Creating Archetypes for Patient Assessment with Nurses to Facilitate Shared Patient Centred Care with Older Persons

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PARTNERS located @
Presentation will consider

• Summary of the process of defining requirements for patient assessment to promote continuity of care with the older person using EN13940 as a high order framework of concepts

• Developing archetypes in accordance with EN13606 and creating a small front end application and database to pilot test patient assessment tool

• Completing small pilot study with 16 patients over the acute primary and continuing care sectors over a six month duration

• Overview of key findings from the pilot study (quantitative data) and development of web 2.0 technologies to disseminate information from clinical viewpoint (qualitative data).

• Discussion - using EN13606 and EN 13940 lessons learned
Some Background

- Co-ordination of care is required across and between services to avoid poly pharmacy, conflicting care plans and ensure continuity of care and management of chronic illness (OECD, 2010).

- Sick adults in six countries indicated that a significant proportion of discharged patients are not told what symptoms to look out for and/or have no follow up arranged (Schoen et al, 2009).
Continuity of Care is Required

- Chronically ill patients may visit up to 16 physicians in a year (Pham et al, 2007)

- Health Information Standards can assist in the delivery of shared assessment records for future EHR in Ireland/Europe by offering signposts on process development

- Key standards used in this project EN13940 EN13606
Challenges and Solutions

• The health sector places an unusual emphasis on non-financial goals - hard to measure (OECD, 2010)

• In Ireland healthcare staff are ‘battle weary’ - economic downturn has resulted in a staff moratorium
Sponsors

• EHRland Funded by the Health Information and Quality Authority (HI QA) - Clinical Engagement EHRland available from
  http://www.ehrland.ie/index.html

• National Council of Nursing and Midwifery in Ireland - Education
  http://www.partnersct.com
Project Focus

- To develop archetypes for shared care by creating a core summary assessment tool that could be used across and between services

- Core tool design features include achieving syntactic and semantic interoperability
Clinically Visualisation is a Core Requirement

1 dream of painting and then I paint my dream’

Vincent Van Gough
Aged 37 years
(1853-1890)
Technically Standards Are a Core Requirement

Standards Used as Guiding Framework for this study

- ISO 11179 Metadata registry identification of concepts with terminology
- A patient centred approach EN13940 to facilitate continuity of care
- EN13606 used to create archetype framework to structure the assessment tool
Research question(s)

Clinical Perspective
• Can participating nurses assist in building a common understanding of patient assessment for future outcomes based research?

Technical Perspective
• Can archetypes be developed in accordance with EN13606 that are fit for purpose and which will facilitate shared care in older persons in the future?
Actions steps included

- Documentary Analysis
- Focus Group Interviews
- Selection of Core Concepts (EN13940)
- Pilot Paper Prototype 6/12 n=18 patients
- Mapping tool to Ref Terminology: ICNP IHTSDO
- Mapping tool to Link EHR (EN13606)
- Stratified Evaluation CMO configurations
- Emerging Models of Meaning & Knowledge

Underpinned by Web 2.0 Technologies
Informing and Guiding Work

Datasets C.HOBI C & I NMDS Health Information Standards EN13606 EN13940 ISO 11179 EN18104 Archetype Application - EN13606 LinkEHR Models based on Gerard Frerik’s Semantic Stack
Research Tools

- **Participatory action research**
  - Dymek Sense Making Model (2008)

- **Contextual design**
  - Ballard (2006) work on contextual requirements analysis.
  - Sorby et al (2005) use of drama improvisation in requirements engineering

- **Mixed Method**
  - Cresswell and Clarke’s exploratory mixed methods dominant qualitative approach used

- **Evaluation**
  - Pawson and Tilley stratified realistic evaluation (2007)
  - Dickenson measuring patient centred outcomes (2008)
Research Practice Interface

• For micro theory testing realistic evaluation facilitates the potential to create a space for cumulative knowledge development within the context mechanism and outcome configurations (CMO)

Pawson and Tilley (1997)
Study Outputs and Linkage

• High order map of Models of Meaning and Knowledge
• Example of Model of Meaning depicting culture and context by CMO role configuration (qualitative data)
• Informs creation of Models of Knowledge suite of prototype archetypes (informatics data)
• Generates health science data - initial data collected (quantitative data)
• Graph of actual interagency communication
• Example of core archetypes created
Higher Order Models

COMPUTER SCIENCE
EHR
CEN TC 251
EN 13940
EN 13606

INFORMATION SCIENCE
CULTURE & CONTEXT

LEVEL 1 & 2 DATA

LEVEL 3 DATA

HEALTH SCIENCE

MODELS OF THOUGHT

MODELS OF KNOWLEDGE

MODELS OF MEANING
A Model of Knowledge

- Creating a space for synthesis of identified information data (Level 1) and meaning data (culture and context - Level 2 data) to be generated and interpreted by health care providers in future patient centred EHR
Using Models of Knowing

Readiness for discharge archetype can be created e.g. Therapeutic Self Care (C.HOBI C)

Freriks G. 2010
CMO configurations

• Focal point for focus group discussion

• Can blend existing models of knowing with qualitative data on culture and context to depict the ontology's as articulated by practitioners

• Bridging the gap useful training resource in future programme
Create clinically appropriate archetypes

Context
Primary care Generalist View

Mechanisms

Outcomes

Structure

Generalist Role

Engaging with

Enhanced inter agency communication
ARCHETYPE

Which is

Sustainable

Process

Bio psycho social model

Providing

Impacts on

Patient outcomes
Discharge planning

Is linked to

Health issues
Community Partnership

Community capacity includes
Social capital
Service capacity
Environmental capacity

Is visible through

Generalist practice
eg advocacy

Addresses

Time

To consider
Population / Patient Focus

To define

PHIT
Monitoring case finding

Influences
Decision making

PARTNER Group
Continuing education

As a process influences

Reasoning / choice
Understanding

Health informatics Standards ,
concepts & terms
EHR
Closer inter agency communication
on discharge planning
Concepts: Time & Health Issue

• Time related concepts
  – An episode of care is centred on a health issue has a time frame for one or more health care activities
  – Contact is a healthcare provider activity

Sometimes we visit a client and whilst we anticipate that this particular contact should take a few minutes the health care activity process of the encounter must address a much more complex set of one or more health issues

(Focus group session participant comment)
Archetype Structure Content
EHRland Creates Database & Collects New Data

THE SECTION 5.1 FUNCTIONAL STATUS CONTAIN ENTRY DEPENDENCY LEVEL SCORE

ENTS ARE CONTEXT SPECIFIC TO SCDJ, Concurrent Data Collection Process

A CLUSTER WITH ELEMENTS OR JUST INDIVIDUAL ELEMENTS

IN THIS CASE THE ENTRY DEPENDENCY LEVEL SCORE CONTAINS A CLUSTER WHICH CONTAINS THE ELEMENTS AS FOLLOWS

1st DEPENDENT REVER
2nd DEPENDENT MINIMAL
3rd DEPENDENT PARTIAL
4th DEPENDENT EXTENSIVE
5th DEPENDENT COMPLETE

ENTRY DEPENDENCY SCORE CLUSTER WITH ELEMENTS

COMPOSITIONS CONTAIN SECTIONS
For example, IN COMPOSITION 5: OUTCOMES ASSESSMENT DIARY CONTAINS THE SECTIONS
5.1 Functional Status
5.2 Symptom Management
5.4 Medical Devices
5.5 Therapeutic self-care—readiness for discharge

THE SECTIONS ARE

FOLDERS ARE
1. ACUTE PATIENT CLINICAL DATA
2. CONTINUING CARE CLINICAL DATA
3. PRIMARY CARE CLINICAL DATA

FOLDERS CONTAIN COMPOSITIONS

COMPOSITIONS
1. ROLE ENCOUNTER RECORD
2. SUBJECT OF INFORMATION CAPACITY
3. HEALTH FINDINGS
4. MEDICATIONS MANAGEMENT
5. OUTCOMES ASSESSMENT DIARY

EHR Extract
CONTAINS FOLDERS
Data Seen by Individual Case

- Discharged home with Guillain-Barre Syndrome
- Shows significant improvement in functional status dependency

![Functional Status Case 2 Chart]
<table>
<thead>
<tr>
<th>Functional Status</th>
<th>Episode 1</th>
<th>Episode 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to perform hygiene</td>
<td>0.875</td>
<td>0.8125</td>
</tr>
<tr>
<td>Ability to dress</td>
<td>0.625</td>
<td>0.6875</td>
</tr>
<tr>
<td>Ability to groom oneself</td>
<td>0.625</td>
<td>0.625</td>
</tr>
<tr>
<td>Ability to bath</td>
<td>1.625</td>
<td>1.6875</td>
</tr>
<tr>
<td>Ability to mobilise</td>
<td>1</td>
<td>1.25</td>
</tr>
<tr>
<td>Ability to walk</td>
<td>0.875</td>
<td>1.125</td>
</tr>
<tr>
<td>Ability to transfer chair or bed</td>
<td>0.6875</td>
<td>0.625</td>
</tr>
<tr>
<td>Ability to walk in room</td>
<td>0.625</td>
<td>0.8125</td>
</tr>
<tr>
<td>Ability to walk in corridor</td>
<td>0.75</td>
<td>0.9375</td>
</tr>
<tr>
<td>Ability to toilet oneself</td>
<td>0.625</td>
<td>0.5</td>
</tr>
<tr>
<td>Ability to feed self</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Falls Frequency</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Falls Risk</td>
<td>1.5625</td>
<td>4.5625</td>
</tr>
<tr>
<td>Pressure Ulcer &amp; Skin Integrity</td>
<td>3.875</td>
<td>3.6875</td>
</tr>
<tr>
<td>Breathing &amp; Dyspnoea</td>
<td>0.6875</td>
<td>0.875</td>
</tr>
<tr>
<td>Weakness &amp; Fatigue</td>
<td>1.3125</td>
<td>1.5</td>
</tr>
<tr>
<td>Nausea</td>
<td>0.125</td>
<td>0.1875</td>
</tr>
<tr>
<td>Fluid Balance</td>
<td>0.125</td>
<td>0.25</td>
</tr>
<tr>
<td>Pain Frequency</td>
<td>0.625</td>
<td>0.625</td>
</tr>
<tr>
<td>Pain Intensity</td>
<td>0.3125</td>
<td>0.5</td>
</tr>
</tbody>
</table>
Summary of Findings

• The small scale quantitative pilot study which was completed on grouped data showed statistical significance with a p value of $p = 0.018$ for functional status improvement and a p value of $p = 0.002$ for functional status disimprovement.

• Combining figures for ability to perform the main tasks of everyday living with falls and risk for falling, skin integrity and symptom management such as breathing and dyspnoea, weakness and fatigue, nausea and pain and completing a t test gave a significant difference of $p = 0.03$.

• These findings correlated to the qualitative data collected on patients and the individual patient centred outcomes identified for individual cases.
Other useful data included

Looking: beneath these patterns of interagency communication to account for why they did or did not occur

Clark et al, 2008, p.71
EN 13940 - CONTSYS Systems of Concepts for Continuity of Care

What are the key health issues (if any) relevant to nursing care?

- Case 1 of this study has identified health issue of repeated readmissions for unstable INR and dyspnoea despite care package being in place.

Discuss with the team suggests that the key health issue with Case 1 = social isolation. Suggesting that medication mismanagement is a direct consequence of Case 1’s loneliness and the frequent inpatient activity offers case 1 respite from living alone.
Current state of play

• The PARTNERS project is consulting with HSE on some potential new development initiatives
  – Pilot study of integrated service framework
  – Discharge letter from acute services
The Final Cumulative Result

It is easy to start an initiative – the trick is to keep it going.
Acknowledgements

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- HI QA and NCNM for sponsoring the study
- Dr G. Freriks and Dr D Moner EN13606 Workshop
Welcome to PARTNERS CT

Introducing PARTNERS

PARTNERS is an acronym for Participatory Action Research To develop Nursing Electronic healthcare Records.

Within the name PARTNERS CT refers to the identification and selection of those concepts and terms which are required to achieve integrated patient care.

The profession of nursing, within Ireland, needs to engage with nursing informatics to ensure that it remains at the forefront of the proposed transformational health care programme.

PARTNERS is a collaborative learning community with representatives from the acute, primary and continuing care sector from the Dublin North East area.

PARTNERS Web Site
www.partnersct.com
I am tomorrow, or some future day what I establish today....Joyce

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