

Nursing Informatics Approach Towards Electronic Health Record Training for Safe Patient Documentation

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Introduction:

Hamad Medical Corporation (HMC) is the National Healthcare provider of the State of Qatar, managing specialty hospitals, ambulance services, home healthcare services, pediatric emergency centers and walk-in-clinics across the country. The Corporation started implementing Clinical Information System in its healthcare facilities since 2014.

The fundamental responsibility of preparing nurses to embrace technological advancement in HMC lies with Nursing Informatics Department. To surpass major challenge of Clinical Information System conversion, the department adopted a multi-step training program. The entire training journey consisted innovative methodology to establish effective and error-free patient health documentation; the steps are summarized in poster entitled "Nursing Informatics Approach towards Electronic Health Record training for safe patient documentation".

Focus Group:

HMC Nursing Department constituting almost 8000 nurses will benefit from the project. As purposive sample, data of Heart Hospital having 572 nurses, which had CIS implemented on February 20, 2015 is taken as the focus group.

Problem:

Nurses are the biggest workforce which makes them major user of Clinical Information System. The cardinal share of success of CIS implementation depends on strong computer skills of nurses. Prior to designing of CIS training program, Nursing Informatics Department encountered following challenges:

- Tool to quantify computer skills of nurses was highly required
- Comprehensive database to reflect computer skills of nurses was not available
- There was no pre-set criteria to identify nursing CIS super users
- Plans to audit EHR documentation of nurses post CIS go-live was unclear.

Aims :

- Improve computer proficiency of nurses
- Increase time of direct nursing care, by decreasing time for documentation
- Documentation compliance to Joint Commission International standards
- Enhancing patient safety by eliminating medical errors caused by improper documentation

Data Collection :

- Windows Skills Assessment (WSA) tool was developed by Nursing Informatics Department to quantify computer knowledge of nurses. The assessment consisted of two parts- first part included different variables to analyze relationship of nurses to computer knowledge, and the second part had questions to determine their computer literacy.
- Each nurse was assessed and scored based on 4 skill matrixes of Windows Skills Assessment-High, Average, Low and Very Low (unclassified).
- 63% of total Heart Hospital nurses were categorized as high, while 34% as average, 2% as low and 1% were placed in very low (unclassified) computer skill matrix category.
- Trainings plans for each of score matrix category was drafted and problem analysis, recommendations and strategies were discussed with nursing administration through periodic meetings and e-mails.

Interventions:

- Developed CIS training journey of nurses with clear timelines, approaches and milestones (Figure 1)
- Created awareness about CIS through unit meetings, presentations, animated videos and emails.
- Delivered Basic Computer Orientation Course to 175 nurses who scored below average in WSA. The course was designed to provide essential knowledge on functionality of computer and Microsoft Windows.
- 40 nurses ranked "highest" on WSA score matrix were recommended to be CIS superusers who were focal point of contact for end-users during trainings and go-live support.
- Provided multifaceted trainings on CIS solutions, medical and end-user device integration, and workflow familiarization.
- Conducted practice skills lab for 346 nurses with role-specific simulated scenarios tailored to nursing units' actual workflow.

- Developed and uploaded workflow videos, solution specific brochures, interactive e-learning and animated workflows on Corporate Intranet which served as handy online reference material to nurses.
- Provided uninterrupted on-floor training and hands-on support to nurses for 2 weeks during CIS go-live.
- Monitored post CIS go-live EHR documentation of nurses (with special emphasis on staff who received Basic Computer Orientation Course) on Joint Commission International standards.

Demonstration of Improvement:

- Nurses who received Basic Computer Orientation Course were reassessed on Windows Skills Assessment after a gap of two months. Average scores of participants increased from 56% to 93%. (Figure 2)
- After conducting Basic Computer Orientation Course and reassessment of Windows Skills Assessment, EHR documentation of staffs who initially scored below average in WSA was audited using random sampling. On JCI standards. The result reflected competent usage of EHR and safe patient documentation. (Figure 6)
- The average rating of staff satisfaction on training provided by NI was 4.67 when evaluated on Likert scale of 1-5 (Figure 3)

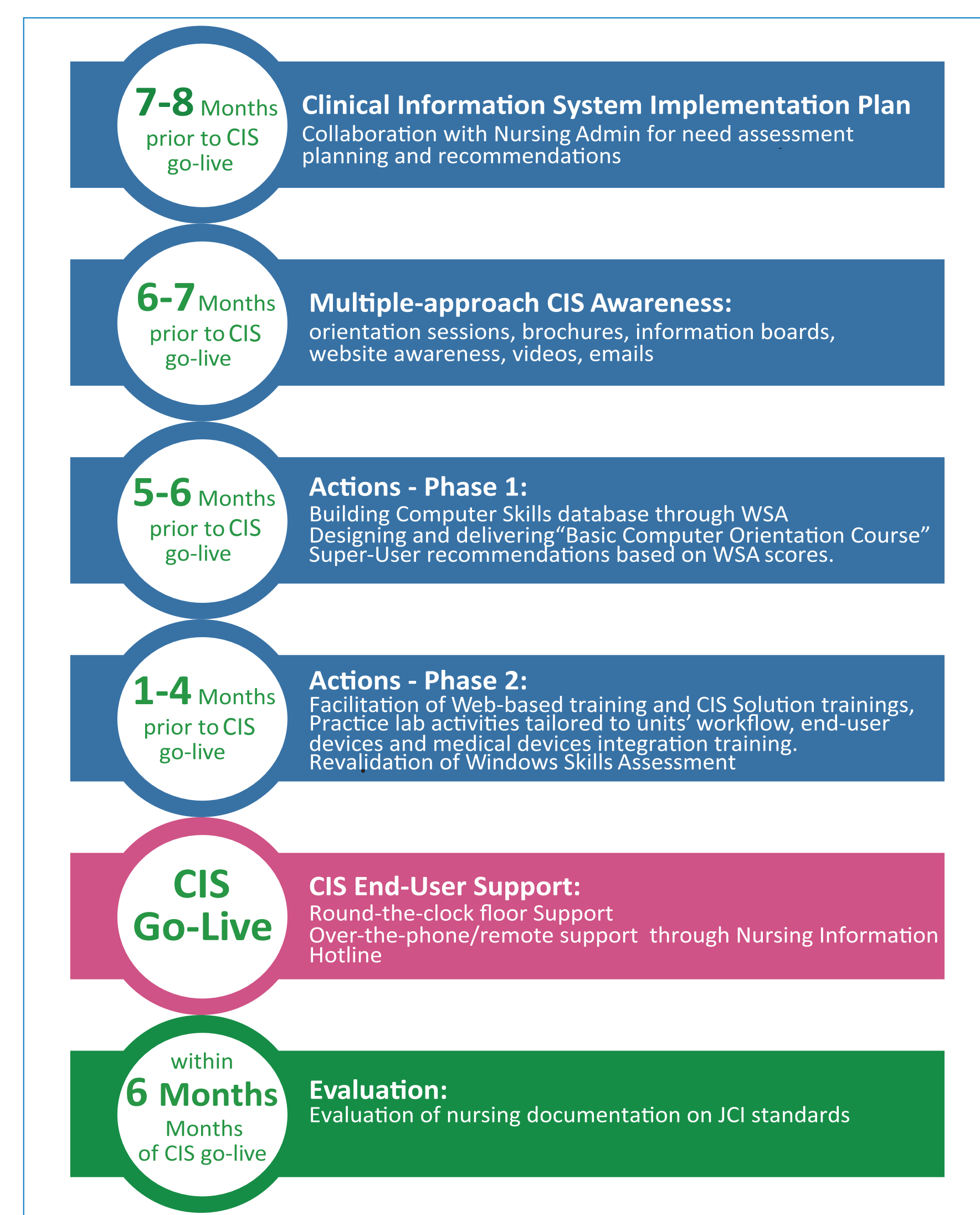


Figure 1. Implementation timeline

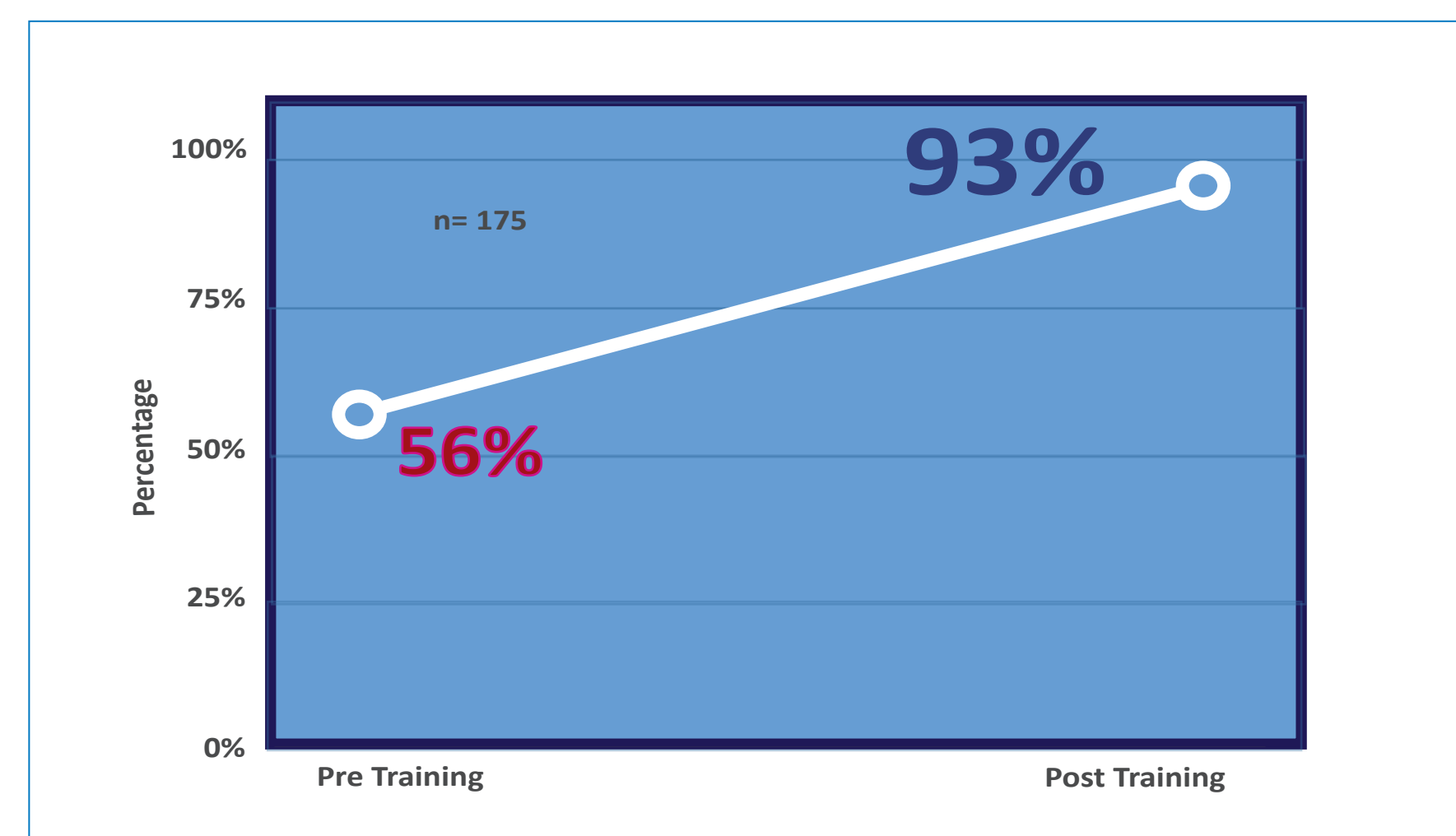


Figure 2. Average WSA scores: pre and post Basic Computer Refresher Course, increased from 53% to 93%

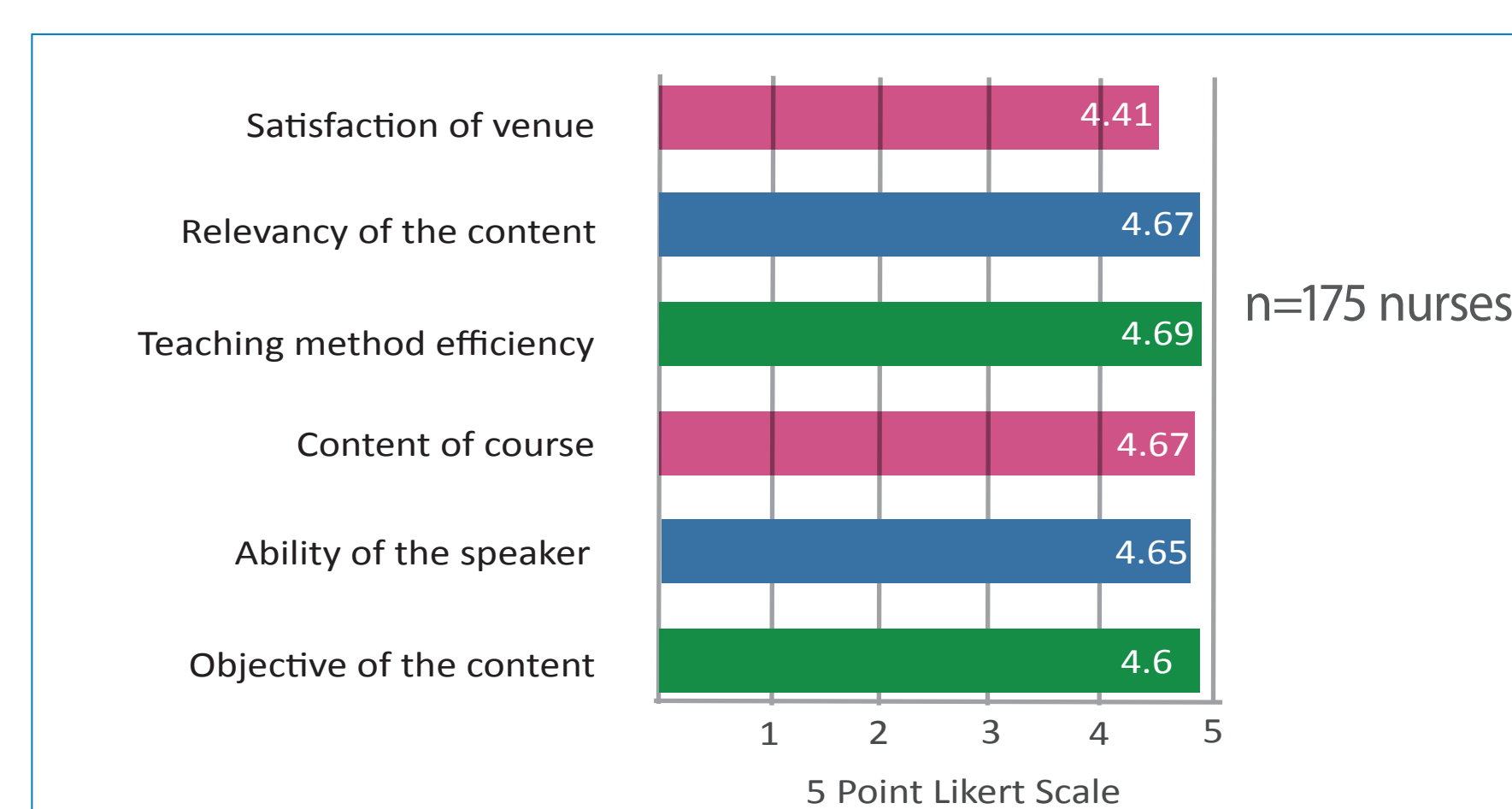


Figure 3. Basic Computer Refresher Course training feedback using Likert scale

Conclusion

- Training evaluation and CIS support survey results indicates that nurses find NI trainings beneficial and effective. (Figure 4 and 5)
- Superusers' selection on quantifiable preset criteria led to efficient support for end-users, and promoted smooth transition of EHR.
- Post go-live survey on NI support (Figure 4)
 - ▶ Above 90% of staff agreed that Nursing Informatics Department has systematically prepared nurses for CIS conversions
 - ▶ 94% of respondents agreed that videos gave them more understanding on CIS workflow
 - ▶ 99% of them agreed that this initiative of NID was beneficial to nurses
- Easy adaption of nurses to Clinical Information System evident by EHR audit report (Figure 6)

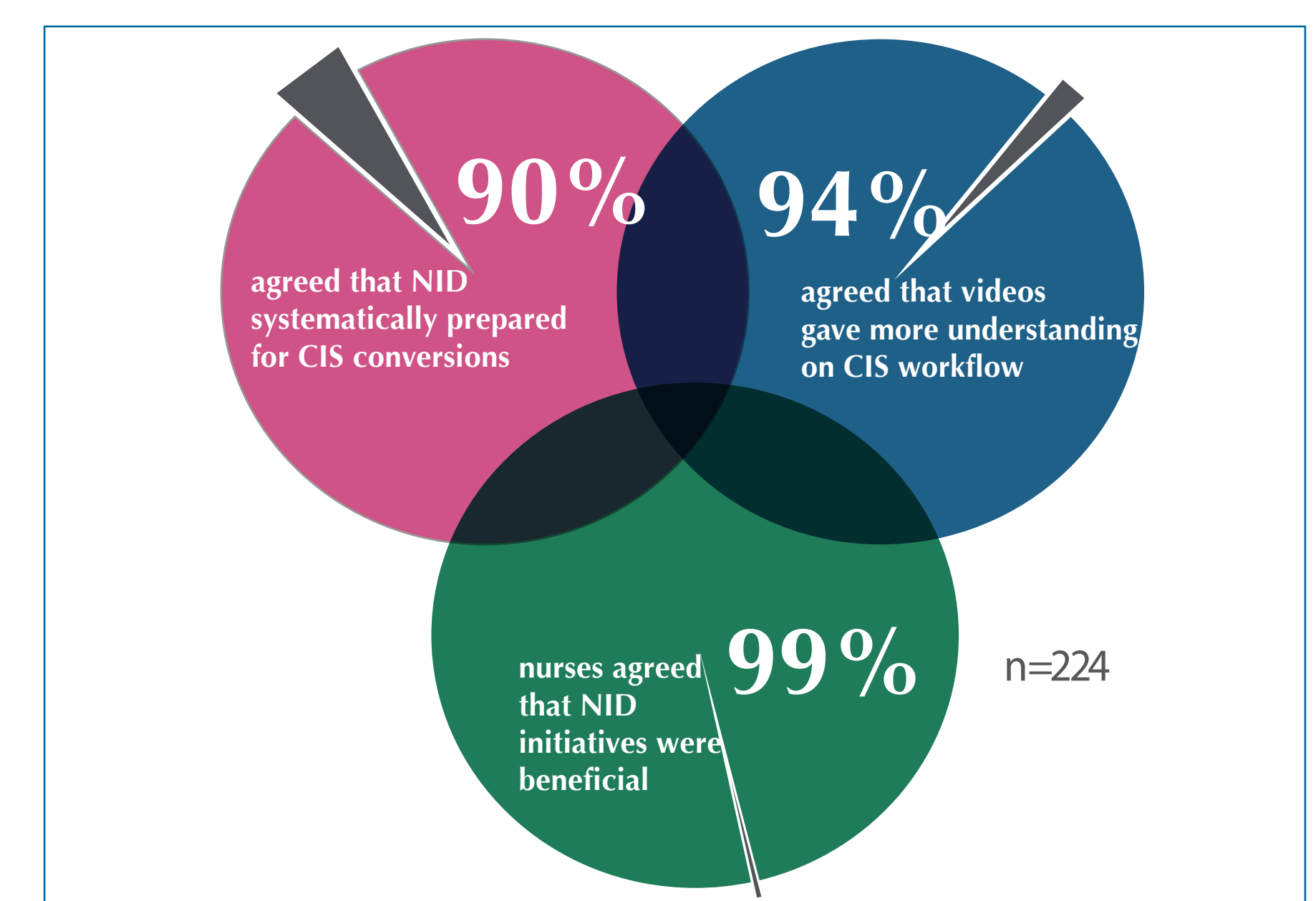


Figure 4. Post CIS go-live survey results

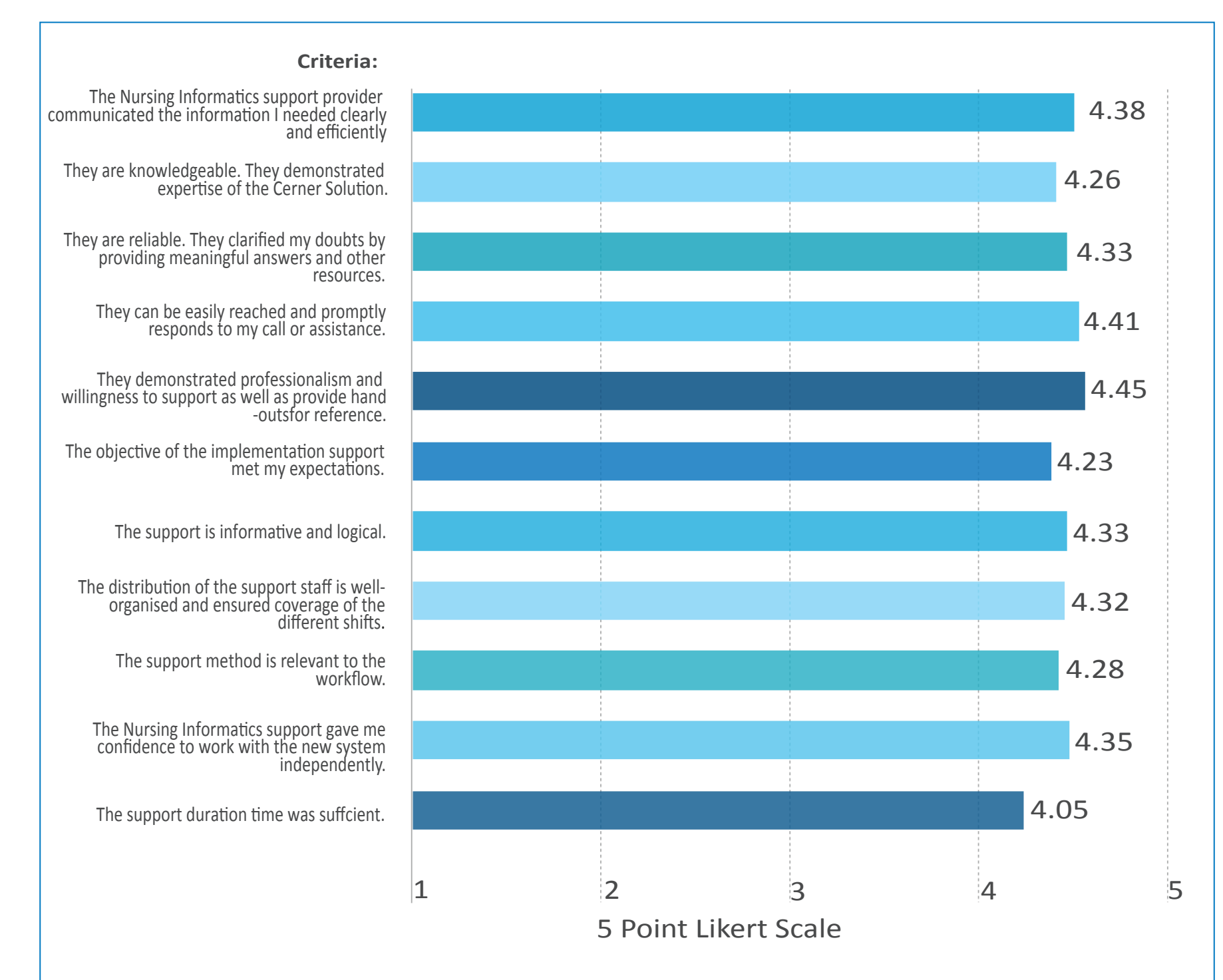


Figure 5. Clinical Information System Support survey from End-users

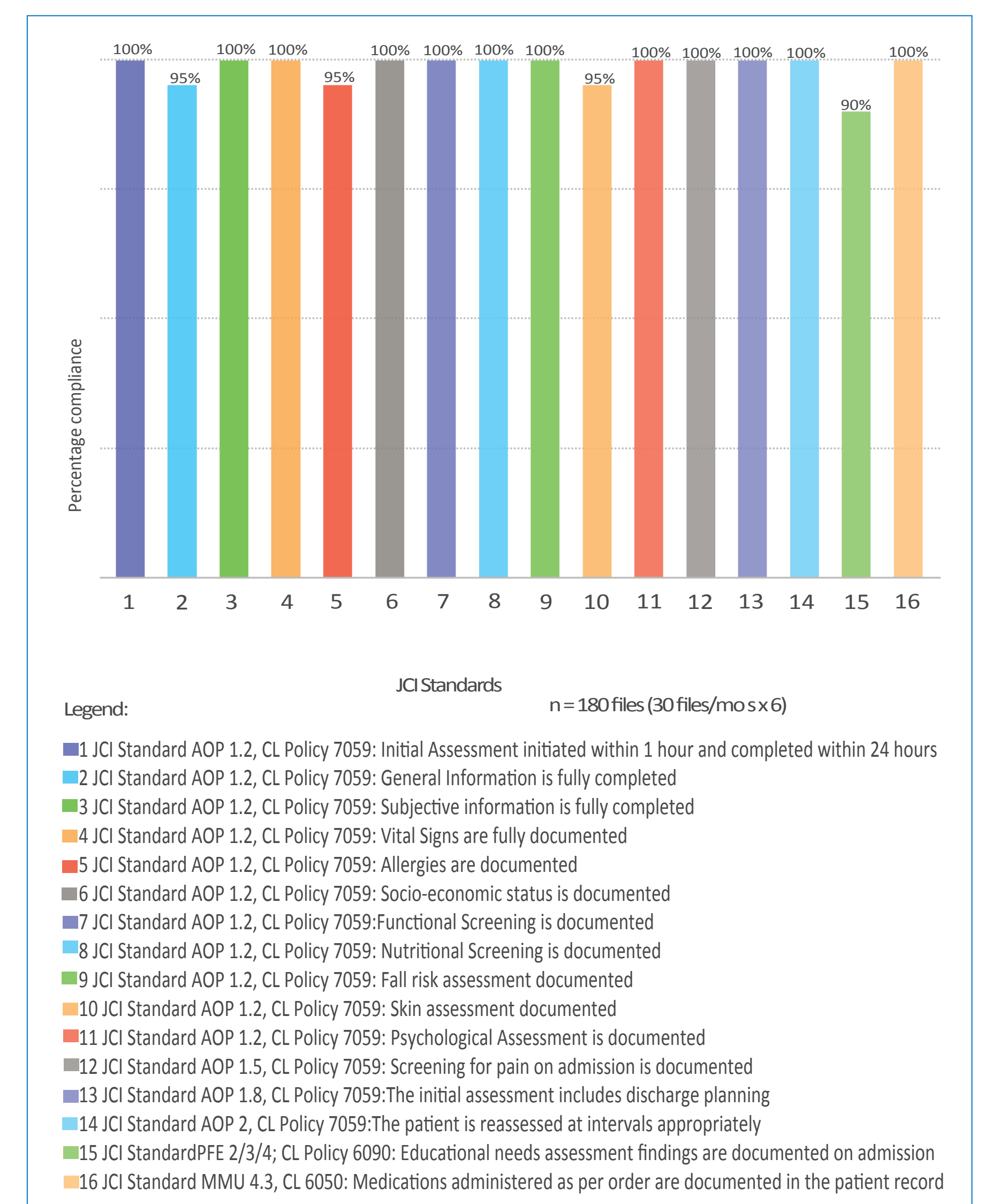


Figure 6. Nursing Documentation Evaluation as per JCI standards