



# Presentation Outline



- Introduction
- What are Technology Drill Down days?
- The Ottawa Hospital's experience
  - Proposal, planning and getting support
  - Implementation
  - Findings
- Discussion
  - a tool for you to consider as part of your own end user engagement strategy?
  - Question period

# The Ottawa Hospital L'hôpital d'Ottawa



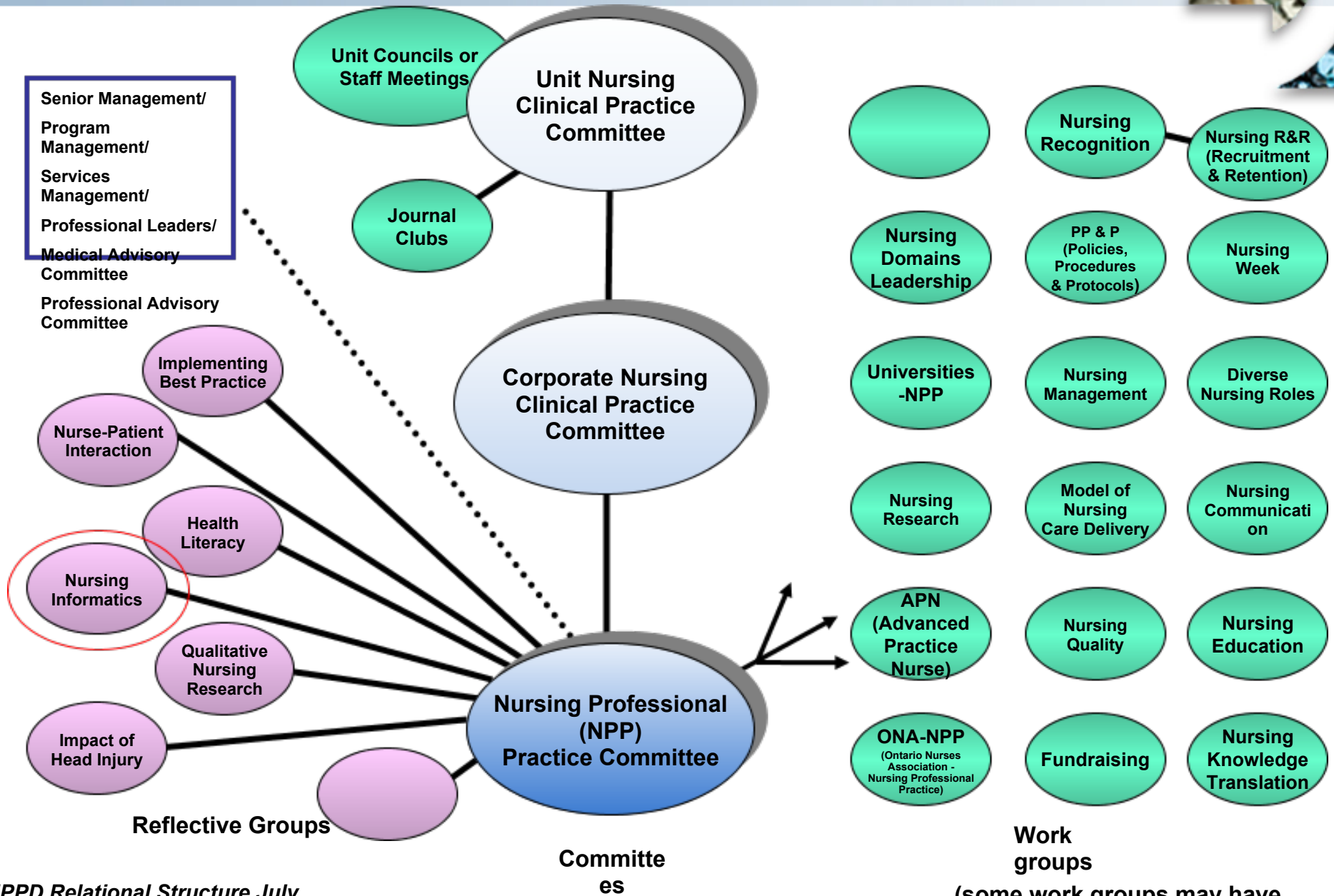
- Tertiary Care Academic Health Science Centre
- Multi-site:
  - Civic Campus, General Campus, Riverside Campus, Cancer Centre, Heart Institute, The Rehabilitation Centre
- Serves Eastern Ontario and Iqaluit, situated in the Champlain LHIN (Local Health Integration Network)

- 4500 nurses
- Nursing Professional Practice Structure
- Senior VP and Chief Nursing Executive:

Dr. Ginette Rodger



# Nursing Professional Practice Relational Structure





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What are Technology  
Drill Down days?

# What are “Technology Drill Down days”?



- “American Academy of Nursing’s (AAN) Workforce Commission was formed in 2000 to develop strategies for dealing with the nursing shortage with the unique perspective of reducing the demand on nurses’ time.”
- In 2005 the Robert Wood Johnson Foundation (RWJF), awarded a grant to the American Academy of Nursing (Nursing Workforce Commission) for a project called:

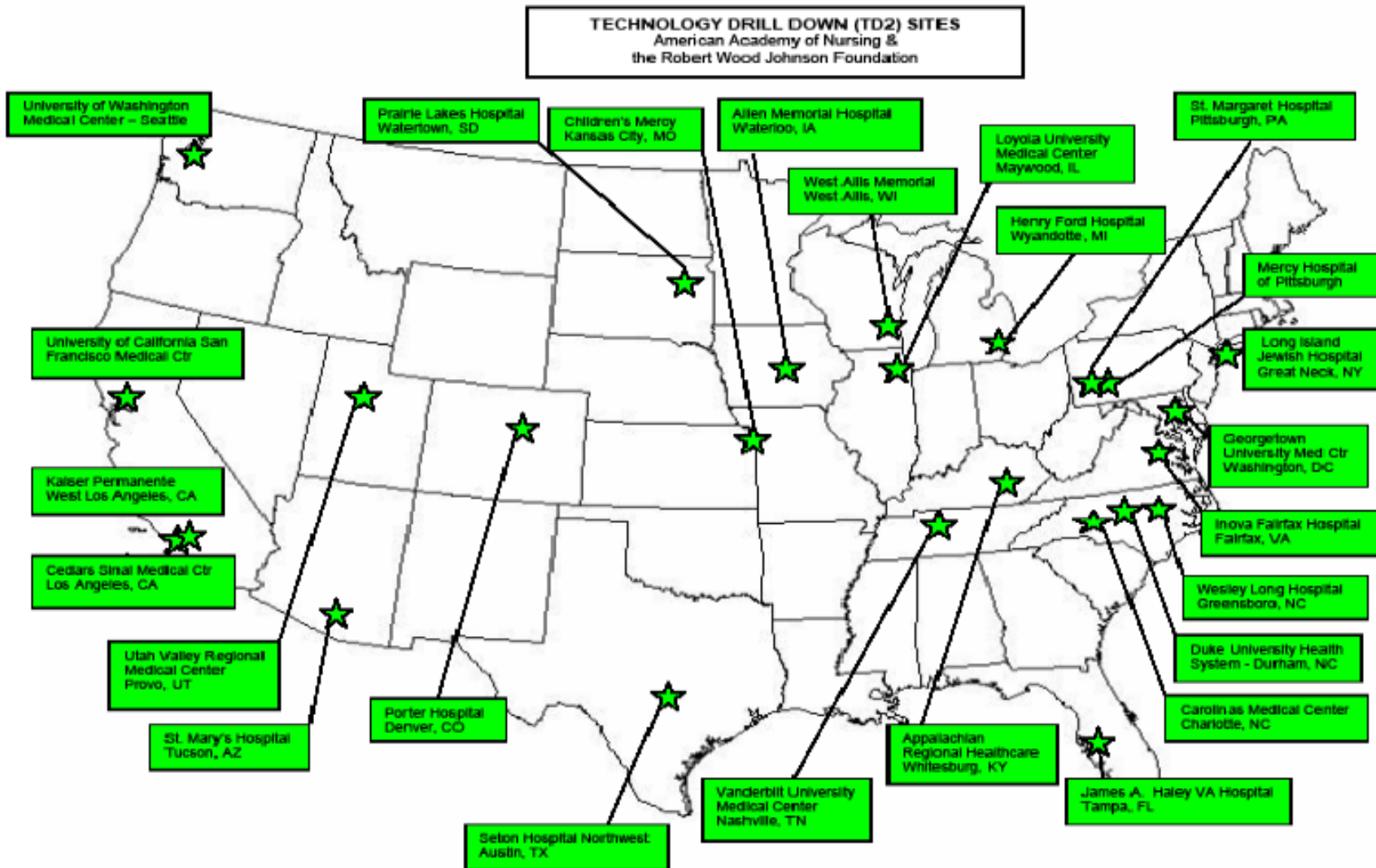
“Technology Targets: A Synthesized Approach for Identifying and Fostering Technological Solutions to Workflow Inefficiencies on Medical Surgical Units.”

- A major component of Technology Targets is a process called **Technology Drill Down** (TD<sup>2</sup>)

[AAN! Technology Drill Down](#)



# Technology Drill Down Sites



25 sites, representing over 200 patient care units and 1000 participants



# Technology Drill Down



## Site Demographics

Size of institution	Geographic Location	Organization Ownership
8% (< 100 beds)	8% Rural	4% Government
20% (101-250 beds)	72% Urban	18% Private
36% (251-500 beds)	20% Suburban	39% Community
36% (> 500 beds)		39% Academic



# Technology Drill Down Days



## Healthcare Industry Trends:

- Too many patients
- Increased patient acuity
- Information overload (terabytes)
- Regulatory demands
- 4 generations in the workforce
- Technology explosion
- Complexity Compression →
- Nursing Shortage

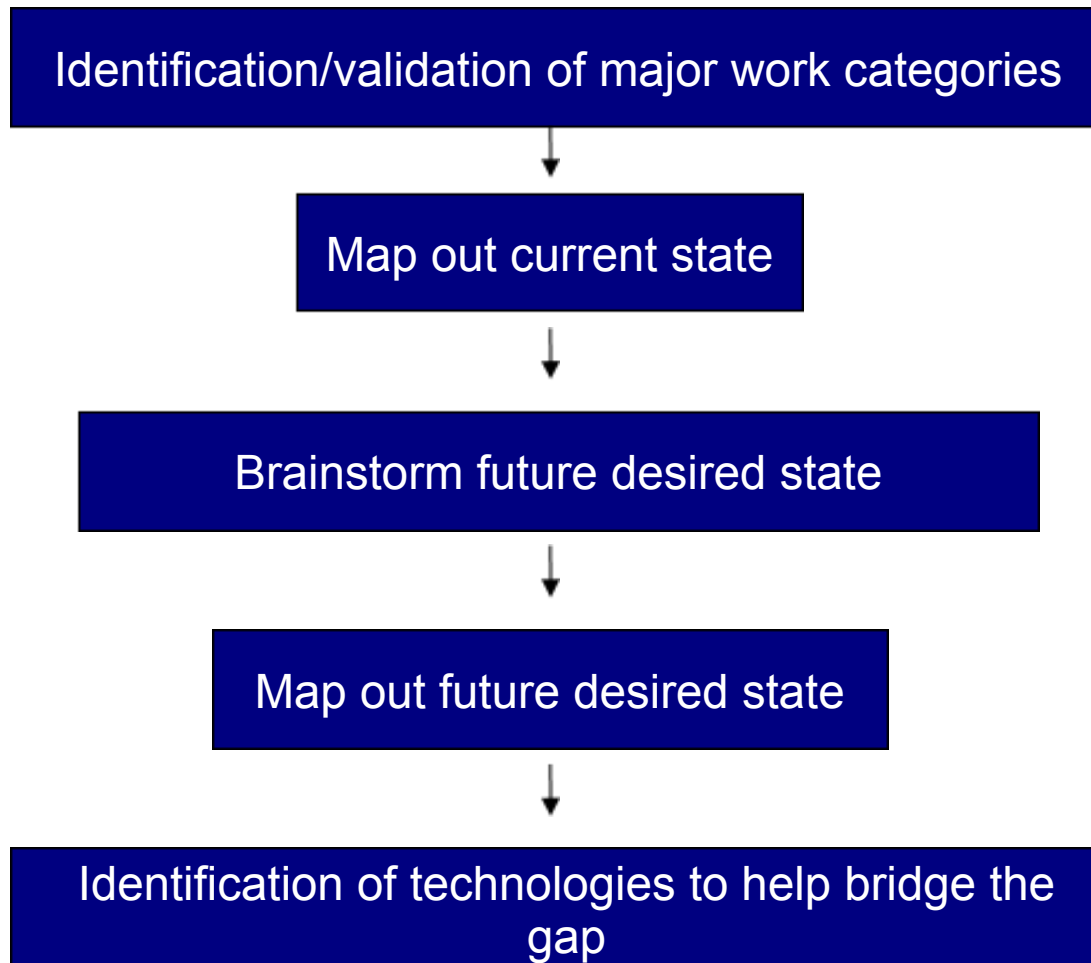
What nurses experience when expected to assume additional, unplanned responsibilities while simultaneously conducting their multiple responsibilities in a condensed time frame

# Predicted Nursing shortage



- There is a predicted gap of 31% between available supply of nurses and demand for nursing services in Canada by 2016 (CNA, 2006)
- Current R & R strategies may not be able to keep up with patient care demands
- Need to improve the practice environment as a key strategy
- **Increasing capacity within teams** is also necessary:
  - increasing available nurse hours by 30 minutes/patient day is associated with decrease in adverse events (*Kovner & Gergen, 1998*)

# Technology Drill Down Process



# Technology Drill Down



Consistent with the philosophy of  
Lean Organizational Thinking

Toyota continuously encourages employees to identify **value add & non value add**: “A key feature of such lean systems is that they focus on eliminating waste, or *muda*, which is defined as **activities that absorb resources but create no**

# Non value add vs Value add



## Misuse of nursing knowledge and skills

- Nurses in practice environments with a disproportionately higher ratio of low level to high level skill had a **higher rate of burnout and turnover**

### Low Level

- Hunting and gathering for equipment and supplies
- Documentation of demographics
- *Feeding, toileting, bathing, specimen collection and transfers*
- Waiting for data or information to provide care

*Time and Motion study by Heindrich et al., suggest that 30% of current nursing care time falls into this category (& 20% for documentation)*

### High Level

- Assessment and planning
- Intervention requiring RN knowledge & skill
- Consults with MD and team members
- Teaching and care management
- Coordination of Care



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# Proposal, Planning and Getting Support

# *Planning Phase*



Solicited feedback and input from Clinical Directors

The 2 units selected to participate:

- Medical-Oncology Unit at TOH General Campus
- General Surgery/Urology Unit at TOH Civic Campus

# Participation in Drill Down Day:



<i>Medical Oncology Unit</i>	<i>General Surgery/Urology Unit</i>
<p>In Kind Contributions:</p> <ul style="list-style-type: none"> <li>● Clinical Manager</li> <li>● NPPD (2)</li> <li>● IS (2 clinical analysts and 1 Director)</li> </ul>	<p>In Kind Contributions:</p> <ul style="list-style-type: none"> <li>● Clinical Manager</li> <li>● Nurse Educator</li> <li>● NPPD (1)</li> <li>● IS (2 clinical analysts and 1 Director)</li> </ul>
RNs: 6 (8 confirmed)	RNs: 4
<p>Health Care Professionals</p> <ul style="list-style-type: none"> <li>● PTA</li> <li>● SW</li> <li>● Dietician</li> <li>● Pharmacist</li> <li>● OT</li> </ul>	<p>Health Care Professionals</p> <ul style="list-style-type: none"> <li>● PT</li> <li>● PCA</li> </ul>
Total # of Participants: 17	Total # of Participants: 12



# 8 Work Categories (AAN, 2008):



1. Admission Discharge/Transfer
2. Care Coordination
3. Care Delivery
4. Communication
5. Documentation
6. Medication
7. Patient Movement
8. Supplies and Equipment



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# Implementation of the actual Technology Drill Down days

# Process & Outcomes for the day



Identification/validation of major work categories

Map out current state

Brainstorm future desired state

Map out future desired state

Identification of technologies to help bridge the gap

- 1 Admission /Discharge/Transfer
- 2 Care Coordination**
- 3 Care Delivery
- 4 Communication
- 5 Documentation**
- 6 Medication**
- 7 Patient Movement
- 8 Supplies and Equipment



Identify top 4 issues 'ripe' for technological fixes

# Which Categories to focus on?



- *Three subcategories accounted for most of nursing practice time:*
  - **Documentation: 35.3%**
  - **Medication Administration: 17.2%**
  - **Care Coordination: 20.6%**
  - *Patient Care Activities: 19.3%*
  - *Patient Assessment and Vital signs: 7.2%*
- *source: Time & Motion study: How Do Medical-Surgical Nurses Spend Their Time? (Heindrich et al., 2008)*

# Selected areas of focus:



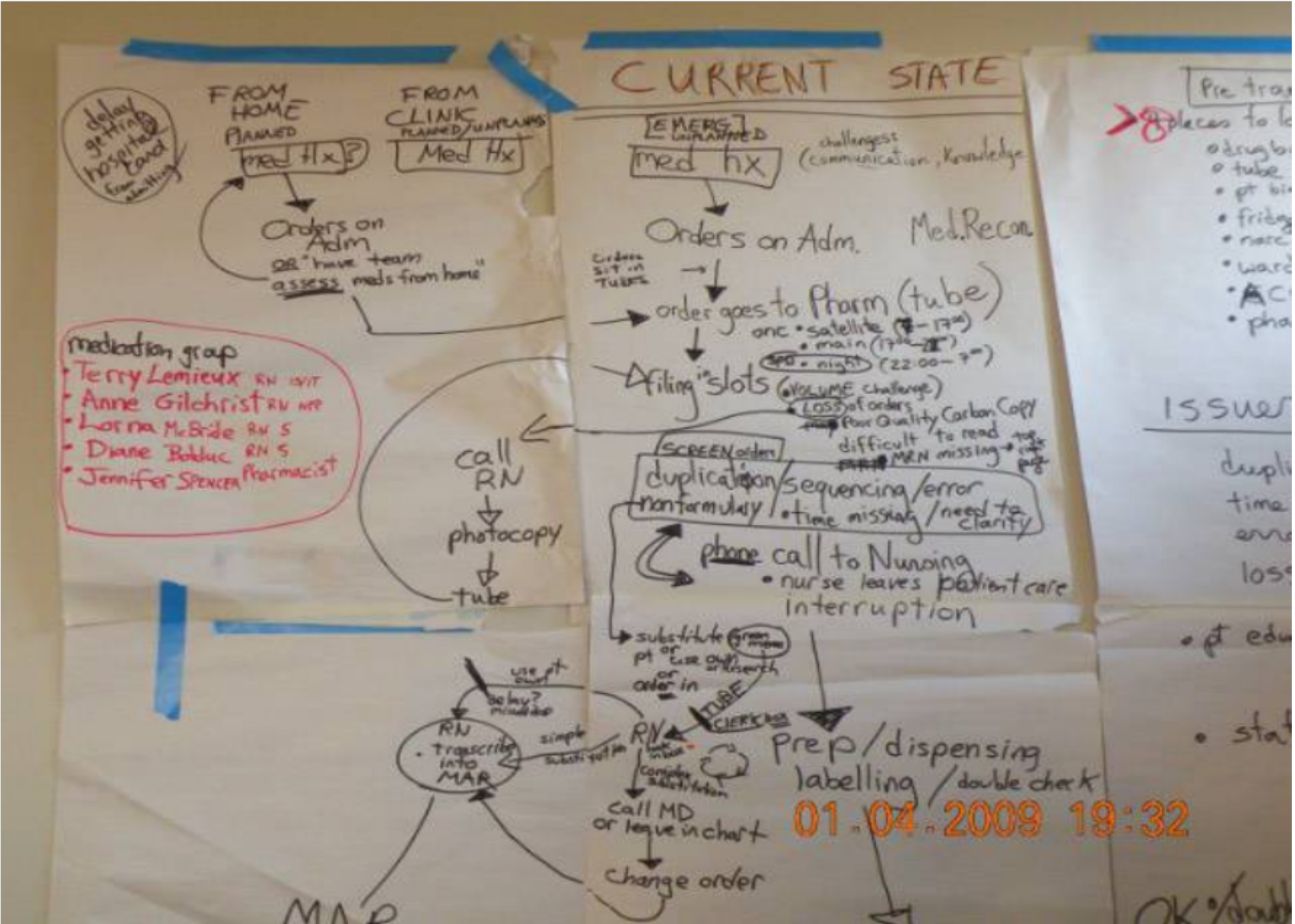
Medical Oncology Unit	Surgical/Urology Unit
<ul style="list-style-type: none"><li>● <b>Documentation</b></li><li>● Medication</li><li>● Care delivery</li><li>● <b>Communication</b></li><li>● Care Coordination</li></ul>	<ul style="list-style-type: none"><li>● <b>Documentation</b></li><li>● Equipment &amp; Supplies</li><li>● <b>Communication</b></li></ul>

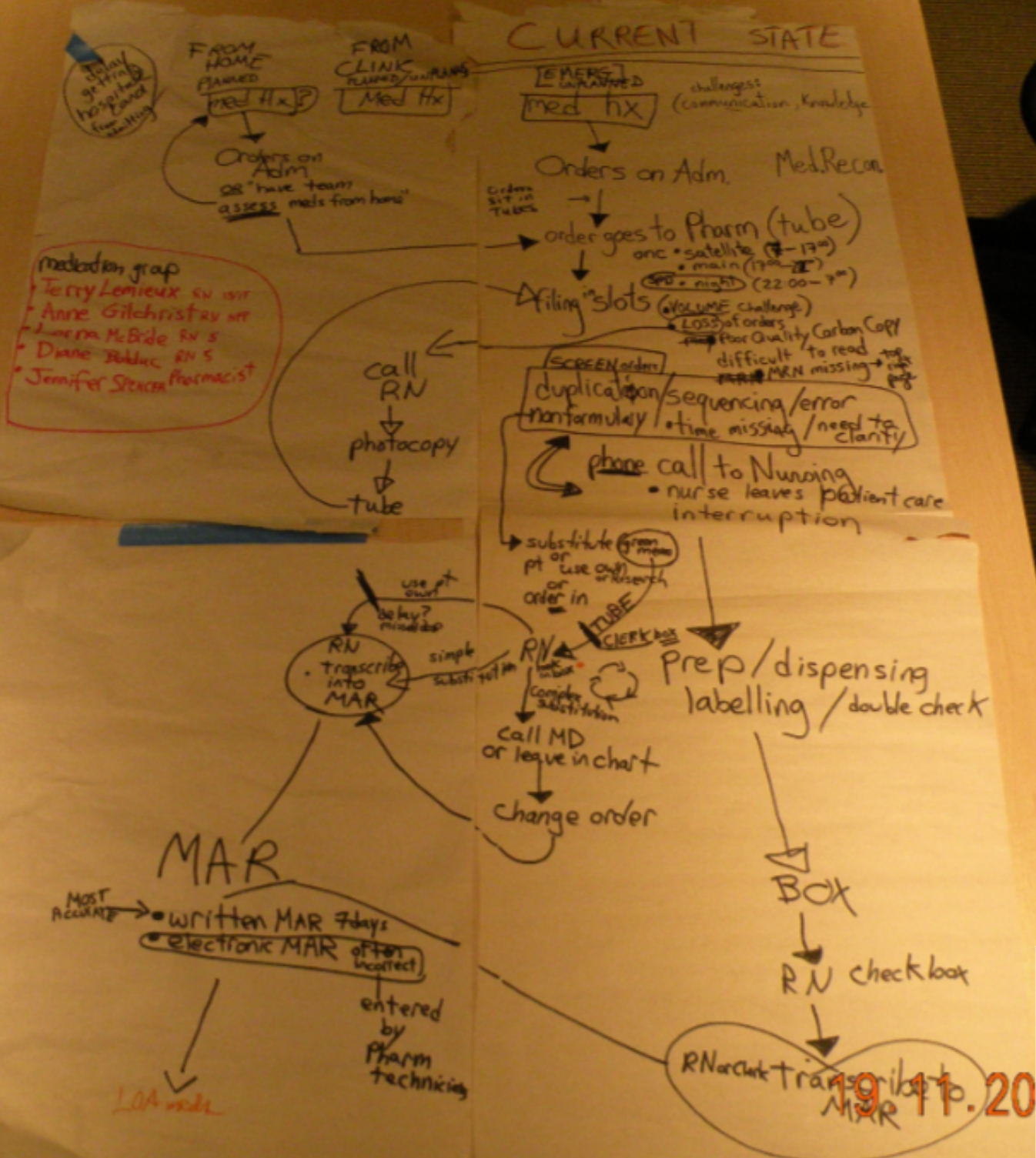
# Technology Drill Down Day: Agenda



Time	Topic	Speaker
8:00 – 8:30	Registration and Continental Breakfast	
8:30 – 8:45	Welcome and Background Information	Julie Latreille
8:45 – 9:00	Identification of Work Categories	Julie
9:00 – 9:45	Defining Current State in selected Work categories on the unit	Work groups of ~ 5
9:45 – 10:00	Health Break	
10:00 – 11:15	IS Strategic Plan to Support Quality and Patient Safety at TOH	Dr. Glen Geiger (CCIO)
11:15 – 12:15	Sharing of current state work categories and identification of areas for future state work	All
12:15 to 13:00	LUNCH (provided)	
13:00 – 14:00	Emerging Technologies	Julie
14:00 – 15:00	Brainstorming the future state	Groups
15:00 – 15:15	Health Break	
15:15 – 15:45	Sharing future state work	All
15:45 – 16:00	Identifying a List of Technologies & Functional Requirements	All
16:00 -16:30	Wrap Up	Please complete and return evaluation form!

# Medication Process Map





Medication Process Map





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# Summary of findings

# Summary of Findings



## Major *Process* Issues Identified:

- Inefficient modes of communication
- Inconsistent (and at times complex) manual processes
- Data availability is an issue (either not there or difficult to find)
- Duplication of effort for assessments, medication reconciliation, medication administration and documentation
- Patient chart (difficulty locating and/or fragmented)
- Supply and equipment difficulty in locating or not on unit

# Brainstorming the future state



The Top 4 types of technology selected:

1. communication devices
  2. e-documentation
  3. CPOE with e-MAR and BCMA
  4. charting and information/clinical decision support devices
- Also on the short list were:
    - tracking systems for medication and equipment
    - transfer of patient data such as IV information and vital signs



## The Functionality requested:

1. Integrated
2. Point of care and/or mobile
3. Smart
4. Wireless
5. Touch screen
6. Voice activated
7. Bar coding scanning
8. RFID tags

# Technology Drill Down Days *as an end-user Engagement Tool*



“We can only succeed in making electronic health records a reality if healthcare providers adopt the technology. Without their acceptance, our efforts are futile.”

Richard Alvarez President and  
CEO

Canada Health Infoway



# *An end-user Engagement Tool*



## Why its important to engage nurses:

- Essentially we have our nurses working in a complex, chaotic and in many times an overwhelming: “web of workflow and communications prone to resources or decision bottlenecks, communication gaps, missed or delayed tasks, and inappropriate use of valuable resources” (California HealthCare Foundation, 2008)
- Because nurses work at the centre of a complex web of care delivery it’s important to involve them in the process of technology selection, process re-design, implementation and evaluation and to make their needs a high priority

# Comments from participants:



What was the most important thing you learned today?

- That technology can improve workload stress
- How complex the task is; fact that there are a lot of things that could be done to improve our efficiency with the difference technologies linked together
- This was a great opportunity to learn about future options for improving care
- Exciting new technology is in the future

# Comments from participants:



“The team is still buzzing about it and the overall chatter has been very positive and is generating excitement about future initiatives! Many of them still can’t believe that as front line staff that they were truly and honestly asked for their thoughts and feedback at such a level. They were very impressed that there were no restrictions on what they had to offer as comments or offer as dreams. They also enjoyed the fact that their priorities for what they would like to change drove the agenda.” (Mario DaPonte, Clinical Manager, Medical Oncology, TOH General Campus)



# Limitations



- Although supported by IS, this was not an IS initiative, (only work from an Independent study for a graduate course in Nursing Informatics)
- Recruitment of participants
- Limited ability for us to follow through on suggestions from the drill down days.... Inability to deliver on the suggested changes
- Resource intensive

# Discussion Period



## Technology Drill Down Days

- Would you consider this tool as part of your own end user engagement strategy?
- Could technology decrease the nurse to patient ratio needed for optimal patient outcomes?
  - increasing efficiency of nurses.... eliminating waste.....creating leaner workflow processes

# Contact Information



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  - Clinical Analysts
- Participants in the Technology Drill Down Days
- Clinical Managers: Mario Deponete and Marnie Houlahan

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