Panel Nursing II

eNursing Summary – where global standardisation and regional practice meet

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\textsuperscript{b} University of Eastern Finland, Kuopio, Finland
\textsuperscript{c} International Council of Nurses, Geneva, Switzerland
\textsuperscript{d} IHE USA, HIMSS, Chicago, IL, USA
Panel Program

Session Room 4  Friday 23th Aug 2013 10:30 - 12:00

10:30 – 10:45  Hübner U – PhD Professor University Appl. Sciences Osnabrück Germany
  eNursing Summary and the nursing process

10:45 – 11:00  Kinnunen UM – MSc, RN University of Eastern Finland
  eNursing Summary: advances in Finland

11:00 – 11:15  Sensmeier J – MS, RN HIMSS Chicago USA / IHE US
  Exchanging nursing data using the IHE patient plan of care and eNursing Summary

11:15 – 11:30  Bartz C – PhD Professor University of Wisconsin-Milwaukee / ICN
  A toolkit of standards and expertise: ICNP, ISO/CEN 18104, ICN’s bank-of-experts

11:30 – 12:00  Discussion: A universal model and framework for the eNursing Summary?
Proposition 1

*The eNursing Summary is a centrepiece of eHealth in particular for chronic and elderly patients.*

... because nursing ensures process coordination and continuity in the care of patients across (and within) settings

... because nurses have the most frequent contact with patients and thus know their immediate needs best.
eNursing Summaries world wide

- Increasing complexity of care processes
- Information gaps compromise the health of patients
- Increasing importance of transfer documents
- eNursing Summaries as part of multi-professional care

<table>
<thead>
<tr>
<th>Language</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Entlassbericht Pflege [6]</td>
<td></td>
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<tr>
<td>Finnish National Nursing Documentation Model [5]</td>
<td></td>
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<tr>
<td>HL7 v3 messages for patient discharge[6]</td>
<td></td>
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<tr>
<td>eNursing Summary [8]</td>
<td></td>
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<tr>
<td>ePflegebericht / eNursing Summary [2]</td>
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Source: flags: flagpedia.net; IHE: wiki.ihe.net

Huebner, Kinnunen, Sensmeier, Bartz | MEDINFO 2013 | 23/08/13 | Copenhagen
Proposition 2

The eNursing Summary is a transfer document across (and within) settings that requires a high level of standardisation (syntactic, semantic and process interoperability)

however

such a standard has to be flexible enough to consider many different settings and different clinical specialties
eNursing Summary and the nursing process

Ursula Hübner, PhD

Health Informatics Research Group, Dept. of Business Management and Social Sciences, University of Applied Sciences Osnabrück Germany
Development of the German HL7 CDA based eNursing Summary

Software

PflegeForm
Online-Pflegeverlegungsbericht

Under the auspices of the
Deutscher Pflegerat e.V.
Bundesarbeitsgemeinschaft Pflege- und Hebammenwesen

Participatory design

Development of a data set based on

• existing data sets and information models, e.g. HL7 RIM, ISO 18104
• the nursing process

Consensus building on

• regional,
• supra-regional,
• national level

Formal Standardisation

• Via German HL7 User Group
• Development of an implementation Guide [2]
Structure and content

**eNursing Summary**

- **Header**
- **Body**
  - **Nursing Process**
    - Assessment / Scores
    - Nursing Diagnoses
    - Nursing Goals
    - Nursing Interventions
    - Nursing Outcomes
  - **Social Information**
    - Biographische Informationen
  - **Homecare-Status**
    - Wohnumfeld
    - Hilfsmittel
  - **Reference To Legal Documents**
    - Advance directive
    - Health care proxy
    - Application Forms
  - **Medical Information**
    - Medical diagnoses
    - Medication

* Must be signed by a physician.
Evaluation of the German HL7 CDA based eNursing Summary

Comparison of the German HL7 eNursing Summary

with 114 paperbased transfer forms

Identified number of users:

- 76 hospitals
- 321 nursing homes
- 409 community nursing services

Total: 806 institutions

<table>
<thead>
<tr>
<th>Developed and used by</th>
<th>$h(x_i)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>municipality</td>
<td>38</td>
</tr>
<tr>
<td>commercial vendors</td>
<td>25</td>
</tr>
<tr>
<td>hospitals</td>
<td>23</td>
</tr>
<tr>
<td>nursing homes</td>
<td>15</td>
</tr>
<tr>
<td>community nursing services</td>
<td>10</td>
</tr>
<tr>
<td>no information</td>
<td>3</td>
</tr>
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</table>
The German HL7 eNursing Summary could cover all information included in the paper based discharge forms!

It is thus valid in terms of contents.

**Nursing diagnoses: related information (n=114)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing problems</td>
<td>92%</td>
</tr>
<tr>
<td>Symptoms</td>
<td>75%</td>
</tr>
<tr>
<td>Associated interventions</td>
<td>45%</td>
</tr>
<tr>
<td>Associated means</td>
<td>44%</td>
</tr>
<tr>
<td>Etiology</td>
<td>23%</td>
</tr>
<tr>
<td>Resources</td>
<td>15%</td>
</tr>
</tbody>
</table>

The paper based discharge forms could transmit only a small portion of the content of the German HL7 eNursing Summary.
Evaluation results (2)

Most of the discharge forms were problem oriented!

<table>
<thead>
<tr>
<th>Nursing problem identified</th>
<th>92%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scores used</td>
<td>39%</td>
</tr>
<tr>
<td>Nursing goals identified</td>
<td>17%</td>
</tr>
<tr>
<td>Interventions identified</td>
<td>62%</td>
</tr>
</tbody>
</table>
Current work (1)

EPA-LE-Client mit GUI
Persönliche Versicherten- daten (XML)

Dateisystem
HL7-CDA-Rendering

ePflege-Client mit GUI

Dateisystem

Eugene-Kardinal

Freigabe für EPA-Zustellung
(Autorisierung kann auch zu Beginn der Behandlung erfolgen)

https://ehealth-g1.fokus.fraunhofer.de/epa

EPA-Kommunikationskomponente

EPA-Kernsystem

Open eCard Plugin

Fraunhofer

Hochschule Osnabrück

University of Applied Sciences

Huebner, Kinnunen, Sensmeier, Bartz | MEDINFO 2013 | 23/08/13 | Copenhagen
Current work (2)

Development of a HL7 CDA eWound Summary to supplement the eNursing Summary and other clinical documents
References


eNursing Summary: advances in Finland

Ulla-Mari Kinnunen, MHSc, RN, PhD-student
Kaija Saranto, PhD, professor

University of Eastern Finland, Department of Health and Social Management, Finland
Finnish National Nursing Documentation Model

- Is based on
  - defined core nursing data (NMDS)
  - nursing process model
  - FinCC
- Finnish Care Classification (FinCC)
  - Classification of nursing diagnoses (FiCND)
  - Classification of nursing interventions (FiCNI)
  - Classification of nursing outcomes (FiCNO)
Nationally defined core nursing data (NMDS)

- Nursing diagnoses
- Nursing interventions
- Nursing outcomes
- Intensity
- Nursing summary

Form the structure of the Nursing Summary
NURSING DIAGNOSIS, SKIN INTEGRITY / Acute wounds / Traumatic wound

06:30  3.POD (postoperative day)
Wounds, back of the right hand

AIM / SKIN INTEGRITY

06:40  Cleaning of wounds for the closure later on-> opening of wound dressings today
- enough pain killers when operating with the wound, Emla® for local anaesthetic of the wounds
- showering and debridement of the wounds
- Acticoat® dressings
- monitoring exudate, augmentation of wound dressings when needed
- hand upraised

NURSING INTERVENTIONS, MEDICATION / Medication distribution / Local anaesthetic

07:55  EMLA 25/25 mg/g, creme, 5 ml 23.8.2011 07:55, Susan Nurse, Plast.Surg to anesthetize the wound for debridement

NURSING INTERVENTIONS, ADL / Care of cleanliness / Wash support

09:15  Shower with little help, washed wounds himself

NURSING INTERVENTIONS, SKIN INTEGRITY / Wound care

09:35  Plenty of hard fibrin removed with curette from the wounds. Easy to remove. Finger blisters have been perforated and the roofs of the blisters have been cut off. Not so much swelling any more. Redness has whitened and it has not diffused over the lines drawn earlier. Wound in little finger size about 5cm x 2cm and in thumb size about 6cm x 3 cm, in which there is also a pocket about 0.5cm

NURSING INTERVENTIONS, SKIN INTEGRITY / Wound care / Wound dressing change

09:40  Wound edges covered with Cavilon®. To the bottom of the wounds and pocket Acticoat®. Not moistened, because plenty of exudate. Lots of absorptions on front of. Fixation using Surfotix®.

NURSING INTERVENTIONS, SENSORY / Pain monitoring / Pain assessment (quality, location, prevalens)

10:10  Wound care without pain thanks to EMLA®. No need for extra pain killers.

NURSING INTERVENTIONS, ACTIVITY / Activity guidance

14:46  According to doctor’s orders patient has had guidance to exercise his fingers several times per day to avoid finger contracture. Exercise went well.

EVALUATION / NURSING OUTCOMES / SKIN INTEGRITY

18:50  Status | S | Stabilized

Dressings clean. No exudates overflow. Has exercised his fingers, still contracture and some swelling.
Nursing Diagnosis


JATKOHOITO / Hoidon jatkuvuuden tarve Kotihoidon toteutumiseksi tarvitsee tukea.

Nursing Interventions

TERVEYSKÄYTTÄTYMINEN / Terveyttä edistävä ohjaus Käytä läpi diabeteksen itsehoitoon, liikuntaan ja painonhallintaan liittyvää asioita.


AKTIVITEETTI / Aktiviteettiin liittyvä ohjaus Ohjattu lisäämään päivittäistä liikuntaa ainakin 30min ja huomioimaan hyötyliikunta.

RAVITSEMUS / Painon seuranta 92,8 kg
Ravitsemukseen liittyvä ohjaus Käytä läpi rasvojen käyttöä. Sovittu, että syö vihanneksia joka aterialla ja vaihtaa vaalenleivän ruiseleipään ja makkaran leivällä vihanneksiin. Harjoiteltu hillihydraattien laskemista ja lautasmallilla aterian kokoamista.

TERVEYSPALVELUJEN KÄYTTO / Näytteenottoon liittyvä ohjaus Kerrattavissa verensokerimittauksen liittyvät asiat ja korostettu säännöllisen seurannan merkitystä sokeritasapainon hallinnassa.

JATKOHOITO / Asiantunti j-sairaanhoitaja Varattu Harjulan diabeteshoitajalta 1.4.2011 klo10.

Nursing Outcomes


Jatkojärjestely Tarvitsee vielä tiheinästä säännöllisen seurannan hoitajalla aluksi, arvioitava lääkärin vastaanoton tarve jatkossa. Motivointiesi suusaa itsehoitoon jää epäselväksi. Tilanne: Ennallaan

Patient Care Intensity

Pisteet yhteensä: 10p Luokka: II Keskimääräinen hoidon tarve 9-12 p

Henna Hoitaja
sairaanhoitaja

Jakelu
Harjulan sairaala diabeteshoitajat
Potilas
eNursing Summary

Nursing records

National Patient Record Archive

New care period

Minna Mykkänen 2011
eNursing summary today

• Kuopio University Hospital: Structured nursing summary is made mostly to every patient transferred from hospital to follow-up care -> eNursing summary (sent electronically) around 10-20 %

• eNursing summary supplements/improves medical care summary

• eNursing summary improves continuity of care

• The feedback from the follow-up care is very positive
  – Clear and easy to read, includes comprehensive patient information

• eNursing summary is transferred to national eArchive
eNursing summary today

• Aggregating eNursing summaries is easy, but:
  
  – Nursing documentation must be uniform and of good quality
  
  – It needs education, practising, technical skills with EPRs
  
  – EPR must support the functionality of eNursing summary (in and between hospitals)
  
  – Nurses want more structured summaries (framework)
  
  – Medication lists should be included automatically into summaries
Thank You!

ulla-mari.kinnunen@uef.fi
Exchanging nursing data using the IHE patient plan of care and eNursing Summary

Joyce Sensmeier MS, RN-BC, CPHIMS, FHIMSS, FAAN
Vice President, Informatics, HIMSS
President, IHE USA
What is IHE?

• A common technical framework for harmonizing and implementing multiple standards
  – Application-to-application
  – System-to-system
  – Setting-to-setting

• A path to seamless health information movement within and between enterprises, regions, nations

• A forum for unbiased selection and coordinated use of established health data and general IT standards to address specific clinical needs
How does IHE work?

IHE Process
What is IHE’s Value?

The value of interoperable nursing data

- Plan for early interventions with appropriate resources based on patient acuity including nurse staffing (resource maximization)

- Support the practice of communicating and representing patient data so it is reusable

- Complete clinical information promotes safety and improved outcomes

- Continuity of care delivery using a care plan

- Promotes safe transfers of care for improved outcomes
Value of Accurate Patient Data

- Decreased risk of error during transfer of care
  - Data re-entry may increase chance of error
  - Inefficient use of staffing and acuity tools
- Improved quality of care, timely delivery
- Decreased costs by eliminating redundancy
- Improved work flow with timely, accessible clinical data
- Allows for clinician collaboration and early intervention
IHE and Nursing

• 2006 IHE Nursing Special Interest Group formed
  – Developed Functional Status Assessment Profile

• 2008 Nursing Subcommittee launched

• 2009 Patient Plan of Care Profile developed

• 2010 Work began on e-Nursing Summary

• 2011 Work began on Nursing Workflow
IHE Nursing Profiles

**Goal:** Move nursing data between care settings and across time and space

**Functional Status Assessment (FSA) Profile**
- Move data from Long Term Care into Acute Care and back without regard for vendor application

**Patient Plan of Care (PPOC) Profile**
- Captures data related for creating and managing individualized patient care between and among EHR systems

**e-Nursing Summary (eNS)**
- Interoperable summary of nursing data that communicates patient care needs to another care provider

**Nursing Workflow**
- Manages and tracks tasks related to patient-centric workflows for health professionals
Functional Status Assessment

Considerations
• Need to demonstrate value and feasibility
• Scales chosen are evidence-based with strong reliability and validity
• Widely accepted cross-enterprise or required/recommended by accrediting agencies

Content Scales
• Numeric Rating Scale (NRS-11) for Pain
• Braden Scale for Predicting Pressure Sore Risk©
• Geriatric Depression Scale (GDS)
• Minimum Data Set – Section G
Patient Plan of Care

Initial Assessment (Admission)

Planning Process
- Diagnosis
- Outcome Identification
- Planning

Actions
- Implementation
- Evaluation
- Assessment

Summary of Inpatient Care

In Scope for 2009-10

Plan of Care
e-Nursing Summary

• Identify key data elements
  – Present in any nursing hand-off/transfer
  – Necessary for patient care

• Develop crucial scenarios
  – Shift report
  – Patient transfer to OR
  – Receiving a patient from the ER
  – Discharge a patient to home care

• “Marry” the key elements to the scenarios
### Data Elements Selected

- Activity Restrictions
- Allergies
- Fall Risk
- Code Status
- Complication
- Devices
- Diet & Nutrition
- Intake and Output
- Coded Results
- Assessment of Mental Status, Pain, Vital Signs, Wound
- Medical Diagnosis
- Medications
- Orders
- Oxygen Requirement
- Precautions
- Primary Language Spoken
- Procedure
- Special Needs
Nursing Workflow

• Scenario details of nursing activities
  – Clinical Assessment
  – Administering medication
  – Delivering nursing interventions for the patient
  – Education of patient and/or family
  – Clinician communication

• Sequence of details
  – Examples:
    • What are the details of administering pain medication?
    • Sending a patient home or transferring to another area in the hospital
    • Preparing a patient care plan
Key Points

• Use of nursing critical thinking processes and documentation requirements fit well into the IHE method

• IHE provides a proven process for enabling interoperability between disparate systems

• Collection of nursing data across time and care settings will allow research to determine evidence based practice guidelines for the future
ICN Role in eNursing Summary
Standardisation and Implementation

Claudia Bartz, PhD, RN, FAAN
Amy Coenen, PhD, RN, FAAN
Presentation objectives

• Describe ICN eHealth Programme vision and goals

• Discuss ICN role in advancing eNursing Summary
  – Synthesis of standards, existing applications, expert opinion
  – Work toward international framework
eHealth definition

eHealth is the use of information and communication technologies (ICT) for health
ICN eHealth Programme

• Transforming nursing through the visionary application of information and communication technology

• Encompasses
  – ICNP Programme
  – ICN Telenursing Network
  – Connecting Nurses (Sanofi)
  – Professional collaborations
eHealth Programme Goals

- Support eHealth practice (technology)
- Recognised as an authority on eHealth (professional)
- Positioned centrally in the eHealth community (business)
Background

• Hübner & colleagues proposed eNursing Summary (MedInfo2010)

• International work considered
  – Dickerson & Sensmeier (HIMSS - IHE)
  – Saranto (Finland – FinCC)
  – HL7 CDA

• ICN approached at NI2012 for
  – Nurse experts globally
  – ICNP applications
  – Work going forward
ICN Initial Survey

- July 2013

- Purpose: explore existing use and content of eNursing summaries

- Goal: support work for eNursing Summary framework with
  - Continuity of Care emphasis
  - International consensus
  - International EHR application
Survey Methods

- Exploratory design; approved by IRB
- Convenience sample
  - ICN Accredited Centre Directors
  - 20 surveyed, 9 responded (45%)
- Worldwide setting (7 countries)
- Web-based survey (SurveyMonkey®)
  - 8 questions + comments section
Survey Findings 1

- **Use?**
  - Always 66.7% Sometimes 33.3%

- **Where?**
  - Hospital (100%), Nursing Home & Ambulatory Care (55.6%) Home Care (33.3%)

- **Who?**
  - Physicians & Nurses (88.9%), also Social Workers, Physiotherapists, Dentists

- **Nursing Content?**
  - Always (55.6%) Sometimes (44.4%)
Survey Findings 2

What type of nursing data in a summary?

- Problems/ Nursing diagnoses
- Activities/ Nursing interventions
- Outcomes and Goals
- Means and Resources
- Nursing Care Plan
- Continuity of Care re: medication, wound care, nutrition, social services
Survey Findings 3

How to improve the summary?

- Integrate nursing throughout
- Integrate other disciplines’ data
- Use standard terminology and HIS
- Data available to providers and agencies
- Use ICNP; use minimum data set
- Ensure care continuity
- Simple, clear with targeted key outcomes
Issues to Consider

• eNursing Summary standard
  – structure
  – Content

• eNursing summary within multidisciplinary summary

• Standard terminology

• Implementation strategy
Recommendations 1

Survey larger sample for consensus on structure & content

- ICN National Nurses Associations
- ICN eHealth experts
- IMIA-NI membership
Recommendations 2

• Propose candidate data set for eNursing Summary
  – based on work to date
  – based on survey results
  – reflecting related standards, eg ISO 18104, EN ISO 13940

• Validate and test in clinical settings
Conclusions

Integrate eNursing Summary in EHRs to

- Assure continuity of care across all settings
- Assess conformance to quality standards
- Use data to build nursing knowledge and evidence for practice
LAUNCH OF THE ICN EHEALTH PROGRAMME

ICN announced the launch of a new ICN eHealth Programme in May 2011. This new programme encompasses the International Classification for Nursing Practice (ICNP®), the ICN Telenursing Network and other eHealth related ICN activities. The programme’s strategic vision is to transform nursing through the application of information and communication technology. The goals of the programme are (a) to support eHealth practice, (b) to have ICN recognised as an authority on eHealth, and (c) to have ICN positioned centrally in the eHealth Community. Specific programme goals address technology, professional practice and business processes, respectively.

A new Strategic Advisory Group was formed, with its first meeting planned for September 2011 in Geneva. The ICN eHealth team is responsible for continuing the day-to-day work that advances projects, product development and information dissemination worldwide related to eHealth, including ICNP, the ICN Telenursing Network, and other related entities. The team consists of Nicholas Hardiker (Director eHealth Programme), Amy Coenen (ICNP Programme Director), Claudia Bartz (Programme Coordinator), Kay Jansen (Terminology Manager), Tae Youn Kim (Research Associate) and Amy Amherdt (Administrative Specialist).

A press release for the ICN eHealth Programme during the ICN Conference in Malta (4-7 May 2011) notified organisations and individuals about the new programme and the news was further disseminated via informational products and conference sessions. The one-page information documents briefly describe the eHealth Programme, ICNP, C-Space and the Telenursing Network. The ICN eHealth Programme will collaborate with other ICN programmes, ICN member associations and with global eHealth organisations and programmes to advance the vision and goals of the programme.


IN THIS ISSUE

Launch of the ICN eHealth Programme
ICN Conference in Malta
ICNP 2011
Spanish and CIPE (ICNP)
C-Space
ICN Core Data Sets
ICN & International Health Information Standards
ACENDIO 2011, Madeira Portugal
Global ICT Programmes
HIFA 2015: A Global Campaign
Conference Announcements
eHealth Contact
Thank-you

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Proposition 3

The eNursing Summary Framework is an abstraction of many proven and reliable real world documents and represents universal knowledge on the discharge and transfer process.

... it thus should be based on a generic structure
... it thus should be flexible with regard to use in different specialties and settings
... it thus should be comprehensive regarding the language (=coded terms)
Proposition 4

In order to make the vision of an eNursing Summary Framework viable necessary building blocks have to be identified and assembled.

These building blocks encompass

... a procedure to reach consensus
... a generic concept
... a comprehensive terminology
... a well defined implementation pathway
... a concept to evaluate the technical implementation and the clinical outcome