

Principles for integrating prescribing and dispensing systems

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Lead Clinical Informatics Pharmacist

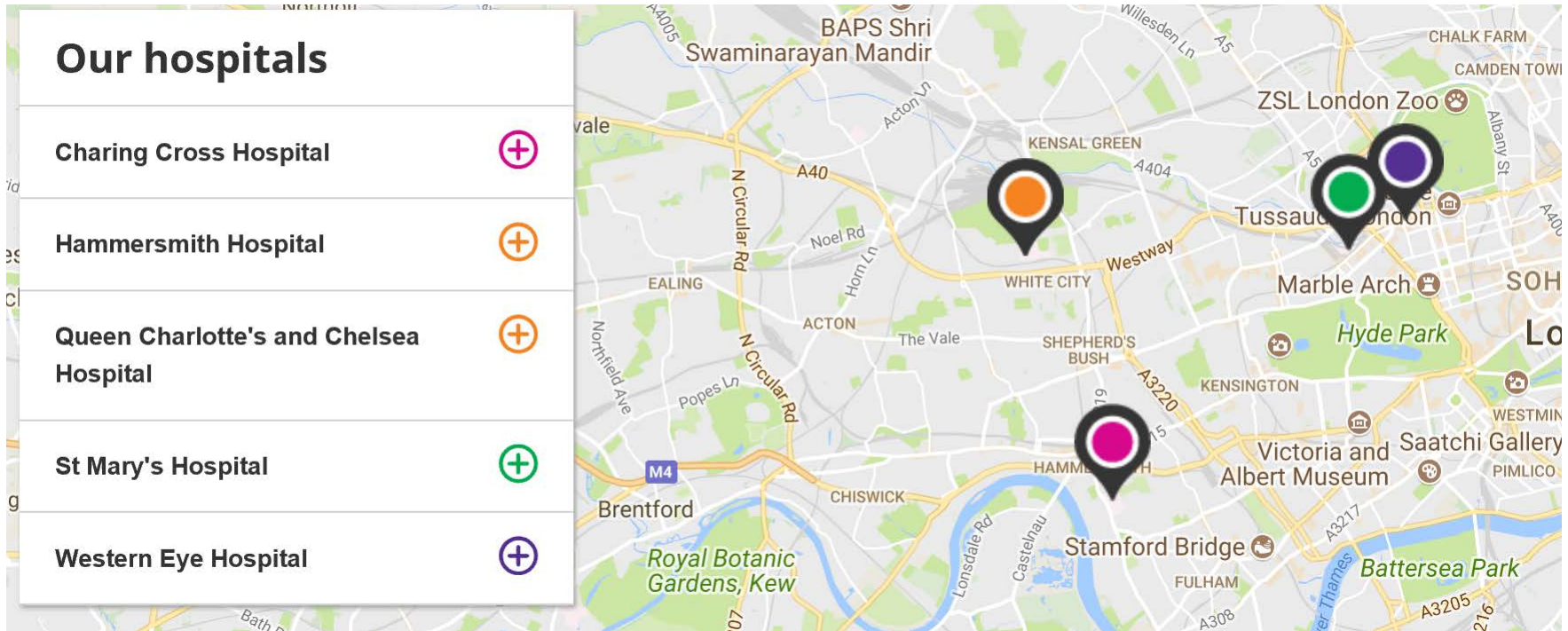
Trupti Sheth – Senior Lead Pharmacist e-Prescribing/
Computers/Projects/Business support

Agenda

- Introductions
 - Imperial's story
 - Why Interface / Integrate ?
 - Who's doing what?
 - Workflow / functionality ePMA/Stock Control
 - Example & Key Principles – cross check applicable to other systems & trusts
 - Plan & next steps for Cerner/JAC
- AOB / Discussion

We provide acute and specialist healthcare for a population of nearly two million people in north west London, and more beyond.

We have five hospitals and with our academic partner, Imperial College London, we are one of the UK's 11 academic health science centres, working to ensure the rapid translation of research for better patient care and excellence in education.



Imperial Background

- ePMA
 - Sept-15 rolled out of ePMA across 5 hospital sites in adult inpatient and outpatient areas in 6 months
 - Mar-17 Paediatrics went live
 - Jul-17 discharge implementation completed
 - Generic build across all sites – roll out across the entire Trust was priority
 - Aug-17 Optimisation work started, GDE site, CWFT fast follower trust
- One Pharmacy System
 - Previously both Ascribe and JAC in trust & outsourced Outpatients
 - Single JAC system Feb-15

Why?

Triple Aim: better health, better healthcare, and lower cost.

HIMMS (EMRAM) stage 6: *The eMAR technology in use are implemented and integrated with CPOE, pharmacy and laboratory systems to maximise safe point-of-care processes and results.*

Improved digital maturity

CPOE<>Pharmacy<>Meds Admin

Better potential for further integration – automated cabinets

No single system in place for EPR/stock control link in a majority of UK NHS hospitals



What?

Where there is a need for medication supply there is a clear link between the prescription and the dispensing system.

In-patient medication requests

Discharge prescriptions

Out-patient prescriptions

Homecare

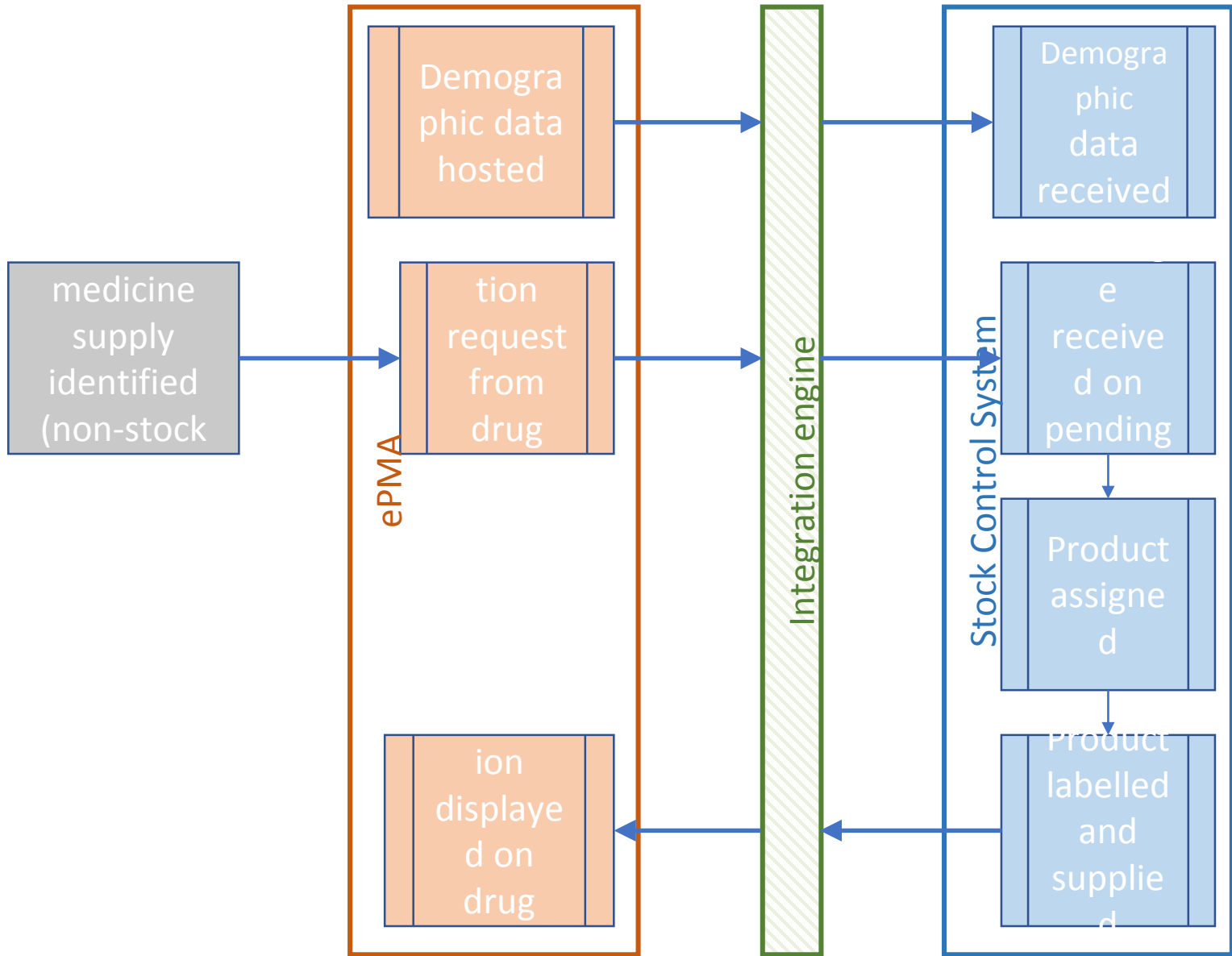
Maintain the ability to accept non-cerner prescriptions.

Which Trusts ?

Imperial, Royal Free, Wirral, Newcastle, Oxford -
Cerner / JAC

Neil Kirby – Salford – Allscripts / Ascribe

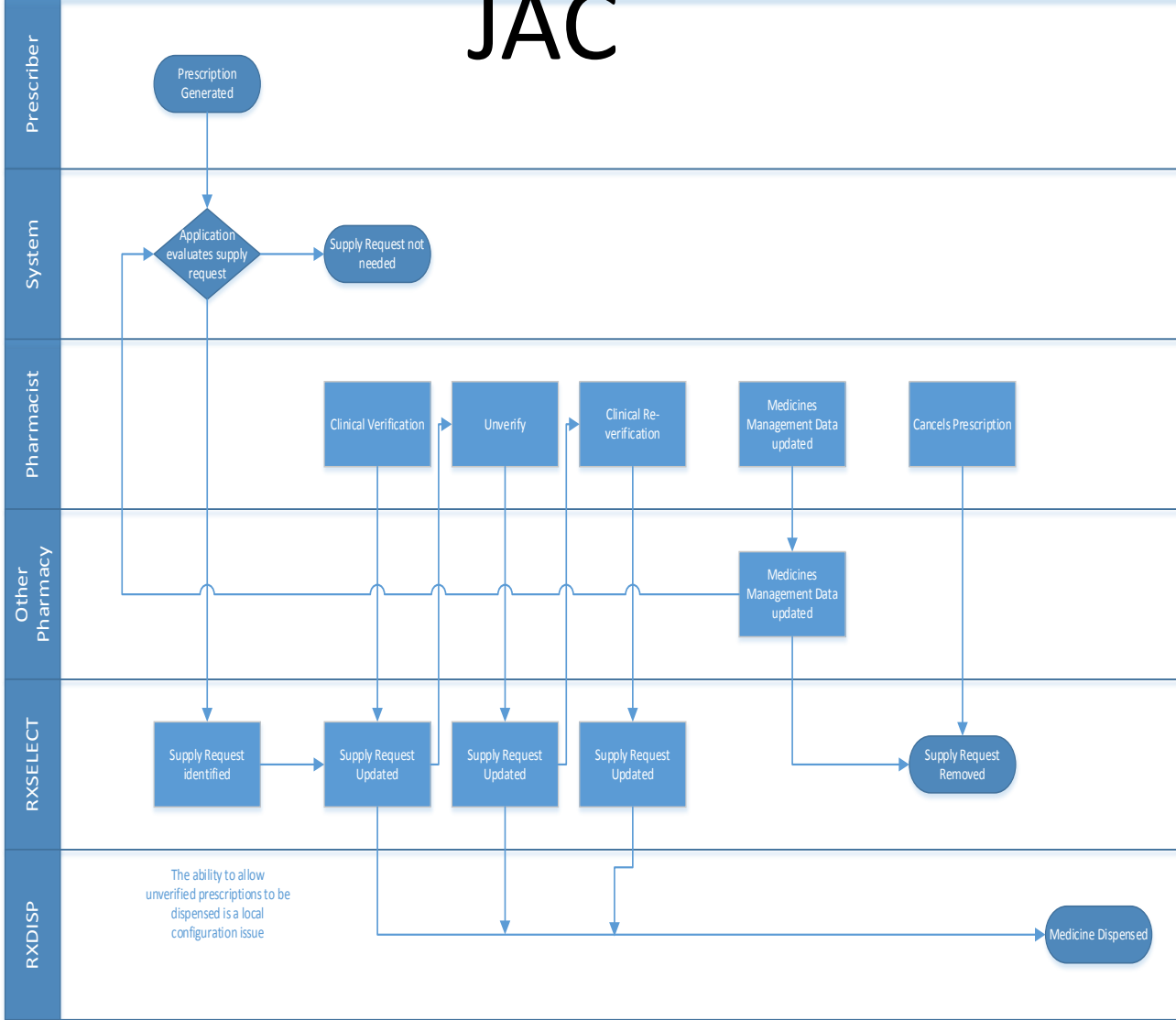
Adam Knight – Aintree – Allscripts / JAC



Workflow within JAC from Cerner to Pharmacy Dispensing

New Prescription

JAC



Cerner

Powerchart CPOE>>PharmNet – product assignment

zstestpharmacy, workflow9

Task Edit View Options Help

MRN: 60273530 Age: 71 Years Gender: Male Location: RAL 7 SOUTH / MW Bed 02
 FIN: 6107883 Race: Admitted: 21/Dec/2017 14:27 GMT Clinician: Harber, Mark
 Rx Clinical Note:

Acute Profile Ambulatory Profile Results Interventions Monitors

Drug

Action	Status	Order Sentence
	Discontinued	Lactulose 10 ml, liquid oral
	Discontinued	Senna 7.5mg tablets 15 mg
	Discontinued	Lansoprazole 15 mg capsule
	Discontinued	Paracetamol 1 gram tablet oral
	Discontinued	Codeine 30 mg tablet oral PC
	Discontinued	Aspirin 75 mg tablet (soluble)
	Discontinued	Warfarin 5 mg tablet oral ON
	Discontinued	Warfarin 5 mg tablet oral ON
	Discontinued	Atorvastatin 40 mg tablet oral
	Discontinued	Morphine subtable 10mg/30min
	Discontinued	Tinzapirin 4.500 unit, inecio
	Active	Aspirin 75 mg tablet (soluble)
	Active	Impiramine 50 mg tablet oral
	Active	aMLiDopine 10 mg tablet oral
	Active	Bisoprolol 5 mg tablet oral O
	Active	Clopidogrel 75 mg tablet oral
	Active	Hypromellose 0.3% eye drops 1
	Active	Impiramine 50 mg tablet oral TW
	Active	Linagliptin 5 mg tablet oral ONC
	Active	Oxybutynin 5mg tablets 5 mg tab

Demographics

Height 0 Result D/Tm

Weight 0 Result D/Tm

Serum O Result D/Tm

BSA MISSING DATA

BSA Method Standard

IBW MISSING DATA

IBW Method Devine

DCI (est) MISSING DATA

DCI Method Cockcroft-Gault

Patient Note

Click here to view/edit the patient...

Reason for Visit

Allergies (1)

Click here to add a new allergy... penicillin

Medications

- aMLiDopine 10 mg tablet oral O
- Aspirin 75 mg tablet (soluble) or...
- Bisoprolol 5 mg tablet oral ONC...
- Clopidogrel 75 mg tablet oral ON
- Hypromellose 0.3% eye drops 1...
- Impiramine 50 mg tablet oral TW
- Linagliptin 5 mg tablet oral ONC
- Oxybutynin 5mg tablets 5 mg tab...

Rx Clinical Note

Rx Interventions (1)

Ready

Verify Med Order

Drug

Drug	Dose	Ordered As
aMLiDopine	10 mg	aMLiDopine

Route: Frequency: Custom PRN doses: PRN reason: (None) * Clinician: Harber, Mark

Duration: (None) Start date: Original 22/Dec/2017 08:00 GMT Stop Date: 24/12/2017

Previous scheduled administration: 19/01/2018 08:00 Next administration: 23/12/2017 08:00 Following: GMT

Order comments:

Product notes:

Dosage form: tablet *Communication type: Written Order priority: No

Dispense category: (None) Dispense from location: (None) Initial doses: 0

Billing formula: (None) Split dispense location: (None) Split doses: 0

Price: £0.00 Cost: £0.00

Auto-calculate initial dose

Manual Product Select - Bisoprolol 5 mg tablet oral ONCE a day (morning) tablet

Order Information

Ingredients:

Bisoprolol	5 mg
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Order comments:

User defined details:

Last updated by: Elliot-Cooke, Robert Charles - DBA Communication type: Written

Products

Description	Prod Info	Formulary Status
Bisoprolol 1.25mg tablets 28 tablet	1.25 mg tablet	Formulary
Bisoprolol 10mg tablets 28 tablet	10 mg tablet	Formulary
Bisoprolol 2.5mg tablets 28 tablet	2.5 mg tablet	Formulary
Bisoprolol 3.75mg tablets 28 tablet	3.75 mg tablet	Formulary
Bisoprolol 5mg tablets 28 tablet	5 mg tablet	Formulary
Bisoprolol 7.5mg tablets 28 tablet	7.5 mg tablet	Formulary

Selected products:

Product	Prod Info	Dose	Unit	Disp..	Qty/Unit
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Reset OK Cancel

Medication request

Medication Request

Apply to Selected

Reason: Priority:

4 Plans (0)

4 Scheduled (5)

Medications

<input type="checkbox"/>	Aspirin, DOSE: 75 mg - ROUTE: oral - tablet (soluble) - ONCE a day - START: 20/Jan/18 09:00:00 GMT	View History	Reason: <input type="text"/>	Comment: <input type="text"/>
<input type="checkbox"/>	Atorvastatin, DOSE: 80 mg - ROUTE: oral - tablet - ONCE a day (night) - START: 19/Jan/18 22:00:00 GMT	View History	Reason: <input type="text"/>	Comment: <input type="text"/>
<input type="checkbox"/>	Bisoprolol, DOSE: 2.5 mg - ROUTE: oral - tablet - ONCE a day (morning) - START: 20/Jan/18 08:00:00 GMT	View History	Reason: <input type="text"/>	Comment: <input type="text"/>
<input type="checkbox"/>	Ramipril, DOSE: 1.25 mg - ROUTE: oral - capsu		Reason: <input type="text"/>	Comment: <input type="text"/>
<input type="checkbox"/>	Ticagrelor, DOSE: 90 mg - ROUTE: oral - tablet		Reason: <input type="text"/>	Comment: <input type="text"/>

zztestpharmacy, careorganiser MRN: 60207905 DOB: 22/Nov/1980 Age: 37 years Gender: Male Weight:

[Expand All](#)

▼ Medication Request 1

▶ Aspirin DOSE: 75 mg - ROUTE: oral - tablet (soluble) - ONCE a day - START: 20/Jan/18 09:00:00 GMT
Requested date/time: 19/Jan/2018 9:23 GMT Queue time: 4 min
Reason: [History](#)

Worked example

- Rx: Omeprazole 40mg oral capsule ONCE a day
 - Coded drug name (minimum requirement) DM+D compliant (essential) VTM/VMP
 - Coded form/route (route/form compatibility)
 - Coded frequency
 - Freetext string clearly displayed for
dose /route /form /frequency /start date /stop date /duration /additional data
- Quantity of supply: OP(default) vs specific amounts (Abx)
- Supply comment: from medication request
- Dispensary location should be contained in the message
- Product options:
 - Omeprazole 20mg capsules
 - Omeprazole 10mg capsules
- Product hierarchy, most commonly used/standard order; Auto-assignment

- Coded drug name (minimum requirement) DM+D compliant (essential) VTM/VMP
- Coded form/route (route/form compatibility)
 - Coded route
- Coded frequency
- Freetext string clearly displayed for
dose /route /form /frequency /start date /stop date
/duration /additional data
- Quantity of supply: OP(default) vs specific amounts (Abx)
- Supply comment: from medication request
- Dispensary location should be contained in the message
- Identify type of prescription (IP, D/C, O/P)

Other examples to include or think about

- Tricky dickies...complex prescribing / supply
- Abx Rx with a duration
- PBR Rx with indication
- Tapering dose Rx
- Continuous infusion Rx
- Controlled drug Rx
- Local consultation to highlight examples & workflows

- Workflows & routing
 - Satellite dispensing
 - Outsourced dispensing

Key Principles

- Documentation providing detail for the interface
- Incorporate all workflows
- Not forgetting what information can be returned – ie two way interface
- Use codified information – future proofing
- Where possible use separate fields - future proofing
- Keep it simple 😊
- 80/20 for speedy delivery

Reporting

- Medicines usage (end-to-end)
- Improved stewardship of medicines
- Accurate review of stock holding requirements
- Emergency drug availability

Next steps..

- GDE Consortium – Chief Pharmacists supporting Collaborative approach
 1. Output – full document for wider consultation
 2. Cross check that aligns with other systems
 3. Publication and then work to progress

Contacts

- Team Imperial - contact Trupti.sheth@nhs.net
- Team Royal Free – contact robert.elliott-cooke@nhs.net