Abstract 20 Table 1 DULCE families screened and provided resources

	Screened % (N)	+ screen % (N)	Families provided resources (among all families)	Families provided resources (among families with + screen)
Food Insecurity	98.0% (678)	46.1% (319)	45.4% (314 of 678)	98.4% (314 of 319)
Housing Instability	97.5% (675)	13.2% (91)	11.3% (78 of 675)	85.7% (78 of 91)
Housing Conditions	94.9% (657)	3.5% (24)	2.0% (14 of 657)	58.3% (14 of 24)
Financial Assistance	99.0% (685)	51.3% (355)	36.3% (251 of 685)	70.7% (251 of 355)
Utilities	96.5% (668)	2.2% (15)	1.7% (12 of 668)	80.0% (12 of 15)
Smoking	97.5% (675)	6.8% (47)	6.1% (42 of 675)	89.4% (42 of 47)
Maternal Depression	94.2% (652)	14.3% (99)	12.0% (83 of 652)	83.8% (83 of 99)
Intimate Partner Violence	96.4% (667)	5.1% (35)	3.0% (21 of 667)	60.0% (21 of 35)

Conclusions QI-supported DULCE expansion increased by 50% the proportion of children receiving all RHC visits and strengthened the healthcare system's capacity to proactively address families' needs via integration of existing resources.

21 EFFECT OF DATA QUALITY IMPROVEMENT INTERVENTION ON HEALTH MANAGEMENT INFORMATION SYSTEM DATA ACCURACY: AN INTERRUPTED TIME SERIES ANALYSIS

¹Zewdie Mulissa, ²Naod Wendrad, ¹Befikadu Bitewulign, ¹Abera Biadgo, ¹Mehiret Abate, ¹Haregeweyni Alemu, ²Biruk Abate, ¹Abiyou Kiflie, ¹Hema Magge, ¹Gareth Parry. ¹IHI, Ethiopia; ²FMOH of Ethiopia, Ethiopia

10.1136/bmjopen-2019-ihl.21

Background As part of a partnership between the Institute for Healthcare Improvement and Ethiopian Federal Ministry of Health (FMOH), a Maternal and Neonatal Health (MNH) Collaborative took place between November 2016 and December 2017 aiming to accelerate reduction of maternal and neonatal mortality in Lemu Bilbilu, Tanqua Abergele and Duguna

Fango districts. Before starting the MNH Collaborative, assessments found inaccuracies in core process and outcome data obtained from Health Management Information System (HMIS) reports.

Objectives We aimed to assess the effect of an initiative to improve data quality in the MNH Collaborative.

Methods Building on the core MNH Collaborative design, data quality improvement activities were added. We used the WHO review methodology to derive a verification factor (VF) for the core measures of number of pregnant women that received antenatal care first visit, number of pregnant women that received antenatal care on at least four visits, number of pregnant women tested for syphilis and number of births attended by skilled health personnel. Impact was assessed using interrupted time series.

Results Data quality improved across all measures, for example, in Duguna Fango, the VF for number of pregnant women that received antenatal care first visit improved from 0.79 (quartiles 0.73, 0.85) pre-intervention to 0.99 (0.93, 1.00) post intervention, $p < 0.001$; and the VF for number of pregnant women tested for syphilis increased from 0.45 (0.36, 0.48) to 0.96 (0.89, 0.99), $p < 0.001$.

	2016								2017											
	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Pre-work																				
Core Improvement Activities: Identification of focus areas and core measures; Quality Improvement training for facility leaders; Baseline Assessment																				
Learning Session 1																				
Core Improvement Activities: Introduction of the core changes and training on improvement methods																				
Data Quality Improvement Activities: Training on the importance of high-quality data																				
Action Period 1																				
Core Improvement Activities: Coaching on tests of change, sharing lessons learned across teams																				
Data Quality Improvement Activities: Monthly data review and feedback; Trust building with health care leaders and workers																				
Learning Session 2																				
Core Improvement Activities: Reflection of and sharing of lessons learned across teams, further training on improvement methods																				
Data Quality Improvement Activities: Training on data quality during learning sessions																				
Action Period 2																				
Core Improvement Activities: Coaching on tests of change, sharing lessons learned across teams																				
Data Quality Improvement Activities: Monthly data review and feedback; Trust building with health care leaders and workers																				
Learning Session 3																				
Core Improvement Activities: Reflection of and sharing of lessons learned across teams, further training on improvement methods																				
Data Quality Improvement Activities: Training on data quality during learning sessions																				
Action Period 3																				
Core Improvement Activities: Coaching on tests of change, sharing lessons learned across teams																				
Data Quality Improvement Activities: Monthly data review and feedback; Trust building with health care leaders and workers																				
Learning Session 4																				
Core Improvement Activities: Reflection of and sharing of lessons learned across teams, further training on improvement methods																				
Data Quality Improvement Activities: Training on data quality during learning sessions																				

Abstract 21 Figure 1 Summary of the core improvement activities and data quality improvement activities for the maternal and neonatal health collaborative

Abstract 21 Figure 2 (A) Antenatal care visit 1. (B) Antenatal care visit 4. (C) Syphilis screening. (D) Skilled birth attendance

Conclusions A data quality improvement initiative significantly improved accuracy of data used to monitor maternal progress of this MNH Collaborative in Ethiopia.

22

FROM NO SHOW TO ARRIVED: USING MACHINE LEARNING TO BOLSTER PATIENT ATTENDANCE FOR RESIDENT CONTINUITY-CLINIC APPOINTMENTS

¹Jaishree Hariharan, ²Roma Bhatia, ¹Zachary Lenhart, ¹Janice Cunningham, ¹Brea Sodini, ¹Dang Tran, ¹Oscar Marrequin, ¹Gary Fischer. ¹University of Pittsburgh Medical Center, USA; ²Beth Israel Deaconess Medical Center, USA

10.1136/bmj-2019-ih.22

Background Resident continuity-clinic (RCC) is a crucial component of ambulatory training in primary care. The no-show rate (NSR) in a large academic center with 60 residents averaged 27% in academic year (AY) 2018, despite an automated phone/text reminder system 3 days prior to appointment, resulting in fragmented care, reduced access and decreased learning opportunities for residents.

Objectives To determine whether telephone outreach targeting patients predicted to be at high-risk to no-show can reduce NSR for RCC appointments.

Methods A validated machine-learning prediction model developed by data scientists at UPMC for Primary care, generated a daily list of high-risk patients (i.e. =20% risk to no-show).

Abstract 22 Table 1 Patient characteristics: resident clinic. Unique patients scheduled in AY 2019

Pt Demographics AY 2019	Unique Scheduled Patients (N/%)	No Shows (Unique Patients) (N/%)
Unique patients	6230	1532 (25%)
Age 18-39 Yrs	2990 (48%)	710 (46%)
Age 40-64	2430 (39%)	693 (44%)
Age > 65	810 (13%)	157 (10%)
Gender		
Female	3606 (58%)	841 (55%)
Male	2624 (42%)	691 (45%)
Ethnicity/Race		
Black	2618 (42%)	941 (61%)
White	2817 (45%)	466 (30%)
Insurance		
Commercial	2625 (48%)	376 (28%)
Medicaid	1568 (29%)	608 (45%)
Medicare	1093 (20%)	287 (21%)

Abstract 22 Figure 1 Determinants of machine learning algorithm