Applying Small Multiples to track facility improvements and guide Learning Sessions

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1. Context

- The **Aurum Institute** is currently running three sub-district Learning Collaboratives to support PMTCT Services in Ekurhuleni District.
- These Learning Collaboratives are made up of Learning Sessions interspersed with Action Periods where facilities run small cycles of change (Plan-Do-Study-Act cycles) to test improvement change ideas.
- Each sub-district is made up of approximately 30 Primary Healthcare facilities and three Maternity and Obstetric Units. The area caters to a highly migrant peri-urban population of approximately 1 million people.[1]
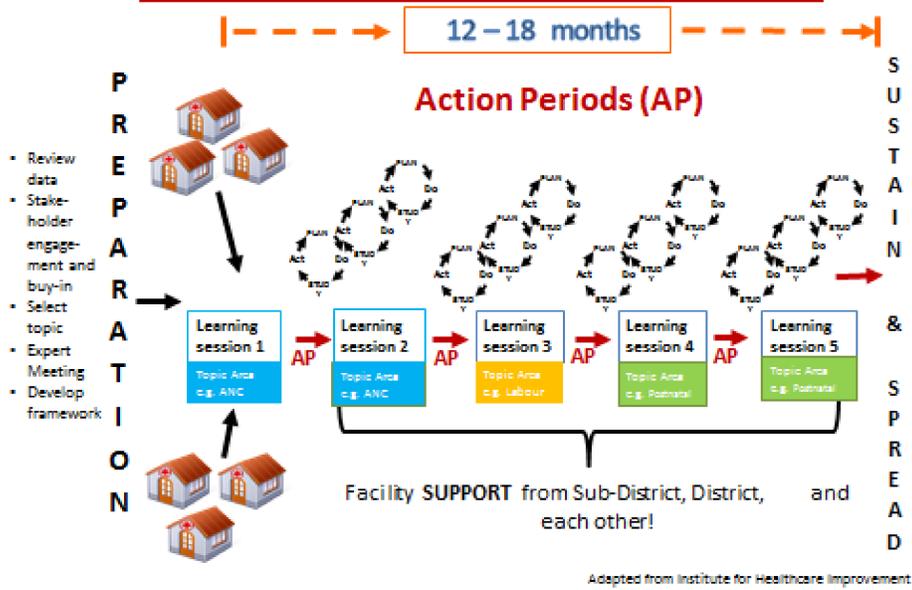

Figure 1: Learning Collaborative Model being used in each Ekurhuleni Sub-District

2. Problem

- The problem was the access and utilization of data to understand how well individual clinics had progressed with their improvement projects during the action period.
- All facilities participating in the collaborative are requested to bring their run charts and data to the learning session. Often they do not bring their data to the learning session or their data is not recorded accurately making it impossible to understand whether facilities have made changes resulting in the beginning of improvement.
- In facilitating Learning Sessions it is really important to identify change ideas that indicate signs of improvement in order to rapidly spread them to other clinics and sub-districts.[2]

3. Assessment of the Problem and Analysis of its Causes

- An analysis of previous learning sessions conducted (n=6), indicates that on average 48% ±12.3 of the participants bring some form of facility level data to the Learning Session with them.

- Continual reminders through email and on site visits had been tried to get facilities to bring their data to the learning sessions but without significant progress.

- The root causes of the problem lay with facilities not placing enough importance on using real time data to track the progress of their change ideas.

Some Anecdotal Feed-back From Using Small Multiples At The Learning Session

" I think using these small graphs has motivated us to work harder on improvement during action periods as we know when we get to the Learning Session our data will be looked at for improvement"

"When my clinic was not highlighted as one of the facilities that was showing signs of improvement, I went to Craig asked him to check his data again... Sure enough we had signs of improvement and he apologised a lot for not highlighting our progress"

"I want to be a clinic that contributes to the "change package" so I want my data to show improvement"

4. Intervention

- Generating small multiples from DHIS data prior to every learning session. These small multiples present graphs that track all facilities within a given topic area, showing their progress before and during the previous action period.

- The small multiples are analysed prior to the learning session by the Improvement Advisor in order to identify facilities that are making improvements versus those that have not yet improved. This was much easier through the formatting of the small multiples which allowed the IA to pick up improvement at a glance.

- Facilities showing signs of improvement are asked to show-case the changes made with the group to encourage the all teach-all learn principle. Clinics not yet showing progress are also encouraged to share especially if their change, if successful, is going to take a while to be detected in outcome data.

- Facilities not showing improvement are also given a chance to share what did not work as this can be critical to the learning process.

COMPARISON OF DATA UTILISATION FOR LEARNING SESSIONS BEFORE AND AFTER CHANGE

Format of Data Feedback Prior to Change
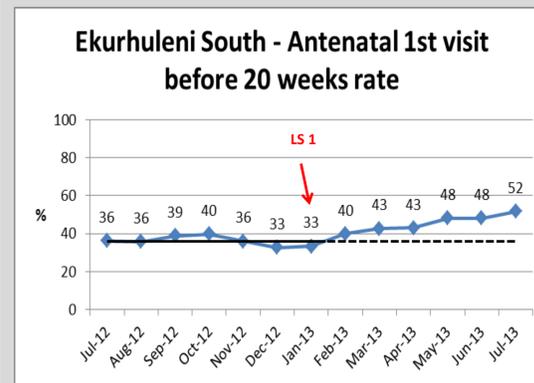
Advantages of Using Small Multiples

1. Prior to the introduction of small multiples, Aurum was only using sub-district level data to track change
2. Small multiples allow for a greater sensitivity to improvement at a facility level
3. Using small multiples allowed Aurum to interrogate variation more rigorously at a facility level
4. Subgrouping of small multiples according to topic areas allows for a better understanding of special cause variation due to change ideas

Format of Data Feedback Post Change
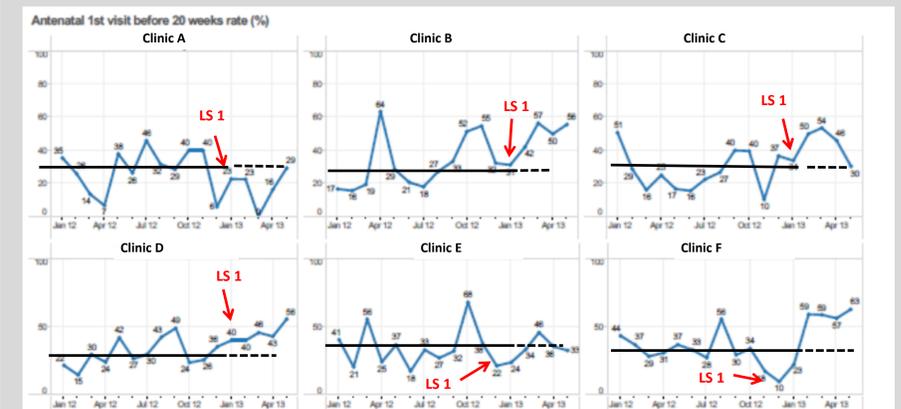
4. Study Design

- This is not formal, traditional research. If it resembles anything close to a research strategy, it is qualitative and interpretive using the learning process of the authors to assist others in how they may use data more effectively when managing a large scale QI learning collaborative.

5. Measurement for Improvement

- Through the use of the small multiples, facilities with access to their own data at Learning Sessions has gone from a baseline of 48% to 100% of facilities having access to their information.
- Based on the perceptions of the Improvement Advisor conducting the Learning Sessions there has been a vast improvement in the way facilities use data to track improvement following the introduction of the small multiples

6. Effects of Change

- We now have a way of tracking facility level data at that is not reliant on facilities bringing their data to Learning Sessions
- The introduction of small multiples to guide decisions on spreading change in a rapid way has created a learning culture much more strongly aligned to the use of data to guide improvement.
- Prior to the introduction of small multiples, facilities knew data was important but did not strive to improve their data so they could be show-cased at the next Learning Session. Small multiples really make the data matter in ways that were not evident before.

REFERENCES:
1. District Health Information System (DHIS)
2. Langley, G. J., Moen, R., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The improvement guide: a practical approach to enhancing organizational performance.* John Wiley & Sons.