# SCIMP Special Interest Group

## Meeting 4th March 2017 Venue: Inchyra Grange Hotel, Falkirk

## Medications at Transitions of Care

Names of attenders are not listed as the meeting is held under the Chatham House rule:
***"Participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed" "without explicit consent."[1]***

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### Introductions by each contributor raised these issues:

- multiple proprietary systems used in hospitals
- Closing the Loop (CtL) program identified lack of "computable dose syntax"
- paper / IT / paper transitions are effectively a *scrambler* of the data and *create clinical work*
- CtL focussed on the transitions without specifying a Hospital Electronic Prescribing and Medicines Administration (HEPMA) system during in-patient care
- CtL output has not yet been published? Still under consideration in relation to eHealth
- eHealth strategy must address that infrastructure upgrades are complex, substantial and long-term in benefits so difficult to capture in "Return-on-Investment" (ROI) terms.
- Chronic Medication Service (eCMS) in NHS Scotland addresses supply of repeat issues at pharmacy level
- it's an international problem
- we have agreed to use dm+d as the UK-standard drug dictionary with computable drug data, mandated in England, at NHS Board discretion in Scotland
- now preferring friendlier term "Computable Dose Instruction" (CDI)
  rather than (computable) "Dose Syntax"
- NHS Scotland has procured various applications and is now trying to make them interoperate …
- NHS England is re-modelling based on open standards and business functionality
- financial issues and deployment requires ROI to be "engineered" into the process
- Computable Dose Instruction models to date are all based on open standards.

### In further discussion:

Dm+d's 5-box model to specify a drug was described as a necessary, though not sufficient, component to translate a product-based into a dose-based prescription.

A product-based prescription includes the dose, so is a superset of a dose-based one.

National bodies should define standards rather than purchase systems.

User interface design issues are the most immediately visible to users, and are important issues, but beyond the scope of standard Computable Dose Instruction (CDI) design.

"Reasons for stopping" a drug are very high value data in Transfer of Care messages used in Medicines Reconciliation (and also beyond scope of CDI.)

Medicines Reconciliation: we need a "change report" comparing input and output meds.
[though this still depends on CDI to compare different products dispensed to meet same dose ]

2 international systems were discussed:
New Zealand:

- on hospital admission, 53% of GP medication records were wrong cf. patient compliance/ dispensing mismatches (unpublished research, based on project evaluation reports)
- their hospitals using Orion products have adopted a SNOMED CT based terminology "NZULM" (similar to dm+d)
- support product- based prescribing only

Denmark:

- applies to OP prescribing only,
- no system of CDI,
- includes dispensing events (as does CMS)

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1 added for clarification

Proposal to have an internet-based single source of medication record?
- read-only? Yes, and enhanced by meta-data e.g. context including provenance

Example of TrakCare -populated document image > Vision reconciliation discussed
Note "Medications changed" field is populated manually by clinician as freetext.

A single live medication record spanning Primary and Secondary care is *not* yet the intention, as medication changes are always local, can be rapid and continuous online connectivity cannot be implemented.

Converting dose- to product- is easily done by a pharmacist: "The Art of Pharmacy"

Could GPs also use dose-based prescribing? This would allow pharmacists to manage all the translation to actual products based on their stocks – especially time-saving for complex scripts.
This "culture change" for GPs may be less unwelcome in order to facilitate Meds Rec. and could be an option in GP systems.

The converse translation, from dose- to product- based prescribing, could be asked of hospital staff, and we note many ambulatory care staff are already familiar with it due to routine exposure to it.

Block-chain architecture offers a way to retain as audit trail incl. provenance.
It may also benefit from the data reduction of converting freetext to code

This group asserts that

- whenever medication data is transferred it must follow agreed standard models
- specific transfers require to identify clinical requirements using before/after metrics of time, errors, harms – not easily converted to £ - so is financial equivalence really necessary?
- infrastructure features of CDI are not amenable to £-based ROI analyses

FHIR and OpenEHR communities have worked together to implement allergy models, so should be able to do likewise on medication models.

Many local health systems have portal-based solutions supporting view-only access to both ends of Transfer of Care prescribing.

NHS Digital have promoted open standards in GP Connect as subset of Care Connect for

- patient and user read-only access to GP records, and
- in v2 data will write back to the GP record

GP Connect demonstrator at http://ec2-54-194-109-184.eu-west-1.compute.amazonaws.com/#/patients/9476719966/patients-summary
Their Medication model not yet supporting CDI, we understand this to be further work c/o PRSB .

CareConnect are doing translation work ….
www.FHIR.org shows at 4.16.2 Boundaries and Relationships
MedicationPrescription incl. computable dose and timing, with freetext fallback option
MedicationDispense
MedicationAdministration
MedicationStatement
Jigsaw pieces analogy: the SCIMP/NSS work showed how to design pieces that can fit together, albeit FHIR now have a CDI in development.
A demo was shown of how modern web technologies in social media link automatically to external resources and manage their presentation in the user interface.
These techniques might be used to manage the display of metadata elements of the medication message.

UK and 4-nation issues were discussed:

- it was noted that PRSB is a UK body although commitment from NHS Scotland is uncertain
- Scotland or Wales are good places to start, with only 2 GP systems.

# The Falkirk Declaration SCIMP SIG workshop 4 March 2017

## Medication Systems at Transitions of Care

1. There is a clinical requirement to improve the safety and effectiveness of the management of medications at transitions of care

2. The NHS in the UK are addressing this through a number of linked professional and governmental organisations, e.g. NSS SCIMP, PRSB, UKTC, InterOpen, Care Connect

3. These have now agreed clinical medication models and data exchange standards for sharing medication data

4. These agreed models and standards should thus be used by projects and programmes using electronic medication records, including linked systems

5. HL7 FHIR profiles are being adopted by vendors to the NHS in the UK, expressed from international FHIR medication resources, and so becoming the de facto interoperability standard

6. The dm+d is also now the de facto standard drug dictionary for the NHS in UK

7. Computable Dose Instructions have now been designed using interoperable resources, and shown in pilots to be components fit to contribute to the first purpose above

8. This set of models and standards must be a non-proprietary resource, openly distributed and available to contribution from all stakeholders

9. NHS bodies must support this by procuring only systems which conform to these standards

10. This infrastructure upgrade policy requires evaluation on wider bases than the short-term financial, to include clinical time saved and harms reduced

11. The clinical community require that these technical models are developed in response to clinical requirements, and to be assured of their clinical safety

12. The resources to gather requirements from clinical teams must:
    - produce medication systems that are safe, effective and person-centred in their application
    - be supported, co-ordinated and collaborative

13. There shall be implementation of these recommendations by NHS bodies in each of the NHS in UK

14. NHS Scotland must formally engage with this UK work to ensure local operational and clinical requirements are modelled and that it has the skills and knowledge to use the resources