

Background

In November 2022 Cook Children's Health Care System's Office of Physician Well-being, headed by Dr. Sara Garza and Dr. Kirk Pinto, approached the Process Improvement Department for assistance in addressing physician burnout at Cook Children's Physician Network (CCPN). The phase I project began in January 2023 and Results were reported in October 2024.

The Office of Physician Well-being identified the Team-based Care model as one that could favorably impact physicians employed at CCPN, as well as their clinical and non-clinical team members. Promoted by the American Medical Association, "Team-based care is a collaborative system in which team members share responsibilities to achieve high-quality and efficient patient care."¹

The Lean Six Sigma DMAIC (Define-Measure-Analyze-Improve-Control) methodology was chosen to evaluate the current state of work at one CCPN primary care location, and one CCPN specialty care location. Due to significant staffing changes at the beginning of Improve phase, the effort for the specialty care location was halted.

Prior to project kickoff, a thirty-one question survey was distributed to the project team to evaluate current state individual well-being. Twelve metrics were established as a result of the survey:

1. **Clinic Collaboration**
2. **Clinic Support/Connection**
3. **Professionally Fulfilled**
4. **Respected & Valued**
5. **Work/Life Balance**
6. **Workflow Efficiency**
7. **Value Demonstration**
8. **Communication**
9. **Team Transparency**
10. **Emotional Exhaustion**
11. **Physical Exhaustion**
12. **Customer Vitality**

The primary objective of our project was to impact Physician Well-being, with the hope of improvements to operational factors like workflow efficiency, key clinic metrics, and team dynamics secondarily.

Define, Measure, Analyze Phases

- The project team identified seven processes in scope for process mapping. The processes included: pre-patient arrival, visit scheduling, patient check-in, rooming, discharge/check-out, post-visit work, and physician specific day-of processes. Level 1 and Level 2 process maps were completed, and the processes were verified via gemba walks.
- The project team then completed issue identification for each process map, and indicated which issues directly contributed to their individual burnout.
- In addition to the individual well-being survey, key clinic timestamp metrics were collected, as well as data to characterize after hours charting time from EPIC Signal.
- Root Cause Analysis was performed via Ishikawa diagrams and the 5-Whys.

References

1. Sinsky, C., & Rajewski, E. (2015, October 7). Team-based care: Improve patient care and team engagement through collaboration and streamlined processes. AMA Ed Hub. <https://edhub.ama-assn.org/steps-forward/module/2/202513>

Improve Phase

- The project team completed Ideal State process maps for each of the seven identified in scope.
- Education was provided to the project team on the Team-based Care model. The education was high level and informed the project team on the principles of the Team-Based care model, the reported benefits by organizations who implemented it, and common solutions used in each fundamental area.
- The approach to identifying solutions was a combination of organic solutions created by the project team members and those that could be enhanced by pairing with appropriate elements from the Team-Based care model.

Solutions included:

Pre-Visit Planning	Expanded Rooming & Discharge	Team Documentation
New arrival time provided to patients, 15min before the scheduled appointment time	5S of vitals and weigh stations	MA or LVN reconcile medications during rooming
Improved in-room communication between MD, MA and/or LVN regarding prep for procedures, vaccines, and point of care testing	Purchase of additional mobile vitals carts to be assigned to each exam room	
Co-location of MD, MA and/or LVN		

- An excellence plan was developed for the solutions, and an initial three week long pilot was initiated. At the conclusion of the pilot, the post-pilot individual well-being survey was administered.

Results

The project results can be organized into three sections: individual well-being, EPIC Signal performance, and operational. The initial pilot period was 4/29/24 – 5/17/24, and at the conclusion of the pilot, the primary care team elected to keep all solutions in place (post-pilot appointment n=1,936). **Figure 1** depicts improvements in the individual Well-being survey.

Improvements in EPIC Signal metric performance were not proven to be statistically significant, though there were some gains:

Metric	Baseline pre-pilot	Post Pilot	%change
Pajama time (min)	40.6	35.1	-13.5%
Time on unscheduled days (min)	22.0	29.0	31.7%

Operational improvements were mixed. The solution instructing patients to arrive 15 minutes prior to their scheduled appointment time was met with little resistance from patients and was greatly appreciated by the project team (**Figure 2**). *Note: Appointment Time Accuracy = (Appointment Time – Department Check-in Start Time)*. **Figure 3** depicts the results of other operational metrics. As a result of the 5S, a bottleneck was eliminated at the weigh station and provided more value added time during rooming (**Figure 4**).

- After the initial pilot period, Cook Children's began a pilot using DAX Copilot to automate the dictation of notes. The physician who worked on this project team adopted DAX, and was able to **add an appointment slot back into her schedule** due to the synergy of both projects.
- The project team anecdotally and qualitatively described their enthusiasm for the changes during close-out by praising the improved morale and team dynamics, as well as the impact on their own individual well-being.

Next Steps

The second round of a pilot at the same clinic with two more physicians was initiated and completed in January 2025. Preliminary results indicate there are similar improvements in well-being across the new project teams, including the physicians.

The Office of Physician Well-being is continually looking for opportunities to scale the efforts to more physicians, and is actively working with system leaders on sustainable strategies to improve well-being.

Figure 1: Results of the individual well-being survey

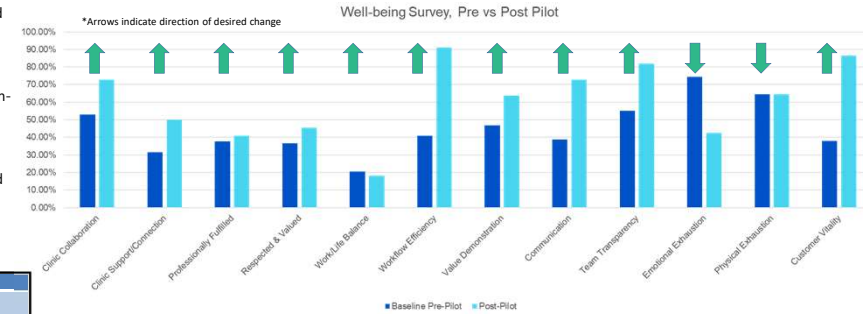


Figure 2: Analysis of Appointment Lead Time and Appointment Time Accuracy

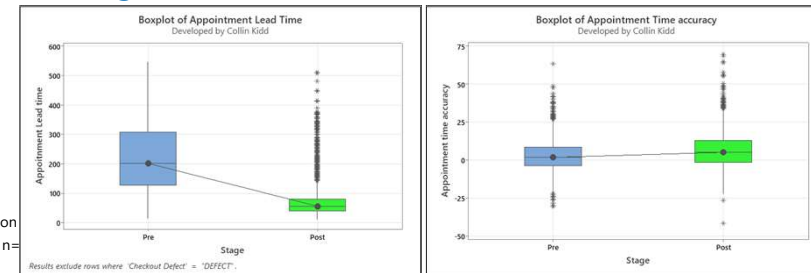


Figure 3: Analysis of all operational metrics

Metric	Median Baseline Pre-Pilot (min)	Median Post-Pilot (min)	%change
Minutes patient arrived early/late	1.93	5.26	172.54%
Wait in the waiting room	7.67	8.05	4.95%
Rooming time	4.21	5.40	28.27%
Appointment lead time	201.23	55.78	-72.28%

Figure 4: 5S performed at Weigh Station

