



Physicians Caring for Texans

TexMed 2017 Quality Improvement Abstract

Please complete all of the following sections and include supporting charts and graphs in this document. Submit a total of two documents - this document and the Biographical Data and Disclosure Form to posters@texmed.org by midnight March 17, 2017.

Procedure and Selection Criteria

- Applicants should demonstrate an understanding of QI concepts through the use of quality tools, measures of success and the use and interpretation of data. Judges will use the scoring described in this matrix to identify projects to be presented at the conference, as well as, projects to be considered for the awards.
- Maximum points are delineated with a brief explanation of the content that should be included under each section. Applicants must select one of the following improvement categories into which the project best fits: patient safety, patient centered care, timeliness, efficiency, effectiveness, or equity. Applicants may describe the problem and results in narrative or graphic format.

PROJECT NAME: A Case for a Statewide, Comprehensive, Opt-Out Immunization Information System

Institution or Practice Name: Texas Tech University Health Science Center

Setting of Care: Clinic

Primary Author: Ricardo Gamez MS2, Ymaliz Ramirez MS4, Jaime Carrillo MS1, Dr. Indu Pathak, Erika Wiker, Gilbert Handal MD

Secondary Author:

Other Members of Project Team:

Is the Primary Author, Secondary Author or Member of Project Team a TMA member (required)?

Yes No

Please provide name(s): Dr. Gilbert Handal

Project Category: (Choose all appropriate categories)

- | | | |
|--|---|-------------------------------------|
| <input checked="" type="checkbox"/> Patient Safety | <input checked="" type="checkbox"/> Patient Centered Care | <input type="checkbox"/> Timeliness |
| <input checked="" type="checkbox"/> Efficiency | <input checked="" type="checkbox"/> Effectiveness | <input type="checkbox"/> Equity |

Enhanced Perioperative Recovery

Disaster Medicine and Emergency Preparedness

For this poster session, TMA is looking for projects that demonstrate the six aspects of Quality Care as defined by the Institute of Medicine.

- Safe - avoids injuries to patients from care that is intended to help them
- Timely - reduces waits and delays for both those who receive care and those who give care
- Effective - based on scientific knowledge, extended to all likely to benefit, while avoiding underuse and overuse
- Equitable - provides consistent quality, without regard to personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status
- Efficient - avoids waste, including waste of equipment, supplies, ideas, and energy

- Patient centered - respects and responds to individual patient preferences, needs, and values, ensuring that patient values guide all clinical decisions

Quality Improvement (QI)

Overview: *Describe 1) where the work was completed; 2) a description of the issue that includes how long the issue has been going on and the impact the issue has on the organization/facility; 3) what faculty/staff/patient groups were involved, and 4) the alignment to organizational goals.*

Over the course of one year 117 records of children admitted to El Paso Children’s Hospital were reviewed. During admittance into the Hospital, parents were approached regarding the study; the potential impacts to the study may have on their child and asked whether they were interested in participating. The parents were able to accept or decline participation in the study. If accepted we explained the Informed Consent and HIPPA waivers and requested applicable signatures. Parents were asked to provide a copy of their child’s immunization record. If the parents did not have the paper copy immunization records on hand we requested that they bring the records back the next day or authorize the primary care physicians to provide TTUHSC with a copy/confirmation of vaccinations. Upon receipt of immunization records, we compared them against ImmTrac. The research focused on children between the ages of 4 months and 17 years, with 7.13 serving as the average age of the patients with a similar number of records reviewed being from male and female children (45.3% and 54.7% respectively). We focused on CDC and ACIP recommended vaccination scheduled to determine the appropriate vaccines that should be administered to a child between the age of 0-18 as well as the recommended age to begin dosage.

Aim Statement (2 points for each portion of SMART, with max points 10): *Describe the goal of the project incorporating SMART.*

The purpose of this research is to determine the reliability and correlation between the recorded immunization history in the Electronic Medical Record, the patient’s own immunization records, and the ImmTrac, the Texas Immunization Registry.

Specific – what faculty/staff/patient groups were involved and where the work was completed

Measureable – numerical values that define baseline and goal

Actionable – what solutions/interventions were implemented

Realistic - able to implement solutions and sustain outcomes with given constraints

Time bound – what date established to reach goal by

Measures of Success (5 points for describing solutions measurement and 5 points for describing outcome measurement, with max points 10): *Describe how you measured your interventions to ensure adherence and describe how you measured your outcome.*

Use of Quality Tools (5 points for appropriate tools utilized during each PDSA phase, with max points 20): *What quality tools did you use to identify and monitor progress and solve the problem? Provide sample QI tools, such as fishbone diagram or process map, and identify which phase of the PDSA cycle each tool was utilized in. Note tools here and send as addendum with abstract form.*

Interventions (max points 15 includes points for innovation): *What was your overall improvement plan (include interventions and identify quick wins)? How did you implement the proposed change? Who was involved in*

implementing the change? How did you communicate the change to all key stakeholders? What was the timeline for the change? Describe any features you feel were especially innovative.

Results (max points 25): Include all results, using control charts, graphs or tables as appropriate. Charts and graphs must be appropriately labeled or points will be deducted. Note charts, graphs and tables here and send as addendum with abstract form.

Results.

Table 2 reflects vaccination recording based upon record type. Of the 117 subject records reviewed only 99 subjects had an ImmTrac Record and 42% maintained vaccination records.

Table 2. Percentage of Subjects with Record Types

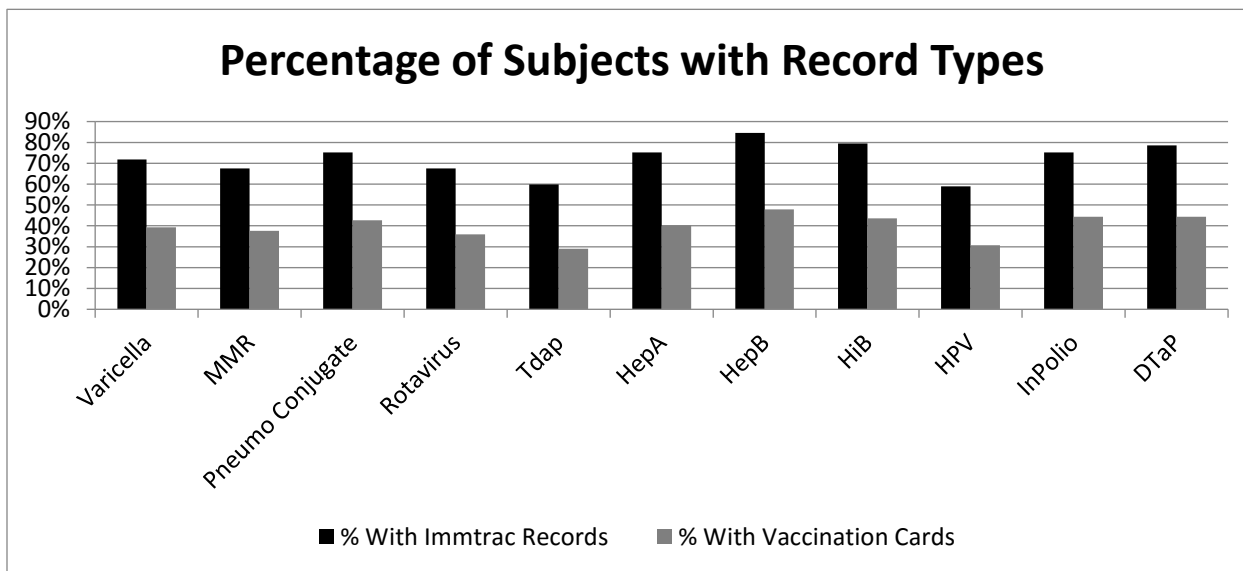


Table 3 outlines the number of patients whose data matched both the ImmTrac and hard copy vaccination records. The records were only accurate in less than 20% of the records reviewed.

Table 3. Percentage of Patients with Matched Data in ImmTrac and Vaccine Records.

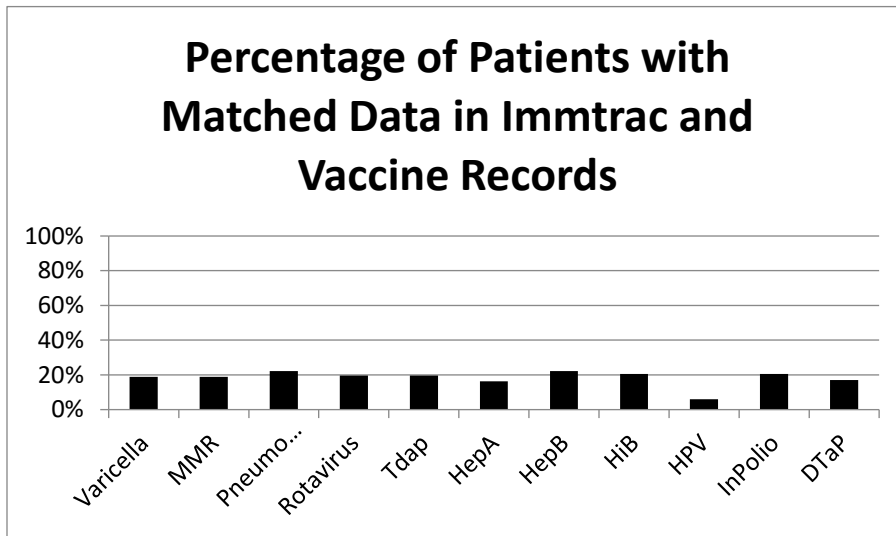


Table 4 details the number of subjects that received extra vaccinations due to inaccurate or no records when compared to ImmTrac and vaccination cards. Those patients with vaccination cards resulted in only 30% of those who received extra dosages, as opposed to 59% of those with ImmTrac records.

Table 4. Percentage of Extra Doses Found in Records.

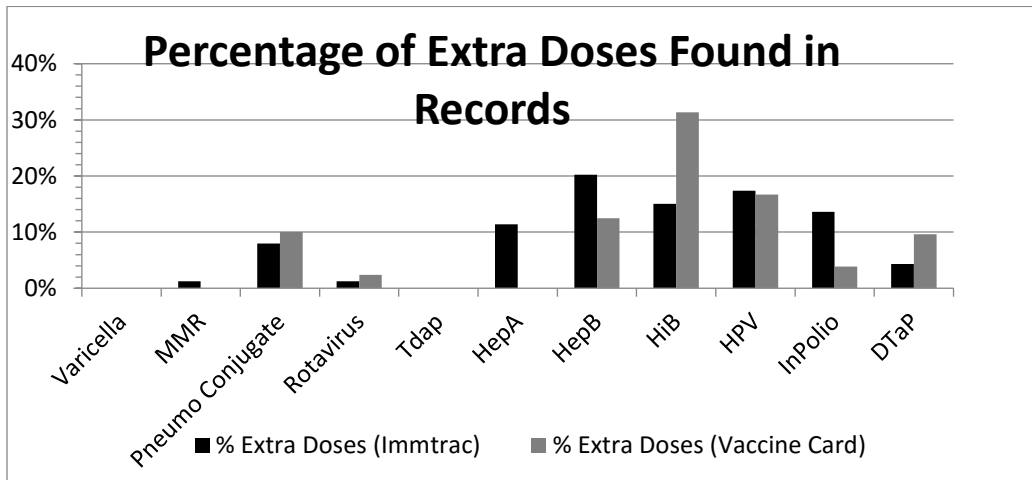
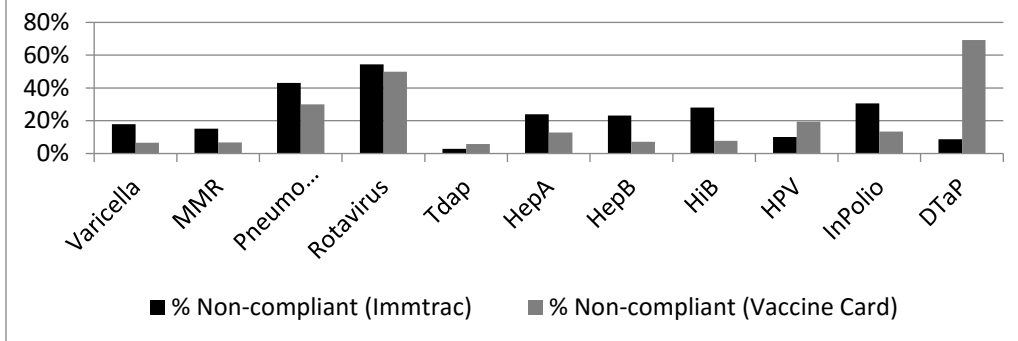


Table 5 outlines the percentage of patients who were not in compliance with 2016 CDC immunization schedules.

Table 5. Percentage of Patients Not in Compliance with 2016 CDC Immunization Schedule.

Percentage of Patients Not In Compliance with 2016 CDC Immunization Schedule



Conclusions and Next Steps (max points 20): Describe your conclusions drawn from this project and any recommendations for future work. How does this project align with organizational goals? Describe, as applicable, how you plan to move ahead with this project.

The comparative review of paper copy immunization records and ImmTrac validates the importance of a comprehensive state-wide immunization tracking system. Immunization record fragmentation places children at substantial risk for under-immunization and over-immunization,ⁱ registries such as ImmTrac, serve as a valuable tool to improve a child’s immunization status and safeguard the child from over-vaccinations, however, this can only occur if the information is accurate. Our research proves that both the implementation of the system and the input of data are flawed.

With many of the patient’s parent (s) relying solely on ImmTrac to manage their child’s immunization records the “opt in” measures in place are not predictive of the parent’s willingness to consent to their child being in the registry. Our research indicates that of the 117 patients reviewed ImmTrac reflected 79.8% of the population and accurately in only 44%; highlighting the larger potential for children to be over-immunized because of flawed or no data. It is estimated that 10 to 20% of young children receive at or more than one additional or duplicate immunization.ⁱⁱ The immunization of children with multiple providers, which is quite frequent in communities, can result in different compliance with the inclusion of the children in the ImmTrac systems opposed to a single provider, a medical home, where there is more consistency. Added to the already complex nature of tracking vaccinations, is the “opt-in” requirement for the state of Texas, which requires consent from the parents to include the child on the ImmTrac. We postulate that this may be one important reason that decreases provider compliance with including the data in the ImmTrac; in our research, we found that over 45% of the children were over-immunized.ⁱⁱⁱ A study conducted by Lumen et al suggests that over 21,212 children ages 19-35 months of the Latino community, were under-vaccinated due to socio-economic situations in El Paso, this is approximately 81.2% of the El Paso population,^{iv} which paves the way for some vaccine-preventable diseases to re-emerge.

Proponents of anti-vaccine campaigns argue that parents should be required to maintain “opt-in” to the registry system because it is effectively tracking those who choose not to vaccinate their children. Our research proves the contrary, requiring parents to “opt-in” is resulting in many children receive unnecessary vaccinations because the child’s immunization status is not appropriately recorded in the ImmTrac and no paper records exist due to parents either misplacing or losing the hard copy records or information being entered into ImmTrac inaccurately.

As a result of our research, it is our position that there is an urgent need to update the waiver requirements for storing of patient data in ImmTrac from an opt-in to opt-out waiver. Updating the waiver requirements will minimize the number of children receiving duplicative and unnecessary vaccinations. Additionally, it is imperative to implement measures to improve the documentation on ImmTrac—facilitating a statewide data exchange that automatically updates and supports the patient’s EMR. This would allow also for less missed opportunities for vaccination, particularly for children that do not have access to a regular medical home. Changing to an opt-out system would begin to improve the system but until this happens—notwithstanding that a child will receive all of his/her immunization in a compliant medical home, we will continue to advocate for both paper and ImmTrac records, and continue to advocate that there is a link between the EMR and ImmTrac so that the records of the child can be reviewed and discussed limiting the number of potential missed opportunities. It is our desire that as the system aligns more with an opt-out process, we will be permitted to conduct a repeated QI program to validate the benefits of a comprehensive vaccination registry and success of decreasing the number of over and under-vaccinated children in El Paso, the goal would be to use only the electronic system once the evidence proves is accurate and appropriate.

ⁱ Stockwell, MS, Natarajan K, Ramakrishnan R, et al. Immunization Data Exchange with Electronic Records. *Pediatrics*. 2016; 137(5): e20154335

ⁱⁱ Feikema SM, Klevens RM, Washington ML, Barker L. Extraimmunization among US children. *JAMA* 2000; 283 (10) 1311-1317

ⁱⁱⁱ Darden, Paul M, Gustafson, Kristina, Nietert, Paul J, Jacobson, Robert M; Extra-Immunization as a Clinical Indicator for Fragmentation of Care. *Public Health Report*. 2001; (126 (Suppl 2): 48-59

^{iv} Lumen, E.T., McCauley, M.M., Shefer, A and Chu, S.Y. (2003). Maternal characteristics associated with vaccination of young children. *Pediatrics*, 111