



A Framework for Measuring Hospital and Other Site Implementation of a Perinatal Quality Collaborative Quality Improvement Initiative

On behalf of the NNPQC Improvement Methods Affinity Group, with leadership from Divya Patel, PhD, Texas Collaborative for Healthy Mothers and Babies; William Sappenfield, MD, MPH, CPH, Florida Perinatal Quality Collaborative; Brenda Barker, M Ed, MBA, Tennessee Initiative for Perinatal Quality Care; Nichole Logan, BSN, BS, RN, Wisconsin Perinatal Quality Collaborative; Stephanie Radke, MD, MPH, Iowa Perinatal Quality Care Collaborative; Terri Deeds, RN, MSN, NE-BC, C-ONQS California Maternal Quality Care Collaborative.

Perinatal Quality Collaboratives (PQC) Background

The high rates of maternal/infant mortality in the United States compared to other high-income countries underscore the need to improve perinatal health care quality and safety. PQCs are state or multistate networks of teams working to improve health outcomes for mothers and newborns through continuous quality improvement (QI).¹ The PQCs in all 50 states and the District of Columbia vary considerably in their funding, infrastructure, partnerships, staffing, and development. Some PQCs are relatively new with only enough funding to conduct one of their first QI initiatives, including hiring staff and developing data systems. Some PQCs have been operating for more than 10 years and are funded well enough to offer three or more initiatives at one time with high-functioning data systems and well-established, experienced staff. Moreover, PQCs operate in differing state contexts, health systems, and historical relationships. Despite these differences, PQCs share a common goal of improving perinatal health care quality and health outcomes through the implementation of QI initiatives in their region or state.

Measuring Hospital Implementation of a PQC QI Initiative

A PQC QI initiative is a multi-hospital or multi-site collaborative effort to *promote* systematic and continuous actions *across hospitals or other health care sites* that lead to measurable improvement in health care services and health outcomes of identified patient groups. The National Network of Perinatal Quality Collaboratives (NNPQC),² along with state PQC leaders, previously published a white paper on the recommended framework for measuring hospital participation in a PQC QI initiative (https://nnpqc.org/publication/a-framework-for-measuring-hospital-participation-in-a-perinatal-quality-collaborative-quality-improvement-initiative/). The four recommended domains of participation include (1) enrollment in a QI initiative, (2) meeting participation, (3) data submission, and (4) demonstrating some hospital changes in their structure and/or process measures. Suggested measures for each domain, which could be adapted to each PQC's context, were provided.

Beyond supporting participation, which is the first step, PQCs play an important role in facilitating hospitals and other health care sites to *fully implement* their QI initiatives – this is an essential next step towards achieving population-level impact in improving perinatal health care and health outcomes. For our purposes, implementation refers to hospitals or other health care sites implementing components of the QI initiative change package in their units and observing the desired changes.

NNPQC has partnered with the Institute for Healthcare Improvement (IHI)³ to provide ongoing QI training and technical assistance to interested PQCs on implementing and operating a QI initiative. This



includes offering the full IHI Breakthrough Series College professional development program and consultation with PQC staff. As part of the College, IHI teaches PQCs to measure QI initiative implementation at a hospital level using the IHI Breakthrough Series Assessment Scale for Collaboratives.⁴

The IHI Assessment Scale for Collaboratives provides a simple and flexible way to measure implementation progress by providing a single number that succinctly summarizes a hospital or other health care site's progress towards implementing a QI initiative. It provides a defined measurement template for how to objectively assess each hospital or other health care site's implementation progress throughout a Breakthrough Series Collaborative project or QI initiative where there is moderate to high degree of belief in the effectiveness of the change ideas. Hospitals or other health care sites as a whole need to have a moderate to high degree of belief in the change package's effectiveness to create the intended result based on current evidence and experience to fully embrace the real change that is needed.

Implementation Measurement Framework Purpose

Upon review of potential implementation measures, the NNPQC suggests PQCs use the IHI approach to measure hospital or other site (e.g., outpatient providers, non-maternity hospital emergency rooms) implementation of PQC QI initiatives. This effort reinforces IHI's ongoing QI training and support for PQCs and minimizes any duplication or confusion by interjecting new or additional hospital or other site implementation measures. This framework describes 1) IHI's recommended methods for assessing implementation and 2) potential approaches PQCs could consider in using this assessment scale with their QI initiatives based on their capacity, context, initiatives, needs, and resources. The IHI Assessment Scale for Collaboratives provides a simple and useful summary measure to assess implementation and improvement, but does not replace the need for structure, process, outcome, and balancing measures as part of a QI initiative. These measures are also essential for planning, implementing, and monitoring a QI initiative at a hospital, other site, and PQC level.

IHI Assessment Scale for Collaboratives

The Assessment Scale for Collaboratives was developed by IHI to assess the progress of teams participating in a Breakthrough Series Collaborative. The scale has since been adapted and successfully used in many types of improvement initiatives. For this paper, this scale explanation and table have been adapted for use to track hospitals or other health care sites' progress in implementing a PQC QI initiative. The scale can also be used when working with other health care sites; but for simplicity, the remainder of this white paper generally describes use with hospitals. Table 1 shows IHI's Assessment Scale for Collaboratives and the respective operational definitions or criteria for each 0.5 scale increment, from 0.5 to 5.0. IHI's scale was designed to serve four main purposes: 1) create a routine objective measure of a QI initiative progress for each hospital team - this measure is determined together by the hospital initiative lead and the PQC, to help tailor needed support for the team, 2) give each team an opportunity to assess their progress through routine self-assessments using the same scale to understand where there might be gaps in perspective between hospital teams, PQC QI team, and the hospital initiative lead, 3) provide an overall sense of progress for the QI initiative which helps PQC staff and initiative leaders determine the pace and content for further learning sessions, webinars,





coaching calls, and action period calls, and 4) give the PQC leadership and their partners who are supporting the QI initiative a way to understand overall levels of implementation progress across PQC QI initiatives over time.⁴ Many PQCs may not be able to use the scale for all of IHI's intended purposes; alternative ways that the scale can be used are provided later in this paper.

When planning a QI initiative that uses the IHI Assessment Scale for Collaboratives to measure implementation progress, PQCs can adapt the scale template to create a tailored assessment scale that hospitals and PQC can use for that specific initiative. For example, teams will need to determine what "key initiatives measures" are necessary for the level 2.5 score. A careful rendering of the scale for a specific initiative makes it easier for PQC QI staff and hospital teams to use the scale as a source of shared language and understanding.

When using the scale, there are additional practices to follow. 1) Progress with the scale moves in 0.5 increments. There are no 0.25 or 0.75 levels. 2) Assessments are progressive, and all elements of a score must be met to move to the next stage. 3) Evidence for the assessment must be documented in some fashion in routine hospital reports, calls, story boards, or other format. 4) Once a score is achieved, that score is either maintained or improved. Scores do not decrease. 5) A team might stay at a specific score for months until the next score is attained. 6) Scale assessments of 4.5 and 5 are uncommon or rare during a QI initiative. 7) A monthly histogram of all hospital scores participating in a QI initiative can be a useful visual for planning and educational purposes. For example, a QI initiative that has an average assessment score of 3.0 where all teams have a score of 3.0 is very different than one that has an average assessment score of 3.0 where half the teams have a score of 2.0 and half the teams have a score of 4.0. 8) In a PQC QI initiative, the initiative-wide performance goal should be for 80% of teams to reach a 4.0 or higher score on the scale.4

Potential PQC Uses of the IHI Assessment Scale for Collaboratives

The IHI Assessment Scale for Collaboratives was designed to be simultaneously assessed by both a hospital or other site QI lead and the PQC QI staff for use on routine action calls to jointly assess hospital or other site's progress in implementing a QI initiative to make plans to assist with further hospital QI initiative implementation. The scale details the required sequential stages of implementing a QI initiative and specific plans can be made to reach the next stage. This goal may not be possible for all PQCs to accomplish. Some PQCs have such a large number of participating sites, or insufficient staffing for the number of sites, that they are unable to meet with each hospital or site regularly. However, the IHI Assessment Scale for Collaboratives can potentially be used by PQCs to monitor implementation in other ways.

First, PQCs could have hospitals or other sites participating in their QI initiatives use the scale to selfassess and track their own implementation progress over time and to determine whether adequate progress is being made. The PQC can simply promote or recommend the scale's use by participating hospitals or sites. The scale could also be included as part of a monthly or periodic reporting to the PQC and included as part of the report provided back to each participating hospital by the PQC. This information would assist hospital or site QI teams and leaders in their ongoing QI initiative planning efforts. In order to do so, PQCs would need to tailor the scale assessment for each QI initiative as well as offer tools and training to participating hospitals or other health care sites on how to accurately





assess implementation and use the information. There may also be a need for consultation and technical assistance.

Second, PQCs could conduct their own scale assessments of hospitals or sites across their initiatives using coaching calls, periodic surveys, presentations, routine hospital reports, storyboards, webinars, and more. Moreover, PQCs could collect and use information on hospital or site self-assessments. This could provide useful information on initiative progress across hospitals and sites and be used for initiative planning. The assessment could also be used to evaluate how well PQCs performed in facilitating and supporting hospitals and sites in implementing QI initiatives. Again, an initiative-specific scale would need to be developed along with offering PQC staff training to assure comparability in scoring hospitals or sites over time. Caution should be used in sharing a PQC's hospital or site assessment score for a specific hospital or site if a PQC uses a scoring process that has not included input from the hospitals or sites. Without input, hospitals may not see the PQC score as useful information. They may feel as if they are being judged or evaluated without being able to provide adequate information. The IHI scale can provide a useful snapshot of the collaborative as a whole. For example, as PQC leaders are trying to determine the duration of an initiative or when to move the initiative into sustainment without a predetermined date, using the target of majority of teams reaching a score of 4.0 provides an objective target. Moreover, the score could be set to identify hospitals or sites that may need assistance or consultation especially at the lower end of the scale.

Current PQC Examples

Some PQCs currently use the IHI Assessment Scale for Collaboratives as part of their work in monitoring implementation progress. Certain QI software used by many PQCs, including LifeQI and SimpleQI, incorporate the IHI scale. Some PQCs have found this to be a useful tool in tracking progress towards implementation goals. Although not a complete list, some examples of how PQCs are using the IHI Assessment Scale for Collaboratives include:

- Tennessee PQC uses the scale as part of monthly coaching calls with hospitals and in broader collaborative-wide huddles to determine progress and readiness for sustainment. Appendix A provides an example of how the Tennessee PQC uses the IHI scale to evaluate hospital-and PQC-level implementation progress.
- Wisconsin PQC uses the scale feature in LifeQI software as one of multiple feedback measures for hospitals. Appendix B provides an example of how the Wisconsin PQC uses the IHI selfassessment progress score within LifeQI software to evaluate implementation progress of hospital teams.
- Iowa PQC has used the IHI scale for its last three QI initiatives. They use the scale to 1) show hospitals where they are in implementation, 2) identify key opportunities to achieve improvement, and 3) understand reasons for lower scores (such as challenges with submitting project data due to lack of resources to generate reports, or inability to attend meetings due to lack of protected time). Appendix C provides an example of how the Iowa PQC uses the IHI project progress score to support their QI initiatives.

Please note, if hospitals are self-assessing their scores, it is important that the PQC leadership ensure adequate understanding and reliability of the scale for accuracy of the self-assessments. Based on





NNPQC committee discussions and discussions with individual PQCs, other PQCs that have not yet used the IHI scale, consider it a good way to summarize implementation in a single measure, perhaps along with some supporting measures, as part of a holistic approach to evaluating implementation. Plans to assess PQCs' application of the IHI scale nationwide are underway, with select questions added to the NNPQC annual assessment.

PQC Considerations in Using the IHI Assessment Scale for Collaboratives

PQCs generally agree that the IHI Assessment Scale for Collaboratives is an effective way for hospitals, other sites, and PQCs to gauge progress towards implementation of QI initiatives. As shown through the examples, many state PQCs are currently using the scale or considering ways to potentially incorporate it in their work. The scale is a progressive method of assessing a QI initiative's implementation at a hospital or other health care site. PQCs can also use the scores across hospitals and other health care sites to assess their initiative-wide progress. However, some PQCs have expressed challenges with resources and staffing. Some have concerns with ensuring the measurement is as easy as possible and wish to limit hospital or site data burden. Hospitals teams may already be too busy to use the scale or have issues submitting data and implementing/testing the change package, given their capacity and resources. Hospital capacity to collect and report data is an important factor in being able to collect additional measures. PQCs may want to explore different time intervals for using the scale or ways to collect and measure the scale at a hospital or initiative level. PQCs may need to adapt this scale to be simpler because of their own resources or the hospital response level in their PQC. Medium to large changes to the scale may be needed, but these changes need to be closely evaluated and tested for reliability and validity. The measure needs to have consistency in collection as well as accuracy and value. Otherwise, the measure may not have real meaning and utility. IHI has performed extensive testing and has vast experience with their scale to support its reliability and validity. PQCs should also be aware that this IHI scale is a simple 5-point linear scale and may not adequately or fully reflect the amount or range of a hospital's work and progress, especially given their capacity, previous efforts, context, and resources. In summary, PQCs agree that the IHI scale is a tool that can assist hospitals, other sites, and PQCs in their efforts to assess implementation progress and help to assure greater population impact.

Conclusion

NNPQC has recommended and suggested ways for PQCs to evaluate hospital or other health care site participation in a PQC QI initiative as an important component in assessing the population reach of a PQC's efforts. This participation requires more than just hospital enrollment in a PQC QI initiative. A PQC's measurement effort cannot stop at measuring just participation if PQCs truly want to have population impact. The level of hospital implementation of a QI initiative is an additional important measure to assess a PQC's population impact effort. IHI's Assessment Scale for Collaboratives is a useful tool in evaluating hospital implementation of a PQC QI initiative and should be considered as an important monitoring option for PQCs.



Table 1. Institute for Healthcare Improvement Assessment Scale for Collaboratives⁴

Apply these criteria to a hospital or site's quality improvement (QI) improvement initiative. Select the definition that best describes the progress. Assessments are progressive: all elements of a 3 must be satisfied before rating your project with an assessment of a 3.5 or 4. Evidence for your assessment must be documented in some fashion.

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QI Initiative Progress Score	Operational Definition of QI Initiative Progress Score
0.5 - Intent to Participate	Project has been identified, but the charter not been completed nor team formed.
1.0 - Charter and team	A charter has been completed and reviewed. Individuals or teams have been assigned, but no work has been
established	accomplished.
1.5 - Planning for the project	Organization of project structure has begun (such as: what resources or other support will likely be needed, where will
has begun	focus first, tools/materials needed gathered, meeting schedule developed).
2.0 - Activity, but no changes	Initial cycles for team learning have begun (project planning, measurement, data collection, obtaining baseline data,
	study of processes, surveys, etc.).
2.5 - Changes tested, but no	Initial cycles for testing changes have begun. Most project goals have a measure established to track progress.
improvement	Measures are graphically displayed with targets included.
3.0 - Modest improvement	Successful tests of changes have been completed for some components of the change package related to the team's
	charter. Some small-scale implementation has been done. Anecdotal evidence of improvement exists. Expected
	results are 20% complete. <i>See note 1</i> .
3.5 - Improvement	Testing and implementation continues and additional improvement in project measures towards goals is seen.
4.0 - Significant improvement	Expected results achieved for major subsystems. Implementation (training, communication, etc.) has begun for the
	project. Project goals are 50% or more complete. <i>See note 2.</i>
4.5 - Sustainable improvement	Data on key measures begin to indicate sustainability of impact of changes implemented in system.
5.0 - Outstanding sustainable	Implementation cycles have been completed and all project goals and expected results have been accomplished.
Results	Organizational changes have been made to accommodate improvements and to make the project changes permanent.

Note 1: This may mean either that a) 20% of project numeric goals have been met or b) each measure is showing 20% improvement towards goal.

Note 2: This may mean either that a) 50% of your numeric goals have been met or b) each measure is showing 50% improvement towards target.





Appendix A: Tennessee's Experience

Tennessee Initiative for Perinatal Quality (TIPQC) – Use of IHI Assessment Scale scores monthly as "Vital Statistics"

A. Background

With TIPQC, hospitals participating in a collaborative project use the IHI Assessment Scale for Collaboratives to self-score. State QI coaches review these scores along with submitted PDSA cycles and data reports during monthly leadership meetings. If the scores do not seem reflective of the team's PDSA cycles and data, one of the state QI coaches requests a coaching call. TIPQC will discuss the scoring, the IHI Assessment Scale, the hospital's successes and challenges, and the improvement work in the hospital, offering support and mentoring as needed. This is in addition to the regularly scheduled quarterly coaching calls.

TIPQC also reviews the scores during monthly collaborative-wide huddles. Figure 1 is an example of a chart that is used to show collaborative progress over time. This has been one factor used to determine when a project is ready to move into sustainment. This has been incredibly helpful on a statewide level to ensure TIPQC's projects do not move into sustainment prematurely.

AVERAGE IHI SCORES 5.0 4.5 4.0 3.2 3.4 3.4 3.5 2.9 2.8 3.0 2.5 2.5 2.0 1.5 1.0 0.5 Pating into in your seby of young on your septing was in

Figure 1. Average hospital IHI Assessment Scale for a QI initiative over time.

A similar bar graph (Figure 2) is used to show hospital team spread in scoring for one month. This is utilized by the TIPQC leadership to know who may need more support, as well as by hospital teams to see how they are doing in the project compared to their peers.





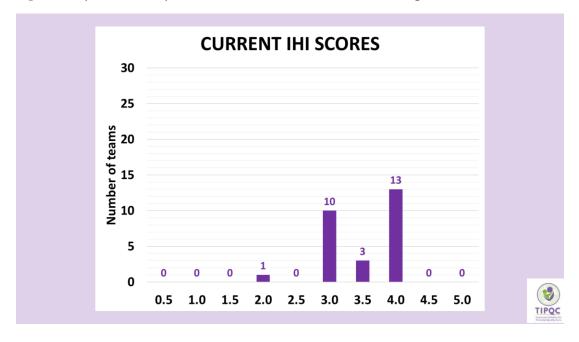


Figure 2. Spread in hospital IHI Assessment Scale scores during a QI initiative for one month.

B. Successes and Challenges

Challenges with using the IHI Assessment Scale include: 1) educating hospital teams on the tool and tool scoring using the same language, 2) the time required by the QI coach to review each hospital team's scoring, PDSA cycles, and data on a monthly basis, and 3) the time to have ongoing discussions supporting each hospital in meeting their goals.

In TIPQC, several successes have occurred through the use of the IHI Assessment Scale. Successes include: 1) allowing for individualized and in-depth coaching conversations to occur regarding QI and the barriers hospitals are encountering with the QI initiative; and 2) allowing the hospital teams to have a standardized way to quantify the ongoing work, barriers, and successes. The scale has also been helpful to the QI coaches on a state level to gauge needed support, timelines, and mentorship opportunities and on the local level, the scale is providing additional information to gauge progress in other hospitals and is useful in supporting opportunities to learn from other hospitals in the collaborative.





Appendix B: Wisconsin's Experience

Wisconsin Perinatal Quality Collaborative (WisPQC) – Use of the IHI scale through LifeQI software

A. Background

WisPQC uses LifeQI software for the QI initiatives, which includes the IHI Assessment Scale for Collaboratives and refers to it as "IHI self-assessment progress scores." This blog article includes more detailed text descriptions and screenshots about the system: https://blog.lifeqisystem.com/ihiprogress-scores.

The "progress score" is one of many ways WisPQC staff measure improvement progress. Having the hospital team's opinion of how they've progressed is helpful. If the self-determined score is found to be different from the score WisPQC staff would give, the Quality Improvement Advisor (QIA) addresses this difference in the monthly written feedback to teams. If there is a trend of multiple teams scoring this way, the QIA addresses this on the monthly call with all teams participating in the initiative. At this time, the score is used primarily by WisPQC staff, but WisPQC is asking how teams use the progress scale for their internal understanding of improvement progress.

Of note, this is one example of how a state PQC is using the software, but is not meant to be an endorsement of this specific software package.

B. Collaborative View Dashboard in LifeQI

- Collaborative view shows an abbreviated scale, with fewer levels and less detailed definitions.
- The first figure below shows the whole dashboard for a collaborative score of 3.0 and may include more information than needed.
- In this example, a progress score of 3.0 (modest improvement) is assigned to the collaborative as a whole (see left side of figure).
- The second figure zooms in with this example of the progress score of 3. You can see the definitions of all levels are not provided at the collaborative level.





Figure 1. Full screen view of the collaborative-level report for a score of 3.0.

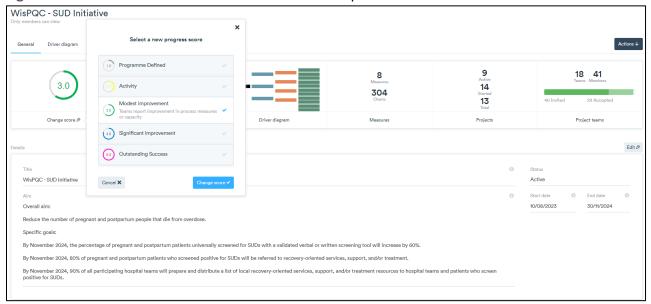
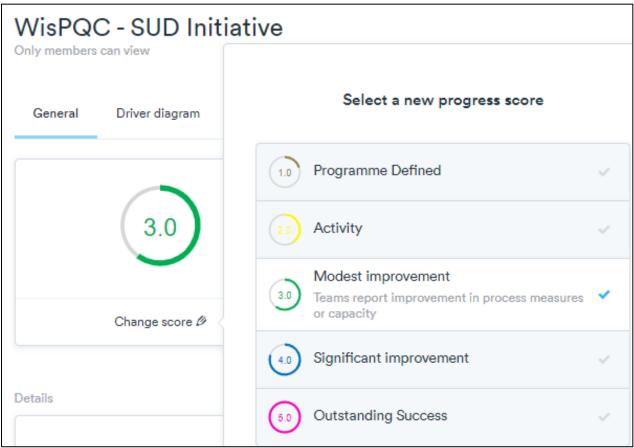


Figure 2. Close-up view of the collaborative-level report focused on the IHI score of 3.0.



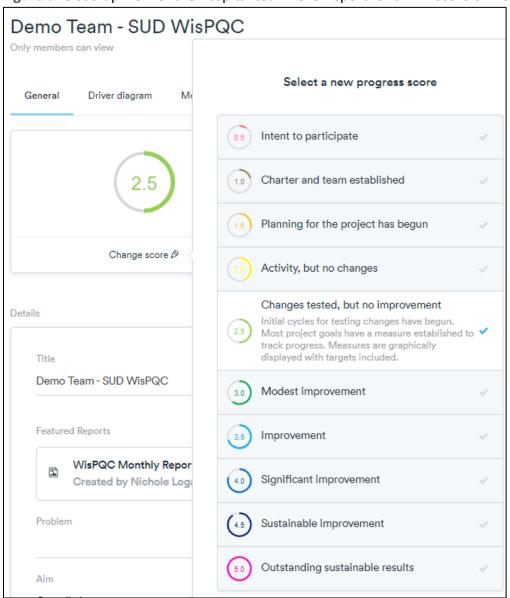




C. Hospital Team View Dashboard in LifeQI

- Team view shows all levels of the IHI scale with full definitions to assist hospitals in understanding and assigning their scores.
- In the Demo Hospital Team example below, a progress score of 2.5 (changes tested, but no improvement) is assigned.

Figure 3. Close-up view of the hospital team-level report for an IHI score of 2.5.



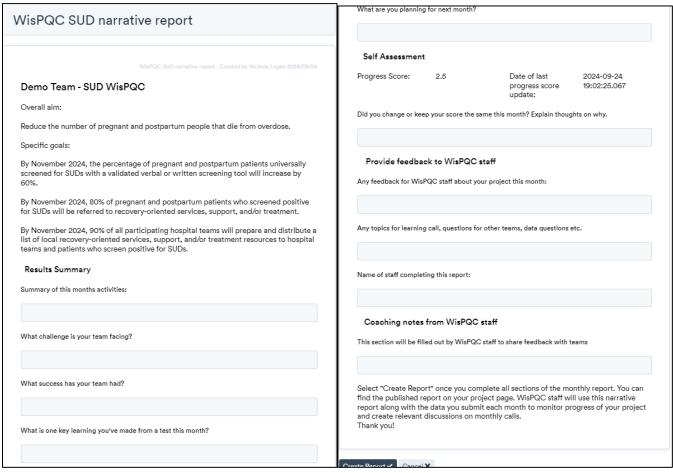




D. Hospital Team Narrative Reports

- Participating hospital team expectations include monthly quantitative data submission (numerators and denominators) and qualitative data submission (narrative report) in LifeQI.
- The narrative report includes a self-assessment section which prompts hospital teams to reflect on and changes to their IHI progress score on their dashboard if needed. This should include the necessary evidence for the assigned score.
- The example for the Demo Hospital Team is provide in the figure below.

Figure 4. Close-up view of the hospital team narrative report for a score of 2.5.



E. Successes and challenges at a collaborative and hospital team level

The "progress score" became particularly useful when WisPQC's initiative to improve the care for
pregnant and postpartum mothers with substance use disorders transitioned from implementation
to sustainment. The LifeQI default definition of 4.5 (sustainable improvement) didn't include
specific markers for hospital teams. Multiple teams indicated their progress score was 4.5, but
WisPQC staff saw varying performance levels. This prompted a helpful discussion with IHI faculty





and LifeQI staff to better understand how to define sustainment and how teams can identify signals of sustainment in their data. The LifeQI default definitions can be changed, but edits must be made when an initiative is initially set up for all teams to see the edits. WisPQC staff will make this change for future initiatives.

- Hospital teams may give themselves a higher progress score than PQC staff would give. This provides a coaching opportunity to ensure all parties have realistic expectations. For example, the WisPQC QIA frequently reminded teams of IHI's advice – 80% of teams should reach 4.0 (significant improvement), while it's very rare to achieve 5.0 (outstanding sustainable results).
- Teams must have clearly defined aim statements to accurately determine progress. For example, to reach 3.0 (modest improvement), a team should have achieved 20% of their expected results. If aim statements aren't clearly defined, it's hard for teams to know when they are 20% complete.





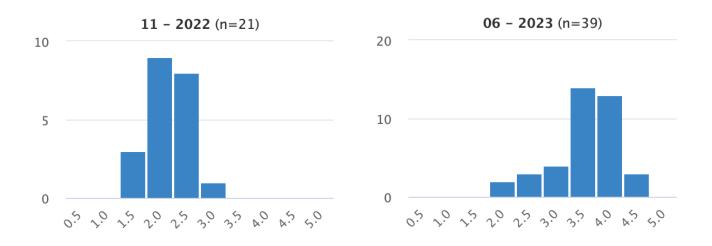
Appendix C: Iowa's Experience

Iowa Perinatal Quality Care Collaborative (IPQCC) – Use of the IHI project progress score to support initiatives

A. Background

The IPQCC, formerly Iowa Maternal Quality Care Collaborative—IMQCC, follows the IHI Breakthrough Series Collaborative framework for statewide quality improvement collaboratives and uses SimpleQI as IPQCC's collaborative QI data software package. The IHI Assessment Scale for Collaboratives scores, referred to as the IHI project progress score, is assessed as part of the hospital monthly team report. First the hospital team lead will perform a self-assessment and then their designated improvement advisor or coach will also assess them. Differences in assessment between the team lead and the coach may stimulate discussion about the hospital's progress with the project or initiative. In aggregate, project assessment scores provide a high-level visual of the progress of the collaborative, as illustrated by two examples from early and late periods in our Obstetric Hemorrhage collaborative:

Figure 1. IHI project progress scores for participating hospital teams during early (11/2022) and late (06/2023) project or initiative stages.



B. Successes and Challenges

The IPQCC leadership team has found the IHI progress score to be a useful way to succinctly relay the status of a team given the objective criteria associated with each score. That said, interrater reliability should still be periodically assessed. IPQCC accomplishes this by having the project director periodically double check the improvement advisor assessments to ensure alignment with defined scores and consistency between our two improvement advisors.





From the perspective of a hospital team, IPQCC has observed that assessing project or initiative progress in this way can offer a new perspective. One trend IPQCC has observed is teams may score themselves higher when they have accomplished all the structural components of an initiative, such as staff education and updating policies, but have not seen improvement in process or outcome measures. In these situations, the IHI progress score can be a useful tool to engage in discussions about what more needs to be done to achieve improvement.

There are a few challenges to be anticipated when a PQC introduces the IHI progress scoring system. First, the scoring algorithm may feel confusing or overwhelming to team leaders. This can be mitigated by presenting examples or walking through the scoring with teams individually. Second, as with other aspects of PQC engagement, many teams may fail to submit a score. As shown in Figure 1 above, IPQCC had scores from 21 and 36 teams, respectively. Yet, IPQCC had 56 teams participating in this project or initiative during these months. The SimpleQI software only allows a coach to submit a score in response to a hospital's team score, so a limitation of the software is that teams who do not submit a monthly assessment will go un-scored. One adjustment IPQCC has subsequently made is to record IPQCC team assessments separately so IPQCC can score teams regardless of whether they submitted an assessment that month.

Overall, the IHI progress score has proven useful in several ways to the IPQCC leadership and IPQCC encourage other PQCs to consider adopting this within their collaboratives. It is not without limitations, however some of these can be mitigated.



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