

From Advanced Analytics to Outcomes

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HIMSS

NORTH CAROLINA *Chapter*

Discussion

- Advanced Analytics (advantages and pitfalls)
- Managing the cost
- Effective tools
- Importance of clinical engagement
 - Right tool
 - Actionable
 - Adoption
- Enterprise Analytics

Advantages of Advanced Analytics

Predicting Readmission

Predicting avoidable emergency room visits

Avoidable hospital admissions

Predicting ICU transfers
Prediction, Prescription, Precision

Predicting mortality
Avoid Poor Outcomes

Predicting Sepsis

Optimizing Care

Patient Simulation

Advanced Analytics Pitfall

Cost

Adoption

Lack of Insight

Old news

Validation

Creates more questions than answers

Complex futures

Distrusting data

Cultural barriers

Access

Regulations

Side effects of analytics pitfall

- Data can improve performance by 41%² over a three-year period. [*Plateau after 3 year*]
- 60% of Big Data Analytics projects, globally through 2017 will fail to go beyond the pilot and experimentation stage, and will be abandoned.

Collin Strong (2016)

- Only 14% of executives say their organizations are successful at operationalizing their analytics.

Harvard Business Review

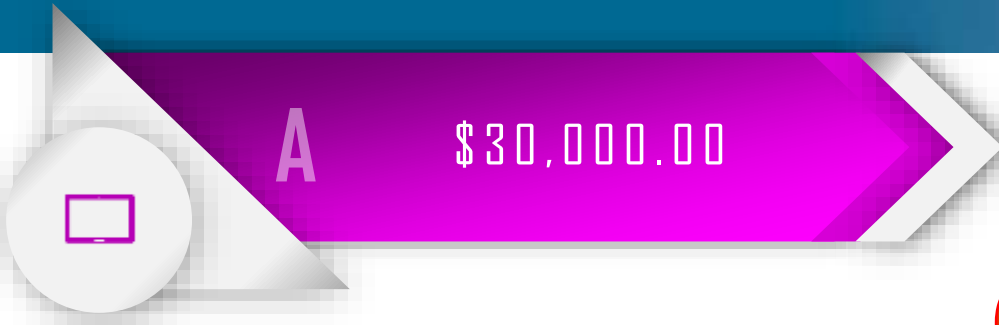


Managing the Cost

Development Phase

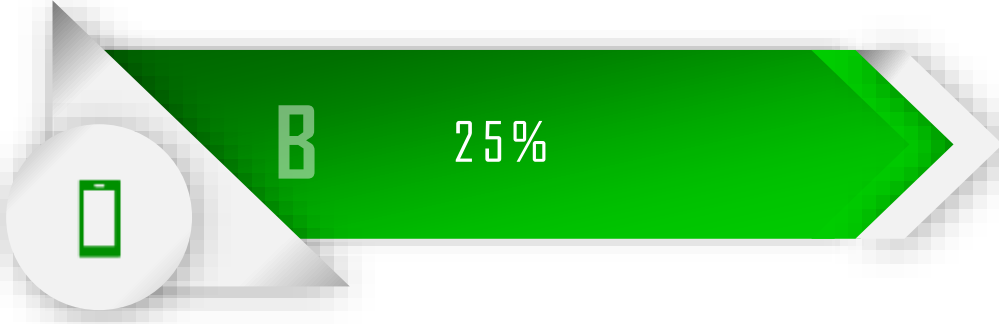
How Much Does It Cost?





A \$30,000.00

Development cost- Depends on size and complexity of the application



B 25%

Estimated Total Cost

OR

Cost per 4 weeks
1 data scientist + 2 Developers



\$ 150 - 360K A

+

Maintenance cost 25% of development cost
Annually

=

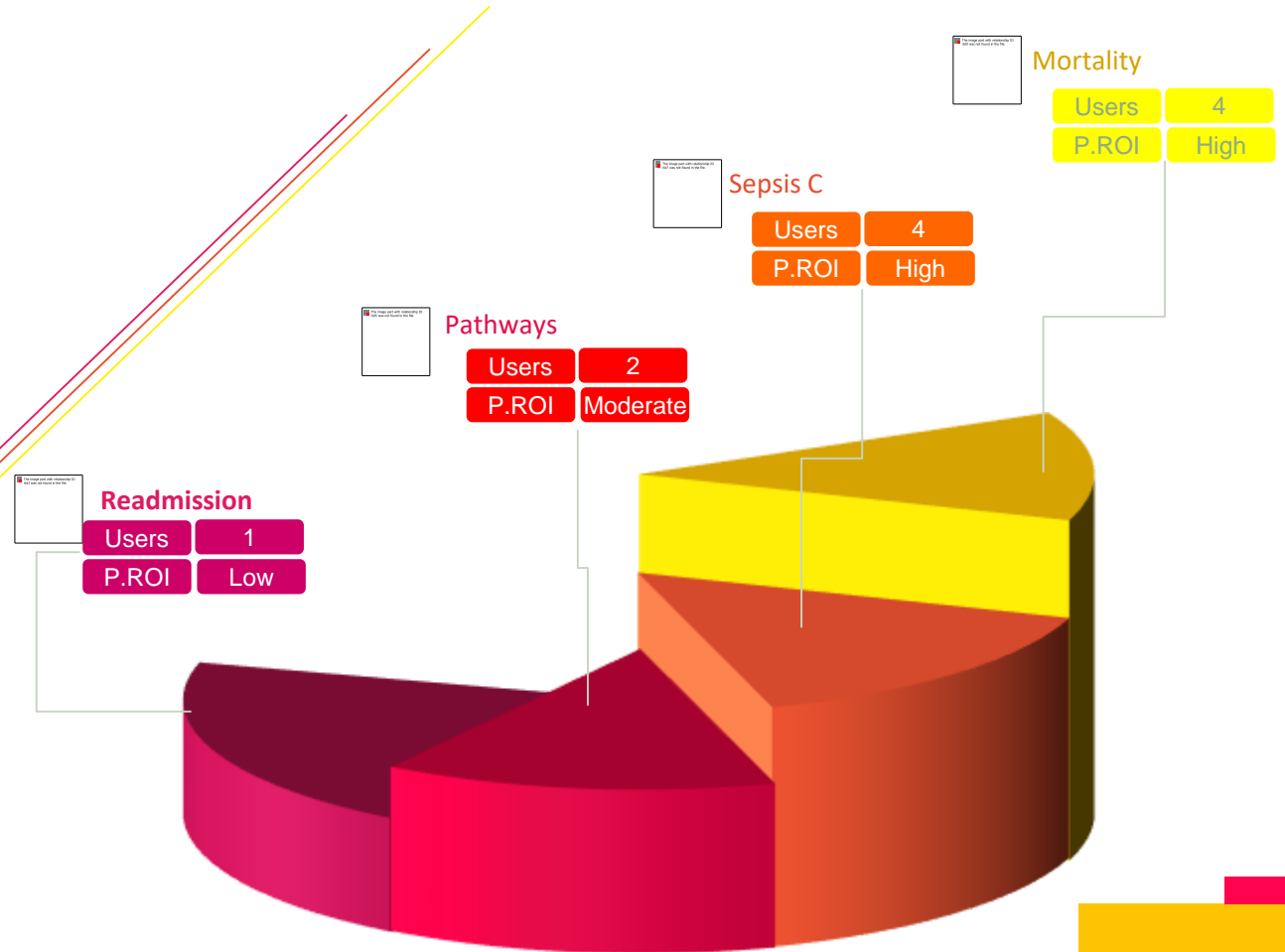


\$500K C

Value Driven Priorities

Why Value Driven Priorities?

- Avoid Value Myopia
- Effective use of resources
- Generates ROI
- Minimizes waste





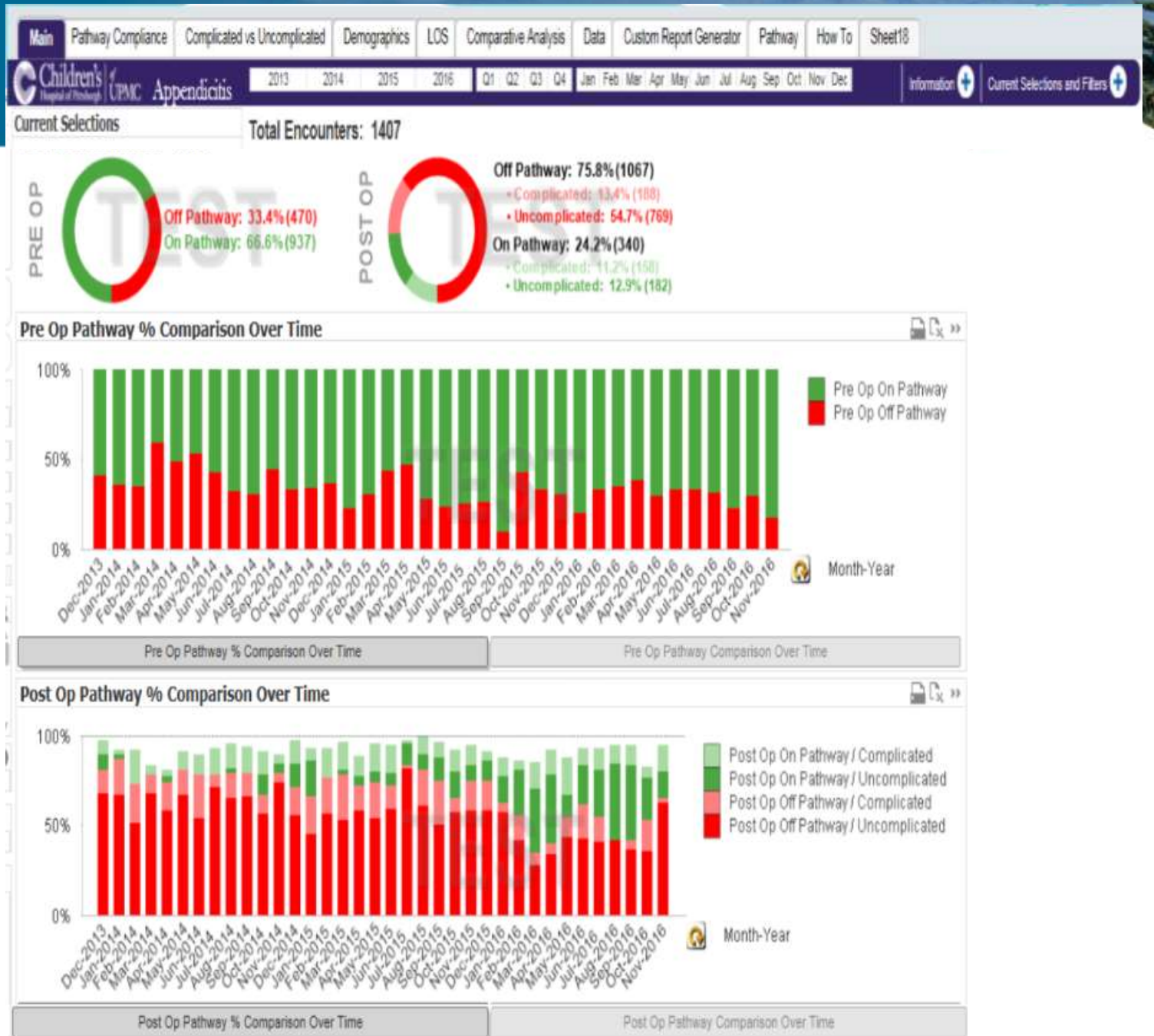
Effective Tool

Choose Wisely

Right Tool

Right Method

Right Population





Manage to Success

Advanced Applications



Rising Risk Not High Risk



Non Intuitive. High Impact



Insight not data



Actionable



Adaptable

Example: Adaptive Readmission CHP

The screenshot displays a patient chart with several key components:

- Navigation Menu:** Located on the left, it includes sections for Patient Information, Orders, Allergies, and various clinical data points like Labs, Medication, and Vital Signs.
- Patient Information:** At the top, it shows patient details such as name, age, sex, and location. Alerts for "Allergies Not Recorded" and "No Known Alerts" are visible.
- Readmission Probability:** A central line graph titled "Patient Readmission Probability" showing a fluctuating trend over time from July 26 to August 1, 2015. The probability is currently 0.7113. A tooltip for the Aug 1 data point lists variables like "All_CAUSE_Readmission" and their corresponding values.
- Number of Medication:** A bar chart at the bottom showing the count of medications administered from July 29 to August 2, 2015.
- Lab Results:** A table on the right lists recent lab tests, including Basic Metabolic Panel, Magnesium(Mg) CHP, and Phosphorus CHP, with their respective specimen collection times.
- Message to Patient:** A text entry field at the bottom right for sending messages via text or email.



Importance of Clinical Engagement

Clinical engagement



Understanding the need



Understanding the want



Acquiring right data



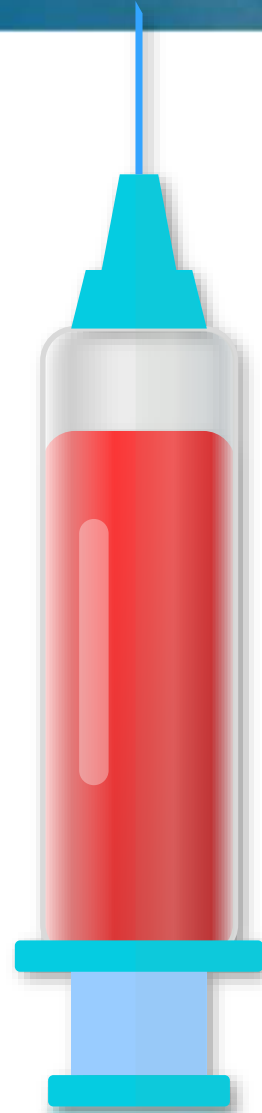
Understanding ontology



Understanding nuances of clinical process and data



Training and adoption



Boost Adoption

- Clinical engagement, from development to training and rollout
- Deliver insight when & where it's needed
- Intuitive and easy to understand
- Eliminate too many options' syndrome
- Pair with process improvement

Enterprise Analytics

Delivering Services

- Data Governance
- Information Governance
- Integration and interoperability
- Simplifying business model
- Robust infrastructure (Real time, wearable, omics...)

Delivering Software

- The monolithic nature:
 - Less effective applications
 - Creates more questions than answers
 - Delivers data, not insights
- Long implementation timeline
- Higher Cost
- Immense training Cost

Closing the loop

From Advanced Analytics



To Desired Outcomes





Index