Jen Miller Small Cycles of Change Table

Small Cycle of Change Series (Potential change categories)	**How connected to your outcome, process, or balancing measure?**	**How will you measure success of the change cycle?** (SMART goal)	**Number of small cycles completed to achieve goal**	**Cycle Dates** (Month/Year)	**Actions taken in each cycle** (Bulleted discussion)	**Results –** Did you achieve the SMART goal? Plan to move forward
RN turnover reasons for leaving (nostart)	Affects the outcome measure, nurse turnover rates, by eliminating 'nostart' from data, which may affect overall yearly turnover rates.	**S:** Eliminate 'nostart' from data collection for accuracy in data. **M:** Turnover rates calculated as a percentage from FY2021-2025. **A:** Data collection simple and straightforward. **R:** Directly related to project aim, goals and outcome measures. **T:** Data collection from June 17-July 1 2025.	2	June 17-July 1 2025 September 15-October 1, 2025	• Reviewed ED RN turnover rates in PowerBi People Dashboard for FY2021-25. • Manually reviewed all reasons for turnover. • Removed 'nostart' from data. • Extrapolated ED RN turnover data and documented in Google Sheet columns by year.	• FY2025, turnover rate decreased from 10.91% to 8.18% by eliminating 'nostart'. • Aligns with outcome measure goal. • Aligns with project aim (CLP-RN reduces RN turnover. • **PLAN:** Will review data from FY2021-24 for changes to turnover rates. • **UPDATE 10/2025: Eliminating 'no start' did not affect previous year's turnover rates. Run charts and statistical testing**

						complete using originally proposed statistical test, Fisher's Exact. Results not significant pre- and post intervention.
Scanning Criteria	Affects the outcome measure, medication scanning rate meeting benchmark and trending, by including medics and techs scan rates.	**S:** Include medics and techs in overall scanning rates. **M:** Medication scanning rates calculated as a percentage for ED from 2021-2025. **A:** Data collected simple and straightforward from EHR. **R:** Directly related to project aim, goals and outcome measures. **T:** Data collection ongoing, completed September/2025.	2	July-September 2025 September 15-October 1, 2025	• Reviewed ED medication scanning rates in EHR EPIC. • Extrapolated individual scanning rates and documented in Google Sheets per year. • Calculate overall percentage of scan rates of medics/techs, compared to RNs. • Determine significance if any.	• Results appear insignificant so far comparing medic and tech scan rates versus overall ED rates with no change in department scan rate. • **PLAN:** Ongoing data collection and will continue to determine significance. • **UPDATE 10/2025: Data collection complete. Results are even more insignificant in earlier years of data as fewer scanning rates noted for techs. Run charts complete using unit total rates.**

Interoperability Policy	Affects outcome and process measures related to interoperability benchmarking for unit and individual RNs.	**S:** Develop interoperability benchmark policy. **M:** Benchmark percentage of 80% for ED is goal. **A:** Rely on interprofessional involvement. **R:** Directly related to outcome and process measures, and project goals. **T:** Ongoing until project completion.	2	August-October 2025 October 1, 2025 and ongoing	• Alerted local Chief Nursing Officer, Director of Quality, Nurse Informaticist, Regional Policy RN and Regional Director of Pharmacy for assistance. • Shared collected research on recommended benchmarking.	• Ongoing communication with influential collaborators. • **PLAN:** May pivot and include other collaborators as needed for policy development. • **UPDATE: Regional leadership change: policy regulators. New positions posted and filled to oversee policy development and revisions. Have requested change to interoperability policy benchmarking for the ED through local hospital Senate for approval to present to monthly Assembly in November for discussion.**
Meeting informally with DNP project team due to time constraints	Potentially affects data collection and analysis, so both outcome measures of	**S:** Meeting with team as needed and when available instead of scheduled meetings.	3-15	July-October 2025 October 1, 2025 and ongoing	• Discuss project needs informally after morning safety huddle and after mutually	• Ongoing • **PLAN:** Continue informal 1:1s as needed until project completion

	scan rates, RN turnover and interoperability, and process measures of number of RNs completing the CLP-RN and percentage of LEARN completions.	**M:** Attempt to meet with team members for 15 minutes per week. **A:** Difficult to attain due to varied schedules, summer vacations and work commitments. **R:** Can affect process measures specifically if I cannot get data not available to me. **T:** Ongoing through project completion.			attended meetings. • Have questions prepared weekly for team members. • Recognize team members with small tokens of appreciation (cards, chocolate).	• **UPDATE 10/2025: Continue to meet with project members 1:1. Have completed formal meetings with clinical site mentor.** • **Have not needed team to retrieve data not available to me.**
Statistical Analysis Tests	Affects the outcome measure, medication scanning rate will increase for the overall unit from 76% to 90%, pre- and post-intervention.	**S:** Change statistical test from McNemar to Paired Student T-Test to follow same pre- and post- intervention nurse scores overall, so repeated pre- and post-. Run charts will illustrate the overall unit rates yearly from 2021 through 2025. **M:** Complete data analysis for outcome measure using both tests in first week of October 2025. **A:** Changing tests is attainable due to necessary data collection.	2 (measured data with McNemar and then with Paired Student T-test)	Late September-October 2025 Met with CRNS statistician 10/10/25	• Identified potential integrity issues with the CRNS App specific to McNemar calculations after reviewing with statistician. • Decided to use Student paired T-test because data is continuous (pre- and post-, for same 21 nurses). • Ran both tests and reviewed outcomes for each with statistician who understood the data.	• Complete data analysis for outcome measure using both tests in October 2025. Which showed statistically significant results using Paired Student T-test, which was expected due to data collection outcomes. • Achieved SMART goal to successfully change test. • Statistician confirmed correctness of data

		R: Student T-test and McNemar are both appropriate depending on what outcome I want to measure, either nominal or continuous. **T:** Statistical testing will be completed by 10/5/2025. and reviewed by CRNS on 10/10/2025.			• Will request approval from Dr Shaw and Dr Fischer to change tests in scholarly paper and presentation. • Completed run charts for unit data from years 2021-2025.	analysis, which met the SMART goal of correctly changing statistical test. • Statistical testing was completed by 10/5/2025 and reviewed by CRNS on 10/10/2025.
Statistical Analysis Tests	Affects the outcome measure, smart pump infusion rate will increase for the overall unit from 57% to 80%, pre- and post-intervention.	**S:** Change statistical test from McNemar to Paired Student T-Test to follow same pre- and post- intervention nurse scores overall, so repeated pre- and post-. Run charts will illustrate the overall unit rates yearly from 2021 through 2025. **M:** Complete data analysis for outcome measure using both tests in first week of October 2025. **A:** Changing tests is attainable due to necessary data collection. **R:** Student T-test and McNemar are both	2 (measured data with McNemar and then with Paired Student T-test)	Late September-October 2025 Met with CRNS statistician 10/10/25	• Identified potential integrity issues with the CRNS App specific to McNemar calculations after reviewing with statistician. • Decided to use Student paired T-test because data is continuous (pre- and post-, for same 21 nurses). • Ran both tests and reviewed outcomes for each with statistician who understood the data. • Will request approval from Dr	• Complete data analysis for outcome measure using both tests in October 2025. Which showed statistically significant results using Paired Student T-test, which was expected due to data collection outcomes. • Achieved SMART goal to successfully change test. • Statistician confirmed correctness of data analysis, which met the SMART goal of

		appropriate depending on what outcome I want to measure, either nominal or continuous. **T:** Statistical testing will be completed by 10/5/2025. and reviewed by CRNS on 10/10/2025.			Shaw and Dr Fischer to change tests in scholarly paper and presentation. • Completed run charts for unit data from years 2021-2025.	correctly changing statistical test. • Statistical testing was completed by 10/5/2025 and reviewed by CRNS on 10/10/2025.
Statistical Analysis Tests	Affects the outcome measure, smart pump infusion rate and 90% of ED RNs meeting benchmark of 80% or not meeting benchmark of 80%.	**S:** Change statistical test from Student T-test to Chi-Square due to desire to illustrate overall *unit* changes due to CLP-RN and meeting a yes/no benchmark (categorical data), so contingency table was more appropriate. Will discuss percentage of ED unit who met the benchmark (67%) in discussion and not via statistical analysis. Also, samples are not completely independent (21 nurses are included in pre- and post- data, along with other nurses from either pre- or post intervention, not both).	2 (measured data with Student-T-test and then with Chi-Square)	Late September-October 2025 Met with CRNS statistician 10/10/25	• Decided to use Chi-Square. • Ran both tests and reviewed outcomes for each with statistician who understood the data. • Will request approval from Dr Shaw and Dr Fischer to change tests. Discussed with Dr Fischer on 10/2/2025. • Can use Wilcoxon signed rank test to account for lack of complete independence, but not necessary. • If approved, I will discuss limitations in my scholarly	• Complete data analysis for outcome measure using both tests in October 2025, which showed statistically significant results using Chi-Square and Student T-test. • Achieved SMART goal to successfully change test. • Statistician confirmed correctness of data analysis, which met the SMART goal of correctly changing statistical test. • Statistical testing was completed by 10/5/2025 and

		M: Complete data analysis for outcome measure using both tests in first week of October 2025. **A:** Changing tests is attainable due to necessary data collection and analysis. **R:** Chi-square and Student T-test are appropriate depending on what outcome I want to measure. **T:** Statistical testing will be completed by 10/5/2025. and reviewed by CRNS on 10/10/2025.			paper as some samples are not independent, which violates Chi-Square assumption. Statistician thought this was fine due to my project not being research, as long as I mention the limitation. • Student T-test also needs independence.	reviewed by CRNS on 10/10/2025.
Statistical Analysis Tests	Affects the outcome measure, medication scanning rate and 90% of ED RNs meeting benchmark of 80% or not meeting benchmark of 80%.	**S:** Change statistical test from Student T-test to Chi-Square due to desire to illustrate overall *unit* changes due to CLP-RN and meeting a yes/no benchmark (categorical data), so contingency table was more appropriate. Will discuss percentage of ED unit who met the benchmark (93%) in discussion and not via	2 (measured data with Student-T-test and then with Chi-Square)	Late September-October 2025 Met with CRNS statistician 10/10/25	• Decided to use Chi-Square. • Ran both tests and reviewed outcomes for each with statistician who understood the data. • Will request approval from Dr Shaw and Dr Fischer to change tests. Discussed with Dr Fischer on 10/2/2025.	• Complete data analysis for outcome measure using both tests in October 2025, which showed statistically significant results using Chi-Square and Student T-test. • Achieved SMART goal to successfully change test. • Statistician confirmed

		statistical analysis. Also, samples are not completely independent (21 nurses are included in pre- and post- data, along with other nurses from either pre- or post intervention, not both). **M:** Complete data analysis for outcome measure using both tests in first week of October 2025. **A:** Changing tests is attainable due to necessary data collection and analysis. **R:** Chi-square and Student T-test are appropriate depending on what outcome I want to measure. **T:** Statistical testing will be completed by 10/5/2025. and reviewed by CRNS on 10/10/2025.			• Can use Wilcoxon signed rank test to account for lack of complete independence, but not necessary. • If approved, I will discuss limitations in my scholarly paper as some samples are not independent, which violates Chi-Square assumption. Statistician thought this was fine due to my project not being research, as long as I mention the limitation. • Student T-test also needs independence.	correctness of data analysis, which met the SMART goal of correctly changing statistical test. • Statistical testing was completed by 10/5/2025 and reviewed by CRNS on 10/10/2025.
Safety Competencies	Affects the process measure, ED RNs will complete medication	**S:** Include all LEARN competencies and not just related to medications due to availability of aggregated data. Will	1	October 2025 Met with CRNS statistician 10/10/25	• Reviewed LEARN platform report availability. • Extrapolated data of LEARNS safety	• Achieved SMART goal due to small cycle of change and process measure goal of 100% of ED RNs will complete

	scanning related safety competencies >90%	not analyze for significance due to lack of pertinent data availability. **M:** Collected data of RN completion percentages in 2021 through 2025 for all ED nurses employed, not individual data. **A:** Available data was collectable through the LEARN platform for ED unit. Data collection straightforward to collect for all CURRENT ED RNs. **R:** All LEARN completion data is relevant as focus is on patient safety. **T:** Data collected in October 2025 to add all years to run chart.			competencies completion rates. • Added to run chart annually 2021-2025. • Did not run statistical testing for significances due to lack of available data for process measure goal.	competencies, post intervention. • Statistician confirmed correctness of data analysis using just a run chart due to inability to aggregate data per nurse.

Medication and patient banding error reporting	Affects the balancing measure of comparing errors pre- and post-intervention.	**S:** Medication and patient banding error data not available due to change in how safety events are reported and stored. **M:** Data was viewed and analyzed for FY 2025 only due to reporting and comparison platform issues. **A:** Data for FY 2025 was collected only. **R:** Data collection issues relevant to balancing measure. **T:** Collected all data possible in September 2025.	1	September 2025	• Data on medication errors and patient banding errors collected through reporting platform for FY 2025. • Data was not pulled from previous years due to change in reporting platform. • Data suggests that medication errors and patient banding errors were rare for FY 2025. • Data not analyzed with NcNemar's	• Data collection issues not significant to program evaluation goals. • Data might be insignificant for purposes of evaluation due to very low denominators of issues reported to FY 2025. • Data was collected successfully for FY 2025 but not reported or analyzed in project.

					due to lack of pre-intervention data.	