

# Availability and Use of HIT in Nursing Homes

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## • Background:

- IOM Definition of Health Information Technology (HIT): *“Electronic systems to collect, store, retrieve and transfer clinical, administrative and financial data”*
- Potential benefits of HIT include improved quality, reduced errors, and administrative efficiencies
- Evidence base regarding prevalence and use in LTC is weak:
  - NNHS ask general questions about canned features
  - Consensus panels are not empirical
  - Small scale ROI case studies

## • Methodology:

- Focus Groups were used to develop questionnaire about “potential uses of information technology for clinical care processes”
  - Participants: Nursing Home Administrators, Directors of Nursing, Advance Practitioners, Medical Directors, Consultant Pharmacists and Certified Nurse Assistants
- National Survey of Nursing Facilities:
  - Random of 599 facilities samples from 12 states (CA, GA, IL, MD, MA, OH, TX; MT, ID, WY, ND and SD were combined)
  - 363 facilities with at least one respondent (61%)
  - 245 Directors of Nursing (41%)
  - 221 Nursing Home Administrators (37%)
- National Surveys of Clinical Professionals:
  - 502 Medical Directors (32% response rate)
  - 321 Advance Practitioners (46% response rate)
  - 540 Consultant Pharmacists (35% response rate)

- Survey Questions Addressed availability and use of HIT across six main areas, and 19 specific functional domains (see Findings)
  - Measured whether HIT was used all the time, some of the time, none of the time, available but not used, or unavailable
  - Each domain had multiple items
- Indices of use were created by counting the number of items in each domain rated as used ‘All’ or ‘Most’ of the time
  - These cut across clinical domains
- We created separate indices for selected clinical issues
  - These indices cut across technical domains of HIT for Risk, Trending, Generating Alerts, and Structured Clinical Documentation

**Adoption Indices** are interpreted as the average number of HIT features (in each domain) that are regularly used . The average of the index represents the state of adoption across all facilities in the sample.

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### Clinical Issues

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New or recurrent infection  
New or recurrent Pressure Sore  
New or recurrent Fall  
Poor nutritional status  
Vaccination Status  
Mood or behavioral problems  
Changes in physical function  
Changes in cognitive function  
Physical restraint use

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- Example of Findings from Directors of Nursing (n=245) calculated at domain and sub-domain levels**

| Clinical Application (# of items)                    | Index Score |
|--|-------------|
| <b>Quality Improvement</b>                           | <b>30%</b>  |
| Identify Residents at Risk (9)                       | 41%         |
| Trending (9)   | 39%         |
| Generate Alerts about Changes in Resident Health (9) | 17%         |
| Generate Alerts about Orders (4)                     | 21%         |
| <b>Communication and Documentation</b>               | <b>24%</b>  |
| Generate Messages for Clinicians (5)                 | 17%         |
| Structured Clinical Documentation (9)                | 32%         |
| Point of Care Documentation (7)                      | 23%         |
| <b>Medication Use Process</b>                        | <b>19%</b>  |
| Prescribing and Order Communication (6)              | 25%         |
| Administration (4)                                   | 22%         |
| Monitoring (4)                                       | 16%         |
| Reconciliation, Recap, Dispensing (3)                | 14%         |
| <b>Data Transfer</b>                                 | <b>10%</b>  |
| Send/Receive Clinical Information (5)                | 14%         |
| Receive Orders at Admission (5)                      | 9%          |
| Send Orders on Discharge (5)                         | 5%          |
| <b>Reminders and Orders</b>                          | <b>8%</b>   |
| Generate Reminders for Clinicians (4)                | 7%          |
| Electronic Orders Sign-Off (5)                       | 9%          |
| <b>Operations</b>                                    | <b>18%</b>  |
| Financial Management (5)                             | 24%         |
| Inventory Management (7)                             | 10%         |
| Planning (7)   | 19%         |

- Summary:**

- Availability of basic functionality is high, but ‘regular’ use is low
  - Facilities use on average 41% of available HIT features for identifying residents at increased risk of clinical problems
  - By contrast, on average, only 17% of features for generating prospective alerts about changes in resident health are being used on a regular basis
  - Use of up to 4 HIT features for selected clinical issues range from 23% (restraint use) to 39% (nutritional status)
- Facilities that self-identify as being part of the ‘culture change movement’ report greater use of HIT
  - 16 out of 19 technical areas (4 were statistically significant)
  - 9 out of 9 clinical domains (all were statistically significant)

- Additional Analyses:**

- Report separately by type of professional
- Differences by facility size, ownership, urban/rural, chain, region
- Explore association between HIT and quality of care
- Examine Leadership/Change management strategies associated with greater adoption of HIT
- Cross-walk findings with definitions of ‘meaningful use’