

**ivi**

**inVita intelligence**

**INRstar®: Instructions for Use**



# Contents

1.	Symbols .....	6
2.	Abbreviations .....	7
3.	Overview of inVita intelligence Limited INRstar® .....	8
4.	Introduction.....	9
4.1.	Intended Use .....	9
4.2.	Important Information.....	9
4.3.	Contraindications.....	9
4.4.	Warnings and Precautions .....	9
5.	Getting Started .....	12
5.1.	Minimum Specification for Installing INRstar .....	12
6.	Installing INRstar.....	13
6.1.	INRstar Updates.....	14
7.	Location Management.....	15
7.1.	Creating User Accounts .....	15
7.2.	Setting or Editing User Permissions .....	16
7.3.	Resetting User Passwords.....	18
7.4.	Permission Levels.....	18
7.5.	Disabling a User Account .....	20
8.	Logging into INRstar.....	21
8.1.	Login Page .....	21
8.2.	Forgotten Your Password?.....	22
9.	Home Page .....	23
9.1.	Messages .....	23
9.2.	Profile .....	24
9.3.	Important Information.....	26
10.	Patient Tab .....	27
10.1.	Adding a Patient .....	27
10.2.	Selecting a Patient .....	27
10.3.	Patient Notes .....	29



10.4.	View Patient Demographic Details .....	31
10.5.	Editing Patient Details.....	31
10.6.	Duplicate Patient Records .....	32
11.	Individual Patient Management .....	34
11.1.	The Patient Record .....	34
11.2.	Adverse Events .....	43
11.3.	Patient Audit Trail.....	45
12.	Tests Due and Home Visits .....	47
12.1.	External Test Results.....	48
12.2.	External Patient Look-up (EPL).....	51
12.3.	Transferring Testing Location or Change Registered Practice.....	51
13.	Managing Non-warfarin Patients in INRstar .....	55
14.	Adding a Treatment Plan – Warfarin .....	56
15.	Adding a Treatment Plan – DOAC or LMWH .....	59
16.	Patient Treatments.....	62
16.1.	Recording a Historical Treatment .....	62
16.2.	Add New INR Result.....	64
16.3.	Manual Dosing.....	66
16.4.	Oates Slow Induction .....	67
16.5.	Tait Dosing Algorithm .....	71
16.6.	Fast Induction - Fennerty-Gedge .....	80
16.7.	Coventry Maintenance .....	93
16.8.	Hillingdon Maintenance.....	95
16.9.	Adding the INR Result for Maintenance and Induction .....	96
16.10.	Suggesting Treatment and Schedule .....	99
16.11.	Skip or Boost Functionality .....	100
16.12.	Bridging .....	105
16.13.	Refer Treatment for Authorisation .....	109
16.14.	Accept a Referred Treatment .....	110
16.15.	Overriding Dosing Suggestions .....	112
16.16.	Select Alternative Schedule .....	112
16.17.	Saved Treatment, Printing, Faxing or Emailing a Dosing Diary.....	113
16.18.	DNA (Did Not Attend) .....	115



16.19.	Deleting a Treatment.....	118
17.	Clinical Reviews .....	119
17.1.	Adding a Review .....	119
17.2.	Adding a Warfarin Review .....	120
17.3.	Adding a DOAC or LMWH Therapy Review .....	121
17.4.	Adding an Acenocoumarol Review .....	123
17.5.	Deleting a Warfarin Review .....	126
17.6.	Deleting a Non Warfarin Review.....	128
18.	Managing Patients in INRstar Engage .....	130
18.1.	Digital Dosing Diary (DDD) .....	130
18.2.	Step 1 - Discuss Digital Dosing with a Patient .....	130
18.3.	Step 2 - Confirm Patient's Details .....	131
18.4.	Step 3 - Enrol Patient .....	131
18.5.	Manage Treatments Using Digital Dosing Diary.....	134
18.6.	Manage Patient on Warfarin Self Testing in INRstar Engage .....	136
18.7.	DOAC Support Programme (DSP) .....	141
19.	Clinics and Appointments .....	144
19.1.	Create a New Clinic.....	144
19.2.	Edit a Clinic .....	147
19.3.	Cancel a Clinic.....	148
19.4.	View Clinic Appointments.....	149
19.5.	View or Edit Appointment Comments .....	151
19.6.	Print Appointments Lists.....	151
19.7.	Make an Appointment.....	152
19.8.	Cancel Appointments .....	152
19.9.	Changes to Scheduled Appointments .....	155
19.10.	Cancel an Appointment .....	156
19.11.	Create a Review Appointment.....	157
19.12.	DNA (Did Not Attend) in Appointment .....	158
20.	Options .....	159
20.1.	Dose Settings .....	159
20.2.	Point of Care Testing (PoCT) .....	162
20.3.	EQC Results.....	164





20.4.	Internal Quality Control (IQC) .....	166
20.5.	Diagnosis .....	170
20.6.	Location Management.....	175
20.7.	System Audit Trail.....	177
20.8.	Printing Settings.....	177
21.	Reports .....	179
22.	Analytics .....	181
22.1.	Overview of INRstar Locations.....	181
22.2.	Clinical Audit - Key Quality Indicators .....	188
22.3.	Export to CSV .....	191
23.	Legal Notices.....	193
Appendix A - Home Page Messages .....		194
Appendix B - NPSA Dosing Guidelines .....		200
Appendix C - External Clinical Systems.....		203
Appendix D – Clinical Risk Assessment.....		209
Appendix E – Update Installation Troubleshooting .....		221



## 1. Symbols

Within the Instructions for use, device labelling and the Software you may encounter the following symbols, shown here with their meaning:



### **Manufacturer**

Indicates the medical device manufacturer, as defined in EU Directives 93/42/EEC and 98/79/EC.



### **Authorized representative in the European Community**



### **Catalogue Number**

Indicates the manufacturer's catalogue number so that the medical device can be identified.



### **CE Mark**

By affixing the CE marking to a product, a manufacturer declares that the product meets all the legal requirements for CE marking.



### **Caution**

Indicates the need for the user to consult the instructions for use.



### **In vitro diagnostic medical device**



### **Caution**

Indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot be presented on the medical device itself.



## 2. Abbreviations

▪ AC	Anticoagulation
▪ ALT	Alanine aminotransaminase
▪ APTT	Activated partial thromboplastin time
▪ BCSH	British Committee for Standards in Haematology
▪ CDSS	Clinical Decision-Support Software
▪ CSV	Comma Separated Values
▪ DDD	Digital Dosing Diary
▪ DOAC	Direct Oral Anticoagulation
▪ DOB	Date of Birth
▪ EPL	External Patient Look-up
▪ EQC	External Quality Control
▪ EULA	End User License Agreement
▪ GP	General Practitioner
▪ Hb	Haemoglobin
▪ HCA	Health Care Assistant
▪ HCP	Health Care Professional
▪ IFU	Instructions for Use
▪ INR	International Normalised Ratio
▪ IQC	Internal Quality Control
▪ LMWH	Low Molecular Weight Heparin
▪ NPSA	National Patient Safety Agency
▪ NSAID	Non-steroidal anti-inflammatory drug
▪ PDF	Portable Document Format
▪ POCT	Point of Care Testing
▪ TTR	Time in Therapeutic Range



### 3. Overview of inVita Intelligence Limited INRstar®

INRstar® (*hereinafter to referred to as INRstar*) is a web-based clinical decision-support software (CDSS) which provides clinical decision-support to clinicians who are prescribing oral anticoagulation (AC) for patients with a variety of physical conditions. The system uses standard, published algorithms to suggest a new warfarin dose and the date of the next International Normalised Ratio (INR) blood test in response to a clinician inputting a new INR result for an individual patient taking long-term AC medication.

The algorithms provided by INRstar include:

- The Coventry Maintenance dosing algorithm
- The Hillingdon Maintenance dosing algorithm
- Induction Fast Fennerty-Gedge
- Induction Slow Oates
- Induction Slow Tait
- A Manual dosing option, which allows a clinician to induct or maintain a patient using warfarin without requiring a dosing suggestion from the system.

INRstar is designed to facilitate management of patients by a clinician. This provides recording and monitoring functions, review periods, appropriate warnings, reports, audits, and reminders, using validated dosing algorithms which provide appropriate dose suggestions, where necessary.

The system also supports the management of direct oral anticoagulant (DOAC) medication, giving the clinician a broader choice of AC management possibilities and the ability to track and manage reviews.

**Software System:** The application is hosted on secure servers within Europe. INRstar runs within a dedicated Windows client which is downloaded from the INRstar server and then resides on the user's machine.

All data transmitted between the INRstar servers and individual user data is encrypted to industry standards. Comprehensive internal and external security testing has been undertaken to ensure that the system cannot be exploited maliciously. The system complies with ISO/IEC 27001 standards.



## 4. Introduction

### 4.1. Intended Use

INRstar is a software program intended for use by Health Care Professionals to support their management of patients taking anticoagulant medication.

### 4.2. Important Information

Read this inVita Intelligence '**Instructions for Use**' (IFU) carefully and completely before using INRstar for the first time.

The INRstar Instructions for Use provide the information required to operate INRstar.

For questions not answered in the INRstar Instructions for Use, please contact Technical Support at [enquiries@invitaintelligence.com](mailto:enquiries@invitaintelligence.com).

**Please note:** Instructions are combined with example screenshots. Some screens may look different in the Software depending on the version being used or regional differences.

### 4.3. Contraindications

The software is intended to offer decision-support to clinicians trained and experienced in the management of AC in patients over the age of 18 years and is not intended for use in patients below this age. INRstar is a CDSS, and users should be trained and competent in AC management before use.

### 4.4. Warnings and Precautions

Only use the inVita Intelligence INRstar for its intended purpose and in accordance with the Instructions for Use, Warnings and Precautions. Users should be aware of the residual risks identified below, and detailed in Appendix D – Clinical Risk Assessment, and should follow the recommended guidance.

#### 4.4.1. Instructions for Use

The IFU does not constitute a local AC protocol; organisations using INRstar should have a formal AC policy and procedures. Formal training on the use of the system should be completed prior to use of the software in a clinical setting with patients.

#### 4.4.2. Inappropriate selection of a maintenance dosing algorithm.

Selection of the appropriate dosing method is an area of risk and should only be undertaken by trained users with clinical knowledge and understanding of the significance of and differences between warfarin induction and maintenance dosing methods.



#### **4.4.3. Inappropriate selection of an induction dosing algorithm.**

Selection of dosing method should only be undertaken by trained users with clinical knowledge and understanding of the significance of and differences between warfarin induction and maintenance dosing methods.

#### **4.4.4. Inappropriate change of induction to maintenance dosing algorithm.**

Selection and changing of dosing algorithms are a high-risk activity. Selection of dosing method should only be undertaken by trained users with clinical knowledge and understanding of the significance of and differences between warfarin induction and maintenance dosing methods.

#### **4.4.5. Inappropriate change of dosing or review period settings.**

The organisation clinical lead should be a clinician with an in-depth understanding of anticoagulation treatment. Organisation clinical lead status can only be granted by the organisation administrator and should not be granted to a user without sufficient training, experience, and knowledge of the practice of oral anticoagulation treatment.

#### **4.4.6. Accurate entry of the new INR result is critical.**

Users should confirm that the result they have entered is correct when the confirmation dialogue is displayed.

Interfaces with the POCT coagulometers which directly import the result should be used, where available, to minimise the risk of transcription errors when entering new INR results.

#### **4.4.7. Incorrect existing warfarin dose is a major area of risk.**

All dosing algorithms rely on the fact that the patient's current dose of warfarin is correctly recorded so that the new suggested dose is accurate. All users should be aware of the importance of confirming with the patient that the currently recorded warfarin dose is still correct before a new dose is calculated.

#### **4.4.8. Accurate entry of the manual INR and dose data is critical.**

Users should positively confirm that the result they have entered is correct when the confirmation dialogue is displayed.

#### **4.4.9. Overriding of suggested doses is a safety critical area.**

Users should positively confirm that the new data they have entered is correct and appropriate in the context of the patient's current clinical situation. Dose overrides are disabled during the induction protocol.

#### **4.4.10. Overriding of suggested review periods is a safety critical area.**

Users should positively confirm that the new data they have entered is correct and appropriate in the context of the patient's current clinical situation.



#### **4.4.11. Warfarin induction is a safety critical activity.**

It should only be carried out by users with clinical knowledge and experience in anticoagulation management. The user must be prepared to dose the patient manually if the INR falls outside the parameters of the induction protocol.



## 5. Getting Started

The **'Getting Started with INRstar'** guide is an outline of how to operate INRstar.

INRstar is a market-leading, evidence-based software for safe and effective AC management. This CDSS provides complete AC support for the induction, dosing, review and connected self-care of patients on both traditional AC and DOACs.

The clinically assessed roles and permissions available in INRstar supports care-teams in the delegation of tasks and in limiting clinical decisions to appropriate staff.

INRstar is designed to be flexible and responsive to the requirements of the service provider, allowing users to manage and review patients on DOACs, Vit K antagonists and Low Molecular Weight Heparin (LMWH).

The examples used within this document are only for the purpose of illustrating the functionality of INRstar and do not convey any clinical guidance.

### 5.1. Minimum Specification for Installing INRstar

To access INRstar you will need to download and install the INRstar client window onto your workstation. Each INRstar workstation must have the following software installed prior to downloading the INRstar client window:

- Operating system: Windows 10 or later.
- .NET Framework 4.0 or later
- Adobe Acrobat Reader 9.0.

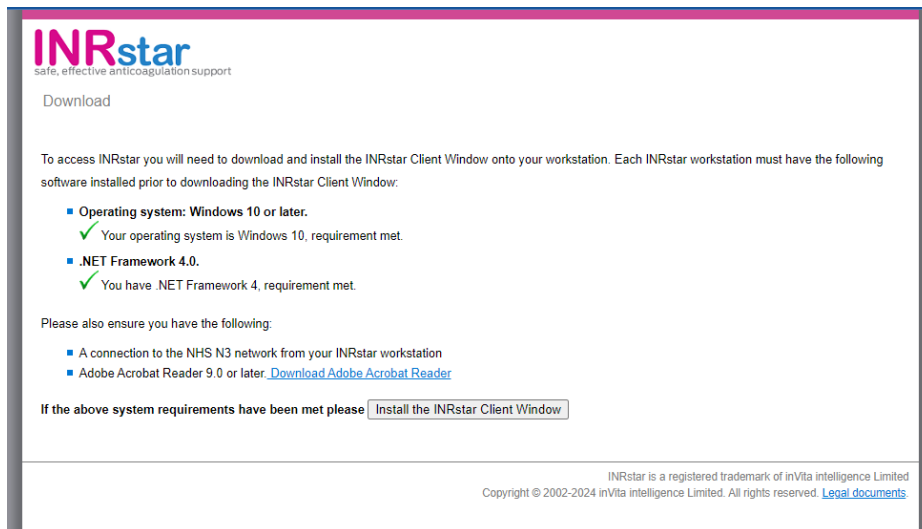




## 6. Installing INRstar

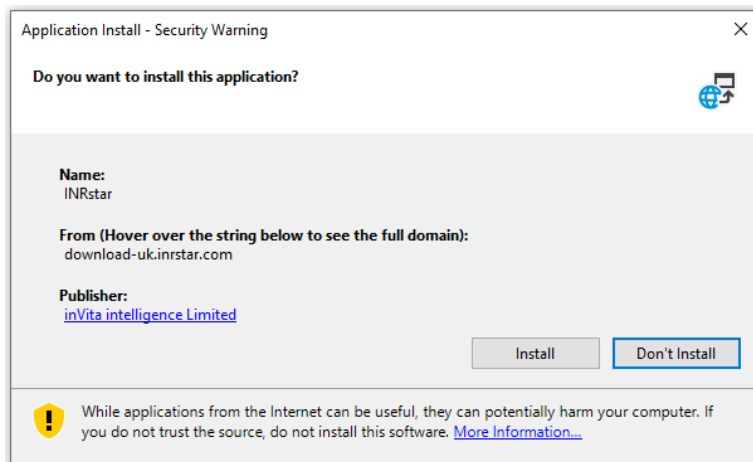
INRstar can be installed on the desktop of every user that requires access to the software. If you use more than one workstation you will need to install it on each computer.

1. Go to <https://download-uk.inrstar.com/> to download INRstar to your workstation. (For Ireland go to <https://download-ie.inrstar.com/>). The web page will verify (where possible) whether the minimum software requirements have been met on the computer and provide help with downloading the software



**Note:** If there are two green ticks INRstar can be installed. If you have one or more red crosses you will need to install the relevant Microsoft download. We recommend that an IT Technician from your IT department or practice, with administrator rights, logs onto the computer to perform the necessary downloads.

2. Click on the **'Install the INRstar Client Window'** button once you have two green ticks (found at the bottom of the page).
3. An **'Application Install'** box will appear. Click **'Install'**.



The INRstar application will then install. This may take a few minutes, after which INRstar will open and be ready to use.

**Please note:** Once a site license is purchased there is no limit on the number of workstations on which you can install the software.

## 6.1. INRstar Updates

To improve user experience, expand INRstar features and apply bug fixes, we regularly release updates.

Often, updates can be deployed with minimal disruption to users, but others require a new version of the software to be installed. The software update usually takes 30-60 seconds to install and should be completed at the earliest opportunity to ensure the version in use is clinically safe and compliant with regulations such as GDPR.

Once a new version has been deployed, users will be prompted to install the next time they open INRstar; **the update should be accepted and installed at this point.**

The software can be used with the same login details and settings immediately.

If the update **is not accepted and installed**, the existing version will need to be uninstalled and replaced with the latest version (see Appendix E – Update Installation Troubleshooting for assistance).



## 7. Location Management

Before a practice or organisation can start using INRstar, all the INRstar users will need to have a user account created and be assigned the correct level of permissions.

These tasks can be completed by the INRstar '**Location Administrator(s)**' for your practice or organisation. If you are a **view only location**, i.e. a practice or prison that has registered patients who are tested at another INRstar location, location management tasks are carried out by the '**View Only Administrator(s)**' for your practice or organisation.

**Note:** It is the organisation's responsibility to ensure their protocols specify which clinical roles can undertake the appropriate treatment activities. The designation of roles to users should comply with local protocols.

All clinical users of INRstar who are involved with patient treatment should regularly attend updates in AC and use of CDSS.

The following sections demonstrate how the tasks below can be completed:

- Creating User Accounts
- Setting or Editing User Permissions
- Resetting User Passwords
- Permission Levels
- Disabling a User Account

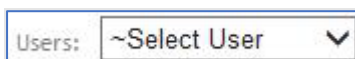
### 7.1. Creating User Accounts

User accounts can be created only by a user with location administrator or location clinical lead permissions.

1. Open and log into INRstar.
2. Navigate to the blue '**Options**' tab.
3. Select the '**Location Management**' tab.
4. Select the '**Users**' tab.

**Note:** This area of INRstar allows administrators to add a new user, manage existing users and reset passwords.

You are now able to see a drop-down box; this contains a list of all users currently registered on the system. If you have not yet added any users, this drop-down will only contain your username.



5. To create a user, click the '**Add User**' button on the right-hand side.



6. Enter the following user details:

- **Full Name:** Enter the individual's full name including their title.
- **Username:** Must be unique. It is recommended to maintain the same format for every user, for example '**firstname.surname**'. If the username already exists add a number at the end, e.g. '**john.smith1**'. Usernames are case sensitive.
- **Password:** Create a default password for the user; password requirements are displayed on the right-hand side of the screen. When the user logs into INRstar for the first time they will be required to change their password.
- **Confirm password:** Confirm the password.

7. To save the new user's details, click the '**Add**' button.

**Note:** Each user will be set to read-only as a default until permission levels are set for each user you create. Make a note of the username and password to inform the user.

## 7.2. Setting or Editing User Permissions

Once the user has been added, the designated permissions level needs to be set within INRstar. You will need an account with '**Location Administrator**' or '**Location Clinical Lead**' permissions (or '**View Only Administrator**' if at a view only location) to perform this task.

**Note:** Due to the potentially serious clinical consequences of an incorrect warfarin dose it is important that you limit INRstar access only to staff who are familiar with the management of AC therapy and who have been trained in its correct use. This is to ensure and maximise the safety of patients managed in the system.

1. Open and log into INRstar.
2. Navigate to the '**Options**' tab.
3. Select the '**Location management**' tab and then the '**Users**' tab.
4. Select the user from the drop-down box.

5. Click the '**Manage User**' button and then the '**Roles & Permissions**' tab.



Roles and Permissions
Update

	Clerical 1	Clerical 2	Clerical 3	Clinical Level 1	Clinical Level 2	Clinical Level 3	Location Administrator	Location Clinical Lead	Read Only
Please select Role/s:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
View a patient record	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manage patient demographic details	✓	✓	✓	✓	✓	✓	✓	✓	
Run location level admin reports	✓	✓	✓	✓	✓	✓	✓	✓	
View Clinics	✓	✓	✓	✓	✓	✓	✓	✓	
Run location level clinical reports	✓	✓	✓	✓	✓	✓	✓	✓	
View location options				✓	✓	✓	✓	✓	
View clinical messages		✓	✓	✓	✓	✓	✓	✓	
Make INR Test Appointments - Limited		✓	✓	✓	✓	✓		✓	

- Select the level of permission required by placing a tick above the relevant role title, untick '**Read Only**' and then click '**Update**'.

More than one box can be ticked. It is recommended to have more than one '**Location Administrator**' in case of absence.

The '**Administrative Lead**'(s) should consult the '**Clinical Lead**' when setting permission levels to ensure that each team member has the correct access level that matches their clinical knowledge and competency. In addition it is recommended that roles and permissions should be clearly defined in the local AC protocol.

### 7.2.1. View Only Locations

- Follow steps 1 – 5 as above.

A '**View Only Administrator**' will see a reduced set of view only role options:

Roles and Permissions

	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	View Only	View Only Administrator
Please select Role/s:		
View a patient record	✓	✓
Update patient notes	✓	✓
View patient audit trail	✓	✓
View treatment audit trail	✓	✓
View registered location reports	✓	✓
View location options		✓
Disable a user account		✓
Manage Location		✓

☒ This person is a Registered and Regulated Health Care Professional ⓘ

Update

- Select the level of permission required by placing a tick above the relevant Role title.
- Tick the '**This person is a Registered and Regulated Health Care Professional**' box if the user is a registered and regulated healthcare professional in order for them to use the External Patient Lookup feature.
- Click '**Update**'.



More than one box can be ticked. We advise that you set another user as a **View Only Administrator** in order to reset passwords or change permission levels if needed in your absence.

### 7.3. Resetting User Passwords

You will need to have an account with '**Location Administrator**' permissions.

1. Open and log into INRstar.
2. Navigate to the '**Options**' tab.
3. Select the '**Location Management**' tab and then the '**users**' tab.
4. Select the user from the drop-down box.

5. Click the '**Manage User**' button.
6. Click the button '**Reset Password**'.

Inform the user of the password generated. The user will have to enter this temporary password when they next login and will then be asked to change their password.

### 7.4. Permission Levels

Only the '**Location Administrator**' and the '**Location Clinical Lead**' have control over user accounts and can assign levels of permissions.

#### Clerical 1 - Admin Assistant, Receptionist

This level is a non-treatment level. Patient records can be viewed, and location level admin reports run. Demographic details can be completed.

#### Clerical 2 - Clerical Administrator

This level is a non-treatment level. Patient records can be viewed, dosing diaries can be printed, treatment comments and patient notes can be edited, location level administrative and clinical reports run. Demographic details can be completed. Clinics can be viewed, and appointments booked/moved within a limited date range; '**Next Test Date**'(s) can also be changed within a limited date range.

#### Clerical 3 - Senior Clerical Administrator

This level is a non-treatment level. Patient records can be viewed, dosing diaries can be printed, treatment comments and patient notes can be edited, location level administrative and clinical reports run. Demographic details can be completed. Clinics can be viewed, and appointments booked/moved within a limited date range, '**Next Test Date**'(s) can also be changed. '**Treatment Plan**' demographics can be created, and '**Historical Treatments**' can be added.



**Note:** The clinical treatment plan must first be created by a level 2 or 3 clinician.

### **Clinical Level 1 – Health Care Assistant (HCA) / Phlebotomist**

A ‘**Clinical Level 1**’ user typically could be an HCA or phlebotomist who has regular contact with the patients, they are able to edit demographic details, update patient notes and enter a new INR test result. We recommend that Clinical Level 1 users have undertaken training in anticoagulation at a level appropriate for this role. An understanding of the implications of an abnormal reading would be required.

If the local protocol allows stable patients with no changes to their treatments can be managed at this level.

### **Clinical Level 2 - Registered Nurse**

A ‘**Clinical Level 2**’ nurse, typically a practice or general nurse would have all the permissions of ‘**Clinical Level 1**’. In addition, they can deactivate and reactivate patients, make changes to patient clinical details and complete out-of-range treatments if accepting the recommendations of INRstar CDSS.

### **Clinical Level 3 – General Practitioner (GP), Lead Clinical Nurse**

A ‘**Clinical Level 3**’ permission typically assigned to a doctor, nurse prescriber or pharmacist. This is a higher permissions level that allows dose changes to be made to a patient’s suggested treatment. A user with this level of authority would be able to authorise referrals from users with a lower level of permission and make changes to suggested doses, target INR and next review date. The clinician can also manually dose patients and document their prescribing decisions in the software and in the patient treatment plan. INRstar recommends the level 3 user has undertaken specific anticoagulation training and is therefore an experienced practitioner.

### **Location Administrator - Practice or Service Manager**

This is usually the practice or service manager. This role allows Testing Location reports to be run, patient treatment records can be viewed but not amended. Location Administrators can also create user accounts, reset user passwords and disable/enable accounts.

### **Location Clinical Lead - Lead GP or Haematologist**

A location ‘**Clinical Lead**’ takes ultimate responsibility for all users of INRstar. The location ‘**Clinical Lead**’ ensures all users are adequately trained in the use of INRstar and have a good understanding of AC. This level allows further accounts to be created and disabled. It allows a complete view of the audit trail of all changes made to records by users. This level can also add bespoke diagnosis if not in the standard list.



## 7.5. Disabling a User Account

It is good practice to disable a user account which no longer uses the system, e.g. if the user no longer works in the service or requires access.

You will need to have '**Location Administrator**' permission.

1. Open and log into INRstar.
2. Navigate to the '**Options**' tab.
3. Select the '**Location Management**' tab and then the '**Users**' tab.
4. Select the user from the drop-down box.

A screenshot of a web interface showing a dropdown menu. The label 'Users:' is to the left of the dropdown. The dropdown itself contains the text '~Select User' and a downward-pointing arrow icon.

5. Click the '**Manage User**' button.
6. Click the button '**Disable Account**'.

The user will still appear in the user list, for auditing purposes, but will display '**(disabled)**' after the username.





## 8. Logging into INRstar

To log into INRstar CDSS your service will need a license and to install the desktop client (see sections 5 and 6 for client installation instructions).

Before a practice or organisation can start using INRstar, all INRstar users will need to have a user account created and be assigned the correct permissions level. This is usually done by the system administrator (see section 7.1 for instructions).

### 8.1. Login Page

Click on the desktop client to open the system to the login page.

**INRstar**  
safe, effective anticoagulation support

Friday 24-Nov-2023

Welcome to the INRstar anticoagulation monitoring system.

This Product is intended to aid and supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals. All information is provided on the basis that the healthcare practitioners responsible for patient care will retain full and sole responsibility for deciding any treatment to prescribe or dispense for all patients and, in particular whether the use of information provided by this Product is safe, appropriate, or effective for any particular patient or in any particular circumstances.

Logging in to INRstar will be taken as your acceptance of this statement.

**Log In**

Username:

Password:

[Forgotten your password?](#)

The Computer Misuse Act 1990, unauthorised access is an offence. [More information.](#)

**iVi** inVita intelligence Limited, The Old Cattle Market,  
Porthleven Road, Helston TR13 0SR UK +44 (0)1209 710999

Amstermed UK Ltd, Unit 109 54 Bloomfield Avenue,  
Belfast BT5 5AD Northern Ireland, UK

Version: 5.74.6 **REF** L103020101001

INRstar is a registered trademark of inVita intelligence Limited  
Copyright © 2002-2023 inVita intelligence Limited. All rights reserved | [INRstar](#) | [Privacy Policy](#) **CE**

**Note:** The acceptance statement on which provision of INRstar is predicated may be found in the header section of the screen. By continuing to use the system you confirm your acceptance of this.

Now enter your '**Username**' and '**Password**' provided by your system administrator for the service; press Enter, or click the '**Log In**' button displayed.

**Log In**

Username:

Password:

[Forgotten your password?](#)

The Computer Misuse Act 1990, unauthorised access is an offence. [More information.](#)

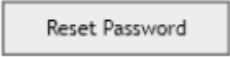



On your first log in the Licence Agreement is displayed. Once you have read and agreed the statement, you will be prompted to change your password and then asked to enter an email address. Your '**Profile**' section is displayed next, where your email address and other details can be edited (See Profile, section 9.2).

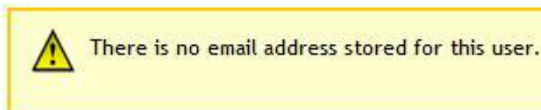
The next time you log in you will be taken to the '**Home**' page.

## 8.2. Forgotten Your Password?

To reset a forgotten password:

1. Open INRstar.
2. Click [Forgotten your password?](#)
3. Enter your INRstar username.
4. Click .
5. Check your inbox for an email titled "**INRstar Password Reset Request**" and take note of the **Temporary Password**.
6. Enter the temporary password into INRstar and click .
7. Type your new password in both fields and click **Update Password**.

**Note:** If you see the following message:



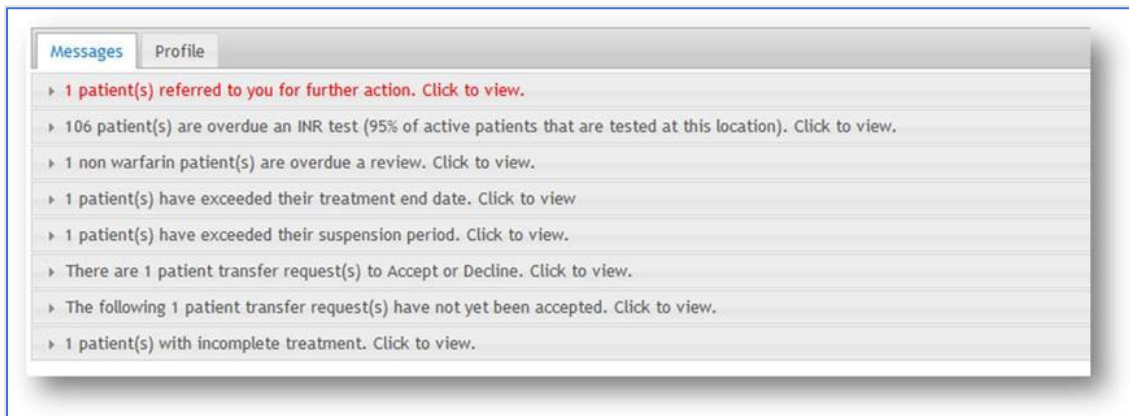
You will have to either contact your Location Administrator or call 01209 710999 to reset your password. Next time you log in you should enter your email address details into your user **Profile** (see section 9.2.3 'Manage Your Email Address').



## 9. Home Page

The '**Home**' page is the first page you reach when you next log into INRstar. Here you can select messages, patient records, run report lists, view/edit your profile tab.

### 9.1. Messages



System-wide messages are always displayed in yellow at the top of the screen.

Other messages provide a report of patients who may require user intervention.

If you are a Clinical Level 1, Clinical Level 2, Clinical Level 3 or Location Clinical Lead user and wish to view a report, click the report header and it will open and display the names of the patients. To view a patient's record, click their name.

For more information on the various Home Page report types, see Appendix A - Home Page Messages.

**Note:** If you remain logged in on the Home Page then you will need to click '**Refresh Messages**' button in order for new messages to appear.



## 9.2. Profile

FOR DEMONSTRATION AND TRAINING USE ONLY

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Monday 26-Oct-2020 Dr Lead @ Varley [Log Off]

Home Patient Clinics Reports Options Help

Messages Important Information Profile

User Details

Email Address: test@luminadx.com

Change Password Edit

Professional Registration Credentials

These credentials will enable you to use External Patient Lookup to provide direct care for patients who are not managed by your anticoagulation service.

Professional Role: Registered Doctor  
Registration Number: P 76091

Edit

Communication Preferences

I'm happy to receive:

- ☒ Information on product updates, tips on new features and functionality
- ☒ Important information about my licence
- ☒ Information on new products or services (INRstar only - no third parties)

I'm happy to offer my feedback on the product from time to time:

- ☒ Short online survey
- ☒ Share my experiences occasionally with other users as part of a virtual user group

Edit

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195

Version : 5.84.0

Use this screen to:

- Change your password.
- Record your email address to enable you to reset your own password.
- Record your professional role and registration number if applicable.
- Select your preferences for communications from INRstar/providing feedback.
- Add and save INPS Vision user credentials where appropriate.

### 9.2.1. Change your Password

Open the **Profile** tab and click the **Change Password** button.

Change Password

Account Information

Current password:

New password:

Confirm new password:

Password Requirements

Your password must be between 8 and 12 characters.

It must include the following:

- at least 1 uppercase letter
- at least 1 lowercase letter
- at least 1 number or symbol (e.g. !@\$%^\_)

Close Update


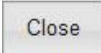
To change the password, complete the following:

- **‘Current password’**: type the existing password into this field.
- **‘New password’**: type the chosen new password into this field.



- **‘Confirm new password’:** repeat the chosen new password here.


Passwords must conform to the **Password Requirements**.

Once these three fields have been filled out correctly, click the  button to save the changes. Alternatively, click  to remove the Change Password dialogue without applying the change.

### 9.2.2. Add Your Professional Registration Credentials

Open the  tab; under **Professional Registration Credentials**  click .

Select your professional role from the drop down list:

Professional Role: 


Click .

### 9.2.3. Manage Your Email Address

Open the  tab and click  under **‘User Details’**.

Now fill in the following fields:

New Email Address:   
Confirm Email Address: 

When both fields are complete, click  to save your changes.

**We will not share your email address with any third parties.**

### 9.2.4. Record Your Communication Preferences

Open the  tab and click  underneath **‘Communication Preferences’**.

Tick or untick the boxes to the left of the options to select your preferences:


**I'm happy to receive:** 

- ☒ Information on product updates, tips on new features and functionality
- ☐ Important information about my licence
- ☐ Information on new products or services (INRstar only - no third parties)

**I'm happy to offer my feedback on the product from time to time:** 

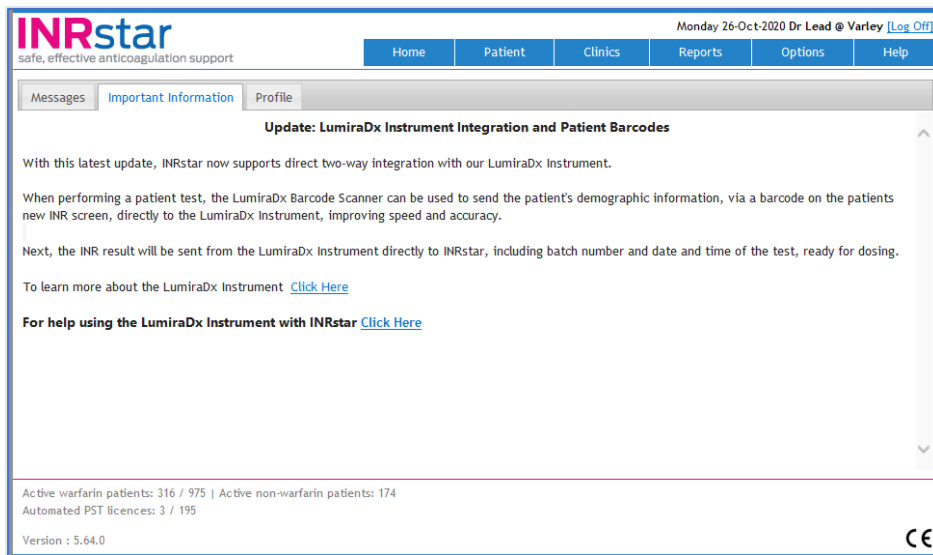
- ☐ Short online survey
- ☒ Share my experiences occasionally with other users as part of a virtual user group



Click  when your selections are complete.

### 9.3. Important Information

Updates and changes to the software are communicated on the 'Important information' page.





## 10. Patient Tab

### 10.1. Adding a Patient

Before treating a patient in INRstar you will need to add the patient record to INRstar. The demographic details ensure that the user can identify the correct patient without the risk of entering clinical data into the wrong record.

1. Click on **'Patient'** tab, then **'Add Patient'**.
2. This will expand the Demographics tab and patient details can be added in the open text fields.

Demographics	Contact
Patient Number: <input type="text"/>	Line 1: <input type="text"/>
NHS Number: <input type="text"/>	Line 2: <input type="text"/>
Title: ~Select Title <input type="text"/>	Line 3: <input type="text"/>
FAMILY name: <input type="text"/>	Town/City: <input type="text"/>
Given name: <input type="text"/>	County: <input type="text"/>
Born: <input type="text"/>	Postcode: <input type="text"/>
Sex: ~Select Sex <input type="text"/>	Home Tel: <input type="text"/>
Gender: Not Known <input type="text"/>	Mobile: <input type="text"/>
Ethnicity: ~Select Ethnicity <input type="text"/>	Email Address: <input type="text"/>
First Language: ~Select First Language <input type="text"/>	
Marital Status: ~Select Marital Status <input type="text"/>	
<div>Save Cancel</div>	

The patient demographic details can be imported automatically from the external clinical system (see Appendix C - External Clinical Systems) if the interface has been set up.

3. When complete, click **'Save'**. As soon as the demographics have been completed you will then be able to add the patient treatment plan.

The new patient record will appear in the home screen messages under 'patients either have no diagnosis or no treatment plan'. Click here to access the record and start a new treatment plan.

### 10.2. Selecting a Patient

To select a patient, either:

1. Select the **'Patient'** tab.
2. Enter the first few letters of the patient's first name/surname/clinical number /identification and click on the **'Search'** button.



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Home Patient Reports Options Help

Search Add Patient Tests Due Results Recently Viewed Change Registered Practice External Patient Lookup

Active Patients Only: ☒ Search

Active warfarin patients: 154 / 200 | Active non-warfarin patients: 6  
Automated PST licences: 0 / 10

Version : 5.40.0

CE        

### 3. Identify the patient from the list.

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Home Patient Reports Options Help









Search Add Patient Tests Due Results Recently Viewed Change Registered Practice External Patient Lookup

james x Active Patients Only: ☒ Search

Name	Born	Patient Number	NHS Number	Address	Post Code
<a href="#">KING, James</a>	15-Jul-1946	611335	178 177 1871	5 Bible Lane	TR14 0HX
<a href="#">QUEEN, James</a>	28-Jul-1931	198495	342 722 7243	45 Palace Road	TR14 0HX
<a href="#">SMITH, James</a>	22-Jul-1952	None	159 877 8951	The Old Cottage	TR1 4ER

Active warfarin patients: 154 / 200 | Active non-warfarin patients: 6  
Automated PST licences: 0 / 10

Version : 5.40.0

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OR

### 1. Select the 'Overdue Patient' list on the 'Home' page.

Messages Profile

- ▶ 1 patient(s) referred to you for further action. Click to view.
- ▶ 106 patient(s) are overdue an INR test (95% of active patients that are tested at this location). Click to view.
- ▶ 1 non warfarin patient(s) are overdue a review. Click to view.
- ▶ 1 patient(s) have exceeded their treatment end date. Click to view
- ▶ 1 patient(s) have exceeded their suspension period. Click to view.
- ▶ There are 1 patient transfer request(s) to Accept or Decline. Click to view.
- ▶ The following 1 patient transfer request(s) have not yet been accepted. Click to view.
- ▶ 1 patient(s) with incomplete treatment. Click to view.

### 2. Click on the patient name.





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Home Patient Clinics Reports Options Help

Messages Important Information Profile

3 urgent notifications from patients using the Engage app. Click to view.

73 patient(s) are overdue an INR test (15% of active patients that are tested at this location). Click to view.

<a href="#">BREIRLEY, Linda</a>	08-Jan-1952	01326 457 198	None	234123574	2.5	27-Oct-2020	2
<a href="#">BROWN, John</a>	07-May-1947	01326 280 997	123 400 4321	233345	2.6	27-Oct-2020	2
<a href="#">BURTON, Rich</a>	03-Sep-1946	01872 233333	074 568 6265	556699	2.2	27-Oct-2020	2
<a href="#">CAMILLA, Stern</a>	07-Aug-1951	01326 784 536	710 326 8193	2341234999	2.6	27-Oct-2020	2
<a href="#">CARLILE, Louise</a>	17-Dec-1935	01326 543 788	None	213412394128934	2.7	27-Oct-2020	2
<a href="#">CAVELL, David</a>	02-Oct-1949	01209 354876	543 340 3831	34234587	2.5	27-Oct-2020	2
<a href="#">CORNISH, Celia</a>	09-May-1951	01326 780 564	258 675 1043	786799	2.3	27-Oct-2020	2
<a href="#">DAMSON, Charlie</a>	04-Jan-1939	01326 758 768	139 703 7652	34523458736	2.6	27-Oct-2020	2
<a href="#">DAVIES, Emily</a>	12-Dec-1947	01326 280 768	251 815 0110	None	2.6	27-Oct-2020	2
<a href="#">DINEEN, Dianne</a>	15-Apr-1931	01326 280 887	None	2334699	2.4	27-Oct-2020	2
<a href="#">DREW, Nick</a>	17-May-1955	01326 567 8979	468 817 4233	54632	2.2	27-Oct-2020	2
<a href="#">EVERTON, Elsie</a>	24-May-1955	01326 280 996	857 563 2825	999777666	2.6	27-Oct-2020	2
<a href="#">FALTON, David</a>	10-Sep-1947	01326876987	168 411 6627	1133786	2.4	27-Oct-2020	2

This will open the patient record in the **'Treatment Plans'** tab (unless there is a patient note – see 10.3).

**Treatment Plans** Patient Details Notes Adverse Events Letters Summary Audit Trail Exit Record

Treatment plan: On warfarin from 04-Feb-2014 to present for LV mural thrombus (post MI / LV aneurysm)

INR Treatments Reviews Clinical Details

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments
25-Feb-2014	2.3	2.5		0	14		11-Mar-2014	-	<a href="#">Add Comment</a>
04-Mar-2014	1.6	4.0		0	8		12-Mar-2014 09:15	-	<a href="#">Add Comment</a>

Treatment: New INR Add Historical Delete Latest

View: All Treatments

Appointment: Make Cancel

DNA: Mark

Print: Summary Diary

## 10.3. Patient Notes

The **'Notes'** section of the patient record includes qualifying remarks relating to patient care which are entered manually by the clinician, plus any items entered automatically (for example when records are deactivated).

Where there is a patient note, this is displayed first when the patient record is opened. If the note is still relevant, proceed to the treatment tab.

**Note:** a patient note that is no longer relevant should be archived (see 'Archive Patient Notes', below)

### 10.3.1. Add a Patient Note

To add a note, find the relevant patient, open their record and click [Notes](#).

Notes Archived Notes

No active notes recorded

Archive Note(s) Add Note

29 of 226 Document Name: INRstar®: Instructions for Use

Document Number: IVIQMS-1761341735-144

Revision: 5

This document is controlled and released electronically in inVita Intelligence Quality Management System (QMS). Hard copies are uncontrolled and should not be relied upon for the most recent version

**Information Classification: For Internal Use Only**



Click the '**Add Note**' button.

Notes Archived Notes

Good Fella's....

Save Cancel


Now enter your freehand note – the space will expand to accommodate a lengthy note but it is recommended you keep the number of characters to a minimum!

Click the '**Save**' button to confirm.

Notes Archived Notes

Notes	Added On	Added By	Archive
Good Fella's INR reading....	30-Oct-2013 14:58	Mary	<input type="checkbox"/>

Archive Note(s) Add Note

The note will now be added and displayed on the '**Notes**' screen. To show a patient has a note, the information icon  will be shown on the '**Notes**' tab.

It is not possible to delete notes once added, but those no longer relevant should be archived.

### 10.3.2. Archive Patient Notes

To archive patient notes, open the patient's '**Notes**' tab, tick the '**Archive**' checkbox adjacent to the note(s) to be archived and then click the '**Archive Notes(s)**' button.

Notes Archived Notes

Notes	Added On	Added By	Archive
New note	17-Sep-2013 14:15	Mary	<input checked="" type="checkbox"/>
Micky Mouse's test note	17-Sep-2013 14:14	Mary	<input type="checkbox"/>

Archive Note(s) Add Note

Once a patient's note has been marked as archived it will no longer appear in the list of notes for that patient. To view an archived note, open the '**Archived Notes**' tab:

Notes Archived Notes

Notes	Added On	Added By	Archive
New note	17-Sep-2013 14:15	Mary	<input checked="" type="checkbox"/>

**Please Note:** Once a patient's note has been archived it cannot be restored.



## 10.4. View Patient Demographic Details

Patient demographic details can be viewed in the patient **'Demographics'** screen.

The screenshot shows the INRstar interface for patient Marjorie Thurstfield. The top navigation bar includes Home, Patient, Clinics, Reports, Options, and Help. The patient banner displays: THURSFIELD, Marjorie (Mrs), Born: 24-Oct-1940 (80y 0m), Gender: Female, NHS Number: 363 483 8795, Patient Number: 99772233, Active patient. Below the banner, a red arrow points to the 'Demographics' tab. The 'Demographics' tab is selected, showing patient details: Patient Number: 99772233, NHS Number: 363 483 8795, Title: Mrs, FAMILY name: THURSFIELD, Given name: Marjorie, Born: 24-Oct-1940, Sex: Female, Gender: Female, Ethnicity: White - British, First Language: English, Marital Status: Widowed. The 'Contact' tab shows Address: Ledlow House, Hanson way, Redruth, Cornwall, TR14 0HX, Home Tel: 01326 280 778, Mobile: 07973538397, Email Address: [blank]. An 'Edit' button is at the bottom right. At the bottom, it shows 'Active warfarin patients: 316 / 975 | Active non-warfarin patients: 174', 'Automated PST licences: 3 / 195', and 'Version : 5.64.0'.

## 10.5. Editing Patient Details

If the demographic details of a patient have changed, it is important to amend the record in INRstar.

The patient's demographic details can be viewed by expanding the patient banner by clicking on the red arrow (as below) or by clicking on the **'Demographic Data'** tab in the patient record.

This screenshot shows the INRstar patient banner for Marjorie Thurstfield with the details expanded. It includes the patient's name, birth date, gender, NHS number, patient number, and status. The expanded details show the address (Ledlow House, Hanson way, Redruth, Cornwall, TR14 0HX), home telephone (01326 280 778), and a list of tablet usage options: Using 5mg tablets (checked), Using 3mg tablets (checked), Using 1mg tablets (checked), Using 0.5mg tablets (checked), and Using Split tablets (unchecked). The 'Max Review Period' is set to 60 Days. The bottom navigation bar is visible with tabs for Treatment Plans, Demographics, Patient Management, Notes, Adverse Events, Letters, Summary, Audit Trail, Self-Care, and Exit.

- To change any of these details click the **'Edit'** button in the patient demographics tab.
- To save any changes click the **'Save'** button, or the **'Cancel'** button to discard any changes.



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Monday 26-Oct-2020 Dr Lead @ Varley [\[Log Off\]](#)

Home Patient Clinics Reports Options Help

**THURSFIELD, Marjorie (Mrs)** Active patient  
Born: 24-Oct-1940 (80y 0m) Gender: Female NHS Number: 363 483 8795 Patient Number: 99772233

Address: Ledlow House Hanson ... Diagnosis: Atrial fibrillation Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: 91.7%

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

**Demographics**

Patient Number: 99772233  
NHS Number: 363 483 8795  
Title: Mrs  
FAMILY name: THURSFIELD  
Given name: Marjorie  
Born: 24-Oct-1940  
Sex: Female  
Gender: Female  
Ethnicity: White - British  
First Language: English  
Marital Status: Widowed

**Contact**

Line 1: Ledlow House  
Line 2: Hanson way  
Line 3: Redruth  
Town/City: Cornwall  
County: Cornwall  
Postcode: TR14 0HX  
Home Tel: 01326 280 778  
Mobile: 07973538397  
Email Address:

Save Cancel

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195

Version : 5.64.0

[Click here to up...](#)

CE

## 10.6. Duplicate Patient Records

Duplicate patient: Adding or editing a patient record.

Often a location requests transfer of a record from a previous location when a patient newly registers with them, and meanwhile create a new record. When the transferred record then arrives onto their message screen, awaiting acceptance or decline, they will be unable to use either record until they decide which record to keep and which to mark as a duplicate.

Below are the scenarios where such entry will be prevented.

1. If all the following information entered for a new patient matches an existing one.

- Family Name
- First Initial of Given Name
- Date of Birth
- Gender

**Note:** the existing patient may be active or inactive.

2. When trying to add/edit a patient who has the same patient number as another patient at your location.

**Note:** If this happens, you will see the following message:

A screenshot of a software dialog box titled 'Please confirm'. It contains a yellow warning box with a triangle icon and the text: 'There are 2 patients with the name Sheila RICHARDS. Please confirm this is the correct patient.' Below the warning box is a text input field. At the bottom right of the dialog is a 'Confirm' button.

If you receive a duplicate error message, you already have a treatment plan for a patient with the same details. The number should be verified as two patients cannot have the same system identification details.

The treatment plan may have been deactivated and you will need to reactivate the patient record.

For assistance, contact INRstar support: [enquiries@invitaintelligence.com](mailto:enquiries@invitaintelligence.com)

**Note:** See also patient status (section 11.1).



## 11. Individual Patient Management

This section outlines patient records and their administration on INRstar including:

- Patient status details – active, deactivated, suspending or unsuspending.
- Care team details.
- Patient group – records transport, home visit or complex.
- Transferring Testing Location or changing Registered Practice.

### 11.1. The Patient Record

#### 11.1.1. Patient Status

Patient status is displayed as '**Active**', '**Deactivated**' or '**Suspended**'.

The status of a patient's treatment can be managed and recorded as active, deactivated or suspended within INRstar.

**Active:** An active patient is currently undergoing AC treatment. When treating a patient their treatment plan status should remain '**Active**'. When activated a patient will show on all reports.

**Deactivated:** A deactivated patient is not currently undergoing AC treatment. When a patient's treatment plan has ended, they should be deactivated. The patient will now not appear on your active patient list, or in any reports run that relate to the period after their deactivation date.

#### 11.1.2. Suspending a Patient

The patient record should only be deactivated if they have permanently left your care or have stopped all AC treatment.

If a patient is going to be away from his or her usual Testing Location for a length of time, you may wish to temporarily suspend the patient at your location for up to 6 months. This might be appropriate if the patient is going on holiday or is being admitted to hospital for treatment or respite care.

Note: the suspended patient record can still be accessed elsewhere using External Patient Lookup to add a treatment (see section 12.2).

You will need to set an end date and record a reason for the suspension period. During the suspension period the patient will not appear in overdue INR test reminder messages or reports.

To suspend a patient:

1. Click on the '**Patient Management**' tab in the patient record.
2. Click on the '**Suspend**' button in the '**Status**' section.



The screenshot shows the INRstar Patient Management interface for a patient named SMITH, Sydney (Mr). The patient's status is 'Active'. The 'Patient Management' tab is selected, and the 'Suspend' button is circled in red. The interface includes a top navigation bar with links to Home, Patient, Clinics, Reports, Options, and Help. The patient's details, including birth date, gender, address, diagnosis, and medication, are displayed at the top. The 'Suspend' button is located in the top right corner of the Patient Management section.

3. Enter a suspension end date.

4. Select a reason for the suspension from the drop-down menu.

The screenshot shows the INRstar Patient Management interface for the same patient, now in the suspension process. The 'Suspend' button is no longer visible, and the 'Confirm' button is circled in red. The form includes a 'Suspended Until' date field (11-Mar-2019), a 'Suspension Reason' dropdown menu (with options: ~Select Suspension Reason, Hospital admission, On holiday, Out of area, Other), and a 'Comments' text area. The 'Confirm' button is located in the bottom right corner of the Patient Management section.

5. Enter any relevant comments as needed.

6. Click on the '**Confirm**' button.

The background colour of the patient demographic banner will change to orange during the suspension period and a message will be displayed if the patient record is opened. A comment will automatically be entered in the patient notes giving details of the suspension period. Free text comments can be added to supplement the information on the record.



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Friday 02-Nov-2018 Dr A N other @ Testdale Surgery [Log Off]

Home Patient Clinics Reports Options Help

SMITH, Sydney (Mr)  
Born: 01-Mar-1983 (35y 8m) Gender: Male  
Patient Suspended until 11-Mar-2019  
NHS Number: None Patient Number: 7788778877

Address: 45 Beech Grove  
Diagnosis: Atrial fibrillation Drug: Dabigatran End Date: Indefinite

Treatment Plans Demographics Patient Management Notes Audit Trail Self-Care Exit

Status

✓ The patient has been successfully suspended with reason of On holiday, until Monday 11-March-2019.

Care Team Patient Groups

Testing Location: Testdale Surgery Transport Required: ☐  
Registered Practice: Testdale Surgery Home Visit Required: ☐

### 11.1.3. Un-suspend a Patient

A suspended patient can be un-suspended at any time during the suspension period. When a patient's suspension end date has been reached a message will be displayed on the home page.

To un-suspend a patient:

1. Click on the **'Patient Management'** tab in the patient record.
2. Click on the **'Unsuspend'** button in the **'Status'** section.

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Friday 02-Nov-2018 Dr A N other @ Testdale Surgery [Log Off]

Home Patient Clinics Reports Options Help

SMITH, Sydney (Mr)  
Born: 01-Mar-1983 (35y 8m) Gender: Male  
Patient Suspended until 11-Mar-2019  
NHS Number: None Patient Number: 7788778877

Address: 45 Beech Grove  
Diagnosis: Atrial fibrillation Drug: Dabigatran End Date: Indefinite

Treatment Plans Demographics Patient Management Notes Adverse Events Audit Trail Self-Care Exit

Status

Status: Suspended  
Suspended Until: 11-Mar-2019  
Suspension Reason: On holiday  
Suspension Notes:

Unsuspend De-activate

Care Team Patient Groups

Testing Location: Testdale Surgery Transport Required: ☐  
Registered Practice: Testdale Surgery Home Visit Required: ☐

3. Check that the current treatment details recorded in INRstar are still correct.

If the patient has had INR tests or dose changes elsewhere during the suspension period, you will need to add this information to the patient record as historical treatments.

**Failure to add a missing historic test result could lead to inappropriate future dosing suggestions.**

### 11.1.4.





### 11.1.5. Deactivate a Patient Record

The patient record should only be de-activated if they have permanently left your care or have stopped all AC treatment.

This function removes patients from the active list – patient details are retained but reinstating them will require a new treatment plan.

This activity is restricted to ‘**Clinical Level 3**’ users.

**Note:** Do not deactivate a patient if the record is likely to be transferred to another INRstar location, suspending for an appropriate time to await a transfer request could be considered.

To de-activate a patient:

1. Click on the ‘**Patient Management**’ tab in the patient record.

The screenshot shows the INRstar patient record for Sydney Smith (Mr), born 01-Mar-1983. The 'Patient Management' tab is active. In the 'Status' section, the 'De-activate' button is highlighted with a red circle. The 'Care Team' section lists the A/C Clinician as Professor, Sir Nicholas Smythe. The 'Patient Groups' section has several checkboxes for Transport, Home Visit, Complex Patient, and INR Self Tester, all of which are currently unchecked. At the bottom, there are buttons for 'Transfer Testing Location', 'Change Registered Practice', and 'Edit'.

2. Click on the ‘**De-activate**’ button in the ‘**Status**’ section.
3. Choose the reason why you are de-activating the patient from the drop-down list then confirm the deactivation.



**INRstar**  
safe, effective anticoagulation support

Friday 02-Nov-2018 Dr A N other @ Testdale Surgery [\[Log Off\]](#)

Home Patient Clinics Reports Options Help

**BROWN, Eric (Mr)** Active patient  
Born: 14-May-1930 (88y 6m) Gender: Male NHS Number: 186 793 4469 Patient Number: None

Address: 29 Privet Drive Diagnosis: DVT or PE (Recurrent) Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: 100%

Treatment Plans Demographics **Patient Management** Notes Audit Trail Self-Care Exit

**Status**

Deactivating this patient will archive all existing treatment information and will cancel any unsaved treatment results.

Please confirm a reason for deactivating this patient:

Notes:

Did you know that you can record non-warfarin patients in INRstar? [Find out more](#)

**Reasons for deactivation:**

- Select Reason
- Adverse Effect
- Co-morbidity
- End of treatment
- Intolerant of anticoagulant
- Moved away
- Moved to another drug - Apixaban
- Moved to another drug - Dabigatran
- Moved to another drug - Dalteparin (LMWH)
- Moved to another drug - Rivaroxaban
- Moved to another drug - Sinthrome
- Moved to another drug - Other
- New contra-indication
- Patient deceased
- Secondary care transfer
- Other

**Care Team**

Testing Location: Testdale Surgery  
Registered Practice: Testdale Surgery  
A/C Clinician: Dr Emrys Jones  
GP Name: Dr Mark Sullivan  
Preferred Clinic:

**Record Sharing Preferences**

Do not allow patient record to be included in anonymised reports: ☐ ?

Transfer Testing Location Change Registered Practice Edit

**Confirm** **Cancel**

### 11.1.6. Reactivate a Patient Record

1. Open 'Search' in the 'Patient' tab.

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Tuesday 27-Oct-2020 Dr Lead @ Varley [\[Log Off\]](#)

Home Patient Clinics Reports Options Help

**Search** Add Patient Tests Due Results 7 Recently Viewed Change Registered Practice External Patient Lookup

mar Active Patients Only: ☐ Search

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195  
Version : 5.64.0

CE

2. Un-tick the 'Active Patient Only' box and search for the patient.

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Home Patient Clinics Reports Options Help

**Search** Add Patient Tests Due Results 7 Recently Viewed Change Registered Practice External Patient Lookup

Active Patients Only: ☒ Search

3. Use the criteria to identify the patient.



FOR DEMONSTRATION AND TRAINING USE ONLY

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Tuesday 27-Oct-2020 Dr Lead @ Varley [\[Log Off\]](#)

Home Patient Clinics Reports Options Help

Search Add Patient Tests Due Results **7** Recently Viewed Change Registered Practice External Patient Lookup

mar x Active Patients Only: ☐ Search

Name	Born	Patient Number	NHS Number	Address	Post Code
<a href="#">BROWN, Marcus</a>	09-Nov-1948	8574239	460 466 1650	11 Carnbrae Fields Near Camborne	TR14 5PY
<a href="#">DEVLIN, Marcus</a>	02-Jun-1943	342347854378788	832 443 4305	2 White lakes	TR14 8TY
<a href="#">HANNON, Margaret</a>	15-Oct-1961	1111	None	8 oakdene	RM3 0FB
<a href="#">MARAZION, Mandy</a>	10-May-1961	1895423	None	The castle Over the water	TR14 6QN
<a href="#">MOORE, Mary</a>	10-Feb-1955	2345127358	255 820 8705	4, Sandy Way Lower Town	TR12 7AB
<a href="#">THURSFIELD, Marjorie</a>	24-Oct-1940	99772233	363 483 8795	Ledlow House Hanson way	TR14 0HX

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195  
Version : 5.64.0

CE

4. Select the patient to be activated.
5. Open the treatment plan and select the **'Patient Management'** tab.

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Tuesday 27-Oct-2020 Dr Lead @ Varley [\[Log Off\]](#)

Home Patient Clinics Reports Options Help

**BROWN, Marcus (Mr)** Active patient  
Born: 09-Nov-1948 (71y 11m) Gender: Male  
NHS Number: 460 466 1650 Patient Number: 8574239

Address: 11 Carnbrae Fields N... Diagnosis: Atrial fibrillation Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: 70.2%

Treatment Plans Demographics Patient Management **Notes** Adverse Events Letters Summary Audit Trail Self-Care Exit

Notes Archived Notes

No active notes recorded

Archive Note(s) Add Note

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195  
Version : 5.64.0

CE

6. Select the **'Activate'** button.



7. Enter new treatment plan details and click **‘Activate’**.

You have now set up a new treatment plan and re-activated the patient record in INRstar.



### 11.1.7. Patient Management Section

#### Care Team

In this section within INRstar the Testing Location and Registered Practice are detailed. An AC clinician can be assigned to the patient, GP name recorded, and a preferred clinical location documented.

Care Team

Testing Location: Varley

Registered Practice: Varley

A/C Clinician: Dr Julie Varley

GP Name:

Preferred Clinic: Clinic A

#### Notes:

- To be assigned to the patient, the AC Clinician must first have been added to the database by a Location Administrator or the Location Clinical Lead. This is done via the **'Options' / 'A/C Clinicians'** tab.
- Similarly, referred clinics must first have been added to the database by a Location Administrator or the Location Clinical Lead. This is done via the **'Options'** tab / **'Location Management'** section / **'Clinical Locations'** tab.

#### Patient Groups

Patients can be assigned to specific groups: e.g. if they require transport, home visits, or are a designated complex patient or self tester.

Patient Groups

Transport Required: ☐

Home Visit Required: ☐

Complex Patient: ☐

INR Self Tester: ☐

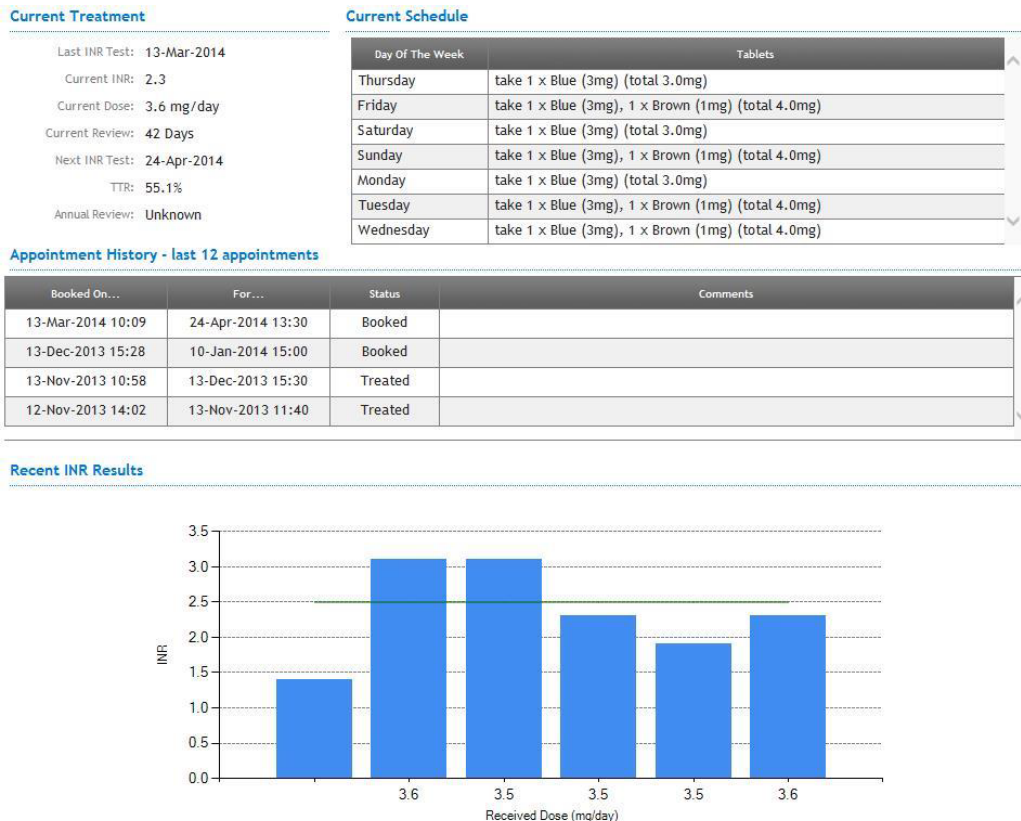
If marked as **'Home Visit Required'** or an **'INR Self Tester'** these can be searched for in the **'Tests Due'** tab of the **'Patient'** section; test types are also collated in a **'Reports'** section report.



### 11.1.8. Patient Summary

Summary

Click the **Summary** tab to display a summary of various aspects of the patient's management.



In the top left hand corner are various details of the patient's current INR treatment:

- **Last INR Test:** The date the INR test was taken.
- **Current INR:** The patient's current INR taken from the last INR test.
- **Current Dose:** The patient's dose from the last INR test.
- **Current Review:** The number of review days from the last INR test.
- **TTR:** Time in Therapeutic Range – the % of time the patient is spending within range of their Target INR +/- 0.5.

In the top right hand corner is a copy of the patient's current dosing schedule.

At the bottom of the screen is a bar chart showing how the patient's INR varies with consecutive doses of warfarin.

Note: None of these fields can be edited in this screen. The information is for display purposes only.




### 11.1.9. Other Tabs in Patient Record

- **‘Demographics’** – displays the patient’s demographics which are populated from the hospital system. The demographics include the patient’s email address, telephone, and fax numbers.
- **‘Notes’** - notes can be added or archived here; they will be displayed on the patient’s current treatment plan until archived. While there are active notes these display on first opening of the patient record to highlight their importance; therefore should only remain if still relevant to current treatment. For more information see section 10.3.
- **‘Audit trail’** – all activities performed on patient in INRstar, accurately recorded to the second.
- **‘Adverse Events’** (see section 11.2).
- **‘Self-Care’** (see section 18 - Managing Patients in INRstar Engage).

### 11.2. Adverse Events

The **‘Adverse Events’** page allows you to record and view any adverse events connected with a patient’s AC therapy.

When a patient has a recorded adverse event an information icon  will appear on the **‘Adverse Events’** tab.

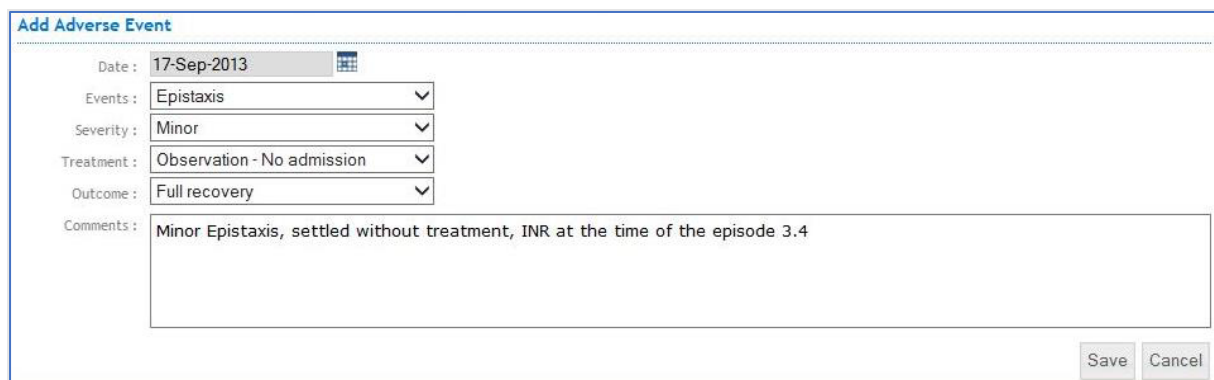
#### 11.2.1. View Adverse Events

**Note:** If any adverse events have been recorded for a patient, an information icon will appear next to the **‘Adverse Events’** tab on the patient’s treatment record screen.

- Click on **‘Adverse Events’**.

The **‘Adverse Events’** page will be displayed.

The date and nature of any recorded adverse events will be listed in chronological order. Clicking on an adverse event will expand the event to show the full details.



Click on the event date again, to hide the data.



### 11.2.2. Add New Adverse Event

1. Click on '**Adverse Events**' the patient's record screen.
2. The '**Adverse Events**' page will be displayed.
3. Click the '**Add Event**' button to display the '**Add Adverse Event**' screen.
4. To proceed fill out all the fields in the '**Add Adverse Events**' screen.
5. Click on the '**Date**' calendar icon to select the date of the adverse event.

**Add Adverse Event**

Date : 17-Sep-2013

Events : Epistaxis

Severity : Minor

Treatment : Observation - No admission

Outcome : Full recovery

Comments : Minor Epistaxis, settled without treatment, INR at the time of the episode 3.4

Save Cancel

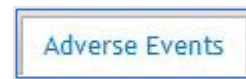
6. Select the event type from the drop-down list of '**Events**'.
7. Select the event severity from the drop-down list of '**Severity**'.
8. Select the event treatment from the drop-down list of '**Treatments**'.
9. Select the event outcome from the drop-down list of '**Outcome**'.
10. Add some explanatory '**Comments**' about the adverse events to document details.
11. Click the '**Save**' button to save the adverse event to the patient record, or click '**Cancel**' to remove the details.

A confirmatory message will be displayed when the adverse event has been saved successfully to the patient's record.



### 11.2.3. Delete Adverse Event

If you add an adverse event to a patient's record in error, it can be deleted.



1. Click on '**Adverse Events**' in the patient record screen.
2. Click the event you wish to delete. The event will expand to display the details.





▼ Thursday 29-Oct-2020 - Bleeding - epistaxis

Drug: Warfarin  
Severity: Minor  
Treatment: Observation - No admission  
Outcome: Full recovery  
Comments: Epistaxis yesterday lasting 10 minutes. Applied pressure and ice as first aid. Seen in GP surgery an ... [View](#)

Delete

3. Click on the **'Delete'** button.

4. Click **'Confirm'** on the message if you wish to continue.

The adverse event details will be removed from the patient record.

Treatment Plans Patient Details Notes **Adverse Events** Letters Summary Audit Trail Exit Record

There are no adverse events for this patient

Add Event

**Note:** Details of any recorded adverse events will also be shown in the individual patient review page.

### 11.3. Patient Audit Trail

The patient audit trail contains details of all activities performed for the selected patient in chronological order. It may be helpful to view the audit trail to understand the sequence of events in the patient's INR treatment.

To view the patient audit trail:

- Click on **'Audit Trail'** on the relevant patient's record screen.

Each entry is listed with the name of the logged-on user responsible for the entry.

Showing 1 - 2 of 2

Date Time	Action	Patient Name	More Information	User
13-Mar-2014 10:09:15	Created Appointment	ANNA admmy	Treatment record was updated. Next Test Date changed from [24-Apr-2014] to [24-Apr-2014]., Appointment record [24-Apr-2014 13:30] was added. Clinic Name set to [Simpson House - Pm Clinic], Appointment Start set to [24-Apr-2014 13:30], Status set to [Booked].	Clinical Level 3
13-Mar-2014 09:54:01	Add New INR	ANNA admmy	Treatment record was added. PoCT Batch used set to [22116200], Treatment Status set to [Awaiting completion], User set to [Clinical Level 3], Dosing Method set to [Coventry Maintenance], Home Visit set to [false], Self Tested set to [false], Testing Method set to [PoCT], Dose set to [3.6], Missed any doses prior set to [false], Patient set to [471 955 9174], Next Test Date set to [24-Apr-2014], Started any new medication prior set to [false], INR set to [2.3], Suggested Dose set to [3.6], Location set to [Stu's Test 1], Use 5mg tablets set to [true], Diary produced set to [false], Induction Treatment set to [false], Use 1mg tablets set to [true], Sent back to clinical system. set to [false], Use 0.5mg tablets set to [false], Version number at the time of treatment set to [3.1.0], Use NPSA guidelines set to [false], Date set to [13-Mar-2014], Use split tablets set to [false], Use treatment's INR for EQC set to [false], Target-INR at the time of treatment set to [2.5], Suggested Review Days set to [42], Omit Days set to [0], Review Days set to [42], Use 3mg tablets set to [true], DNA Count set to [0].	Clinical Level 3

Showing 1 - 2 of 2

The audit trail can be navigated by clicking the links at the bottom of the screen.

**Note:** The patient audit trail records actions at the patient level. For further details of an individual treatment inspect the INR treatment audit trail.



### 11.3.1. Treatment Information Audit

The INR ‘**Treatment Information**’ displays all selected INR treatments information.

Treatment Information for 25-Sep-2020	
User: Dr Lead	Filed to Clinical System: No
Target INR: 2.5	PoCT Batch Number: 456
Missed any doses: No	Recorded On: 25-Sep-2020 15:51
Changed any medication: No	Next Test Date: 06-Nov-2020
Dosing Method: Coventry Maintenance	Testing Method: PoCT
Selected 5 mg Tablets: No	Treatment Status: Complete
Selected 3 mg Tablets: No	Testing Location: Varley
Selected 1 mg Tablets: Yes	INRstar Version Number: 5.64.0
Selected 0.5 mg Tablets: No	Home Visit: No
Selected split Tablets: No	Induction: No
Dosing Diary Produced: No	
<div>View InformationView ScheduleView Audit TrailClose</div>	

### 11.3.2. INR Treatment Audit Trail

The INR ‘**Treatment Audit Trail**’ displays the audit trail for the selected treatment.



## 12. Tests Due and Home Visits

The 'Tests Due' page shows a list of patients who are due to be tested within the date range specified. This date range will default to today.

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Tuesday 09-Jan-2018 MARYAM MAYA @ Showme Practice [Log Off](#)

Home Patient Clinics Reports Options Help

Search Add Patient **Tests Due** Results Recently Viewed Change Registered Practice External Patient Lookup

Show me All patients due for a test ☒ between: 09-Jan-2018 and: 31-Jan-2018 Find Tests Due

Patients attending a clinic ☐  
Patients needing a home visit ☐  
Patients needing transport ☐  
Patients due to self test ☐

Total number of patients found: 1 [Print List](#) [Print Test Recording Sheets](#)

Name	Born	Address	Post Code	Registered Practice (if different)	Groups	Next Test Date
<a href="#">HOLLOWAY, Sebastian</a>	25-May-1944	14 Long Close, Camborne, Cornwall	TR14 0HX			26-Jan-2018

Active warfarin patients: 154 / 200 | Active non-warfarin patients: 6  
Automated PST licences: 0 / 10

Version : 5.40.0

CE

The default list will show all patients due to be tested, including those due to be seen at the clinic, patients due a home visit, and patients sending their INR result electronically.

The list of patients can be filtered by these options, and by those requiring organised transport to the clinic.

For patients who are unable to attend a clinic, a set of 'Test Recording Sheets' can be produced for the visiting clinician.

These show previous treatments and current tablet schedule, with additional space to record clinical details about the visit, including the INR reading and comments about the patient's current condition.

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Tuesday 09-Jan-2018 MARYAM MAYA @ Showme Practice [Log Off](#)

Home Patient Clinics Reports Options Help

Search Add Patient **Tests Due** Results Recently Viewed Change Registered Practice External Patient Lookup

Show me All patients due for a test ☒ between: 09-Jan-2018 and: 31-Jan-2018 Find Tests Due

Patients attending a clinic ☐  
Patients needing a home visit ☐  
Patients needing transport ☐  
Patients due to self test ☐

Total number of patients found: 1 [Print List](#) [Print Test Recording Sheets](#)

Name	Born	Address	Post Code	Registered Practice (if different)	Groups	Next Test Date
<a href="#">HOLLOWAY, Sebastian</a>	25-May-1944	14 Long Close, Camborne, Cornwall	TR14 0HX			26-Jan-2018

Active warfarin patients: 154 / 200 | Active non-warfarin patients: 6  
Automated PST licences: 0 / 10

Version : 5.40.0

CE



Varley

WARFARIN TREATMENT SUMMARY Printed on Tuesday 27-October-2020

NATASHA TENNYSON

Patient No: 3452734

7 High Steet

NHS Number: 267 925 4791

Camborne, Camborne, Cornwall, TR12 8YR

Patient telephone number: 01326 345 789

Date of Birth: 07-Dec-1956

Diagnosis: Atrial fibrillation

Start Date: 22-July-2016

End Date: Indefinite

12 Month TTR: 84.6%

Target INR: 2.5

A/C Clinician: Dr Jane Smith

Date	INR	Dose (mg/day)	Omits (days)	Review (days)
23-July-2019	2.5	3.1mg	0	42 Days
16-September-2019	2.3	3.1mg	0	56 Days
13-November-2019	1.6	3.3mg	0	7 Days
26-November-2019	2.5	3.3mg	0	29 Days
08-January-2020	2.4	3.3mg	0	42 Days
02-March-2020	2.9	3.3mg	0	57 Days
26-May-2020	2.8	3.3mg	0	70 Days
18-August-2020	2.1	3.3mg	0	70 Days

Next INR test date: Tuesday 27-October-2020

COMMENTS (LAST TREATMENT)

DOSING SCHEDULE 18-August-2020

Tuesday	take 1 x Blue (3mg)	(total 3.0mg)
Wednesday	take 1 x Blue (3mg), 1 x White (½mg)	(total 3.5mg)
Thursday	take 1 x Blue (3mg)	(total 3.0mg)
Friday	take 1 x Blue (3mg), 1 x White (½mg)	(total 3.5mg)
Saturday	take 1 x Blue (3mg)	(total 3.0mg)
Sunday	take 1 x Blue (3mg), 1 x White (½mg)	(total 3.5mg)
Monday	take 1 x Blue (3mg), 1 x White (½mg)	(total 3.5mg)

NEXT TEST RECORDING AREA

Step 1 – Confirm the following

Step 2 – Has the patient in the last 7 days

Step 3 – Today's Test Result

Patient Identity?

Yes / No

Missed any warfarin doses?

Yes / No

INR:

Is the patient still taking the last recorded dose?

Yes / No

Started or changed any other medication?

Yes / No

Test Date:

Notes:

Strip batch no:

Strip expiry date:

## 12.1. External Test Results

The 'Test Results' screen enables integration of the integrated hospital laboratory systems with INRstar.

The interface files INR readings from the Instrument and hospital laboratory system directly back to the INRstar software within the clinic. There is no need to manually enter the patient INR result into INRstar, this saves time and reduces the risk of manual entry error.

### 12.1.1. Processing Test Results

1. Click on the 'Patient' tab.
2. Click the 'Results' tab.
3. Click the 'INR' tab.
4. If the result matches a patient in INRstar you can click the 'Dose Patient' button.



Received Date/Time	Patient	Blood Taken Date/Time	INR	User Action/Status
14-Oct-2020 11:42:47	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	14/10/2020 10:54:00	1.6	<button>Dose Patient</button> <button>Archive</button>

5. Complete the details in the 'New INR' page for the patient to complete the treatment using the prepopulated result.

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
16-Sep-2019	2.9	2.5	2.5	0	70	70	25-Nov-2019	-	<a href="#">Add Comment</a>	<a href="#">i</a>
18-Dec-2019	2.4	2.5	2.5	0	70	70	26-Feb-2020	-	<a href="#">Add Comment</a>	<a href="#">i</a>
05-Mar-2020	2.7	2.5	2.5	0	70	70	14-May-2020	-	<a href="#">Add Comment</a>	<a href="#">i</a>
03-Jun-2020	2.9	2.5	2.5	0	70	70	12-Aug-2020	-	<a href="#">Add Comment</a>	<a href="#">i</a>
18-Aug-2020	2.0	2.5	2.5	0	28	28	15-Sep-2020	-	<a href="#">Low end target range</a>	<a href="#">i</a>
16-Sep-2020	2.7	2.5	2.5	0	42	42	28-Oct-2020	-	<a href="#">annual review comple...</a>	<a href="#">i</a>

**Early INR test, this patient is not due for a test until 28-Oct-2020**

**Previous treatment comments (16-Sep-2020):**  
annual review completed

**Patient information:**  
GARRAS, Lillian (Mrs), 10-Aug-1949

☐ Changed their last prescribed dose ( 16-Sep-2020, 2.5 mg/day ) ?  
☐ Missed any warfarin doses in the last 7 days?  
☐ Changed any medication in the last 7 days?

**Enter new INR test information:**

Test Date: 27-Oct-2020  
New INR: 1.6  
Testing Method: PoCT

**Options**  
Use INR for EQC: ☐ Home Visit: ☐  
INR Self Tested: ☒

[Suggest Warfarin Dose](#) [Cancel](#)

### 12.1.2. Patient Demographic Discrepancy

If the result does not match a patient in INRstar, click 'Find Patient'.

02-Mar-2020 12:00:17	Lemon, Apple (Unknown) NHS No.: 555 137 6176	02/03/2020 08:01:00	2.0	<button>Find Patient</button> <button>Archive</button>
----------------------	---	---------------------	-----	--

Search for the patient's name and select if the correct patient is found.

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Home Patient Clinics Reports Options Help

Search Add Patient Tests Due Test Results (3) Recently Viewed Change Registered Practice External Patient Lookup

Looking for Patient's Name: DUMMY, Patient  
Born: 04-Aug-1973  
NHS Number: 4269080795  
Postcode:  
Patient Number: 90002001

dummy patient \* Active Patients Only: ☒ [Search](#)

No patients found

[Use Selected Patient](#) [Add New Patient](#) [Cancel](#)

If the patient is not in INRstar, but you still want to treat them, click 'Add New Patient'.

The demographic details from the laboratory results will be prepopulated with the patient's NHS number, Name and Date-of-birth (DOB). Complete the relevant details and add a treatment plan for the patient.

Document Name: INRstar®: Instructions for Use

49 of 226

Document Number: IVIQMS-1761341735-144

Revision: 5

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**Information Classification: For Internal Use Only**



Received Date/Time	Patient	Blood Taken Date/Time	INR	User Action/Status
14-Oct-2020 11:42:47	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	14/10/2020 10:54:00	1.6	<button>Dose Patient</button> <button>Archive</button>

The patient will now be available for dosing, following processing of the test results.

- To view all dosed results, click on the **'Show Dosed Results'** filter.

Show Archived Results <input type="checkbox"/> Show Dosed Results <input checked="" type="checkbox"/> <button>Filter</button>				
Showing 1 - 10 of 23 first   prev   <a href="#">next</a>   <a href="#">last</a>				
Received Date/Time	Patient	Blood Taken Date/Time	INR	User Action/Status
14-Oct-2020 11:42:47	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	14/10/2020 10:54:00	1.6	<button>Dose Patient</button> <button>Archive</button>
14-Oct-2020 11:41:39	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	14/10/2020 10:54:00	1.0	<button>Dose Patient</button> <button>Archive</button>
02-Oct-2020 18:24:06	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	31/10/2019 10:54:00	1.0	<button>Dose Patient</button> <button>Archive</button>
02-Jun-2020 10:31:20	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	02/06/2020 10:54:00	1.0	<button>Find Patient</button> <button>Archive</button>
02-Jun-2020 10:30:29	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	27/03/2020 10:54:00	1.0	<button>Find Patient</button> <button>Archive</button>
05-May-2020 10:17:29	<a href="#">ANDREWS, Elizabeth</a> (17-Jul-1953) NHS No.: 365 718 9971 Patient No.: ZC015805	05/05/2020 09:52:00	2.8	Accepted
29-Apr-2020 13:39:35	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476 Patient No.: ZC015805	27/03/2020 10:54:00	1.0	<button>Find Patient</button> <button>Archive</button>
29-Apr-2020 12:22:45	<a href="#">EDITESTPATIENT, TWO</a> (29-Feb-1964) NHS No.: 999 999 9476 Patient No.: ZC015805	20/08/2015 10:52:00	1.0	<button>Find Patient</button> <button>Archive</button>

### 12.1.3. Archiving Unwanted Test Result

If a test result cannot be actioned due to an incorrect format or is not required, it can be archived to remove it from the new test result page.

- Select **'Archive'**.
- Enter the reason and Click **'OK'**.

To view all archived results, click on the **'Show Archived Results'** filter.

Search

Add Patient

Tests Due

Results 7

Recently Viewed

Change Registered Practice

External Patient Lookup

INR 7

DOAC

Show Archived Results

☒

Show Dosed Results


☒

Filter

Showing 1 - 10 of 75 first | prev | [next](#) | [last](#)

Received Date/Time	Patient	Blood Taken Date/Time	INR	User Action/Status
14-Oct-2020 11:42:47	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476    Patient No.: ZC015805	14/10/2020 10:54:00	1.6	<div>Dose Patient</div> <div>Archive</div>
14-Oct-2020 11:41:39	<a href="#">PT-TEST2, TWO</a> (29-Feb-1964) NHS No.: 999 888 8476    Patient No.: ZC015805	14/10/2020 10:54:00	1.0	<div>Dose Patient</div> <div>Archive</div>

### 12.1.4. Test Results Sorting

Click the sort icon  in the column headers to refresh the list of results and include any newly received results.

The sort feature is available in the following:

- The **'Received Date and Time'** column.
- The **'Patient'** column.
- The **'INR'** column.



The data can be sorted either ascending or descending.

Results that are out of range are displayed with a message next to them.

Results that are a duplicate are also displayed with matching text on the column next to archive.

## 12.2. External Patient Look-up (EPL)

INRstar's External Patient Lookup feature allows you to access the record of and provide direct care for a patient who is not managed by your anticoagulation service.

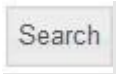
1. Click .

2. Click .

- **Please Note** - If you have not added in your Professional Registration Credentials, in your '**Profile**' section on the home page, you will need to complete the information via a pop up box in order to continue using the functionality.

3. Select your '**Reason for using EPL**' now and add any comments.

4. Now fill one of the two sections under '**Mandatory Search Criteria**' and any '**Optional Search Criteria**'.

5. Click .

6. A patient's name, date of Birth, NHS number, address, postcode, and Testing Location will then appear below if the correct search criteria was entered in correctly. Select the correct patient by clicking on their name.

7. You will now have accessed the patients record that you required.

Once the record is open the user will then be permitted to view and/or treat the patient. **Users will not be allowed to edit the patient's treatment plan or change any demographic details.**

## 12.3. Transferring Testing Location or Change Registered Practice

This is usually performed following a request by the patient's new Testing Location.

**Testing Location:** This is the site or service that tests, doses and manages the patient. It is possible to change the Testing Location if for example a patient is moving out of the area and will be treated elsewhere. The treatment location has full visibility of the patient's record, including treatment history, can edit demographics, add treatments and adverse events. Only the Testing Location can edit the patient's treatment plan or add a new treatment plan.

**Registered Practice:** This is the registered GP practice of the patient. This will be the same as the Testing Location if the patient is treated by their registered GP. If the





patient has their anticoagulation monitored elsewhere, a warning is shown on the patient's record. The Registered Practice has full visibility of the patient's record, including treatment history, can edit demographics, add treatments and adverse events. If the Registered Practice is not also the Testing Location, they cannot edit the patient's treatment plan or add a new treatment plan.

**Note:** A warning is shown next to any treatment that was performed elsewhere.

You can transfer a patient to any INRstar Testing Location held within the database.

**Note:** If the patient is also changing their registered GP, you will need to change the patient's 'Registered Practice' first, i.e. before transferring the Testing Location. This is because once the Testing Location has been transferred (pending acceptance) the Registered Practice cannot be changed, except by the new Testing Location once accepted.

To transfer a patient's Testing Location:

1. Click on the '**Patient Management**' tab in the patient record.
2. Click on the '**Transfer Testing Location**' button.
3. You will now need to search for the patient's new Testing Location:

First select the search criterion required from the drop-down menu (e.g. name, postcode, etc.) Then enter the first few letters of the search criterion you have chosen.

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Friday 02-Nov-2018 Dr A N other @ Testdale Surgery [Log Off](#)

Home Patient Clinics Reports Options Help

SMITH, Sydney (Mr)  
Born: 01-Mar-1983 (35y 8m) Gender: Male  
NHS Number: None Patient Number: 7788778877  
Address: 45 Beech Grove  
Diagnosis: Atrial fibrillation Drug: Dabigatran End Date: Indefinite

Treatment Plans Demographics **Patient Management** Notes Audit Trail Self-Care Exit

Status  
Status: Active  
Suspend De-activate

Care Team  
Testing Location: Testdale Surgery  
Registered Practice: Testdale Surgery  
A/C Clinician: Professor, Sir Nicholas Smythe  
GP Name:  
Preferred Clinic:

Patient Groups  
Transport Required: ☐  
Home Visit Required: ☐  
Complex Patient: ☐  
INR Self Tester: ☐

Record Sharing Preferences  
Do not allow patient record to be included in anonymised reports: ☐ ?

Transfer Testing Location Change Registered Practice Edit

4. Click on the '**Search**' button.
5. Select the relevant Testing Location from the list of locations displayed.





Search Field:  Search Criteria:

Name	Location Code	Address	Postcode
<a href="#">Cannock Chase CCG (Test)</a>		12 North Crofty Tolvaddon Business Park, Camborne, Cornwall	TR14 0HX
<a href="#">Customer Services Loc</a>		1 North Crofty, Tolvaddon Energy Park, Camborne, Cornwall	TR14 0HX
<a href="#">Davy Practice</a>		LDX65 North Crofty, Camborne, Cornwall	TR14 0HX

6. Check that the correct location is displayed in the **'Selected Testing Location'** section.

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Home Patient Clinics Reports Options Help

**BROWN, Eric (Mr)** Active patient  
Born: 14-May-1930 (88y 6m) Gender: Male NHS Number: 186 793 4469 Patient Number: None  
Address: 29 Privet Drive Diagnosis: DVT or PE (Recurrent) Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: 100%

Treatment Plans Demographics **Patient Management** Notes Audit Trail Self-Care Exit

**Status**  
Status: Active

**Transfer Testing Location**

Please Note: If you wish to transfer this patient completely to another location (change both testing location and registered practice), you will need to change the registered practice first. There is no need to deactivate this patient prior to transfer.

Search Field:  Search Criteria:

Search Field:  Search Criteria:

**Selected Testing Location**

Practice Name: Dunkley & Partners Practice Address: 1 North Crofty, Tolvaddon Energy Park Practice Postcode: TR14 0HX

7. Click on the **'Confirm'** button.

**Confirmation Required**

Are you sure you want to transfer the responsibility for testing this patient to Dunkley & Partners?  
Please be aware that once the transfer is confirmed by Dunkley & Partners, you will only have access to this patient if you are their registered practice.



8. Click '**Confirm**' to confirm that you wish to transfer the patient to the new location.

A transfer request message will now be sent to the new Testing Location – this will appear on the home page of all clinical level users at the new location.

The new location can accept or decline the transfer request, but:

- The new location can examine the patient's record before deciding whether to accept or decline the transfer.
- New treatments can be added by either the Testing Location or the registered location, both before and after the transfer is accepted.
- Once the transfer of Testing Location is completed only the Testing Location can edit and create new treatment plans.
- A message will be displayed on the patient record with the status of the transfer request.
- If the transfer request is declined, the patient's record will remain at your location and an explanatory message will appear on your home page.

**Note:** You cannot transfer a patient enrolled to INRstar Engage. You would have to first un-enrol them from INRstar Engage and then transfer the patient.

### 12.3.1. Transfer Request Acceptance

If your location has been transferred a patient record, you will see the following message on the **Home** screen.

► There are 1 patient transfer request(s) to Accept or Decline. Click to view.

Expand this message to see details of the patient details.

▼ There are 1 patient transfer request(s) to Accept or Decline. Click to view.						
Full Name	Born	Treatment Plan	Transferred From	Next INR Test Date	Last INR	
<a href="#">BZFFRH, ARCHIE</a>	03-Jun-1934	Atrial fibrillation Warfarin	Stu's Test 2 (01143826332)	Friday 31-Jan-2014	2.4	<input type="button" value="Accept"/> <input type="button" value="Decline"/>
Generated On: 17-Mar-2014 12:05						

Here you can select either  or .

If you click the '**Accept**' button the patient record has been transferred.

Once accepted, check that the patient record demographics are up to date, e.g. address and telephone number may now need to be changed.



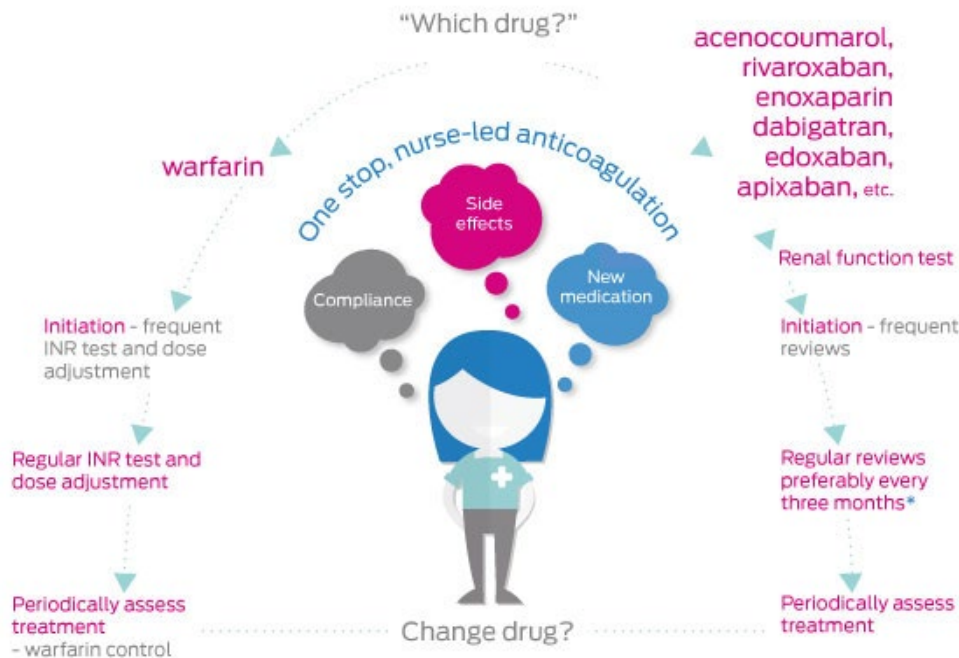
## 13. Managing Non-warfarin Patients in INRstar

Patients on non-warfarin anticoagulants can be managed within INRstar.

Although patients taking DOACs no longer need regular INR tests, the national experts still recommend regular clinical review and many anticoagulation services are now adapting their clinics to cater for those patients taking the newer agents. Non-warfarin Vitamin K antagonists such as acenocoumarol require regular INR tests.

Which non-warfarin drugs are currently supported on INRstar?

Currently supported drugs are apixaban, dabigatran, rivaroxaban, edoxaban, acenocoumarol, enoxaparin (Low Molecular Weight Heparin (LMWH)) and dalteparin (LMWH).



Recording these reviews in INRstar ensures that those patients are not lost to follow up, and all your anticoagulation patients can be reported on as a whole.

### Please note:

- Treatment plans are only able to be set up for drugs licenced to the authorised diagnosis. Non-warfarin treatment plans are not currently able to be set up for custom diagnoses.
- Patients overdue a review will appear in a list on the home page.
- Patient reviews are filed back to the clinical system (currently only for EMIS Web & TPP SystemOne).



## 14. Adding a Treatment Plan – Warfarin

To manage treatments or reviews of a patient in INRstar each patient must have a treatment plan. The treatment plan defines the diagnosis, prescribed drug and length of treatment and collates all treatments and reviews together for that anticoagulation therapy.

**Warfarin treatment plans should not be used for any other AC drug than warfarin.**

Entering clinical information:

1. Select the **'Clinical Details'** tab on the patient record.
2. Click on the **'New Treatment Plan'** button.

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Tuesday 27-Oct-2020 Dr Lead @ Varley [Log Off](#)

Home Patient Clinics Reports Options Help

**GARRISON, Phillip (Mr)** Active patient  
Born: 07-Aug-1951 (69y 2m) Gender: Male NHS Number: 818 976 3253 Patient Number: 23412341  
Address: 2 Whitmore Lane Diagnosis: No Diagnosis Drug: No Drug End Date: No Date

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: No Treatment Plans

Reviews Clinical Details

**Details**

The patient does not have a current treatment plan. Please click the 'New Treatment Plan' button below to create a new plan.

[New Treatment Plan](#)

**Treatment Plan Summary**

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195

Version : 5.64.0

3. Enter the date that the patient started their current period of AC treatment.
4. Select the relevant diagnosis from the drop-down menu.



5. Select the AC drug to be used.

6. Select the appropriate duration of treatment.

**Note:** Treatment duration will be automatically completed if the British Committee for Standards in Haematology (BCSH) evidence-based guideline recommendation exists. These can be clinically overridden on individual patients using the drop-down list if appropriate.

7. Select the 'Target INR'.

8. Select the dosing algorithm to be used (See on-line FAQ for algorithm flow charts):

- Induction – Slow Oates or Slow Tait
- Fast Induction – Fennerty-Gedge
- Maintenance – Coventry or Hillingdon
- Manual dosing

**Note:** when Manual dosing is selected a warning is displayed reminding the user of the significance of the Manual dosing option:

Click 'OK' to acknowledge the message.



When the patient record is next displayed a warning message appears, beneath the patient detail at the top of the screen, reminding the user that the dosing method is set to Manual dosing.

9. Select the INR '**Testing Method**' to be used.
10. Point of Care Testing (PoCT) or Laboratory.
11. Select the maximum interval period between INR tests for the patient.
12. Select the format of the printed diary.

13. Click '**Save**' This will take you to the patient treatment screen where a historic or new INR can be recorded.





## 15. Adding a Treatment Plan – DOAC or LMWH

Entering clinical information:

1. Select the **'Clinical Details'** tab on the patient record.
2. Click on the **'New Treatment Plan'** button.

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Tuesday 27-Oct-2020 Dr Lead @ Varley [Log Off](#)

Home Patient Clinics Reports Options Help

GARRISON, Phillip (Mr) Born: 07-Aug-1951 (69y 2m) Gender: Male NHS Number: 818 976 3253 Patient Number: 23412341 Active patient

Address: 2 Whitmore Lane Diagnosis: No Diagnosis Drug: No Drug End Date: No Date

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: No Treatment Plans

Reviews Clinical Details

Details

The patient does not have a current treatment plan. Please click the 'New Treatment Plan' button below to create a new plan.

New Treatment Plan

Treatment Plan Summary

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195

Version : 5.64.0

3. Enter the **'Plan Start Date'** for the patient's AC treatment plan.
4. Select the relevant diagnosis from the **'Diagnosis'** drop-down list.

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Home Patient Clinics Reports Options Help

GARRISON, Phillip (Mr) Born: 07-Aug-1951 (69y 2m) Gender: Male NHS Number: 818 976 3253 Patient Number: 23412341 Active patient

Address: 2 Whitmore Lane Diagnosis: No Diagnosis Drug: No Drug End Date: No Date

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: No Treatment Plans

Reviews Clinical Details

To add a new treatment plan for this patient enter the details in the form below

Treatment Plan

Plan Start Date: 27-Oct-2020

Diagnosis: ~Select Diagnosis

Drug: Antiphospholipid syndrome

Treatment duration: Atrial fibrillation

Written Info Provided: CVD

Dilated cardiomyopathy

DVT (distal, non-surgical, no risk factors)

DVT (distal, surgical, no risk factors)

DVT (isolated calf vein)

DVT (proximal, corrected risk factors)

DVT (proximal, permanent risk factors)

DVT or PE (Recurrent during treatment)

DVT or PE (Recurrent)

LV mural thrombus (post MI / LV aneurysm)

Prosthetic Heart Valve (bioprosthetic, corrected risk factors)

Prosthetic Heart Valve (bioprosthetic, mitral, no risk factors)

Prosthetic Heart Valve (bioprosthetic, permanent risk factors)

Prosthetic Heart Valve (mechanical, high risk)

Save Cancel

Treatment Plan Summary

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195

Version : 5.64.0



5. Select the AC drug from the 'Drug' drop-down list.

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Home Patient Clinics Reports Options Help

**GARRISON, Phillip (Mr)** Active patient  
Born: 07-Aug-1951 (69y 2m) Gender: Male NHS Number: 818 976 3253 Patient Number: 23412341  
Address: 2 Whitmore Lane Diagnosis: No Diagnosis Drug: No Drug End Date: No Date

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: No Treatment Plans

Reviews Clinical Details

To add a new treatment plan for this patient enter the details in the form below

**Treatment Plan**

Plan Start Date:

Diagnosis:

Drug:  Please select the drug from the list.

Treatment duration:

Written Info Provided: ☐

**Treatment Plan Summary**

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195

Version : 5.64.0

6. Select the 'Treatment Duration' from the drop-down list.

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Home Patient Clinics Reports Options Help

**GARRISON, Phillip (Mr)** Active patient  
Born: 07-Aug-1951 (69y 2m) Gender: Male NHS Number: 818 976 3253 Patient Number: 23412341  
Address: 2 Whitmore Lane Diagnosis: No Diagnosis Drug: No Drug End Date: No Date

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: No Treatment Plans

Reviews Clinical Details

To add a new treatment plan for this patient enter the details in the form below

**Treatment Plan**

Plan Start Date:

Diagnosis:

Drug:

Treatment duration:  Please select the treatment duration from the list.

Written Info Provided: ☐

**Treatment Plan Summary**

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 174  
Automated PST licences: 3 / 195

Version : 5.64.0

7. Tick the box to confirm 'Written Information' has been provided to the patient.

Document Name: INRstar®: Instructions for Use

60 of 226

Document Number: IVIQMS-1761341735-144

Revision: 5

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**Information Classification: For Internal Use Only**





Written Info Provided: ☐

8. Click **'Save'** to confirm the DOAC or LMWH treatment plan.

The screenshot shows the 'Clinical Details' tab of a patient record. The form is titled 'To add a new treatment plan for this patient enter the details in the form below'. It contains the following fields: 'Plan Start Date' (27-Oct-2020), 'Diagnosis' (Atrial fibrillation), 'Drug' (Edoxaban), 'Treatment duration' (Indefinite), and 'Written Info Provided' (checked). There are 'Save' and 'Cancel' buttons at the bottom right. Below the form is a 'Treatment Plan Summary' section with a link 'Click here to add'. At the bottom of the page, there is a status bar showing 'Active warfarin patients: 315 / 975 | Active non-warfarin patients: 174', 'Automated PST licences: 3 / 195', and 'Version : 5.64.0'. A 'CE' mark is also visible in the bottom right corner.

Your treatment plan is now complete, and you will be taken to the review section.

If not ready to review just yet, scroll to the bottom of the review page to cancel. The patient record will then be in the home screen messages list of **'Non-Warfarin Patient(s) overdue reviews'**, where it is also possible to change the review date on a review. This is useful to know when adding several patients at once who are on a DOAC for example.



## 16. Patient Treatments

This section outlines the clinical use of INRstar for a patient when the treatment plan has been previously entered for patients treated on warfarin.

### 16.1. Recording a Historical Treatment

There are several situations where a user will need to record a treatment episode which has occurred in the past.

For example:

- Recording treatments performed before the patient was added to INRstar and their treatment plan was first created.
- Recording treatments performed while the patient was on holiday or in hospital.
- Recording the actual dose being taken, if the patient is no longer taking the dose that is currently recorded in their INRstar record screen.

INR	Dose (mg/day)	Omits	Review (Days)	Target INR
2.6	2.9	0	42	42
2.8	2.9	0	56	56
2.2	2.9	0	70	70
2.7	2.9	0	70	70
2.9	2.9	0	70	70
2.5	2.9	0	70	70
2.3	2.9	0	70	70

Historical Treatment

Date: 28-Oct-2020 INR: ~Select INR Dose (mg/day): ~Select Dose Omits: ~Select Omits Review (Days): ~Select Review Period Target INR: 2.5

Comments

Save Cancel

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 176  
Automated PST licenses: 3 / 195  
Version : 5.64.0

1. Click on the **'Add Historical'** INR button.
2. The add **'Historical Treatment'** screen will be displayed.
3. Proceed to fill out the **'Historical Treatment'** data entry and drop-downs.
4. Click on the **'Date'** calendar icon and select the date of the historical INR test.

Historical Treatment

Date: 28-Oct-2020 INR: ~Select INR Dose (mg/day): ~Select Dose Omits: ~Select Omits Review (Days): ~Select Review Period Target INR: 2.5

Comments

Save Cancel

non-warfarin patients: 176  
Version : 5.64.0

5. Select the **'INR'** result from the drop-down list by clicking the down arrow.



**Note:** if there is no new INR taken since the last recorded INR, the last recorded INR would be used here.

A screenshot of a dropdown menu titled "INR". The selected value is "1.9".

6. Select the average daily warfarin dose in milligrams/day from the drop-down list by clicking the down arrow. You need to calculate the dose by dividing the total weekly warfarin dose by seven to arrive at the average daily dose, to the nearest 0.1mg.

A screenshot of a dropdown menu titled "Dose (mg/day)". The selected value is "3.0".

7. Select the appropriate omits (in days) from the '**Omits**' drop-down list.

A screenshot of a dropdown menu titled "Omits". The selected value is "0 Days".

- If the omits are unknown, please select '**Not Known**' from the list.
8. Select the review period in days from the drop-down list by clicking the down arrow.
  9. The patient's current target INR will be displayed in the '**Target INR**' box. If the target INR was a different value at the time of the historical treatment you can select the correct value in the '**Target INR**' drop-down list by clicking the down arrow.

A screenshot of a dropdown menu titled "Target INR". The selected value is "2.5".

10. Type any comments relevant to the treatment in the comments box.
11. Click the '**Save**' button when you have finished entering the information, to save the historical INR treatment.
12. Check the information is correct when the confirmation dialogue is shown.



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Wednesday 28-Oct-2020 Dr Lead @ Varley [Log Off]

Home Patient Clinics Reports Options Help

**ARNOLD, Amy (Mrs)** Active patient  
Born: 03-Dec-1955 (64y 10m) Gender: Female NHS Number: 584 013 7677 Patient Number: 34523985  
Address: 11 Sennen drive Diagnosis: Atrial fibrillation Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: 100%

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: On warfarin from 06-Dec-2017 to present for Atrial fibrillation

INR Treatments Reviews Clinical Details Bridging

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DHA	Comments	Info
01-Jul-2019	2.6	2.9	2.9	0	42	42	12-Aug-2019	-	Add Comment	
14-Aug-2019	2.8	2.9	2.9	0	56	56	09-Oct-2019	-	Add Comment	
21-Oct-2019	2.2	2.9	2.9	0	70	70	30-Dec-2019	-	Add Comment	
08-Jan-2020	2.7								Add Comment	
25-Mar-2020	2.9								Add Comment	
08-Jun-2020	2.5								Add Comment	
18-Aug-2020	2.3								Add Comment	

Historical Treatment

Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DHA	Comments	Info
28-Oct-2020										

Comments

Test Date: 28-Oct-2020  
INR: 2.5  
Dose: 3.0 mg/day  
Omits: 0 days(s)  
Review: 28 day(s)  
Target: 2.5

Confirm Cancel

Target INR: 2.5

Save Cancel

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

13. Click the **'Confirm'** button to continue if the information is correct or **'Cancel'** to edit the historical INR treatment.

The Historical treatment is now added to the treatment plan.

## 16.2. Add New INR Result

Click on the **'New INR'** button.

**BILLINGTON, William (Mr)** Active patient  
Born: 13-Oct-1954 (66y 0m) Gender: Male NHS Number: 339 033 5382 Patient Number: 2351275  
Address: 9 Chasewater Way Diagnosis: Atrial fibrillation Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: 100%

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: On warfarin from 10-Oct-2016 to present for Atrial fibrillation

INR Treatments Reviews Clinical Details Bridging

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DHA	Comments	Info
14-Aug-2019	3.1	2.0	2.0	0	14	14	28-Aug-2019	-	Add Comment	
09-Sep-2019	2.8	2.0	2.0	0	28	28	07-Oct-2019	-	Add Comment	
21-Oct-2019	2.4	2.0	2.0	0	42	42	02-Dec-2019	-	Add Comment	
08-Jan-2020	2.6	2.0	2.0	0	56	56	04-Mar-2020	-	Add Comment	
11-Mar-2020	2.2	2.0	2.0	0	70	70	20-May-2020	-	Add Comment	
03-Jun-2020	2.8	2.0	2.0	0	70	70	12-Aug-2020	-	Add Comment	
18-Aug-2020	2.8	2.0	2.0	0	70	70	27-Oct-2020	-	Add Comment	

Treatment View Appointment DNA Print

New INR Add Historical Delete Latest All Treatments Make Cancel Mark Summary Diary

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0



## 16.2.1 Confirm Patient Identity

Patient information:

1. Confirm the patient identity and DOB.

**BILLINGTON, William (Mr)** **13-Oct-1954 (66y 0m)** Gender: **Male** **Active patient**

NHS Number: 339 033 5382 Patient Number: 2351275

Diagnosis: **Atrial fibrillation** Drug: **Warfarin** Target INR: **2.5** End Date: **Indefinite** TTR: **100%**

Treatment plan: On warfarin from 10-Oct-2016 to present for Atrial fibrillation

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DHA	Comments	Info
14-Aug-2019	3.1	2.0	2.0	0	14	14	28-Aug-2019	-	Add Comment	
09-Sep-2019	2.8	2.0	2.0	0	28	28	07-Oct-2019	-	Add Comment	
21-Oct-2019	2.4	2.0	2.0	0	42	42	02-Dec-2019	-	Add Comment	
08-Jan-2020	2.6	2.0	2.0	0	56	56	04-Mar-2020	-	Add Comment	
11-Mar-2020	2.2	2.0	2.0	0	70	70	20-May-2020	-	Add Comment	
03-Jun-2020	2.8	2.0	2.0	0	70	70	12-Aug-2020	-	Add Comment	
18-Aug-2020	2.8	2.0	2.0	0	70	70	27-Oct-2020	-	Add Comment	

Late INR test warning. This test should have been on 27-Oct-2020. Please check that the last recorded dose and review period are still current and accurate.

The patient's last treatment was more than 70 days ago, please ensure that the dose and review period are still current and accurate.

**Patient information:** **BILLINGTON, William (Mr), 13-Oct-1954**

☐ Changed their last prescribed dose (18-Aug-2020, 2.0 mg/day)?

☐ Missed any warfarin doses in the last 7 days?

☐ Changed any medication in the last 7 days?

**Comments:**

**Enter new INR test information:**

Test Date: 28-Oct-2020

New INR: ~Select INR

Testing Method: PoCT

PoCT Batch: ~Select PoCT Batch

Options

Use INR for EQC: ☐ Home Visit: ☐

Suggest Warfarin Dose Cancel

Active warfarin patients: 315 / 975 | Active non-warfarin patients: 176

Automated PST licences: 3 / 195

Version : 5.64.0

2. Confirm the patient's current dose and tick the check box if the dose is changed. If the dose has changed, add the new dose to 'Add Historical' record and the patient's treatment plan.

3. Tick the check box if the patient has any missed warfarin doses.

4. Tick the check box if the patient has had a change in any other medication.

**Note:** Changes to medication may include clinically prescribed or over-the-counter medications.

5. Confirm date of INR test from the calendar icon.

6. Select and add the INR result from the pick list manually or scan the bar code if using the LumiraDx Instrument.

**Enter new INR test information:**

Scan this barcode using the [Barcode Scanner](#) to quickly search for this patient on the [LumiraDx Instrument](#), so that results can be entered into INRstar automatically.

Scan this barcode using the Barcode Scanner to quickly search for this patient on the [LumiraDx Instrument](#), so that results can be entered into INRstar automatically

INRstar supports direct two-way integration with the LumiraDx Instrument.



**Note:** When performing a patient test, the Barcode Scanner can be used to send the patient's demographic information, via a barcode on the patients new INR screen, directly to the LumiraDx Instrument. The INR result will be sent from the LumiraDx Instrument directly to INRstar, including batch number and date and time of the test, ready for dosing.

7. Confirm the testing method, '**PoCT**' or '**Lab**' if manually entering INR result.
8. Add or change the last prescribed dose under '**Adding INR**'.
9. Within the options box, mark if using the INR result for external quality control (**EQC**), or home visit.
10. Click on the '**Suggest Warfarin Dose**' button at the bottom right. Depending on the dosing method you might have to click on '**Save**' or '**Cancel**' (if you want to cancel) if the patient is being manually dosed.

After a click on the '**Save**' or '**Suggest Warfarin Dose**' button a confirmation pop-up is displayed. Confirm the data entered by clicking the '**Confirm**' button. Click '**Cancel**' if you want to make changes to the treatment.

### 16.3. Manual Dosing

If manual dosing is chosen in the '**Treatment Plan**' tab, when '**New INR**' is selected, the screen below is displayed. This is available for treating patients on warfarin.

**Note:** Manually entered INR treatments cannot be overridden or referred for dose authorisation. (Clinical Level 3 user permission required to manually dose).

1. Complete the date, '**new INR**', '**Testing Method**' and '**Batch**' as previously.

**Note:** If your PoCT Lot number has an expired date, a '**PoCT Batch Expired**' warning is displayed. You may need to add your current PoCT Lot number to the list available for use within INRstar.

2. Select '**Dose**', number of '**Omits**' (if appropriate) and next review date '**Review Days**'.




3. The manually entered treatment will be displayed with a suitable dosing schedule in the usual way, or you may have to select a dose if the required dose is not exactly available.
4. The dosing schedule can be re-ordered, or an alternative schedule can be selected if required.  
**Note:** 'Skip or Boost' is not available for manual dosing and will display a warning message if you attempt to select it.
5. Click '**Save**' to save the INR treatment to the patient record to allow printing of a dosing diary and or patient summary sheet.

#### 16.4. Oates Slow Induction

The Oates algorithm is intended for use with non-urgent induction of patients requiring an INR target of between 2.0 and 3.0. It cannot be used for urgent induction or for those patients who have a baseline INR > 1.3 or in those taking Amiodarone<sup>1</sup>.

Warfarin Induction protocols have been designed to initiate warfarin treatment in patients who are not currently taking warfarin.

Before commencing ensure that 1mg tablets and/or 0.5mg tablets are selected. The patient's gender also needs to be added as on the 15th day of treatment the dosing is determined by INR and male/female gender.

1. Select the clinical details tab in the patient record and click on '**New Treatment Plan**'.
2. Select the warfarin treatment start date from the calendar icon . For patients starting an Induction protocol this should be today's or yesterday's date.
3. Select the primary diagnosis for AC treatment from the diagnosis drop down list.

<sup>1</sup> Reference: *Br J Clin Pharmacology*. 1998 Aug; 46(2):157-61



4. The recommended target INR and treatment duration will be populated automatically but can be edited by a user with Level 3 permission if required.
5. Then complete the patient warfarin details section:
  - **'Target INR'**.
  - Select the dosing method **'Induction Slow Oates'**. Confirm that this protocol is suitable for your patient when the confirmation dialogue is displayed.

**More information - Induction Slow Oates**

This algorithm is designed to initiate warfarin treatment with a target INR of 2.5 for patients not requiring a rapid response (eg. Atrial fibrillation) and suggests an evening warfarin dose of 2mg daily for the first 7 days. Patients must not currently be taking warfarin. They must have a pre-treatment INR of less than 1.4 and have no evidence of hepatic problems.

OK

- Select **'Testing Method'**, 'PoCT' or 'Lab'.
  - Set the **'Maximum Review Period'** in between test (Max 70 days).
  - Confirm **'Written Information'** has been provided to the patient.
  - Select the warfarin tablet strengths appropriate for this patient from the **'Tablet Selection'**.
6. Select the **'Print Preferences'** for the diary format required.
  7. Click the **'Save'** button to save the clinical details to the patient's record, or Click **'Cancel'** to exit without saving.

Treatment Plans | Demographics | Patient Management | Notes | Adverse Events | Letters | Summary | Audit Trail | Self-Care | Exit

Treatment plan: No Treatment Plans

Reviews | Clinical Details

To add a new treatment plan for this patient enter the details in the form below

Treatment Plan

Plan Start Date: 28-Oct-2020

Diagnosis: Atrial fibrillation

Drug: Warfarin

Treatment duration: Indefinite

Written Info Provided: ☒

Warfarin Details

Target INR: 2.5

Dosing Method: Induction Slow Oates

Testing Method: ~Select Method

Max Review Period: 70 Days

Tablet Selection

Use NPSA Guidelines: ☐

Use 5mg: ☒

Use 3mg: ☒

Use 1mg: ☒

Use 0.5mg: ☒

Use Split tablets: ☐

Print Preferences

Diary Format: A4 - Tablet Graphics Hidden

Save Cancel

Treatment Plan Summary

The patient is now set to **'Induction Slow Oates'**.





**INRstar**  
safe, effective anticoagulation support

Wednesday 28-Oct-2020 Dr Lead @ Varley [Log Off]

Home Patient Clinics Reports Options Help

**The patient's dosing method is currently set to : Induction Slow Oates**

**PETERS, Arnold (Mr)** Active patient  
Born: 01-Sep-1949 (71y 1m) Gender: Male NHS Number: 508 838 8705 Patient Number: 23412341234  
Address: 34 Menage street Diagnosis: Atrial fibrillation Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: N/A

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: On warfarin from 28-Oct-2020 to present for Atrial fibrillation

INR Treatments Reviews Clinical Details Bridging

This patient has no recorded treatments since the treatment plan's start date: 28-Oct-2020

Treatment View Appointment DNA  
Initiate Add Historical Delete Latest All Treatments Make Cancel Mark

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

Click **'Initiate'** and the following screen will issue an outline message that provides an overview of the **'Induction Slow Oates'** and includes the dates the patient will require follow up tests.

**This initiation protocol is suitable for the non-urgent initiation of warfarin treatment in patients requiring a target INR of 2.5.**  
It uses the protocol established by Oates, published in the British Journal of Clinical Pharmacology, 46, 157-161.  
It is not suitable for urgent initiation of anticoagulation or for patients with a baseline INR greater than 1.3 or patients taking amiodarone.

**This induction protocol suggests an evening warfarin dose of 2mg daily for the first 7 days and will require an INR test on the morning of Day 8 followed by a further INR test on Day 15.**  
These tests will be due on Wednesday 04-Nov-2020 and Wednesday 11-Nov-2020 based on an INR test date of today.  
This induction protocol becomes invalid if the INR results are not entered strictly on these days.

Patient information: PETERS, Arnold (Mr), 01-Sep-1949

Comments:

Enter pre-treatment INR test information:  
Test Date: 28-Oct-2020  
Pre-treatment INR: 1.3  
Testing Method: PoCT  
PoCT Batch: 456  
Home Visit: ☐

Suggest Warfarin Dose Cancel

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

**Note:** At this stage it is essential to confirm with the patient that they will be able to attend for repeat INR tests on the next 7 days. The patient must be available to be tested on the dates detailed in the protocol. If the patient cannot be tested on the dates advised, the protocol is unsuitable and therefore the patient should be dosed manually.

- Click **'Suggest Warfarin Dose'**.
- Read and confirm the information entered is correct or **'Cancel'**.



**⚠️** This initiation protocol is suitable for the non-urgent initiation of warfarin treatment in patients requiring a target INR of 2.5. It uses the protocol established by Oates, published in the British Journal of Clinical Pharmacology, 46, 157-161. It is not suitable for urgent initiation of anticoagulation or for patients with a baseline INR greater than 1.3 or patients taking amiodarone.

**⚠️** This induction protocol suggests an evening warfarin dose of 2mg daily for the first 7 days and will require an INR test on the morning of Day 8 followed by a further INR test on Day 15. These tests will be due on Wednesday 04-Nov-2020 and Wednesday 11-Nov-2020 based on an INR test date of today. This induction protocol becomes...

**Please confirm that the following is correct**

Patient: **PETERS, Arnold (Mr), 01-Sep-1949**  
Test Date: **28-Oct-2020**  
INR: **1.3**

Home Visit: ☐

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

INRstar will suggest a 2mg dosing schedule for the next 7 days.

**INR Treatments** | Reviews | Clinical Details | Bridging

This patient has no recorded treatments since the treatment plan's start date: 28-Oct-2020

**Suggested Treatment & Schedule**

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
28-Oct-2020	1.3	2.0	2.0	0	7	7	04-Nov-2020	-	<a href="#">Induction Slow Oates...</a>	

The patient's next INR test will be due on: **Wednesday 04-November-2020**

**Suggested** | Current

Day	Instructions
Wednesday	take 2 x Brown (1mg) (total 2.0mg)
Thursday	take 2 x Brown (1mg) (total 2.0mg)
Friday	take 2 x Brown (1mg) (total 2.0mg)
Saturday	take 2 x Brown (1mg) (total 2.0mg)
Sunday	take 2 x Brown (1mg) (total 2.0mg)
Monday	take 2 x Brown (1mg) (total 2.0mg)
Tuesday	take 2 x Brown (1mg) (total 2.0mg)

Treatment Date: 28-Oct-2020    Tablets required for this treatment: 14 x 1mg   

The treatment is currently: **Awaiting completion**   

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

There are options to **'Save'**, **'Refer'** the record for approval or **'Cancel'**.

The dosing method is now set to: **'Induction Slow Oates'**.



**INRstar**  
safe, effective anticoagulation support

Wednesday 28-Oct-2020 Dr Lead @ Varley [Log Off](#)

Home Patient Clinics Reports Options Help

**⚠** The patient's dosing method is currently set to : Induction Slow Oates

PETERS, Arnold (Mr)  
Born: 01-Sep-1949 (71y 1m) Gender: Male NHS Number: 508 838 8705 Patient Number: 23412341234 Active patient

Address: 34 Menage street Diagnosis: Atrial fibrillation Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: N/A

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: On warfarin from 28-Oct-2020 to present for Atrial fibrillation

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
28-Oct-2020	1.3	2.0	2.0	0	7	7	04-Nov-2020	-	Induction Slow Oates...	

Treatment: New INR Add Historical Delete Latest View: All Treatments Appointment: Make Cancel DNA: Mark Print: Summary Diary

Active warfarin patients: 316 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

CE

On 'Day 8' and 'Day 15' the patient should be tested, and the INR result entered into INRstar. The 'Induction Slow Oates' protocol will generate the recommended dose of warfarin and next review date.

When the patient has two INR results in target range with a minimum of 7 days in between results recorded, the treatment plan can be amended to a maintenance algorithm ('Coventry' or 'Hillingdon').

## 16.5. Tait Dosing Algorithm

The **Tait slow induction** is only available for patients being treated on warfarin.

Warfarin induction protocols have been designed to initiate warfarin treatment in patients who are not currently taking warfarin.

It cannot be used for:

- Urgent induction.
- Patients who have a baseline INR greater than or equal to 1.4.
- Patients taking Amiodarone<sup>2</sup>.

The Tait slow induction protocol is used to initiate warfarin treatment in patients for whom a target INR of 2.5 (INR range 2.0-3.0) is appropriate and who do not need rapid induction of AC (e.g. patients with atrial fibrillation and non-urgent).

It is not suitable for patients who require higher target ranges or in whom rapid AC is needed (e.g. prosthetic valves or pulmonary emboli/deep vein thromboses, etc.).

Before starting this induction protocol, it is essential to ensure that:

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<sup>2</sup> Reference: Br J Haem. 1998; 101, 450-4



- The patient is not currently taking an oral AC drug.
- The patient is not taking a drug with a potentially significant interaction with warfarin (especially antiplatelet agents, non-steroidal anti-inflammatory drugs or Amiodarone).
- They have no evidence of hepatic impairment.
- Their pre-treatment baseline INR is less than 1.4.
- The patient will be able to attend for INR testing on the required days (see below).

The Tait protocol suggests a warfarin dose of 5mg daily with an INR test on the fifth day. Further dosing suggestions will depend on the INR result on this day. A second INR result will be required on the eighth day of treatment and again suggestions will be made based on the INR result. On day 12 or 15 fine dose adjustments can be made and a clinical decision to select a suitable maintenance algorithm if appropriate.

It is essential that these INR tests are carried out on the required days (Day five, eight, 12 or 15); if not the protocol will be invalidated. In this situation the patient will need to be dosed manually until they are sufficiently stable to start on a maintenance dosing algorithm.

For patients who are being manually dosed on induction, see section 16.3.

Firstly, you will need to add the relevant clinical details to the treatment plan and set the dosing method to '**Induction Slow Tait**'.

1. Click on '**Treatment Plans**' and then '**Clinical Details**' and the patient's record screen to view the treatment details screen.
2. Select a warfarin start date from the calendar icon. For patients starting an induction protocol, this should be today's date.
3. Select a diagnosis from the '**Diagnosis**' drop-down list.
  - The recommended target INR and treatment duration will be added automatically.
  - Users with sufficient permission levels may edit the recommended values if needed.
4. Set the dosing method to induction by selecting '**Induction Slow Tait**' from the '**Dosing Method**' drop-down list.



Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: No Treatment Plans

Reviews Clinical Details

To add a new treatment plan for this patient enter the details in the form below

**Treatment Plan**

Plan Start Date: 29-Oct-2020

Diagnosis: Atrial fibrillation

Drug: Warfarin

Treatment duration: Indefinite

Written Info Provided: ☐

**Warfarin Details**

Target INR: 2.5

Dosing Method: ~Select Dosing Method

Testing Method: Coventry Maintenance

Max Review Period: Hillingdon Maintenance

Induction Fast Fennerty Gedge

Induction Slow Oates

Induction Slow Tait

Manual Dosing

**Tablet Selection**

Use NPSA Guidelines: ☐

Use 5mg: ☒

Use 3mg: ☒

Use 1mg: ☒

Use 0.5mg: ☒

Use Split tablets: ☐

5. Confirm that this protocol is suitable for your patient when the confirmation dialogue displayed.

**More information - Induction Slow Tait**

This algorithm is designed to initiate warfarin treatment in patients not requiring a rapid response, (eg Atrial fibrillation) and suggests an evening warfarin dose of 5mg daily for the first 4 days. Patients should not currently be taking warfarin. They must have a pre-treatment INR of less than 1.4 and have no evidence of hepatic problems.

OK

6. Select the appropriate testing method from the '**Testing method**' drop-down list.
7. Select the warfarin tablet strength appropriate for this patient from the '**Tablet Selection**'.
8. Confirm that you have given the patient written information about AC treatment (e.g. 'Yellow Book') by clicking the '**Written Info Provided**' check box.
9. Click the '**Save**' button to save the clinical details to the patient's record, or click '**Cancel**' to exit without saving.

### 16.5.1. Stage 1 of the Tait Induction Protocol

The next step is to perform Stage 1 of the induction protocol:

1. Click on '**INR Treatments**' in the patient's clinical record screen.  
The induction protocol Stage 1 screen will be displayed.
2. Click the '**Initiate**' button.

**⚠** This initiation protocol is suitable for the non-urgent initiation of warfarin treatment in patients requiring an INR target range 2.0 - 3.0. It uses the protocol established by Tait R.C and Serfick A, published in the British Journal of Haematology 1998;101:450-454. It is not suitable for urgent initiation of anticoagulation or for patients with a baseline INR greater than 1.3 or patients taking amiodarone.

**⚠** This induction protocol suggests an evening warfarin dose of 5mg daily for the first 4 days and will require an INR test on the morning of Day 5 followed by a further INR test on Day 8.  
These tests will be due on Monday 02-Nov-2020 and Thursday 05-Nov-2020 based on an INR test date of today.  
These tests will be due on Monday 02-Nov-2020 and Thursday 05-Nov-2020 based on an INR test date of today.  
This induction protocol becomes invalid if the INR results are not entered strictly on these days.



A reminder message about the appropriateness of using an induction protocol is displayed which includes the proposed dosing details and dates of INR tests shown.

At this stage it is essential to confirm with the patient that they will be able to attend for repeat INR tests on the days shown. If not, the protocol will be invalidated.

If these days are not possible it might be necessary to delay the induction process to a different day so that the necessary INR review tests can be conducted to follow the protocol.

3. Confirm the patient identity.
4. Add the pre-treatment INR result by selecting it from the '**Pre-Treatment INR**' drop-down list.

Enter pre-treatment INR test information:

Test Date: 29-Oct-2020

Pre-treatment INR: 1.1

Testing Method: PoCT

PoCT Batch: 456

Home Visit: ☐

Suggest Warfarin Dose Cancel

5. Click the '**Home Visit**' check box if the test was conducted on a home visit.
6. Click '**Suggest a Warfarin Dose**' to continue.
7. '**Confirm**' the pre-treatment INR when the confirmation dialogue is presented.

Please confirm that the following is correct

Patient: REECE, Jane (Mrs), 05-Aug-1975

Test Date: 29-Oct-2020

INR: 1.1

Confirm Cancel

The dosing suggestion screen will be displayed. This will indicate the daily dose for the next four days and the date of the next INR test on day five.

**Note:** As this is an induction protocol it is not possible to override the dose or review period selection at this stage.



INR Treatments | Reviews | Clinical Details | Bridging

This patient has no recorded treatments since the treatment plan's start date: 29-Oct-2020

**Suggested Treatment & Schedule**

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
29-Oct-2020	1.1	5.0	5.0	0	4	4	02-Nov-2020	-	<a href="#">Induction Slow Tait ...</a>	

The patient's next INR test will be due on: **Monday 02-November-2020**

**Suggested** | Current

Day	Treatment
Thursday	take 1 x Pink (5mg) (total 5.0mg)
Friday	take 1 x Pink (5mg) (total 5.0mg)
Saturday	take 1 x Pink (5mg) (total 5.0mg)
Sunday	take 1 x Pink (5mg) (total 5.0mg)

Treatment Date: 29-Oct-2020    Tablets required for this treatment: 4 x 5mg    [Re-Order Schedule](#)    [More Schedules](#)

The treatment is currently: **Awaiting completion**

[Save](#)   [Refer](#)   [Override](#)   [Skip or Boost](#)   [Edit Comments](#)   [Cancel](#)

Active warfarin patients: 317 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

8. Click **'Save'** to save this treatment suggestion to the patient's record.

- Or click **'Cancel'** to exit from this screen without saving the details to the record.

**Note:** Users with **'Clinical Level 2'** permissions will not be able to save an induction treatment. It must be referred to a **'Clinical Level 3'** user for authorisation.

The patient's dosing method is currently set to : Induction Slow Tait

**REEECE, Jane (Mrs)**    **Active patient**  
Born: 05-Aug-1975 (45y 2m)    Gender: Female    NHS Number: 649 360 8236    Patient Number: 21341234

Address: 23b harbour Lane    Diagnosis: Atrial fibrillation    Drug: Warfarin    Target INR: 2.5    End Date: Indefinite    TTR: N/A

Treatment Plans | Demographics | Patient Management | Notes | Adverse Events | Letters | Summary | Audit Trail | Self-Care | Exit

Treatment plan: On warfarin from 29-Oct-2020 to present for Atrial fibrillation

INR Treatments | Reviews | Clinical Details | Bridging

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
29-Oct-2020	1.1	5.0	5.0	0	4	4	02-Nov-2020	-	<a href="#">Induction Slow Tait ...</a>	

**Treatment**    **View**    **Appointment**    **DNA**    **Print**

[New INR](#)   [Add Historical](#)   [Delete Latest](#)    [All Treatments](#)    [Make](#)   [Cancel](#)    [Mark](#)    [Summary](#)   [Diary](#)

Active warfarin patients: 317 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

The patient's INR treatment record screen is displayed, and by clicking on the **'Diary'** button the patient dosing diary can be printed or saved to be sent to the patient via fax or email.

A comment will be added automatically to the INR treatment to indicate it is an induction treatment. By clicking on the hyperlink of the first few words of the comment, the full text can be viewed.



- Close the patient record by clicking 'Exit'.

### 16.5.2. Stage 2 – Day Five

**Stage 2** is entered when the patient attends for an INR test on **Day Five** of the protocol.

1. Select the patient from the patient search screen (see section 10.2).
2. A warning message will be displayed reminding the user that this patient is currently being treated using an induction protocol. Click '**Confirm**' to continue.

Please confirm

The patient's dosing method is currently set to : Induction Slow

Confirm Close

3. Click on '**Treatment Plan**' and then '**INR Treatment**' to display the treatment record.
4. Click '**New INR**'.
5. If the INR test date is not exactly as required by the protocol a warning message will be displayed.

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments
15-Mar-2019	1.2	5.0	5.0	0	4	4	19-Mar-2019	-	<a href="#">Induction slow algor...</a>

This patient is not due for an INR test until 19-Mar-2019. You will invalidate the induction algorithm if a test is performed early. If you wish to dose this patient today you will need to change the patient onto the Manual dosing regime.

The protocol is invalidated and INRstar will remove the patient from the induction process. The patient will then need to be **dosed manually** until sufficiently stable to be started on the appropriate **maintenance dosing algorithm**.

**Patient information:**

**ARNARGE, John (Mr), 14-Nov-1934**

☐ Changed their last prescribed dose ( [15-Mar-2019, 5.0 mg/day](#) )?

☐ Missed any warfarin doses in the last 7 days?

☐ Changed any medication in the last 7 days?

If the patient is tested on the correct day, confirm the data and INR result into the treatment schedule as required by the protocol.

6. Confirm the patient identity, that they are still taking the last warfarin dose recorded in the treatment record, and that the patient has not missed a warfarin dose in the





last seven days or started, stopped or changed any other medication since the last appointment.

**Note:** This could include prescribed or over-the-counter medication.

7. Select the **'New INR'** result from the drop-down list.

New INR: ~Select INR

8. Select a **'Testing Method'** from the drop-down list if not laboratory or instrument.

Testing Method: PoCT

**Note:** You will only need to do this if the patient's testing method for this test is different from the default method displayed in the box.

9. Select a **'POCT Batch'** from the drop-down list.

PoCT Batch: ~Select PoCT Batch

**Note:**

- You will only need to do this if the patient's testing method is POCT and your location has more than one POCT batch activated.
- If your PoCT Lot number has an expired date, a 'PoCT Batch Expired' warning is displayed. You may need to add your current PoCT Lot number to the list available for use within INRstar.

10. Click the **'Use INR for EQC'** check box if you wish to record this test in your EQC record log (see section 20.3).

**Note:** Normally an INR from a stable, in range patient is preferred for EQC testing that includes sending a parallel venous sample to the lab.

Use INR for EQC : ☐

11. Click the **'Home Visit'** check box if the test was recorded on a home visit.

Home Visit: ☐

**Enter new INR test information:**

Test Date: 15-Mar-2019

New INR: 1.8

Testing Method: PoCT

**Options**

Use INR for EQC : ☐ Home Visit: ☐

12. Click the **'Suggest Warfarin Dose'** button.

The new dosing suggestion screen will be displayed with the suggested new dose, review period and dosing schedule.



13. Click the '**Save**' button.

A comment will be added automatically to the treatment to indicate that it is an induction treatment. By clicking on the hyperlink of the first few words of the comment, the full text can be viewed.

- Print the patient dosing diary, or save it to be sent to the patient via fax or email, by clicking the '**Diary**' button.
- Close the patient record by clicking the '**Exit**' button.

**Note:**

- If the new INR is outside the acceptable values specified in the induction protocol a message will be displayed and the patient removed from induction protocol. The patient will then need to be dosed manually until sufficiently stable to be started on an appropriate maintenance dosing algorithm.
- It is not possible to override a dose or review period suggestion during an induction protocol.
- Users with permission levels below '**Clinical Level 3**' will not be able to save an INR treatment during an induction protocol. The INR treatment must be referred for authorisation by a '**Clinical Level 3**' user.

### 16.5.3. Stage 3 - Tait Induction Protocol

This occurs when the patient attends for an INR test on day eight of the protocol.

1. Select the patient from the patient search screen (see section 10.2).
2. A warning message will be displayed reminding the user that this patient is currently being treated using an induction protocol. Click '**Confirm**' to continue.
3. Click on the '**INR Treatments**' tab in the '**Treatment Plans**' to display the INR treatment record.
4. Click on the '**New INR**' button.
5. Confirm patient identity, that the patient is still taking the dose as last recorded, has missed no warfarin doses, or changed other medication as in Stage 2 above.
6. Select the correct date of the INR test from the calendar icon. You can choose a date up to three days in the past, but the new INR cannot be before the previous treatment or on the same date.
7. Select the '**New INR**' result from the drop-down list.

New INR:

8. Select a '**Testing Method**' from the drop-down list.

Testing Method:

**Note:** You will only need to do this if the patient's testing method for this test is different from the default method displayed in the box.



9. Select a '**POCT Batch**' from the drop-down list.

**Note:**

- You will only need to do this if the patient's testing method is POCT and your location has more than one POCT batch activated.
- If your PoCT Lot number has an expired date, a 'PoCT Batch Expired' warning is displayed. You may need to add your current PoCT Lot number to the list available for use within INRstar.

10. Click the '**Use INR for EQC**' check box if you wish to record this test in your EQC record log (see section 20.3).

**Note:** Normally an INR from a stable, in range patient is preferred for EQC testing that includes sending a parallel venous sample to the lab.


Use INR for EQC : ☐

11. Complete any relevant text in the comments box.

12. Click the '**Suggest Warfarin Dose**' button.


At day 12/15 check INR and make fine dose adjustments as required. This will complete the induction process and the patient will automatically be removed from the induction protocol, which will be explained to you in a pop-up warning message, shown below. The patient will need to be transferred to a suitable maintenance algorithm before further dosing suggestions can be calculated (see section 16.7).

Please acknowledge

 This treatment will complete the induction protocol for this patient. You will now need to select a suitable dosing algorithm to continue.  
If the last review period suggestion was 7 days or longer then the patient is stable enough to use a maintenance algorithm. If the review period suggestion was less than 7 days you will need to use manual dosing until stability is achieved.  
To select a suitable dosing method click the "Treatment Plan" tab then click "Edit" and select a method from the Dosing Method list.

Confirm

The new dosing suggestion screen will be displayed with the suggested new dose, review period and dosing schedule. The warning notice is displayed advising the user that the patient will now be removed from the Tait induction protocol and the message remains and can be viewed on the dosing suggestion screen.

 This treatment will complete the induction protocol for this patient. You will now need to select a suitable dosing algorithm to continue.  
If the last review period suggestion was 7 days or longer then the patient is stable enough to use a maintenance algorithm. If the review period suggestion was less than 7 days you will need to use manual dosing until stability is achieved.  
To select a suitable dosing method click the "Treatment Plan" tab then click "Edit" and select a method from the Dosing Method list.

Suggested

Current

79 of 226 Document Name: INRstar®: Instructions for Use  
Document Number: IVIQMS-1761341735-144

Revision: 5

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**Information Classification: For Internal Use Only**



**Note:**

- It is not possible to override a dose or review period suggestion during an induction protocol.

A comment will be added automatically to the treatment to indicate that it is an induction treatment. By clicking on the hyperlink of the first few words of the comment, the full text can be viewed.

- Users with permission levels below '**Clinical Level 3**' will not be able to save a treatment during an induction protocol. The treatment must be referred for authorisation by a '**Clinical Level 3**' user.
- The patient will be removed from the induction protocol and their dosing algorithm will now be set to '**No Protocol**'; a message will be displayed. You will now need to select a suitable dosing algorithm to continue treating them, by editing the patient's clinical details.



The patient's dosing method is currently set to : No Protocol

13. Click the '**Save**' button.

- Print the patient dosing diary, or save it to be sent to the patient via fax or email, by clicking the '**Diary**' button.
- Close the patient record by clicking '**Exit**'.

## **16.6. Fast Induction - Fennerty-Gedge**

The Fennerty-Gedge algorithm is supported by the British Committee for Standards in Haematology (BCSH) guideline 2011, which states that there is no evidence to support the use of a 10mg loading dose over a 5mg dose.

The initiation of warfarin is the prescription for a patient who has not previously received warfarin or has temporarily been taken off warfarin such that their INR is now less than 1.4. The aims of this protocol are:

- To ensure that evidence-based doses are prescribed for initiation of warfarin to ensure that a therapeutic INR is reached in a timely but safe manner.
- To satisfy the requirements of Patient Safety Alert 18 – actions that can make anticoagulant therapy safer.
- To reduce the occurrence of INRs greater than 6 which are associated with an increase in bleeding risk (and delayed discharge).

### **16.6.1. Prior to initiation of warfarin**

- Confirm no contraindications to anticoagulation.
- Confirm patient is not on other oral anticoagulants, i.e. dabigatran, rivaroxaban, apixaban (note: if switching from one of these anticoagulants to warfarin, a period



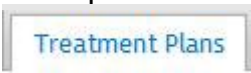

of overlap will be required – (see relevant drug's Summary of Product Characteristics for details).

- Consider discontinuation of anti-platelet drugs, i.e. Aspirin, Clopidogrel, Dipyridamole, Prasugrel, Ticagrelor.
- Further information on concurrent anticoagulation and anti-platelets can be found in BCSH guidelines.
- Consider discontinuation of drugs that may increase bleeding risk such as non-steroidal anti-inflammatory drugs (NSAIDs).
- Measure full blood count, liver function, INR and APTT.

**Note:**

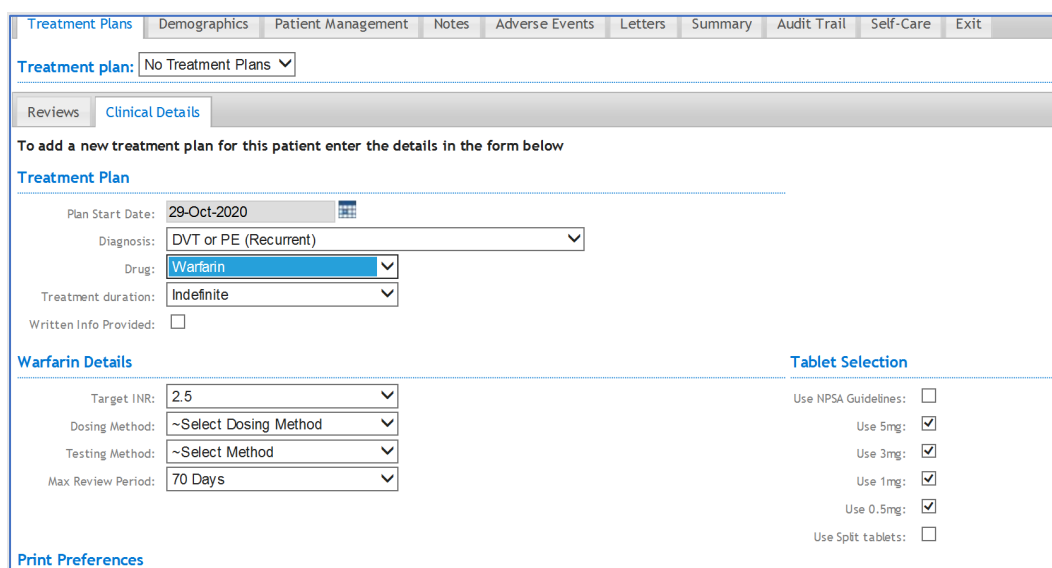
- Fast Induction cannot be selected if the patient is indicated as a 'Self Tester'.
- For patients who are being manually dosed on induction, please see section 16.3.
- The patient must be added to the demographic details in INRstar. See section 10.1.

1. Once the patient details are added, in the patient's record click

on  and then on .

2. Complete the 'Treatment Plan' section:

- Select primary diagnosis for treatment.
- Select drug – induction protocol only available for warfarin.
- Treatment duration.
- Confirm written information provided.





### 3. Complete the 'Warfarin Details' section:

- Select the patient's '**Dosing Method**' of '**Fast Induction Fennerty-Gedge**'; select the '**Testing Method**' and '**Max Review Period**'.

- To acknowledge the confirmation message, click '**Ok**':

### 4. Complete the **Tablet Selection** - Select the tablet strengths you want to treat the patient with.

**Please note:** only 1mg and 3mg tablets can be selected for this Dosing Method.

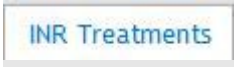
### 5. Complete **Print Preferences** – Select the '**Diary format**' preference if different format to standard one for their Testing Location.



This can be a benefit if for example your default settings are set as label but you have a patient who are visually impaired, where it may be more appropriate for your patient's safety to set their printing preferences to A4 (see section 20.8 for more information).





### 16.6.2. Stage 1 - Induction Fast Fennerty-Gedge

The next step is to perform stage 1 of the Induction protocol:

1. Click on  on the patient's clinical record screen.

The Induction protocol stage 1 screen will be displayed.

2. Click the  button.

-  This initiation protocol is suitable for the rapid initiation of patients with a target INR of 2.5. It uses the protocol established by Fennerty and modified by Gedge (Age and Aging, 29,31-34). This protocol is not suitable for patients who do not require urgent initiation of anticoagulation.
-  A pre-treatment INR of less than 1.4 is required. The patient will require an INR test every day for at least the first 4 days. This induction becomes invalid if the INR results are not entered strictly on these days.
-  **Patients must not currently be taking warfarin.**  
For patients taking other anticoagulants consult the relevant drug's Summary of Product Characteristics.
-  The warfarin dose should be taken at 18:00 each day and blood for INR tests should be drawn between 09:00 and 11:00 the next morning.

3. A reminder message about the suitability of using an '**Induction**' is displayed, confirming dosing details and INR tests.

At this stage it is essential to confirm with the patient that they will be able to attend for repeat INR tests on the next 3 days. If not, the protocol will be invalidated. If these days are not possible it might be necessary to delay the Induction process, so that the necessary review and INR tests can be performed, or alternatively consider manually dosing.

The initial dose for the Fennerty-Gedge Protocol is decided depending upon various Risk Factors.

#### Risk factors - Induction Fast Fennerty Gedge:

- |   |                          |
|---|--------------------------|
| No risk factors:                          | <input type="checkbox"/> |
| Patient >60yr:                            | <input type="checkbox"/> |
| Body weight <50kg:                        | <input type="checkbox"/> |
| Liver disease:                            | <input type="checkbox"/> |
| Cardiac failure:                          | <input type="checkbox"/> |
| Serum albumin <35g/L:                     | <input type="checkbox"/> |
| Known bleeding risk:                      | <input type="checkbox"/> |
| Taking drugs which enhance a/c effect:    | <input type="checkbox"/> |
| Previous a/c maintenance dose <2mg daily: | <input type="checkbox"/> |

- If **NO** Risk Factors are present, the initial dose will be 10mg.
- If **ANY** of the Risk Factors are present, then the initial dose will be 5mg.

Tick the appropriate checkboxes for the Risk Factors for the patient.

4. Add the pre-treatment INR result by selecting it from the '**Pre-Treatment INR**' drop-down list.





**Enter pre treatment INR test information:**

Test Date: 23-Apr-2018

Pre Treatment INR: ~Select INR ▼

Testing Method: PoCT ▼

Home Visit: ☐

5. Click the '**Home Visit**' checkbox if the test was recorded on a home visit.
6. Click **Suggest Warfarin Dose** to continue.
7. Confirm the pre-treatment INR when the confirmation dialogue is displayed.

No '**Risk Factors**' selected:

**Please confirm that the following is correct**

Patient: [REDACTED] (Mr), 04-Mar-1987

✓ Has no risk factors selected

Test Date: 29-Mar-2018

INR: 1.2

Confirm Cancel

With '**Risk Factors**' selected:

**Please confirm that the following is correct**

Patient: [REDACTED] (Mr), 04-Mar-1987

⚠ Has the following risk factors selected

- ⚠ Body weight <50kg
- ⚠ Liver disease

Test Date: 29-Mar-2018

INR: 1.2

Confirm Cancel

The dosing suggestion screen will be displayed. This will indicate the daily dose for today and the next test date for tomorrow.

As this is an Induction protocol it is not possible to override the dose or review period selection at this stage.





**Suggested Treatment & Schedule**

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
29-Mar-2018	1.2	10.0	10.0	0	1	1	30-Mar-2018	-	<a href="#">Day 1/4 Induction Fa...</a>	

**Suggested** | **Current**


Thurs day take 3 x Blue (3mg), 1 x Brown (1mg) (total 10.0mg)

Treatment Date: 29-Mar-2018      Tablets required for this treatment: 1 x 1mg, 3 x 3mg

The treatment is currently: **Awaiting completion**

Re-Order Schedule | More Schedules

Save | Refer | Override | Edit Comments | Cancel

8. Click  to save this treatment suggestion to the patient's record.

- Or click  to exit from this screen without saving the details to the record.

**Note:** Users with Clinical Level 2 permissions will not be able to save an Induction treatment. It must be referred to a Clinical Level 3 user for authorisation.

**INR Treatments** | **Reviews** | **Clinical Details**

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
23-Apr-2018	1.2	10.0	10.0	0	1	1	24-Apr-2018	-	<a href="#">Day 1/4 Induction Fa...</a>	

**Treatment** | **View** | **DNA** | **Print**

New INR | Add Historical | Delete Latest | All Treatments | Mark | Summary | Diary

When the patient's INR treatment record screen is displayed, by clicking on the **'Diary'** button the patient dosing diary can be printed or saved to be sent to the patient via fax or email.


A comment will be added automatically to the INR treatment to indicate that it is an Induction treatment. By clicking on the hyperlink in the comment box, the full text can be viewed.

- Close the patient record by clicking the **'Exit Record'** tab.

### 16.6.3. Stage 2 - Induction Fast Fennerty-Gedge

**Stage 2** is initiated when the patient attends for an INR test on Day 2 of the protocol.

1. Select the patient from the patient search screen (see section 10.2).
2. A warning message will be displayed reminding the user that this patient is currently being treated using an Induction protocol. Click **'Confirm'** to continue.


 The patient's dosing method is currently set to : Induction Fast Fennerty Gedge

3. Click on  and then  to display the treatment record.

4. Click .



If the INR test date is not correct for Day 2 of the protocol a warning message will be displayed.

 This patient is not due for an INR test until 25-Apr-2018. You will invalidate this induction algorithm if a test is performed early. If you wish to dose this patient today you will need to change the patient onto the Manual dosing regime.

If an INR is added on the date set at stage one, the protocol becomes invalidated and INRstar will remove the patient from the Induction process. The patient will then need to be dosed manually until sufficiently stable to be started on an appropriate '**Maintenance Dosing**' algorithm.

**Patient information:**

**FERRARI, Sophia (Miss), 13-Apr-1977**

- ☐ Changed their last prescribed dose ( [23-Apr-2018, 10.0 mg/day](#) )?
- ☐ Missed any warfarin doses in the last 7 days?
- ☐ Changed any medication in the last 7 days?

5. Confirm that the patient is still taking the last warfarin dose which is recorded in the treatment record.
6. Tick the checkbox if the patient is taking a different dose.
7. Confirm that the patient has not missed a warfarin dose since the last clinic attendance. Tick the checkbox if any tablets were missed.
8. Confirm that the patient has not started, stopped, or changed any other medication since the last appointment. Tick the checkbox if they have missed tablets.

**Enter new INR test information:**

Test Date: 24-Apr-2018

New INR:

Testing Method:

**Options**

Use INR for EQC : ☐ Home Visit: ☐

9. Select the new INR result from the dropdown list:

New INR:

10. Select a testing method from the dropdown list:

Testing Method:



**Note:** you will only need to do this if the patient's testing method for this test is different from the default method displayed in the box.

11. Select a PoCT batch from the dropdown list.

PoCT Batch: ~Select PoCT Batch ▼

**Note:**

- You will only need to do this if the patient's testing method is PoCT and your location has more than one PoCT batch activated.
- If your PoCT Lot number has an expired date, a 'PoCT Batch Expired' warning is displayed. You may need to add your current PoCT Lot number to the list available for use within INRstar.

12. Click the '**Use INR for EQC**' checkbox if you wish to record this test in your External Quality Control (EQC) record log (see section 20.3 for adding an EQC result).

**Note:** Normally an INR from a stable, in range patient is preferred for EQC testing that includes sending a parallel venous sample to the lab.

Use INR for EQC : ☐

13. Click the '**Home Visit**' checkbox if the test was recorded on a home visit.

Home Visit: ☐

14. Click the '**Suggest Warfarin Dose**' button.

**Please confirm that the following is correct**

Patient: **FERRARI, Sophia (Miss), 13-Apr-1977**

- ✓ is still taking the prescribed dose (23-Apr-2018, 10.0 mg/day)
- ✓ has not missed any warfarin doses in the last 7 days
- ✓ has not changed any medication in the last 7 days

Test Date: **24-Apr-2018**

New INR: **1.6**

15. Review the values entered are correct in the notification and click the '**Confirm**' button or '**Cancel**'.

The new dosing suggestion screen will be displayed with the suggested new dose, review period and dosing schedule.



INR Treatments		Reviews		Clinical Details						
Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
23-Apr-2018	1.2	10.0	10.0	0	1	1	24-Apr-2018	-	<a href="#">Day 1/4 Induction Fa...</a>	
<b>Suggested Treatment &amp; Schedule</b>										
24-Apr-2018	1.6	5.0	5.0	0	1	1	25-Apr-2018	-	<a href="#">Day 2/4 Induction Fa...</a>	
<div> <div>Suggested</div> <div>Current</div> </div>										
Tuesday		take 1 x Blue (3mg), 2 x Brown (1mg) (total 5.0mg)								

**Note:** It is not possible to override a dose or review period suggestion during an Induction protocol.

16. Click the '**Save**' button.

A comment will be added automatically to the treatment to indicate that it is an Induction treatment. By clicking on the hyperlink of the first few words of the comment, the full text can be viewed.

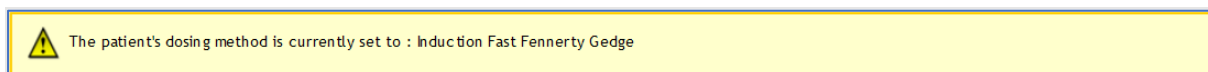
**Note:** Users with permission levels below Clinical Level 3 will not be able to save an INR treatment during an Induction protocol. The INR treatment must be referred for authorisation by a Clinical Level 3 user.

- Print the patient dosing diary, or save it to be sent to the patient via fax or email, by clicking the '**Diary**' button.
- Close the patient record by clicking the '**Exit Record**' tab.

#### 16.6.4. Stage 3 - Induction Fast Fennerty-Gedge

**Stage 3** takes place when the patient attends for an INR test on Day 3 of the protocol.

1. Select the patient from the patient search screen, as before.
2. A warning message will be displayed reminding the user that this patient is currently being treated using an Induction protocol. Click '**Confirm**' to continue.



3. Click and then to display the treatment record.
4. Click to display the patient treatment plan.

Patient information:

FERRARI, Sophia (Miss), 13-Apr-1977

☐ Changed their last prescribed dose ( [23-Apr-2018, 10.0 mg/day](#) )?
 ☐ Missed any warfarin doses in the last 7 days?
 ☐ Changed any medication in the last 7 days?

5. Confirm that the patient is still taking the last warfarin dose which is recorded in the treatment record. Tick the checkbox if the patient is taking a different dose.



6. Confirm that the patient has not missed a warfarin dose since the last clinic attendance. Tick the checkbox if any tablets were missed.
7. Confirm that the patient has not started, stopped, or changed any other medication since the last appointment. Tick the checkbox if they have.

**Enter new INR test information:**

Test Date: 25-Apr-2018

New INR: 1.9

Testing Method: PoCT

Options

Use INR for EQC : ☐ Home Visit: ☐

8. Repeat the process for stage one and two:
  - Select the '**New INR**' result from the dropdown list.
  - Select a '**Testing method**' from the dropdown list.

**Note:** you will only need to do this if the patient's testing method for this test is different from the default method displayed in the box.

9. Select a PoCT batch from the dropdown list.

**Note:**

- You will only need to do this if the patient's testing method is PoCT and your location has more than one PoCT batch activated.
- If your PoCT Lot number has an expired date, a 'PoCT Batch Expired' warning is displayed. You may need to add your current PoCT Lot number to the list available for use within INRstar.

10. Click the '**Use INR for EQC**' checkbox if you wish to record this test in your External Quality Control (EQC) record log (see section 20.3 for adding an EQC result).

Note: Normally an INR from a stable, in range patient is preferred for EQC testing that includes sending a parallel venous sample to the lab.

11. Click the '**Home Visit**' checkbox if the test was recorded on a home visit.
12. Click the '**Suggest Warfarin Dose**' button.



Please confirm that the following is correct

Patient: **FERRARI, Sophia (Miss), 13-Apr-1977**

- ✓ is still taking the prescribed dose (24-Apr-2018, 5.0 mg/day)
- ✓ has not missed any warfarin doses in the last 7 days
- ✓ has not changed any medication in the last 7 days

Test Date: **25-Apr-2018**

New INR: **1.9**

The new dosing suggestion screen will be displayed with the suggested new dose, review period and dosing schedule.

INR Treatments		Reviews		Clinical Details						
Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
23-Apr-2018	1.2	10.0	10.0	0	1	1	24-Apr-2018	-	<a href="#">Day 1/4 Induction Fa...</a>	
24-Apr-2018	1.6	5.0	5.0	0	1	1	25-Apr-2018	-	<a href="#">Day 2/4 Induction Fa...</a>	
Suggested Treatment & Schedule										
25-Apr-2018	1.9	5.0	5.0	0	1	1	26-Apr-2018	-	<a href="#">Day 3/4 Induction Fa...</a>	

**Note:** It is not possible to override a dose or review period suggestion during an Induction protocol.

13. Click the '**Save**' button.

A comment will be added automatically to the treatment to indicate that it is an Induction treatment. By clicking on the hyperlink of the first few words of the comment, the full text can be viewed.

**Note:** Users with permission levels below Clinical Level 3 will not be able to save an INR treatment during an Induction protocol. The INR treatment must be referred for authorisation by a Clinical Level 3 user.


- Print the patient dosing diary, or save it to be sent to the patient via fax or email, by clicking the '**Diary**' button.
- Close the patient record by clicking the '**Exit Record**' tab.

#### 16.6.5. Stage 4 - Induction Fast Fennerty-Gedge

**Stage 4** takes place when the patient attends for an INR test on Day 4 of the protocol.

1. Select the patient from the patient search screen, as before.
2. A warning message will be displayed reminding the user that this patient is currently being treated using an Induction protocol. Click '**Confirm**' to continue.



 The patient's dosing method is currently set to : Induction Fast Fennerty Gedge

3. Click on  and then  to display the treatment record.

4. Click .

**Patient information:**

FERRARI, Sophia (Miss), 13-Apr-1977

- ☐ Changed their last prescribed dose ( [25-Apr-2018, 5.0 mg/day](#) )?
- ☐ Missed any warfarin doses in the last 7 days?
- ☐ Changed any medication in the last 7 days?

5. Confirm that the patient is still taking the last warfarin dose which is recorded in the treatment record. Tick the checkbox if the patient is taking a different dose.
6. Confirm that the patient has not missed a warfarin dose since the last clinic attendance. Tick the checkbox if any tablets were missed.
7. Confirm that the patient has not started, stopped, or changed any other medication since the last appointment. Tick the checkbox if they have.

**Enter new INR test information:**

Test Date: 26-Apr-2018

New INR:

Testing Method:

**Options**

Use INR for EQC : ☐ Home Visit: ☐

8. Repeat the process for stages one, two and three:
- Select the '**New INR**' result from the dropdown list.
  - Select a '**Testing method**' from the dropdown list.

**Note:** The user will only need to do this if the patient's testing method for this test is different from the default method displayed in the box.

9. Select a PoCT batch from the dropdown list.

**Note:**

- The user only needs to do this if the patient's testing method is PoCT and your location has more than one PoCT batch activated.
- If your PoCT Lot number has an expired date, a 'PoCT Batch Expired' warning is displayed. You may need to add your current PoCT Lot number to the list available for use within INRstar.



10. Click the '**Use INR**' for '**EQC**' checkbox if you wish to record this test in your External Quality Control (EQC) record log (see section 20.3 for adding an EQC result).
11. Click the '**Home Visit**' checkbox if the test was recorded on a home visit.
12. Click the '**Suggest Warfarin Dose**' button.
13. Review the values and information entered are correct.

Please confirm that the following is correct

Patient: **FERRARI, Sophia (Miss), 13-Apr-1977**

- ✓ is still taking the prescribed dose (25-Apr-2018, 5.0 mg/day)
- ✓ has not missed any warfarin doses in the last 7 days
- ✓ has not changed any medication in the last 7 days

Test Date: **26-Apr-2018**

New INR: **2.2**

**Confirm** **Cancel**

14. Click the '**Confirm**' button.

The dosing suggestion screen will be displayed with the suggested new dose.

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
23-Apr-2018	1.2	10.0	10.0	0	1	1	24-Apr-2018	-	<a href="#">Day 1/4 Induction Fa...</a>	ⓘ
24-Apr-2018	1.6	5.0	5.0	0	1	1	25-Apr-2018	-	<a href="#">Day 2/4 Induction Fa...</a>	ⓘ
25-Apr-2018	1.9	5.0	5.0	0	1	1	26-Apr-2018	-	<a href="#">Day 3/4 Induction Fa...</a>	ⓘ

**Suggested Treatment & Schedule**

26-Apr-2018	2.2	4.0	4.0	-	-	-	-	-	<a href="#">Day 4/4 Induction Fa...</a>	ⓘ
-------------	-----	-----	-----	---	---	---	---	---	---	---

**⚠ The patient has now successfully completed the Fast Induction protocol (Fennerty Gedge) and they will now go on to Manual Dosing until their INR has been stable for at least 7 days, when a maintenance dosing protocol can be selected.**

**Confirm Dose and Select Review Period**

Test date	Dose (mg/day)	Omits (Days)	Review (Days)	Next Test Date
26-Apr-2018	4.0	0 Days	~Select Review Period	27-Apr-2018

**OK** **Cancel**

**Note:** You will now have to confirm the suggested dose and select a '**Review**' period.

**Confirm Dose and Select Review Period**

Test date	Dose (mg/day)	Omits (Days)	Review (Days)	Next Test Date
26-Apr-2018	4.0	0 Days	7 Days	03-May-2018

**OK** **Cancel**

15. Click the **OK** button.





A comment will be added automatically to the treatment to indicate that it is an Induction treatment. By clicking on the hyperlink of the first few words of the comment, the full text can be viewed.

The new schedule will be shown.

**Suggested Treatment & Schedule**

26-Apr-2018	2.2	4.0	4.0	0	7	-	03-May-2018	-	<a href="#">Day 4/4 Induction</a>	
<a href="#">Fa...</a>										

The patient has now successfully completed the Fast Induction protocol (Fennerty Gedge) and they will now go on to Manual Dosing until their INR has been stable for at least 7 days, when a maintenance dosing protocol can be selected.

Suggested

Current

Thursday	take 1 x Blue (3mg), 1 x Brown (1mg) (total 4.0mg)
Friday	take 1 x Blue (3mg), 1 x Brown (1mg) (total 4.0mg)
Saturday	take 1 x Blue (3mg), 1 x Brown (1mg) (total 4.0mg)
Sunday	take 1 x Blue (3mg), 1 x Brown (1mg) (total 4.0mg)
Monday	take 1 x Blue (3mg), 1 x Brown (1mg) (total 4.0mg)
Tuesday	take 1 x Blue (3mg), 1 x Brown (1mg) (total 4.0mg)
Wednesday	take 1 x Blue (3mg), 1 x Brown (1mg) (total 4.0mg)

Treatment Date: 26-Apr-2018    Tablets required for this treatment: 7 x 1mg, 7 x 3mg

Re-Order Schedule    More Schedules

The treatment is currently: **Awaiting completion**

Save    Refer    Override    Edit Comments    Cancel

16. Click the **Save** button.

The patient has now been successfully initiated using the Fennerty-Gedge Fast Induction protocol.

**Note:** Users with permission levels below Clinical Level 3 will not be able to save an INR treatment during an Induction protocol. The INR treatment must be referred for authorisation by a Clinical Level 3 user.

- Print the patient dosing diary, or save it to be sent to the patient via fax or email, by clicking the **Diary** button.
- Close the patient record by clicking the **Exit Record** tab.

## 16.7. Coventry Maintenance

**Only available for patients being treated on warfarin.**

Coventry is the customer preferred dosing maintenance algorithm included in INRstar.

A maintenance dosing algorithm is used to suggest suitable warfarin doses and review periods for patients who are stable and fully established on warfarin treatment.

They are **not suitable** for initiating warfarin for patients who are starting oral AC, treating patients who are not yet sufficiently stable on treatment or treating those on non-warfarin anticoagulation drugs.



Patients should have had at least two in-range INR results with a seven-day review period between tests to be suitable for treating with a maintenance algorithm.

Patients who are starting warfarin should be dosed using an induction protocol or be dosed manually until sufficiently stable to be transferred to a maintenance algorithm for continued treatment.

**Inappropriate use of a maintenance dosing algorithm could lead to significant over-dosing or under-dosing with warfarin, which could cause serious injury or fatality for the patient.**

Firstly, in the patients record click on **'Treatment Plan'** and then on **'Clinical Details'**.

Here you will be able to view the **'Current Treatment Plan'** and underneath that, **'Warfarin Details'**.

In **'Warfarin Details'** you can view the **'Dosing Method'**.

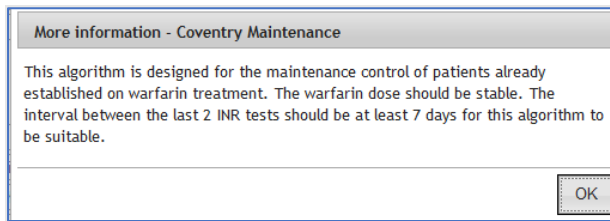
If you wish to change the **'Dosing Method'** click **'Edit Treatment Plan'** situated underneath the **'Warfarin Details'** section to the far bottom right.

The **'Warfarin Details'** can now be edited.

Simply select the maintenance dosing algorithm you wish to change from the **'Dosing Method'** drop down list and click **'Save'** where the **'Edit Treatment Plan'** button was before.



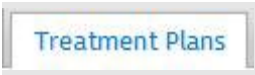

A confirmation message will appear with details of the dosing algorithm and for the user to acknowledge as suitable for use with the patient.



The patient treatment plan is now set to Coventry maintenance.

## 16.8. Hillingdon Maintenance

Developed at the Hillingdon Hospital, Middlesex, this algorithm was the first published warfarin dosing algorithm to be made available in the UK. Like the Coventry algorithm, which superseded it for routine use, it may only be used for warfarin dosing maintenance. It can be useful for the small minority of patients whose INR overreacts to even a small change in Dose<sup>3</sup>.

- In the patient record click on  and then on .

You will be able to view the '**Current Treatment Plan**' and below the '**Warfarin Details**'.

---

<sup>3</sup> Reference: *BMJ* 1984; Vol 289: 422–424



In the '**Warfarin Details**' you can view the '**Dosing Method**' and select '**Hillingdon Maintenance**' from the dropdown list.

Edit Treatment Plan

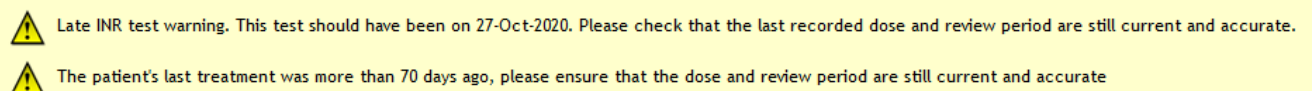
To change the '**Dosing Method**' click the situated below the '**Warfarin Details**' section to the far bottom right.

- Select the maintenance dosing algorithm you wish to change to from the '**Dosing Method**' drop down list and click .

## 16.9. Adding the INR Result for Maintenance and Induction

Select the '**New INR**' result from the drop-down menu.

Any relevant information or warning messages will be displayed below the INR treatment history area. In this example the patient has attended too early, or late for an INR test.

- 
- Late INR test warning. This test should have been on 27-Oct-2020. Please check that the last recorded dose and review period are still current and accurate.
  - The patient's last treatment was more than 70 days ago, please ensure that the dose and review period are still current and accurate

- If the previous INR treatment has a comment, that comment will be displayed just above the steps for a new INR.



Date	INR	Target	Review
17-Sep-2012	1.5	8.2	8.2

Previous treatment comments (17-Sep-2012):

Review in 7 days because of new medication



Select the '**New INR**' from the drop-down:

Previous treatment comments (29-Oct-2020):  
Induction Slow Tait stage 1

Patient information:  
REEECE, Jane (Mrs), 05-Aug-1975  
☐ Changed their last prescribed dose ( 29-Oct-2020, 5.0 mg/day )?  
☐ Missed any warfarin doses in the last 7 days?  
☐ Changed any medication in the last 7 days?

Comments:

Enter new INR test information:  
~Select INR  
0.8  
0.9  
1.0  
1.1  
1.2  
1.3  
1.4  
1.5  
1.6  
1.7  
1.8  
1.9  
2.0  
2.1  
2.2  
2.3  
2.4  
2.5  
2.6  
2.7  
2.8  
2.9  
3.0  
3.1  
3.2  
3.3  
3.4  
3.5

Test Date: 29-Oct-2020  
New INR: 1.9  
Testing Method: POCT  
PoCT Batch: 1.0  
Options  
Use INR for EQC: ☐ Home Visit: ☐

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

Select the '**Testing Method**': POCT or Lab (laboratory).

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
29-Oct-2020	1.1	5.0	5.0	0	4	4	02-Nov-2020	-	Induction Slow Tait...	

Previous treatment comments (29-Oct-2020):  
Induction Slow Tait stage 1

Patient information:  
REEECE, Jane (Mrs), 05-Aug-1975  
☐ Changed their last prescribed dose ( 29-Oct-2020, 5.0 mg/day )?  
☐ Missed any warfarin doses in the last 7 days?  
☐ Changed any medication in the last 7 days?

Comments:

Enter new INR test information:  
Scan this barcode using the Barcode Scanner to quickly search for this patient on the LumiraDx Instrument, so that results can be entered into INRstar automatically.

Test Date: 30-Oct-2020  
New INR: ~Select Method  
Testing Method: POCT  
PoCT Batch: 1.0  
Options  
Use INR for EQC: ☐ Home Visit: ☐

Suggest Warfarin Dose Cancel

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

With PoCT the first data entry will prompt the user to select the correct strip batch number (if more than one batch is in use). Subsequent tests will default to the first chosen batch number until the next login; this can be changed if required.

### Note:

- If patient is recorded in patient management as a self-tester, along with their PoCT batch number, the batch will default to this. A repeat of the PoCT batch selection will then be required for the next patient.



- If your PoCT Lot number has an expired date, a 'PoCT Batch Expired' warning is displayed. You may need to add your current PoCT Lot number to the list available for use within INRstar.

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
29-Oct-2020	1.1	5.0	5.0	0	4	4	02-Nov-2020	-	<a href="#">Induction Slow Tait ...</a>	<a href="#">i</a>

**Previous treatment comments (29-Oct-2020):**

Induction Slow Tait stage 1

**Patient information:**

REEECE, Jane (Mrs), 05-Aug-1975


☐ Changed their last prescribed dose ( [29-Oct-2020, 5.0 mg/day](#) )?

☐ Missed any warfarin doses in the last 7 days?

☐ Changed any medication in the last 7 days?

**Comments:**

**Enter new INR test information:**



Scan this barcode using the [Barcode Scanner](#) to quickly search for this patient on the [LumiraDx Instrument](#), so that results can be entered into INRstar automatically.

Test Date: 30-Oct-2020

New INR: 1.6

Testing Method: PoCT

PoCT Batch: 456

**Options**

Use INR for EQC: ☐ Home Visit: ☐

[Suggest Warfarin Dose](#) [Cancel](#)

Optional recording of the following can be made here: home visit and use for EQC. If self-tester is recorded in the patient management section, an additional tick box is displayed here to identify the patient as a self-tester.

Test Date: 30-Oct-2020

New INR: 1.6

Testing Method: PoCT

PoCT Batch: 456

**Options**

Use INR for EQC: ☒ Home Visit: ☒

[Suggest Warfarin Dose](#) [Cancel](#)

CE

- Click on the '**Suggested Warfarin Dose**' button at the bottom right.
- Confirm that the data entered is correct in the overview screen.



Please confirm that the following is correct

Patient: **ARNOLD, Amy (Mrs), 03-Dec-1955**

- ✓ is still taking the prescribed dose (18-Aug-2020, 2.9 mg/day)
- ✓ has not missed any warfarin doses in the last 7 days
- ✓ has not changed any medication in the last 7 days

Test Date: **30-Oct-2020**

New INR: **1.6**

The new warfarin dosing suggestions will be displayed as suggested treatment and schedule.

30-Oct-2020	1.6	3.1	3.1	0	7	7	06-Nov-2020	-	<a href="#">Add Comment</a>	
-------------	-----	-----	-----	---	---	---	-------------	---	-----------------------------	--

The patient's next INR test will be due on: **Friday 06-November-2020**

**⚠ Low INR warning: Patient may be at increased risk of thromboembolic events until INR is back in-range. Consult clinical lead for advice about the use of LMWH for very low INR if clinically appropriate.**

Suggested	Current
Friday	take 1 x Blue (3mg) (total 3.0mg)
Saturday	take 1 x Blue (3mg) (total 3.0mg)
Sunday	take 1 x Blue (3mg) (total 3.0mg)
Monday	take 1 x Blue (3mg) (total 3.0mg)
Tuesday	take 1 x Blue (3mg) (total 3.0mg)
Wednesday	take 1 x Blue (3mg), 1 x White (½mg) (total 3.5mg)
Thursday	take 1 x Blue (3mg) (total 3.0mg)

Treatment Date: **30-Oct-2020**    Tablets required for this treatment: **1 x 0.5mg, 7 x 3mg**   

The treatment is currently: **Awaiting completion**   

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176

## 16.10. Suggesting Treatment and Schedule

Review the new dosing suggestion.



The screenshot shows the INRstar software interface. At the top, there's a navigation bar with tabs: Home, Patient, Clinics, Reports, Options, and Help. Below this, patient information is displayed: CAVELL, David (Mr), born 02-Oct-1949 (71y 0m), Gender: Male, NHS Number: 543 340 3831, Patient Number: 34234587. The diagnosis is Atrial fibrillation, and the drug is Warfarin with a target INR of 2.5. The treatment plan is set to 'On warfarin from 07-Aug-2017 to present for Atrial fibrillation'. A table of INR treatments shows historical data from 13-Aug-2019 to 18-Aug-2020. Below this, a 'Suggested Treatment & Schedule' section shows a daily dosing schedule of 1 x Pink (5mg) totaling 5.0mg. At the bottom, there are buttons for 'Save', 'Refer', 'Override', 'Skip or Boost', 'Edit Comments', and 'Cancel'. The status indicates 'Awaiting completion'.

- Click **'Save'** if you want to accept the dosing suggestions. Save the treatment.
- Or click **'Skip or Boost'** if required to amend the treatment schedule for up to three days. (Clinical Level 3 users only). See section 16.11.
- Or click **'Refer'** if you need to refer this treatment to another user for authorisation (e.g. if a Clinical Level 1 or 2 user).
- Or click **'Override'** if you wish to change the suggested dose or review period.

**Note:**

- If you are a **'Clinical Level 1'** user, out-of-range INRs will need to be referred – see section 16.13 'Refer Treatment for Authorisation'.
- Only **'Clinical Level 3'** and **'Clinical Lead'** users are permitted to manage referral.

## 16.11. Skip or Boost Functionality

### 16.11.1. Overview

- You can perform a **'Skip or Boost'** on patients treated with warfarin and maintenance dosing method.
- You can **'Skip or Boost'** for up to 3 days.
- Original Schedules and review dates are not reset.





- Allows a temporary adjustment to your patient's dose which can be printed out.
- Recorded in INRstar maintaining a full and complete clinical audit trail.

#### **16.11.2. Clinical Safety**

The Skip or Boost feature cannot be used in the following situations:

- The recommended selected schedule already includes 'Omit Days'.
- The recommended schedule is less than 7 days.
- Cannot be actioned by users with role permissions of less than Clinical Level 3.
- Cannot be used for patients on induction dosing algorithms.

#### **16.11.3. 'Skip or Boost' is:**

- Not enabled for patients using INRstar Engage or any clinical care programmes.
- Only available when adding a new treatment.



#### 16.11.4. How to use Skip or Boost functionality

You can Skip or Boost by clicking on the **'Skip or Boost'** button.

Buttons: Save, Refer, Override, Skip or Boost, Edit Comments, Cancel, Re-Order Schedule, More Schedules.

The drug dosage to be taken for up to the first three days of the schedule can now be adjusted.

Skip or Boost (based on Suggested schedule)			
A Skip or Boost schedule must be a minimum of 7 days. You may edit the first 3 days. The remaining days will become part of the recurring schedule.			
Date	Original Dose (mg/day)	Dose (mg/day)	-/+ 0.5mg
Fri 16-Nov-2018	2.0mg	take 2 x Brown (1mg) (total 2.0mg)	- + Skip
Sat 17-Nov-2018	2.0mg	take 2 x Brown (1mg) (total 2.0mg)	- + Skip
Sun 18-Nov-2018	2.0mg	take 2 x Brown (1mg) (total 2.0mg)	- + Skip
Monday		take 2 x Brown (1mg) (total 2.0mg)	
Tuesday		take 2 x Brown (1mg) (total 2.0mg)	
Wednesday		take 2 x Brown (1mg) (total 2.0mg)	
Thursday		take 2 x Brown (1mg) (total 2.0mg)	

Review (no. of days) 42 Days Next test date 28-Dec-2018

OK Cancel

#### 16.11.5. How to change the Dose

You can change the daily dose using the buttons alongside each of the three days:

Buttons: -, +, Skip

- To **'reduce'** the dose to be taken on any day, use the negative buttons to step.
- To **'increase'** the dose, use the positive buttons to step up.
- To **'Skip'** completely for any day, either use the **'Skip'** button, or reduce the dose to zero using the negative button.
- To cancel any dose changes, use the **'Reset'** button:

Buttons: -, +, Reset

When all the necessary dose changes have been made, use the **'OK'** button to update the schedule.

Buttons: OK, Cancel



You will now see the proposed schedule, with the '**Skip or Boost**' days followed by the regular schedule days.

**Suggested Treatment & Schedule**

16-Nov-2018	4.0	2.0	<del>4.0</del>	0	42	<del>7</del>	28-Dec-2018	-	<a href="#">Add Comment</a>	
-------------	-----	-----	----------------	---	----	--------------	-------------	---	-----------------------------	--

The patient's next INR test will be due on: **Friday 28-December-2018**

**Suggested** | Current

**This Skip or Boost schedule is based on the Suggested schedule**

**Temporary dosing instructions until Friday 16-Nov-2018**

Date	Original Dose (mg/day)	Skip or Boost dose (mg/day)
Fri 16-Nov-2018	2.0mg	take 1 x Brown (1mg), 1 x White (½mg) (total 1.5mg)

**Dosing instructions from Saturday 17-Nov-2018 until next test date**

Day	Dose
Saturday	take 2 x Brown (1mg) (total 2.0mg)
Sunday	take 2 x Brown (1mg) (total 2.0mg)
Monday	take 2 x Brown (1mg) (total 2.0mg)
Tuesday	take 2 x Brown (1mg) (total 2.0mg)
Wednesday	take 2 x Brown (1mg) (total 2.0mg)
Thursday	take 2 x Brown (1mg) (total 2.0mg)
Friday	take 2 x Brown (1mg) (total 2.0mg)

Treatment Date: 16-Nov-2018    Tablets required for this treatment: 1 x 0.5mg, 85 x 1mg    [Re-Order Schedule](#) [More Schedules](#)

The treatment is currently: **Awaiting completion**    [Save](#) [Refer](#) [Override](#) [Skip or Boost](#) [Edit Comments](#) [Cancel](#)

- Click the '**Save**' button and the treatment plan will then be available to print the schedule from the '**Diary**' or '**Summary**' buttons.

Date	Original Dose (mg/day)	Dose (mg/day)	-/+ 0.5mg
Fri 30-Oct-2020	5.0mg	<div>Please select a tablet combination for dose (5.5mg) take 1 x Pink (5mg), ½ x Brown (1mg) (total 5.5mg) take 1 x Pink (5mg), 1 x White (½mg) (total 5.5mg) take 1½ x Blue (3mg), 2 x White (½mg) (total 5.5mg) take 1 x Blue (3mg), 2½ x Brown (1mg) (total 5.5mg) take 1 x Blue (3mg), 2 x Brown (1mg), 1 x White (½mg) (total 5.5mg) take 5½ x Brown (1mg) (total 5.5mg) take 5 x Brown (1mg), 1 x White (½mg) (total 5.5mg) take 1 x Blue (3mg), 5 x White (½mg) (total 5.5mg) take 11 x White (½mg) (total 5.5mg)</div>	<div> - + Reset</div>
Sat 31-Oct-2020	5.0mg		<div>- + Skip</div>
Sun 01-Nov-2020	5.0mg		<div>- + Skip</div>
Monday			
Tuesday		take 1 x Pink (5mg) (total 5.0mg)	
Wednesday		take 1 x Pink (5mg), 1 x Brown (1mg) (total 6.0mg)	
Thursday		take 1 x Pink (5mg) (total 5.0mg)	


**Note:** When using '**Skip or Boost**' INRstar will offer the option of different tablet selections for the user to select from, if appropriate, in a drop-down list.



### 16.11.6. Saving and Printing

After saving the treatment note the warning about the possible number of pages for the diary.

**Printing**

 Please be aware that this treatment may produce a dosing diary using two separate pages. If this is the case, please ensure that the patient receives both sections.

Ok

INRstar will add a comment to the treatment to indicate a '**Skip or Boost**' process was used and detail the temporary schedule and dose to be taken.

**Edit comments**

SkipOrBoost - Temporary schedule - [Fri 16-Nov-2018 take 1 x Brown (1mg), 1 x White (1/2mg)]

Update Cancel

You may add any additional comments relevant to the patient treatment into the free text box when completing the patient record.

Comments added will be printed on the diary and summary outputs.

When the patient attends their next appointment, and a new INR is added 'Skip or Boost' and clinician comments are detailed on the open treatment plan.

**Previous treatment comments (30-Oct-2020):**

SkipOrBoost - Temporary schedule - [Fri 30-Oct-2020 take 1 x Pink (5mg), half x Brown (1mg) (total 5.5mg)]



## 16.12. Bridging

Bridging provides the ability for clinicians to create and manage a bridging record for warfarin only patients who require anticoagulation management whilst they undergo a medical procedure.

**IMPORTANT:** A bridging record is created completely separately and has no effect or impact on patients existing warfarin treatments. INRs recorded within the bridging record are **NOT** included in any TTR calculations.

### 16.12.1. Features and Benefits of Bridging

- Manage the patients dosing with warfarin and LMWH.
- Edit and update bridging records throughout the bridging period.
- Print schedules to give to the patient.
- View full audit trail in INRstar.

For more detailed descriptions of bridging's features and functions see the INRstar Help site <https://help.inrstar.co.uk/>

### 16.12.2. Clinical Safety

- Clinical Level 3 or Location Clinical Lead can create and manage bridging records.
- All other users can view bridging records.
- System alerts to remind clinicians of the importance of bringing patients back into therapeutic range following bridging.
- Change the patient's next test date on completion of bridging.
- **Not** enabled for patients using INRstar Engage or any of the care programmes.
- Only available for use with warfarin treatment plans.



### 16.12.3. Bridging Overview

1. Click on '**Bridging**' tab in the patient treatment plan.

Treatment plan: On warfarin from 04-May-2020 to present for Atrial fibrillation

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
04-May-2020	2.0	1.5		0	30		03-Jun-2020	-	<a href="#">Add Comment</a>	<a href="#">Info</a>

Treatment: New INR Add Historical Delete Latest

View: All Treatments

Appointment: Make Cancel

DNA: Mark

Print: Summary Diary

2. Click the '**New Bridging Record**' button:

INR Treatments Reviews Clinical Details **Bridging**

**Bridging Records**

Bridging is a temporary anticoagulation protocol to cover a patient undergoing a surgical or other procedure. The patients normal anticoagulant will be replaced or combined with LMWH during the bridging period.

This feature is intended for clinicians who are competent and confident in managing patients being Bridged, or under the guidance or advice of a specialist.

Please ensure your patient returns to the correct treatment schedule once bridging is complete.

**New Bridging Record**

3. Complete the details as required in the pre-schedule section, select a procedure date, and click '**Create Schedule**' button.
4. The '**Risk**' drop down provides three options for you to select from, low, medium, and high. This is not a calculated field and is for you to decide, based on the procedure and patient.
  - There is no creatinine clearance calculator on this screen; the value will need to be calculated manually.



INR Treatments | Reviews | Clinical Details | **Bridging**

**Procedure details** \* Required fields

Procedure:  Maximum 50 Characters

Risk:

Treatment type(s):

LMWH:

Weight:  Kg

**Test results**

Creatinine:   $\mu\text{mol/L}$

Creatinine clearance (CrCl):   $\text{mL/min}$

Platelets:   $\times 10^3/\mu\text{L}$

Haemoglobin (Hb):   $\text{g/L}$

**Select procedure date**

Procedure date:

5. Define the number of days you require in each section of the schedule, by adding or deleting days.

**Select procedure date**

Procedure date:

**Bridging schedule**

**Pre-op schedule**

Date	Day	INR	Warfarin (mg)	Dalteparin (IU)	Comments (shown on printout)
<input type="button" value="+ Add a day"/>					
17-May-2020	-3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a> <input type="button" value="- Delete day"/>
18-May-2020	-2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a>
19-May-2020	-1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a>

**Procedure date (plus in-patient days if applicable)**

Date	Day	INR	Warfarin (mg)	Dalteparin (IU)	Comments (shown on printout)
20-May-2020	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a>
<input type="button" value="+ Add a day"/>					

**Post-discharge schedule**

Date	Day	INR	Warfarin (mg)	Dalteparin (IU)	Comments (shown on printout)
21-May-2020	+1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a>
22-May-2020	+2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a>
23-May-2020	+3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a> <input type="button" value="- Delete day"/>
<input type="button" value="+ Add a day"/>					

**Notes (shown on patient's printout)**



6. Add INR test results, doses and any comments in the '**Notes**' field as required:

**Bridging schedule**

**Pre-op schedule**

Date	Day	INR	Warfarin (mg)	Dalteparin (IU)	Comments (shown on printout)
<a href="#">+ Add a day</a>					
17-May-2020	-3	<input checked="" type="checkbox"/> Test due	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+ Add comment</a> <a href="#">Delete day</a>
18-May-2020	-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> 5000 IU Once daily	<a href="#">Take at 6.00...</a>
19-May-2020	-1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> 5000 IU Once daily	<a href="#">+ Add comment</a>

**Procedure date (plus in-patient days if applicable)**

Date	Day	INR	Warfarin (mg)	Dalteparin (IU)	Comments (shown on printout)
<a href="#">+ Add a day</a>					
20-May-2020	0	<input checked="" type="checkbox"/> Test due	<input type="checkbox"/>	<input checked="" type="checkbox"/> 2500 IU Once daily	<a href="#">+ Add comment</a>

**Post-discharge schedule**

Date	Day	INR	Warfarin (mg)	Dalteparin (IU)	Comments (shown on printout)
<a href="#">+ Add a day</a>					
21-May-2020	+1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> 5000 IU Once daily	<a href="#">+ Add comment</a>
22-May-2020	+2	<input type="checkbox"/>	<input checked="" type="checkbox"/> 2.0 mg	<input type="checkbox"/>	<a href="#">+ Add comment</a>
23-May-2020	+3	<input checked="" type="checkbox"/> Test due	<input checked="" type="checkbox"/> 2.0 mg	<input type="checkbox"/>	<a href="#">+ Add comment</a> <a href="#">Delete day</a>

**Notes (shown on patient's printout)**

Save Cancel

7. Click '**Save**':

Save Cancel

8. Print the schedule.

**Note:** The schedule can only be printed if the status is '**Pending**' or '**Active**'.

9. The '**Bridging**' schedule can also be viewed if required.

Start Date	Procedure Date	End Date	Procedure	LMWH	Status	Actions
17-May-2020	20-May-2020	23-May-2020	Hip replacement	Dalteparin	Pending	<a href="#">View</a> <a href="#">Print</a>





### 16.13. Refer Treatment for Authorisation

There may be times when a user needs to refer a patient's treatment to another member of staff with more clinical knowledge and experience and the appropriate clinical permission level in INRstar.

INRstar's referral functionality allows the user treating a patient to send an incomplete treatment to any member of staff with either '**Clinical Level 3**' or '**Clinical Lead**' permission levels within **INRstar**.

All users with these higher-level permissions (Level 3) will receive a message on their home page notifying that a patient has been referred for the treatment to be completed.

You can refer a treatment to another clinical user for advice or to authorise a dosing suggestion:

The patient's next INR test will be due on: **Friday 27-November-2020**

**Suggested** Current

Friday	take 1 x Pink (5mg) (total 5.0mg)
Saturday	take 1 x Pink (5mg) (total 5.0mg)
Sunday	take 1 x Pink (5mg) (total 5.0mg)
Monday	take 1 x Pink (5mg) (total 5.0mg)
Tuesday	take 1 x Pink (5mg) (total 5.0mg)
Wednesday	take 1 x Pink (5mg) (total 5.0mg)
Thursday	take 1 x Pink (5mg) (total 5.0mg)

Treatment Date: 30-Oct-2020    Tablets required for this treatment: 28 x 5mg    [Re-Order Schedule](#)    [More Schedules](#)

The treatment is currently: **Awaiting completion**    [Save](#)    [Refer](#)    [Override](#)    [Skip or Boost](#)    [Edit Comments](#)    [Cancel](#)

- Click on the [Refer](#) button, at bottom right of the new dosing suggestion screen.

The patient record will now close. A message will be sent to the home page of all users who have sufficient clinical permission levels to accept and process a referred treatment.

▶ 1 patient(s) referred to you for further action. [Click to view.](#)

The status of this treatment will be changed from '**Awaiting completion**' to '**Referred, Awaiting Authorisation**' until the referral has been accepted and the treatment has been authorised by the referral clinician. The referred treatment is also visible to all on the messages screen, as a patient with an incomplete treatment.



## 16.14. Accept a Referred Treatment

**Note:** Only 'Clinical Level 3' and 'Clinical Lead' users are permitted to manage, accept, and manage a referral.

If you have the correct clinical permission level, you can accept referrals from other users. This allows a high-level clinical user to give advice on individual patients, override dosing suggestions and/or authorise the treatment. When a referral is made a message will be sent to the home page of all users who have clinical permission level to accept and process a referred treatment.

1. Click on the message to view a list of patients referred for dosing advice and authorisation.

**INRstar**  
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Friday 30-Oct-2020 Dr Lead @ Varley [Log Off](#)

Home Patient Clinics Reports Options Help

Messages Important Information Profile

- 3 urgent notifications from patients using the Engage app. Click to view.
- 1 patient(s) referred to you for further action. Click to view.**
- 83 patient(s) are overdue an INR test (17% of active patients that are tested at this location). Click to view.
- 2 non warfarin patient(s) are overdue a review. Click to view.
- 2 patient(s) with incomplete treatment. Click to view.
- 4 patient(s) either have no diagnosis or no treatment plan. Click to view.

Refresh Messages

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

2. Click on the name of a referred patient to view the patient record.

Messages Important Information Profile

- 3 urgent notifications from patients using the Engage app. Click to view.
- 1 patient(s) referred to you for further action. Click to view.**

Full Name	Born	NHS Number	Referee	A/C Clinician	When	INR
<a href="#">CAVELL, David</a>	02-Oct-1949	543 340 3831	Dr Lead		30-Oct-2020 14:03	3.0

Generated On: 30-Oct-2020 14:05

- 83 patient(s) are overdue an INR test (17% of active patients that are tested at this location). Click to view.
- 2 non warfarin patient(s) are overdue a review. Click to view.
- 2 patient(s) with incomplete treatment. Click to view.
- 4 patient(s) either have no diagnosis or no treatment plan. Click to view.

Refresh Messages

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

3. The treatment record will open with the suggested dosing schedule.



30-Oct-2020	3.0	5.0	5.0	0	28	28	27-Nov-2020	-	<a href="#">Add Comment</a>	
-------------	-----	-----	-----	---	----	----	-------------	---	-----------------------------	--

The patient's next INR test will be due on: **Friday 27-November-2020**

[Suggested](#) [Current](#)

Friday	take 1 x Pink (5mg) (total 5.0mg)
Saturday	take 1 x Pink (5mg) (total 5.0mg)
Sunday	take 1 x Pink (5mg) (total 5.0mg)
Monday	take 1 x Pink (5mg) (total 5.0mg)
Tuesday	take 1 x Pink (5mg) (total 5.0mg)
Wednesday	take 1 x Pink (5mg) (total 5.0mg)
Thursday	take 1 x Pink (5mg) (total 5.0mg)

Treatment Date: 30-Oct-2020      Tablets required for this treatment: 28 x 5mg      [Re-Order Schedule](#)      [More Schedules](#)

The treatment is currently: **Referred, awaiting authorisation**      [Authorise](#)      [Refer](#)      [Override](#)      [Skip or Boost](#)      [Edit Comments](#)      [Withdraw Referral](#)

- Click '**Authorise**' to accept the suggestions and authorise the treatment.
- Click '**Override**' to override the dosing suggestions.
- Click '**Edit comments**' to add comments on the treatment.
- Click '**Withdraw Referral**' to cancel the referral of the treatment.

If the user clicks on the '**Authorise**' button, the patient record will close, and a message will be sent to the home page of all clinical users indicating that the treatment has been authorised and that it is now ready for completion. The message will appear as an incomplete treatment on the home screen.

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Friday 30-Oct-2020 Dr Lead @ Varley [Log Off](#)

[Home](#) [Patient](#) [Clinics](#) [Reports](#) [Options](#) [Help](#)

[Messages](#) [Important Information](#) [Profile](#)

► 3 urgent notifications from patients using the Engage app. [Click to view.](#)

► 83 patient(s) are overdue an INR test (17% of active patients that are tested at this location). [Click to view.](#)

► 2 non warfarin patient(s) are overdue a review. [Click to view.](#)

► 2 patient(s) with incomplete treatment. [Click to view.](#)

► 4 patient(s) either have no diagnosis or no treatment plan. [Click to view.](#)

[Refresh Messages](#)

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195

The referring clinician can then open the patient record to complete the treatment by saving and printing the dosing diary, completing the treatment episode.

The status of this treatment currently will be set to '**Authorised, awaiting completion**' and not completed until the treatment has been saved:

<a href="#">CAVELL, David</a>	02-Oct-1949	543 340 3831		Authorised, awaiting completion
-------------------------------	-------------	--------------	--	---------------------------------



Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
13-Aug-2019	2.5	5.0	5.0	0	56	56	08-Oct-2019	-	<a href="#">Add Comment</a>	<a href="#">Info</a>
21-Oct-2019	2.0	5.0	5.0	0	28	28	18-Nov-2019	-	<a href="#">Low end INR of target...</a>	<a href="#">Info</a>
26-Nov-2019	2.8	5.0	5.0	0	42	42	07-Jan-2020	-	<a href="#">Add Comment</a>	<a href="#">Info</a>
08-Jan-2020	2.7	5.0	5.0	0	56	56	04-Mar-2020	-	<a href="#">Add Comment</a>	<a href="#">Info</a>
10-Mar-2020	2.4	5.0	5.0	0	70	70	19-May-2020	-	<a href="#">Add Comment</a>	<a href="#">Info</a>
03-Jun-2020	2.9	5.0	5.0	0	70	70	12-Aug-2020	-	<a href="#">Add Comment</a>	<a href="#">Info</a>
18-Aug-2020	2.5	5.0	5.0	0	70	70	27-Oct-2020	-	<a href="#">Add Comment</a>	<a href="#">Info</a>

**Suggested Treatment & Schedule**

Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
30-Oct-2020	3.0	5.0	5.0	0	28	28	27-Nov-2020	-	<a href="#">Add Comment</a>	<a href="#">Info</a>

The patient's next INR test will be due on: **Friday 27-November-2020**

**Suggested** | **Current**

Day	Treatment
Friday	take 1 x Pink (5mg) (total 5.0mg)
Saturday	take 1 x Pink (5mg) (total 5.0mg)
Sunday	take 1 x Pink (5mg) (total 5.0mg)
Monday	take 1 x Pink (5mg) (total 5.0mg)
Tuesday	take 1 x Pink (5mg) (total 5.0mg)
Wednesday	take 1 x Pink (5mg) (total 5.0mg)
Thursday	take 1 x Pink (5mg) (total 5.0mg)

Treatment Date: 30-Oct-2020    Tablets required for this treatment: 28 x 5mg    [Re-Order Schedule](#)    [More Schedules](#)

The treatment is currently: **Awaiting completion**    [Save](#)    [Refer](#)    [Override](#)    [Skip or Boost](#)    [Edit Comments](#)    [Cancel](#)

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

When authorised the 'Save' button will be available to Level 1 users to complete the treatment and dosing schedule.

## 16.15. Overriding Dosing Suggestions

**Note:** Only 'Clinical Level 3' and 'Clinical Lead' users are permitted to override dosing suggestions.

Amendments can be made to the warfarin dose, omission days, review period or the next test date.

Click on the 'Override' button on the new 'Suggested Treatment and Schedule' screen, then select your preferred dose, omission days, review period or next test date.

Click 'OK' once you have completed your amendments to the suggested treatment.

## 16.16. Select Alternative Schedule

INRstar will always try to calculate a daily dosing schedule to provide the suggested daily dose of warfarin using the selection of tablet strengths which has been specified for the individual patient.

Occasionally you may wish to use a different dosing schedule from the one suggested.

This may be necessary if:

- The patient prefers to take certain doses on specific days of the week.
- Or INRstar cannot calculate a dosing schedule for a certain dose and review period combinations.



Click on the **‘More Schedules’** button.

**Treatment plan:** On warfarin from 07-Aug-2017 to present for Atrial fibrillation ▾

INR Treatments		Reviews		Clinical Details		Bridging			
Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments
13-Aug-2019	2.5	5.0	5.0	0	56	56	08-Oct-2019	-	<a href="#">Add Comment</a>
21-Oct-2019	2.0	5.0	5.0	0	28	28	18-Nov-2019	-	<a href="#">Low end INR of target...</a>
26-Nov-2019	2.8	5.0	5.0	0	42	42	07-Jan-2020	-	<a href="#">Add Comment</a>
08-Jan-2020	2.7	5.0	5.0	0	56	56	04-Mar-2020	-	<a href="#">Add Comment</a>
10-Mar-2020	2.4	5.0	5.0	0	70	70	19-May-2020	-	<a href="#">Add Comment</a>
03-Jun-2020	2.9	5.0	5.0	0	70	70	12-Aug-2020	-	<a href="#">Add Comment</a>
18-Aug-2020	2.5	5.0	5.0	0	70	70	27-Oct-2020	-	<a href="#">Add Comment</a>

**Suggested Treatment & Schedule**

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments
30-Oct-2020	3.0	5.0	5.0	0	28	28	27-Nov-2020	-	<a href="#">Add Comment</a>

The patient's next INR test will be due on: **Friday 27-November-2020**

**Suggested** **Current**

**⚠ The selected Schedule contains a large number of tablets per day.**

Delivered Dose	Tablets Used	
5.0mg	0.5mg	<a href="#">Use</a>
5.0mg	1mg	<a href="#">Use</a>
5.0mg	5mg	<a href="#">Use</a>
5.0mg	0.5mg, 3mg	<a href="#">Use</a>
5.0mg	1mg, 3mg	<a href="#">Use</a>
5.0mg	0.5mg, 3mg, Split tablets	<a href="#">Use</a>

The treatment is currently: **Awaiting completion**

[Save](#) [Refer](#) [Override](#) [Skip or Boost](#) [Edit Comments](#) [Cancel](#)

A selection of alternative schedules for the suggested dose will be displayed. This allows you to choose between alternative schedules, which provide slightly different doses.

Select your preferred schedule from the list and click the **‘Use’** button.

#### Note:

- Clinical Level 1 users can select schedules with same dose.
- Clinical Level 2 users can select schedules with dosing changes of up to 0.1mg a day.
- Clinical Level 3 and Clinical Lead users can select any alternative schedules.

### 16.17. Saved Treatment, Printing, Faxing or Emailing a Dosing Diary

- **INRstar** enables printing of the patient dosing diary either as a label or on an A4 sheet. This can be given as a schedule to a patient after their new dosing and review period suggestions have been saved in INRstar.
- **INRstar** enables users to decide on your default print preferences.
- **INRstar** also allows Printing Preferences to be set individually within each patient record.

Click **‘Save’** to save the dosing suggestions to the patient record.

Click **‘Diary’** to print a schedule to give to the patient.



Treatment Plans Patient Details Notes Adverse Events Letters Summary Audit Trail Exit Record

Treatment plan: On warfarin from 04-Feb-2014 to present for LV mural thrombus (post MI / LV aneurysm)

INR Treatments Reviews Clinical Details

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments
25-Feb-2014	2.3	2.5		0	14		11-Mar-2014	-	<a href="#">Add Comment</a>
04-Mar-2014	1.6	4.0		0	8		12-Mar-2014 09:15	-	<a href="#">Add Comment</a>

Treatment View Appointment DNA Print

New INR Add Historical Delete Latest All Treatments Make Cancel Mark Summary Diary

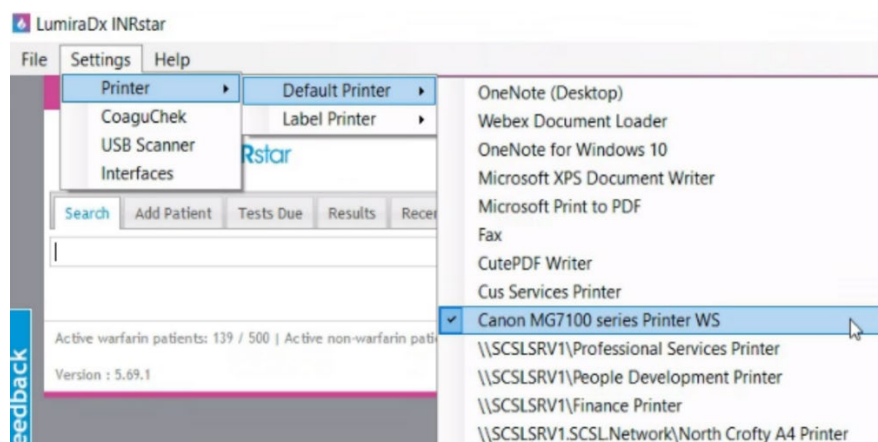
Or click '**Summary**' to print a new patient summary to file in the paper notes. This Doctor Summary Sheet summarises the patient's anticoagulation treatment. It contains sufficient information to allow Manual dosing of the patient if, for some reason, the computer system is unavailable.

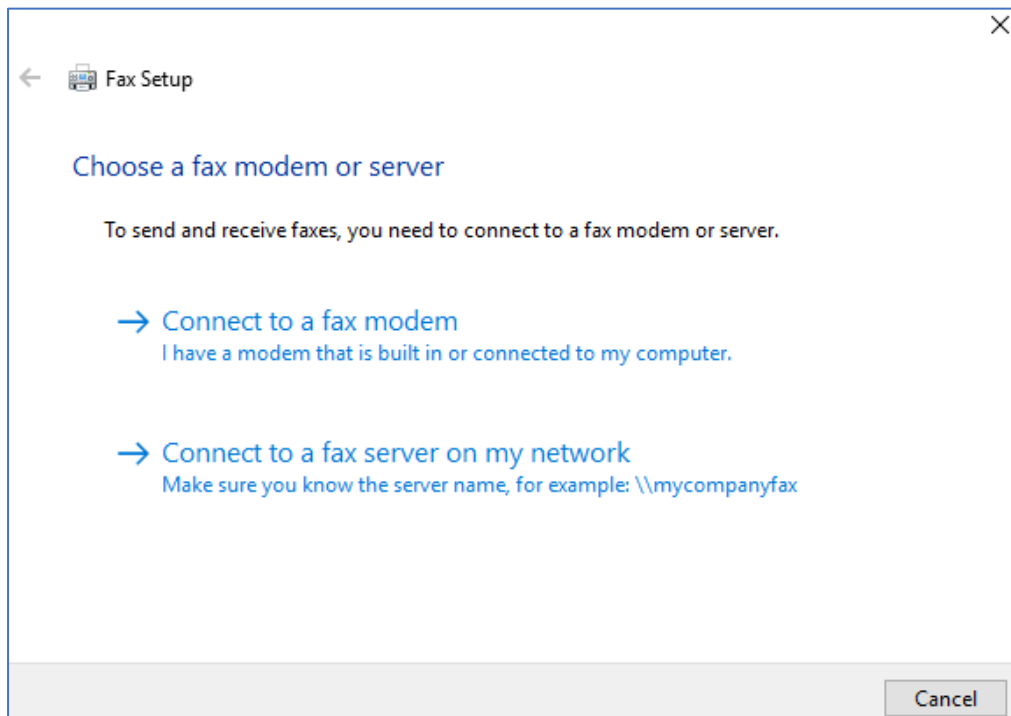


The printed dosing diary can be produced with or without tablet graphics. This printed version can be faxed to patient if required.

The diary can also be saved as a portable document format (PDF) file, which can then be emailed/faxed to the patient.

If the user of INRstar has a modem attached to their computer, then the printer configuration in the menu can be set to fax.





If the patient has been enrolled in the ‘**Digital Dosing Diary**’ self-care programme, then the diary does not need to be printed. The patient will be notified automatically by email of their new schedule, which they can view online or in the INRstar Engage smartphone app.

If the patient either does not acknowledge receipt of their dosing schedule within 3 hours or indicates they do not understand the schedule, the clinician is notified with a warning message on the home page of INRstar.

### **16.18. DNA (Did Not Attend)**

The DNA (did not attend) management functionality allows you to mark and record when patients do not keep their appointment for an INR test.

Marking tests using the DNA management functionality ensures that your patient records are kept up to date, and may assist you in managing local protocols for DNA management.

It is not essential for you to make use of the DNA management functionality, but in most scenarios users will appreciate the benefits it brings in terms of increased awareness of DNAs, clearer record keeping and improved patient safety.





### 16.18.1. Mark and Unmark DNA (Did Not Attend)

To find all patients who have Overdue INR test dates, open the **'Messages'** tab on the user's **'Home Page'**.

**INRstar** safe, effective anticoagulation support

Tuesday 12-Mar-2019 Dr A N other @ INPS Medical Centre [Log Off]

Home Patient Clinics Reports Options Help

Messages Important Information Profile

▼ 5 patient(s) are overdue an INR test (88% of active patients that are tested at this location). Click to view.

Full Name	Born	Phone Number	NHS Number	Patient Number	Last INR	Test Due Date	Days Overdue
<a href="#">HUDSON, Edna</a>	06-Oct-1924	n/a	109 764 6432	None	2.5	03-Jan-2019	68
<a href="#">SMITH, James</a>	04-Oct-2005		996 855 8699	None	2.4	03-Jan-2019	68
<a href="#">WOLSLEY, Ulysses</a>	23-Feb-1934	n/a	None	3335	2.3	14-Jan-2019	57
<a href="#">BULMERS, Cynthia</a>	03-Jun-1977		879 655 6978	Bl01	2.0	12-Feb-2019	28
<a href="#">GREEN, Theresa</a>	14-Jun-1954	01209 710999	468 099 0864	None	2.3	14-Feb-2019	26

Generated On: 12-Mar-2019 14:54

Print Letters Print Report

Expand the list and then select the patient concerned.

**BULMERS, Cynthia (Miss)** Active patient  
 Born: 03-Jun-1977 (41y 9m) Gender: Female  
 NHS Number: 879 655 6978 Patient Number: Bl01

Address: The White Dog Diagnosis: Antiphospholipid syndrome Drug: Warfarin Target INR: 2.4 End Date: Indefinite TTR: 60.1%

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: On warfarin from 30-May-2013 to present for Antiphospholipid syndrome

**INR Treatments** Reviews Clinical Details

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
03-Jun-2013	2.7	3.4		0	7		10-Jun-2013	-	<a href="#">Add Comment</a>	<a href="#">i</a>
04-Jun-2013	1.8	4.8	4.0	0	8	7	12-Jun-2013	-	<a href="#">Add Comment</a>	<a href="#">i</a>
21-Dec-2018	2.0	4.8		0	14		04-Jan-2019	-	<a href="#">Add Comment</a>	<a href="#">i</a>
04-Jan-2019	2.4	4.8	4.8	0	28	28	01-Feb-2019	-	<a href="#">Add Comment</a>	<a href="#">i</a>
29-Jan-2019	1.4	4.8	6.3	0	7	7	05-Feb-2019	-	<a href="#">SkipOrBoost - Tempor...</a>	<a href="#">i</a>
05-Feb-2019	2.0	4.8		0	7		12-Feb-2019	-	<a href="#">Add Comment</a>	<a href="#">i</a>

Treatment View Appointment DNA Print

New INR Add Historical Delete Latest All Treatments Make Cancel Mark Summary Diary

On the **'INR Treatments'** screen click on **'Mark'** to add a **'DNA'**.

#### Please Note:

- You can only add a 'Mark' to a missed next test date associated with the patient's latest treatment.
- You cannot mark 'DNA' on any test date that is in the future.





INR Treatments										
Reviews			Clinical Details							
Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
03-Jun-2013	2.7	3.4		0	7		10-Jun-2013	-	<a href="#">Add Comment</a>	
04-Jun-2013	1.8	4.8	4.8	0	8	7	12-Jun-2013	-	<a href="#">Add Comment</a>	
21-Dec-2018	2.0	4.8		0	14		04-Jan-2019	-	<a href="#">Add Comment</a>	
04-Jan-2019	2.4	4.8	4.8	0	28	28	01-Feb-2019	-	<a href="#">Add Comment</a>	
29-Jan-2019	1.4	4.8	6.3	0	7	7	05-Feb-2019	-	<a href="#">SkipOrBoost - Tempor...</a>	
05-Feb-2019	2.0	4.8		0	7		12-Feb-2019	1	<a href="#">Add Comment</a>	

Treatment

New INRAdd HistoricalDelete Latest

View

All Treatments

Appointment

MakeCancel

DNA

Unmark

Print

SummaryDiary

To undo these changes click on **‘Unmark’** to remove a **‘DNA’**.

**Please Note:** you can only **‘Unmark’** a marked missed next test date associated with the patient’s latest marked treatment.

## DNA Audit

In the **‘Audit Trail’** tab the patient’s status will now have **‘DNA’** added.

### 16.18.2. Mark a Repeatedly Missed Next Test Date

If a next test date has been unattended on more than one occasion you can add multiple marks to the **‘DNA’** column.

To do so click the **‘Mark’** button in the **‘Treatment Plans’** / **‘INR Treatments’** tab.

INR Treatments										
Reviews			Clinical Details							
Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments	Info
03-Jun-2013	2.7	3.4		0	7		10-Jun-2013	-	<a href="#">Add Comment</a>	
04-Jun-2013	1.8	4.8	4.8	0	8	7	12-Jun-2013	-	<a href="#">Add Comment</a>	
21-Dec-2018	2.0	4.8		0	14		04-Jan-2019	-	<a href="#">Add Comment</a>	
04-Jan-2019	2.4	4.8	4.8	0	28	28	01-Feb-2019	-	<a href="#">Add Comment</a>	
29-Jan-2019	1.4	4.8	6.3	0	7	7	05-Feb-2019	-	<a href="#">SkipOrBoost - Tempor...</a>	
05-Feb-2019	2.0	4.8		0	7		12-Feb-2019	1	<a href="#">Add Comment</a>	

Treatment

New INRAdd HistoricalDelete Latest

View

All Treatments

Appointment

MakeCancel

DNA

Unmark

Print

SummaryDiary

**Please Note:** if the **‘Next Test Date’** is not the most recent unattended test date the **‘Mark’** button will show as **‘Unmark’** and you won’t be able to add an additional **‘Mark’** to the **‘DNA’** column.



## 16.19. Deleting a Treatment

It may be necessary occasionally to delete a treatment that has already been saved to a patient's clinical record, for example where there has been an incorrectly entered date of INR test, INR result etc.

**Note:** Because of its potential clinical significance, deletion of a treatment is restricted to users with Clinical Level 3 permission levels and is limited to the last recorded treatment only.

### 16.19.1. To Delete a Treatment

1. Go to the patient's record where you would like to delete a treatment.
2. Click **Treatment Plans** and then **INR Treatments** to display the treatment history.

**Treatment Plans** Patient Details Notes Adverse Events Letters Summary Audit Trail Exit Record

**Treatment plan:** On warfarin from 04-Feb-2014 to present for LV mural thrombus (post MI / LV aneurysm) ▼


**INR Treatments** Reviews Clinical Details

Test Date	INR	Dose (mg/day)	Suggested Dose (mg/day)	Omits (Days)	Review (Days)	Suggested Review (Days)	Next Test Date	DNA	Comments
25-Feb-2014	2.3	2.5		0	14		11-Mar-2014	-	<a href="#">Add Comment</a>
04-Mar-2014	1.6	4.0		0	8		12-Mar-2014 09:15	-	<a href="#">Add Comment</a>

**Treatment** View Appointment DNA Print

New INR Add Historical Delete Latest All Treatments Make Cancel Mark Summary Diary

3. At the bottom of the page under **Treatment**, click **Delete Latest**.
4. If the patient is using the PST Care Programme and has already taken their Warfarin dose for today, a warning message will be shown:

 INRstar will not send another warfarin dosing instruction to this patient for today because they have confirmed that they have already taken their warfarin dose today. Please discuss with the patient directly if you want to give another dose today.

Click the '**Confirm**' button to continue.

5. Confirm the deletion by clicking the '**Confirm**' button on the confirmation dialogue. Click '**Cancel**' if you do not wish to delete the treatment.

**Confirmation Required**

Please confirm you want to delete the treatment added on the 12-Oct-2011 ?

Confirm Cancel

The last recorded treatment will now be deleted and you will be returned to the patient's treatment record screen.



## 17. Clinical Reviews

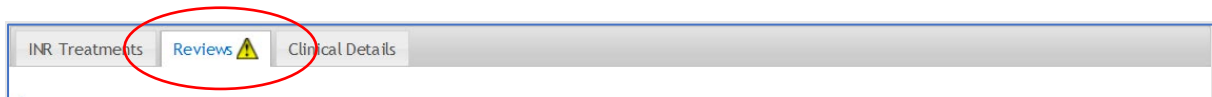
National experts and guidance recommend that any patient managed on AC therapy should have an annual review to assess the risks and benefits of continued AC treatment in that patient.

### 17.1. Adding a Review

Locate a patient needing a review via the patient search area, or by running the report 'Patients Overdue an Annual Warfarin Review' in the Reports section of INRstar (see section 21 Reports).

17.1.1.

1. Select the '**Treatment Plans**' tab on the patient record.
2. Select the '**Reviews**' tab. A yellow triangle with an exclamation mark indicates a review is due.



A summary of any existing reviews will be displayed if available.

This patient is overdue for a review.

Next review

Next review date: 04-Apr-2020

Edit

Showing 1 - 2 of 2

Review Date	Review Type	Notes	Adherence	Action
04-Apr-2019	Face-to-face	None	✓	<a href="#">View</a>
01-Apr-2019	Face-to-face	None	✓	<a href="#">View</a>

Showing 1 - 2 of 2

Appointment Review

Make Cancel New Review

3. Click on the '**New Review**' button.



## 17.2. Adding a Warfarin Review

The warfarin clinical review entry screen will be displayed. Confirm that the correct review date is shown, or change it using the calendar icon.

INR Treatments | Reviews | Clinical Details

**Summary**

Review date: 22-Mar-2018

**INR control**

Calculated at date of last INR result

12 Month TTR: 86.8 %  
All Time TTR: 92.7 %  
Number of treatments (Last 12 Months): 0  
Average review period (Last 12 Months): 0 days

**Adherence**

Unknown ☒  
Frequently misses doses ☐  
Occasionally misses doses ☐  
Never or rarely misses doses ☐

**Previous adverse events**

None Recorded

**Risk assessment**

CHADS2-VASc: Unknown  
HAS-BLED: Unknown

**Clinical review notes**

**Next review**

Next Review Date: 22-Mar-2019

Save Cancel

On this screen you can review the display of AC control data as follows:

- Time in therapeutic range (TTR, 12 months and All Time).
- Number of tests.
- Average review period.
- Assessment of patient adherence and compliance.

**Adherence**

Unknown ☐  
Frequently misses doses ☐  
Occasionally misses doses ☐  
Never or rarely misses doses ☒

You can enter details of:

- **‘Adherence’**: your assessment of the patient’s compliance with treatment.



- **'Risk Assessment'**: document a CHADS2, CHADS2-VASc and HAS-BLED risk score if appropriate. These scores are used commonly to assess a patient's thromboembolic and bleeding risks to help identify them as potentially benefiting from AC treatment.

**Note:** A link to a calculator tool is available:

Risk assessment

CHADS2-VASc: Unknown [suggested calculator tool](#)

HAS-BLED: Unknown [suggested calculator tool](#)

- Any relevant comments.
- A date for the next clinical review. Automatically defaults to the next annual review date, but can be changed using the calendar icon.

Clinical review notes

Next review

Next Review Date:

Save Cancel

- Click **'Save'** when you have completed the review.

**Note:**

- The review can be re-opened, and the comments edited, after saving by clicking on **'View'**.
- The review cannot be deleted once saved.

Review Date	Review Type	Notes	Adherence	Action
17-Sep-2020	Face-to-face	TTR relevance to outcomes discussed with patient. ...	✓	<a href="#">View</a>

### 17.3. Adding a DOAC or LMWH Therapy Review

To view a patient on DOAC or LMWH therapy either:

- Select the required patient in the **'Non-Warfarin Patient(s) overdue reviews'** section of the **'Messages'** tab.

Messages Important Information Profile

3 urgent notifications from patients using the Engage app. Click to view.

83 patient(s) are overdue an INR test (17% of active patients that are tested at this location). Click to view.

2 non warfarin patient(s) are overdue a review. Click to view.

1 patient(s) with incomplete treatment. Click to view.

4 patient(s) either have no diagnosis or no treatment plan. Click to view.

Refresh Messages



- Or search and select patient.

From the patient record:

- Select the '**Treatment Plans**' tab.
- Select the '**Reviews**' tab.

A summary of any existing reviews will be displayed if available.

- Click the '**New Review**' button.
- The clinical '**Review**' screen will be displayed.

On this screen you can review the AC data.

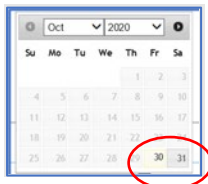
You can enter the following details:

- Your assessment of the patient's compliance with their treatment.
- Assessed risk scores, e.g. CHADS2-VASc, etc, used commonly to assess a patient's thromboembolic and bleeding risks to help identify them as potentially benefiting from AC treatment.



- The specific measurements that help inform the future anticoagulant selection and dose: weight, creatinine, (creatinine clearance automatically calculated with the Cockcroft-Gault formula), ALT and Haemoglobin (HB).
- The dose selection for the chosen anticoagulant and a date for the next clinical review.
- Any relevant comments. Free text comments to be filed back to the clinical system.

Confirm treatment '**Review Date**' from the calendar icon.

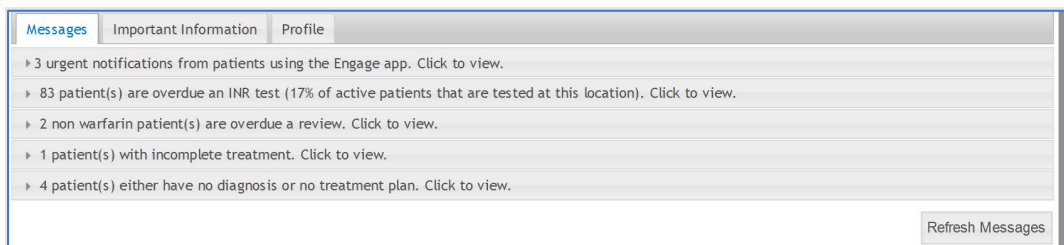


Click '**Save**' when you have completed the review, or '**Cancel**' if you do not want the document to be saved.

#### 17.4. Adding an Acenocoumarol Review

To view a patient on Acenocoumarol therapy either:

- Select the required patient in the '**non-warfarin patient(s) overdue reviews**' section of the '**Messages**' tab.



- Or search and select the patient.

From the patient record:

- Select the '**Treatment Plans**' tab.
- Select the '**Reviews**' tab.

A summary of any existing reviews will be displayed if available.



**⚠ This patient is overdue for a review.**

**Next review**  
Next review date: 12-Nov-2020  
[Edit](#)

Review Date	Review Type	Notes	Adherence	Dose	INR	Action
15-Oct-2020	Face-to-face	None	Unknown	2.0mg - Daily	2.3	<a href="#">View</a>
17-Sep-2020	Face-to-face	None	✓	2.0mg - Daily	2.5	<a href="#">View</a>
19-Aug-2020	Face-to-face	None	✓	2.0mg - Daily	2.3	<a href="#">View</a>
26-May-2020	Face-to-face	None	✓	2.2mg - Daily	2.5	<a href="#">View</a>
08-Jan-2020	Face-to-face	None	Unknown	2.0mg - Daily	2.4	<a href="#">View</a>
06-Aug-2019	Face-to-face	INR in target range 2.4	Unknown	2.0mg - Daily	2.4	<a href="#">View</a>

Showing 1 - 6 of 6

**Appointment** **Review**  
[Make](#) [Cancel](#) [New Review](#)

- Click the 'New Review' button.

The clinical 'Review' screen will be displayed.

**LOVE, Judy (Mrs)** **Active patient**  
Born: 06-Sep-1944 (76y 2m) Gender: Female NHS Number: 494 226 9946 Patient Number: 267511  
Address: Little Owl Cottage L... Diagnosis: Atrial fibrillation Drug: Acenocoumarol End Date: Indefinite

**Treatment Plans** Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

**Treatment plans:** On acenocoumarol from 27-Oct-2020 to present for Atrial fibrillation

**Reviews** Clinical Details

**Summary**  
Review date: 02-Nov-2020

**Adherence**  
☒ Unknown  
☐ Frequently misses doses  
☐ Occasionally misses doses  
☐ Never or rarely misses doses

**Previous adverse events**  
None Recorded

**Risk assessment**  
CHA2DS2-VASc: 4 HAS-BLED: 2  
[suggested calculator tool](#) [suggested calculator tool](#)

**Test results**  
INR Result: 2.4  
Target INR: 2.5

**Dosing**  
INRstar does not currently suggest doses for acenocoumarol. The appropriate dose must be selected manually.  
Dose: 2 mg - Daily (2.0mg - Daily)

**Clinical review notes**  
INR in range to continue on 2mg daily and review in 4 weeks.

**Next review**  
Next Review Date: 30-Nov-2020  
[Save](#) [Cancel](#)

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version: 5.64.0





You can enter the following details:

- **'Adherence'** - An assessment of the patient's compliance with their treatment.
  - If this is an initiation you may need to tick the **'Unknown'** box.
  - Future reviews will allow you to record the patients level of compliance and adherence to the medication schedule.
- **'Risk assessment'** - An updated CHADS<sub>2</sub>, CHADS<sub>2</sub>-VASc and HAS-BLED risk score, used commonly to assess a patient's thromboembolic and bleeding risks to help identify them as potentially benefiting from AC treatment.
- **'Adverse Events'** - If previously recorded.
- **'Test results'** - INR result against target INR.
- **'Dosing'** - Select the required dose from the drop-down list.

**Note:** INRstar does not currently suggest doses for Acenocoumarol.

The appropriate dose must be selected manually from the list available.

- **'Clinical review notes'** - Free text comments to be filed back to the clinical system.
- **'Next review date'** - Select a date for next planned review from the calendar.

Click **'Save'**, or **'Cancel'** if you do not want the document to be saved.

LOVE, Judy (Mrs)  
Born: 06-Sep-1944 (76y 2m) Gender: Female  
NHS Number: 494 226 9946 Patient Number: 267511  
Address: Little Owl Cottage L...  
Diagnosis: Atrial fibrillation Drug: Acenocoumarol End Date: Indefinite

Treatment Plans Demographics Patient Management Notes Adverse Events Letters Summary Audit Trail Self-Care Exit

Treatment plan: On acenocoumarol from 27-Oct-2020 to present for Atrial fibrillation

Reviews Clinical Details

Next review  
Next review date: 30-Nov-2020 [Edit]

Review Date	Review Type	Notes	Adherence	Dose	INR	Action
02-Nov-2020	Face-to-face	INR in range to continue on 2mg daily and review i...	Unknown	2.0mg - Daily	2.4	[View]

Showing 1 - 1 of 1

Showing 1 - 1 of 1

[Appointment Make Cancel] [Review New Review]

The **'Review'** record is now complete. An overview of the Acenocoumarol review can be seen on the main screen and viewed at any time.

Showing 1 - 6 of 10 first | prev | next | last

Incomplete reviews

This patient currently has no incomplete reviews

[Appointment Make Cancel] [Review New Review]



Where the location's database has been set up to use the Clinics functionality, an appointment can be made from this section by clicking on **'Make'** in the **'Appointment'** box.

The date of the review can be edited in the **'Next Review'** box.

## 17.5. Deleting a Warfarin Review

In the patients record click on the Reviews tab



Any reviews that have been created are displayed within the Review Summary table.

The screenshot shows the 'Reviews' tab selected. At the top, there's a 'Next review' section with 'Next review date: 01-Jan-2024' and an 'Edit' button. Below this is a table with the following data:

Review Date	Review Type	Notes	Adherence	Action
01-Jan-2023	Face-to-face	None	✓	<a href="#">View</a>

Below the table, there are two sections: 'Appointment' with 'Make' and 'Cancel' buttons, and 'Review' with 'New Review' and 'Delete Latest' buttons. The 'Delete Latest' button is highlighted in blue.

Clicking the **Delete Latest** button you can delete the most recently completed review shown in the list, providing that you are one of the following users within INRstar.

- Clinical 1
- Clinical 2
- Clinical 3
- Location Clinical Lead

You will not be able to delete a review if;

- You are not one of the users listed above
- The patient status is Deactivated
- You are accessing the patient record via the External Patient Lookup feature
- The treatment plan has been completed

You can only delete one review at a time and that will always be the most recent one displayed. If the patient has multiple pages of reviews the Delete Latest button will only be enabled on the screen displaying the latest Review.

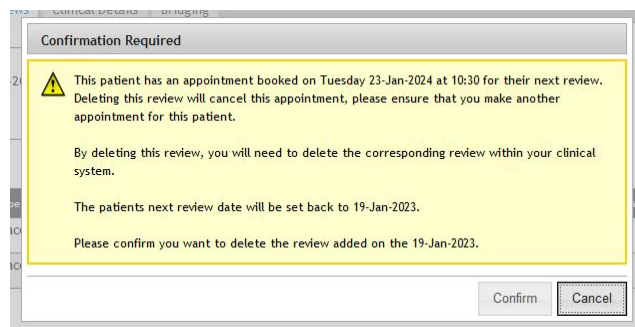


Deleted reviews are **NOT** filed back to any clinical system so any changes will need to be made manually, this will appear on a warning message to advise you.

If you use the INRstar clinics feature any associated appointment for the deleted review will also be deleted.

When a review is deleted the Next Review Date will change to that of the Date of the Review that you deleted. If this date is in the past it will appear on the Overdue Review notifications on the Home page.

Any of the above scenarios will display a warning message to you prior to you confirming the action. An example of how that will look is shown below, note this shows all messages where in some cases you may only see one or two.



This process will be audited and will display as follows;

Date Time	Action	Patient Name	More Information	User
19-Jan-2023 11:07:38	Changed Next Review Date - Face-to-Face.	Wonderful WARFARIN	Appointment record [19-Jan-2023] was added. Status set to [Booked], Date set to [19-Jan-2023], DNA set to [False], NextDate record [Warfarin Review] was updated. Next Review Date changed from [23-Jan-2024] to [19-Jan-2023], Appointment record [23-Jan-2024] was updated. Status changed from [Booked] to [Cancelled], Reason set to [Moved], Consultation record was updated. Review Date changed from [19-Jan-2024] to [19-Jan-2023], TreatmentPlan record [01-Jan-2023] was updated.	pauld@tpp
19-Jan-2023 11:07:38	Review dated 19-01-2023 deleted.	Wonderful WARFARIN		pauld@tpp
19-Jan-2023 11:06:32	Booked Review Appointment	Wonderful WARFARIN	ClinicToAppointment record [23-Jan-2024] was added. Clinic name set to [test clinic], Start date set to [23-Jan-2024], Appointment record [23-Jan-2024] was added. Status set to [Booked], Date set to [23-Jan-2024], DNA set to [False], NextDate record [Warfarin Review] was updated. Next Review Date changed from [19-Jan-2024] to [23-Jan-2024], Appointment record [19-Jan-2024] was updated. Status changed from [Booked] to [Cancelled], Reason set to [Moved].	pauld@tpp
19-Jan-2023 11:06:16	Fileback to the Clinical System	Wonderful WARFARIN		pauld@tpp

The above image shows, from the bottom up;

- the creation of a review and that it was filed back to the clinical system.
- the review was deleted
- the Next Review Date was changed to that of the review date of the one deleted.



## 17.6. Deleting a Non Warfarin Review

In the patients record click on



Any reviews that have been created are displayed within the Review Summary table.

Clicking the **Delete Latest** button you can delete the most recently completed review shown in the list, providing that you are one of the following users within INRstar.

- Clinical 2
- Clinical 3
- Location Clinical Lead

You will not be able to delete a review if;

- You are not one of the users listed above
- The patient status is Deactivated
- Accessing the patient record via the External Patient Lookup feature
- If the treatment plan has been completed

You can only delete one review at a time and that will always be the most recent one displayed. If the patient has multiple pages of reviews the Delete Latest button will only be enabled on the screen displaying the latest Review.

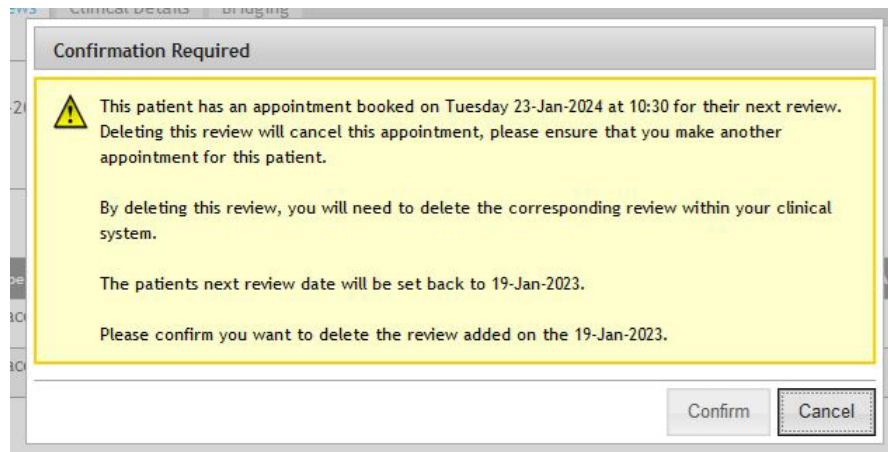
Deleted reviews are **NOT** filed back to any clinical system so any changes will need to be made manually, this will appear on a warning message to advise you.

If you use the INRstar clinics feature any associated appointment for the deleted review will also be deleted.

When a review is deleted the Next Review Date will change to that of the Date of the Review that you deleted. If this date is in the past it will appear on the Overdue Review notifications on the Home page.



Any of the above scenarios will display a warning message to you prior to you confirming the action. An example of how that will look is shown below, note this shows all messages where in some cases you may only see one or two.



This process will be audited and will display as follows;

Date Time	Action	Patient Name	More Information	User
19-Jan-2023 11:07:38	Changed Next Review Date - Face-to-face.	Wonderful WARFARIN	Appointment record [19-Jan-2023] was added. Status set to [Booked], Date set to [19-Jan-2023], DNA set to [False], NextDate record [Warfarin Review] was updated. Next Review Date changed from [23-Jan-2024] to [19-Jan-2023], Appointment record [23-Jan-2024] was updated. Status changed from [Booked] to [Cancelled], Reason set to [Moved], Consultation record was updated. Review Date changed from [19-Jan-2024] to [19-Jan-2023], TreatmentPlan record [01-Jan-2023] was updated.	pauld@tpp
19-Jan-2023 11:07:38	Review dated 19-01-2023 deleted.	Wonderful WARFARIN		pauld@tpp
19-Jan-2023 11:06:32	Booked Review Appointment	Wonderful WARFARIN	ClinicToAppointment record [23-Jan-2024] was added. Clinic name set to [test clinic1], Start date set to [23-Jan-2024], Appointment record [23-Jan-2024] was added. Status set to [Booked], Date set to [23-Jan-2024], DNA set to [False], NextDate record [Warfarin Review] was updated. Next Review Date changed from [19-Jan-2024] to [23-Jan-2024], Appointment record [19-Jan-2024] was updated. Status changed from [Booked] to [Cancelled], Reason set to [Moved].	pauld@tpp
19-Jan-2023 11:06:16	Fileback to the Clinical System	Wonderful WARFARIN		pauld@tpp

The above image shows, from the bottom up;

- the creation of a review and that it was filed back to the clinical system.
- the review was deleted
- the Next Review Date was changed to that of the review date of the one deleted.



## 18. Managing Patients in INRstar Engage

### 18.1. Digital Dosing Diary (DDD)

This gives your patients digital access to their current dosing schedule via the INRstar Engage app or website. As their latest treatment record is saved in INRstar, the new schedule is seamlessly transmitted to INRstar Engage and is instantly available to the patient.

INRstar Engage contains reminders of their daily dose and of their new INR test date.

The programme also provides comprehensive educational videos, available at any time, to help your patients learn more about warfarin and their anticoagulation therapy.

Topics include:

- Welcome to the Digital Dosing Diary
- Understanding your INR
- All about warfarin
- Diet and Alcohol
- Symptoms of bleeding
- Symptoms of clotting
- Taking other Medication

The **'Digital Dosing Diary'** is an electronic form of the traditional printed tablet schedule. This is the list of daily tablets they need to take for their AC and is known in INRstar as the **'Diary'**.

The INRstar Engage application, provided by inVita Intelligence, can be accessed using a smart phone, tablet device, laptop, or desktop computer. It consists of a series of simple instructions (known as 'tasks') for the patient to follow.

Through INRstar Engage and the seamless integration with INRstar, you will know if your patient has received and understands their schedule, so you can be confident your care team is providing the best possible support.

DDD is easy to set up, following simple steps to enrol your patient, so they can get started on learning more about their AC therapy.

### 18.2. Step 1 - Discuss Digital Dosing with a Patient

Select the correct patient record in INRstar and click on the **'Self-Care'** tab where you will find information about INRstar Engage and the **'DDD'**. Discuss **'DDD'** with your patients including how it can help them understand their AC therapy better whilst staying in touch with their care team.



<b>INRstar</b> safe, effective anticoagulation support		Tuesday 29-May-2018 MARYAM MAYA @ Showme Surgery <a href="#">Log Off</a>				
Home		Patient	Clinics	Reports	Options	Help
<b>JONES, Summer (Mrs)</b> <span style="float: right;">Active patient</span>						
Born: 27-Aug-1944 (73y 9m) Gender: Female		NHS Number: 752 744 7257 Patient Number: 530645				
Address: 45 High Street		Diagnosis: Pulmonary embolus (permanent r...		Drug: Warfarin Target INR: 2.5 End Date: Indefinite TTR: N/A		
Treatment Plans	Demographics	Patient Management	Notes	Adverse Events	Letters	Summary
Audit Trail	Self-Care	Exit				

### 18.3. Step 2 - Confirm Patient's Details

You will need to ensure the patient has access to a smart phone, tablet device, laptop or desktop computer that is connected to their email account.

County:	Cornwall
Postcode:	
Home Tel:	01555 667788
Mobile:	07111 222333
Email Address:	some.one@lumiradx.com

- Confirm the patient's demographics in INRstar contain either a home or mobile phone number and a valid email address.

### 18.4. Step 3 - Enrol Patient

Enrol the patient in the appropriate digital programme, '**Digital Dosing Diary**'.

<p><b>Digital dosing diary</b></p> <p>(available for patients on Warfarin)</p> <p>This programme gives the patients digital access to their current dosing schedule via the <a href="#">engage</a> app. It helps them to learn more about warfarin and their anticoagulation therapy with comprehensive educational videos available at any time. The programme also reminds them of their daily dose and of their new INR test date.</p> <p><a href="#">Find out more here</a></p> <p><b>Enrol patient</b></p>
---

It is important to note that until the patient confirms they are ready to use the DDD, they will not receive their tablet schedule via INRstar Engage on their electronic device.

On the '**Self-Care**' page, click the '**Enrol Patient**' button in the '**Digital dosing diary**' area.

This will display the first stage of the process.





**Enrol the patient into the digital dosing diary**

Please confirm that the patient's contact details are correct. When you click on the 'Send Email' button, the patient will be enrolled and will receive an email on how to get started.

Patient name: JONES, Courtney (Mr)  
Patient phone number: 01101572540  
Patient mobile number: 07415249893  
Patient email address: some.email@hotmail.com

[Edit contact details](#)

☐ I confirm that the patient has consented to be contacted by LumiraDx Care Solutions UK Ltd for the purpose of being provided with further information regarding the digital dosing diary programme.

[Send Email](#)

[Patient confirmation](#)  
[Remove the patient from this programme](#)

### Check with the patient that the email address displayed is correct.

Tick the check box alongside the 'I confirm that patient has given consent to be contacted by inVita intelligence Limited for the purpose of being provided with further information regarding the digital dosing diary' text, then click on the **'Send email'** button.

[Edit contact details](#)

☒ I confirm that the patient has consented to be contacted by LumiraDx Care Solutions UK Ltd for the purpose of being provided with further information regarding the digital dosing diary programme.

[Send Email](#)

The patient will receive a welcome email, which will explain how to download, or access INRstar Engage and how to register.

When the patient has registered and logged in to INRstar Engage, they are asked to accept the EULA and privacy policy.

Once they are registered, they will be automatically sent a task to start their initial training.





Things I did yesterday

You have no tasks

Things to do today

Watch the 'Welcome to the digital dosing diary' video

No due date

Things to do soon

You have no tasks

All the training for the patient is contained within INRstar Engage. When they have completed their initial training, the patient can decide if they are ready to start using the selected the **'Digital Dosing Diary'** or **'Self Care'** programmes, by answering a task question.

Things I did yesterday

You have no tasks

Things to do today

Watch the 'Welcome to the digital dosing diary' video

No due date

Confirm that you're ready to use the digital dosing diary

No due date

Things to do soon

You have no tasks

When your patient has confirmed they are ready to use the Digital Dosing Dairy, they will be fully enrolled.

#### Patient confirmation

Patient confirmation: ☒ The patient has confirmed they are confident to use the digital dosing diary

Click [here](#) to view the training tutorials.

Remove the patient from this programme

When you treat this patient in INRstar, you will see a message to indicate they are on the Digital Dosing Diary self-care programme. **Note:** If you do not see the message,



then your patient has not confirmed they are ready and will not receive their schedule electronically.

## 18.5. Manage Treatments Using Digital Dosing Diary

### 18.5.1. Pre-treatment Questions

When your patient arrives for their next appointment, ask the usual confirmation, clinical assessment questions and perform INR test.


### 18.5.2. Create Treatment Record

If using the PoCT testing method, or when the INR test results are available from the lab, then create the INRstar treatment record.

As you save this record, INRstar will instantly send the new tablet dosing schedule to the INRstar Engage app.

INRstar will also send the patient an email informing them they have a new schedule that they need to confirm.

You have no need to print the patient diary but may be required to print the patient summary sheet, for your own records.

Next Test Date	DNA	Comments	Info
10-Oct-2017	-	<a href="#">Add Comment</a>	<a href="#">i</a>
23-Jan-2018 	-	<a href="#">Add Comment</a>	<a href="#">i</a>

<b>Appointment</b>	<b>DNA</b>	<b>Print</b>
<input type="button" value="Make"/> <input type="button" value="Cancel"/>	<input type="button" value="Mark"/>	<input type="button" value="Summary"/> <input type="button" value="Diary"/>

### 18.5.3. Patient Confirms Schedule

Your patient will then complete the task in INRstar Engage to indicate they understand the new schedule.



**Dosing Schedule**

Please read and confirm at the bottom of this screen that you understand this new warfarin schedule.

Repeat this warfarin schedule from:  
Tue 12 Jun 2018 to Fri 15 Jun 2018

**Tuesday**  
1 x 1mg (Brown tablet)  
(1mg total for the day)

**Wednesday**  
1 x 1mg (Brown tablet)  
(1mg total for the day)

**Thursday**  
1½ x 1mg (Brown tablet)  
(1.5mg total for the day)

**Friday**  
1 x 1mg (Brown tablet)  
(1mg total for the day)

Do you understand your new dosing schedule?

The patient will then be sent a set of daily tasks, stating which tablet or tablets they need to take each day. They will also get a task with their next test date.

**Things to do today**

**Daily dose of warfarin** >

Due date: Tue 12 Jun 2018

**Things to do soon**

**Daily dose of warfarin** ⓘ

Due date: Wed 13 Jun 2018

**Daily dose of warfarin** ⓘ

Due date: Thu 14 Jun 2018

**Your INR clinic appointment** ⓘ

Due date: Fri 15 Jun 2018

#### 18.5.4. Patient does not 'Confirm Schedule' or does not 'Understand Schedule'

If the patient does not reply that they have received the schedule, or they indicate they have not understood it, INRstar will display a notification message on the home page that can be viewed by the clinician. The clinic would be notified after three hours if patients do not accept or refuse a new schedule, to alert clinicians of a need to action.



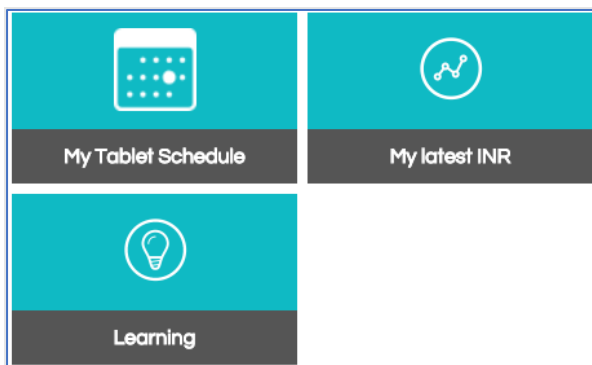
► 1 urgent notification from patients using the Engage app. Click to view.

- Click on the message and open to view more information.

16-May-2018 11:22	<div>██████████ (12-May-1954)</div> <div>NHS No.: ██████████ Phone No.: ██████████</div>	The patient has indicated that they do not understand the new dosing schedule and so the engage app will not provide a schedule or daily dosing instructions until this has been resolved. You will need to delete the disputed treatment and create a new treatment in order for the correct schedule and daily dosing instructions to be sent to the patient in the engage app.	<button>Acknowledge</button>
----------------------	--	---	------------------------------

The message contains information that the clinician will need to acknowledge and then follow up with the patient directly.

The patient is also able to check what their last INR result was by using the option 'My latest INR' in INRstar Engage.



- The last INR will be displayed:

My latest INR	
This is the latest INR result used by your anticoagulation team to advise you on your warfarin tablet schedule.	
Date	INR
Mon 11 Jun 2018	3.1

## 18.6. Manage Patient on Warfarin Self Testing in INRstar Engage

Patients can learn how to self-test with step-by-step training and support through the clinically risk assessed INRstar Engage app. The clinician will need to confirm they are trained and competent, to enable the patient to self-test independently and send their INR result directly to INRstar via the app. The clinician will then review the results remotely and send the patient their new dosing schedule electronically through the INRstar Engage app.

INR stability is not a requirement for self-testing according to NICE<sup>3</sup>, as patients with unstable INR may benefit from frequent testing. Additionally, patients with other



conditions requiring long-term vitamin K antagonist therapy may also be suitable for self-testing.

To use the INRstar Engage app your patient will need:

- A valid, unique email address and phone number.
- Access to the internet.
- A tablet, computer, or smartphone.

The self-testing programme is easy to set up, just follow the three steps and once your patient (or their carer) has demonstrated competence in performing their INR test and submitting it via the INRstar Engage app, they will be ready to self-test.

### 18.6.1. Self-Testing, Enrol Patient

Discuss the programme with the patient first and provide an overview; confirm the patient is willing to participate.

- Make sure your patient's record has a valid email address and phone number in INRstar.
- Once they have consented to be contacted by us and join the self-testing in INRstar Engage, tick the checkbox on the '**Self-Care**' tab and click '**Send Email**'.

**Patient Warfarin Self-Testing**

Self-testing frees the patient from regular attendance at the anticoagulation clinic. The patient tests their INR at home and the result is sent automatically to INRstar for the clinician to dose, thus freeing up clinic time.

Once the new dose has been calculated, the dosing instructions are returned automatically to the patient.

Self-testing helps empower a patient to become more active in managing their own care and can improve warfarin control, which is associated with reduced risk of stroke and bleeding events.

**Self-Testing Method**

**engage**

engage is the patient portal that INRstar uses to enable patient self-testing. To register your patient's interest in this self-testing programme please complete the form below. An email will be sent to the patient to start them on their journey to self-testing. To find out more about the process click [here](#).

**Send initial information**

Patient Phone Number: 01209777555  
Patient Mobile Number: 078149632145  
Patient Email Address: sarah123@gmail.com

I confirm that the patient has consented to be contacted by INRstar for the purpose of being provided with further information regarding the INRstar Anticoagulation Self Testing Service.  
☒

**Send Email**

Patient Training  
Authorise  
Remove patient from self testing programme

An automatic email will then be generated to the patient with an online form to be submitted in order to proceed further. Once the online form has been received by



INRstar a welcome email will be sent to the patient with guidance on how to access the App and get started.

Before your next appointment, your patient will train on how to self-test via the INRstar Engage app.

On your next appointment ask your patient to:

- Show you in the INRstar Engage app that they have completed their training – There will be a tick on each of the training modules.
- Perform an INR test on their own INR meter.

If you are satisfied that your patient (or their carer) knows how to self-test, go to the '**Self-Care**' tab in **INRstar** and click that they have completed their training to authorise the patient to self-test.

**Note:** The final authorisation of a patient to allow self-testing must be done by an **INRstar** user with a Clinical Level 2 or higher access permission level.

The screenshot shows the 'engage' app interface. At the top, it says 'engage is the patient portal that INRstar uses to enable patient self-testing. To register your patient's interest in this self-testing programme please complete the form below. An email will be sent to the patient to start them on their journey to self-testing. To find out more about the process click [here](#).'

The form is divided into several sections, each with a green header bar and a green checkmark icon on the right:

- Send initial information**: Contains fields for Patient Phone Number (01209777555), Patient Mobile Number (078149632145), and Patient Email Address (sarah123@gmail.com). Below these is a confirmation statement: 'I confirm that the patient has consented to be contacted by INRstar the purpose of being provided with further information regarding th INRstar Anticoagulation Self Testing Service.' with a checked checkbox and a 'Send Email' button.
- Patient Training**: Contains a 'Patient Training Complete:' field with a checked checkbox and a confirmation statement: 'I confirm that this patient has completed a validated training programme.'
- Authorise**: Contains an 'Authorise Patient to Self-Test:' field with a checked checkbox and a confirmation statement: 'I confirm that this patient has satisfied me that they are fully competent to self-test under clinical supervision from this testing location.'
- Remove patient from self testing programme**: Contains a confirmation statement: 'I confirm that I wish to remove the patient from the self-testing programme and understand that they will return to PoCT at this location.' with an unchecked checkbox and a 'Remove Patient' button.

**Note:** Whilst your patients are in training, the INRstar Engage app does not record their INR result and it does not send the result to your clinic. Once you authorise the patient to '**Self-test**', their INR results will be recorded in the INRstar Engage app and sent to your clinic for you to dose your patient through INRstar.



### 18.6.2. Quality Checks

The clinician should check the patient's INR on your clinic's INR meter, which serves as the first quality check of your patient's INR meter.

It is important that your patients periodically bring their INR meter to the clinical team for quality control testing. Every six months is recommended.

### 18.6.3. Self-Testing Process

The patient is encouraged to take greater control of their health by using the INRstar Engage app to send you their INR results and receive their dosing schedule.

The following five-step cycle explains the self-testing process. The patient self-tests using their INR meter and sends their results to the INRstar Engage app.

In the INRstar Engage app the patient answers these four questions:

- What dose of warfarin did you take yesterday?
- Have you had any changes to your medications in the last 7 days?
- Have you had any bleeding symptoms in the last 7 days?
- Have you missed any warfarin dose in the last 7 days?

Once the patient has answered all four questions, the INRstar Engage app sends their INR result to the testing clinic. The treating clinician will be able to access their result on the '**Test Results**' tab in **INRstar**. There is a paging feature if there are more than 10 outstanding results.

The screenshot shows the INRstar web application interface. At the top, there's a header with the INRstar logo and the tagline 'safe, effective anticoagulation support'. The date and user information are displayed as 'Wednesday 04-Jan-2017 drmark@hie1 @ HIE self care location 1'. Navigation tabs include Home, Patient, Reports, Options, and Help. Below this, there's a search bar and several filter buttons: Add Patient, Tests Due, Results (11), Recently Viewed, Change Registered Practice, and External Patient Lookup. A sub-filter bar shows 'INR 11' and 'DOAC'. There are checkboxes for 'Show Archived Results' and 'Show Dosed Results', along with a 'Filter' button. The main table has columns for Received Date/Time, Patient, Blood Taken Date/Time, INR, and User Action/Status. Two results are visible: one from 03-Jan-2017 with an INR of 1.2 for patient 'MULTIPLE-LOCATION, TERRY', and another from 21-Dec-2016 with an INR of 3.1 for patient 'ORMEROD, WILLOW'. Each result has 'Dose Patient' and 'Archive' buttons. At the bottom, there's a status bar showing 'Active warfarin patients: 112 / 1000 | Active non-warfarin patients: 7', 'Automated PST licences: 1 / 30', and the version '5.21.0'. Various certification logos (CE, ISO, etc.) and a Twitter icon are also present.

Received Date/Time	Patient	Blood Taken Date/Time	INR	User Action/Status
03-Jan-2017 16:22:39	<a href="#">MULTIPLE-LOCATION, TERRY</a> (12-Mar-1953) NHS No.: None Patient No.: None	03-Jan-2017 16:21	1.2	Dose Patient Archive
21-Dec-2016 12:17:10	<a href="#">ORMEROD, WILLOW</a> (10-Jan-1974) NHS No.: None Patient No.: None	21-Dec-2016 12:08	3.1	Dose Patient Archive

Once you have received their INR result, you can review the information in the '**Test Results**' tab.

Click '**Dose Patient**' in the '**User/Action**' status column:






Received Date/Time	Patient	Blood Taken Date/Time	INR	User Action/Status
03-Jan-2017 16:22:39	<a href="#">MULTIPLE-LOCATION, TERRY</a> (12-Mar-1953) NHS No.: None Patient No.: None	03-Jan-2017 16:21	1.2	<a href="#">Dose Patient</a> <a href="#">Archive</a>
21-Dec-2016 12:17:10	<a href="#">ORMEROD, WILLOW</a> (10-Jan-1974) NHS No.: None Patient No.: None	21-Dec-2016 12:08	3.1	<a href="#">Dose Patient</a> <a href="#">Archive</a>

If the date of the INR result is today, the patient's records will automatically open on the '**New INR**' page. The rest of the process for dosing and completing a patient's treatment is the same as the one you follow for all patient treatments.

When [Save](#) is clicked INRstar will automatically send the new schedule to your patient's INRstar Engage app.

If the date of the INR result is **up to 3 days prior to today**, you will be shown the following warning message.

This INR test was not performed today



The patient may have taken warfarin doses since the test was performed and so the test result may no longer be valid.

You have two options to process this INR result:

Enter as historical treatment: The INR will be entered as a historical treatment. A new dose schedule will not be generated and you should contact the patient to discuss a suitable dosing regimen until their next INR test. Recommended.

Enter as valid INR result: This INR result will be considered as valid and used to calculate a new dose schedule and next test date.

[Enter as historical treatment](#) [Enter as valid INR result](#) [Cancel](#)

There are three options to select from:

- Enter the information as a historical treatment - (*recommended*).
- Enter the information as a valid INR result.
- Cancel the process.

- If you click the [Enter as historical treatment](#) button, you will be taken to the '**Add Historical INR**' tab.

**Note:** A new dose schedule will not be generated, and you should contact the patient to discuss a suitable dosing regimen until their next INR test.





Enter as valid INR result

- If you click the **Enter as valid INR result** button, you will be taken to the **'New INR'** button. The remaining process for dosing and completing a patient's treatment is the same as the one you currently follow for patients.

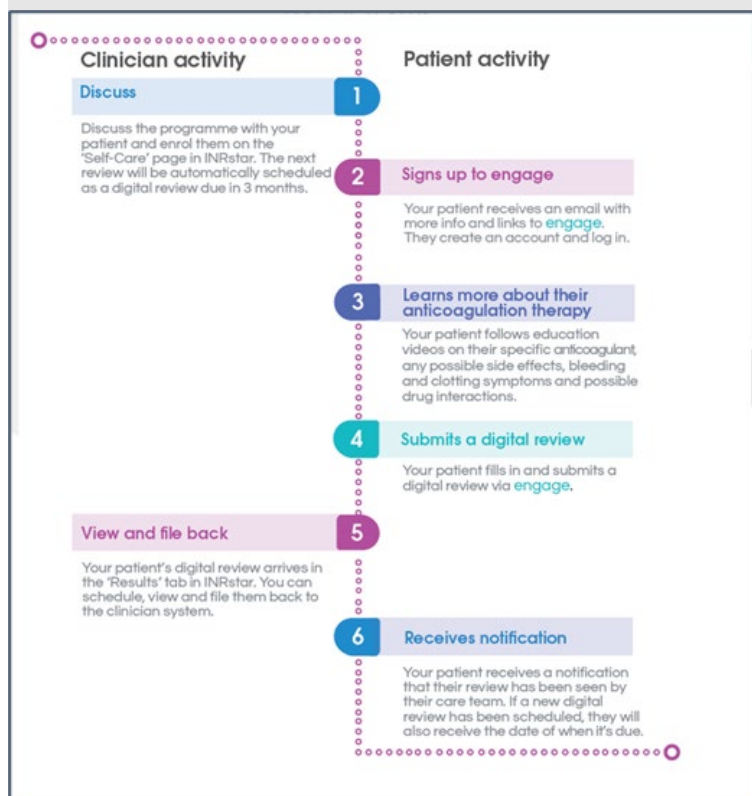
When **'Save'** is clicked INRstar will automatically send the new schedule to your patient's INRstar Engage app.

**Note:** **'Skip or Boost'** is not enabled for patients using INRstar Engage.

## 18.7. DOAC Support Programme (DSP)

The programme helps patients to understand the benefits of their anticoagulation therapy and reinforces the importance of adherence. It also offers tailored educational videos about their anticoagulant and enables them to submit regular digital reviews helping service providers to follow NICE guidelines without significant impact on clinic time.

The flow chart below provides an overview of the DOAC review process in INRstar



### 18.7.1. Enrol Patient on a DOAC Support Programme

In the individual DOAC review, when the review is completed, the clinician could consider with the patient if the programme would be suitable.

Tick the box in **'DOAC support programme'** at the end of the review.



#### DOAC support programme

The patient might be suitable for the DOAC support programme. To find out more about the programme, tick the box below or visit the Self-Care page.

Tell me more about the  
programme: ☒

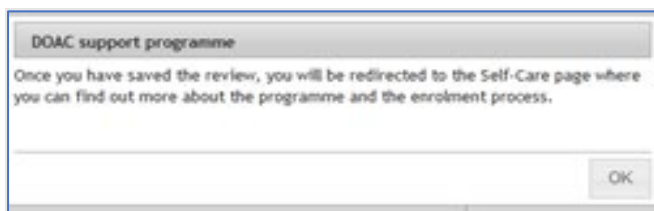
Save Cancel

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195

Version : 5.64.0



**Note:** the review must be saved.



You will then be directed the **'Self-Care'** tab in the patient record:

**INRstar**  
safe, effective anticoagulation support

Thursday 05-Nov-2020 Dr Lead @ Varley [Log Off](#)

HomePatientClinicsReportsOptionsHelp

COLLINS, Leonard (Mr)  
Born: 06-Jun-1951 (69y 5m) Gender: Male

NHS Number: 042 631 7602 Patient Number: 234234888

Active patient

Address: 2 The Harbour, Carl...Diagnosis: Atrial fibrillationDrug: EdoxabanEnd Date: Indefinite

Treatment PlansDemographicsPatient ManagementNotesAdverse EventsLettersSummaryAudit TrailSelf-CareExit

engage  
supported self-care

Supported self-care app for all your anticoagulation patients

engage, our easy-to-use patient app, transforms the way you and your patients connect. Available on smartphones, tablets and web, the engage app seamlessly connects to your patient's record in INRstar, enabling you to save time and avoid transcription errors whilst you continue to support your patients as they self-care.

A range of care programmes

Our self-care programmes are easy to set up - there's no extra work for your team. We take care of the whole process including education, step-by-step training and on-hand support for individuals and care teams.

DOAC support programme

(available for patients on a DOAC)

This programme helps patients to understand the benefits of their anticoagulation therapy and reinforces the importance of adherence. It also offers tailored educational videos about their anticoagulant and enables them to submit regular reviews helping you to follow NICE guidelines without significant impact on clinic time.

[Find out more here](#)

Enrol patient

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195

Version : 5.64.0

Confirm the patient details:

142 of 226

Document Name: INRstar®: Instructions for Use

Document Number: IVIQMS-1761341735-144

Revision: 5

This document is controlled and released electronically in inVita Intelligence Quality Management System (QMS). Hard copies are uncontrolled and should not be relied upon for the most recent version

**Information Classification: For Internal Use Only**



- Name
- Phone numbers, mobile and landline
- Confirmed email address

**Note:** Click '**Edit details**' to make any changes.

**DOAC support programme**  
(available for patients on a DOAC)  
  
This programme helps patients to understand the benefits of their anticoagulation therapy and reinforces the importance of adherence. It also offers tailored educational videos about their anticoagulant and enables them to submit regular reviews helping you to follow NICE guidelines without significant impact on clinic time.  
  
[Find out more here](#)  
  
Enrol patient

**Invite this patient to the DOAC support programme**

Please confirm that the patient's contact details are correct. When you click the Send email button, the patient will be enrolled and will receive an email with instructions on how to get started.

Patient name: COLLINS, Leonard (Mr)  
Patient phone number: 01326 567 876  
Patient mobile number: 098987665  
Patient email address: L.collins@hotmail.co.uk

[Edit contact details](#)

☐ I confirm that the patient has consented to be contacted by LumiraDx Care Solutions UK Ltd for the purpose of being provided with further information regarding the DOAC support programme. I understand that sending this email will invite the patient to the DOAC support programme.

[Send email](#)

[Remove this patient from the DOAC support programme](#)

Click to confirm that the patient has consented to be contacted by inVita intelligence Limited, for the purpose of being provided with further information regarding the DOAC support programme. Click '**Send email**'.

The patient will be emailed more information and links to enrol into the INRstar Engage app.

They will then be provided access to a series of videos to 'Learn more about anticoagulation therapy'. When the patient has followed the educational videos on their specific anticoagulant, possible side effects, bleeding, and clotting symptoms, and drug interactions they can confirm that they are ready to submit a review on a date decided by the managing clinician.

The patient receives a reminder that their DOAC digital review is due and completes the necessary information on their Phone app, iPad or computer.

The DOAC digital review details are received in the '**Results**' tab by the clinician managing the patient in INRstar and the information reviewed and filed back to the computer system in the normal way.



## 19. Clinics and Appointments

Where optionally enabled, the clinics and appointments feature allows you to view all your INR clinics and appointments.

To book in and view appointments you must first set up your clinics. This will allow you to view all your INR clinics and appointments by month, week, or day. The day view provides a clear and easy layout for all the details to be displayed on the screen. This is particularly beneficial for services running multiple clinics at the same time.

### 19.1. Create a New Clinic

To create a new clinic, click on the **'Clinics'** tab on the INRstar blue navigation bar, then select the **'Manage Clinics'** tab.

A calendar will then be displayed, defaulting to the current week.

Clinics can be added on today's date and in the future. To select a date, you can either use the arrows located at the top left of the calendar to skip between weeks or click on the **'Month'** button located at the top right of the calendar to switch to month view.

To pick a time for the desired date, double click on the time slot and select **'New Clinic'** or click the **'Add Clinic'** button.



The '**Manage Clinic**' page will then be displayed. Enter a clinic name - we recommend that each clinic is given a different name - followed by a clinic date and start/end time.

Select an appointment length (slot length) for each patient appointment within this clinic, e.g. 10 minutes.

Appointment length can be a minimum of five minutes or maximum of 60 minutes. If your preferred appointment length is less than five minutes, e.g. two minutes, we recommend that two patients are added to a five-minute slot.



- For the clinic to repeat weekly for the selected day of the week click the check box named '**Repeat clinic every...**'.
- For the clinic to repeat every week with no end date, select the '**No end date**' option.
- For the clinic to repeat weekly until a certain date, e.g. 6 months in the future, choose the '**End by**' option and select a date.

When you have added all the required information click the '**Save**' button to save the clinic, or click the '**Cancel**' button to discard the changes.

### 19.1.1. Clinic Details

Each clinic shows the clinic name, and the appointment slots booked out of the available appointment slots. If the clinic does not start or end on an exact hour, the clinic's run-time is also shown.

Appts:0/12 Saturday morning	14:00-15:30 Appts:1/9 Saturday afternoon
--------------------------------	--

To view more information about the clinic, single click on the clinic and the following will be displayed at the top of the screen:

- '**Selected Clinic**' name.
- Selected '**Clinic Date**'.
- Selected clinic '**Time**' - 'from and to'.
- Selected clinic '**Slot Length**' in minutes.
- Number of appointments already '**Booked**' out in the selected clinic.

<a href="#">Manage Clinics</a> <a href="#">Appointments</a>	
<a href="#">Add Clinic</a>	<a href="#">View Clinics Help</a>
Selected Clinic: <b>Saturday afternoon</b>	
Clinic Date: 17-11-2018	Time: 14:00 to 15:30 Slot Length (mins): 10 Booked: 1/9



## 19.2. Edit a Clinic

To edit a clinic:

1. Click on the **'Clinics'** tab on the INRstar main navigation bar. If not selected by default, click on the **'Manage Clinics'** tab on the calendar.
2. Navigate to the date of the clinic you wish to edit.
3. Select the clinic by double clicking the clinic and then select the **'Edit Clinic(s)'** option.

Editing a clinic follows the same process as adding a clinic.

The screenshot displays the INRstar web application interface. At the top, the INRstar logo and navigation tabs (Home, Patient, Clinics, Reports, Options, Help) are visible. The 'Manage Clinics' tab is active. Below the navigation bar, there's a section for 'Selected Clinic: Wednesday' and 'Clinic Date: 14-11-2018'. A calendar view for '12 - 18 November 2018' is shown. A red circle highlights a context menu that appears when a clinic is double-clicked. The menu options are 'View Appointments', 'Edit Clinic(s)', and 'Cancel Clinic(s)'. The 'Edit Clinic(s)' option is the one to be selected according to the instructions.



### 19.3. Cancel a Clinic

To cancel a clinic, double click on the required clinic and select the '**Cancel Clinic(s)**' option.

The screenshot shows the INRstar web application interface. At the top, there's a navigation bar with 'Home', 'Patient', 'Clinics', 'Reports', 'Options', and 'Help'. Below this, there's a 'Manage Clinics' tab and an 'Add Clinic' button. The main area displays a calendar for the week of 12-18 November 2018. A clinic for Wednesday, 14-Nov, is selected, and a context menu is open with options: 'View Appointments', 'Edit Clinic(s)', and 'Cancel Clinic(s)'. The 'Cancel Clinic(s)' option is circled in red.

If the clinic is non-repeating, a popup is displayed where you can confirm cancellation of the clinic by clicking the '**Confirm**' button.

The dialog box has a title bar 'Cancel Clinic?'. Below it, the text reads 'Please confirm that you want to cancel this clinic.' At the bottom, there are two buttons: 'Confirm' and 'Back'.

If you double clicked a repeating clinic, and there are no appointments in the series, you can cancel the specific clinic or cancel all clinics in the series.





Confirm Delete

X

The selected clinic repeats weekly. Do you want to cancel the selected clinic only or cancel all repeating clinics?

Cancel All Clinics

Cancel Selected Clinic

Back

**Note:** To cancel a clinic with one or more occupied appointment slots, either cancel each appointment or set the clinic end date.

## 19.4. View Clinic Appointments

To view the names of patients booked in for clinic, double click on the required clinic and select the **‘View Appointments’** option.

Manage Clinics

Appointments

Add Clinic

[View Clinics Help](#)

Selected Clinic: recurring clinic

Clinic Date: 04-04-2013

Time: 11:00 to 15:30

Slot Length (mins): 5

Booked: 0/54

< Today >

01 – 07 April 2013

Week Month

	Mon, 01-Apr	Tue, 02-Apr	Wed, 03-Apr	Thu, 04-Apr	Fri, 05-Apr	Sat, 06-Apr	Sun, 07-Apr
06:00							
07:00			Appts:0/1 new recurring-				
08:00				Appts:0/6 test clinic			
09:00		09:00-11:30 Appts:0/30 Tuesday Clinic	Appts:0/1 new recurring-				
10:00							
11:00				11:00-15:30 Appts:0/54 recurring clinic			
12:00			Appts:0/6 one off clinic				
13:00							
14:00							
15:00							
16:00							
17:00							

View Appointments

Edit Clinic(s)

Cancel Clinic(s)

The **‘Appointments’** list will then be displayed.



recurring clinic	
Thursday 20 December 2012	
11 00	
05	
10	NSU, Richard (07-Jul-1965) Stuck in traffic
15	
20	
25	CAROLINE , Beavis (03-Oct-1985) Due to be late - stuck in traffic - stuck in traffic - stuck in traffic - stu...
30	
35	ADDING, New Patient (03-Oct-1985)      BEATLE, Manoubi (07-Mar-1970)
40	
45	BLEEDING, High (04-Jul-1968) ✓
50	
55	

At the top of the page, the total number of appointments booked into the selected clinic is displayed.

Each appointment shows the patient's name, DOB, and appointment comments, if any.

If a patient has turned up and had a treatment on the day of their appointment, the appointment background will be green and have a green tick, to show that it has been completed.



To navigate to a patient from the '**Appointments**' list, double click on an appointment and select the '**View Patient**' option.



## 19.5. View or Edit Appointment Comments

If you would like to add a comment to the appointment, double click the appointment and select '**View/Edit Comments**'.

The screenshot shows a list of appointments with a time slot on the left (11:00 to 11:55). The appointment 'NSU, Richard (07-Jul-1965) Stuck in traffic' is highlighted. A red circle is drawn around the 'View Patient' and 'View/Edit Comments' buttons that appear when the appointment is clicked. Other appointments listed include 'CAROLINE, Beavis (03-Oct-1985)', 'ADDING, New Patient (03-Oct-1985)', 'BEATLE, Manoubi (07-Mar-1970)', and 'BLEEDING, High (04-Jul-1968)' which has a green checkmark.

- Type in the appointment comment and click the '**Save**' button.

The screenshot shows a dialog box titled 'NSU, Richard' with a 'Comments:' label and a text input area. At the bottom right, there are 'Save' and 'Cancel' buttons. The background shows the appointment list with the appointment 'NSU, Richard' selected.

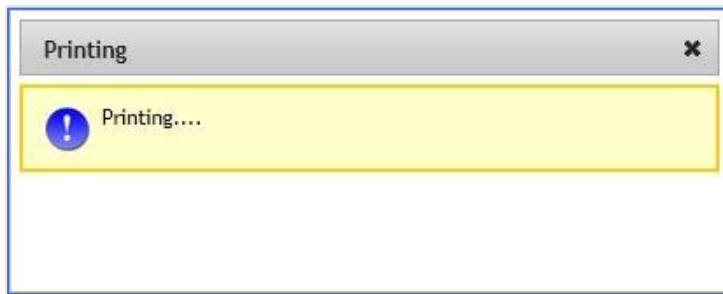
## 19.6. Print Appointments Lists

The '**Print Appointment List**' button produces a summary of the clinic, i.e. clinic name, date, start time, total booked appointments and total treated appointments, and a list of the patients with appointments within that clinic.

The status tells you whether this appointment was:

- **Booked** = Appointment booked but patient has not arrived for their appointment.
- **Treated** = Patient has been seen in the clinic and the appointment is complete.

To print a list of all appointments booked into a clinic you must first select a clinic by double clicking and selecting the '**View Appointments**' option. This will open the '**Appointments**' tab. Click on the '**Print Appointment List**' button in the top right corner to print a list of appointments in the selected clinic.

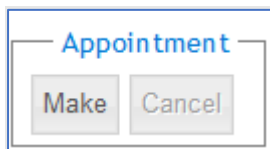



## 19.7. Make an Appointment

To create an appointment for a patient you must first select a patient.

Once you have selected a patient, click on the **'Treatment Plan'** tab.

Next click on either the **'Make'** button, located in the **'Appointment'** button group, or the calendar icon, located next to the patient's **'Next Test Date'**, in the same column.



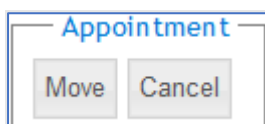
After the **'Make'** button or the calendar icon  has been clicked a calendar is displayed showing the available clinics.

The calendar date defaults to the patient's **'Next Test Date'** set from their last treatment, with the date highlighted in a blue box. Today's date is also highlighted for your reference.

The patient's **'Next Test Date'** and **'Review'** period is displayed at the top of the screen.

## 19.8. Cancel Appointments

- It is possible to change the **'Next Review Date'** and this will then cancel any associated clinic appointment.
- If the clinic appointment is moved, this will also change the associated **'Next Review Date'**.
- If the clinic appointment is cancelled, the **'Next Review Date'** will be retained.



You can see more information about a clinic you have selected at the top of the screen:

- Selected clinic name.
- Number of appointments already booked into the selected clinic.



**Important:** If there is a clinic on the specified ‘Next Test Date’ and the patient can make an appointment on this date, it is important that this clinic is selected for the patient’s next appointment.

To add an appointment to a clinic, double click the required clinic and select the ‘**Select This Clinic**’ option.

The ‘**Make an Appointment**’ form will then be displayed, with the clinic divided into time slots. To make an appointment double click the applicable time slot and select the ‘**Make Appointment**’ option. You can select multiple slots if you need to see the patient for a longer period: drag the mouse over the period you wish to move it to and right click for the option ‘**Move appointment**’.



After selecting the **'Make Appointment'** option you will see that the **'Make an Appointment'** form has been updated and an appointment for the selected patient has been added.

If you would like to add a comment to the appointment, double click the appointment and select **'View/Edit Comments'**.

Type in the appointment comment and click the **'Save'** button.

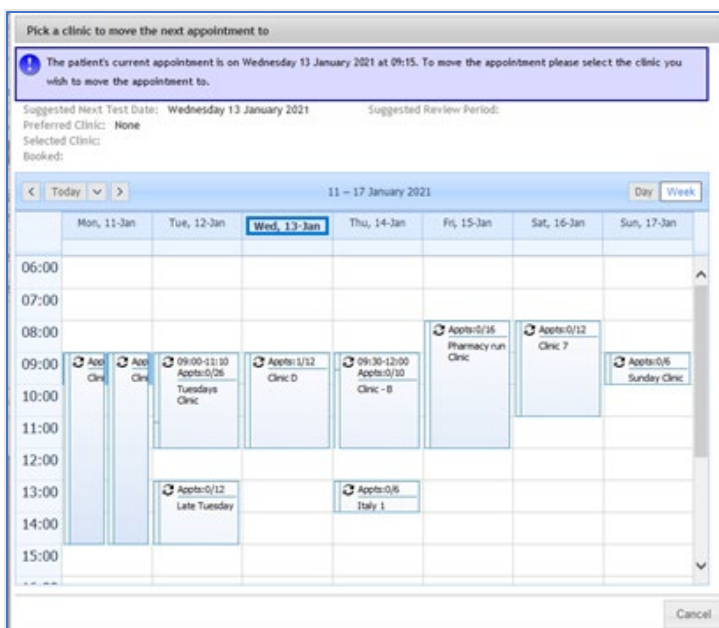


## 19.9. Changes to Scheduled Appointments

To change a patient's appointment time or date the same process should be followed as making an appointment.

Once you have selected a patient, click on the **'Treatment Plan'** tab. Then click on either the **'Move'** button, located in the **'Appointment'** button group, or the calendar icon, located next to the patient's **'Next Test Date'** of their last treatment.

After the **'Move'** button or the calendar icon  has been clicked a pop-up calendar displays available clinics. The calendar date defaults to the patient's next appointment date, with the date being highlighted in blue.



You can see more information about a clinic you have selected at the top of the screen:

- Selected clinic name.
- Number of appointments already booked out in the selected clinic.

Double click or right click the clinic you wish to move the appointment to; select the **'Select This Clinic'** option.



Pick a clinic to move the next appointment to

**!** The patient's current appointment is on Wednesday 13 January 2021 at 09:15. To move the appointment please select the clinic you wish to move the appointment to.

Suggested Next Test Date: Wednesday 13 January 2021      Suggested Review Period:

Preferred Clinic: None  
Selected Clinic: Clinic - B  
Booked: 0/10

< Today >      11 – 17 January 2021      Day Week

	Mon, 11-Jan	Tue, 12-Jan	Wed, 13-Jan	Thu, 14-Jan	Fri, 15-Jan	Sat, 16-Jan	Sun, 17-Jan
06:00							
07:00							
08:00							
09:00	App Clin	App Clin	App:0/12 Clinic D	App:0/10 Clinic - B	App:0/16 Pharmacy run Clinic	App:0/12 Clinic 7	App:0/6 Sunday Clinic
10:00		App:0/26 Tuesdays Clinic					
11:00							
12:00							
13:00		App:0/12 Late Tuesday		App:0/6 Italy 1			
14:00							
15:00							

Cancel

The **'Move Appointment'** form will then be displayed. To move an appointment, double click or right click the applicable time slot and select the **'Move Appointment Here'** option.

20	
25	Move Appointment Here
30	

After selecting **'Move Appointment Here'** you will see that the **'Move Appointment'** form has been updated and an appointment for the selected patient has been moved to the clinic and time specified.

09	30	
	45	
10	00	CASEY, Kara (01-Jul-1948) Tel No: 01326 456 987 [INR Test] ring carer with result and confirm dosing schedule
	15	
	30	

## 19.10. Cancel an Appointment


To cancel an appointment for a patient you must first select a patient. Next, click on the **'Treatment Plan'** tab and click the **'Cancel'** button located in the **'Appointment'** button group.

When the **'Cancel'** button is clicked a confirmation box is displayed to request you confirm cancellation of the patient's appointment. Click the **'Confirm'** button to cancel the appointment.





Confirmation Required

 Are you sure you wish to cancel this patient's next appointment? Please confirm that either this patient does not need another test, or that you have made other suitable arrangements for them to be tested.

Confirm

Cancel

## 19.11. Create a Review Appointment

When a user is making the appointment in a clinic, they can select multiple time slots if appropriate.

If the user chooses a date for the review that is different to the '**Next Review Date**', the associated '**Next Review Date**' will be changed to match. A '**Next Review Date**' appointment can only be selected from today to 13 months in the future.

### 19.11.1. Move or Cancel a Review Appointment

Moving or cancelling an appointment makes it possible to change the '**Next Review Date**' and will cancel any associated clinic appointment.

If the clinic appointment is moved, this will also change the associated '**Next Review Date**'.

If the clinic appointment is cancelled, the '**Next Review Date**' will be retained.

You will see this button on the reviews page:

Appointment

Make

Cancel

Review

New Review

**Note:** If a new Vitamin K Antagonist treatment plan is added with a start date over 12 months in the past, the '**Next Review Date**' will also be set in the past – the '**Next Review Date**' is automatically calculated as the treatment plan start date, plus 12 months.



## 19.12. DNA (Did Not Attend) in Appointment

If you have marked a test date '**DNA**' for 'Did Not Attend' (see section 16.18 DNA (Did Not Attend)), '**DNA**' will appear in the relevant Appointment Screen:

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Wednesday 13-Mar-2019 Dr A N other @ Wormwood Scrubs [\[Log Off\]](#)

HomePatientClinicsReportsOptionsHelp

Manage ClinicsAppointments

Number of appointments booked: 1

Print Appointment List

Wednesday

Wednesday 13 March 2019

09 00	
10	BULMERS, Cynthia (03-Jun-1977) [INR Test] <span>DNA</span>
20	
30	



## 20. Options

The INRstar '**Options**' menu is divided into several sections separated by tabs. Click on these to open.

The screenshot shows the INRstar web application interface. At the top, there's a header with the INRstar logo and tagline 'safe, effective anticoagulation support'. To the right, it says 'Wednesday 04-Nov-2020 Dr Lead @ Varley' with a 'Log Off' link. Below this is a navigation bar with tabs: Home, Patient, Clinics, Reports, Options, and Help. The 'Options' tab is selected. Under 'Options', there are sub-tabs: Dosing Settings, PoCT, IQC, EQC, Diagnosis, A/C Clinicians, Location Management, Letter Management, and View Audit Trail. The 'Dosing Settings' sub-tab is active, showing a 'Manage Location Settings' section. This section contains a list of settings with expandable arrows: Daily Dose, Dose Rounding, High target with INR above 3.5, 4.0, 4.9, 6.0, 7.9, In Range INR Stage 1 through 6, Low INR Warning, Low target with INR above 3.0, 3.5, 4.0, 4.9, 6.0, 7.9, and Tablets. At the bottom of the settings list, it shows 'Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176' and 'Automated PST licences: 3 / 195'. The version '5.64.0' is displayed in the bottom left, and a CE mark is in the bottom right.

### 20.1. Dose Settings

These details are managed by the '**Organisation Clinical Lead**' and set the clinical rules for the dosing of patients using warfarin.

The '**Dosing Settings**' information can be viewed by any '**User**' but can only be changed by an '**Organisation Clinical Lead**' User. The values set within the '**Dosing Settings**' affect each location equally, so need to be agreed by the Clinical Lead(s) of the Practice or Organisation.

**Note:**

- **Changes to the default settings could have significant consequences to the dosing suggestions made by the software.**
- The '**Organisation Clinical Lead**' role should only be held by a Registered and Regulated Health Care professional with sufficient knowledge, training and experience in anticoagulation management to undertake these responsibilities.



1. In 'Dosing Settings' and 'Manage Location Settings' screen click on the settings title that you want to edit.

▼ Daily Dose

Maximum Limit (set at): 13.5

Edit

2. Click the 'Edit' button.

Edit the setting by using the dropdown list or textbox.

3. Click the 'Save' button to save your changes.

INRstar

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Wednesday 01-Mar-2017 MARYAM MAYA @ Dr Local [Log Off]

Home Patient Reports Options Help

Dosing Settings PoCT IQC EQC Diagnoses A/C Clinicians Location Management Letter Management View Audit Trail

Manage Location Settings

- ▶ Daily Dose
- ▶ Dose Rounding
- ▶ High target with INR above 3.5
- ▶ High target with INR above 4.0
- ▶ High target with INR above 4.9
- ▶ High target with INR above 6.0
- ▶ High target with INR above 7.9
- ▶ In Range INR Stage 1
- ▶ In Range INR Stage 2
- ▶ In Range INR Stage 3
- ▶ In Range INR Stage 4
- ▶ In Range INR Stage 5
- ▶ In Range INR Stage 6
- ▶ Low INR Warning
- ▶ Low target with INR above 3.0
- ▶ Low target with INR above 3.5
- ▶ Low target with INR above 4.0
- ▶ Low target with INR above 4.9
- ▶ Low target with INR above 6.0
- ▶ Low target with INR above 7.9
- ▶ Tablets

## Daily Dose

- This option allows the setting of the maximum daily dose which INRstar will allow to be calculated and for which a schedule will be suggested.

## Dose Rounding

- This option allows the setting of the optional threshold above which INRstar will round dose values to the nearest 0.5mg. See the section 'Dosing Issue (tablet strength) Rounding' for further information.

## Low Target INRs

- INRstar defines a **Low Target** as any **Target INR** up to and including 2.9.



## High Target INRs

- INRstar defines a **High Target** as any **Target INR** as 3 or above.

If a patient's INR value is over the patient's **Target INR** range (**Target INR** plus 0.5), the amount of difference between the **Target INR** and actual INR is graded into bands.

For each band, the dose calculation parameters and review period values can be adjusted from the default values.

Target INR above 3.5, 4.0, 5.0, 6.0, and 7.9 the following parameters can be changed:

- Omit days.
- Reduce percentage of current INR dose.
- Amend the recommended review period for the patient.

**Note:** A warning message to be displayed to the clinician, should the INR invoke these conditions.

## In Range INR Stages

There are 6 '**In Range**' INR stages which can be adjusted to suggest the recommended '**Review Period**' for cumulative consecutive '**INR Range**' values.

The default review period values are 7 days, 14 days, 28 days, 42 days, 56 days, and 70 days.

These settings can be modified by the '**Organisation Clinical Lead**' to comply with local guidelines. The maximum review period can be increased to **84** days.

**Note:** The maximum review period of 70 days is recommended.

## Tablets

- This option allows the default tablet settings to be set for all new patients.
- Changes to these values will not affect any existing patient's details.

### 20.1.1. Dosing Issue (tablet strength) Rounding

Sometimes it is mathematically impossible to create a dosing schedule for the suggested dose using the tablet strengths selected for the patient. For example a 0.5mg tablet is needed to create a suggested dose ending in 0.8 or 0.2, over a 7 day review period.



INRstar cannot provide a dosing schedule for this dose using the selected tablet strengths, please choose an alternative schedule.

If this happens INRstar will give you the option to choose from a list of all available schedules. This includes using different tablets to obtain the exact dose, or using the tablets you have selected but a slightly alternative dose. The alternate doses are usually 0.1mg higher or lower per day. You will need to scroll down the schedules to view all suggestions.



Delivered Dose	Tablets Used		
2.8mg	0.5mg	Use	
2.8mg	0.5mg, 1mg	Use	
2.8mg	0.5mg, 3mg	Use	
2.8mg	0.5mg, 1mg, 3mg	Use	
2.7mg	1mg, 3mg	Use	
2.7mg	3mg, 5mg	Use	
2.7mg	0.5mg, 1mg	Use	

To select a schedule, click the '**Use**' button on the right hand side of the screen. INRstar will then produce the dosing diary and the treatment can then be processed as normal.

Please note INRstar will never force you to use 0.5mg tablets, you always have the choice to select an alternative dose.

The **Dose Rounding** setting has the effect of rounding all daily doses at your practice to the nearest half-milligram.



In the above example, dose rounding is applied to all daily doses below 10mg.

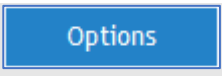
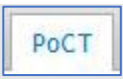
Refer also to 'Appendix B - NPSA Dosing Guidelines' for Q&As.

## 20.2. Point of Care Testing (PoCT)

This section allows the recording of the batches of test strip that are in use at the location.

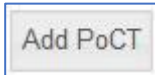
When starting a new batch of test strips, the user should add the batch number and expiry date in INRstar.

The PoCT batch number and expiry date of the testing kit consumables are documented in INRstar so users can track the use of INR testing consumables. This will allow the tracking of consumables against the testing of individual patients for Quality Assurance purposes.

1. Click the  button.
2. Click the  tab.



Add PoCT

- Click the button  to add a new batch of test consumables. Add the Batch number - it is recommended to use two key identifiers where available, i.e. the Pot code chip number and lot number of the batch e.g. 444-6123456; set the expiry date using the calendar. Click 'Add' or 'Cancel'.

A list of recorded PoCT batches will be displayed:

Batch Number	Expiry Date	Active
777-345-999	31-Oct-2026	<input checked="" type="checkbox"/>
223-557-334	31-Oct-2025	<input checked="" type="checkbox"/>
567-999-888	31-Jan-2025	<input checked="" type="checkbox"/>

The user has the option to deactivate expired batches:

- Click to remove the tick in the 'Active' list box.

- Tick the checkboxes in the 'Active' column next to the amend the PoCT batch details.

Save

- Click the  button.

Now when creating a new individual treatment, you can choose which PoCT batch that you are using for that treatment or will be prepopulated automatically if using the LumiraDx Instrument.



## 20.3. EQC Results

The **'EQC'** section in **'Options'** provides an area to record and document for audit purposes external quality control tests on the point of care testing device or individual patient parallel venous samples.

**Note:** The EQA SOURCE value is pre-set, according to your location's preferred EQA supplier in **'Options'**, **'Location management'**, **'Component'**, **'EQC'** source to amend and reflect the centre used.

In **'Manage EQC'** results:

- Click **'Add EQA'** to add details.

In **'Add EQC Result'** enter the details for the EQA result:

- **Date** of test: Date samples taken.
- **Reference:** Survey details e.g. 36\CUC XS: March 2020.
- **PoCT Batch Number:** Select from the drop down. **Note:** This could also be the Code Chip number found on the pot of strips. Two key identifiers are recommended i.e. the Pot code chip number and lot number of the batch e.g. 444-6123456.
- **PoCT INR Result:** e.g. 2.4 (test sample result).
- **External INR Result:** Instrument Median INR.

**Note:** You can enter in the **External INR Result** later.






To complete the record, click **'Save'**.

**Note:**

- There are always TWO sample test results to enter - please repeat this process again for the second sample.
- The percentage error for each test will not be calculated until the External INR Result is entered.

To enter the **'External INR Result'** later, simply click on , find the test you want to add the result to and click **'Edit'**

**Manage EQC Results**

Use this page to record the results of your External Quality Control (EQC) INR Results.

To add an EQA external QC test, select the 'Add EQA' button then enter the relevant details. If the external INR result is also added, the percentage error will then be calculated.

To enter an external QC result, select which QC log you want to edit and select the external INR result. The percentage error will then be calculated.

You can amend the EQA source via the Location Management > Components tab.

[Add EQA](#)

Showing 1 - 6 of 12 first | [prev](#) | [next](#) | [last](#)

Date of Test	Reference	Source	PoCT Batch Number	PoCT INR	External INR	Error %	
09-Aug-2019	36 / CUC XS	WEQAS	5RT-Y78	2.8		No Value	<a href="#">Edit</a> <a href="#">Delete</a>
09-Aug-2019	36 / CUC XS	WEQAS	5RT-Y78	2.5		No Value	<a href="#">Edit</a> <a href="#">Delete</a>

- Add your result, then click **'Update'**:

**Edit EQC Result**

Source: WEQAS ⓘ

Date: 09-Aug-2019 ⓘ

Reference: 36 / CUC XS

PoCT Batch Number: 5RT-Y78 ▼

PoCT INR Result: 2.8 ▼

External INR Result: 2.7 ▼

[Update](#) [Cancel](#)

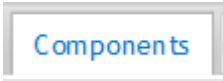
Your results can be viewed in the **'Manage EQA Result'** tab:

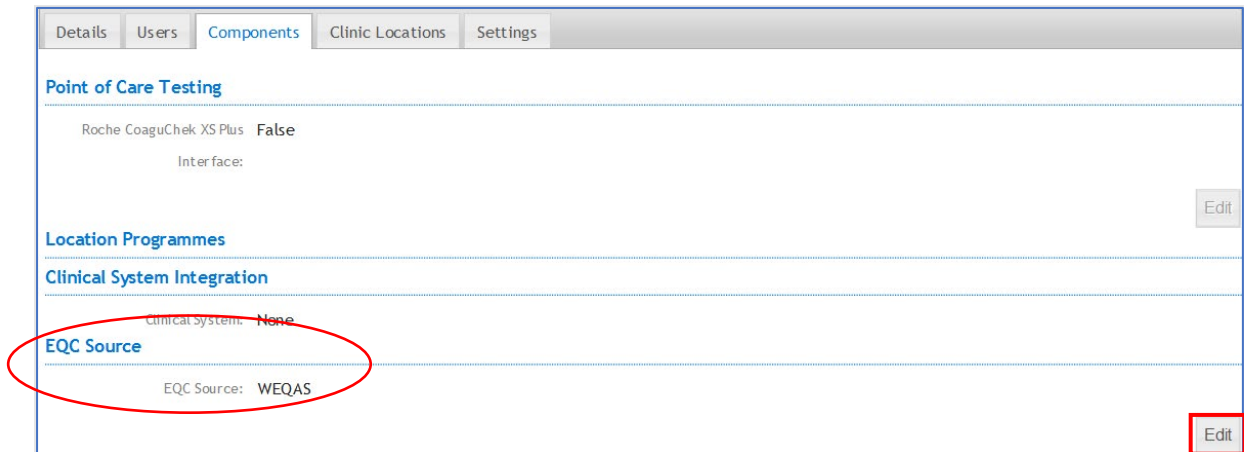
Date of Test	Reference	Source	PoCT Batch Number	PoCT INR	External INR	Error %	
09-Aug-2019	36 / CUC XS	WEQAS	5RT-Y78	2.8	2.7	3.70%	<a href="#">Edit</a> <a href="#">Delete</a>
09-Aug-2019	36 / CUC XS	WEQAS	5RT-Y78	2.5		No Value	<a href="#">Edit</a> <a href="#">Delete</a>

INRstar can record External Quality Assessment results from three independent organisations.

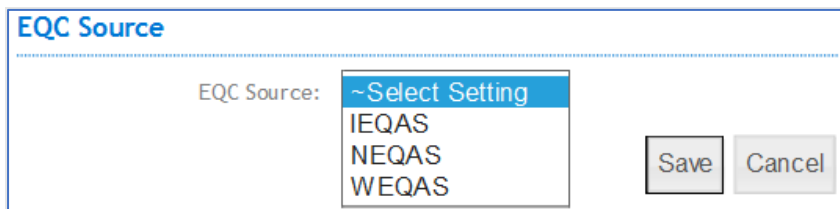


You can select which of these is your preferred supplier:

1. In **'Options'** click on **'Location Management'** and then .
2. In the **'Components'** tab select **'EQC source'** and **'Edit'** to reveal a drop down list of options.



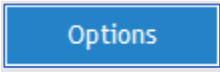

3. Select the **'EQC Source'**:



4. Then click **'Save'** or **'Cancel'**.

## 20.4. Internal Quality Control (IQC)

This section allows the INRstar user to document and record the IQC test details for audit purposes.

1. First click the  button.
2. Then click the  tab.
3. Click the **'Add'** button shown in the screen below:



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Home Patient Clinics Reports Options Help

Dosing Settings PoCT **IQC** EQC Diagnosis A/C Clinicians Location Management Letter Management View Audit Trail

**Manage IQC Results**

Use this page to record the results of your Internal Quality Control (IQC) reagent INR tests.

**Add**

Date	Batch Number	Expiry Date	Lower Bound	Upper Bound	Result	Machine Id	User	Edit	Delete
29-Jul-2020	2146325	22-Jul-2021	1.8	2.2	2.0	235126	Dr Lead	Edit	Delete
13-Jul-2020	54653	01-Jul-2021	2.0	2.5	2.4	3456ty	Dr Lead	Edit	Delete
04-Jun-2020	452345	12-Aug-2021	2.0	2.5	2.2	342354ty	Dr Lead	Edit	Delete
07-Apr-2020	656	15-Apr-2021	2.0	3.0	2.5	54367ty	Dr Lead	Edit	Delete
16-Mar-2020	76744	03-Mar-2022	2.3	2.6	2.4	33265ty	Dr Lead	Edit	Delete
26-Feb-2020	4567	11-Feb-2021	2.0	2.5	2.3	3546ty	Dr Lead	Edit	Delete
26-Feb-2020	152376152	03-Feb-2021	2.5	3.0	2.7	2342763	Dr Lead	Edit	Delete
14-Jan-2020	436745	10-Mar-2021	2.5	2.8	2.7	45467PT	Dr Lead	Edit	Delete
28-Nov-2019	4742	12-Nov-2020	2.0	2.4	2.2	34rt	Dr Lead	Edit	Delete
28-Nov-2019	345387	12-Nov-2020	2.1	2.4	2.2	34523365	Dr Lead	Edit	Delete
21-Nov-2019	6758	06-Nov-2020	2.5	2.8	2.7	234465TY	Dr Lead	Edit	Delete

#### 4. Add the details of the IQC result and the following information:

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Home Patient Clinics Reports Options Help

Dosing Settings PoCT **IQC** EQC Diagnosis A/C Clinicians Location Management Letter Management View Audit Trail

**Add IQC Result**

Date: 04-Nov-2020

Batch Number: 234/45L

Expiry Date: 03-Nov-2021

Lower INR Result Range: 1.8

Upper INR Result Range: 2.1

INR Result: 2.0

Machine Id: 234TY

Save Cancel

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195  
Version : 5.64.0

- The **'Date'** – the default date is today.
- The **'Batch number'** identification (Lot number) of the QC material you are testing.
- The **'Expiry Date'** of that Quality Control material.
- You will have entered the latest batch number, together with the expiry date in the **'PoCT'** tab in **'Options'**.
- The **'Lower INR Result Range'** of acceptable measured values – from the package insert.
- The **'Upper INR Result Range'** of acceptable measured values – from the package insert.



- The **'INR result'** you obtain from your test.
- The **'Machine ID'** - A local code (or serial number) to positively identify the test machine you used.




5. Once you have completed the data entry, click **'Save'**.

#### 20.4.1. Edit an IQC result

1. First click the  button.





2. Then click the  tab.

On **'Manage IQC Results'**, the IQC log will be displayed. Each row will show the date and result of the PoCT INR test, the batch number of the POCT reagent used for the test, the upper and lower bound result range, machine ID and name of the user.

Manage IQC Results								
Use this page to record the results of your Internal Quality Control (IQC) reagent INR tests.								
								
Date	Batch Number	Expiry Date	Lower Bound	Upper Bound	Result	Machine Id	User	
01-Mar-2017	XX-123	05-Feb-2018	2.2	2.7	2.5	34-846	MARYAM MAYA	 

3. Identify the correct IQC result and click the **'Edit'** button.

This will open a window which allows any of the data to be altered:

Edit IQC Result	
Date:	<input type="text" value="01-Mar-2017"/> 
Batch Number:	<input type="text" value="XX-123"/>
Expiry Date:	<input type="text" value="05-Feb-2018"/> 
Lower INR Result Range:	<input type="text" value="2.2"/> ▼
Upper INR Result Range:	<input type="text" value="2.7"/> ▼
INR Result:	<input type="text" value="2.5"/> ▼
Machine Id:	<input type="text" value="34-846"/>
 	

4. Click **'Update'** to record the amended IQC details to the database.



## 20.4.2. Delete an IQC result

1. Navigate to the **Options** tab.
2. Select the **IQC** tab.

**Manage IQC Results**

Use this page to record the results of your Internal Quality Control (IQC) reagent INR tests.

Add

Date	Batch Number	Expiry Date	Lower Bound	Upper Bound	Result	Machine Id	User	
01-Mar-2017	XX-123	05-Feb-2018	2.2	2.7	2.5	34-846	MARYAM MAYA	<div>EditDelete</div>

3. Click **Delete**.

**Confirmation Required**

Are you sure you want to delete the IQC result on the 08-Aug-2011 ?

ConfirmCancel

4. A **Confirmation Required** message will appear to allow to user to **Confirm** or **Cancel** the data entry.

**Manage IQC Results**

Use this page to record the results of your Internal Quality Control (IQC) reagent INR tests.

Add

There are no IQCs recorded

Once confirmed, the **IQC** record is removed.



## 20.5. Diagnosis

INRstar has a standard set of published Diagnoses which are suitable for treatment with anticoagulation drugs. INRstar supports the following anticoagulation drugs:

- Warfarin
- Acenacoumarol
- Apixaban
- Dabigatran
- Dalteparin (LMWH)
- Rivaroxaban
- Edoxaban
- Enoxaparin (LMWH)

Each warfarin diagnosis has a recommended 'Target INR' and 'Duration' of treatment.

Unlisted diagnoses can be added to INRstar, but they will currently only be available for warfarin treatments plans.

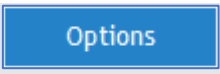
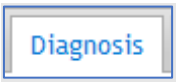
These details are managed by the organisation clinical lead. They define the standard diagnoses with their recommended treatment duration and target INR duration and target INR.

### 20.5.1. Adding a New diagnosis

**Note:** Do not add a new diagnosis if the only difference is the Target INR. Use the patient's individual Treatment Plan to set the specific, non-standard Target INR.

If you do need to add a new diagnosis, you must be logged into INRstar as the **Organisation Clinical Lead**. The available main menu options will be:



- Navigate to the  tab.
- Select the  tab.



To add an unlisted diagnosis, click the '**Add Diagnosis**' button.

Enter the following fields:

- Diagnosis' '**Name**'
- Diagnosis' '**Target INR**'
- Diagnosis' '**Treatment Duration**'
- Drug
  - Warfarin is always selected and this can't be removed
  - The user can add none, one or multiple drugs



To save the new Diagnosis, click the '**Add Diagnosis**' button.

## 20.5.2. Edit an Existing Diagnosis

1. To edit an existing diagnosis, select the diagnosis from the dropdown list.

2. In the '**Details**' section, click the '**Edit**' button.





It is only possible to **add** a new drug to the diagnosis, it is no longer possible to edit Target INR or Treatment Duration or Diagnosis Name..

3. Then click the '**Update**' button.

### 20.5.3. Delete a Custom Diagnosis

Only custom or edited standard diagnoses can be deleted. If an edited standard diagnosis is deleted, it will be replaced with the original standard diagnosis.

To delete a custom diagnosis, click the '**Delete**' button:



UK-Test1

Friday 17-Mar-2023 taram@testOrg @ LumiraDx Care Solutions Test & Demo Org [Log Off](#)

**LumiraDx INRstar**

Home Patient Reports Options Help

Dosing Settings PoCT IQC EQC **Diagnosis** A/C Clinicians User Management Letter Management View Audit Trail

**Manage Diagnosis**

Diagnosis: **Pulmonary Big Toe Infection** Add Diagnosis

**Details**

Name: Pulmonary Big Toe Infection  
Target INR: 2.2  
Treatment Duration: Indefinite

**Warfarin VKA**

Warfarin ☒  
Acenocoumarol ☐

**DOACs and LMWH**

Apixaban ☒  
Dabigatran ☒  
Dalteparin (LMWH) ☐  
Edoxaban ☐  
Enoxaparin (LMWH) ☐  
Rivaroxaban ☐

Edit Delete


Active warfarin patients: 0 / 0 ⚠ (Request additional licences) | Active non-warfarin patients: 0

Version : 5.74.1

CE

If there is an active patient within your Organisation with this diagnosis the following message is also displayed.

**Confirmation Required**

 You are attempting to delete a diagnosis that is in use by 1 patients. Deleting the diagnosis will prevent these patients from being treated, until an alternative diagnosis is selected.

Confirm Cancel

Click the '**Confirm**' button to confirm deleting the diagnosis, or click the '**Cancel**' button to cancel the deletion



## 20.6. Location Management

- **Details** – **Practice** or **Service** location details.
- **Users** – add users and allocate roles and permissions.
- **Components** – details of additional interfaces.
- **Clinic Locations** – add locations for selection as a patient's preferred clinic.
- **Settings:**
  - Allows selection of print preference: A4 graphics (colour) or A4 hidden (black and white).
  - Sets security logout time.

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Wednesday 04-Nov-2020 Dr Lead @ Varley [Log Off]

Home Patient Clinics Reports Options Help

Dosing Settings PoCT IQC EQC Diagnosis A/C Clinicians **Location Management** Letter Management View Audit Trail

**Manage Location(s)**

**Details** Users Components Clinic Locations Settings

Name: **Varley**  
Location Type: **Practice**  
NHS Location Code:  
Contact: **Julie Varley**  
Job Title: **Dr**  
Phone Number: **01209 710999**  
Mobile Number: **09893726151**  
Address 1: **Varley Practice**  
Address 2: **123, The High Street**  
Address 3: **Camborne**  
Town: **Camborne**  
County: **Cornwall**  
Post Code: **TR14 0HX**  
Country: **England**  
Primary E-mail Address: **Julie.varley@lumiradx.com**  
Second E-mail Address: **practice.manager@varleypractice.co.uk**  
Number of Licences: **975**  
Expiry Date: **01-Apr-2024**

**Edit**

Active warfarin patients: 318 / 975 | Active non-warfarin patients: 176  
Automated PST licences: 3 / 195

Version : 5.64.0

CE

### 20.6.1. Log Out Time Configuration

For security reasons INRstar will log out a user if their session is inactive for longer than one hour by default.

Users with **Location Administrator** and **Location Clinical Lead** permission levels can change this setting for each location from 15 minutes to 3 hours:

1. Under **'Options' / 'Location Management'**, open the **'Settings'** tab.
2. Click **'Edit'**, underneath **'Security Settings'**.
3. Select a time via the **'User Inactivity Timeout'** drop-down:



#### Security Settings

User Inactivity Timeout: 1 Hour

4. Click '**Save**' to apply your setting.



## 20.7. System Audit Trail

The audit trail details every action taken by users whilst managing or treating patients. Location clinical lead and organisation clinical lead users can view an audit trail of actions performed on INRstar.

This is accessed from the **'View Audit Trail'** tab found in **'Options'**:

Date Time	Action	Patient Name	More Information	User
05-Jan-2016 10:07:27	Add Patient	Jane HENLEY	PatientTransfer record was added. Transferred to set to [Varley], Transferred from set to [Varley]., Patient record was added. Given Name set to [Jane], Surname set to [HENLEY], Second Address Line set to [Blakeney street], Registered Location set to [Varley], Gender set to [Female], First Address Line set to [ 2 The house], Sex set to [Female], Phone set to [0121 351 2134], Post Code set to [B48 7QS], Patient Number set to [2324156], Fourth Address Line set to [Yardley], Title set to [Mrs], Born set to [10-May-1961], Third Address Line set to [Yardley], Email Address set to [j.hehley@hotmail.co.uk], First Language set to [English], Marital Status set to [Married], Ethnicity set to [British], Ethnic Group set to [White], Fifth Address Line set to [Birmingham], Active Status set to [true], Testing Location set to [Varley]., PatientTransfer record was added. Transferred to set to [Varley], Transferred from set to [Varley].	Dr Lead
05-Jan-2016 09:49:31	Log on			Dr Lead

By default, INRstar will display a page containing all the user actions for this location.

This will include the date/time, action taken, patient's name, name of the user concerned and, if appropriate, the data added or amended.

Older entries can be accessed by means of links marked **'prev'** or **'first'**. Users can then navigate forward again with **'last'** or **'next'**.

<a href="#">first</a>   <a href="#">prev</a>   <a href="#">next</a>   <a href="#">last</a>

## 20.8. Printing Settings

INRstar enables printing of the dosing diary either as a label or on an A4 sheet.

You will need to decide on your default print preferences. INRstar also allows Printing Preferences to be set individually within each patient record.

**Please Note:** The use of A4 diaries is recommended for patients with sight problems.

### 20.8.1. Edit Default Diary, Label and Letter Print Preferences

These are the default settings for all patients on INRstar. If you wish to edit an individual patient's settings to differ from the default, please see below.

1. Navigate to **'Options'**, **'Location Management'**, and then **'Settings'**.
2. Click the **'Edit'** button and choose from the dropdown list:



#### Print Preferences

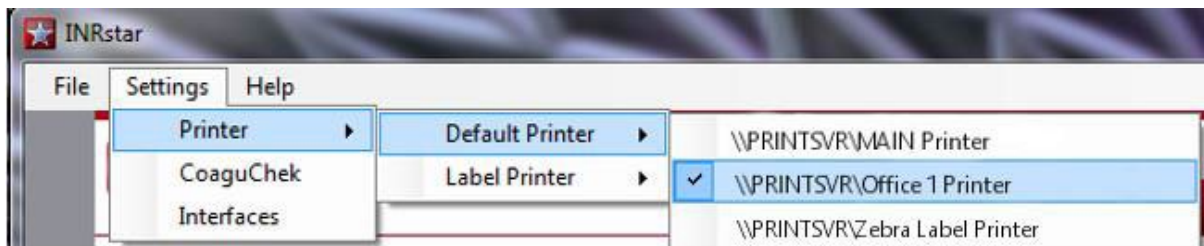
Diary Format: A4 - Tablet Graphics Hidden ▼  
Letter Paper Type: Headed Paper ▼

- When you have selected your desired preferences, click **'Save'**.

**Please Note:** Displaying Tablet Graphics on a dosing diary is only designed for use with colour printers.

#### 20.8.2. Set the Local Workstation Profiles

On the window in which INRstar is running, choose **'Settings'**, **'Printer'**, **'Default Printer'** and then select the appropriate printer for the workstation:



The Default printer will be used to print the practice activity, overdue and exceeded reports, overdue letters, Patient Dosing Diary and the Patient Summary document.

#### 20.8.3. Change Individual Patient's Diary Print Preferences

You can set patients' print preferences to differ from the default on an individual basis in INRstar. For example you may wish to do this because you have one or more patients with sight problems that need A4 diaries, but where the default is set to label.

To change these print preferences for a patient:

- Open the patient's record.
- Click **'Treatment Plans'**, then **'Clinical Details'**.
- Click **'Edit Treatment Plan'**.
- Under **'Print Preferences'**, select the diary format you wish to give your patient from the drop-down list:

#### Print Preferences

Diary Format: A4 - Tablet Graphics Hidden ▼

- Click **'Save'** to complete these changes.

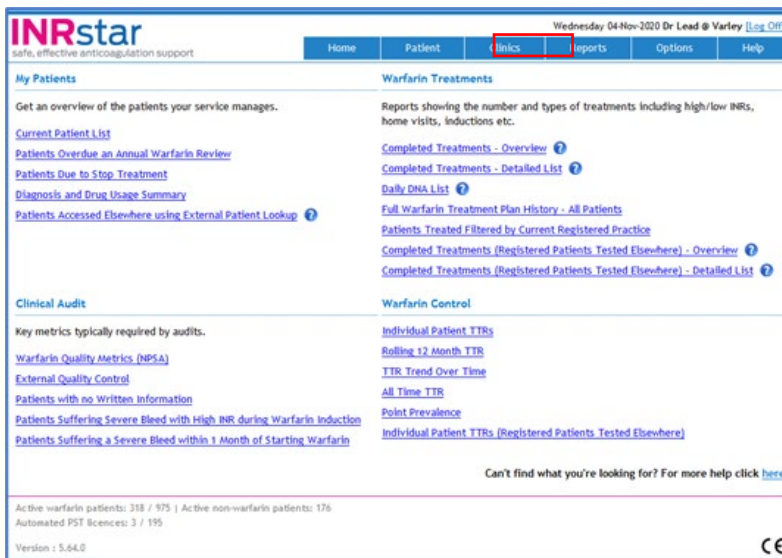


## 21. Reports

Select the **'Reports'** tab on the main menu to display the reports selection screen.

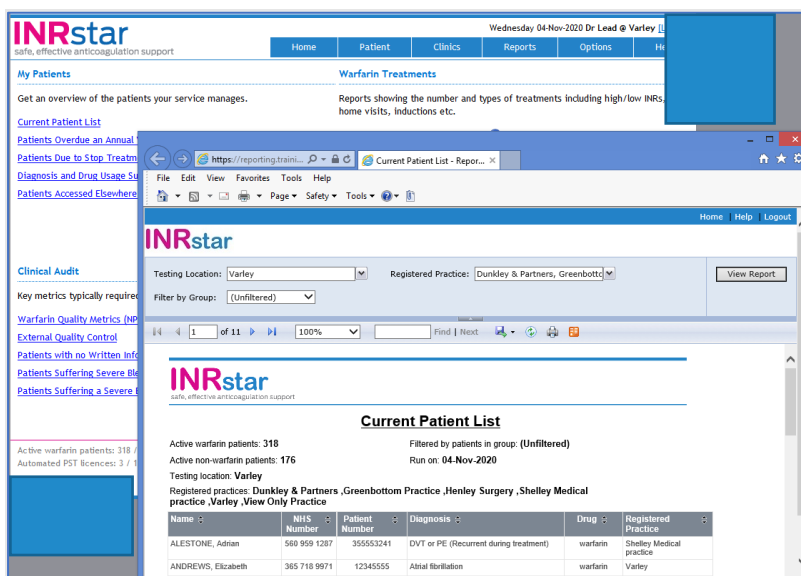


This screen includes several reports available for patients and treatments, divided into 4 section headers: **'My Patients'**, **'Warfarin Treatments'**, **'Clinical Audit'** and **'Warfarin Control'**.



To view a report, click on its name.

If you would like more information, a brief description of the report can be found by hovering over the title.





Reports can be exported and saved in various formats: PDF, Excel-formatted or Excel-unformatted (CSV).

**INRstar**

Testing Location:  Registered Practice:  Filter by Group:

1 of 11 100% Find | Next

**INRstar**  
safe, effective anticoagulation support

**Current Patient List**

Active warfarin patients: 318 Filtered by patients in group: (Unfiltered)  
Active non-warfarin patients: 176 Run on: 04-Nov-2020  
Testing location: Varley  
Registered practices: Dunkley & Partners ,Greenbottom Practice ,Henley Surgery ,Shelley Medical practice ,Varley ,View Only Practice

Name	NHS Number	Patient Number	Diagnosis	Drug	Registered Practice
ALESTONE, Adrian	560 959 1287	355553241	DVT or PE (Recurrent during treatment)	warfarin	Shelley Medical practice
ANDREWS, Elizabeth	365 718 9971	12345555	Atrial fibrillation	warfarin	Varley
ARNOLD, Amy	584 013 7677	34523985	Atrial fibrillation	warfarin	Varley
BAY, Sandy	071 596 5506	88877766	Atrial fibrillation	edoxaban	Varley
BEDDERS, Beatrice	812 145 4565	9272817	Atrial fibrillation	warfarin	Varley

Click on the  icon to print the report documents.





## 22. Analytics


Analytics is an optional central analysis tool, separate to INRstar, allowing users to monitor AC services easily and efficiently with instant access to data across all your INRstar locations and providers.

### 22.1. Overview of INRstar Locations

INRstar analytics provides up-to-date information across all your INRstar locations.

INRstar analytics enables services to:

- Review and benchmark location TTR.
- Compare each location against high performance areas to share best practice (compare to country average).
- Make informed decisions on AC services across multiple locations.
- View the number of INRs within 0.5, 0.75 and 1.0 of the target range.
- Benchmark the number of adverse events and severity recorded at each location.
- Improve health outcomes at population level.

INRstar Analytics contains tool tips throughout the software. The information icon  provides additional information for each section.

Supported web browsers are:

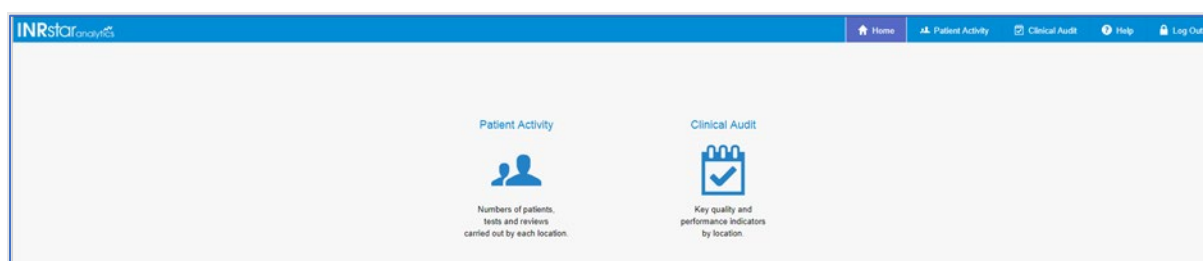
- Internet Explorer 10+
- Google Chrome

Login at: <https://analytics-uk.caresolutions.lumiradx.com/>

Use your username and password provided to sign into your designated site.

The '**Home**' screen will provide you with two options:

- '**Patient Activity**' – The number of patient tests and reviews at each location.
- '**Clinical Audit**' – Key quality and performance indicators by location.





**‘Patient Activity’** – Click on the **‘Patient Activity’** symbol on the screen:



Or

The **‘Patient Activity’** section in the screen header bar:



These take you to the **‘Patient Activity’** screen. Here, in the first column you will see a series of available data filters:

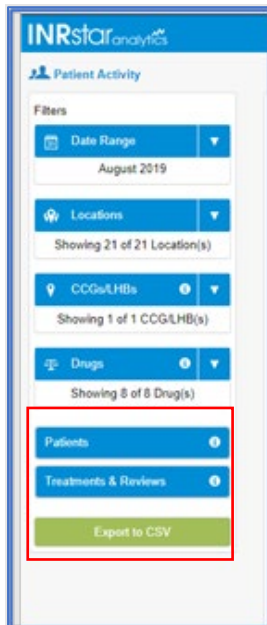
- Date Range
- Locations
- Organisations CCG/LHB (Health Authority)
- Drugs

Location	Patients Over Period	Patients Seen	Patients Initiated	Warfarin Home Visits	Warfarin Treatments	Reviews Done
Hospital E	75	0	0	0	0	0
Hospital F	75	0	0	0	0	0
Pharmacy D	75	0	0	0	0	0
Pharmacy H	75	0	0	0	0	0
Practice A	79	0	0	0	0	0
Practice B	79	0	0	0	0	0
Practice I	64	0	0	0	0	0
Practice J	75	0	0	0	0	0
Practice K	75	0	0	0	0	0
Practice L	78	0	0	0	0	0
Practice M	78	0	0	0	0	0
Practice N	29	0	0	0	0	0
Practice O	43	0	0	0	0	0
Practice P	78	0	0	0	0	0
Practice Q	62	0	0	0	0	0
Practice R	71	0	0	0	0	0
Practice S	76	0	0	0	0	0
Practice T	76	0	0	0	0	0
Practice U	44	0	0	0	0	0
Prison C	76	0	0	0	0	0
Prison G	72	0	0	0	0	0



In the same column you have a further two sections:

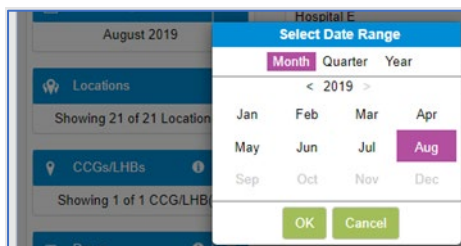
- Patients
- Treatments & Reviews



There is an option to export the data in the tool into Excel, as CSV files.

For each section that contains the symbol  you can hover over with a mouse and click to expand and reveal a detailed description of how the data is displayed.

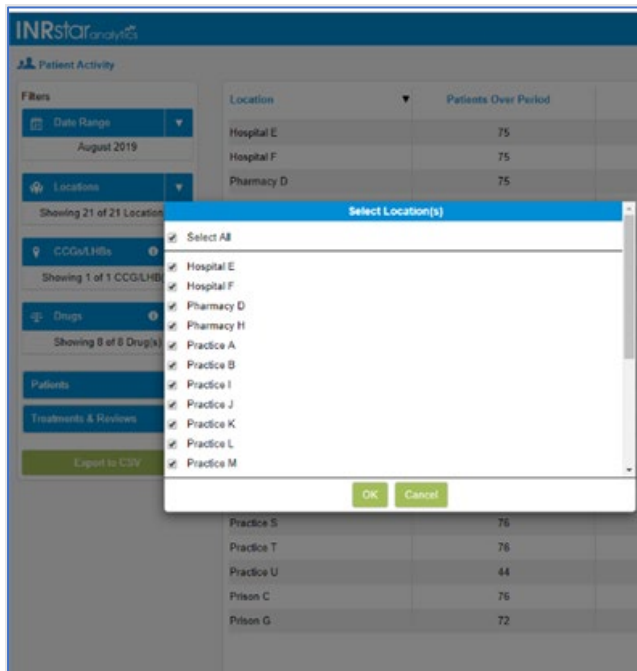
### 22.1.1. Date Ranges



The date range filter can be set to month, quarter, or year. The filter will show the current or previous data in preceding years if available.

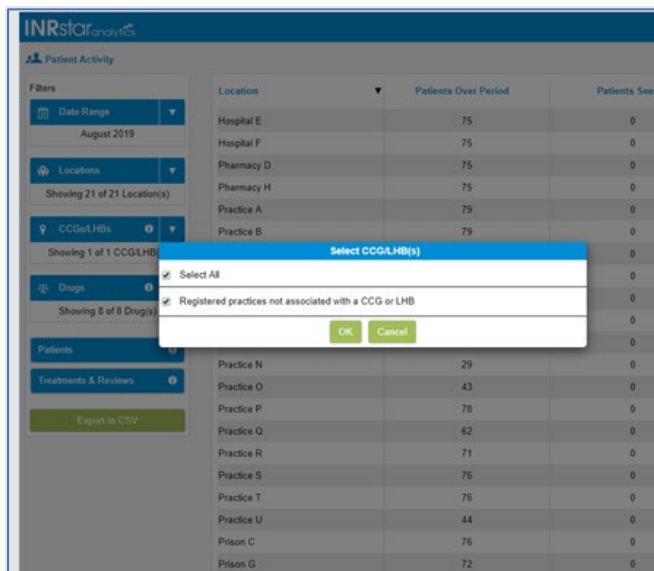


## 22.1.2. Locations




The system will detail all locations that have been set up for the organisation.

## 22.1.3. Organisations (PCN's, Local Health Boards, Federations)



The details of the organisation and locations assigned.

**Note:** Click on the search criteria box to include and present data on registered locations/practices not associated with the organisation.

The Icon  when clicked reveals more information on how the data is presented for organisations.



Location	Patients Over Period	Patients Seen
Hospital E	75	0
Hospital F	75	0
Pharmacy D	75	0
Pharmacy H	75	0
Practice A	79	0
Practice B	79	0
Practice I	64	0
Practice J	75	0
Practice K	75	0
Practice M	78	0
Practice N	29	0
Practice O	43	0
Practice P	78	0
Practice Q	62	0


#### 22.1.4. Drugs

The **Drugs** list section (eight drugs) can be filtered to select individual, several, or all drugs.


Location	Patients Over Period
Hospital E	75
Hospital F	75
Pharmacy D	75
Pharmacy H	75
Practice A	79
Practice B	79
Practice I	64
Practice J	75
Practice K	75

Drugs
<input checked="" type="checkbox"/> Select All
<input checked="" type="checkbox"/> Apixaban
<input checked="" type="checkbox"/> Dabigatran
<input checked="" type="checkbox"/> Dalteparin (LMWH)
<input checked="" type="checkbox"/> Edoxaban
<input checked="" type="checkbox"/> Enoxaparin (LMWH)
<input checked="" type="checkbox"/> Rivaroxaban
<input checked="" type="checkbox"/> Warfarin

Click '**OK**' to confirm and run the search with data requirement or '**Cancel**' if not required.  reveals more information on how the data is presented.

#### 22.1.5. Patients

The '**Patients**' section contains an information icon  that details how the data is presented in three formats, with a description for each report format.



**INRstar analytics**

**Patient Activity**

**Filters**

- Date Range**: August 2019
- Locations**: Showing 21 of 21 Location(s)
- CCGs/LHBs**: Showing 1 of 1 CCG/LHB(s)
- Drugs**: Showing 8 of 8 Drug(s)
- Patients**
- Treatments & Reviews**

**Export to CSV**

Location	Patients Over Period	Patients Seen
Hospital E	75	0
Hospital F	75	0
Pharmacy D	75	0
Pharmacy H	75	0
	79	0
	79	0
	64	0
	75	0
	75	0
	78	0
	29	0
Practice O	43	0
Practice P	78	0
Practice Q	62	0
Practice R	71	0
Practice S	76	0
Practice T	76	0
Practice U	44	0
Prison C	76	0
Prison G	72	0

**Drugs**

If your AC services use INRstar to assist with regular reviews for non-warfarin patients, you can filter data by drug.

The NICE Clinical Knowledge Summary recommends that patients on rivaroxaban, dabigatran or apixaban are assessed ideally every 3 months.

- Patients Over Period
- Patients Seen
- Patients Initiated

**INRstar analytics**

**Patient Activity**

**Filters**

- Date Range**: August 2019
- Locations**: Showing 21 of 21 Location(s)
- CCGs/LHBs**: Showing 1 of 1 CCG/LHB(s)
- Drugs**: Showing 8 of 8 Drug(s)
- Patients**
- Treatments & Reviews**

**Export to CSV**


**Location**

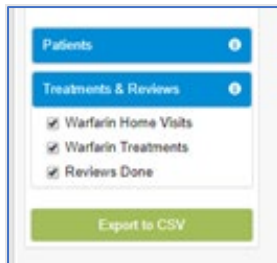
**Patients**

- **Patients Over Period**: Total number of patients who were active at some point over the selected period. Example: A patient is deactivated on the 1st of the month. This patient is included in this count.
- **Patients Seen**: Number of unique patients seen for either a warfarin INR treatment or a clinical review during the selected period. Example: A patient having two INR tests during the period will only be counted once; A patient having two rivaroxaban reviews during the period will only be counted once.
- **Patients Initiated**: Number of patients started warfarin initiation. Example: A patient requires 3 INR tests as part of their induction. Tests one and two fall within the period selected. Test 3 does not. The patient would be counted once only during the period their first INR test falls into. For non-warfarin patients this will be a count of the number of patients who have had the 'initiated' flag ticked at their review. If a single patient has had the 'initiated' flag ticked several times in the reporting period, each 'tick' will count.

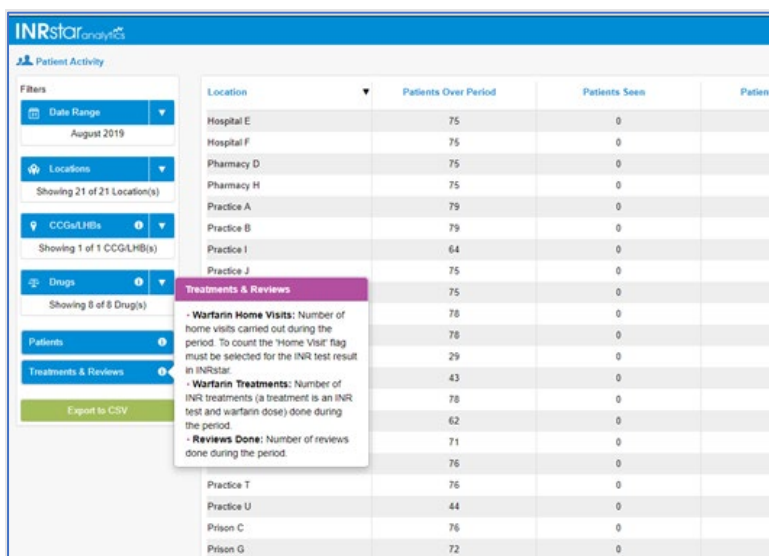


## 22.1.6. Treatments

The '**Treatments**' section contains an information icon  that details how the data is presented in three formats with a description:



- Warfarin Home Visits
- Warfarin Treatments
- Reviews Done



Location	Patients Over Period	Patients Seen	Patient
Hospital E	75	0	
Hospital F	75	0	
Pharmacy D	75	0	
Pharmacy H	75	0	
Practice A	79	0	
Practice B	79	0	
Practice I	64	0	
Practice J	75	0	
Treatments & Reviews	75	0	
- Warfarin Home Visits: Number of home visits carried out during the period. To count the 'Home Visit' flag must be selected for the INR test result in INRstar.	78	0	
- Warfarin Treatments: Number of INR treatments (a treatment is an INR test and warfarin dose) done during the period.	78	0	
- Reviews Done: Number of reviews done during the period.	29	0	
	43	0	
	78	0	
	62	0	
	71	0	
	76	0	
Practice T	76	0	
Practice U	44	0	
Prison C	76	0	
Prison G	72	0	

When each section has been selected the user can view data presented in charts on screen or, if required, export the data to a different format.

Use the 'scroll bar' at the edge of the display, by clicking and dragging with a mouse to view all rows and columns of the data.

**Note:** The export creates a CSV output which should be saved and then imported into appropriate software for analysis. The file should not be opened directly from the export function as some data could be misinterpreted due to the structure of the file.



## 22.2. Clinical Audit - Key Quality Indicators


Click on the '**Clinical Audit**' icon or the button header of the front screen to select and review the key quality indicators.

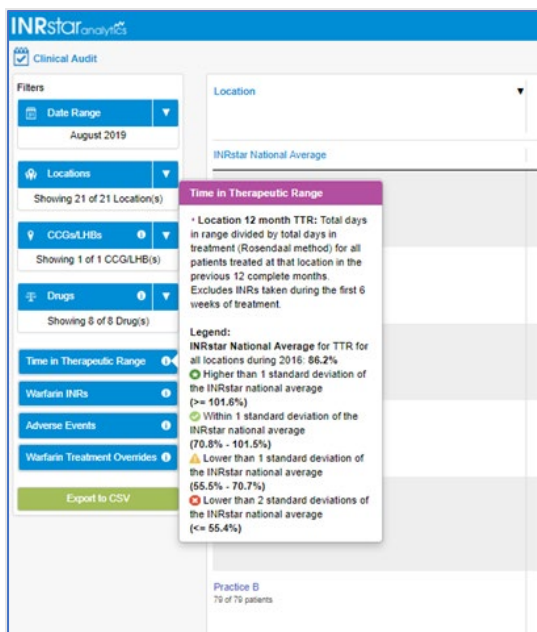


In the '**Clinical Audit**', instructions for use remain the same as for '**Patient Activity**' for the following sections:

- Date range
- Locations
- Organisations/ASL details
- Drugs

### 22.2.1. Time in Therapeutic Range (TTR)

Click on the TTR to search 12-month location TTR for each Testing Location. The information icon  will display a description of the data provided and a '**Legend**' to identify the different categories of data for this section.








### 22.2.2. Quality Metrics for Warfarin INRs

The quality metrics for the **‘Warfarin INRs’** section will provide the user options to select the data to be presented. Each section can be selected by a ‘tick’ in the list box, or the data can be segmented into individual data views.

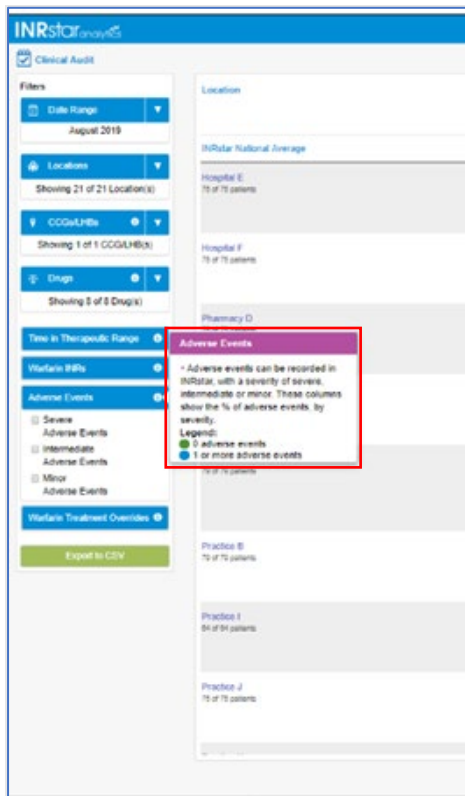
The information icon  will display a description of the data provided and a **‘Legend’** to identify the different categories of data for this section.




### 22.2.3. Adverse Events

The section details the **'Adverse Events'** recorded in INRstar, in three categories as follows:

- Severe
- Intermediate
- Minor



The information icon  will display a description of the data provided and a **'Legend'** to identify the different categories of data for this section.

### 22.2.4. Warfarin Treatment Overrides

The **'Warfarin Treatment Overrides'** section shows the following data and can be selected by clicking the required box:

- Dose overrides
- Review (days) overrides



When each section has been selected the user can view collated data presented in charts on screen or, if required, look to export the data to a different format.

Use the 'scroll bars' at the edge of the display, by clicking and dragging with a mouse to view all rows and columns of the data.

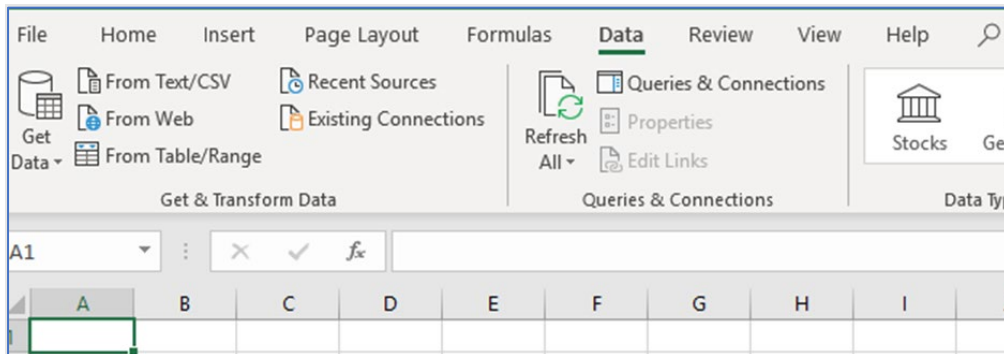
### 22.3. Export to CSV

The report tool can export the data to a CSV file by using the '**Export to CSV**' button at the bottom of the first column on the screen.



**Note:** The export creates a CSV output which should be saved and then imported into appropriate software for analysis. The file should not be opened directly from the export function as some data could be misinterpreted due to the structure of the file.

The data will be displayed correctly in Excel if the file is opened by Importing into Excel using the **'Get Data from Text/CSV'** option.



At the end of the Analytics session click on the **'Log Out'** icon on the task bar.





## 23. Legal Notices

### Copyright:

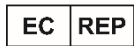
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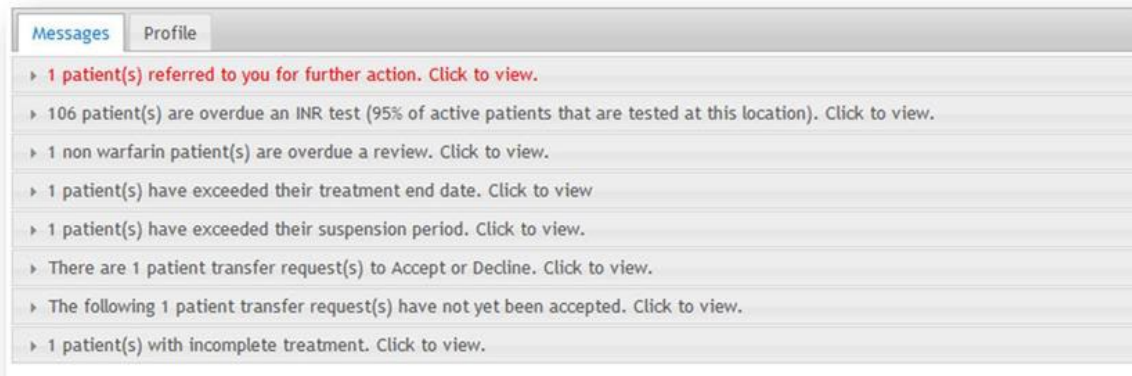


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## Appendix A - Home Page Messages

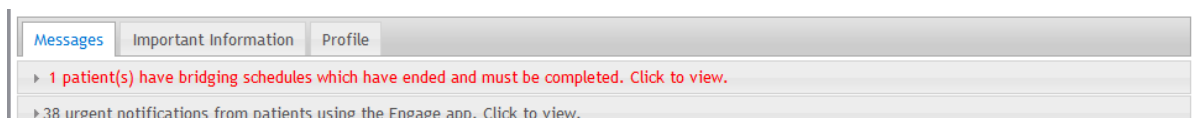
A selection of reports are displayed on the **'Messages'** tab of the user's **Home Page**.



To view a report, click its title.

### Patient(s) have bridging schedules which have ended and must be completed

This report is highlighted in red text to alert you to the importance of reviewing bridging records that have ended and that will need to be completed.



Open the notification and click the patient name or **'View'** button to access the patient's details and bridging records.





## Patient(s) referred to you for further action

The report title shows the total number of active patients' INR treatments that have been referred by peers.

▼ 1 patient(s) referred to you for further action. Click to view.

Full Name	Born	NHS Number	Referee	Clinician	When	INR
<a href="#">JAVELIN, Michael</a>	19-Sep-1948	740 980 4610	Dr John Smith	Mr Smith	02-May-2012 11:09	2.0

Generated On: 02-May-2012 11:10

You can access the Treatment Plan of each patient directly from this list, by clicking the patient's name.

## Patient(s) who are overdue an INR test

The report title shows the total number of active patients that are Overdue for their next INR blood test, along with the percentage, plus any patients who have recently finished their bridging schedule and the Next Test Date was moved by the clinician.

▼ 7 patient(s) are overdue an INR test (78% of active patients at this location). Click to view.

Full Name	Born	Phone Number	INR	Last INR Test Date	Next INR Test Date	Days Overdue
<a href="#">REVIEWS, Testing</a>	01-Feb-1927		1.9	15-Sep-2011	22-Sep-2011	109
<a href="#">SMITH, Bob</a>	01-Feb-1972		2.1	01-Oct-2011	08-Oct-2011	93
<a href="#">KOLOT, John</a>	10-Nov-1933		2.6	19-Oct-2011	09-Nov-2011	61
<a href="#">NICHOLLS133, Jr Michael</a>	27-Aug-1986		1.0	30-Nov-2011	04-Dec-2011	36
<a href="#">GREEN2, Gordon</a>	15-Mar-1963	01578 456789	1.0	06-Dec-2011	10-Dec-2011	30
<a href="#">TRIPPER 2, Day</a>	16-Dec-1954	0000000000	3.3	06-Dec-2011	13-Dec-2011	27
<a href="#">NEWPAATIENT, Joan</a>	01-May-1973		2.5	06-Dec-2011	03-Jan-2012	6

Generated On: 09-Jan-2012 12:44

[Print letters](#) [Print report](#)

You can access the treatment plan of each patient directly from this list, by clicking the patient's name.

To print out a letter for each overdue patient, click the '**Print letters**' button. This will open a .pdf document, and from here you can print all the letters or just a chosen few using the standard page selection.

**Please Note:** You need Adobe Acrobat to view and print this document.



To print the report of Overdue patients, click the **'Print report'** button.

### Non warfarin patient(s) are overdue a review

The report title shows the total number of non-warfarin patients overdue a review.

Click the patient(s) name and open the **'Treatment Plans'** and then **'Reviews'** tab to enter a new next Review Date.

### Patient(s) that have exceeded their treatment end date

The report title shows the total number of active patients that are still being actively treated but have surpassed their treatment end date.

▼ 1 patient(s) who have exceeded their treatment end date. Click to view

Full Name	Born	Phone Number	NHS Number	Diagnosis Name	End Date
<a href="#">TEST, John</a>	10-Jan-1940	555 834 598	621 556 4486	Atrial fibrillation	31-Jan-2011

Generated On: 11-Aug-2011 13:38

Print report

To print the report of Exceeded patients, click the **'Print report'** button.





You can access the treatment plan of each patient directly from this list, by clicking the patient's name.

**Please Note:** You need Adobe Acrobat to view and print this document.

### Patient(s) exceeded their suspension

The report title shows the total number of suspended patients that have surpassed their suspension end date.

The suspension feature allows a patient to be temporarily suspended from treatment, for a period of up to 6 months. This will allow a patient to remain 'Active', but to not appear on the overdue reports during their suspension period. The patient will not be automatically un-suspended, once the selected date has been passed.

### Patient transfer request(s) to Accept or Decline

The report title shows the total number of patients that have been transferred to your location that have not yet been accepted or declined.

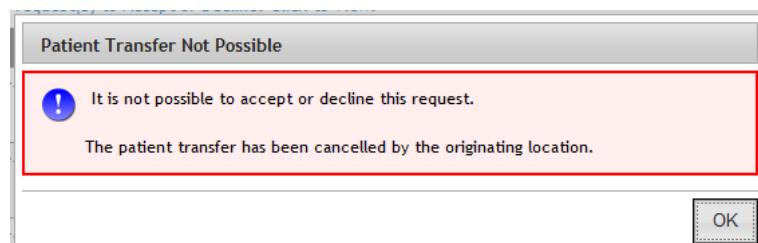
▼ There are 5 patient transfer request(s) to Accept or Decline. Click to view.

Full Name	Born	Diagnosis	Transferred From	Next Test Due	Last INR Result		
<a href="#">CAPRI, Krystyna</a>	06-Sep-1944	Atrial fibrillation	Office (01209 710999)	Thursday 23-Aug-2012	2.0	Accept	Decline
<a href="#">ELLIS, Bob</a>	14-Jul-1942	Atrial fibrillation	Office (01209 710999)	Wednesday 09-May-2012	2.1	Accept	Decline
<a href="#">DUTTON, Patrick</a>	28-Jan-1947	Angelman Syndrome (AS) Non Standard Diagnosis	Office (01209 710999)	Tuesday 01-May-2012	1.8	Accept	Decline
<a href="#">JONES, Helen</a>	07-Mar-1955	Atrial fibrillation	Office (01209 710999)	Sunday 11-Dec-2011	0.9	Accept	Decline
<a href="#">HUDSON, Edna</a>	06-Oct-1924	Atrial fibrillation	Office (01209 710999)	Thursday 01-Dec-2011	1.6	Accept	Decline

Generated On: 20-Aug-2012 14:21

To accept the patient transfer, which sets your location as the patient's Testing Location, therefore giving your location the responsibility of treating this patient, click the '**Accept**' button.

If the patient's transfer request has been cancelled by the originating location the following pop up message is displayed:



To decline the patient transfer, which sets the transferred from location to continue being responsible for the treating of this patient, click the '**Decline**' button.

You can access the patient's record directly from this list, by clicking the patient's name.



## Patient transfer request(s) have not yet been accepted

The report title shows the total number of patients that you have requested a transfer to another Testing Location but have not yet been accepted.


▼ The following 1 patient transfer request(s) have not yet been accepted. [Click to view.](#)

Full Name	Born	NHS Number	Transferred To	Transfer Requested On	Next INR Test Date	
<a href="#">BUTTER, Peanut</a>	01-Sep-1980	660 501 5282	Tpp Pharmacy (06925922205)	05-Sep-2019	Monday 02-Sep-2019	<a href="#">Cancel</a>

You can now cancel a request to transfer a patient's Testing Location from this report:

Click on the [Cancel](#) button. A pop up message box is displayed if the patient transfer request has not yet been accepted by the receiving location:

**Confirm Transfer Cancellation**

 Please confirm you wish to cancel the testing location transfer request of Laura Smith to Tpp Pharmacy.  
  
The receiving location for the patient transfer will not receive a notification that the transfer has been cancelled.

[Confirm](#) [Cancel](#)


Click '**Confirm**' to keep the Patient record at your location, or '**Cancel**' to remove the message and the patient record will remain being transferred.

You will see the following confirmation at the bottom of your screen to advise when the request to cancel has been successfully completed:

Patient transfer request cancelled successfully.

If the receiving location has accepted the transfer request you will see the following message:

**Cancellation not possible**

 It is not possible to cancel this testing location transfer.  
  
The patient transfer has already been accepted by the receiving location.

[OK](#)



## Patient transfer request(s) have been declined

The report title shows the total number of patients for which you have a change of Testing Location but have been declined.

▼ 1 patient transfer request(s) have been declined. [Click to view.](#)

Full Name	Born	Declined By	Next Test Date	
<a href="#">ELLIS, Bob</a>	14-Jul-1942	Nats Practice Long Name (027589632255)	Wednesday 09-May-2012	<a href="#">Acknowledge</a>

The patient transfer request being declined means that the patient is still under your location's responsibility to treat. You need to acknowledge the patient's declined transfer request before you can transfer this patient's Testing Location to another location.

You can access the patient's treatment plan directly from this list, by clicking the patient's name.

## Patient(s) with incomplete INR treatment

The report title shows the total number of active patients with an Incomplete INR treatment.

▼ 2 patient(s) with incomplete treatment. [Click to view.](#)

Full Name	Born	NHS Number	Clinician	Status
<a href="#">ATHERTON, Janice</a>	06-Jun-1955	742 702 1940	Dr Hugo Searle	Awaiting completion
<a href="#">SMITH, Edna</a>	12-Jul-1938	580 379 0788		Referred, awaiting authorisation

Access the treatment plan of each patient directly from this list, by clicking the patient's name.

## Patient(s) either have no diagnosis or no treatment plan

The report title shows the total number of active patients that either have their diagnosis set to '**No Diagnosis**' or do not have a treatment plan.

▼ 3 patient(s) either have no diagnosis or no treatment plan. [Click to view.](#)

Full Name	NHS Number	Diagnosis in Previous Version of INRstar
<a href="#">BARCELONA, Jamie</a>	453 598 9303	Antiphospholipid syndrome (standard risk)
<a href="#">CHELSEA, Krystyna</a>	789 211 0291	Prosthetic Valve (high Risk)
<a href="#">YEOVILL, Emma</a>	432 122 1234	Antiphospholipid syndrome (standard risk)

Generated On: 18-Sep-2013 11:34

You can access the treatment plan of each patient directly from this list, by clicking the patient's name.



## Appendix B - NPSA Dosing Guidelines

### Q. What are NPSA guidelines?

- A. In 2007 the National Patient Safety Agency (NPSA) issued '**Patient Safety Alert 18**' which contained a set of recommendations aimed at increasing the safety of warfarin dosing.

In section 8 the guidelines state:

*"Patient and carer groups have informed the NPSA that warfarin regimens with the following characteristics would promote safer use:*

- *use the least number of tablets each day;*
- *use constant daily dosing and not alternate day dosing;*
- *not require the use of half tablets – patients find it difficult to break tablets in half and instead, when necessary, would rather use 0.5mg tablets.*

*The NPSA recommends that NHS organisations should review their local practice to incorporate these characteristics. All strengths of warfarin tablets should be used to best meet the needs of individual patients. Not all patients will need all strengths of tablets.*

*It is recommended that oral anticoagulant doses should be expressed in mg and not as the number of tablets."*

Read the full guidelines at [Actions that can make anticoagulant therapy safer: Alert and other information \(nationalarchives.gov.uk\)](http://nationalarchives.gov.uk); select document titled 'Anticoagulation Compliance Checklist'.

### Q. How does INRstar incorporate the NPSA dosing guidelines?

- A. INRstar complies with the NPSA guidelines by adopting the following rules when calculating a suggested warfarin dose:
- All warfarin doses (greater than 3.0mg/day) are rounded to the nearest 0.5mg. This ensures that the dose of warfarin will be the same for each day of the week.
  - All strengths of warfarin tablets (including 0.5mg) are made available for use in calculating dosing schedules.
  - Split tablets are excluded from suggested dosing schedules.

### Q. I don't like the guidelines. Can I turn them off?

- A. Yes, you can switch the guidelines on or off at any time for individual patients. To disable the NPSA guidelines for an individual patient:

1. Click on the '**Clinical Details**' tab in the patient's treatment plan.



2. Click the '**Edit Treatment Plan**' button.
3. Uncheck the '**Use NPSA Guidelines**' box in the '**Tablet Selection**' section.
4. Select the warfarin tablet strengths you prefer for the patient.
5. Click '**Save**'.

**Q. Can I prevent the NPSA guidelines from being the default dosing method for new patients?**

- A. Yes, the default dosing method for new patients can be configured by the organisation clinical lead to prevent NPSA dosing being applied as the default dosing method.

**Q. How does INRstar round the warfarin doses?**

- A. If NPSA dosing is enabled, when a new INR result is added INRstar will calculate a new INR dose and then apply rounding to the dose as follows:
- For in-range INR results the existing warfarin dose will be rounded to the nearest 0.5mg.
  - For a low INR result the new suggested dose will be rounded **up** to the nearest 0.5mg.
  - For high INR result the new suggested dose will be rounded **down** to the nearest 0.5mg.

Note: Dose rounding will not be applied to doses less than 3.0mg/day.

**Q. Why are low doses not rounded even if 'Use NPSA guideline' is selected?**

- A. For low doses (<3.0mg) rounding to the nearest 0.5mg could cause proportionately excessive dose changes which might lead to under or over anticoagulation. For this reason doses of <3.0 mg are not rounded even when NPSA dosing is enabled.

**Q: Since migrating from an earlier version, INRstar is changing the doses of some patients with in-range INR results. Why is this?**

- A: Previous versions of INRstar did not apply rounding to doses when an in-range INR was entered. This did not fully meet the NPSA recommendation so this has been changed in the latest version. This will mean that, if you have recently migrated from an earlier version and you have NPSA dosing enabled, you will notice that some warfarin doses will round to the nearest 0.5mg even if the new NR is in-range.

**Q: Since migrating from an earlier version, INRstar is reducing the review period to 28 days for some patients with in-range INR results. Why is this?**

- A: If INRstar changes the existing dose of a patient with an in-range INR result (by rounding it – as described above) it will also limit the associated review period to a maximum of 28 days. This is a safety precaution to prevent a patient having an excessively long review period following a change in the warfarin dose. This will



only apply to patients with previous review periods which are greater than 28 days – and will apply to this treatment only.

**Q. We don't use 5mg strength warfarin tablets at our centre. Can I prevent these being used?**

**A.** Yes, you can prevent the use of 5mg strength tablets whilst still using the NPSA dosing guidelines:

1. Click on the '**Clinical Details**' tab in the patient's treatment plan.
2. Click the '**Edit Treatment Plan**' button.
3. Uncheck the '**5mg tablet strength**' box in the '**Tablet Selection**' section.
4. Click '**Save**'.



## Appendix C - External Clinical Systems

This section describes adding a new patient to INRstar from an external Clinical System where your location has the appropriate Clinical System interface licence.

### Add a New Patient from TPP SystmOne

**Please Note:** You must have the patient you want to add into INRstar open in TPP SystmOne.

On the INRstar Navigation bar click the  button to display the patient Search screen.

Click the  tab to display the add patient screen.

When using INRstar, the first time you get a patient from TPP SystmOne or save a patient's new treatment into TPP SystmOne, a message box will appear in TPP SystmOne:



Click the '**Allow Connection**' button so that INRstar and TPP SystmOne can share data.

You will need to log out and then log back in again to TPP SystmOne to complete the interface settings.

A message box will appear, asking if you would like to get the current patient from TPP SystmOne:



Click the '**Yes**' button on the message box to get the patient details from TPP SystmOne.



**Step 1:** INRstar will get the current patient's demographics from TPP SystmOne.

**Step 2:** The patient's details will populate the **'Add Patient'** form. Please check these are the expected patient's details.

**Step 3:** Please select the patient's Clinician in the **'Add Patient'** form.

**Step 4:** Click the **'Save'** button to save the patient into INRstar.

If a patient's record is not open in TPP SystmOne, or TPP SystmOne is not open, an error will appear:

If this happens, make sure TPP SystmOne is open, select the correct patient in TPP SystmOne and click the **'Retry'** button.

If you click the **'No'** button, the add patient's details screen will display to allow you to enter the patient's details in manually.





## Add a New Patient from INPS Vision

When adding a new patient into INRstar you are able to automatically retrieve the patient's demographical information stored in INPS Vision.

Check INPS Vision is open and that you are logged in.

In INRstar navigate to the **Patient** page.

Click the **Add Patient** tab.

To search for a patient within INPS Vision, you need to enter either the patient's NHS number, Family Name, Given Name or Date of Birth or all four criteria.

Click the **'Search Vision'** button.

The matching patients will be displayed below the form:

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Monday 11-Mar-2019 Dr A N other @INPS Medical Centre [\[Log Off\]](#)

[Home](#) [Patient](#) [Clinics](#) [Reports](#) [Options](#) [Help](#)

[Search](#) [Add Patient](#) [Tests Due](#) [Results](#) [Recently Viewed](#) [Change Registered Practice](#) [External Patient Lookup](#)

**Demographics**

**Contact**

Patient Number:

NHS Number:

Title:

FAMILY name:

Given name:

Born:

Sex:

Gender:

Ethnicity:

First Language:

Marital Status:

Line 1:

Line 2:

Line 3:

Town/City:

County:

Postcode:

Home Tel:

Mobile:

Email Address:

[Search Vision](#) [Save](#) [Cancel](#)

**Clinical System Search Results**

Name	Born	NHS Number	Address	Postcode
<a href="#">BENNET, EDITH</a>	26-Dec-1958	502 809 0333	19 WHITWORTH CLOSE	Z99 9ZZ
<a href="#">BERNICE, EDITH ROSE</a>	08-Jul-1943	484 059 4384	1 WHITWORTH CLOSE	Z99 9ZZ
<a href="#">FAICHEN, EDITH ANN</a>	21-Nov-1968	589 562 9091	7 THE PADDOCK	Z99 9ZZ
<a href="#">HODGMAN, EDITH M</a>	05-Feb-1924	488 290 4055	9 JERRAM CLOSE	Z99 9ZZ
<a href="#">PIERCE, EDITH R</a>	11-Jun-1965	512 392 8200	THE REDAN	Z99 9ZZ

If your search criteria returns too many results the interface may time out. If this happens, enter more specific search criteria, for example a NHS number.

Choose a patient by clicking on the patient's name, this will fill in the **'Add Patient'** form with the selected patient's demographics that are stored in INPS Vision.



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Home Patient Clinics Reports Options Help

Search Add Patient Tests Due Results Recently Viewed Change Registered Practice External Patient Lookup

**Demographics** **Contact**

Patient Number:

NHS Number:

Title:

FAMILY name:

Given name:

Born:

Sex:

Gender:

Ethnicity:

First Language:

Marital Status:

Line 1:

Line 2:

Line 3:

Town/City:

County:

Postcode:

Home Tel:

Mobile:

Email Address:

Check all the patient's details are correct and add any missing details and optional information, such as the patient's A/C Clinician.

To save the new patient, click the '**Save**' button.

To cancel, click the '**Cancel**' button.

## Add a New Patient from EMIS Web, LV & PCS

The interface between INRstar and Clinical systems allow the user to:

- Extract a patient's demographic information from clinical system when adding a new patient record into INRstar.
- Save a patient's INR treatment under the corresponding patient record in the clinical system.

In order to use the clinical system interfaces within INRstar, you will need to contact the INRstar Sales team on 01209 710999 to purchase a clinical system licence. Without this licence on your account the clinical system integration options will not be available.

Once you have purchased your licence, you will need to enter your EMIS configuration settings into INRstar - you will only need to do this once. Use the guides below to see what information INRstar requires and where you will find that information in your EMIS system. See related content.

**Please Note:** You will need EMIS to be open.

Within INRstar you are able to add a new patient using the details stored in EMIS.



## Step 1

Navigate to the **Patient** page using the navigation bar in the top right hand corner.

Then click the **Add Patient** tab.

## Step 2

To search for a patient within EMIS, you need to enter either the patient's NHS number, Family Name, Given Name or Date of Birth or all four.

Click the **'Search EMIS'** button.

## Step 3

The matching patients will be displayed below the form.

SearchAdd PatientTests DueResultsRecently ViewedChange Registered PracticeExternal Patient Lookup

**Demographics**

Patient Number:

NHS Number:

Title:~Select Title

FAMILY name:smith

Given name:

Born:

Sex:~Select Sex

Gender:Not Known

Ethnicity:~Select Ethnicity

First Language:~Select First Language

Marital Status:~Select Marital Status

**Contact**

Line 1:

Line 2:

Line 3:

Town/City:

County:

Postcode:

Home Tel:

Mobile:

Email Address:

Search EMISSaveCancel

**Clinical System Search Results**

Name	Born	NHS Number	Address	Post Code
ARNOLD, Kathleen	09-Feb-1973	475 577 0792	29 Main Street	WF5
BIRD, Keith	12-Aug-1993	762 421 9724	70 Park Avenue	LS10
LONG, Christopher	05-Oct-1958	114 106 1105	82 Queensway	LS2
NORTH, Steven	17-Oct-1950	987 322 7816	37 Victoria Street	BD13
PALMER, Alexander	04-Dec-1943	883 919 9535	25 The Grove	HD4 7PT
PRATT, Alice	10-Jun-1976	710 361 2173	44 Victoria Street	HD4
RHODES, Stuart	06-Oct-1948	227 352 1993	97 North Road	LS18
SINCLAIR, Joseph	19-Apr-1966	536 518 6124	71 Park Road	BD14
SKINNER, Adam	12-Jun-1997	203 389 4583	80 New Road	LS18
SMITH, Abigail	11-Apr-1988		23 Street	
SMITH, Andrew	23-Dec-1936	829 531 3517	Flat 4A 13 Chester Road	LS18 1AR
SMITH, Duncan	11-Apr-1988		4 Fun Street	LS1 1LS
SMITH, Edwin	08-Aug-1950		High Street London	PQ1 4RS



To choose a patient, select the patient's name, this will fill in the Add Patient form with the selected patient's details that are stored in EMIS.

Search	Add Patient	Tests Due	Results	Recently Viewed	Change Registered Practice	External Patient Lookup
--------	-------------	-----------	---------	-----------------	----------------------------	-------------------------

Demographics	Contact
Patient Number: <input type="text"/>	Line 1: <input type="text" value="Flat 4A"/>
NHS Number: <input type="text" value="829 531 3517"/>	Line 2: <input type="text" value="13 Chester Road"/>
Title: <input type="text" value="Mr"/>	Line 3: <input type="text"/>
FAMILY name: <input type="text" value="Smith"/>	Town/City: <input type="text" value="Leicester"/>
Given name: <input type="text" value="Andrew"/>	County: <input type="text" value="Leicestershire"/>
Born: <input type="text" value="23-Dec-1936"/>	Postcode: <input type="text" value="LS18 1AR"/>
Sex: <input type="text" value="Male"/>	Home Tel: <input type="text"/>
Gender: <input type="text" value="Male"/>	Mobile: <input type="text"/>
Ethnicity: <input type="text" value="~Select Ethnicity"/>	Email Address: <input type="text"/>
First Language: <input type="text" value="~Select First Language"/>	
Marital Status: <input type="text" value="~Select Marital Status"/>	

#### Step 4

Please check all the patients' details are correct.

To save the new patient, click the **'Save'** button.



## Appendix D – Clinical Risk Assessment

### INRstar Anticoagulation Decision Support Software

#### Residual Risks ‘As Far As Possible’ (‘AFAP’)

#### Background

Anticoagulation is an inherently risky process. It offers measurable benefits to patients in the reduction of the risk of thromboembolic events and in the treatment of established thrombotic episodes but, inevitably, it increases the risk of bleeding episodes. It is the aim of INRstar to reduce the risks and increase the benefits as far as possible.

To meet these aims INRstar undergoes a process of full Clinical Risk Assessment at all stages of its design, development and deployment. Standard approved risk assessment methods are used and risks quantified using an appropriate risk matrix (see Appendix 1 in this section).

Measures are implemented to reduce all identified clinical risks to an acceptable level but there are certain risks which it is not possible to fully mitigate. These residual risks are classified as AFAP risks (‘As Far As Possible’).

This section outlines the clinical risks assessed as AFAP within INRstar.

**Users should be aware of these residual risks and should be particularly careful when performing actions which contain them.**

#### Adding a patient

##### Risk

Inappropriate selection of a maintenance dosing algorithm.

##### Possible scenario

A user selects a maintenance dosing algorithm when adding a patient to the system. The patient has been initiated on warfarin elsewhere (e.g. in hospital) and is taking a loading dose. The patient attends the practice for review and is added to the system. The user selects a maintenance dosing algorithm when completing the clinical details screen. If a maintenance dosing algorithm is used before the patient is stably established on warfarin the dose suggestion will be inaccurate and could cause serious warfarin overdose. This could lead to significant bleeding, injury or death.

**Pre-control risk D4 High**



## Controls

1. A warning message is displayed when a maintenance algorithm is selected as the dosing method. This explains the appropriate indications for the use of a maintenance algorithm.
2. The entry of a new INR is prevented if the last historical treatment entered has a review period of less than 7 days.
3. A dosing algorithm warning/confirmation message is displayed when a patient record is selected if there are fewer than 4 treatments in the record and the dosing method is a maintenance algorithm.
4. A dosing algorithm warning/confirmation message is displayed when a patient record is selected if warfarin start date is less than 28 days ago and the dosing method is a maintenance algorithm.
5. Addition or editing of Clinical details including selection of dosing method algorithms restricted to users with Clinical level 2 or 3 access permission.

## Post Control Risk D2 Medium

### Recommendation

**Selection of the appropriate dosing method is an area of risk** and should only be undertaken by trained users with clinical knowledge and understanding of the significance of and differences between warfarin induction and maintenance dosing methods.

## Adding a patient

### Risk

Inappropriate selection of an induction dosing algorithm.

### Possible scenario

A user selects an induction dosing algorithm when adding a patient to the system. The patient has been taking warfarin for several months on a stable dose at a previous practice. The patient has now moved home and attends the new practice for review and is added to the system. The user selects a induction dosing algorithm when completing the clinical details screen. If an induction dosing algorithm is used when the patient is already established on warfarin the dose suggestion will be inaccurate and could cause serious warfarin overdose or under-dose. This could lead to significant bleeding, injury or death or risk of thromboembolic events.

## Pre-control risk D4 High



## Controls

1. A warning message is displayed when an induction algorithm is selected as the dosing method. This explains the appropriate indications for the use of a induction algorithm.
2. Warfarin induction is prevented if the last treatment entered has an INR result of  $>1.3$ .
3. An explanatory dialogue is displayed before the first induction treatment is produced.
4. A warning message is displayed when the patient screen is accessed whilst on induction protocol.
5. The warfarin induction screen has a different appearance from the usual maintenance treatment INR entry form.
6. Addition or editing of Clinical details including selection of dosing method algorithms restricted to users with Clinical level 2 or 3 access permission.
7. The saving and printing of induction treatments is restricted to users with clinical level 2 or 3 access permission.
8. Selection of induction algorithm is only enabled for new or re-activated patients.

## Post Control Risk D2 Medium

### Recommendation

Selection of dosing method should only be undertaken by trained users with clinical knowledge and understanding of the significance of and differences between warfarin induction and maintenance dosing methods.

## Editing patient clinical details

### Risk

Inappropriate change of induction to maintenance dosing algorithm.

### Possible scenario

The patient has been initiated on warfarin and is taking a loading dose using the induction protocol. The user changes the dosing method from induction to a maintenance algorithm by editing the clinical details before the patient has been fully initiated onto a stable dose of warfarin. If a maintenance dosing algorithm is used before the patient is stably established on warfarin the dose suggestion will be inaccurate and could cause serious warfarin overdose. This could lead to significant bleeding, injury or death.

## Pre-control risk D4 High



## Controls

1. Confirmatory and explanatory dialogue displayed if user removes patient from induction algorithm.
2. A warning message is displayed when a maintenance algorithm is selected as the dosing method. This explains the appropriate indications for the use of a maintenance algorithm.
3. The entry of a new INR is prevented if the last historical treatment entered has a review period of less than 7 days.
4. A dosing algorithm warning/confirmation message is displayed when a patient record is selected if there are fewer than 4 treatments in the record and the dosing method is a maintenance algorithm.
5. A dosing algorithm warning/confirmation message is displayed when a patient record is selected if warfarin start date is less than 28 days ago and the dosing method is a maintenance algorithm.
6. Addition or editing of Clinical details including selection of dosing method algorithms restricted to users with Clinical level 2 or 3 access permission.

**Post Control Risk** D2 Medium

## Recommendation

**Selection and changing of dosing algorithms is a high risk activity.** Selection of dosing method should only be undertaken by trained users with clinical knowledge and understanding of the significance of and differences between warfarin induction and maintenance dosing methods.

## Editing organisation-level settings

### Risk

Inappropriate change of dosing or review period settings.

### Possible scenario

An untrained user changes the default dosing or review period settings at the organisation level. These settings will then be applied to all locations within the organisation.

For example: The percentage dose reduction suggested for INR results >5 is changed to 10%.

This setting will be applied to all locations and may result in an inappropriate dose reduction for patients with high INR results. This could lead to serious bleeding events, injury or death.





**Pre-control risk** D4 High

### **Controls**

1. Editing of organisation-wide settings is restricted to the organisation clinical lead.
2. Organisation clinical lead status can only be granted by the organisation administrator.

**Post Control Risk** D2 Medium

### **Recommendation**

The organisation clinical lead should be a clinician with an in-depth understanding of anticoagulation treatment. Organisation clinical lead status can only be granted by the organisation administrator and should not be granted to a user without sufficient training, experience and knowledge of the practice of oral anticoagulation treatment.

We recommend that only one named person holds organisation clinical lead status.

## **Performing a treatment**

### **Risk**

Incorrect selection of INR result when a new treatment is entered.

### **Possible scenario**

A patient attends the clinic for an INR test. The result of the test is incorrectly entered as 1.2 instead of 2.2. The incorrect low INR will trigger a suggested dose increase. This would cause a significant overdose of warfarin which could lead to serious bleeding events, injury or death.

**Pre-control risk** D4 High

### **Controls**

1. INR values selected from drop-down of valid figures.
2. New INR must be confirmed in a confirmatory dialogue before new warfarin dose is calculated.
3. No default INR value – result must be positively selected from list.
4. INR entry and dose calculation is restricted to users with clinical level access permissions.

**Post Control Risk** D2 Medium

### **Recommendation**



**Accurate entry of the new INR result is critical.** Users should positively confirm that the result they have entered is correct when the confirmation dialogue is displayed. The confirmation dialogues should be regarded as a positive safety feature rather than a nuisance.

Interfaces with the POCT coagulometers which directly import the result should be used, where available, to minimise the risk of transcription errors when entering new INR results.

## Performing a treatment

### Risk

Incorrect existing warfarin dose.

### Possible scenario

A patient attends the clinic for an INR test. The last recorded dose in INRstar is 4mg/day. The patient had been admitted to hospital since last attending the practice anticoagulation clinic and had been discharged home taking 2mg/day. Today's INR is in-range. The user enters today's INR but does not confirm that the patient is still taking the last recorded dose. The new dose suggestion is calculated based on the last recorded dose of 4mg/day.

This would cause a significant overdose of warfarin which could lead to serious bleeding events, injury or death.

**Pre-control risk** D4 High

### Controls

1. The user must tick a confirmatory message box to confirm that the last recorded dose is still current and accurate before a new INR can be entered.
2. A new INR cannot be added if no previous dose is recorded.
3. If the date of the last recorded dose is longer ago than the patient's maximum review period (and might therefore be out of date) a warning message is displayed.
4. The last 6 doses are displayed chronologically on the new INR entry screen.
5. The existing treatment details are archived when an inactive patient is reactivated – a new existing dose must be recorded before a new INR can be entered.
6. INR entry and dose calculation is restricted to users with clinical level access permissions.

**Post Control Risk** D2 Medium



## Recommendation

**This is a major area of risk.** All dosing algorithms rely on the fact that the patient's current dose of warfarin is correctly recorded so that the new suggested dose is accurate.

All users should be aware of the importance of confirming with the patient that the currently recorded warfarin dose is still current and correct before a new dose is calculated.

## Performing a treatment

### Risk

Incorrect date, INR, review details entered when recording a manual treatment.

### Possible scenario

A patient attends the clinic for an INR test. The dosing method currently selected is Manual. This enables a clinician to enter an INR and a manually calculated dose and review period (without using INRstar's dose and review period suggestion algorithms). The manually calculated dose was entered incorrectly as 5mg instead of 0.5mg/day.

This would cause a significant overdose of warfarin which could lead to serious bleeding events, injury or death.

**Pre-control risk** D4 High

### Controls

1. The user must confirm the new INR, dose and review period before saving the treatment.
2. Manual INR and dose entry is restricted to users with clinical level 3 access permissions.

**Post Control Risk** D2 Medium

## Recommendation

Accurate entry of the manual INR and dose data is critical. Users should positively confirm that the result they have entered is correct when the confirmation dialogue is displayed. The confirmation dialogues should be regarded as a positive safety feature rather than a nuisance.



## Performing a treatment

### Risk

Inappropriate override of suggested warfarin dose.

### Possible scenario

A patient attends the clinic for an INR test. The INR is below-range and the dose suggested is increased to 2mg/day. The user decides to override the suggested dose to 2.5mg/day but mistakenly enters a new dose of 5mg/day.

This would cause a significant overdose of warfarin which could lead to serious bleeding events, injury or death.

**Pre-control risk** D4 High

### Controls

1. Dose overrides > 20% must be confirmed by user before saving the treatment.
2. Doses selected from pick list of valid doses. Limited to system-wide maximum dose.
3. Previous treatment history displayed on dose override screen to aid clinical decision making.
4. Full dose override enabled for clinical level 3 users only.
5. Minor dose override (+/- 0.1mg) enabled for clinical level 2 users only.
6. Save and Print of out-of-range treatments restricted to clinical level 2 or 3 level users.
7. Dose overrides are disabled during induction protocol - warning message displayed on attempted override.

**Post Control Risk** D2 Medium

### Recommendation

**Overriding of suggested doses is a safety critical area.** Users should positively confirm that the new data they have entered is correct and appropriate in the context of the patient's current clinical situation. Confirmation dialogues should be regarded as a positive safety feature rather than a nuisance.

Dose overrides are disabled during the induction protocol.



## Performing a treatment

### Risk

Inappropriate override of suggested review period.

### Possible scenario

A patient attends the clinic for an INR test. The INR is below-range and the dose suggested is increased. The suggested review period is 7 days. The patient is unable to attend on that date and the user decides to override the suggested review period to 6 weeks (42 days).

The increased warfarin dose might lead to overtreatment which would not be detected if the review period was extended inappropriately. This could lead to serious bleeding events, injury or death.

**Pre-control risk** D4 High

### Controls

1. Previous treatment history displayed on review period override screen to aid clinical decision making.
2. Review period override selected from a list of valid days. Limited to patient's maximum review period.
3. Full review period override enabled for clinical level 3 users only.
4. Minor review period override (+/- 7 days) enabled for clinical level 2 users only.
5. Save and Print of out-of-range treatments restricted to clinical level 2 or 3 users.
6. Review period overrides are disabled during induction protocol - warning message displayed on attempted override.

**Post Control Risk** D2 Medium

### Recommendation

**Overriding of suggested review periods is a safety critical area.** Users should positively confirm that the new data they have entered is correct and appropriate in the context of the patient's current clinical situation. Confirmation dialogues should be regarded as a positive safety feature rather than a nuisance.



## Warfarin induction

### Risk

INR result falls outside the limits for the induction protocol.

### Possible scenario

A patient is being induced onto warfarin treatment using the Tait induction protocol. They attend the clinic as arranged on day 5 for an INR test. This is 6.0 and falls outside the limits of the induction protocol. Continuing with the induction protocol might lead to overtreatment which could lead to serious bleeding events, injury or death.

**Pre-control risk** D4 High

### Controls

1. Patient is automatically removed from the induction protocol if the INR result >5. The user must then dose the patient manually until sufficiently stable to be dosed using a maintenance dosing algorithm.
2. Induction treatments can only be performed by users with clinical level access permissions.
3. Induction treatments can only be saved and printed by users with clinical level 3 access permission.
4. The protocol must be strictly adhered to. Doses and review periods cannot be overridden and INR tests must be done on the dates specified in the protocol.

**Post Control Risk** D2 Medium

### Recommendation

**Warfarin induction is a safety critical activity.** It should only be carried out by users with clinical knowledge and experience in anticoagulation management. The user must be prepared to dose the patient manually if the INR falls outside the parameters of the induction protocol.



## Appendix 1

### Risk Assessment (NPSA Risk assessment of anticoagulation therapy 2006)

#### 1. Consequences (C)

A	Negligible: little or no effect	This is an unexpected or unintended incident which required extra observations or minor treatment and caused minimal harm to one patient
B	Marginal: medium term harm	This is an unexpected or unintended incident which resulted in further treatment, cancelled treatment, transfer to another area, possibly critical care and which caused short term harm to one patient
C	Critical: causes severe harm	This is an unexpected or unintended incident which caused permanent or long term harm to one patient
D	Fatality	This is an unexpected or unintended incident which caused death for one patient
E	Catastrophic	This is an unexpected or unintended incident which caused death for two or more patients



## 2. Likelihood (L) Projected incidences of harm / year in UK

Class	Likelihood
1	Improbable
2	~2
3	~20
4	~200
5	~2,000
6	20,000

## 3. Risk Matrix

6	Medium	High	High	High	High
5	Medium	Medium	High	High	High
4	Low	Medium	Medium	High	High
3	Low	Medium	Medium	Medium	High
2	Low	Low	Low	Medium	High
1	Low	Low	Low	Low	Low
	A	B	C	D	E





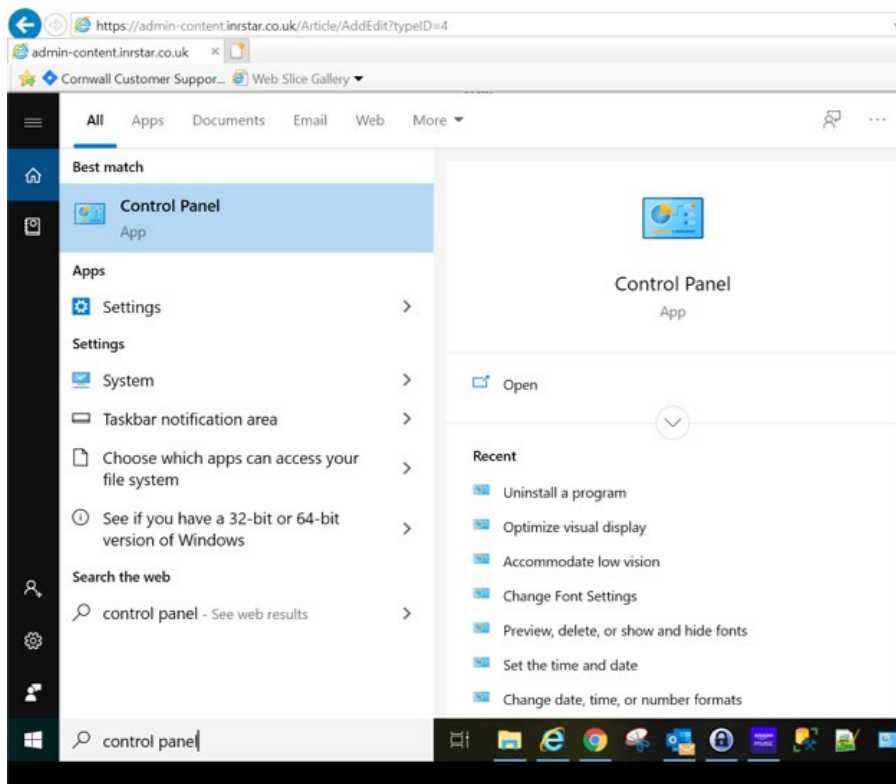
## Appendix E – Update Installation Troubleshooting

If an INRstar update is not accepted and installed, the existing version will need to be uninstalled and replaced with the latest version.

**Support from your local IT personnel may be required to complete this process.**

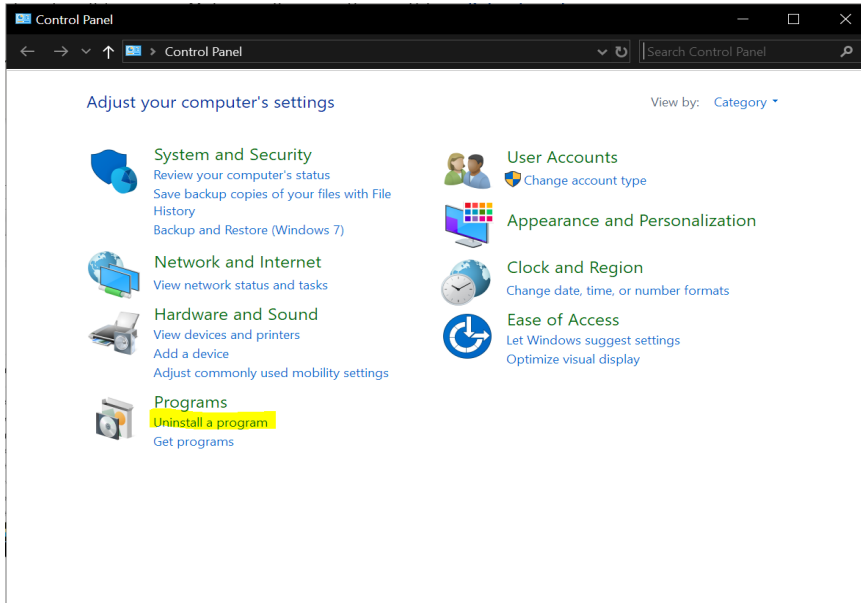
This section includes a step-by-step guide to uninstalling and reinstalling INRstar.

1. Click the '**Start**' icon in the bottom left corner of your screen, and type **Control Panel** into the search bar.

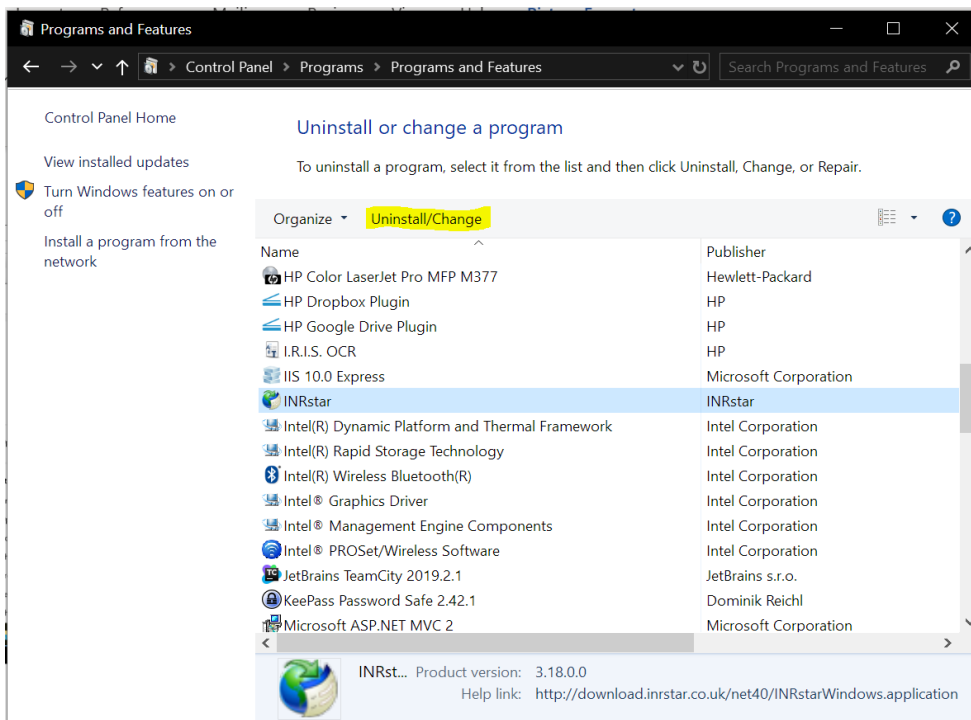




2. Open the **Control Panel**, navigate to **Programs**, then click **Uninstall a program**.

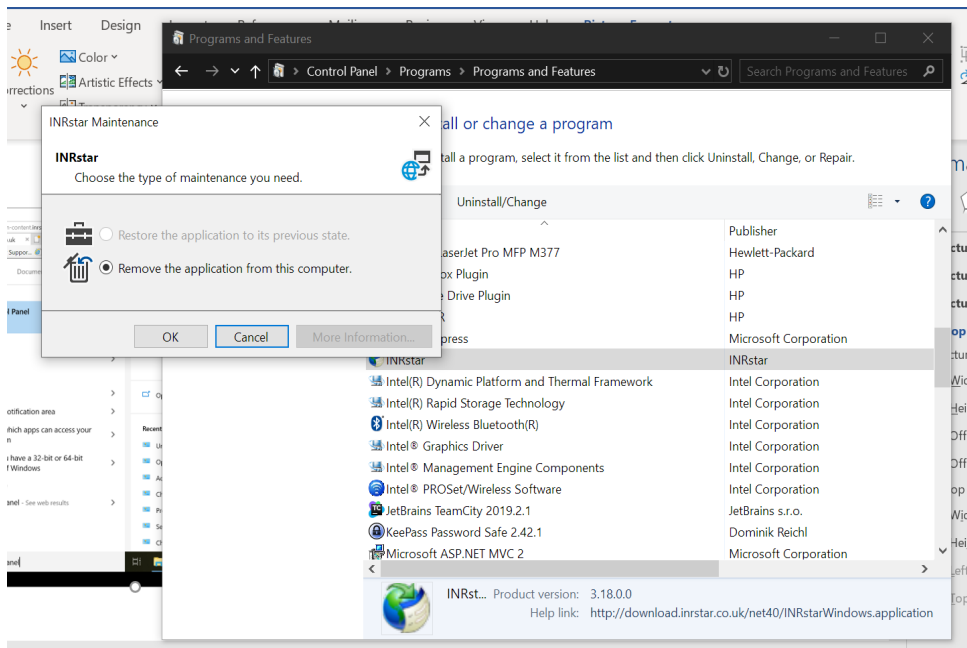


3. Scroll through list until you find **INRstar**. Click to highlight, then click **Uninstall**.

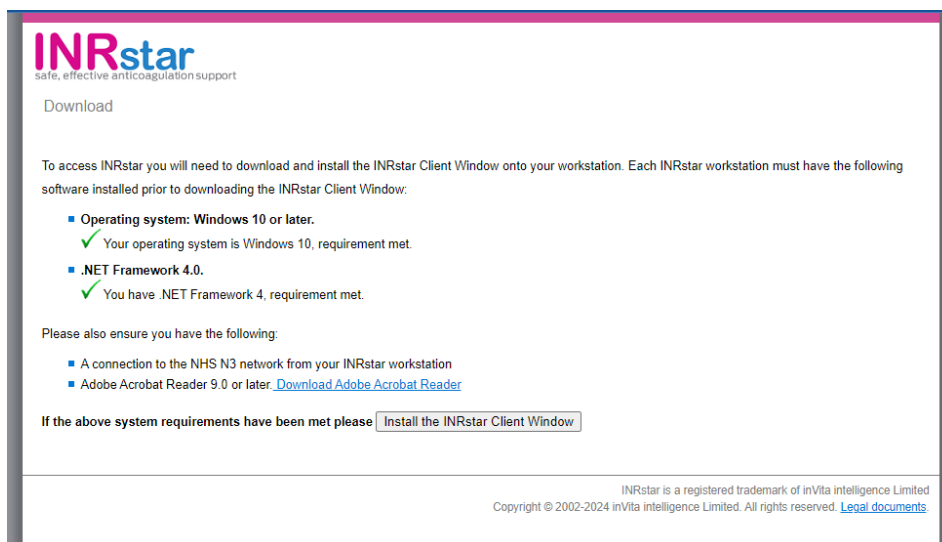




- When the INRstar Maintenance box appears on your screen, click **Remove the application from this computer**, then **OK**.



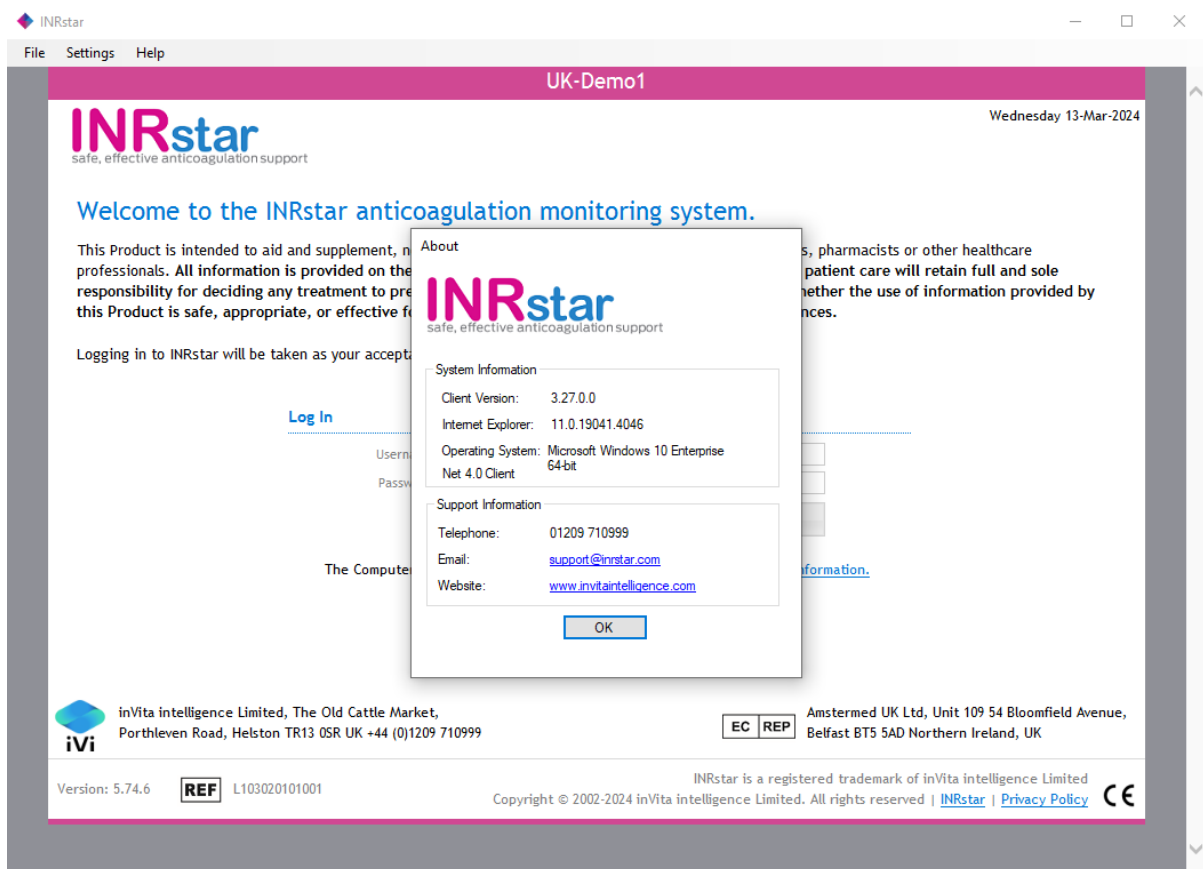
- Once INRstar has uninstalled, open **Internet Explorer** and navigate to <https://download-uk.inrstar.com/> (In Ireland go to <https://download-ie.inrstar.com/>). If Internet Explorer is not available, then use your default web browser and look for the downloaded file named 'INRstarWindows.application' in your download folder and double-click it to open.
- Click **Install the INRstar Client Window** to begin the install process.



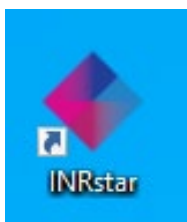
- Once installed, the INRstar login page will open and you can access the software as normal.



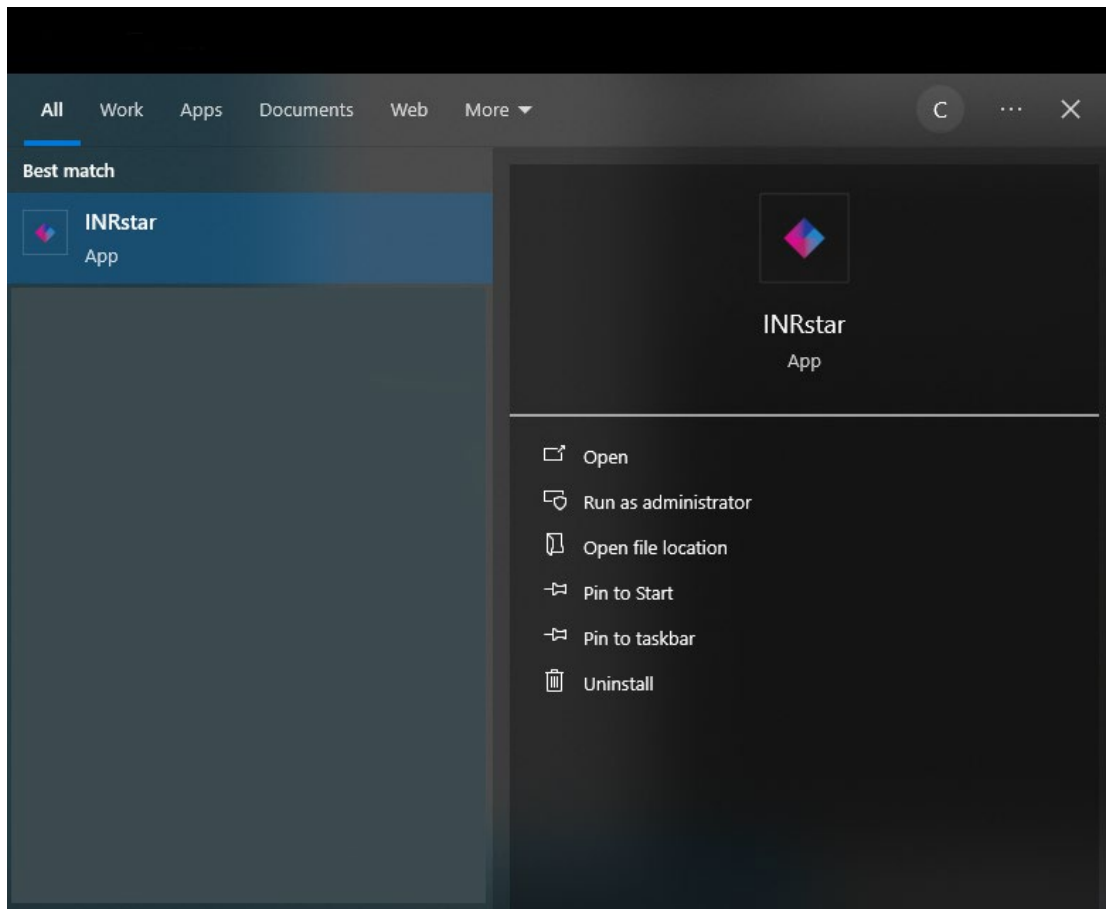
At this point, it is a good idea to confirm the INRstar version you have installed: click **Help** at the top of the INRstar window, followed by **About**.



If INRstar does not open automatically, look for a shortcut on your desktop like this:



or use the Windows search bar to find the "INRstar" application.





## Revision History

Revision	Date	Details of Change
1	13 <sup>th</sup> March 2024	First issue at inVita intelligence.
2	19 <sup>th</sup> June 2024	Updated INRstar Windows Client installation instructions
3	1 <sup>st</sup> July 2024	Additional updates to INRstar Windows Client installation
4	N/A	
5	9 <sup>th</sup> April 2025	Updated the revision number to match the SharePoint version