Imperial College London Imperial College Healthcare

The Prescribing Improvement Model (PIM)

Implementation Toolkit

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Introduction

The idea for this toolkit originated from our work to improve pharmacists' feedback to doctors on their prescribing errors. We created this toolkit to briefly describe our interventions and assist anyone who is interested in using feedback to improve prescribing.

The diagram below summarises the approach we took with the aim of improving feedback, represented in the centre.



Each section of this toolkit is represented within the diagram, and colour coded to help navigation. This toolkit can be read from start to finish, but each section can also be read in isolation.

We'd be delighted to hear your comments, experiences and any suggestions for improvements.

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Background and purpose of this toolkit



Are any of these problems familiar?

Prescribers make prescribing errors. Prescribers want feedback on their errors but do not get it. Pharmacists cannot identify who wrote erroneous prescriptions.

What we did and why

This toolkit was designed to share learning from the design and early implementation of a package of interventions to improve pharmacists' feedback on prescribing errors.

Our team of researchers and practitioners received funding from the Health Foundation to develop, implement and evaluate a package of interventions to improve feedback by pharmacists to Foundation Year 1 (FY1) doctors on their prescribing errors. We had previously identified that prescribers were not getting sufficient individual feedback on their prescribing errors¹.

We conducted this quality improvement work over 18 months from October 2012. We identified specific local problems and developed local solutions at Imperial College Healthcare NHS Trust. We also worked with North West London Hospitals NHS Trust to improve the generalisability of our work, and to increase its applicability outside our setting.

Our aim was:

To improve prescribing by the provision of better feedback on prescribing errors.

This toolkit is for anyone who shares that aim.

Although both professional groups supported improvements in feedback¹ particular problems we identified were:

- our FY1 prescribers often did not state their name when prescribing and could therefore not be identified;
- pharmacists sometimes lacked opportunity, confidence and support to contact prescribers who had prescribed erroneously.

Regular Press	Time	Date J			
Medicine (approved n	FLUCLO	KACILLIN		6	
Dose 500mg	Route PO	Start Date 3/2/14	Stop Date	12	
Signature/Sleep Additional Instructions					
Pharmacy	and the second second	- Cellui t	is	18	
	7 days				
Patient Medicine on ac	Imission New	1 3		Addit	ional Instruc

Figure 1: I don't recognise this signature – who needs to know that they have made an error?

To **enable pharmacists to identify prescribers**, we gave each prescriber an individual name-stamp to use when prescribing and used a multi-faceted approach to encourage them

to write or stamp their name when prescribing. We audited whether or not they did this and fed back their performance fortnightly.

To enhance pharmacists' feedback skills we **designed and conducted education sessions** with pharmacists to overcome barriers to feedback to FY1s. We also developed **"Good prescribing tip" emails** which were sent to FY1s fortnightly, and addressed one prescribing error in depth.

The logic model in figure 2 summarises how we conceptualised our approach.



"Change Theory"

Provision of feedback on prescribing errors will facilitate prescriber education, reflection and changes to practice, and thus increase safety of prescribing.

This toolkit is therefore:

- Our attempt to generalise and share our learning so that it may be applied in other settings to achieve a similar goal.
- A description of a practical low-cost method to improve prescribing and patient safety by addressing three common problems:
 - 1) Prescribers are often unaware of the prescribing errors they make;
 - 2) Pharmacists are ideally qualified to give feedback on prescribing errors, but often don't;
 - 3) Prescribers don't always state their name when prescribing and therefore cannot be identified in order to receive feedback.

The principles of giving feedback to prescribers are relevant regardless of whether paperbased or electronic prescribing systems are in use, although the challenge of identifying individual prescribers is likely to be less of a problem with electronic systems.

Rationale for this work

Prescribing errors occur in up to 15% of UK inpatient medication orders; it is estimated that about 1% of patients are harmed^{2,3}.

If a prescriber makes a mistake which a pharmacist detects, **the pharmacist usually resolves the error** to ensure the safety of the patient, usually after consultation with an available doctor. However, the prescriber contacted is often not the original prescriber: the **original prescriber is therefore not made aware** of their error and therefore unaware of the need to adapt their practice. Particularly when paper drug charts are used, individual prescribers may not be identifiable by their signatures. It is therefore difficult for pharmacists to identify and contact the initial prescriber.

It's OK to screw up once but there ought to be a process that says you've screwed up once and we're going to correct it so that it doesn't happen again. What's unforgivable is if you've got the ability to go on screwing up time and time again

> Public focus group participant

Even when the prescriber is identifiable, pharmacists may also lack the opportunity to tackle the prescriber's knowledge gap: the cause of the error is therefore not addressed.

As part of our background work scoping the problems and potential solutions, we asked **FY1 doctors** and **pharmacists** if they agreed with a number of statements (<u>appendix 1</u>):

Questions to foundation year 1 doctors (n=65 responses)	% of respondents who agreed or strongly agreed
Receiving feedback is a valuable use of my time	98%
I want to be told of all prescribing errors I made however minor	89%

Questions to <i>pharmacists</i> (n=57 responses)	% of respondents who agreed or strongly agreed
Giving feedback is a valuable use of my time	95%
I believe foundation year 1 doctors are aware of all major prescribing errors they make	29%

The pharmacists' responses suggest that the doctors are not told about all the errors that they make.



This toolkit includes guidance and ideas aimed at improving feedback by:

- 1) targeting feedback at the initial prescriber to make them aware of their mistakes;
- 2) supporting pharmacists in providing constructive feedback to help inform prescribers and prevent error reoccurrence;
- 3) increasing the proportion of prescriptions for which the prescriber states their name.



Figure 3: we need to break this cycle

These schematics represent a simplified version of the system for correcting prescribing errors. We are attempting to move from figure 3 to figure 4.



Figure 4: using feedback to change the outcome

Before you start



Setting up your work

- Identify which local problems you are trying to resolve
- Design the intervention to encourage prescriber identification
- Decide how to give feedback
- Get buy-in from staff members involved
- Pilot locally

Identify your problems – do you share any of the problems we had?

- Doctors wanted more feedback and pharmacists were happy to provide it, but practices did not support this
- Pharmacists needed support and guidance to provide effective feedback
- Pharmacists were often unable to identify prescribers on drug charts
- Even when prescribers were identifiable, a lack of bleep or phone number meant they could not be contacted - compounded by varied working patterns
- Pharmacists often did not address gaps in the prescriber's knowledge

A clearly defined problem and specific objectives will guide your work; it would be pointless to encourage prescribers to state their name if this isn't a problem locally. Other objectives such as improving knowledge of where prescribing resources are found could also be worthwhile.

Design the intervention

Consider the specific problems identified in your organisation.

Decide how to give feedback

What feedback currently takes place, if any? How can you enhance the positive aspects and ensure that any ineffective practices are changed?

Get buy-in

We recommend recruiting representatives from all professions involved. The pharmacists or other staff providing feedback, and prescribers receiving it, will provide valuable insights into what works practically.

Pilot

Whichever changes you decide on, we strongly recommend piloting locally. A pilot will enable you to refine your work to improve your chance of success. Involving staff members also reduces the risk of introducing something that staff members are unhappy with.



Who needs to be involved?

As with any change, the relevant people should be involved at the outset. These are likely to include:

- Senior doctor(s) responsible for medical education
- FY1 representative / champion(s)
- Pharmacist representative / champion(s)
- The clinical pharmacy / pharmacy education team
- If collecting data (see <u>Monitoring your progress</u>), it would be helpful to include someone with good computing skills who can enter and analyse these data

Others may also be able to offer valuable support or advice:

- The chief pharmacist and senior pharmacy management team
- The medical director
- A nursing representative
- Representative of any local quality improvement or research groups

These are not exhaustive lists, but suggestions of those who are likely to be able to help.

Contacting groups of prescribers can be challenging – your postgraduate administrator for teaching or human resources department may be able to help you contact prescribers or groups of prescribers (and make your life easier).

Identifying prescribers

1 312

68

12

18

22

Regular Prescriptions

500mg

FLUCIOXACILLIN

3/2/14

cellulitis

7 days

PO

The aim of this section is to consider how to encourage prescribers to state their name when prescribing. Effective feedback can only be provided if the initial prescriber can be identified.

like this...

Change prescribing

Adjusticion Parameter ad a second	
First, consider what is covered by local standard	ds and policies. How can you build on these
(or change them if necessary)? Does your policy	support your message? If not, does the
policy require updating?	

There are several issues to consider. For instance, do prescribers need to state their name on each individual medication order of any type (e.g. regular, variable, fluids)? Knowing what is acceptable, and what is common practice, will help you ask for reasonable changes in practices. You will also have to consider questions such as whether a legible signature is sufficient, or whether one clearly printed prescriber's name per chart is acceptable, rather than for each mediation order.

Your drug chart or electronic system may support or hinder your intervention. Does the chart prompt the prescriber to state their name and contact number and is there sufficient space to make this realistic? If your electronic prescribing systems do not allow the prescriber to be easily identified both on-screen and on printed outputs, is there any way you can improve this?

- Check your prescribing policy
- Define an "identifiable" prescriber
- What is feasible locally?





Name-stamps for prescribers

One element of our intervention was to provide name-stamps for our FY1 doctors to make it easier to identify individual prescribers.

Assuming paper drug charts are used, there are two options for prescriber identification:

- 1) Prescribers clearly handwrite their name;
- 2) Prescribers stamp their name using a preformatted name-stamp.

In our work with prescribers we found that many wanted name-stamps. We therefore issued all FY1 doctors with personalised name-stamps.

Designing and using name-stamps

We found the design of the stamp to be important. Consult your prescribers to see what is likely to work locally.

- Find a name-stamp supplier.
- Measure the drug chart signature box sizes what size stamp fits? Some charts have very small spaces to sign, as illustrated in figure 5.



- Figure 5: Even a small name-stamp spans two lines!
- Consider how prescribers will carry them. Do you need a lanyard to attach the stamp to bags or clothes?
- Decide on the name-stamp specifics and design. See <u>appendix 2</u> for some suggestions. Our stamp is shown in figure 6.
- Establish how to distribute the stamps and brief the recipients. Inductions and other mandatory sessions are good options.

You will also need to consider:

- Which prescribers to include: FY1s only? All medical prescribers? Supplementary or independent prescribers?
- How to obtain and distribute ink refills and replacement stamps.

Providing prescribers with name-stamps is unlikely to be sufficient to change their prescribing habits. We recommend ongoing engagement and encouragement and suggest some approaches in <u>dissemination of key messages</u> below.

Figure 6: Our example stamp





Principles of effective feedback

Prescribers who state their name are easier to identify, and subsequently provide feedback to.

Our intervention is based on the assumption that effective feedback of prescribing errors is central to reducing the number of prescribing errors made.

Designing your feedback

We describe two different but complementary methods of feeding back details of prescribing errors to the relevant prescribers:

- 1) Pharmacists providing individualised feedback on prescribers' own errors;
- 2) Supporting wider learning via email summaries of common or serious errors.
- Tailor your feedback local problems, local solutions
- Direct prescribers to appropriate prescribing resources

What does good feedback comprise?

Our work suggests that most prescribers want to know what was wrong and how they can avoid repeating the mistake. Below are other key principles which will help provide effective feedback which is valued by prescribers.

Feedback should:

- Be as soon as possible after the event
- Ensure the prescriber is aware of the cause of the error and that an error has been made
- Identify the solution
- Highlight any relevant prescribing resources (e.g. clinical guidelines)
- Be non-judgemental and blame-free

Feedbacl

Feedback to individuals

Personal feedback by pharmacists

Many pharmacists already provide feedback about prescribing errors: this section gives tips on how to maximise its effectiveness.

Pharmacists are ideally placed to inform prescribers about any errors. Pharmacists regularly detect prescribing errors during their clinical practice; however, it is often the case that the nearest doctor corrects the chart, rather than the one who initially prescribed. Prescribers want to know about the errors they make, so why not tell them?

I've always found the feedback really helpful and the pharmacists really approachable.

Foundation year 1 doctor

Information for pharmacists

Ideally, ward-based pharmacists should **agree a plan** in advance with prescribers they regularly work with. Pharmacists should let prescribers know that they will attempt to contact them regarding their own prescribing errors and agree how this should be done.

In order to provide effective feedback when a prescribing error is identified, pharmacists should:

- 1) Identify the prescriber
- 2) Contact the prescriber
- 3) Describe the problem and tell the prescriber an error has been made
- 4) Direct the prescriber to appropriate **prescribing resources**, such as local guidelines
- 5) Ensure the error is resolved

Our experience is that prescribers generally prefer feedback to be face-to-face wherever possible. Our FY1s reported that they are often asked to amend charts, without being made aware that an error had been made: pharmacists should be encouraged to clearly state that there is an error on the chart concerned. If possible, the actual medication order should be corrected by the original prescriber, or at least be available to support the conversation.

Key points for pharmacists

- Prescribers value feedback
- Aim to provide feedback as soon as possible after the event
- Provide feedback personally whenever possible

Training for pharmacists may be important. Any training session should cover the five points above. Some pharmacists, especially juniors, may lack the confidence necessary to tell prescribers that they have made an error. Running training sessions which remind pharmacists that prescribers want to know about their errors should help. We also suggest



illustrating some phrases to help pharmacists provide confident professional feedback, and have included some below. Additionally, if a prescriber is willing to come to a teaching session and talk about how valuable feedback is, why not invite them?

Here are some suggested phrases we developed together with our FY1 doctors:



Your organisation will have an incident reporting system. The organisation still needs to learn from incidents and near-misses, even if the error is fed back to the prescriber. Feedback should therefore be encouraged alongside the usual incident reporting, rather than to replace it.

Information for prescribers

Feedback is a two-way process: prescribers need to be briefed to expect feedback, and informed of why they are getting it. Prescribers should be briefed to:

- Agree a plan with their pharmacist for how they would like to receive feedback
- Recognise that this is non-punitive and a learning opportunity
- Adapt their practice in line with the prescribing resources

A note about professional relationships

During our work with pharmacists, we found that they highly valued their professional relationship with prescribers, and did not want to compromise it. Pharmacists were sometimes concerned that feeding back errors might risk that relationship. However, we found that prescribers really wanted feedback and did not see it as a negative encounter, providing it was given fairly, objectively and constructively. It may therefore be important to stress this to encourage pharmacists to feed back. Our prescribers stated that they were very comfortable being told that they had made an "error" whereas our pharmacists were uncomfortable with this word and found it easier to say "mistake" or "incorrect". Whichever, term is used, it is important to be clear that an error has occurred, but also to depersonalise the error (for example by saying "there is an error on this chart", rather than "you have made an error"). The phrases above were designed to enable errors to be identified in a non-confrontational manner. It is also worth noting that health care professionals should provide the best care possible, and this obligation should override any reluctance to engage in feedback.

Feedback to groups



Learning from others' errors

Here we discuss providing group feedback via email. This provides an opportunity to share learning. The aim is to prevent errors caused by gaps in prescribers' knowledge **before** they occur.

Creating a feedback email

- Must be visually appealing •
- Simple and quick to read •
- Must be readable on desktops, smartphones and tablets 0
- Provide hyperlinks to relevant online prescribing resources



Figure 7: example prescribing tip

Thank	you, this is very
helpful.	Especially
, pictures	s. This has
confuse	ed me before"

Foundation year 1 doctor

Health care professionals are unlikely to want to read lengthy emails, so here are some tips for creating something short enough to be used, but rigorous enough to be worthwhile.

Use photos or screenshots, especially of real errors, but remember to make them anonymous (both in terms of the patient and the prescriber). Photos of easily confused drugs or formulations are also useful.

Make sure you state the potential impact of the error – there is a patient at the end of it!

A summary of the problem and the **solution** is helpful. Provide links to relevant guidance.

We recommend that a feedback email should be sent at scheduled intervals: prescribers will expect it. We found fortnightly was a good compromise between overloading recipients and being forgotten about. See figure 7 and appendix 3 for examples.

We sent our prescribing tips to all FY1 doctors, all pharmacists, and all medical education leads, plus anyone else who wished to be included on the mailing list, but you may wish to distribute further.

You need a list of email addresses which are regularly checked – your human resources or education department may be able to help.

Finally, we rewrote our example prescriptions to maintain prescribers' anonymity and focus on the central messages.

Topics for group feedback

Deciding on topics for prescribing tip emails is a good way to engage staff in the work:

Ask all parties (e.g. nurses, pharmacist, and doctors, or medication incident review groups) for suggestions.

Use incident reports to identify areas for improvement

Link your feedback in with other local or national announcements e.g. to reflect national patient safety alerts or local formulary issues.

Wider distribution of learning

To supplement the emails, you may also want to consider adding the prescribing tips to your trust's intranet. This would provide a permanent location for previous tips. Prescribers and pharmacists alike can access the intranet without first accessing their emails.

Tip: you could provide a <u>hyperlink</u> to the intranet page on all your communications, and state where they can be found e.g. figure 8.

All previous prescribing tips are found in the **<u>Pharmacy</u>** section of the intranet

Figure 8: Hyperlinks are useful to automatically show information stored elsewhere

Other potential outlets for your message: Training sessions Regular team meetings Screen-savers Social media

Key messages for prescribers, pharmacists, and educators



In this section, we provide hints and tips on how to disseminate your messages and increase awareness of your work.

Key messages

- Be clear what you are asking of pharmacists and prescribers
- Changing practice is difficult: provide consistent messages and make it easy for people to do the right thing

In <u>Personal feedback by pharmacists</u> you decided on what you wanted to tell your pharmacists and prescribers in order to encourage them to give and receive feedback.

Provide consistent messages wherever possible:

- To pharmacists: feed back to the original prescriber
- To prescribers: expect and use feedback; clearly write or stamp your name

Our initial work involved FY1s only, but these messages are generalisable to anyone.

Dissemination of key messages

You are unlikely to be able to get all pharmacists or prescribers together as a group. You will need to take that into account when disseminating your key messages. We suggest using as many different ways as possible. Here are a few suggestions:

- Teaching sessions are an excellent forum to reinforce your messages.
- Using your intranet is a good way to publicise to a wide audience.
- Design **posters** to put up around your departments, <u>appendix 4</u>.
- Do you have a departmental or organisational newsletter?
- Use **pharmacy meetings**: add feedback as a running agenda item in relevant meetings: encourage pharmacists to share their interventions and how they fed back.
- Include in new pharmacists' inductions
- <u>Feedback emails</u> can also be used to remind prescribers to state their name, and pharmacists to feed back. State clearly what you are asking recipients to do.
- Visibly copy consultants and other senior staff into key communications senior pharmacists and doctors should be asked to support these messages.

Monitoring your progress



How are you doing?

The two measures of success we discuss here are:

- 1) Are pharmacists feeding back to the initial prescriber?
- 2) Are doctors writing or stamping their name when prescribing?

Answers to these questions are technically not needed: you can introduce your interventions and leave it there. However, a modest amount of monitoring may help you reinforce and improve your initial work, ensuring that the effort you put into changing practice in the first place is translated into a sustainable improvement.

- Feedback to prescribers is central to improving prescribing. You will probably want to know if, and how, pharmacists are doing this in practice. We suggest <u>below</u> two simple ways - using accompanied ward visits or self-reporting - for you to determine whether and how pharmacists are feeding back regarding any prescribing errors identified.
- The information gained from monitoring whether prescribers write or stamp their name when prescribing can be used for two purposes. Firstly, like the assessment of pharmacists' feedback provision, it can be used to identify weaknesses in the system. Prescribers or teams of prescribers who do not routinely state their name can be identified and targeted with specific interventions. The information can also be fed back directly to prescribers to inform them of how they are performing. This in itself may encourage competition between groups of prescribers: benchmarking against peers can lead to an increase in performance.

Do pharmacists feed back?



Are pharmacists feeding back?

Provision of feedback is difficult to assess formally, but we suggest two options:

- Accompany pharmacists on ward visits;
- Ask pharmacists to self-report.

Assessing pharmacists' provision of feedback enables you to determine whether they are doing it, and identify what barriers to feedback they encounter. Findings can be disseminated to other pharmacists so that they can also learn how to overcome these barriers.

Accompany ward pharmacists

Many pharmacy departments use accompanied ward visits for peer review or assessment. It may be possible to add extra criteria to a local accompanied visit checklist. We suggest some criteria in <u>appendix 5</u>. If formal accompanied ward visits are not currently used you may wish to conduct a small number of accompanied visits for the purposes of this work. The requirements for effective feedback should form the basis of any assessment (see <u>Key</u> <u>Messages</u>). This is the most labour intensive of the two methods.

Ask pharmacists to self-report

This is more subjective, as it relies on the pharmacist giving an accurate summary. However, it is much less labour intensive than accompanied ward visits. Regular pharmacy meetings may provide a convenient moment to ask pharmacists about their interventions and feedback to prescribers. Question 9 on our <u>supplemental work</u> questionnaire also asks whether the pharmacist contacts the prescriber.

Do prescribers state their name?

We now discuss assessing whether prescribers state their name when prescribing. This is optional, but likely to provide very useful information to help you improve further. The information gained can itself be fed back periodically to prescribers to promote and reinforce your messages. An example, and reinforce your messages.

periodically to prescribers to promote and reinforce your messages. An example of how we did this, via email, is included as <u>appendix 6</u>

Are prescribers stating their name?

To assess if prescribers are identifying themselves, consider this simple method:

- 1) Obtain a signature list for all your targeted prescribers.
- 2) Periodically (e.g. once weekly) check a random sample of drug charts for all medication orders written by your prescribers. Ideally, the same data collector should be used, who will need to become familiar with the prescribers' signatures.
 - a. Decide which sections of the chart are to be included (e.g. stat / regular / fluids)
 - b. Check charts on a selection of wards where your prescribers work
 - c. Record whether the prescriber has stated their name
 - d. The presence of contact details can also be recorded
 - e. Record the number of medication orders audited for your denominator

We suggest sampling 5-10 drug charts on each selected ward. You may want to rotate the wards on which data are collected. The intensity of data collection will be guided by which staff members you can use. As a guide, we required 2-3 minutes per chart, more at first.

3) Calculate the percentage of medication orders where the prescriber is identifiable:

 $Percentage \ identifiable = \frac{number \ of \ orders \ with \ name \ stated}{total \ number \ of \ medication \ orders} \ge 100$

- 4) Plot your results (appendix 6)
- 5) You may wish to circulate this data to prescribers and to pharmacists.

If you do plan to collect such data, we recommend staring a few weeks before you introduce start your work to encourage prescribers to state their names. This would enable you to compare identification rates before and after your intervention(s). Our data collection form is found in <u>appendix 7</u>.



Supplemental work

In this section we describe extra work which falls outside the core intervention, but may also be useful to conduct if you wish to evaluate your interventions locally.

User focus groups

One way to gain valuable information about what works and doesn't, whilst simultaneously engaging users, is to run a focus group.

A focus group gives you the opportunity to explore reasons why your interventions may, or may not, be working. You may be able to adapt your intervention to minimise the barriers and maximise the returns. Furthermore, inviting prescribers and pharmacists to focus groups shows that you are interested in their experiences and suggestions, which may also aid uptake of your interventions.

Tip: recruitment is easier if you can offer something in return – can you provide lunch, or a certificate of participation for professional portfolios?

Questionnaires

To formally assess your FY1s' and pharmacists' views on feedback and prescribing errors, consider distributing a questionnaire.

An appropriate questionnaire would allow you to establish the current views and experiences around feedback and target areas for improvement. It could also show you what your prescribers expect, and what your pharmacists are willing to do. Additionally, results from the questionnaire can be used in your teaching sessions to highlight the need for local work.

A sample questionnaire is found in appendix 1.

Prescribers' competencies

Another method of increasing teamwork between junior doctors (FY1s and FY2s) and pharmacists would be for pharmacists to be involved in assessing doctors' competencies as required as part of their foundation year training.

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The Health Foundation is an independent charity working to improve the quality of healthcare in the UK. We are here to support people working in healthcare practice and policy to make lasting improvements to health services. We carry out research and in-depth policy analysis, run improvement programmes to put ideas into practice in the NHS, support and develop leaders and share evidence to encourage wider change. We want the UK to have a healthcare system of the highest possible quality – safe, effective, person-centred, timely, efficient and equitable.



Appendix 1: Questionnaire

Inspiring Improvement JIIIIE				NH	Tru	st		
Prescribing Questionnaire for Foundation	Ye	ei ar	11	Do	cte	ors	•	
This questionnaire is part of a study helping us improve how phy prescribing errors to prescribers: your views on prescribing errors and	arma e imj	cists port	s gi ant	ve	feed	lbad	k c	n
Current site: CXH : HH ; SMH Gender: Male ; Fe	male							
Previous sites worked at: CXH : HH ; SMH Undergraduate medic	al sch	nool:	Im	peri	al 🗆	; 0	ther	
Please circle the number which best represents your agreement with the state	ment.	Rep	lies i	are a	anon	ymo	us.	
Understanding prescribing errors	(Bood)	dragen						20000
I feel there is an open culture in this organisation with respect to discussing prescribing errors.	1	2	3	4	5	6	7	8
2. I understand why doctors make prescribing errors	1	2	3	4	5	6	7	8
When I have made prescribing errors in the past, I understand why I , made them	1	2	3	4	5	6	7	8
 I am aware of the conditions under which I am likely to make a prescribing error 	1	2	3	4	5	6	7	8
s. I believe I am aware of all major prescribing errors I make	1	2	3	4	5	6	7	8
think knowing about the prescribing errors I make is important	1	2	3	4	5	6	7	8
*. I think knowing about the prescribing errors others make is important	1	2	3	4	5	6	7	8
Evaluation of the current feedback you receive from pharmacists on prescribing errors	Stemps	- near	3	_			_	Variation of
In I feel I receive verbal feedback often enough for it to be useful	1	2	3	4	5	6	7	8
n I feel I receive written feedback often enough for it to be useful	1	2	3	4	5	6	7	8
12 I receive verbal teedback soon enough after the event to be useful 13 I receive written feedback soon enough after the event to be useful	1	2	3	4	5	6	7	8
The feedback I receive on prescribing errors is highly relevant to my	1	2	3	4	5	6	7	8
I believe that the information I receive on prescribing errors from ¹⁵ pharmacists is accurate	1	2	3	4	5	6	7	8
I believe that the information I receive on prescribing errors is from a 14 trusted source	1	2	3	4	5	6	7	8
The feedback I receive from pharmacists on prescribing errors is ¹⁷ provided in a constructive manner	1	2	3	4	5	6	7	8
18 Receiving feedback is a valuable use of my time	1	2	3	4	5	6	7	8
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How is pharmacists' feedback on prescribing errors received?	Strong	dime					
I am always receptive to feedback I receive from pharmacists on my prescribing errors	1	2	3	4	5	6	7
The feedback I receive from pharmacists on prescribing errors is non- $^{\rm 26}$ threatening	1	2	3	4	5	6	7
Response to receiving feedback on prescribing errors from pharmacists	Songly	dingmo					
Receiving feedback on prescribing errors has caused me to reflect on ²¹ my prescribing practice	1	2	3	4	5	6	7
I have made changes to my prescribing practice in response to 22 feedback received from pharmacists	1	2	3	4	5	6	7
23 I am happy to discuss prescribing errors with my peers	1	2	3	4	5	6	7
I think receiving formal feedback on prescribing errors means I would ²⁴ make fewer errors in the future	1	2	3	4	5	6	7
What kind of prescribing error feedback would you like to receive?	Stongly	andersp					
28 I want to be told of all major prescribing errors I make	1	2	3	4	5	6	7
34. I want to be told of an prescholig errors i make, however minor I would like to have feedback by pharmacists which includes examples	1	-	3	*	2	6	-
^{27,} of specific errors I make Eactback by pharmacists which includes generic guidance on				-	-		
²⁸ prescribing practice would be useful	1	2	3	4	5	6	7
Peedback which includes statistical companion with my peers would be	1	2	3	4	5	6	7
I prefer to receive feedback on prescribing errors from pharmacists an rather than senior doctors	1	2	3	4	5	6	7
Do you have any comments or suggestions that would help pharmacists to p	rovic	le be	etter	fee	dba	ck?	
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Thanks for completing this questionnaire! Please return the questionnaire to	the µ	pers	on w	nho l	hand	ded	the
out, or to Matthew Reynolds, Pharmacy, CXH prescribingfeedb	ack@	lim	eria	l.nh	s.uk		
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¹⁵ I believe that the information FY1s receive on prescribing errors is accurate 1 believe that FY1s find the feedback they receive on prescribing errors 1 to be trustworthy	2	3	4	5	6	7	8
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Electronic versions are available from the authors.

Appendix 2: Name stamp design ideas

- Preferred name some prescribers will not be known by their forename; it's better to check before ordering.
- Name prefix or suffix consider adding "Dr.", "CT1", or "Consultant" in order to differentiate between groups of prescribers. However, adding prefixes or suffixes specific to levels of training would mean replacing the stamp after every promotion and add to costs.
- Contact number consider "Bleep____" or "Phone____". Is it possible to state permanent number? Some prescribers share bleeps or regularly change numbers, and would therefore often need a replacement stamp.
- Signature prompt is there space to add a prompt onto the stamp if required? Adding a reminder to the stamp's outer box can also be considered.
- Doctors may not be the only prescribers in your organisation. If you have pharmacist, nurse, or other prescribers you may wish to offer them name-stamps.
- You can also consider adding an individual's professional registration number to the stamp.
- We included a lanyard on our stamps to allow them to be attached to bags and belts etc.
- "Pen-stamps" may be another feasible option.

Here are a couple of illustrative designs.

Dr. Good Example Bleep: 1234 G. Example Contact: 07899876543 Good Example Pharmacist Independent Prescriber Ext. 12345

Appendix 3: Example Good Prescribing Tip emails

	Avoid errors in penicillin sensitive patients: good prescribing tip of the fortnight
Avoid errors when prescribing drugs with unusual requencies: good prescribing tip of the fortnight	(this prescription has been re-written to maintain the anonymity of the prescriber)
(uns prescription has been re-written to maritain the anonymity of the prescribery	Can you spot the error. The error
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Onle on well 10	2) This patient has been prescribed Tascore [®] (piezeralin/ tascbatam)
an (Norman 22) and an and an and	which contains penicillin and is
The error	hyper measures therefore contra-indicated as this therefore contra-indicated as this patient had a severe adverse reaction
	4.5 ₉ IV DUDIS
This adult patient erroneously received a dose of alendronic acid on two consecutive days instead of once a week because the dose administration section of the chart had not	Laser Mar 1997
been clearly marked.	Alexandra de la contractiva
Not indicating the dosing frequency on the administration section of the drug chart	Auways cneck a patient's anergy status before pressioning any medicine.
can result in a patient receiving an incorrect dose. An overoose of alendronic acid may cause hypocalcaemia, hypophosphataemia or upper gastro-intestinal adverse events.	Administration of a penicillin based drug to a patient with a history of hypersensitivity reactions to paging the care to first
Prescribing tips:	Personal control of rates
r reasoning ups.	Prescribing tips:
 Explicitly indicate when the dose is due by marking the whole of the dose administration section of the chart, to ensure the drug is administered at the 	 Always establish the nature of any allergy and document it on the chart and notes. It is important to confirm
intended times only.	whether the aliergy is severe, jess severe or an intolerance/ side effect. The nature of the reaction will guide prescribing decisions.
 Some examples of prescribing drugs with unusual frequencies: 	For information related to penicilin allergies refer to the document Documented Peniciliin Sensitivity antibiotic
	prescribing in a penicili in sensitive patient on the intranet. This document uses a 'traffic-light' system RED drugs
Reputer Prescriptions 1 Imit ↓ PALAGY	are contraindicated for pencificilin allergic patients, AMBER drugs are to be used with caution, GREEN drugs are safe for pencificiling allergic patients.
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week GE Barey 2014 3 America work 18	found in the Antibiotic App (download onto a
2/52 22 Address to a second and the	smartphone <u>here</u> or scan the QR code). Precina along
Persember to use your name stamp or print your name when presentition	Be aware of commonly used brand names for A structure and the structure and
Do you find this feedback useful? Email prescribing feedback@impedial.phs.uk and let	Augmentin' (co-amosidar), Tazorin' (piperacilin/
us know your thoughts	tazobactam), Timentin® (tiarcillin/ clavalanic acid)
Have you lost your name-stamp? Email presorbing feedback@imperial.nhs.uk to order a replacement	and prescribe as the generic name.
Lio you need an ink retill for your name-stamp / Email presonand needoaddoumpenaums uk to order one	Remember to use your name-stamp when prescribing
This work forms part of the Presorbing Improvement Model (PIM) project (1/10/2013 vfinal) (modified	Have you bot your name-stamp? Cick age to order a replacement Do you need an isk refil for your name-stamp? Cick age to order one
	Do you find this feedback useful? <u>Receiv</u> us and let us know your thoughts
	Matt Reynolds on behalf of the Pharmacy Good Prescribing Team This work form and of the Republic Insurgement Market (FMA state) (FMA state)
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Appendix 4: Publicity posters aimed at pharmacists



Appendix 5: Accompanied ward visit assessment ideas

We added the three criteria below as extra categories to our departmental accompanied ward visit form.

Name:		Wa	rd:		Chart / Patient Focused Visi
Competency / Rating	Always	Mostly	Rarely	Never	Comments
Attempts to contact the initial prescriber whenever possible					
Provides feedback on prescribing errors confidently in a professional manner					
Informs doctor of available resources to aid prescribing					

Appendix 6: Run chart example

As part of our monitoring, we created a run chart using Excel which we sent to FY1 prescribers once a fortnight to show how they were doing with stating their name when prescribing. We included a brief narrative of the previous two weeks, and also took the opportunity to advertise the complementary Good Prescribing Tip emails. We included email links back to our team encouraging recipients to get in touch with ideas to improve prescribing.



Appendix 7: Prescriber identification data collection form

This data collection form reflects our decision to examine numerous sections of the drug chart to monitor whether or not prescribers were stating their name in each section



This completed example below shows how we coded our results. For example, drug chart 4 was found to have medication orders written by prescribers 1 and 8. Prescriber 1 wrote 14 regular/variable prescriptions and two PRN prescriptions which stated a signature and bleep only. Prescriber 8 also wrote four regular/variable prescriptions, but stated their signature, bleep and used their name stamp for all.

			Ua	te: ter t					
				Total number p	resent on chart	Total medication			
Ward	Prescription number	Doctor code	Stat	Regular / Variable / DVT prophylaxis / Warfarin	PRN	Infusions / blood	orders prescribed by FY1	Comments	Key S – Signature
81	(i)	19		9SB		21	12		N – Name stamp
1	(2)	000	Los				0		B – Bleep numbe
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	0	8		SSNB			3		
	G	18		2SB	3SB		5		
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	60	33	150	-			1		
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				Service					
						The second second			
	-			- Carlos Carlos					