

Improving performance of educational microsystems: Improvement intervention of NCLEX performance (2014-2016)

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OBJECTIVE

To apply formal improvement methods commonly utilized in healthcare to improve first time NCLEX-RX pass rate for accelerated BSN (ABSN) graduates at our institution.

METHODS

- An improvement team (The QI Action Committee) was formed by the Dean comprised of nursing faculty from the ABSN program, a student representative, and a faculty expert in improvement science.
- An required course (educational microsystem) involved in preparing students for the NCLEX was approached and a partnership formed with faculty leaders for that course.
- Together, we embarked on improvement work from spring 2014 to summer 2016 using methods from Clinical Microsystems, IHI Model for Improvement, and LEAN/Six Sigma.
- We conducted a context assessment of the course and an evidence synthesis of generalizable knowledge related to NCLEX-RN performance.
- We then conducted two Plan-Do-Study-Act (PDSA) cycles in 2015 aimed at increasing NCLEX-RN practice and test mastery.
- Effects of interventions on NCLEX-RN pass rates were assessed using summary statistics and Statistical Process Control (SPC) methods.

RESULTS

- Average *PassPoint* practice questions per student per semester increased from a pre-intervention baseline of 1,000 questions to 2,330 questions in spring 2015 and 2,130 questions in summer 2015.
- Average *PassPoint* practice exams per student per semester increased from 2.9 in spring 2015 and 3.2 in summer 2015 ($p < 0.05$).
- Average *PassPoint* practice test global mastery score increased from 6.8 in spring 2015 to 7.2 in summer 2015 ($p < 0.05$).
- Post-intervention first attempt NCLEX-RN pass rate increased to 86.2% compared to 76.7% pre-intervention ($p < 0.05$).
- This was accompanied by a special cause variation observed in summer 2016 on a proportions SPC chart (p Chart) of longitudinal NCLEX-RN pass rates from 2012-2016.

CONCLUSIONS

- The improvement intervention was successful in significantly improving first-time NCLEX-RN pass rate for accelerated BSN graduates at our institution.
- Our approach did not require comprehensive program redesign and had low resource requirements.
- Our intervention effected total program outcomes by focusing on a single course.

Figure 1. QI Action Committee Strategy

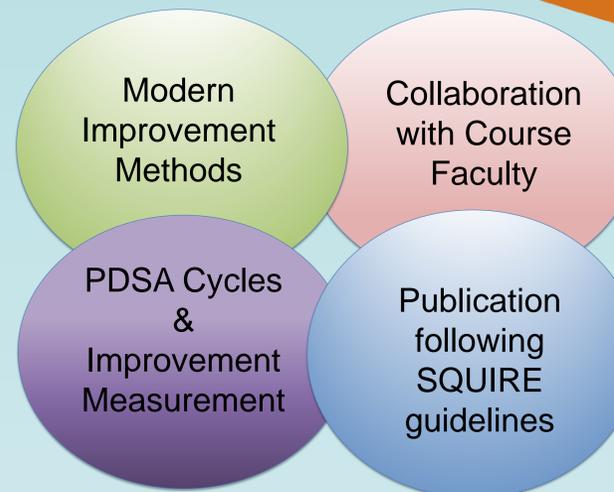


Figure 2. Summative Results (NCLEX)

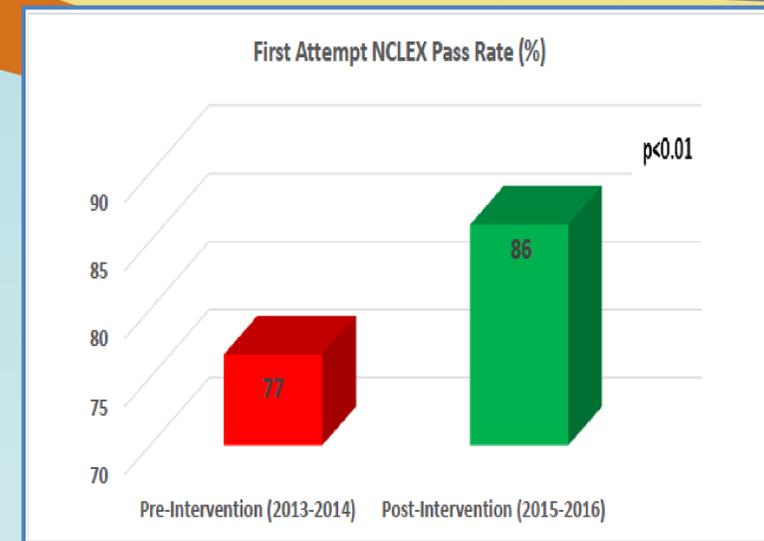
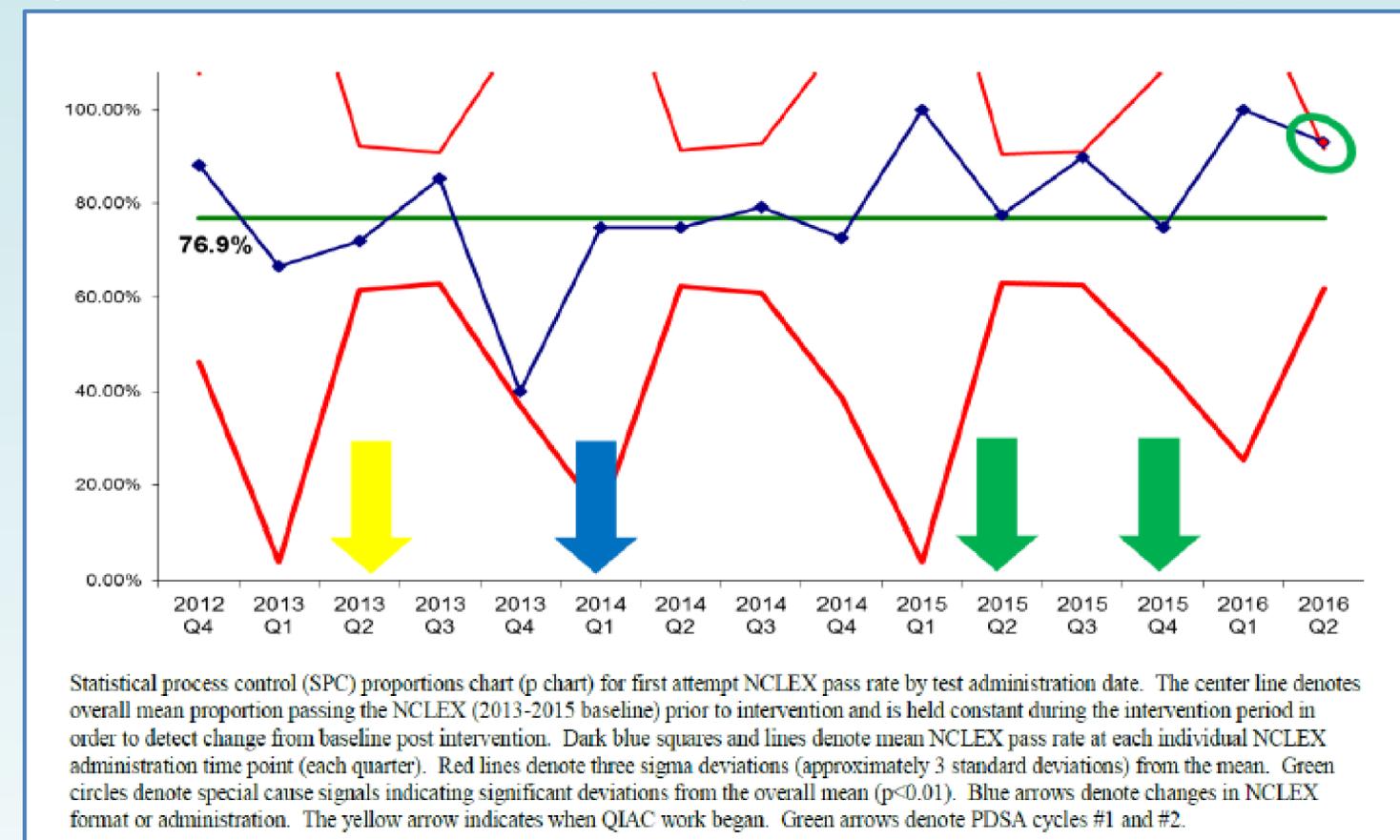


Figure 3. Statistical Process Control (SPC) Analysis: Fixed Mean p Chart (NCLEX)



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