IMPROVEMENT SCIENCE PROJECT PORTFOLIO

Notes
This table was adapted from Sehgal, Neeman, and King, 2017. It represents a compilation of service, scholarship, and teaching/advising. Finally, SMART aim refers to an aim that is Specific, Measurable, Achievable, Relevant, Time bound and refers to the goal of an Improvement Science project.

Project Timeline	Role	Project Title	Project Description/Aims	Local-level, Patient-level and System-level improvements and Learnings Dissemination of findings
June 2013-June 2015	Team leader	Improving pain in the ED	Multidisciplinary team to be a leader in the assessment, treatment, and minimization of pain in pediatric patients	**Local-level Improvements** -Improved awareness of importance of improving pain management in the ED, -Genesis for several other pain focused projects in the ED, including changes to tracking board
June 2015-2017	Team member	Decreasing blood culture contaminants in a pediatric emergency department	SMART Aims: 1. to decrease the BCCR by 50% within 12 months (baseline ~3%) 2. Decrease number of peripheral blood cultures ordered	**Patient-level Improvements** -61% decrease in contaminated blood cultures, -fewer blood cultures being ordered/sent **System-level Improvements** -Blood culture ordering guideline tool inserted into EMR which requires justification for ordering from ordering provider **Publication** Mullan P, Chamberlain J, Scott S, Weber A, Palacious K, Pettinichi J, **Payne AS**, Badolato G, Brown K. "A quality improvement project to decrease blood culture contaminants in a pediatric emergency department: an interrupted time series analysis." Pediatric Quality & Safety: May/June 2018; 3 (3): e082
July 2015-June 2016	Team leader (learning project used for I2S2 training course)	Improving Pain Management in the UMC ED	SMART Aim: To increase the percent of patients that receive the 1st dose of non-narcotic analgesia within 20 minutes	**System-level Learning** -System was already well performing (highly reliable system) -Major technology input needed to improve system further

			from 81% to 90% by June 2016	
Fall 2016-Jan 2017	Team leader (learning project used for Advanced Improvement Methods training course)	Improving RTU throughput (Factorial design)		**System-level Learning** -Stalled-changes in clinical environment from Front End re-design
January 2017-May 2017	Team member	Improving Re-assessment in Sickle Cell patients with pain	SMART Aim: Improve timely re-assessment from 22% to 50% by May 2017 Improving the timeliness of re-assessment in SCD patients with pain, after 2nd dose of analgesia	**System-level Learning** -Limited improvement, not sustained -Project scope need to be widened
January 2017-December 2018	Improvement Science expert, data analysis expert	Improving ED Throughput	SMART aim: Decrease time from arrival to first provider from 92 to 60 minutes	**Patient-level Improvements** -Decrease time from patient arrival to 1st provider -Decrease in overall ED length of stay **Local-level Improvements** -Redesign of physical space -Instituted new triage/assessment process -Instituted new care team **System-level Learning** -Improvements to decrease time to 1st provider for patient, created inefficient nursing assessment **Publication** **Payne AS**, Brown K, Berkowitz D, Pettinichi J, Schultz TR, Thomas A, Chamberlain JM, Morrison SN. "Improving throughput for mid acuity patients in the pediatric emergency department." (Pediatr Qual Saf 2020;3:e302)
March 2017-	Improvement	Improve billing	SMART aims:	**Local-level Improvements**

June 2018	Science expert, data analysis expert	and coding for POCUS in the ED	1. Improve complete POCUS documentation from 62% to 80% 2. Improve correct POCUS billing codes to 95% or higher	-instituted new process to improve documentation for point of care ultrasound studies performed in the emergency department **Publication** Ng C, Patel A, **Payne AS,** Thomas-Mohtat R, Maxwell A, Abo A. Improving Point-of-Care Ultrasound (POCUS) Documentation and Billing Accuracy in a Pediatric Emergency Department: A Quality Improvement Study *Journal: IN press*
April 2017-June 2018	Improvement Science coach (Quilt 2017) Division of Neonatology	To provide fellows with comprehensive feedback on their clinical performance	SMART aim: Increase the number of fellow evaluations to include comprehensive 360 feedback from attendings, nursing (2), social work (1), families (2) for each fellow / service month, beginning July 30, 2017 and sustaining for three years.	**Local-level Improvements** -2 PDSA cycles completed; increased number of evaluations completed
April 2017-June 2018	Improvement Science coach (Quilt 2017) Division of Child and Adolescent Psychiatry	To improve the overall performance and quality of future child psychiatrists	SMART aim: To improve the rate of timely (within 2 weeks of completion of rotation) evaluations of both our fellows and faculty from 30% to 65% within a nine month time frame and sustain for 6 months	**Local-level Improvements** -1 PDSA cycle completed; increased number of evaluations completed
April 2017-June 2018	Improvement Science coach (Quilt 2017) Division of Genetics	Improve in-patient care for metabolic patients	Improve in-patient care by improving use of IPASS System	**Local-level Improvements** -2 PDSA cycles completed; increased number of evaluations completed
April 2017-June 2018	Improvement Science coach	Improving process for	SMART AIM: Increase number of patient	**Local-level Improvements** -2 PDSA cycles completed; increased number of

		patient evaluations of fellow	evaluations from 2 per quarter to 5 per quarter by April of 2018	evaluations completed
	(Quilt 2017) Division of Otolaryngology			
October 2017-present	Improvement Science expert, data analysis	Improving UMC low acuity throughput	SMART AIMs: 1. Decrease time from patient arrival to physician evaluation from 72 to 65 minutes 2. Decrease length of stay after initial physician evaluation	**Local-level Improvements** -Implemented monthly feedback to physicians on efficiency using QI analyses methods **System-level Learning** -additional improvements in nursing and physician efficiency limited by cost and inability to expand clinical area
January 2018-present	Improvement Science expert Joint QI project with Division of Orthopedics	Improving length of stay for orthopedic patients requiring sedation for fracture reduction	SMART AIMs: Decrease the proportion of patients upper extremity reduction with a length of stay of 5 hours or longer from 60% to 30%	**Local-level Improvements** -Established new clinical role to improve efficiency with sedations -*Project progress impacted by COVID-19* **System-level Learning** -improvements in physician efficiency limited by inability to expand clinical areas, overall ED volumes
January 2018-August 2018	Improvement Science expert, team member	Improve the rates of call to primary care pediatricians		**System-level Improvements** -Created automated process for initiating PCP callback
May 2018-present	Improvement Coach Multi-site national collaborative	Integrate health care delivery system operations and graduate medical education (GME), such that the clinical learning environment enables measurable improvement in both learner experience and patient care.		**System-level Improvements** -Establishment of Quality and Safety Academy to support the academic productivity of faculty and staff trained in quality and safety - Establish Institute for Inter-professional Learning -Develop infrastructure for Joint Accreditation -Increase non-physician participation in creation and dissemination of new knowledge -Continue hospital-wide Simulation-based Training -Integrate inter-professional team design into facility redesign *(pending)*

Appendix 2: Quality Improvement Portfolio Example (from APA Quality and Safety Improvement Scholars program)

Reference
Sehgal, N. L., Neeman, N., & King, T. E. (2017). Early Experiences After Adopting a Quality Improvement Portfolio Into the Academic Advancement Process. Academic medicine : Journal of the Association of American Medical Colleges, 92(1), 78–82. https://doi.org/10.1097/ACM.0000000000001213