TRENDS IN CLINICAL INFORMATICS:
A NURSING PERSPECTIVE

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ONC Health Information Technology Standards Committee Member
Tenet spans 16 states in many settings

- **California**: 11 Hospitals, 29 OP Centers
- **Illinois**: 4 Hospitals, 4 OP Centers
- **Missouri**: 2 Hospitals, 5 OP Centers
- **Texas**: 18 Hospitals (b), 55 OP Centers
- **Florida**: 10 Hospitals, 27 OP Centers
- **Arizona**: 6 Hospitals, 2 OP Centers
- **New Mexico**: 2 OP Centers
- **Pennsylvania**: 2 Hospitals, 3 OP Centers
- **Connecticut (LOI)**: 2 Hospitals
- **Massachusetts**: 3 Hospitals, 4 OP Centers
- **N. Carolina**: 2 Hospitals, 4 OP Centers
- **S. Carolina**: 4 Hospitals, 10 OP Centers
- **Georgia**: 5 Hospitals, 9 OP Centers
- **Tennessee**: 2 Hospitals, 5 OP Centers

- (a) Excludes 2 Connecticut hospitals currently under LOI
- (b) Includes the Resolute Health Hospital and Wellness Campus under construction in New Braunfels, Texas

**Note:** Tenet spans 16 states in many settings.
Session Objectives

• Develop an understanding that the application of nursing informatics knowledge is empowering for all healthcare practitioners in achieving patient-centered care.

• Describe at least three major trends in the nursing informatics workforce as demonstrated by the results from the HIMSS 2014 Nursing Informatics Workforce Survey.

• State at least two important shifts in the work of clinical informaticists.

• Discuss at least two ways in which the work of nursing and clinical informatics is providing foundational tools to transform health and healthcare.
BACKGROUND .... Nursing informatics emerged over time

1980’s: The term nursing informatics first begins to appear in the literature.

1989: Graves and Corcoran publish paper defining the data-information-knowledge conceptual model.

1990: ANA recognizes nursing informatics as a specialty, and the role of the nursing informatics specialist.

1992: ANA recognizes nursing informatics as a specialty, and the role of the nursing informatics specialist.

1995: ANA offers the first certification exam in nursing informatics.

2000: IOM’s Crossing the Quality Chasm proclaims HIT is crucial to safety and quality in healthcare.

2001: IOM’s Crossing the Quality Chasm proclaims HIT is crucial to safety and quality in healthcare.

2004: TIGER Initiative created.

2005: TIGER Initiative created.

2010: Informatics listed as essential for advanced practice nursing core competencies.

2012: Informatics listed as essential for advanced practice nursing core competencies.

2014: National League of Nursing describes the necessary components for an informatics curriculum.
Nursing Informatics Defined

Nursing informatics (NI) is a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge, and wisdom in nursing practice. NI supports consumers, patients, nurses, and other providers in their decision-making in all roles and settings. This support is accomplished through the use of information structures, information processes, and information technology.

*Nursing Informatics: Scope and Standards of Practice, ANA 2008*
I can’t imagine writing nurses notes without my computer!

I’m using the computer, but I still rely on my written nurses notes.

I wonder... Could teaching plans be computerized?

Well, maybe a computer would be faster?

I can chart better on paper than I can on a computer.

Integration

Transference

Assimilation

Uncertainty

Resistance
The changing role of nurses and enabling technology…

Charting

Ordering

Biomedical Devices

…has intensified the need for formalized clinical informatics leaders
Clinical Informaticist Role

Creating your role as the clinical transformation leader using informatics

Lead Change

• Serve as an agent of change to move people out of their comfort zone
• Use shared governance and hold sponsors and stakeholders accountable

Promote Standardization

• Eliminate silos and promote adherence to clinical and technical standards

Develop Relationships & Credibility

• Collaborate with all departments to realize the full potential of the EHR
• Partner closely with CNO, CIO, and physician executive

Implement and Optimize

• Direct clinical specialties in preparing for new system functionality through workflow, policies/procedures, education, communication
• Analyze data to optimize system use and patient outcomes

Provide Thought Leadership

• Develop clinical system strategies with hospital leaders
Nursing Informaticists: managing multiple moving parts

- CPOE
- eMAR & bar coding
- Staffing & Training
- Device Selection & Integration
- IT Strategy
- System Selection
- Change Management
- Clinical Transformation Management
- Recruit & Retention
- Patient & Employee Satisfaction
- Design & Build
Clinical Informaticists

Nursing Informaticists are shifting from system implementation to clinical documentation and system optimization/utilization.

**SALARY**

- Average 2014: Salary $121,830 (certified)
- Average 2011: Salary $98,703
- Up 17% from 2007
- Up 42% from 2004

**PROJECTS**

- 69% Implementing new EHRs
- 80% Clinical documentation for EHRs and Meaningful Use
- 62% CPOE

**DEMOGRAPHICS**

- 41% 16+ years of clinical experience
- 46% Certified
- 78% Hospital Based
- 81% Liked their job

Source: HIMSS Survey 2014
The Journey

**Governance**
- Vision and mission
- Program and hospital
- Clinical advisory teams
- Standards

**Process Continuity**
- Future state workflow localization
- Change readiness assessment
- Key Stake holder analysis
- Change readiness survey

**Communications**
- Communication plan template is provided to each hospital communication lead to tailor and manage
- Hospitals are given monthly communication campaigns with predesigned messages throughout the project life cycle
- Hospital communication owners
- Guides and vehicles

**Adoption and Sustainment**
- End user engagement and adoption
- Clinical Informaticist
- CNO
- Physician Champion
- Risk mitigation plan-change strategy

**Value Realization**
- Clinical performance improvement and business value, IMPACT based value metrics
- Identify, act on, report and monitor the CMS Meaningful Use requirements

**Optimization**
- Post go-live optimization
- Ongoing continuous improvement
- Change management
A Glimpse of Clinical Informatics at Tenet
Clinical Informatics Structure at Tenet

• Three levels of Clinical Informatics (CI)

National Clinical Informatics Managing Director

- Regional Clinical Informatics Director
- Regional Clinical Informatics Director
- Regional Clinical Informatics Director
- Regional Clinical Informatics Director

- Hospital Clinical Informatics Director
- Hospital Clinical Informatics Director
- Hospital Clinical Informatics Director
- Hospital Clinical Informatics Director

1Direct report to hospital Chief Nursing Officer
Clinical Informatics Role at Tenet

• Hospital director-level position

• Strategic to the successful adoption and sustainment of the Electronic Health Record (EHR)

• Primary role is to serve as a change agent
  – Must be able to move people out of their comfort zones and challenge the status quo
  – Promotes healthcare system-wide standards, not automation of hospital-specific practices

• Represents all departments, not just nursing

• Must be influential, articulate, credible, respected, fair-minded
Clinical Informatics development at Tenet

- Mentorship of hospital CIs by IMPACT CIs experienced in EHR
- Annual Tenet Clinical Informatics Academy
- CI collaborative calls and website to share best practices
- CI skills assessments
- Regional CI support to hospital CIs beyond go-live
- Visits and assistance to other Tenet hospitals
Behavior Profile Study
Why Behavioral Profiling?
The Cause for Action

• Identify the right individuals to fill clinical informatics (CI) leadership positions
• Improve CI effectiveness as an agent of change
• Improve the organization’s perception of the strategic contributions of the role and its understanding of role requirements and purpose
• Reduce turnover due to poor matching of behavioral traits to role requirements
• Enhance the organization’s ability to promote standardization, implement rapid changes, and develop the culture needed to sustain the EHR environment
How was the profile developed?
How was the profile developed?

- Identify the population
  - 30 Tenet-employed clinical informatics leaders from hospitals in 12 states who had over 6 months tenure in the position

- Assess and rank the population
  - Each CI leader was administered the PeopleAnswers® behavioral inventory (now administered as part of the hiring process)
  - Each CI leader was rated by their manager using the CI skills assessment developed by Tenet
  - CI’s were ranked based on CI skills assessment ratings and manager feedback
How was the profile developed? (cont.)

• PeopleAnswers® performed an analysis of all data to determine the behavioral DNA of our top performers
  – Analyzed 38 attributes measured in their behavioral inventory
  – Determined most predictive attributes for position fit and assigned weights
  – Identified 8 significant attributes
What is the behavioral DNA of effective clinical informatics leaders?
Interpretation

**Behavioral attribute identified as relevant to the effective CI leader**

**Weight**: Degree of relevance of the attribute  
*Note: Above 4 is relevant; 15 is an extremely high weight*

**Description of the successful behavior**

**Realistic Thinking**  
Weight = 15.0  
A candidate in the target range approaches problem solving with a collection of reliable facts and figures.

**Continuum**: The ideal placement and range on the scale of behavioral extremes
#1 – Realistic Thinking

The effective Clinical Informatics Leader:

• Makes decisions based on reliable facts but also considers other factors such as
  – The organization’s capacity to deal with change
  – Environmental constraints
  – Clinical system functionality
  – Resource capabilities
  – Competing initiatives and priorities
#2 – Organizational Structure

The effective Clinical Informatics Leader:

- Can exert influence at all levels of the organization
  - C-Suite
  - Department directors and physician department chairs
  - Managers and supervisors
  - Super users
  - End users

- Does not need a rigid structure
#3 – Acceptance of Authority

The effective Clinical Informatics Leader:

- Will respectfully challenge the status quo when perceived for the better good

- Will support a clinical system standard but must believe in it (using realistic thinking!)
  - This is hard when supporting standards across a large organization
#4 – Organizational Skills

The effective Clinical Informatics Leader:

- Can make organization out of disorganization, but leaves highly detailed organizational tasks to others
- Helps others see the big picture and directs them to do the minutia to follow through on what needs to be done
- This is one of the hardest areas for nurses to deal with (tend to want to do everything themselves)

Organizational Skills
Weight = 10.6
A candidate in the target range is typically organized and neat without spending too much time reordering projects and tasks
#5 – Job Atmosphere

The effective Clinical Informatics Leader:

- Is effective in both informal (i.e. the break room) and formal (the board room) settings
- Is flexible and adapts to a wide range of professional environments to establish a rapport with the audience

Job Atmosphere

Weight = 6.2

A candidate in the target range will be able to work effectively in both a relaxed or more formal atmosphere
#6 – Conscientiousness

The effective Clinical Informatics Leader:

• Balances quality with timeliness
• Knows when “B” work is good enough
• Doesn’t sweat the small stuff
• Holds others accountable
The effective Clinical Informatics Leader:

• Analyzes facts but also considers the people factors
  – Mid range between artists and accountants

• Uses data to change behavior
  – Doesn’t stay behind a desk creating spreadsheets
  – Makes end users understand how their use of the EHR produces analytics that allow comparative analysis of outcomes
#8 – People Orientation

The effective Clinical Informatics Leader:

- Are tolerant of others’ viewpoints
- Respects and encourages discussion
- Are not critical, rigid, and fault-finding
- Supportive of others, yet able to drive to a decision
- More outgoing in nature as opposed to being introverted
How can you use the profile?
Skills development for you and your team

• Understand your profile
• Develop and/or attend CI education sessions to strengthen desired characteristics and mitigate high-risk behaviors
• Create individual CI development plans geared to improve behavioral skills
• Find a mentor who is nurturing and honest
The Future
Our Role: Empowering Patients & Clinicians

Patient Engagement
Merging information & operational processes to promote patient knowledge & self-management

Implementation Program
- Process Standards
- Data Standards
- Training
- Physician order entry
- Decision Support
- Patient Safety
- Improved efficiency
- Best Practice
- EMR Adoption

Meaningful Use
- Certified EMR
- Stage 1, 2 Data Capture
- Attestation
- MU Program Management
- Metrics Monitoring
- Stage 3 Planning
- Stage 3 Execution

Clinical Effectiveness
- CPOE Utilization
- Near Misses
- Adverse Med Events
- Reduced Clinical Care Variance
- Quality of Clinical Care
- Clinical trends
- Cost Efficiency
- Patient/Clinician Satisfaction
- Disease Management
- Key Performance Indicators
- Branding

Value Realization: Providing meaningful information resulting in meaningful care, clinical integration, improved outcomes, & risk sharing
STAGE  3

“We received the guidelines on what we need to do to demonstrate Meaningful Use for the incentives, or as I like to call it: ‘50 shades of grey’.”
Vision: Patient Centric Care

- **Attributes:**
  - Patient-centric collaboration, coordination and clinical integration across the care continuum
  - Quality and outcomes based where value, not volume is rewarded
  - Economic efficiencies and cost savings

Identify at risk patients in chronic disease populations

Report specific quality measures (e.g. Discharge on anti thrombotics Hbg A1c control in DM)

Share and exchange data between stakeholders, Providers, Payers, Consumers, Retail Rx, etc.

Share accountability for the care of patient populations with chronic diseases
"That’s not what it says on the Web."
The evidence:

Methods: Retrospective cohort study of 35,904 Medicare patients undergoing major surgery to determine the relationship between catheter use and postoperative outcomes.
Results: Eighty-six percent of the patients had perioperative indwelling urinary catheters. Catheters remained in place for > 2 days postoperatively in 50% of the patients. Postoperative catheterization of > 2 days was associated with: Increased in-hospital urinary tract infection, Increased 30-day mortality, Increased length of stay. Conclusion: Remove Catheters ≤ second post op day.

Vision: Creating Measurable Value

Case Study: Clinical Alerts for Prevention of Urinary Tract Infections

Background:
• The Surgical Care Improvement Project (SCIP) is a national quality partnership of organizations interested in improving surgical care by significantly reducing surgical complications.
• Urinary tract infections associated with the use of catheters are a common surgical complication that is largely preventable.
• Core Measures from Joint Commission require postoperative tracking of indwelling urinary catheters and daily assessment of the need for continued use.

Solution:
• A clinical alert has been developed within the IMPACT system to remind physicians to re-assess need for continuation of catheter usage on a daily basis.
• The alert is directed to the surgeon on post-operative days 1 and 2 if the catheter has not been removed.

Results:
• Surgeons are successfully addressing every postoperative patient with a decision to remove the catheter or continue if indicated.
• Compliance with Core Measures has improved.
Vision: Integrate, Connect, Collaborate and Share
Connecting the Patients and Caregivers

- Consumer/ Patient
  - Consumer Health Alerts and Reminders
  - Manage costs and utilization

- Hospitals
  - IDNs

- Physician Offices
  - Accountable Care Organization
  - Medical Home
  - Payers

- Population Management
  - Diabetes, Heart Failure, Asthma

- Care Management, Referrals
  - Orders, Results, Clinical Summaries
  - Prescriptions

- Vision: Integrate, Connect, Collaborate and Share
  - Connecting the Patients and Caregivers
Be an Expert Nurse, respected for knowledge and teamwork

Participate in EMR projects as Subject Matter Expert, workflow & process design

Increase knowledge of Informatics, gain expertise in systems, manage change and adoption

Lead IT projects, implement systems, manage large project teams, earn credibility

Lead strategic initiatives inside/outside IT, participate on multiple committees
Nursing has evolved significantly…

…Today, nursing Informaticists voices must be heard.
CONCLUSION

There has never been a better time to have a career in the field of health informatics. As the nation’s health system reinvents itself as a digital system, health informatics professionals are positioned to play crucial roles which will impact the way patient care interventions are determined in the future. The result of those real time interventions will be patients who enjoy better care and better outcomes. Employing leadership and vision, the digital revolution will become our launching pad for success.
Questions
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Appendix
The Clinical Informaticist:

HIMSS 2014 Nurse Informatics Workforce Survey Results
Years of Clinical Experience

2014 Results | 2011 Results | 2007 Results

More than 20 years
- 2014: 28%
- 2011: 31%
- 2007: 31%

16 to 20 years
- 2014: 13%
- 2011: 15%
- 2007: 17%

11 to 15 years
- 2014: 15%
- 2011: 15%
- 2007: 20%

6 to 10 years
- 2014: 12%
- 2011: 21%
- 2007: 22%

1 to 5 years
- 2014: 13%
- 2011: 20%
- 2007: 19%

Less than 1 year
- 2014: 4%
- 2011: n/a
- 2007: n/a
Percent of Time Spent on Clinical Activities

- **More than 75%**
  - 2014 Results: 3%
  - 2011 Results: 2%
  - 2007 Results: 3%

- **51% to 75%**
  - 2014 Results: 1%
  - 2011 Results: 1%
  - 2007 Results: 1%

- **26% to 50%**
  - 2014 Results: 2%
  - 2011 Results: 2%
  - 2007 Results: 3%

- **Less than 25%**
  - 2014 Results: 17%
  - 2011 Results: 19%
  - 2007 Results: 22%

- **None**
  - 2014 Results: 77%
  - 2011 Results: 77%
  - 2007 Results: 71%
Average salaries for Nurse Informaticists (NI) increased 42% in seven years — from $69,500 in 2004 to $98,702 in 2011.

The average education level also is increasing. Those with master’s degrees and PhDs increased from 52% in 2007 to 56% in 2011.

NI Shifting from system implementation to clinical documentation and system optimization/utilization.

In the 2004 and 2007 surveys, respondents identified the lack of financial resources as the top barrier while in 2011 it was the lack of integration and interoperability.

While the HIMSS survey shows 58% of nurses Informaticists work in hospitals that number is expected to decrease as health care moves form acute care to coordinated care and from large IT hardware to cloud technology and personal devices. (HealthCare It News February 23, 2014).
Current Informatics Education/Training

- On-the-Job Training: 2014 Results 23%, 2011 Results 26%
- Masters/PhD: 2014 Results 9%, 2011 Results 11%
- Certificate: 2014 Results 5%, 2011 Results 7%
- Program/Course: 2014 Results 4%, 2011 Results 7%
- Bachelors: 2014 Results 1%, 2011 Results 1%

Survey question was revised in 2011 and not comparable to 2007 survey.
Certification Held

- **ANCC**
  - 2014: 23%
  - 2011: 19%
  - 2007: 23%

- **CPHIMS**
  - 2014: 6%
  - 2011: 4%
  - 2007: 3%

- **Other Nursing Specialty**
  - 2014: 17%
  - 2011: 9%
  - 2007: 20%

- **None**
  - 2014: 52%
  - 2011: 55%
  - 2007: 55%

- 2014 Results: Gold
- 2011 Results: Dark Red
- 2007 Results: Grey

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Tenet
Nursing Informatics Certification Pursuing

Survey question was revised in 2011 and not comparable to 2007 survey.
Nursing Informatics Workforce Survey - Results

Career Satisfaction

• Over half (57 percent) of respondents indicated that they were satisfied or highly satisfied with their current position (score of six or above).

• 81 percent were also satisfied or highly satisfied with their career choice in informatics.

• Respondents seemed to be quite satisfied with their choice of career in informatics but not necessarily with the current position they hold.
Nursing Informatics Workforce Survey- Results

Job Responsibilities

• Two-thirds (67 percent) of respondents indicated that they do not have a supervisory role and there are no individuals who report to them.

• The job responsibilities of the respondents continue to include systems implementation and development as well as system utilization and optimization, which was a new selection category added to this year’s survey.
Nursing Informatics Workforce Survey - Results

Barriers to Success

• There was a significant shift in the identified barriers to success as a nurse informaticist

• In the 2004 and 2007 surveys, respondents identified the lack of financial resources as the top barrier while in 2011 it was the lack of integration and interoperability

• 2014 survey, a lack of administrative support and a lack of staffing resources were the primary barriers faced
Salary Expectations

• Average salaries for Nurse Informaticists increased 42% in seven years — from $69,500 in 2004 to $98,702 in 2011.

• The average education level also is increasing. Those with master’s degrees and PhDs increased from 52% in 2007 to 56% in 2011.
## Organization Annual Gross Revenue

### Annual Gross Revenue Ranges

<table>
<thead>
<tr>
<th>Range</th>
<th>2011 Results</th>
<th>2014 Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $1 Million</td>
<td>9%</td>
<td>8%</td>
</tr>
<tr>
<td>$1 Million to $4 Million</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>$5 Million to $10 Million</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>$11 Million to $50 Million</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>$51 Million to $200 Million</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>$201 Million to $350 Million</td>
<td>13%</td>
<td>5%</td>
</tr>
<tr>
<td>$351 Million to $500 Million</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>$501 Million to $1 Billion</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>More than $1 Billion</td>
<td>19%</td>
<td>28%</td>
</tr>
<tr>
<td>Not applicable (e.g. military)</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Annual Gross Revenue ranges were changed for the 2011 survey.
### Geographic Region

<table>
<thead>
<tr>
<th>Region</th>
<th>2014 Results</th>
<th>2011 Results</th>
<th>2007 Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Atlantic</td>
<td>16%</td>
<td>14%</td>
<td>20%</td>
</tr>
<tr>
<td>Pacific</td>
<td>14%</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>East North Central</td>
<td>14%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>11%</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>West North Central</td>
<td>10%</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>West South Central</td>
<td>9%</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>New England</td>
<td>8%</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Mountain</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>East South Central</td>
<td>5%</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>Outside the United States</td>
<td>1%</td>
<td>3%</td>
<td>4%</td>
</tr>
</tbody>
</table>
Perceived Value in Holding Certification

- Personal Satisfaction: 41%
- Enhances Credibility/Marketability: 40%
- Validates Specialized Knowledge: 35%
- Enhances Confidence: 28%
- Competitive Advantage: 28%
- Indicates Attainment of Practice/Clinical Standard: 27%
- Professional Advancement: 23%
- Recognition from Peers: 21%
- Recognition from Employer: 20%
- Prestigious Image: 12%

2014 Results

New question for 2014 survey
Top Barrier to Certification

- Lack of time: 45%
- Lack of financial resources: 18%
- Lack of employer/executive support: 7%
- Not interested: 6%
- Hold another certification(s): 5%
- Cannot maintain CE requirements: 5%

New question for 2014 survey
### Department to Which You Report

<table>
<thead>
<tr>
<th>Department</th>
<th>2007 Results</th>
<th>2011 Results</th>
<th>2014 Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS/IT</td>
<td>n/a</td>
<td>32%</td>
<td>53%</td>
</tr>
<tr>
<td>Nursing</td>
<td>38%</td>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td>Administration</td>
<td>22%</td>
<td>21%</td>
<td>38%</td>
</tr>
<tr>
<td>Corporate Headquarters</td>
<td>10%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Quality Improvement</td>
<td>5%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Education Department</td>
<td>6%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Implementation</td>
<td>5%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Software Design</td>
<td>2%</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Selection options expanded for 2014 survey
Job Responsibilities

- System Optimization/Utilization: n/a (2014), n/a (2011), n/a (2007)
- Clinical Analytics: n/a (2014), n/a (2011), n/a (2007)
- Regulatory Initiatives: 16% (2014), n/a (2011), n/a (2007)

Selection options expanded for 2014 survey
Applications Currently Developing/Implementing

- Nursing Clinical Documentation
  - 2014 Results: 80%
  - 2011 Results: 77%
  - 2007 Results: 77%

- EMR/EHR
  - 2014 Results: 69%
  - 2011 Results: 69%
  - 2007 Results: 62%

- CPOE
  - 2014 Results: 46%
  - 2011 Results: 62%
  - 2007 Results: 60%

- Non-Nursing Clinical Documentation
  - 2014 Results: 59%
  - 2011 Results: 56%
  - 2007 Results: 52%

- Clinical Information Systems
  - 2014 Results: 58%
  - 2011 Results: 55%
  - 2007 Results: 51%

- eMAR
  - 2014 Results: 48%
  - 2011 Results: 47%
  - 2007 Results: 41%

- Bar Coded Medication Management
  - 2014 Results: 34%
  - 2011 Results: 36%
  - 2007 Results: 33%

- Point-of-Care CDS
  - 2014 Results: 36%
  - 2011 Results: 36%
  - 2007 Results: 36%

- Quality Improvement/Risk Management
  - 2014 Results: 30%
  - 2011 Results: 36%
  - 2007 Results: 36%
Top Barrier to Success as a Nurse Informaticist – Past 10 Years

- Organizational Strategic Plan: 12% (2014), 9% (2004)

Percent of respondents who rated option as the top/largest barrier for select responses appearing in both years.
Average Salary & Certification

- **Nursing Informatics Certification**: $121,830
- **No Certification Held**: $106,537

2014 Results
Average Salary & Education

- Post Graduate Degree: $107,215
- No Post Graduate Degree: $90,801

2014 Results