“Improving efficiency in section of Hematology through reducing turnaround time from 24 hrs. to 12 hrs. for all Complete Blood Count (CBC) samples received by November 2014.”

**Methods**: Methodology used was Lean Six Sigma Roadmap which includes following:

- Define, Measure, Analyze, Improve, Control (DMAIC)

**Results**

1. Reporting of CBC results reduced from 24 – 12 hrs. with report completion rate of about 99%.
2. With the induction of barcoding and automation:
   (a) The average sample analysis time was reduced from 1.3 minutes/sample to 0.64 minutes/sample.
   (b) The average rate of slide preparation per sample was reduced from 1.24 slides/sample to 0.34 slides/sample.
   (c) Slide rejection and re-staining is significantly reduced by factor of $1/6^b$.
3. New process has completely eliminated the requirement of print out with the provision of abnormal results flagging. Hence annual saving of 0.2 Million Rupees and saving of 31 labor hours/month by avoiding unnecessary printout.

**Conclusion**: This was a Lean Six Sigma Green Belt Project which utilizes the methodology of DMAIC (Define, Measure, Analyze, Improve & Control). This methodology proved to be very useful in identifying wastes as well as improving the efficiency of processes. The concept of “walk through the process” was very effective in identifying gaps.

The team concludes as follows:

1. Barcode printing and scanning reduces delay in process of CBC reporting as well as enhance tracking of sample at every step.
2. Throughput of analyzer reduces from 80 samples to 150 samples per hour.
3. Slide preparation and staining reduces from 100% to 40%.
4. Slide rejection rate decreased to 2% from 70%.
5. Printing of initial results reduces from 100% to 10%.
6. Manual platelet counting was substituted with automated optical platelet count which in turn saves about 2hrs. per sample time of technologist.
7. Decrease in slide rejection rate speed up the process of CBC reporting.
8. Eliminating the step of printing initial results saves time of one staff which was then utilized to start the reporting of Malaria Thick Smear in the same capacity.

**ISQUA16-2413**

**THE IMPACT OF NEW PAYMENT MODELS ON CARE DELIVERY: REDUCTIONS IN EMERGENCY CARE USE AMONG BENEFICIARIES IN A MEDICARE PIONEER ACO**

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**Objectives**: Changes in care delivery patterns represent one mechanism for reducing medical spending growth while preserving or improving quality. For example, many visits to the Emergency Department (ED) are for conditions that could be addressed in lower-cost outpatient clinics, or could be avoided altogether with better outpatient access. Using 2009–14 Medicare claims for a large Pioneer Accountable Care Organization (ACO), we examined whether ACO entry or intensive care management receipt was associated with Medicare beneficiary ED visit rates.

**Methods**: Beneficiaries could join the ACO between 2012-14 (Pioneer contract years); we focused on the first two cohorts of entrants (entry in 2012 or 2013) to allow for at least two years of post-entry data, then compared ACO-entrants with those who had yet to join. The ACO also identified high-risk beneficiaries and enrolled them in an integrated Care Management Program (iCMP), which provided additional routes through which to receive care, beyond that available from their primary care physicians. Because of program capacity constraints, iCMP program entry was staggered. For both the ACO-entrants and iCMP entrants, we examined the pre-program trends in ED use for those who started earlier versus later, and found the trends to be comparable. We then examined changes in visit rates over time (within-person) for earlier versus later entrants, using Poisson or logistic regression models with individual-level fixed effects, and adjusted for changes in risk scores (i.e., CMS-HCC scores), calendar month, and year. We examined ED visit rates overall, and then for conditions treatable with timely outpatient care. For the latter, we classified the ED visits using the NYU algorithm, i.e., using a 50% probability threshold that an ED visit was for conditions likely to be non-emergent or primary care treatable. We also conducted sensitivity analyses with different probability thresholds.

**Results**: There were 42,050 beneficiaries who entered the ACO in 2012, and 19,521 in 2013. Within the 2012 cohort, the ACO classified 11.2% beneficiaries as eligible for the high-risk iCMP program; of these, 65% started the program during the study period. Within the 2013 cohort, the ACO classified 11.7% beneficiaries as iCMP eligible; of these, 39.0% started during the study period. In adjusted models, ACO entry was associated with a 3.6% decreases in ED visit rates (95% CI: 1.5% to 5.6% decrease). ACO entry also was associated with lower odds of ED visits for outpatient treatable conditions (OR = 0.905; 95%CI: 0.872–0.941). Among the higher risk beneficiaries who were eligible for the iCMP program, starting the program was associated with an 8.0% decrease in ED visit rates (95% CI: 4.7–11.1% decrease). Program entry also was associated with lower odds of visits for outpatient treatable conditions (OR = 0.918; 95%CI: 0.887–0.982). Analyses altering the ED classification threshold yielded comparable findings.

**Conclusion**: Entry into a Medicare Pioneer ACO is associated with decreases in ED visit rates for all visits and visits for conditions treatable in outpatient clinics. Among the ACO population, entry into a high-risk care management program had similar additional effects. Alternative payment models such as those for Pioneer ACOs (e.g., shared upside and downside risk) could alter care delivery patterns, and thereby have the potential to slow medical spending growth.