

IMPACT

Instructions for Use

Background

- In 2012, the University of Birmingham carried out a two-stage eDelphi with 20 expert pharmacists, clinical pharmacologists and physicians in England.
- 80 high- and extreme-risk prescribing indicators were identified that are relevant to the hospital setting ^[1]. The indicators:
 - are likely to occur in the general hospital setting and/or have a high risk of harm should the error occur
 - have the potential to be prevented by alerts and warnings in clinical decision support software
- The iMPACT tool was created to enable the 80 indicators to be identified and captured in a standardised way.

iMPACT data collection tool

- iMPACT investigates medication prescribing accuracy for critical error types.
- It is a standalone Windows based data capture tool.
- It presents the user with a series of questions to capture details about a patient's:
 - medication-related information (e.g. allergy status, weight);
 - accuracy of prescription documentation; and
 - specific drugs prescribed
- The tool:
 - collects standardised data
 - is designed to be used during the pharmacist's normal prescription chart review duties
 - reduces subjectivity when errors are reviewed for seriousness
 - is easy to use and mobile
 - captures information on 'patient harm' if the medication prescribing error reached the patient

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1.0 Getting started

When you open iMPACT, you will be asked for a username and password. If you are gathering data, you will have been provided with a personalised administration password for your site. For the purpose of testing, login with the following details:

Username: test

Password: impact

1.1 Creating user access

To create individual user access:

1. Log into IMPACT using your site administrator user name and password
2. On the 'Site Admin' menu select the item 'Manage users'
3. On the 'Manage Users' dialog click on the 'New User' button
4. Enter a user name, password and the name of the reviewer and then click on the 'Save Details' button
5. Once the details have been saved click on the 'Close' button to exit the dialog

2.0 Data collection

The data collection process will involve ‘prescription chart review’. This may be a paper-based drug chart (and any additional drug charts the NHS Trust utilises for prescribing), or an electronic order. You should review the patient’s medication systematically, and any drugs or drug classes prescribed that appear on IMPACT should be selected and the questions answered.

In some cases, biochemical and haematological data will be required. Again, these may be available to you electronically or in the patient’s medical notes.

The data collection tool comprises two pages, one relating to patient demographics, the prescribing process and prescription documentation (Figure 1), the second relating to prescribing indicators.

To start (or test) data collection:

- Click on ‘Form’
- Select ‘New’

The first page of the data collection tool will appear.

Figure 1: iMPACT data capture tool: demographics

The screenshot shows the 'Demographics (page 1 of 2)' form in the iMPACT data capture tool. The form is divided into several sections:

- Form Header:** Includes 'Delete Form', 'Close Form', 'Help', and 'Exit' buttons. The form status is 'New' and the template is 'v1.14'.
- Form ID and Patient Information:** Fields for Form ID, Study Site (Test site), Reviewer ID (4), Date Created (04/04/2013 07:46:26), Patient Initials (TH), Patient Age (76), Admission Date (04/04/2013), and Prescribing process (Paper-based).
- Chart Review:** A section for reviewing the drug chart, including a 'Drug chart available for review' checkbox (Yes/No) and a field for 'Please state if any additional drug charts are in use' (Oxygen).
- Medication Orders:** A section for recording medication orders, including 'No. of regular prescribed drugs' (14), 'No. of as required prescribed drugs' (4), 'Has the patient had a VTE risk assessment?' (Yes/No), 'Does the assessment indicate prophylactic treatment?' (Yes/No), 'Has a parenteral prophylactic therapy been prescribed?' (Yes/No), and 'Are there any incomplete medication orders?' (Yes/No).
- Non Alerting Decision Support:** A section for decision support, including 'Weight documented' (Yes/No), 'Weight recorded (kg)' (62), 'Allergy status documented' (Yes/No), 'Drug' (Class/Type), 'Are any inappropriate or non-approved dose units used?' (Yes/No), and 'Inappropriate route/form combination' (Yes/No).

2.1 Demographics

Information governance is a priority when you are collecting data. You will only be asked for information necessary to determine whether a prescribing indicator is present and to prevent the same patient being audited twice. The patient information required only consists of:

- Patient initials
- Patients age
- Date of admission

Furthermore, the initials are deleted before the information is transferred for analysis so the information is not patient identifiable.

We ask that when you add free text information into the tool, you do not make reference to the patient's name (forename or surname), address, ethnicity, sex, or occupation.

To maintain confidentiality, and to concur with the NHS Information Governance Policy, the data captured is held locally in an SQL server database and is encrypted before secure data transfer for collation and further analysis.

2.2 Chart review and medication orders

The drug chart will not always be available for review, and in many cases, there may be more than one chart in use (i.e. anticoagulation). If the drug chart is not available, answering no to this question will complete the record and you will be asked no further questions; simply skip to the next page and select 'Save Form'.

To determine the rate at which errors occur, it is important the total number of medicines prescribed for a patient is identified. The number of 'regular' and 'when required' prescriptions is a mandated field in the tool, and as such requires data input. If the patient is not on any medicines at the time of review, enter 0 in the appropriate field.

It is an NHS priority to ensure Venous Thromboembolism (VTE) assessments are performed on admission and updated during a patient's stay in hospital. You will be asked whether a VTE assessment has been completed (in a paper-based system this is likely to require the medical notes).

- If you select **Yes**, you will be asked whether the assessment indicates prophylactic treatment and whether a parenteral therapy is prescribed.
- If you select **No**, you will still be asked whether the patient requires prophylactic treatment. This will require assessment of the patient's history/risk factors etc. as would be carried out in a clinical verification of the patient's prescription.

Finally, in this section you will be asked for information on any incomplete prescription orders. This refers to missing information such as date, signature or prescription details. Again, these fields are mandated.

2.3 Non-alerting decision support

You will be asked to provide information on the patient's weight and allergy status. The allergy status can be on a drug or class level (see Figure 2).

Figure 2: Non-alerting decision support

In this section, you will also be asked for information on inappropriate abbreviations or dose units (e.g. IU for international units) and route/form combinations (morphine IV/IM).

When all sections have been completed, click **Next Page >>**.

If you have inadvertently missed a section or field out, you will be prompted as below:

2.4 Prescribing indicators

The second page of the iMPACT tool introduces five therapeutic categories with associated medicines. The aim is to carry out your usual prescription review, and if a patient is on any of the listed medicines (or groups of medicines), select the relevant one and answer the questions that follow. An example is provided in Figure 3 for 'colestyramine'.

The questions may occasionally require information such as blood tests results (e.g. amiodarone and thyroid function tests) and the past medical history (e.g. beta-blockers and asthma) to answer. However, in the most part, will only require a yes or a no answer.

Figure 3: Questions for colestyramine

Information icons are present for some questions to facilitate the answer and clarify the information required (see Figure 4). You can view the text by hovering the mouse over the icon. In some cases, clicking on the icon will take you to the relevant section of the help file for more information.

Figure 4: Help icons

For each indicator, we have asked you to provide details of harm for cases where the error reached the patient. The options for the level of harm are based on the National Patient Safety Agency (NPSA) 'Risk Matrix', and are defined as follows:

- Not applicable:** No perceived error
- Insignificant:** No risk of patient injury or harm and no intervention required
- Minor:** Minor injury or illness requiring minor intervention
- Moderate:** Moderate injury requiring intervention
- Major:** Major injury leading to long-term incapacity/disability
- Catastrophic:** Leads to death, multiple permanent injuries, or irreversible health effects

If patient injury occurred, from minor to catastrophic, a free text box will appear so you can provide information of this. The free text box is mandated, however if you are unsure of the details of harm, please state this to be the case.

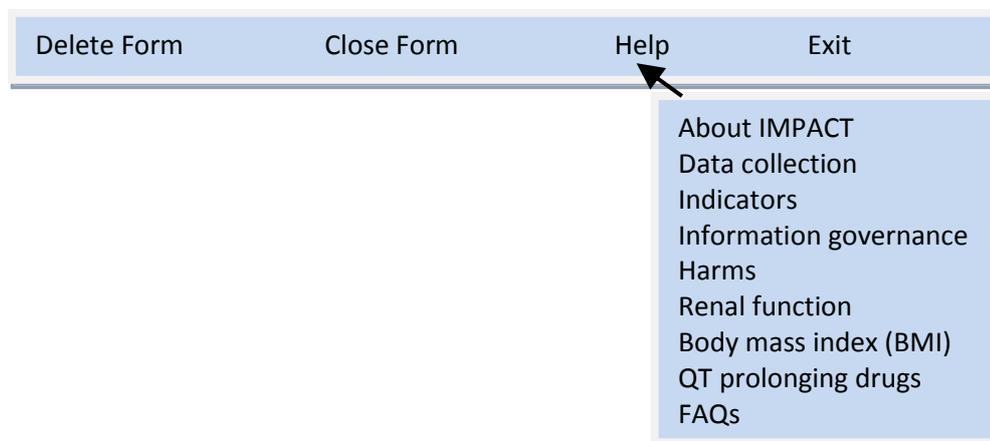
We understand that determining the seriousness of patient harm can be subjective. This information is being captured as a secondary outcome measure, and any details of harm you provide may be assessed and the level of harm confirmed by expert consensus.

If the patient is not on any of the medicines listed, ensure you still complete the first page in full. This will allow the rate of prescribing indicators to be calculated.

When you have finished reviewing the patient's prescription, select **'Save Form'**

3.0 Information

There is a 'Help' file within the iMPACT tool. To view this, select '**Help**'



The Help file will appear as a PDF (Appendix 1). You can also access it via some of the information icons.

4.0 Managing saved forms

4.1 Editing a saved form

If you would like to re-visit a form:

- Click on 'Form'
- Select 'Search'

The 'Search for forms' screen will appear (Figure 5). From here you can search for a form using the patient initials, admission data, age or date the form was created. Alternatively, clicking 'Search' will show all saved forms. Click on the form you would like to view, and then select 'Edit Form' or 'View Form'.

Figure 5: Searching for saved forms

Form ID	Study site	Create time	Status	Initials	Age	Admit date	Reviewer	Process	Version
7	Test site	29/05/2013 13:27	Completed	EE	55	29/05/2013	Test user	Paper-based	1.15
8	Test site	29/05/2013 13:28	Completed	GG	55	29/05/2013	Test user	Paper-based	1.15

If you try to edit a form with a status of 'Deleted', you will be prompted to confirm that you wish to edit a deleted form. Selecting 'yes' and saving any changes to the form will change its status back to 'Completed'.

Note that forms with a status of 'Transferred' (i.e. a form has been exported) can only be viewed and not edited.

4.2 Deleting a saved form

If you wish to delete a form, find the form you wish to remove using the search function and select 'Edit form'. Click on the 'Delete form' menu item and select 'Yes'. The form will be marked as 'Deleted', but will not be physically removed from the system.

5.0 Exporting data

To export data from the IMPACT data collection software:

- Log in to IMPACT using your administrator user name and password.
- On the 'Data Transfer' menu click on the 'Export Data' menu item.
- On the 'Export data to UHB' dialog click on the 'Start Export' button. (All the completed forms in the database will be encrypted and exported to files in the folder 'C:\IMPACT\Export' and their status in the database changed to 'Transferred').
- Once the export has finished click on the 'Close' button to close the dialog and then exit the IMPACT software.
- In Windows Explorer go to the folder 'C:\IMPACT\Export'.
- There should be files in this folder with the file extension '.data'. Move these files to the relevant sub folder under the 'Export' folder for the week number and whether it is data collected pre or post implementation.
- If it is time to send the exported data to UHB then use WinZip to zip up the relevant folder and email it to **impact@uhb.nhs.uk**.

6.0 Backing up the IMPACT database

It is wise to back up the IMPACT software database on the device on a regular basis. To do this:

- Ensure that the IMPACT data collection software is not running on the device.
- Copy the database file 'C:\IMPACT\Data\DataCaptureDB.sdf' on the device to a memory stick.
- Copy the database file from the memory stick to a secure location. Ensure that if you have multiple devices that this doesn't overwrite the database backup from another device.

FAQs

What do I do if a drop down list of options on the patient demographics does not contain the selection I require?

Simply clicking F9 will allow you to add your own option within a field. This has been designed so local formularies and practice can be reflected for an individual study site. *(Note: On devices without a F9 key holding down the Ctrl key and pressing 'N' will have the same effect).*

How can I add a new drug or drug class to the dictionary?

Simply clicking F9 will allow you to add your own option within a field. This has been designed so local formularies and practice can be reflected for an individual study site. *(Note: On devices without a F9 key holding down the Ctrl key and pressing 'N' will have the same effect).*

Is there a quick way to enter drug names into text fields?

Clicking F1 after entering a minimum of 3 characters into a text field will bring up a list of matching drug names. Selecting the required drug name from the list will insert it into the text field. Clicking the Esc key will remove the list from the screen. *(Note: On devices without a F1 key holding down the Ctrl key and pressing 'D' will have the same effect).*

Is there a quick way to enter drug class names into text fields?

Clicking F2 after entering a minimum of 3 characters into a text field will bring up a list of matching drug classes. Selecting the required drug class from the list will insert it into the text field. Clicking the Esc key will remove the list from the screen. *(Note: On devices a F2 key holding down the Ctrl key and pressing 'K' will have the same effect).*

How do I move between data entry fields on tablet devices without a Tab key?

Holding down the Ctrl key and pressing 'T' will act the same as the Tab key and move to the next data entry field on the screen.

What do I do if I get an error message appear about the 'SystemSettings.xml'?

If you should get an error message about the 'SystemSettings.xml' which prevents you from using the software, take the following steps:

- In Windows explorer go to the folder 'C:\IMPACT\Data'
- Right click on the file 'SystemSettings.xml' and select 'Open with' and 'Notepad' to edit the file

- On the 'Edit' menu select the menu item 'Select All'
- Press the delete key to remove all the contents of the file
- On the 'File' menu select the menu item 'Save' and then close the file
- When IMPACT is next run it will rewrite the correct contents for the file

What should I do if the Help file does not appear?

This may mean your device does not have Adobe Reader installed. You might like to ask IT at your Trust for assistance. In the meantime, email impact@uhb.nhs.uk for a copy of the file.