New Aged Workforce: Blending Professional and Digital Behaviours

Adelaide Convention Centre
Monday 15 July 2013

“The role of the nursing informatics specialist – a critical success factor for implementing healthcare IT solutions”

Presenter:
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The combination of nursing science, computer science and information science to assist in the collection, display and management of nursing data, information and knowledge to support the practice of nursing and delivery of patient care.

Graves and Corcoran (1989)
Informatics – Improving practice

Data

Information

Knowledge

Wisdom

(facts)

(Interpretation of data)

(Transformed / synthetised information)

(Ability to make changes to improve outcomes using knowledge and evidence and to predict and identify critical issues)

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Nursing Informatics Focus Areas

Use of Technology and Information Systems

- To administer nursing services and resources, and measure nursing productivity
- To manage the delivery of nursing care
- To link knowledge and research to nursing practice
- To monitor quality and effectiveness of patient care by measuring patient outcomes
- To protect confidentiality and privacy of data (patient, staff and organisation).

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Excellent clinician

Sound computer skill

Excellent communication skills

Ability to teach and evaluate

Ability to motivate and convince others

Technically curious – willing to try new things and challenges
Implementation of the TrendCare Patient Nurse Dependency and Workforce Planning Tool into acute public hospitals in 3 different countries

Case Studies

- Singapore Ministry of Health Public Hospitals
- New Zealand Ministry of Health Public Hospitals
- Queensland Health Public Hospitals

Public Hospital Beds for all three case studies range within 11,000 to 12,000 beds

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**Case Study 3: Singapore Ministry of Health Public Hospitals**

**Project aim:** Implementation of Patient Nurse Dependency system to plan, manage and maintain an ongoing sustainable workforce for nursing services in Singapore.

**Scope**  To implement the TrendCare System across 8 public hospitals (11,000 beds) utilising the functions of:
- Rostering
- Patient acuity / patient nurse dependency
- Workload allocation
- Work area allocation
- Nursing handovers
- Productivity and efficiency reporting

**Timeframe**  April 2007 to April 2008 (1 year)

Financial penalties applied for Vendor if milestones and timeframes are not met.

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Case Study 3: Singapore Ministry of Health Public Hospitals – Project Management

- Funded by Ministry of Health
- Implementation and training managed at individual sites.
- First nursing solution implemented nationally. Nursing Informatics positions funded for the project at each site
- Steering committees set up at each site
- Gantt charts used to plan, monitor and measure project outcomes
- User champions identified and provided with additional training to support users in each ward / department
- Benchmarking of outcomes completed by nursing informatics specialist nurse at Ministry level

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## Case Study 3: Singapore Ministry of Health Public Hospitals - Outcomes

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>Apr 2007/Feb 2008</td>
<td>All wards, operating theatres and outpatients implemented across all Ministry of Health Hospitals</td>
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<tr>
<td>Apr 2008</td>
<td>All ward nurses (30,000) accuracy tested using Inter-Rater Reliability testing methodology</td>
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<tr>
<td>2009</td>
<td>Use of software and interoperability functions extended (HRM and export to payroll)</td>
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<tr>
<td>2010</td>
<td>Nursing informatics nurses role extended and additional resources funded for new clinical software roll out</td>
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<tr>
<td></td>
<td>Informatics nurses experienced and well prepared for more complex projects</td>
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<tr>
<td>2011</td>
<td>e-medication, e-patient records implemented</td>
</tr>
<tr>
<td>2012</td>
<td>Development of dashboards for care capacity management</td>
</tr>
<tr>
<td></td>
<td>Expansion of the TrendCare functions used</td>
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<tr>
<td>2013</td>
<td>Development of national nursing informatics group</td>
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Case Study 3: Singapore Ministry of Health Public Hospitals – Lessons Learned

Trial in 2006 (6 months) (1,200 beds)
- Project managed by non nursing personnel – difficult to explain benefits and provide credible training
- Project objectives and milestones not shared with vendor.

National Implementation in 2007 (11,000 beds)
- Informatics Nurses managed all projects with IT support and vendor involvement in Steering Group meetings.
- Nursing informatics positions appointed and funded at management level for all sites.
- IT support was funded and specific positions allocated to the project.
- Progress of milestones were reported regularly to MOH.

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Case Study 2: New Zealand Ministry of Health Public Hospitals

Project aim: To review the processes currently used in NZ for measuring nursing workloads and provide an evidence based system for monitoring, managing and planning nursing resources for New Zealand Ministry of Health Hospitals.

Scope

To assess the validity of the TrendCare patient nurse dependency system and determine the suitability of the system.

To collect, collate and display data for the National Care Capacity Demand Management system. Functions to be utilised include:

- Patient acuity / patient nurse dependency
- Workload allocation
- Nursing handovers
- Productivity and efficiency reporting

To review the functions used, the data accuracy and the level of support provided from nursing informatics and IT at the 14 New Zealand sites currently using the system.

Timeframe - 2009 to 2011 (2years) A decision to recommend the continued use, or the withdrawal of the system would be made following the review.
Funded by MOH Safe Staffing Unit
Development of Educational DVD “Mix and Match” to engage DHB Hospital Executives into the project
Bay of Plenty DHB first site for Work Study and extraction of TrendCare data for re-engineering purposes
Data Integrity requirements – 90% minimum inter-rater reliability scores / 100% actualisation rates
Outcomes resulting from roster re-engineering and work redesign circulated to other DHB’s
All 16 DHB’s using TrendCare invited to participate
Project initiatives and objectives were developed and implemented by nurses (co-operative approach between MOH nurses, the DHB nurses and the NZ Nursing Association (Union)
KPI’s set to monitor outcomes of the project.
2008 • 14 MOH hospitals using the TrendCare solution

2009 • Safe Staffing and Healthy Work Places Unit identify capability of TrendCare and its role in assisting the unit to achieve its objectives for their Care Capacity Demand Management program (matching demand and supply of resources for each shift)

2010 • Independent work studies and timing studies completed to validate the patient nurse dependency acuity measures for New Zealand completed
• Review of all sites using TrendCare software and a gap analysis developed in relation to the effective use of the system and requirements for interfaces to other systems (PMI, HRM, ROSTER).

2011 • Role of the TrendCare Co-ordinator reviewed and recommendations made to all hospitals to provide adequate resources and IT support.
Case Study 2: New Zealand Ministry of Health Public Hospitals - Outcomes

2012

• MOH Safe Staffing Unit recommend the use of TrendCare for determining nurse staffing levels for NZ public hospitals
• Hospital Executive identify benefits
• MECA – NZ mandatory requirements for public hospitals to use a valid acuity system to determine staffing levels
• National Nursing Informatics Nurse appointed on a 12 month trial to support TrendCare user sites.

2013

• 16 of 20 District Health Boards – 36 hospitals using the system
• 2 large District Health Boards currently planning implementation
• National Nursing Informatics position funded
• Wide spread recognition of the importance of the nursing informatics role in supporting users and maintaining data integrity
Research and Validation Studies

- Work studies identified peaks and troughs in workloads, also reflected in acuity tool
- Evidence collected indicated the need for:
  - Work redesign, roster reengineering and skill mix restructuring
  - Significant opportunities for productivity and efficiency gains
  - Some shifts consistently under staffed, others consistently over staffed

National Implementations

- All DHB’s must show evidence of complete and accurate data before reengineering resources for nursing services
- Evidence of nursing workloads must be captured, trended and analysed for each service/ward
- Benchmarking ranges established for HPPD per patient type
- An evidence based National staffing methodology was considered possible
- The importance of Nursing Informatics positions recognised by DHB’s

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Case Study 1: Queensland Health Public Hospitals

**History**

- 7 regional hospitals involved in original TrendCare research (timing studies and work studies) early 1990’s
- 40 sites currently use the system in Queensland Health and are supported by 10 FTE informatics nurses who regularly network via teleconference calls
- Acuity data integrity is high in hospitals where regular IRR testing is completed and data is used for workforce planning, budgeting, and workforce planning
- All Queensland Health sites are on the current version of the system

**Main functions used include:**
- Rostering
- Patient / nurse dependency
- Work allocation
- Clinical handovers
- HRM functions
- Productivity and efficiency reporting

**Site implementations are ongoing**

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Case Study 1: Queensland Health Public Hospitals

Project Aim:
To identify if TrendCare Systems was able to collect, collate and report on data required by Qld Health hospitals

Scope:
- To identify the critical data required to plan, monitor and manage nursing resources
- To identify how this data was currently being collected by Qld Health sites
- To identify how much of this data was captured in TrendCare by Qld Hospitals

Timeframe: 6 months
Case Study 1: Queensland Health Public Hospitals – Project Management

Review initiated by the Director of Nursing and midwifery advisory group

Supported by chief nurse

Survey developed and distributed by the ehealth clinical advisor /District Executive Director of Nursing- Informatics

The findings of this study were collated and included in a business case to implement the TrendCare system across all Qld Health sites.
Year 2012

• Responses from hospitals using the TrendCare System indicated a high proportion of the data required could be collected in the TrendCare System.

• Hospitals not using TrendCare collected the data in a wide range of XL spread sheets, in-house access data bases and other stand alone systems.

• Informatics nurses supporting the Trendcare system demonstrated their support for a state role out of the system, so that reporting can be standardised across the state.
Case Study 1: Queensland Health Public Hospitals – Lessons Learned

Survey Results:
Hospital utilising the TrendCare System could generate a large number of comprehensive reports and graphs from one system: eg

• Patient acuity measures
• Variance trends related to demand and supply of nursing hours
• Resource utilisation trends
• Absenteeism / Overtime utilisation trends
• Admission / discharge trends
• 1:1 specialising occurrence rates

Hospitals not using TrendCare could not easily generate an extensive range of reports and graphs

State implications:
The benefits listed for having a state wide system to measure and manage the demand and supply of nursing resources included:

• An evidence based solution for measuring patient acuity
• A standard methodology for allocating nurse workloads and managing nursing resources
• Standardised reporting of efficiency and productivity data using the same denominators
• A state wide benchmarking of patient acuity measures, nursing productivity and efficiency data
• The contribution made by the informatics nurse working with the system would be recognized

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Benefits of the role of the Informatics Nurse

- Develops the pathway to facilitate the smooth implementation of new technologies and computerised solutions
- Provides an interface between nursing and available technology and systems that can improve nursing services and the care they deliver
- Facilitates a true multidisciplinary approach to implementation, support and management of technology and information systems in a health care facility
- Facilitates change management to achieve the effective use of technology to improve patient outcomes, improve efficiency and decrease costs

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Informatics Nurse – Key to Success

- Appropriately appointed position and renumeration
- Has a voice on nursing executive
- Supported by project steering groups
- Works in a multidisciplinary informatics environment
- Empowered to support a multidisciplinary clinical team
- Provided with ongoing education and development
- Receives feedback on performance and achievements
Thank you for listening

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