Data Without Walls

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Topics

• Data Driven Possibilities
  Julie Whipple

• Data Without Walls – Meaningful Analytics
  Eric Pennington

• Closing Remarks
  Chris Sault
Data Driven Possibilities

How organizations that use all their data, all their people and all their ideas are changing the world
Alerts vs. Beds Tracker

These graphics help analyze credible alerts vs. # of available beds. The variance view shows the difference between credible alerts and # of available beds over time. Negative numbers are highlighted in red, this indicates that there are not enough beds to meet the demand.

The trend tracker view shows the same metrics but as trend across the two measures. The y-axis represents the # of credible alerts. The x-axis represents the # of available beds. The red area indicates the breakaway point where # of beds does not meet the # of alerts.

Weekly Trend

Variance Analysis

Trend Paths

Quarantine Map

This map shows the quarantine locations. These locations can be analyzed over time using the weekly trend feature. Other features include the bounding area of quarantines and highlighting the most isolated quarantines. This isolation is calculated by looking at the distance of a location from the next closest location. This can be an indication of new locations for the disease.

Isolation Analysis

Objective

Bounding Area

Show bounding area

Weekly Trend

Variance by week
What is Zika?

Zika virus spreads to people primarily through the bite of an infected Aedes species mosquito (Ae. aegypti and Ae. albopictus). People can also get Zika through sex with an infected man, and the virus can also be passed from a pregnant woman to her fetus.

The most common symptoms of Zika are fever, rash, joint pain, and conjunctivitis (red eyes). The illness is usually mild with symptoms lasting for several days to a week after being bitten by an infected mosquito. People usually don't get sick enough to go to the hospital, and they very rarely die of Zika. For this reason, many people might not realize they have been infected. However, Zika virus infection during pregnancy can cause a serious birth defect called microcephaly, as well as other severe fetal brain defects. Once a person has been infected, he or she is likely to be protected from future infections.

The Global Risks 2015 Report

The Ten Global Risks in Terms of Likelihood and Impact

<table>
<thead>
<tr>
<th>Top 10 risks in terms of Impact</th>
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<tbody>
<tr>
<td>Water crises</td>
</tr>
<tr>
<td>Spread of infectious diseases</td>
</tr>
<tr>
<td>Weapons of mass destruction</td>
</tr>
<tr>
<td>Interstate conflict</td>
</tr>
<tr>
<td>Failure of climate-change adaptation</td>
</tr>
<tr>
<td>Energy price shock</td>
</tr>
<tr>
<td>Critical information infrastructure breakdown</td>
</tr>
<tr>
<td>Fiscal crises</td>
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<tr>
<td>Unemployment or underemployment</td>
</tr>
<tr>
<td>Biodiversity loss and ecosystem collapse</td>
</tr>
</tbody>
</table>

Categories:
- Economic
- Environmental
- Geopolitical
- Societal
- Technological

Source: Global Risks 2015 report, World Economic Forum
Where is it being used?

Crop produced or planted increased almost three times since 1949. But after 1960, the overall trend leveled off, just like the trend of water withdrawal for irrigation.
Thank you
Data Without Walls

Meaningful Analytics
Meaningful Analytics

Significant end user adoption.

Data reliability, accuracy, consistency, and operational trust

Data drives decisions throughout the organization
Are analytics meaningful at my organization?

Could they be more meaningful?
Obstacles in Meaningful Analytics
Obstacles in Meaningful Analytics

- Low end user adoption.
- Lack of data reliability, accuracy, consistency, and operational trust.
- Data is not actionable.
Obstacles in Meaningful Analytics

People / Process

Data
Session Goals

• Review obstacles and possible solutions
• Interactive and conversational
• Caveat – I work for Qlik
Data Obstacles

Reliability

• Inconsistent data definitions and calculations
  • Siloed Analysis
• Data integrity
  • Calculations
  • Upstream data issues
Readmit Rate

Hospital Analysis

Filters

Locations

CV TELE  SURGICAL  ONCOCOL-  TELEMET-  ORTHOP-  MEDICAL  COMP CARE  Springfield General  Main Street

TELE

TV

General Hospital

Centre County General

# of Admits

51,160

Readmit Rate

5.1%

# of Readmits

2,600

Patients by Age Group

Admissions

# of Admits by Attending Provider

Red color indicates Avg Readmit Rate over 7%
Readmit Rate

ACO Patients

Patient Count by Geolocation

Inpatient Care By Facility

Average Inpatient LOS

HEARTLAND HOSPICE SERVICES
CAPITAL HOSPICE

Admission Type
- Unspecified
- Elective
- Emergency

Facility Type
- Specialty facility or ASC
- Surgery

Average Cost of Stay by Major Diagnostic Code

HTV $61,192.12
Malignant Neoplasms, Separations $15,424.95
Muscoskeletal $12,110
Infection $10,822.09
Injury & Poison $8,351.32
Circulatory $8,978.28
Trauma $14,496.12
Factors Influencing Health Status $11,375
Psychiatric $8,946.81

Average Cost of Stay by Risk Score

122.3M 23.75k

Readmit Rate 7.4%
Data Obstacles

Sourcing

- Disparate data sources
- Data processing and storage
Data Solutions - EDW

Enterprise Data Warehouse?
EDW Difficulties

- Architecture requirements
- Dynamism
- Cost
Logical Data Layer

Schema Definition outside of DBMS
Logical Data Layer

Operational Data Sources:
- Excel
- SQL
- SAP
- ERP
- Oracle
- Salesforce
- Data Warehouse
- WWW
Logical Data Layer Examples
Data and analytics alone do not drive change
Case Study – Mid Sized Hospital

Background

• Strong Leadership Team
• Executive buy-in for Analytics
• Data Governance Group
• Strong IT Infrastructure
Case Study – Mid Sized Hospital

Result

• < 5% of reports leveraged within 6 months of go-live.
Why?

People / Process
Process Obstacles

- Poor end user engagement
- Poor Analytics Marketing
- Data access difficult/inconvenient
- Data not Actionable
Process Obstacles

- Poor end user engagement
- Poor internal marketing
- Data access difficult/inconvenient
- Data not actionable
How to create meaningful actionable analytics

Workflow
Constructive Introjection

Workflow
Actionable Analytics Examples
Driver for Meaningful Analytics

Analytic embedded in workflows

Data reliability, accuracy, consistency, and operational trust

Data Actionably
Closing Remarks
Thank you

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