Deciding on Clinical Decision Support

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Background

- 6 month roll out of ePMA across 5 hospital sites in adult inpatient and outpatient areas starting September 2015
- Paediatrics went live in March 2017
- Implementation of discharge was completed in July 2017
- Generic build across all sites – roll out across the entire Trust was priority
- August 2017 – Optimisation journey begins
What is clinical decision support?
Drug Catalogue:
This is clinical decision support in its most basic form. The drugs available to prescribe at Imperial College NHS Trust are based on usage and formulary choices.

Drug alerts:
Any non-formulary medications prescribed are presented with a non-formulary pop up alert which encourage the user to review their choice. High alerts can be used to highlight high risk medications at the point of prescribing. A pop will appear upon drug selection where a message can be displayed. NPSA alerts have been incorporated as high alerts where possible.
**Order sentences:**
Additional information can be added in ‘comments’ or ‘special administration instructions’. Aimed at providing nursing staff with additional information to aid medication administration.

Special admin instructions have been pre-populated for many medications to match BNF warnings.

Order comments have also be pre-populated for some medications. Order comments are used we there is a large amount of information required to aid drug administration. For example: Insulin intravenous variable rate infusions:
Order comments can be viewed by hovering over the medication on the drug administration page.
Within the order sentence box **dummy order sentences** can be created to aid selection.

**Order sentence filtering** is also used to provide targeted clinical decision support depending on the patient's age or weight.
Caresets/ Powerplans:
A care set or power plan allows for a multiple orders to be signed at one time. This functionality also allows for additional notes and guidelines to be incorporated to guide the user in medication order selection.
Multum decision support
Includes allergy checking, duplicate checking, and drug-drug interaction checking
Figure 1: Overview of pros and cons of decision support

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instant allergy checking by class</td>
<td>Decision support is attached to the drug chemical (Primary). Therefore if a new primary is created which does not exist in the Multum drug catalogue this will not have any decision support attached until a Multum update is carried out.*</td>
</tr>
<tr>
<td>Provides a double check for interactions and allergies on very busy screens</td>
<td>Current medicines that do not have a primary include all PGDs, Fidaxomycin and Artenusate**.</td>
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<tr>
<td>Three types of interactions can be detected: drug-drug, drug-food &amp; duplicate prescribing</td>
<td>Interaction checking may be useful for specialist drugs such as HIV medicines and drugs which are new to the market</td>
</tr>
<tr>
<td>The level of interaction severity switched on can be customised</td>
<td>Turning on all levels of decision support can cause alert fatigue—with little or no attention paid to important allergy/interaction warnings</td>
</tr>
<tr>
<td>Interaction checking maybe useful for specialist drugs such as HIV medicines and drugs which are new to the market</td>
<td>Decision support also allows for interaction checking for drugs that have been discontinued within 24 hours. This is a preference and can be turned off if it is not required.</td>
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<td>Available in both Powerchart and Pharmmed manager</td>
<td>Junior medical/pharmacy staff may read too much into interaction warnings if all are made active.</td>
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<td></td>
<td>The decision support catalogue currently has 12,211 interactions listed in the ‘Major’ category, 77,440 in the moderate category and 7598 in the mild category.</td>
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<td></td>
<td>In Pharmmed manager, even if interaction warnings are switched off, a column with warning symbols remains which can only be ‘hidden’ by individual user preferences.</td>
</tr>
</tbody>
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Custom alerts

An **EKM rule** can be created to pop up at the point of opening a patient's record or signing an order. The example below is an EKM rule alert. These can be targeted at all users, particular positions and can be associated with a form to capture more information.

**Medication Review Due**

This patient has a prescription which has already passed the date of review.

Please ensure the following prescription is reviewed today:

Gammaplex (IVIG)
Considerations

- Is the clinical decision support request required? Will it prevent clinical risk?
- Is an alert necessary? Can the same message be delivered in an alternative way?
- How can the information be best targeted without causing unnecessary interruption?
- Many requests are in the form of an alert being added to a particular medication. There are various methods of delivering clinical decision support in the form of order sets, documentation and templates that may be more effective than those that interrupt the workflow.
- It is important to deliver clinical decision support involving interruptions to workflows to those that are most appropriate given the context.
- Alternative options should be considered before agreeing an alert should be created within the electronic system.
Considerations

• Is the request technically possible?
• What are the likely unintended consequences of implementing the alert?
  a) Alert fatigue
  b) Prevent prescribing in a timely manner
  c) Block to access patients record
  d) Is there a risk that information is provided for some medications and not others which may lead to clinical risk for other medications?
• Is there the ability to keep content current?
• As the amount of content increases, keeping the system up to date becomes increasingly difficult.
Requests for Decision Support

- Requests for caresets, powerplans, changes existing alerts and workflows
- Parkinsons meds – order sentence to include ‘Must be given on time’
- Stopping this infusion may cause cardiac arrest
- Quinolones may cause tendon rupture
- Palonosetron should not be used with ondansteron
- Removal of ‘Sulfur’ allergies from drug allergy database
- Valproate rule to prompt review in female patients of child bearing potential
Governance

- A designated committee is required to review incoming requests
- This may be the Drugs & Therapeutics committee, Medication Safety committee or create a new subcommittee if necessary
- Main consideration is whether the existing groups have the required representation to make system related decisions.
Thank you

Any Questions?