Studying the Applicability of Methods Activity Driven Needs Analysis Applied to Maternity Pathway in Pudong, Shanghai

Irmeli Luukkonen, Mikko Korpela, Anja Mursu
University of Eastern Finland, School of Computing, HIS R&D Unit
UbiHealth'10 Conference, 31.5. - 2.6.2010, Shanghai
In this presentation:

• Background
  – Related research papers in this conference
  – Motivation

• Case Maternity Pathway
  – Research Settings
  – Research Flow and Outcomes

• Experiences of ADNA applicability
  – Examples of useful concepts
  – Further development

Viewpoint of the experiences in applying a method in a new context, and further development of the method
(not detailed description of the method or the case study findings)
Related research in this conference

- Activity driven ISD Model
- Parallel development of work and IS

Personal health and wellbeing information management

China-Finland eHealth Partners (2007-2008):
Designing regional IS

Toivanen et al: Activity-Driven Information Analysis – Designing Personal Ubiquitous Health and Wellbeing Systems

Jiang et al: A Regional Model for Healthcare Information Sharing in China

Luukkonen et al: Studying the Applicability of Methods – Activity Driven Needs Analysis Applied to Maternity Pathway in Pudong; Shanghai
Motivation from method development viewpoint

• Activity Driven Needs Analysis (ADNA)?
  – Even if we think about ubiquitous or citizen centered ISD, health care workers has important role as producers and users of health information of citizens. => it is important to study their information needs.
  – ADNA is meant for early phases of information systems development (exploration of as-is situation; starting point analysis), it leans on Activity Theory, and has strong emphasis of clarifying the information use within work activities and information needs of the different kind of health professionals – in participative manner

• Why case in China?
  – ADNA developed in Finnish context - blindness to "obvious, invisible issues", which have impact on ISD decisions, thus important to understand
  – Issues of local application and method tailoring? Challenges & solutions?
Starting point and research settings in Case Maternity Pathway

Starting point:

• Method developed in Finnish health care settings and experiences of applying in previous projects, concepts of useful models and working principles
• Relations to Chinese participants established in other previous projects

Case Maternity Pathway

• As part of China-Finland eHealth Partners project 2007-2008
• Maternity pathway as example case of cross-organizational health care chain => cross-organizational information sharing
• Case hospitals in Pudong New Area: Weifang Community Health Center and East Hospital
• Multinational and multidicipline research group in NR theme:
  – 3 Finnish (AD ISD methods for health information systems) and
  – 1 Chinese (public health, health information management)
<table>
<thead>
<tr>
<th>Phase</th>
<th>Research Activities Tools and materials</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preparation</td>
<td>Story telling, interactive writing, brainstorming Concepts of story, question lists and diagrams</td>
<td>Initial understanding of the context; Plans and tools for field study, e.g. question lists, maternity scenario</td>
</tr>
<tr>
<td>2. Field study in target hospitals</td>
<td>Group interviews, pathway walkthrough in hospitals Scenario and questions in Chinese; Camera</td>
<td>Answered questions, notes and observations, photographs</td>
</tr>
<tr>
<td>3. Analysis</td>
<td>Iterative modeling and creative model tuning; translation Concepts of basic diagrams; Theoretical basis for tailoring diagrams</td>
<td>Initial description of maternity pathway and information needs within</td>
</tr>
<tr>
<td>4. Validation in target hospitals</td>
<td>Half-a-day workshop, separate interviews Whole set of diagrams in Chinese</td>
<td>Comments from local health professionals and authorities</td>
</tr>
<tr>
<td>5. Reporting</td>
<td>Constructive writing Concepts of basic and applied diagrams, Case materials</td>
<td>Report: description of the current state of the maternity pathway in Weifang CHC and East Hospital</td>
</tr>
</tbody>
</table>
Experiences of Method applicability 1/3

Research settings caused some challenges:

• Distance between research 'home base' and the target organization was both concrete and conceptual

• Lack of common language

• Multidisciplinary and multinational research group was necessity, but also challenging
Experiences of Method applicability 2/3

Surviving the challenges:

• Previous cooperation together among the research group; familiarity

• Putting extra effort to planning and preparation and translations

• The concepts of ADNA guided the research and supported flexibility
  – Theory based structure in analysis, modelling and questionlists
  – Storytelling and interactive writing (example)
  – Use of diagrams and stories in communication (example)

• Using diagrams
  – reduced the translation work load
Example of using story telling and interactive writing; a concept of “activity story” is used

Maternity story (v.2, Oct 2007, planning phase beginning)
Researcher 1 writes in black text
Questions in red by researcher 1
Researcher 2 writes in blue text
Unsure parts in green text

Mrs. Yang Hong Hong lives in Pudong area with her husband. She thinks that she might be pregnant, mostly she will visit the big hospital first (not 100% sure) and that's why she is going to Weifang Community Health Center (later on Weifang CHC). First she goes to the registration window, pays the registration fee and work staff types her personal data into computer if she is the first time to visit Weifang or uses card reader to get her personal data. And then she goes to the reception desk and the reception nurse asks her [what information does the nurse need? why?]. Mrs Yang pays the doctors fee to the nurse? or to the doctor? No, Yang will pay the registration fee for the visiting fee at the registration windows, and later for the fee of Lab tests and Drugs. The nurse at reception desk will ask the yang’s problem or purpose to visit weifang, based on that the nurse will choose one doctor for yang if she is first time to visit Weifang. Then Mrs Yang selects doctor [surname Doctor Jiang] and goes to the doctor's room [how does she know when to go? There is a big screen on the wall, which lists the patient name and the no. of clinical room, the nurse at reception desk will also call yang when it is her turn. Does the doctor invite her to come? No, the doctor will not invite her, and doctor will put the green light on (above the door) which means the clinical room is available now. does the doctor know that she is coming to see her
Example of diagram as communication mean
Need for further study and development:

1. For adjusting the method according to the needs in hands:
   • Documentation for Method Building Blokcs (models and procedures) in English e.g.
     – templates for question lists and diagrams
     – checklist for preparation phase
     – example procedures for information gathering and analysis practices
   • Guidelines for tailoring according to the situational and local circumstances

2. For integration to both broader and narrower level analysis methods
   • Context analysis (e.g. societal, cultural aspects)
   • Architecture and Integration design (e.g. technical aspects)
Despite of highly different contexts..

About the research findings
The health care work activities and information needs within them, and the "means of survival" with computers are surprisingly similar.
The health care work activities and information needs within them, and the "means of survival" with computers are surprisingly similar.

Thank You!

Further information:
irmeli.luukkonen@uef.fi
HIS R&D Unit: www.uef.fi/his
ZipIT-project: www.uku.fi/zipit/
China-Finland eHP -project:
www.uku.fi/ehp/cn-fi/
SOLEA-project: www.uku.fi/solea/

Thank You!

Kiitos!

谢谢

surprisingly similar