ePrescribing – delivering a paperless NHS

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Overview

• Moving to a paperless NHS

• Challenges

• ePrescribing Maturity model

• Where to get help

• Next steps
Moving to paperless......

- Mainly paper based
- Digitisation of some clinical and admin systems
- Comprehensively digitised clinical and admin systems
- Integration of systems within the organisation
- Integration across all care settings within and beyond the organisation
National Information Board

Personalised Health and Care 2020
Using Data and Technology to Transform Outcomes for Patients and Citizens
A Framework for Action

November 2014

www.england.nhs.uk
Background

- 2011
  - 13% NHS trusts use for inpatient prescribing in adult medical and surgical wards
  - 11% adult critical care
  - 1% paediatric/neonatal critical care
  - 3% renal
  - 34% chemotherapy
  - 48% discharge prescribing
Change in numbers…

• Safer Hospitals Safer Wards fund – 2013
  • 52 ePrescribing projects
  • £45m (plus matched funding) over two years to March 2015

• Integrated Digital Care Record fund – 2014
  • 2 ePrescribing projects
  • Funding to March 2016

• Nurse Technology funds
  • Automated cabinets
  • Near patient support
Technology fund requirements

• Project milestones defined in M.O.U
  • Monthly monitoring

• Expectation of Value for Money ratio 1:1
  • Plus quality benefits…..

• Benefits outline and delivery
  • Quarterly monitoring
Change in horizon?

- Rapid introduction of ePrescribing
- Will take use over tipping point by 2016/17

- No longer future technology…….. 
- Need to start re-think/shaping service delivery
  - Routine data available
  - Access to information
  - Efficiencies
Overview

- Moving to a paperless NHS
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- ePrescribing Maturity model
- Where to get help
- Next steps
Challenges

• Unrealistic expectations
  • Failed procurements

• Learning not being used

• Market focussed on implementation at present
  • Immature

• Implementation still challenging
Challenges

[Diagram showing a hexagon with 'Our shared purpose' at the center. Surrounding this are sections labeled: Leadership for change, Spread of innovation, Engagement to mobilise, Improvement methodology, Rigorous delivery, Transparent measurement, and System drivers.]
Challenges

- Focus should be IT enabled change
- Each profession = different needs
- Do not underestimate the challenge/resource to deliver
  - Initial implementation
  - Ongoing support…..
Not all implementations are equal...

Hospital Scores for detection of test orders causing an ADR according to product.
How the customer explained it

How the lead understood it

How the programmer wrote it

What the customer really wanted
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What is Digital Maturity?

- Relatively novel concept which refers to the effective use of digital capabilities to deliver better services...

- In health and care ….this is to demonstrate that individuals, carers, health and care professionals have access to information to facilitate informed decision making, support integrated care and enable citizens to be active participants in their health and care.
Background for ePrescribing

- Current measures of ePrescribing maturity unhelpful

- West Midlands wanted to compare practice
  - Identify areas of best practice
  - Benchmark
  - Support developments

- Working with NHSE, Newcastle Foundation Trust and AHSN developed a prototype tool
Approach

• Review of current literature / existing models
  • CDMI
  • EMRAM / HIMSS
  • Canadian model
  • UK research

• Limitations
  • We do things differently…
  • Measure of use / reach missing and/or inconsistent
  • Little/nothing about enabling functions
## Current Digital Maturity Index

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Inpatient e-prescribing</th>
<th>Oncology e-prescribing</th>
<th>CDSS in use on e-prescribing</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Advanced e-prescribing</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<tr>
<td>8</td>
<td>Simple e-prescribing</td>
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<td>None</td>
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<td>7</td>
<td>Enterprise scheduling</td>
<td>Scheduling</td>
<td>Clinical workflow engine/integrated pathways</td>
<td>Blood tracking</td>
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<td>Lorenzo</td>
<td>Lorenzo</td>
<td>None</td>
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<tr>
<td>6</td>
<td>Clinical noting and document management</td>
<td>Document management</td>
<td>Clinical noting</td>
<td>Observations vital signs</td>
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<td></td>
<td></td>
<td>ECM</td>
<td>Lorenzo</td>
<td>Lorenzo</td>
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<tr>
<td>5</td>
<td>Order comms and diagnostic reporting</td>
<td>Order comms</td>
<td>Diagnostic reporting</td>
<td>Bed management</td>
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<td></td>
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<td>None</td>
<td>None</td>
<td>Lorenzo</td>
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<tr>
<td>4</td>
<td>Specialist departments</td>
<td>Cardiology</td>
<td>Oncology</td>
<td>Critical care</td>
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<td>None</td>
<td>None</td>
<td>Lorenzo</td>
</tr>
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<td>Departmentals</td>
<td>A&amp;E</td>
<td>Theatres</td>
<td>Maternity</td>
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<td>None</td>
<td>ORMIS</td>
<td>Guardian/Athena</td>
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<td>2</td>
<td>Core ancillary</td>
<td>Pharmacy</td>
<td>Pathology</td>
<td>RIS</td>
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<td>None</td>
<td>iLab</td>
<td>CRIS</td>
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<td>Foundation</td>
<td>PAS</td>
<td>Discharge letters</td>
<td>Community PAS</td>
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<td></td>
<td></td>
<td>Lorenzo</td>
<td>None</td>
<td>Simple UI</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Stage</th>
<th>Cumulative Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 7</td>
<td>Complete EMR; CCD transactions to share data; Data warehousing feeding outcomes reports, quality assurance, and business intelligence; Data continuity with ED, ambulatory, OP.</td>
</tr>
<tr>
<td>Stage 6</td>
<td>Physician documentation interaction with full CDSS (structured templates related to clinical protocols trigger variance &amp; compliance alerts) and Closed loop medication administration.</td>
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<tr>
<td>Stage 5</td>
<td>Full complement of PACS displaces all film-based images.</td>
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<tr>
<td>Stage 4</td>
<td>CPOE in at least one clinical service area and/or for medication (i.e. e-Prescribing); may have Clinical Decision Support based on clinical protocols.</td>
</tr>
<tr>
<td>Stage 3</td>
<td>Nursing/clinical documentation (flow sheets); may have Clinical Decision Support for error checking during order entry and/or PACS available outside Radiology.</td>
</tr>
<tr>
<td>Stage 2</td>
<td>Clinical Data Repository (CDR) / Electronic Patient Record; may have Controlled Medical Vocabulary, Clinical Decision Support (CDS) for rudimentary conflict checking, Document Imaging and health information exchange (HIE) capability.</td>
</tr>
<tr>
<td>Stage 1</td>
<td>Ancillaries – Lab, Radiology, Pharmacy – All Installed OR processing LIS, RIS, PHIS data output online from external service providers.</td>
</tr>
<tr>
<td>Stage 0</td>
<td>All Three Ancillaries (LIS, RIS, PHIS) Not Installed OR Not processing Lab, Radiology, Pharmacy data output online from external service providers.</td>
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</tbody>
</table>
Guiding Principles

- Include measures of
  - Enabling capabilities
  - Levels of functionality
    - Use and reach
    - Governance / safety
  - Ability to develop as practice/policy evolves
  - Ability to link to other maturity indicators
- Scoring
  - Able to ‘develop’ as model itself matures and develops
  - Simple
  - Reproducible

- QUICK to complete
Semantics

• Avoid language that implies ‘criticism’
  • Basic, advanced

• Functional, Mature

• Ensure all terms defined
  • Understood by clinical teams
  • Technical language avoided
Demonstrating Maturity

Available

In use

Extent or Reach
Core Model Capabilities

- Enabling capabilities
- Functional ePrescribing
- Mature ePrescribing
Functional and Mature Components for Context of Prescribing

- Functional
  - Inpatient Prescribing
  - Outpatient Prescribing
  - Discharge Prescribing
  - Different types of dose
  - Emergency prescribing

- Mature
  - Paediatrics
  - Oncology
  - Emergency Department
  - Critical Care
  - Theatres
  - Day case/Ambulatory care
  - Mental Health
Does the system support the prescribing of inpatient medicine orders and schedule them for administration?

Is this functionality in use?

For what % of inpatients was the system used to prescribe inpatient prescriptions in the last month?
Results

- 16 responses
  - 8 acute
  - 2 specialist
  - 6 mental health/community

- Mixture of maturity
  - Majority of Trusts have no system but work in progress
    - Enabling scores reflect
  - Mix of systems in use/planned
Trust results

• Typical Trust score:
  • Enabling Capabilities: 66%
  • Functional Components: 0%
  • Mature Components: 0%
  • Total Maturity Score: 6%
West Midlands Summary

Overall maturity score (%)
Individual Trust Maturity Overview

1. Enabling Capabilities
2. Types of Medicines
3. Context of Prescribing
4. Medicines Administration
5. Prescriber Type
6. Medicines Optimisation
7. Secondary Uses
8. Interoperability
9. Communication
10. Supply & Inventory Management
11. Decision Support

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Individual Capability Review

Antibiotic Stewardship

Support for recording of antibiotic indication for each prescription
Functionality to pre-define course length for antibiotics
Review function for course length for IV antibiotics
Functionality for a prompt for IV to oral switching

This data is based on five NHS Trusts

Functionality available
Functionality in use

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Where to find help….

• Trusts awarded monies
  • Trust facing team at HSCIC
  • Specialist input available

• Talk to other Trusts BEFORE you sign
• Listen to what they have learnt
  • What you think you want before implementing
  • May not be what you want afterwards….
Welcome to the ePrescribing Toolkit for the NHS

Designed to support NHS hospitals in the planning, implementation and use of ePrescribing and Medicines Administration systems, the toolkit offers you tools, resources and information to help you every step of the way.

Put together by the NIHR funded ePrescribing Research Programme, the toolkit is aimed at NHS managers, IT specialists, doctors, nurses, pharmacists, allied health professionals and patients. Find out more by visiting our FAQ pages or by clicking on the links below.

@ Planner
A series of mini ‘How to’ guides to support you at every stage of the process

Case Study Showcase
Best practice showcase drawn from the Programme’s case study sites

Interact
Get in touch with us, or talk to suppliers, other hospitals and staff in your hospital

Quick Reference
Key points to remember, potential pitfalls, top tips and FAQs

Tools
Practical tools to estimate costs, evaluate safety and monitor user satisfaction

News and Documents
Papers, reports, references, news and other key documents

www.eprescribingtoolkit.com
System Benefits

- Three years
  - Standalone vs Integrated
- Similar outcomes
- Greater legibility
- Organisational benefits
  - Secondary data uses
- New risks
  - Accessibility/usability hardware and software
Benefits Guidance

• Benefits guidance
  • Outline of possible areas
  • Remember benefits must match the measure
  • Open document – additional ideas welcomed
Investigating Medication Prescribing Accuracy for Critical Error Types

- Standardised data collection tool:
  - Completeness of documentation (demographics and prescriptions)
  - Incidence of 80 critical error types
- Facilitates research into the impact of electronic prescribing and clinical decision support
- Allows for comparative studies to be conducted between sites


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Webex presentations

- Monthly – first or second Wednesday at 1pm
- Three presentations
  - 10 minutes
  - Key learning points
  - Varied sites, systems and topics
- All available on NHS England website and eP toolkit
- Next session 3rd June, 1pm
- Sign up: ann.slee@nhs.net
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Open Source Development

• NHS England promoting open source
• ePrescribing development underway

• More details at:
  • http://www.technologystrategy.england.nhs.uk/login.php
  • http://www.openep.org

• Contact: d.jobling@nhs.net
Medication reconciliation
Drag and drop medicines to reconcile
# Chlordiazepoxide (Chlordiazepoxide)
- **Dose**: Variable dose – 4X per day – Oral

# Gliclazide (Gliclazide)
- **Dose**: 80 mg – Morning – Oral

# Metformin (Metformin)
- **Dose**: 500 mg – 2X per day – Oral

# Paracetamol (Paracetamol)
- **Dose**: 1000 mg – Every 6 hours – When needed – Oral

# Salbutamol (Salbutamol 100micrograms/dose breath actuated inhaler CFC free)
- **Dose**: 200 microgram/2 dose – 4X per day – When needed – Inhalation

# Salmeterol (Salmeterol 25micrograms/dose inhaler CFC free)
- **Dose**: 50 microgram/2 dose – 2X per day – Inhalation

# Sodium chloride (Sodium chloride 0.9% infusion 1 litre bags)
- **Rate**: 125 ml/h = Dose 1635 mg/hr –
Digital Medicines Strategy

- Strategic forum for all
- Stakeholders need to attend lots of groups
Digital Medicines Strategy

- Lots of different programmes of work

- Reduces potential for
  - Duplication
  - Misalignment
  - Poor prioritisation
Digital Medicines Strategy

Integration is hard

Fragmentation is easy

• Evolving strategy to:
  • Coordinate
  • Support prioritisation
  • Simpler point of contact