

# TRENDS IN CLINICAL INFORMATICS: A NURSING PERSPECTIVE

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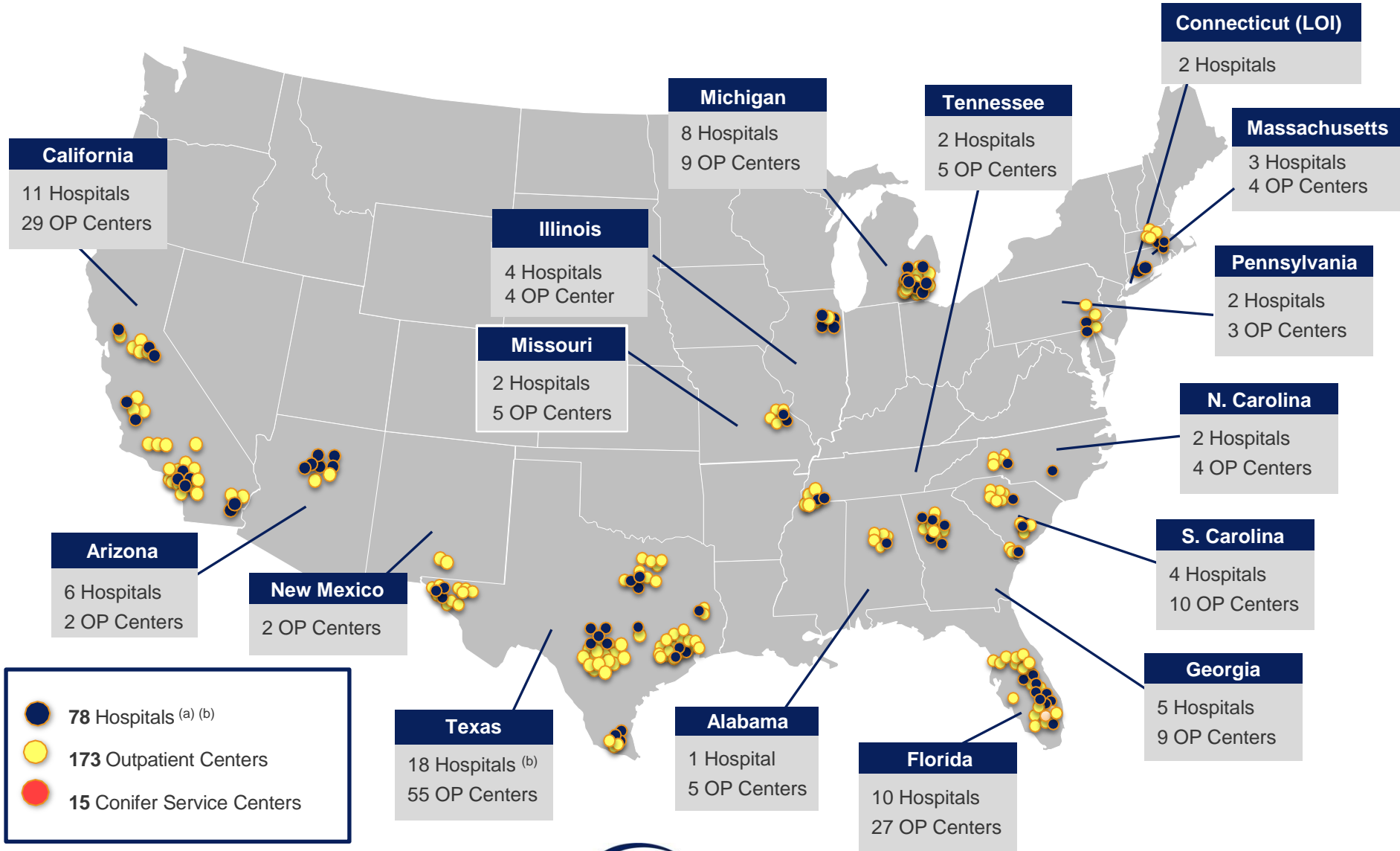
VP of Applied Clinical Informatics and Chief Clinical Informaticist

Tenet Healthcare Corporation

ONC Health Information Technology Standards Committee Member

Modern Healthcare Top 25 Clinical Informaticist 2010, 2011 & 2012

# Tenet spans 16 states in many settings



(a) Excludes 2 Connecticut hospitals currently under LOI

(b) Includes the Resolute Health Hospital and Wellness Campus under construction in New Braunfels, Texas

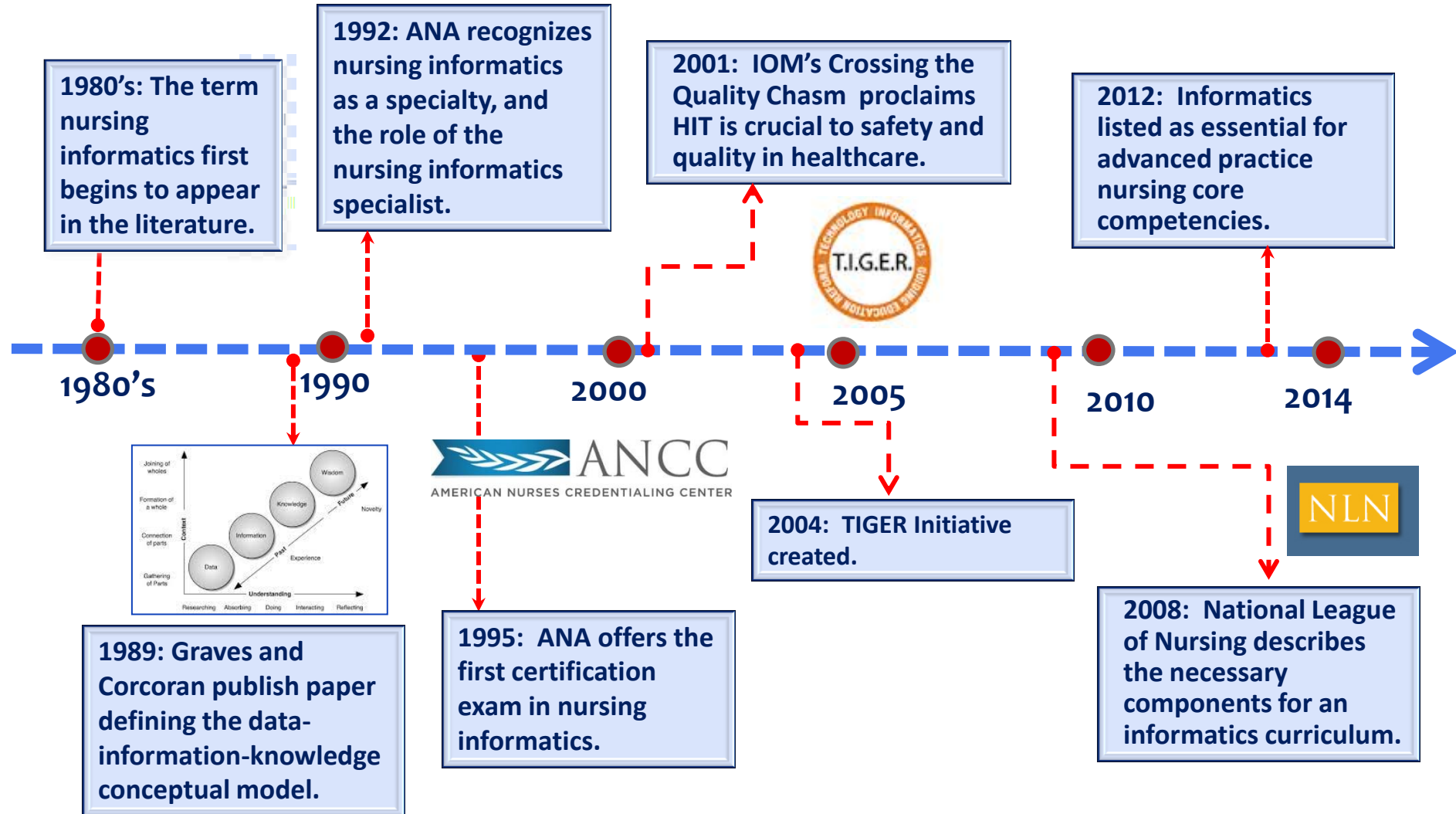


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# Session Objectives

- 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



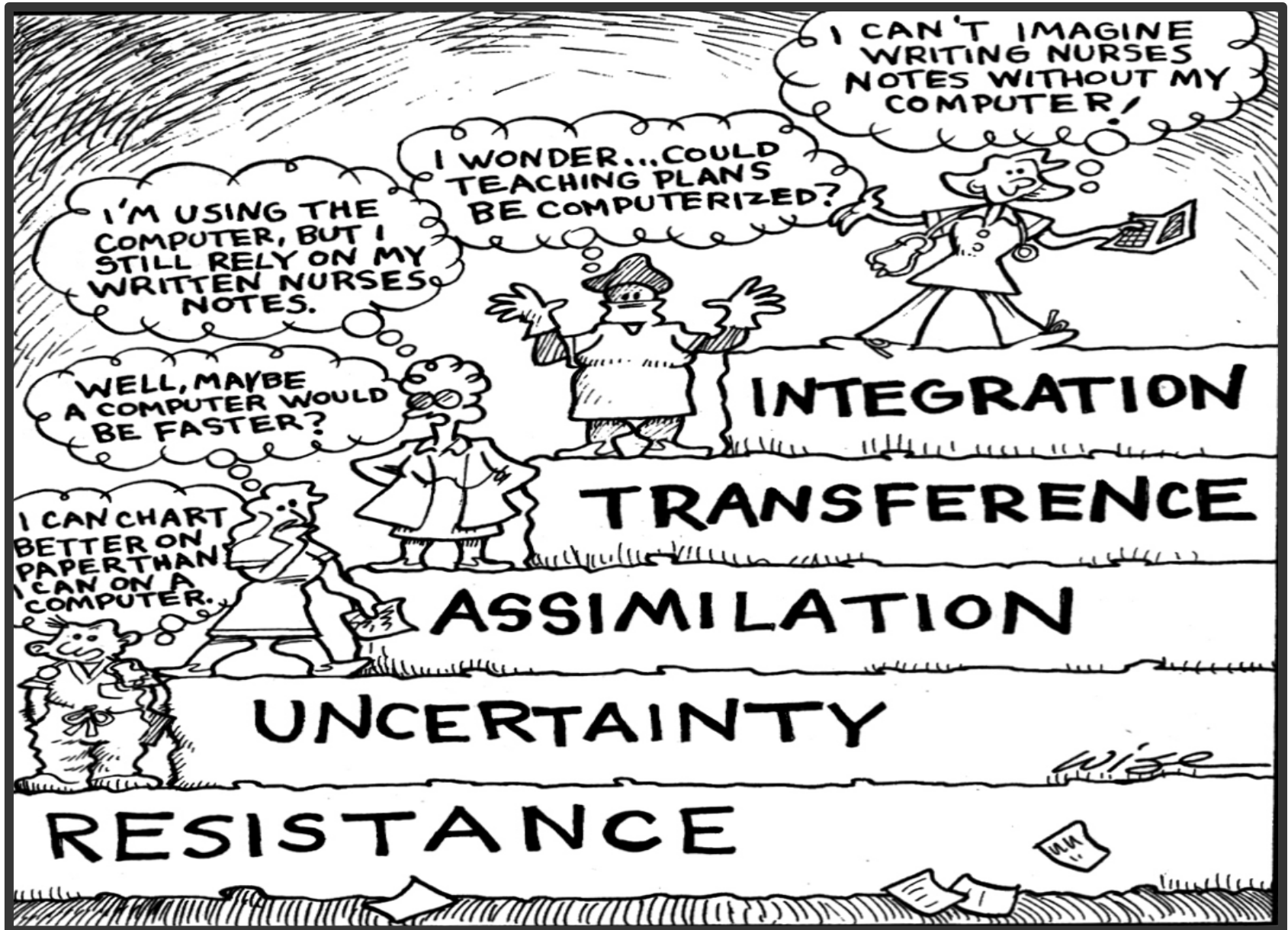
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# ***Nursing Informatics Defined***

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*





# The changing role of nurses and enabling technology...

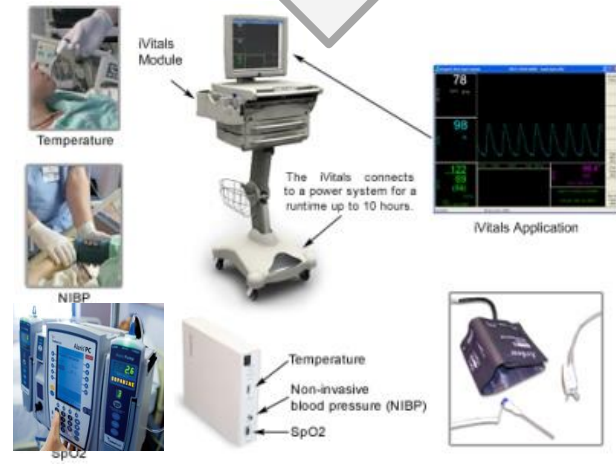
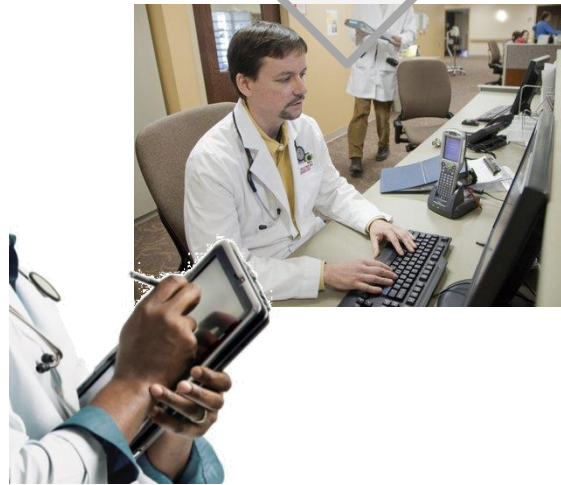
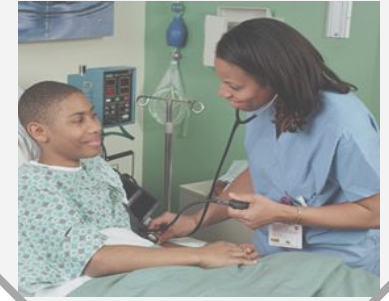
Charting



Ordering



Biomedical Devices



...has intensified the need for formalized clinical informatics leaders

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# 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

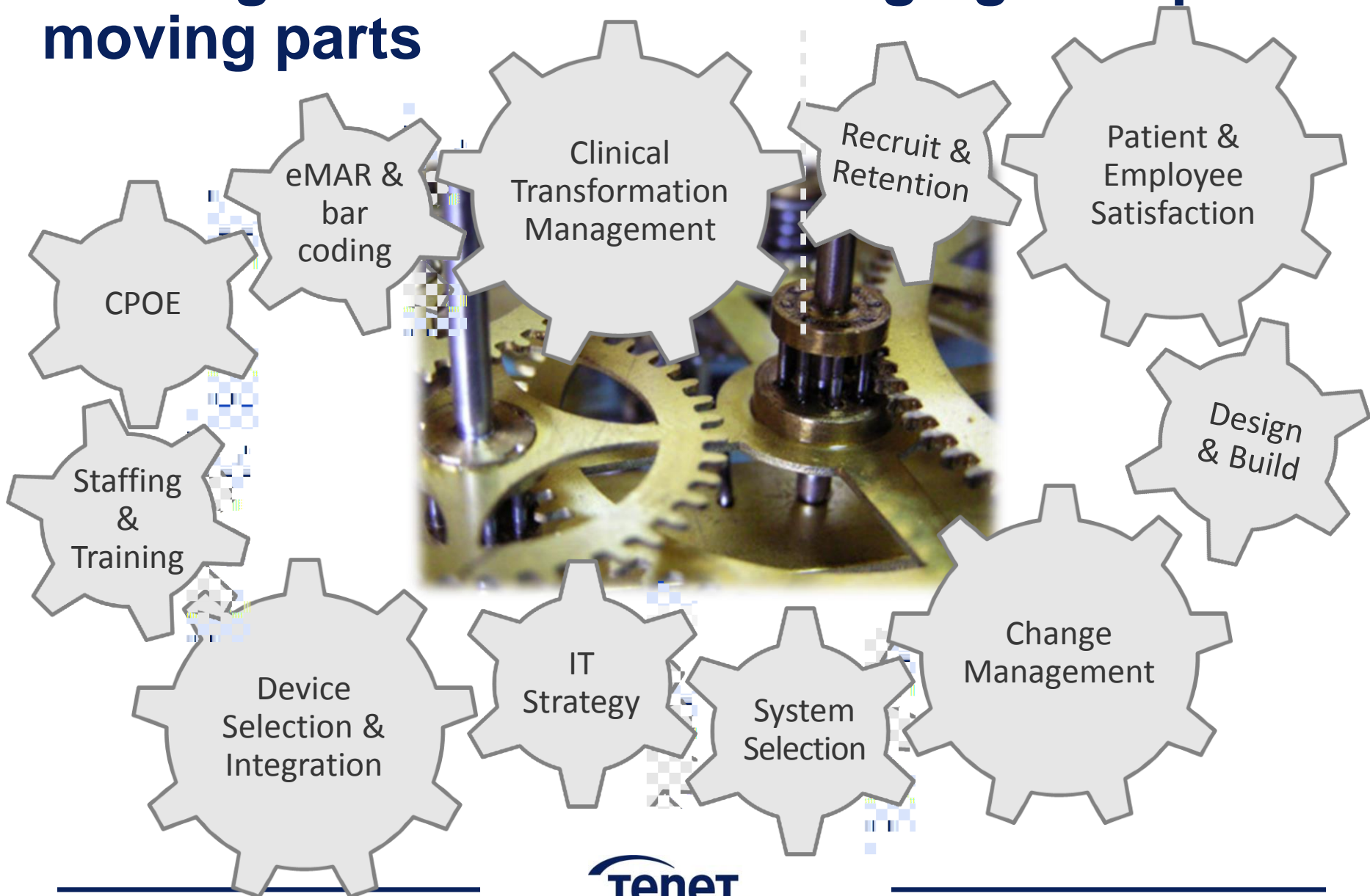
- Direct clinical specialties in preparing for new system functionality through workflow, policies/procedures, education, communication
- Analyze data to optimize system use and patient outcomes

## Provide Thought Leadership

- Develop clinical system strategies with hospital leaders



# Nursing Informaticists: managing multiple moving parts



# Clinical Informaticists

## ROLE



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

## SALARY



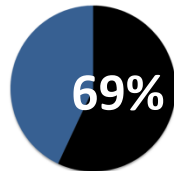
Average 2014 Salary \$121,830 (certified)

Average 2011 Salary \$98,703

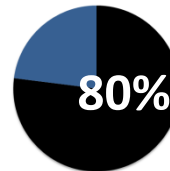
Up 17% from 2007

Up 42% from 2004

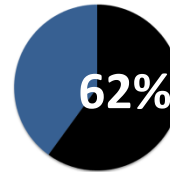
## PROJECTS



Implementing new EHRs

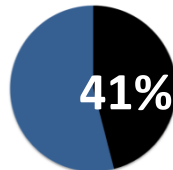


Clinical documentation for EHRs and Meaningful Use

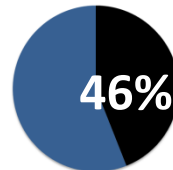


CPOE

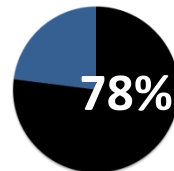
## DEMOGRAPHICS



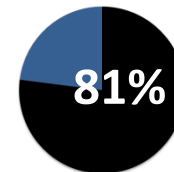
16+ years of clinical experience



Certified



Hospital Based



Liked their job

# 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



Organizational  
Change

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# A Glimpse of Clinical Informatics at Tenet



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# Clinical Informatics Structure at Tenet

- Three levels of Clinical Informatics (CI)



<sup>1</sup>Direct report to hospital Chief Nursing Officer

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# 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

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# 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



2012 Academy awarded 18.5 nursing continuing education credits

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# Behavior Profile Study



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# Why Behavioral Profiling?

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# 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

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# How was the profile developed?

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# 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

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# 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

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# **What is the behavioral DNA of effective clinical informatics leaders?**


# Interpretation

**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.



Unrealistic Realistic

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

**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

## Realistic Thinking

Weight = 15.0

A candidate in the target range approaches problem solving with a collection of reliable facts and figures.





## #2 – Organizational Structure

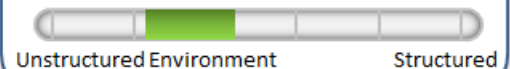
The effective Clinical Informatics Leader:

- 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

### Organizational Structure

Weight = 11.6

A candidate in the target range prefers an environment where there are no preset rules or formalized chain of command.



# #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

## Acceptance of Authority

Weight = 11.6

A candidate in this range is respectful of authority but will challenge it when perceived for the greater good.



# #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

## Conscientiousness

Weight = 6.2

A candidate in the target range will try to balance quality of work with timelines.



# #7 – Analytical

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

## Analytical

Weight = 5.9

A candidate in the target range sees the value of a systematic approach to problem solving, but, at times, prefers a broader perspective.



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# #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

## People Orientation

Weight = 4.5

A candidate in the target range has a tolerant nature and is very accepting of others' viewpoints.



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# How can you use the profile?



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# 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

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# The Future

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# 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

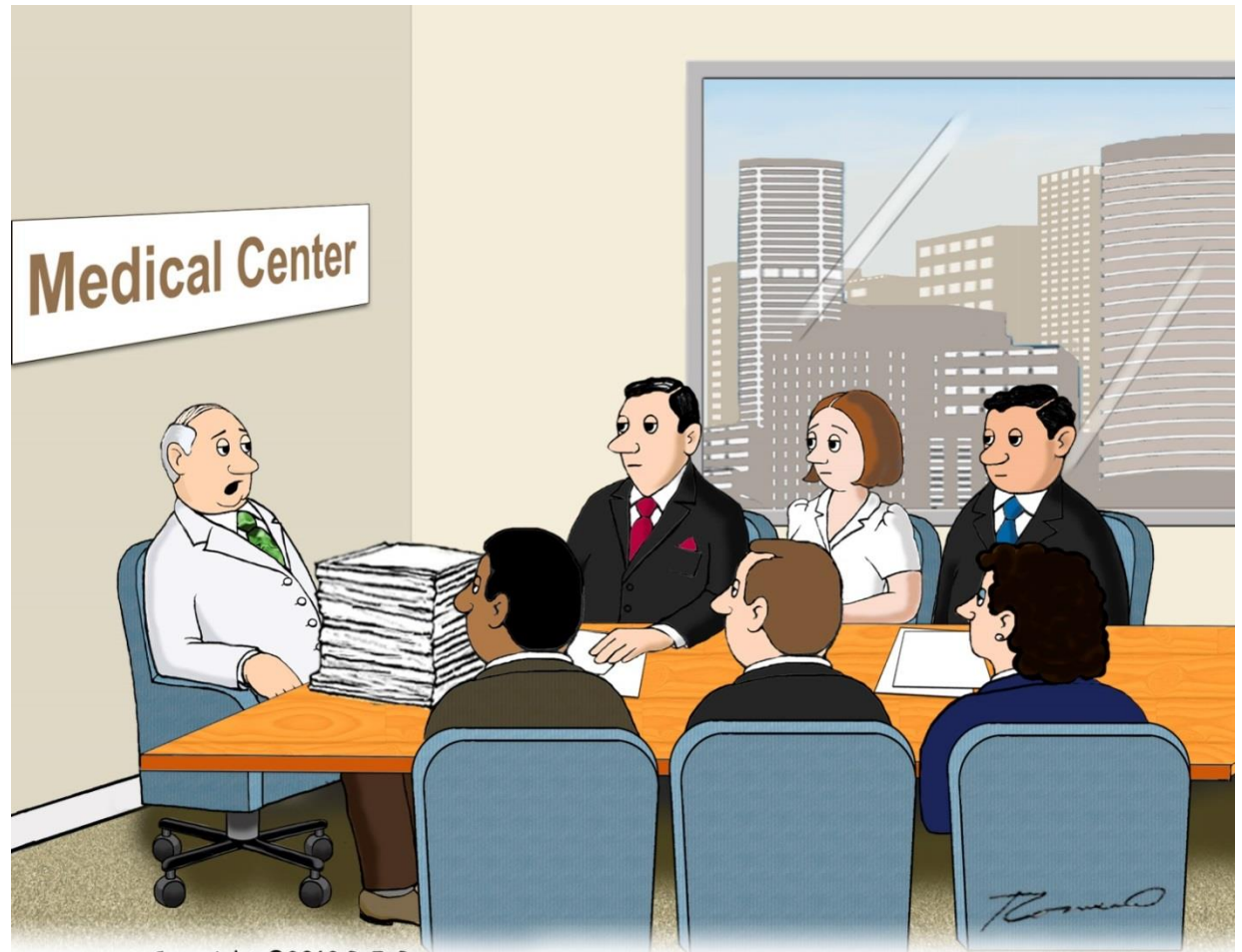
- Certified EMR
- Stage 1, 2 Data Capture
- Attestation
- MU Program Management
- Metrics Monitoring
- Stage 3 Planning
- Stage 3 Execution

### 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



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"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'."

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# 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.



**Personal health records**



Share accountability for the care of patient populations with chronic diseases



“That’s not what it says on the Web.”

# 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 post-operative tracking of indwelling urinary catheters and daily assessment of the need for continued use.

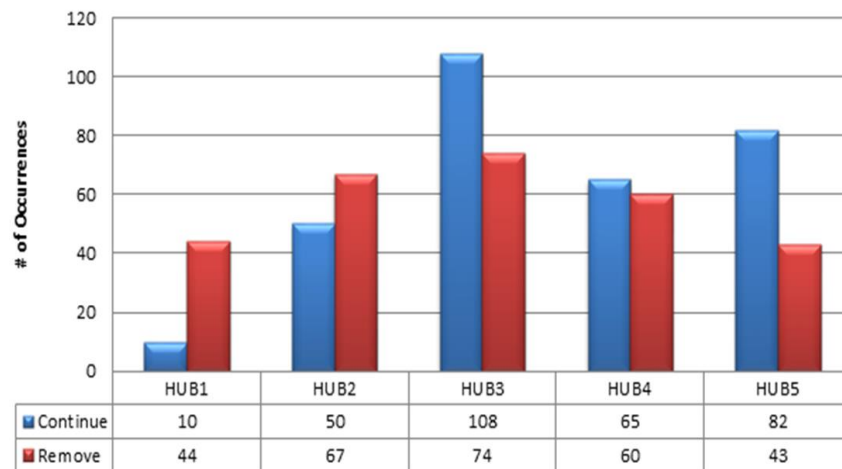
### Solution:

- 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 post-operative patient with a decision to remove the catheter or continue if indicated.**
- Compliance with Core Measures has improved.

Foley Physician SCIP Alert Outcomes All HUBS  
03/22/2014-03/28/2014



The evidence:

Wald HL, Ma A, Bratzler DW, Kramer AM. [Indwelling urinary catheter use in the postoperative period: analysis of the national surgical infection prevention project data](#). *Arch Surg*. 2008;43(6):551-557.

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: Integrate, Connect, Collaborate and Share

## Connecting the Patients and Caregivers



**Consumer/ Patient**

Population Management  
Diabetes, Heart Failure, Asthma

Physician Offices



Hospitals

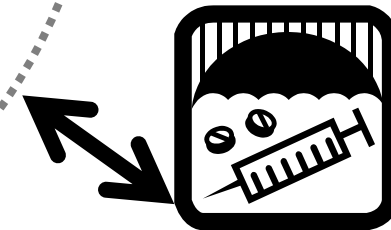
IDNs



Consumer Health Alerts and Reminders

Care Management, Referrals  
Orders, Results, Clinical Summaries  
Prescriptions

Manage costs and utilization

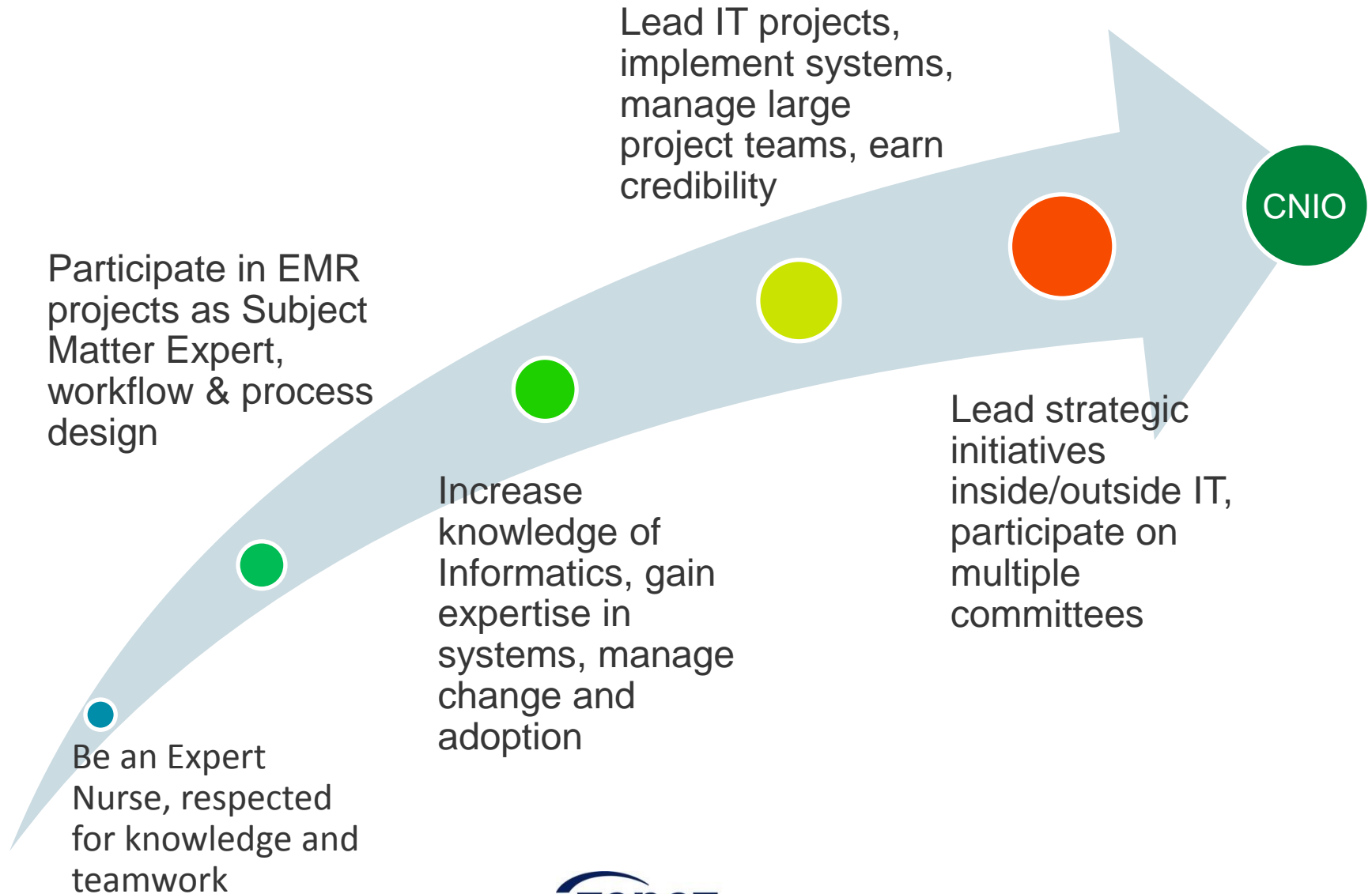


Payers





# Journey to CNIO



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# Nursing has evolved significantly...



‘The Hallway’



‘The Boardroom’



‘The White House’

...Today, nursing Informaticists voices must be heard.

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# 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.



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# Questions



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# Contact Information

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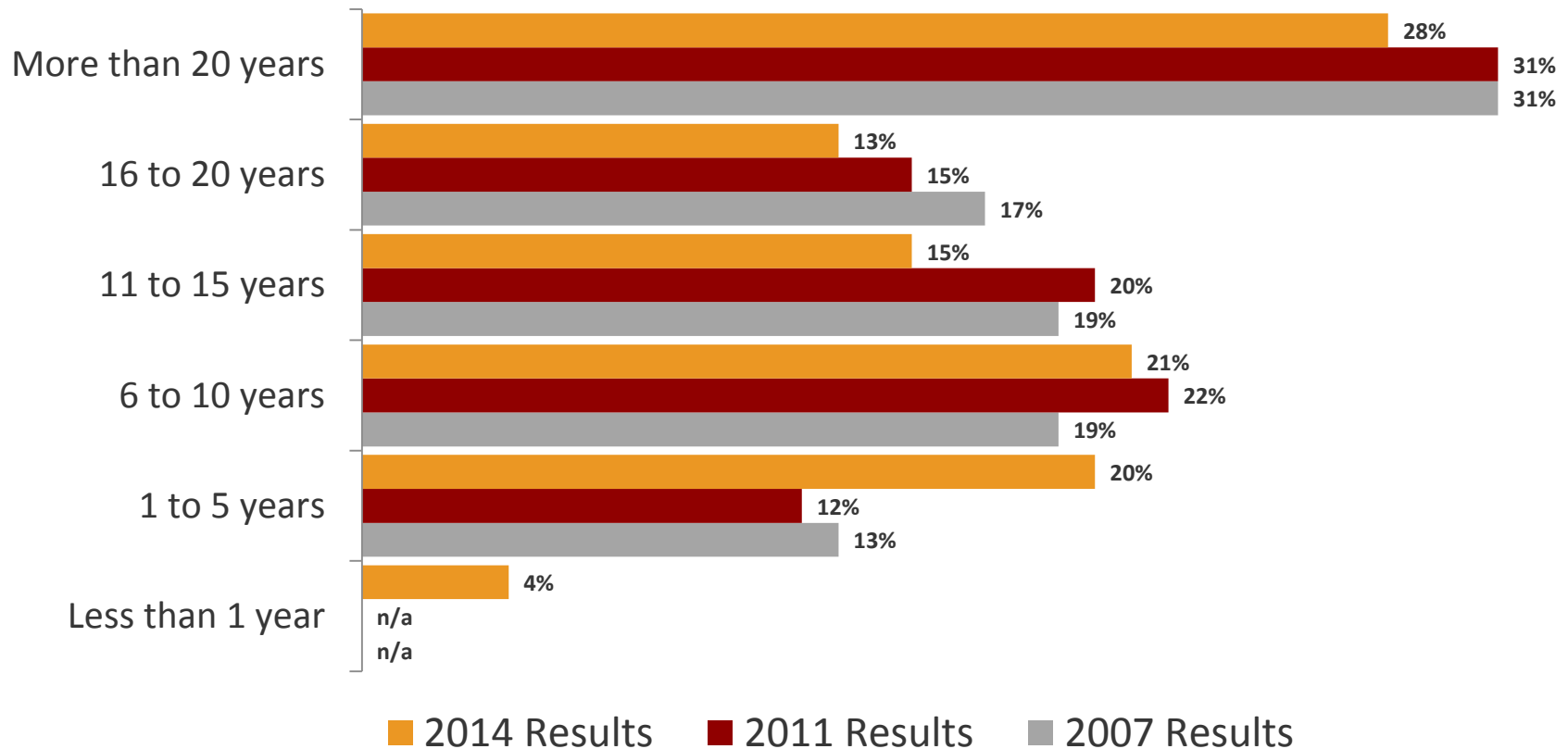
# Appendix

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# The Clinical Informaticist:

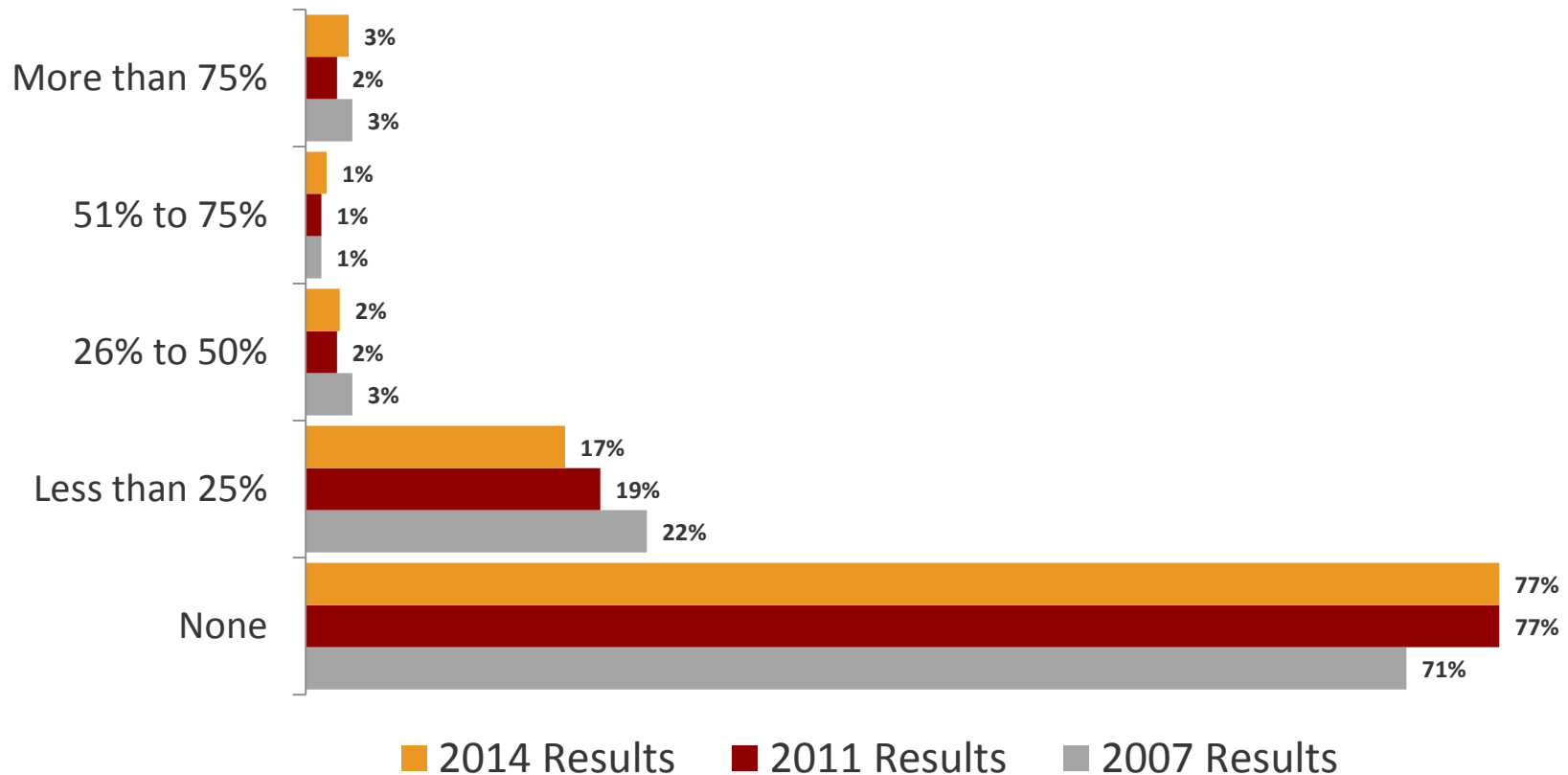
## HIMSS 2014 Nurse Informatics Workforce Survey Results

# Years of Clinical Experience





# Percent of Time Spent on Clinical Activities



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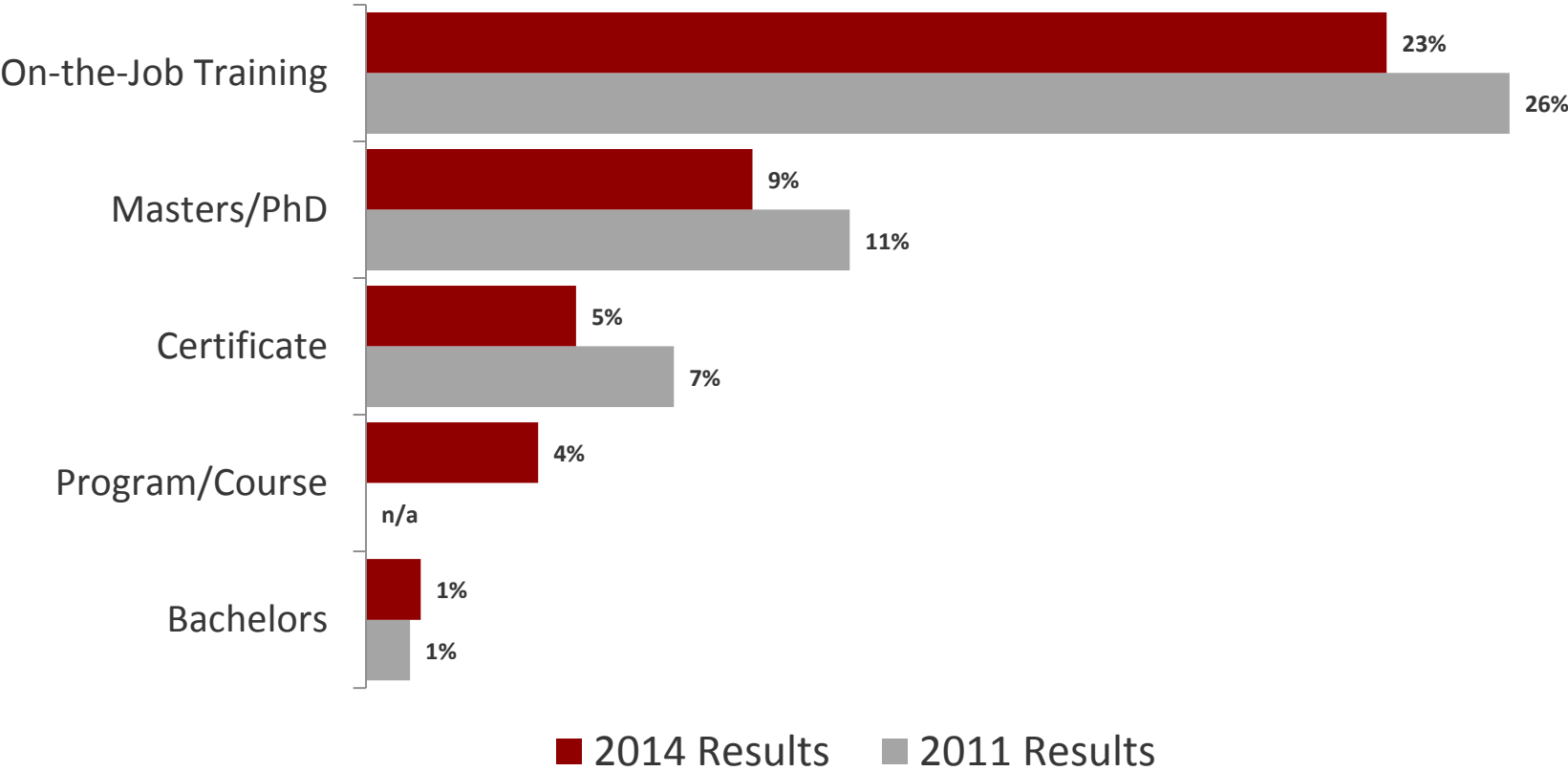
# HIMSS 2014 Nursing Informatics Workforce Survey

## Major Trends



- 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 from acute care to coordinated care and from large IT hardware to cloud technology and personal devices. (HealthCare It News February 23, 2014).

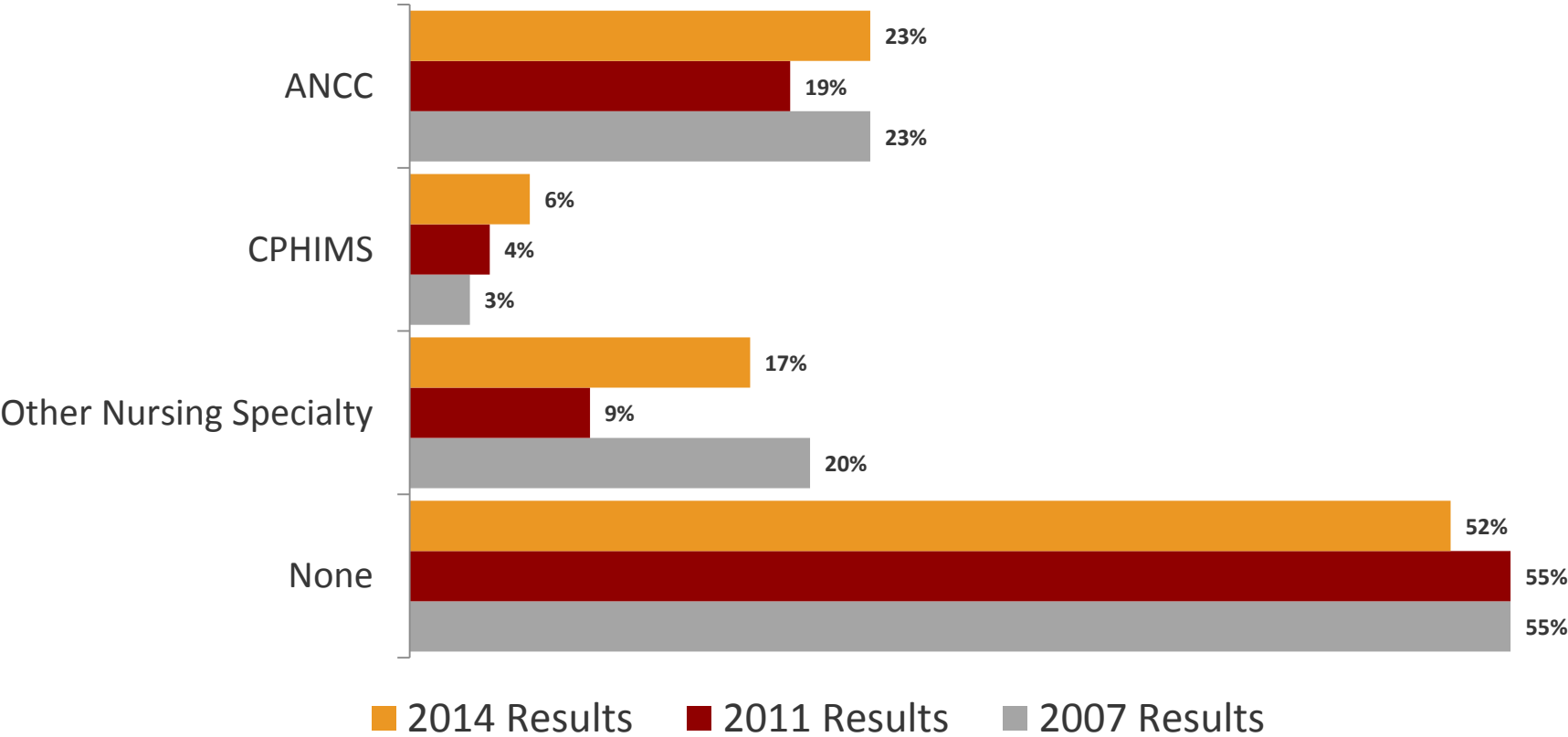
# Current Informatics Education/Training



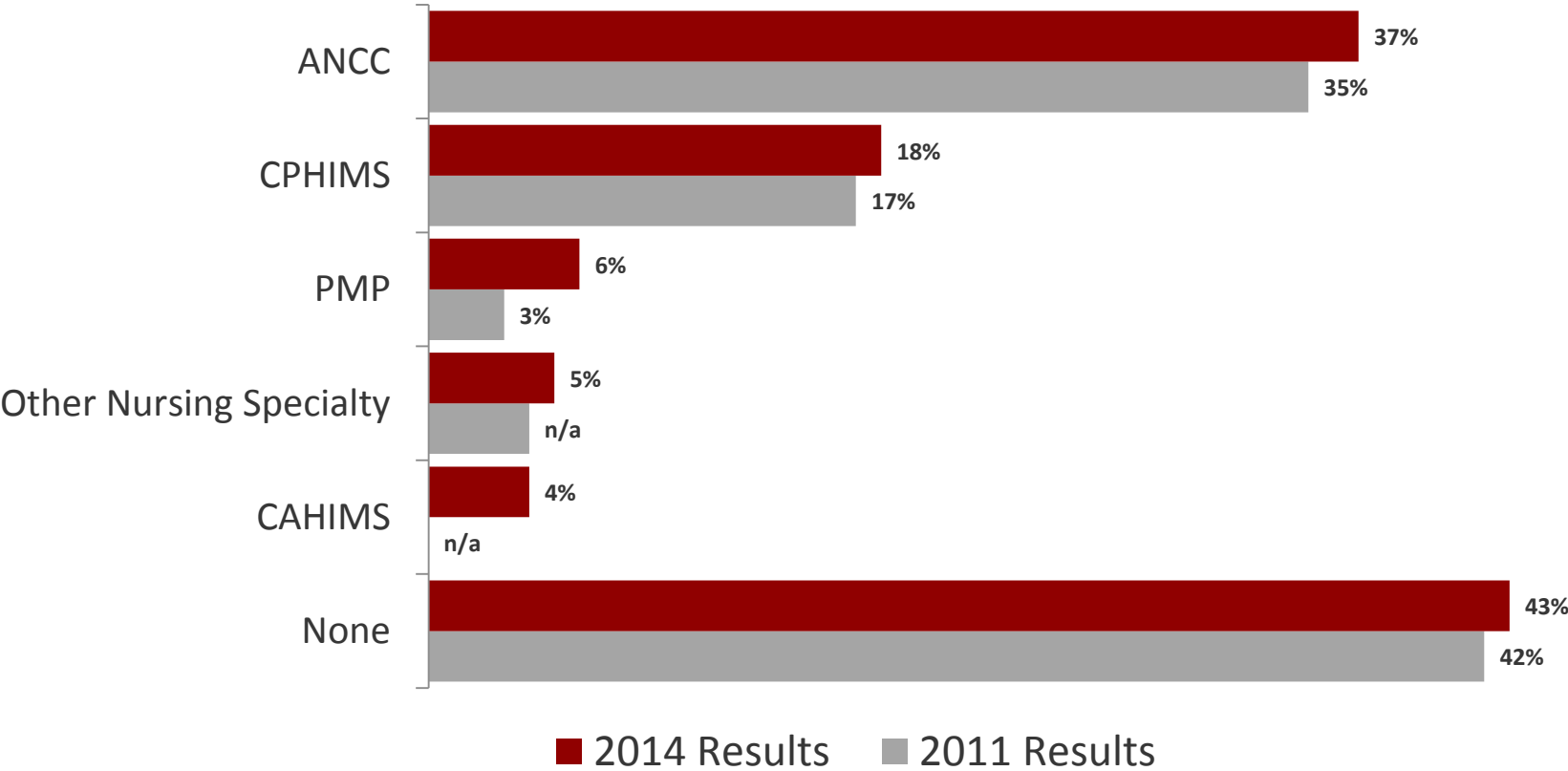
Survey question was revised in 2011 and not comparable to 2007 survey



# Certification Held



# Nursing Informatics Certification Pursuing



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



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# 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.

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# 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.

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# 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

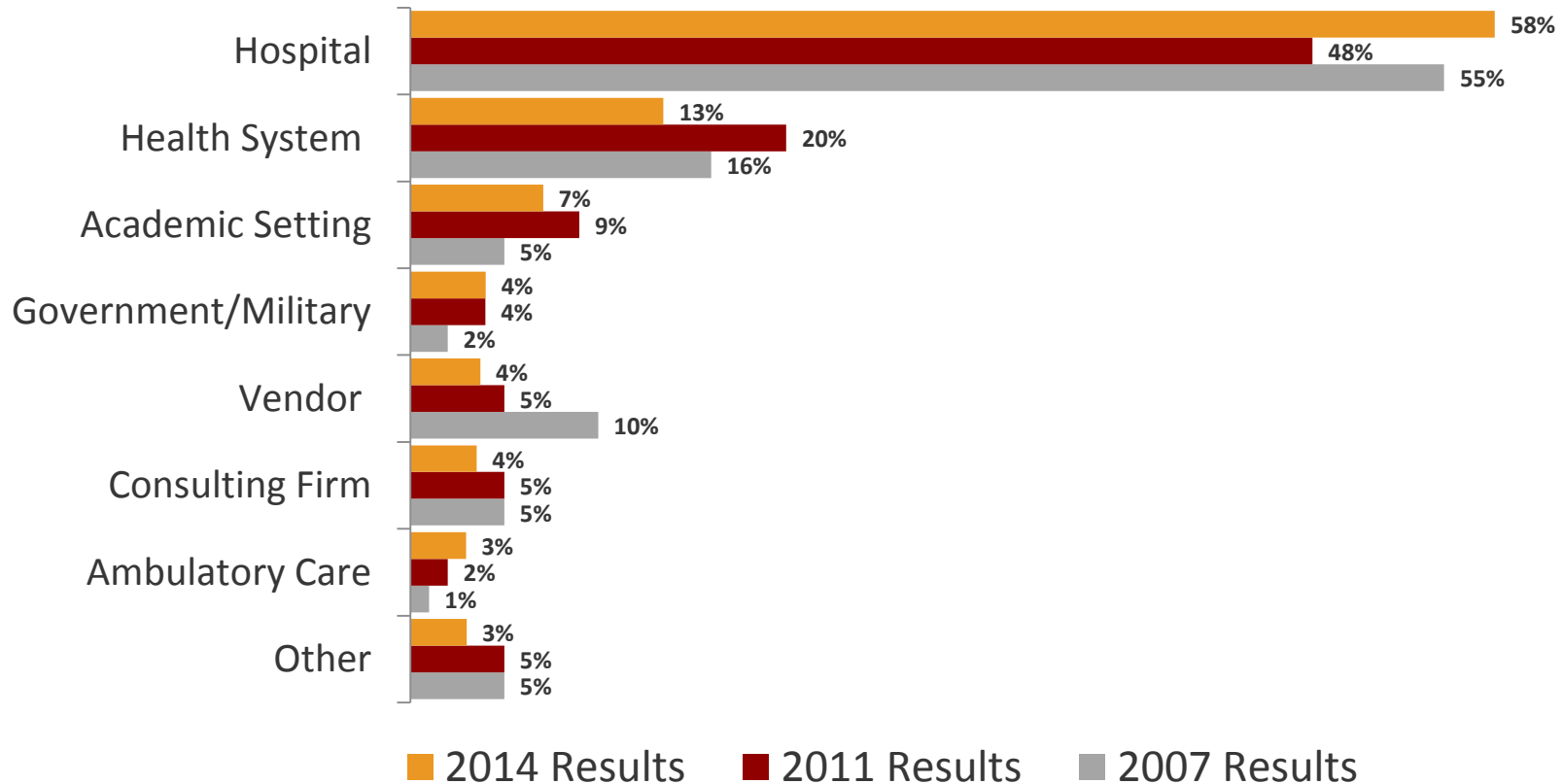


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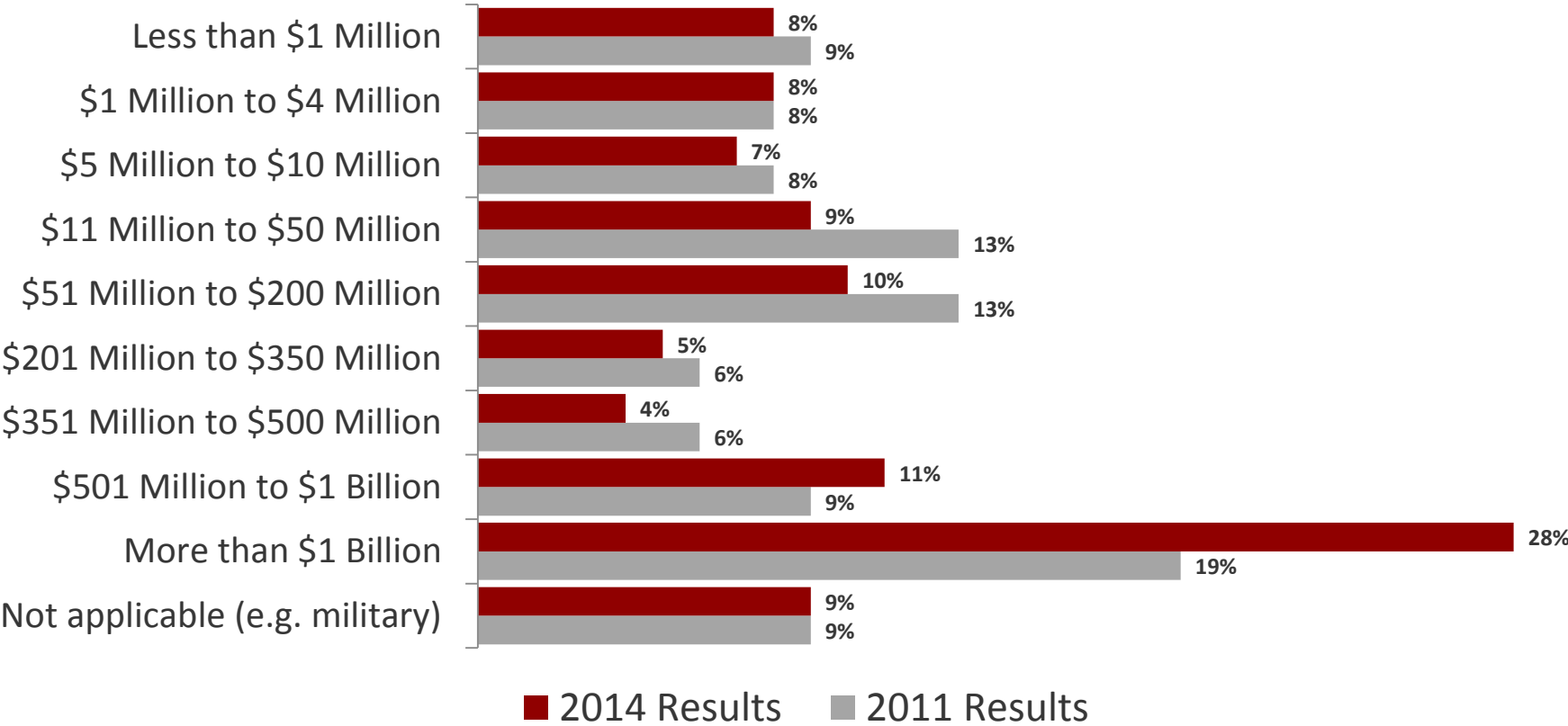
# Salary Expectations

- 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.

# Workplace



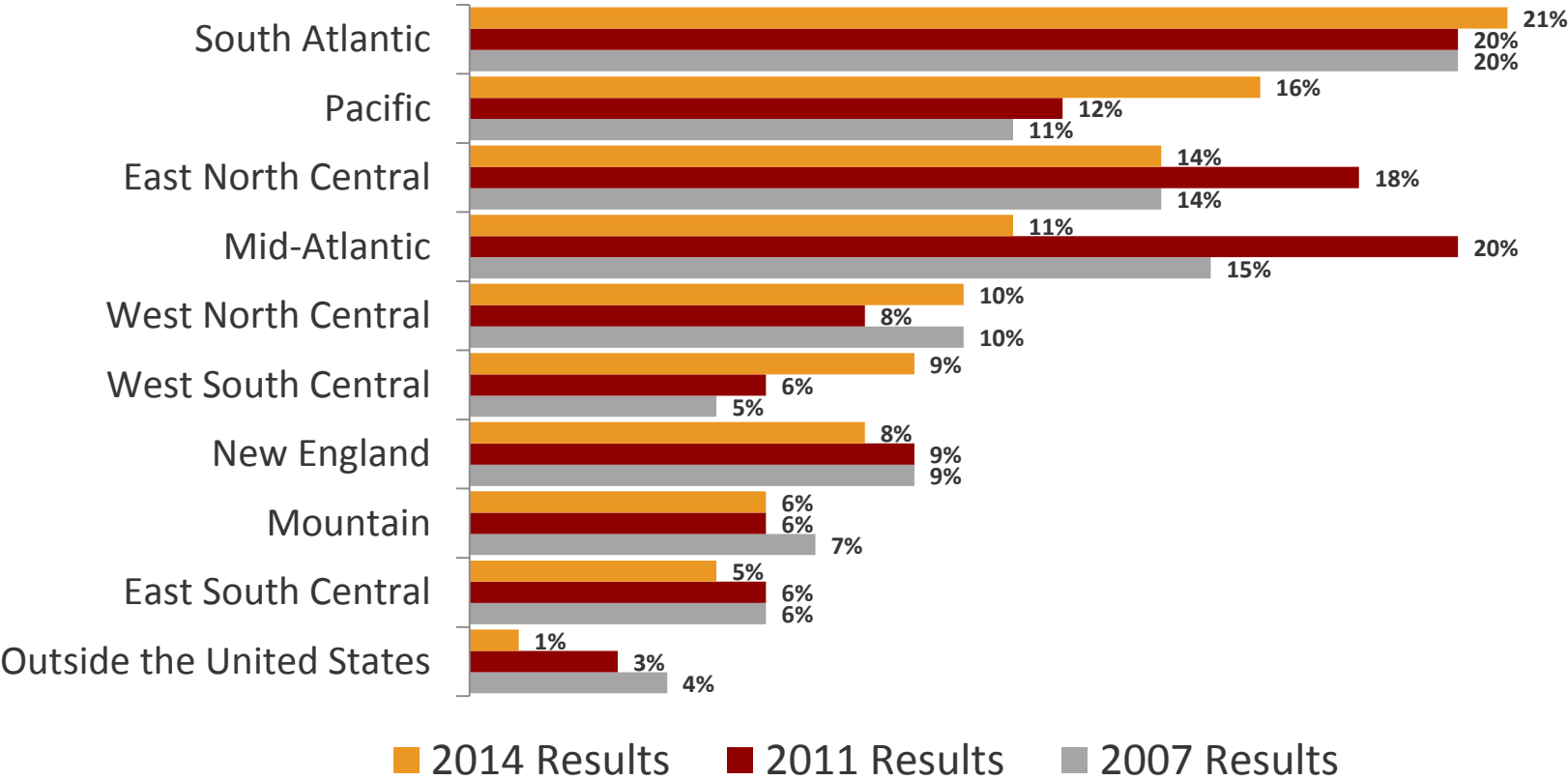
# Organization Annual Gross Revenue



Annual Gross Revenue ranges were changed for the 2011 survey



# Geographic Region



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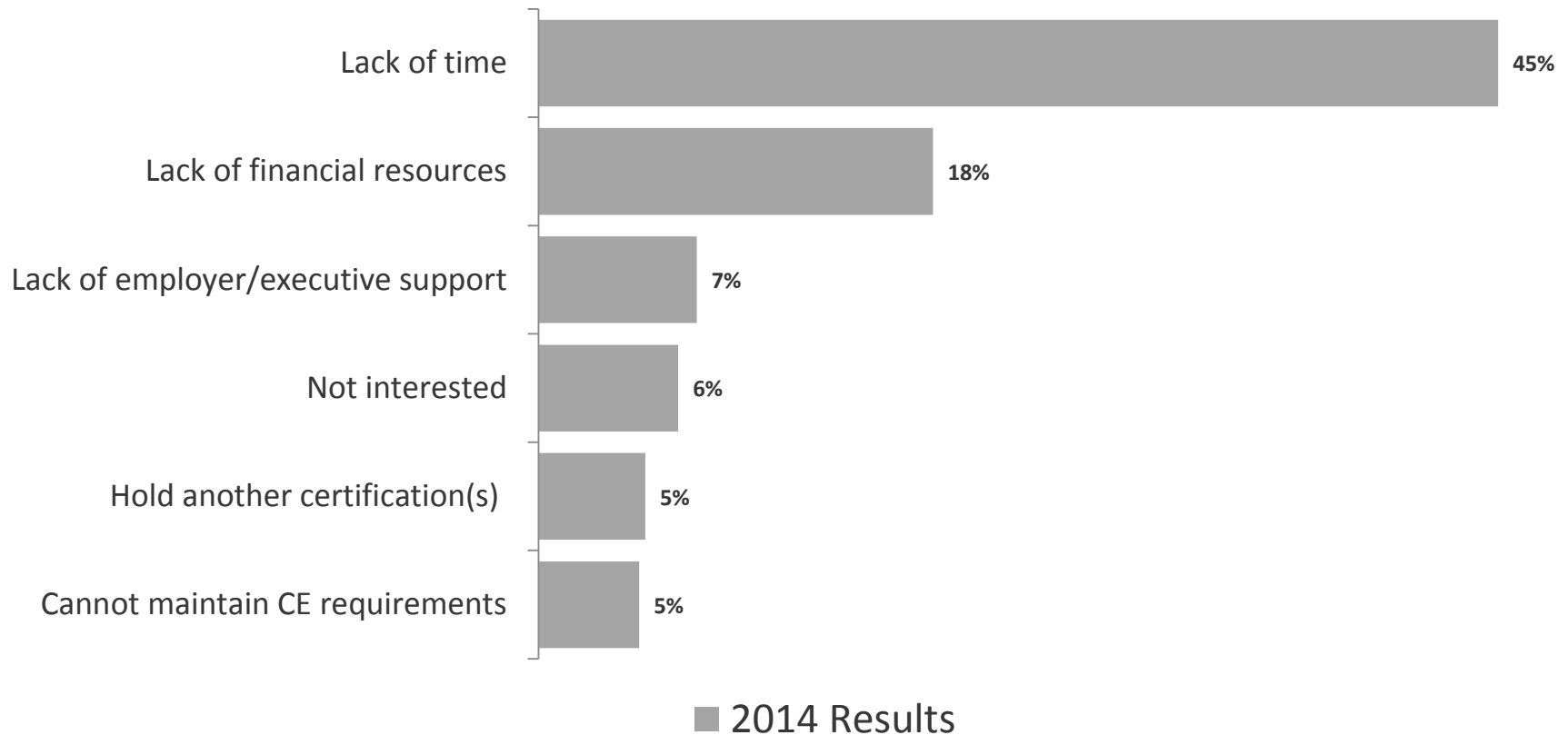
# Perceived Value in Holding Certification



New question for 2014 survey

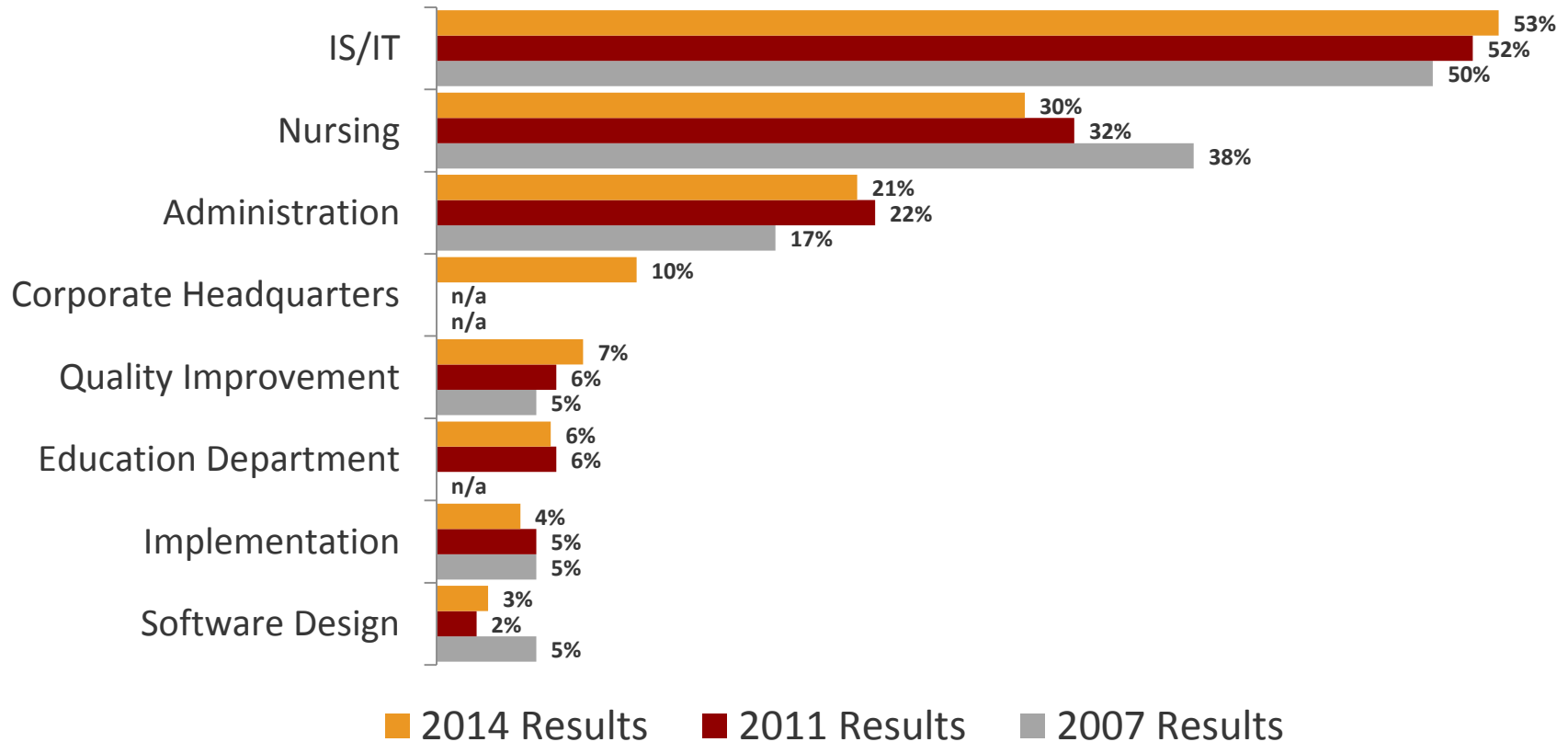
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# Top Barrier to Certification



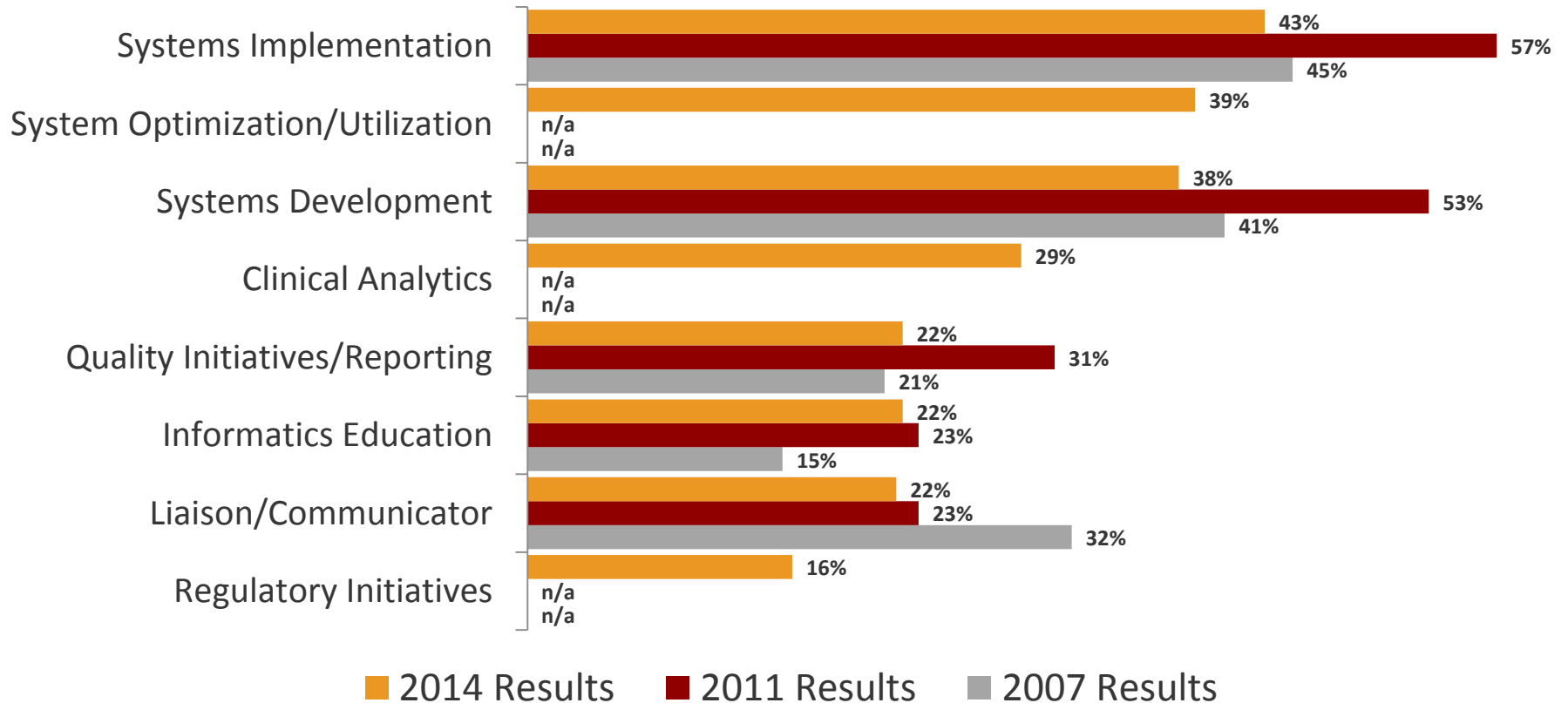
New question for 2014 survey

# Department to Which You Report



Selection options expanded for 2014 survey

# Job Responsibilities

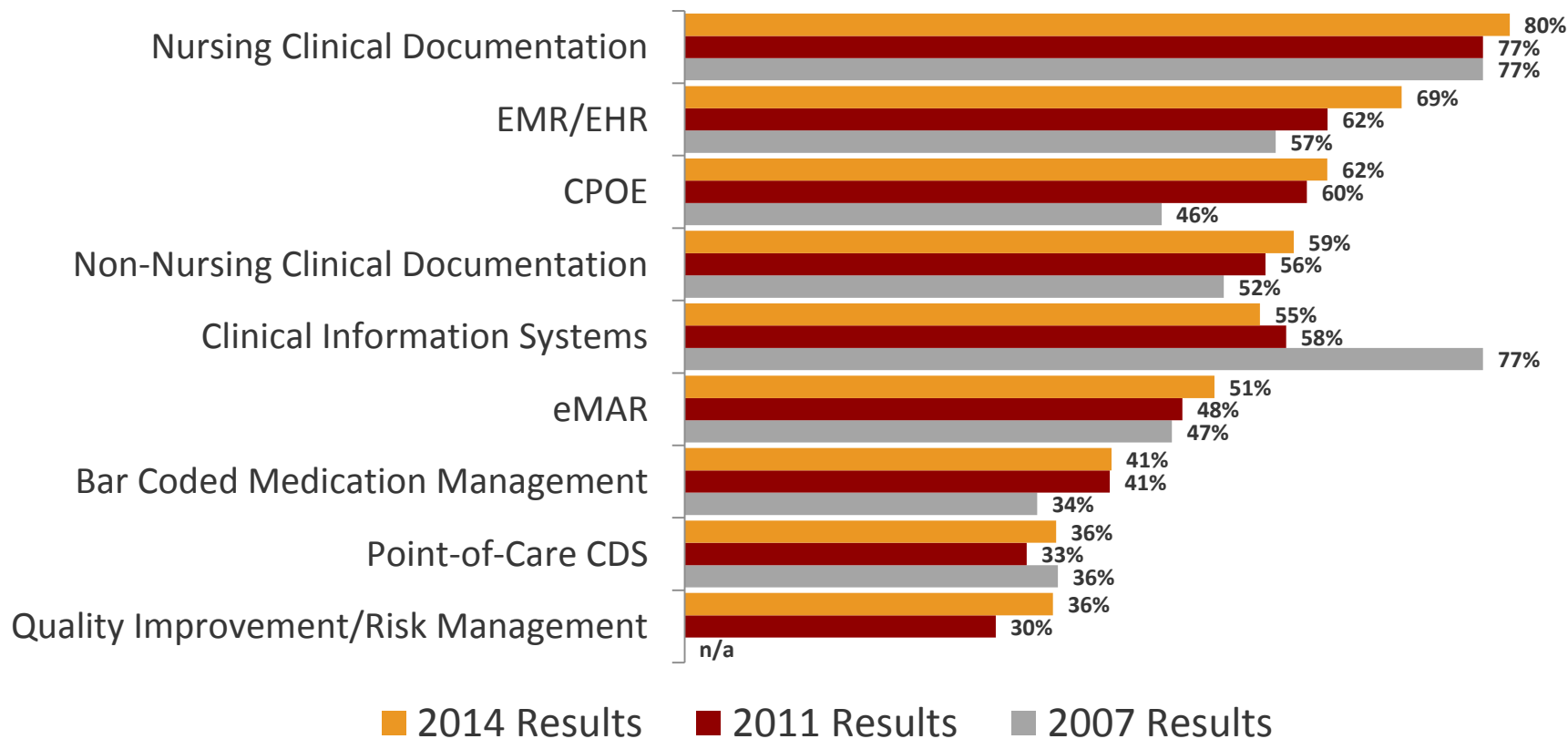


Selection options expanded for 2014 survey

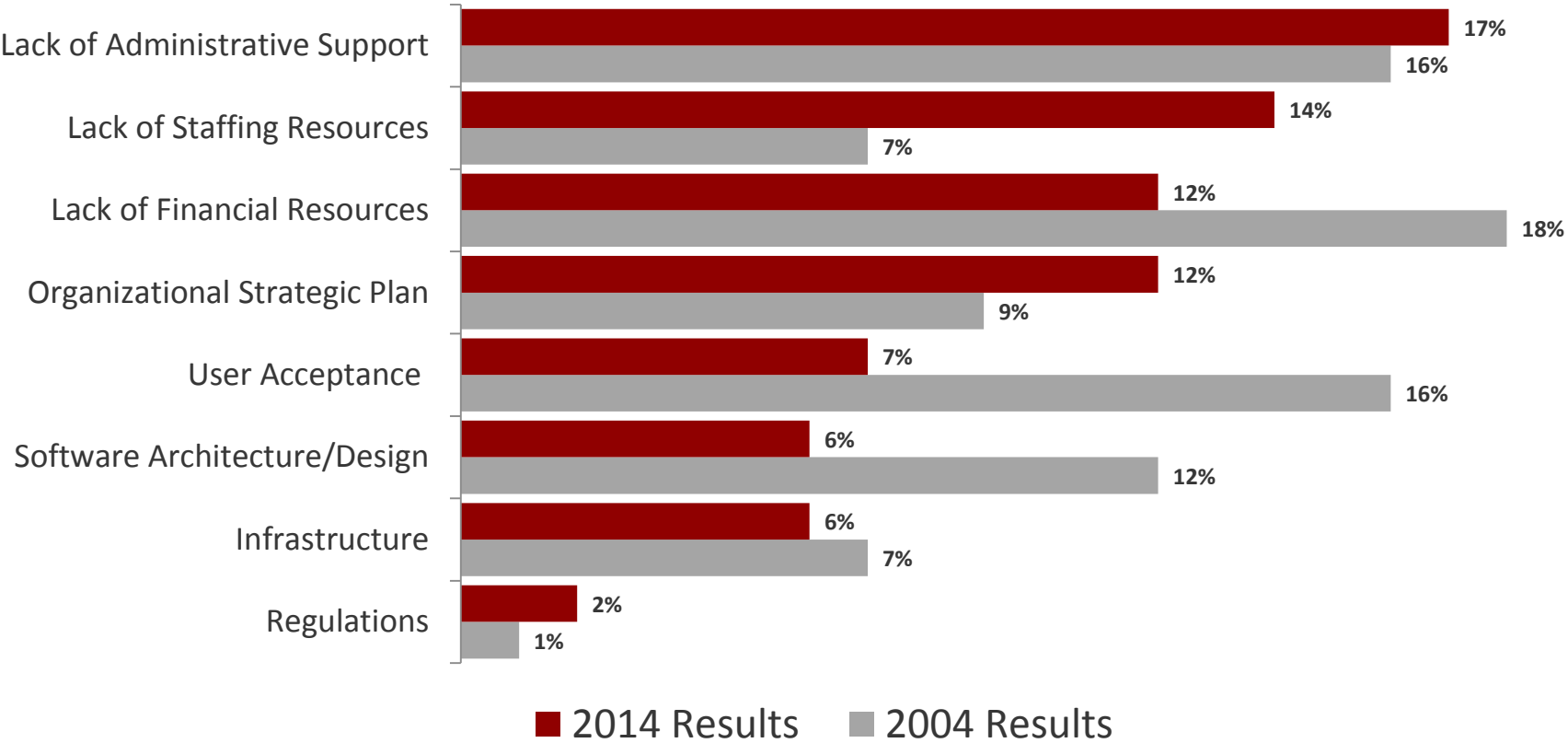




# Applications Currently Developing/Implementing



# Top Barrier to Success as a Nurse Informaticist – Past 10 Years

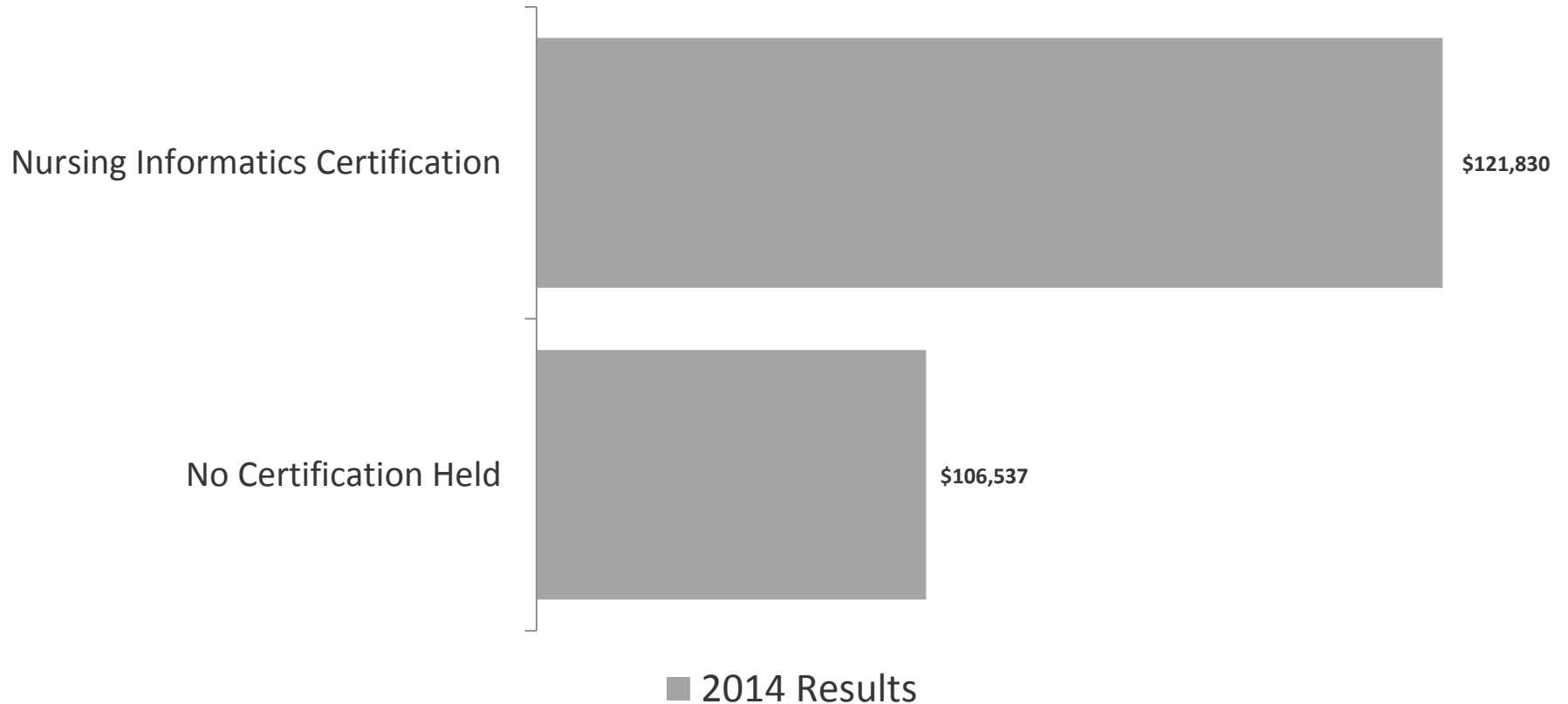


Percent of respondents who rated option as the top/largest barrier for select responses appearing in both years



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# Average Salary & Certification



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# Average Salary & Education

