OrchardAnalytics

Harvest the Power

One Person's Journey Toward Understanding the Value of Healthcare Analytics

WebEx August 16, 2016: Follow-up Q&A by Dr. Thomas Novicki, PhD, DABMM

1. Where did you get the algorithms used in your examples?

   In the first pilot project, the thyroid function test algorithm was derived from our thyroid function reflex panel. That in turn was developed from a variety of sources (e.g., publications, professional society recommendations). Project two on test utilization used this article as a guide:
   Brimhall, B., Mandel, A., Hightower, C., & Clements, B. (2013). Integrated medical and financial analytics to identify and quantify unnecessary clinical laboratory testing. In Seref, O., Serban, N., & Zeng, D. (Eds.) Proceedings of the 8th INFORMS Workshop on Data Mining and Health Informatics (DM-HI 2013). University of Mississippi Health Care System.

2. In which way are medical analytics useful other than test utilization?

   Medical Analytics (MA), in the simplest sense, is a way to use all institutional data to prove or disprove a hypothesis. The potential projects are thus quite broad and only limited by the imagination and the availability of the necessary data. For example, others have used MA to justify placement of a POC serum creatinine instrument in a radiology department to shorten the turnaround time for those patients who are to receive contrast imaging and have to wait for a creatinine level determination before proceeding with the procedure. In that study, by the way, the POC instruments paid for themselves in 22 days, more patients received imaging services, and patient satisfaction improved. While this study involved a lab test (creatinine), it was not an analysis of test utilization. MA will often involve a lab test, since lab tests are in total the single greatest type of medical diagnostic procedure. That said, MA techniques are equally sound for studies not involving a lab test. To take a hypothetical example, MA could analyze the value of a manual in-office diagnostic procedure to an imaging procedure in the radiology department.

3. In implementation of project #1, did the physicians accept the implementation, or not? Did you save any money?

   Post-analysis steps were not considered in our pilots due to time constraints. Others, however, have found that popup messages on EHR ordering screens can be very

effective. There are a wide variety of interventions possible based on the urgency with which your organization wishes to see a change take place.

4. Are there other resources to learn about leveraging the data against your business?
   I am not aware of any but am not best qualified to speak on this. To get started, one might try https://www.informs.org/.

5. Do you need to file an institutional review board (IRB) or equivalent to be able to access and analyze these data sets for publication?

   Generally speaking, no, since these are internal quality improvement (QI) projects, and not publishable research. However, in general you should consult your IRB before embarking on an MA project, and specifically if you plan to publish or otherwise present any data outside of the institution.

   There is also the need to consider HIPAA and HITECH as a data warehouse is being developed. How this would be handled will vary with institutional policy.

6. At my institution, IT resources are somewhat limited. How do you compete for a bigger piece of the IT pie in your setting?

   The best approach will vary with each institution. After arming myself with background on MA, I would seek a white knight in the form of your lab director or administrator who can open the door to the C-suite. You can then make your pitch to your administrators. Once they are on board, IT funding can be made available at their discretion. Consider writing up a business proposal, where funding is given for a defined term (2-3 years) MA program. An ROI could be considered as part of this proposal.

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