# TC18

Taking Data to the Edge

Transforming how Premera Blue Cross delivers, defines and communicates information and insights using visual analytics

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Actuary, R&D
Premera Blue Cross

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Lead Data Consultant
Premera Blue Cross
Introductions

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Who is Premera Blue Cross?

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent licensee of the Blue Cross Blue Shield Association</td>
<td></td>
</tr>
<tr>
<td>Operating in Washington (state) since 1933, and Alaska since 1952</td>
<td></td>
</tr>
<tr>
<td>Health, vision, dental, stop-loss, life &amp; disability, wellness and related products</td>
<td></td>
</tr>
<tr>
<td>Covering 2.1 million people and 7 of 11 Fortune 500 companies in our service area</td>
<td></td>
</tr>
<tr>
<td>Located 10 miles north of beautiful Seattle, WA and Tableau HQ</td>
<td></td>
</tr>
</tbody>
</table>

“OUR PURPOSE IS TO IMPROVE CUSTOMERS’ LIVES BY MAKING HEALTHCARE WORK BETTER.”

For more information, visit [www.premera.com](http://www.premera.com)
Themes
Themes

DATA IMMEDIACY
DATA CUSTODY
DATA LANGUAGE
Data immediacy

Time between when events happen and when we see them represented in our data
Data custody

Entities responsible for the definition, delivery, and security of our data

DATA ENGINEERS

SUBJECT MATTER EXPERTS
How we ensure that the data we communicate is interpreted correctly
Affordable Care Act

The system is down at the moment.
We're currently performing scheduled maintenance. Please try again later.

Want a reminder?
We will send you a one-time email when HealthCare.gov is back up.

Email address

REMIND ME!
Affordable Care Act
Medicare Advantage

Easy enrollment by phone, online or with a local representative

Premera

(TTY: 711) 7 days a week, 8 am – 8 pm
premera.com/ma
Medicare Advantage

- Reporting limited to spreadsheet solution
- Manual process to acquire and deliver “Data”
- No interaction
- Lengthy turnaround
Deliver Data to Those Who Need It
Trade-off frontier

BUSINESS INTELLIGENCE
Lengthy lead time, self-serve after

INFORMATICS
Quicker response time / single use

SELF
Manual, time intensive, limited access
Trade-off frontier

INFORMATION TECHNOLOGY
Formalized, documented, data dictionary

DEPARTMENTAL DATAMARTS
Ensure technical accuracy

INDIVIDUAL ANALYST
Contextual relevance, prone to error
Trade-off frontier

**SPECIALTY APPLICATION**
Steep learning curve

**SPREADSHEET**
Direct, flexible, messy

**POWERPOINT**
Manual, time intensive, disconnected
Confluence

- Affordable Care Act
- Medicare Advantage Market Re-Entrance
- Premera Made Tableau Server Available
<table>
<thead>
<tr>
<th>Brand</th>
<th>Medicare Subscribers</th>
<th>Medicaid Subscribers</th>
<th>Exchange Subscribers</th>
<th>Non-Exchange Subscribers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand A</td>
<td>11438</td>
<td>430</td>
<td>2367</td>
<td>1707</td>
<td>3288</td>
</tr>
<tr>
<td>Brand B</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Brand C</td>
<td>18819</td>
<td>9642</td>
<td>7416</td>
<td>4587</td>
<td>32342</td>
</tr>
<tr>
<td>Brand D</td>
<td>144</td>
<td>100</td>
<td>75</td>
<td>64</td>
<td>323</td>
</tr>
<tr>
<td>Total</td>
<td>3288</td>
<td>33210</td>
<td>2367</td>
<td>1707</td>
<td>3288</td>
</tr>
</tbody>
</table>

Demographics:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>34%</td>
<td>66%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Enrollment Date:

<table>
<thead>
<tr>
<th>Family Size</th>
<th>Enrollment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Large</td>
<td></td>
</tr>
</tbody>
</table>
Wear pajamas.
Drink hot chocolate.
Talk about getting health insurance.

#GetTalking
barackobama.com/talk
## Incoming Exchange Membership

**Through December 23, 2013**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Members</th>
<th>Subscribers</th>
<th>Exchange</th>
<th>Multi-State</th>
<th>Out of Exchange</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand A</td>
<td>1,138</td>
<td>799</td>
<td>4,120</td>
<td>1,120</td>
<td>262</td>
<td>648</td>
<td>168</td>
<td></td>
</tr>
<tr>
<td>Brand B</td>
<td>703</td>
<td>469</td>
<td>82</td>
<td>621</td>
<td>298</td>
<td>162</td>
<td>243</td>
<td></td>
</tr>
<tr>
<td>Brand C</td>
<td>15,219</td>
<td>9,457</td>
<td>7,944</td>
<td>7,775</td>
<td>6,835</td>
<td>6,387</td>
<td>2,197</td>
<td></td>
</tr>
<tr>
<td>Brand D</td>
<td>22,045</td>
<td>14,661</td>
<td>10,486</td>
<td>7,919</td>
<td>3,640</td>
<td>8,555</td>
<td>10,638</td>
<td>2,785</td>
</tr>
<tr>
<td>Total</td>
<td>39,105</td>
<td>25,386</td>
<td>18,012</td>
<td>10,856</td>
<td>12,038</td>
<td>18,750</td>
<td>17,836</td>
<td>5,398</td>
</tr>
</tbody>
</table>

### Demographics

- **Gender**
  - Male: 54%
  - Female: 46%
- **Age Group**
  - 0-17: 61%
  - 18-64: 33%
  - 65+: 6%
- **Metropolitan Tier**
  - Urban: 57%
  - Suburban: 39%
  - Rural: 4%

### Enrollment Date

- **Total Members**
  - January 2013: 15,823
  - December 2013: 10,500

### Family Size

- **Single**
  - 7,500
- **Couple**
  - 5,500
- **Family**
  - 1,500

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**Premera**

**Blue Cross**
Affordable Care Act
Medicare Advantage
Medicare Advantage

Self Serve Solution
Daily Scheduled Refresh
Parameters Drill Down Options
Actionable Insights
Medicare Advantage

Ages 65-69 is the largest enrollment group. I wonder what the retention rate is for that age group.

The Call Center channel enrollment is more than expected. We should see how call wait times are.

We need to look at ways to make Web enrollment easier. I wonder which channel has the highest ratio of paper enrollment.

72? 67? 79?
75? 68?
63? 70?
Taking Data to the Edge
Shaping the new philosophy

Provide infrastructure to allow for immediacy
Create trust in the information
Cultivate a data-centric environment
Tangible investments
Visual Analytics Allowed for:

- RAPID PILOT PROGRAM
- POPULATION DEFINITION
- DISCOVERY of critical nuance surrounding cost curves relative to identification timeframe
Oops!

76 PMPM Savings over the first three months of the program.
In my experience, each failure contains the seeds of your next success – if you are willing to learn from it.

- Paul Allen
Premera purpose and values

**OUR PURPOSE**
Improve customers’ lives by making healthcare work better

**OUR VALUES**
The customer is the center of all we do
- Identify with the customer
- Act with urgency
- Be excellent
- Challenge convention
- Do the right thing
- Work together

**WHAT OUR CUSTOMERS WILL SAY**
You take great care of me and make it simple and easy
Intangible investments

- Training
- Community of practice
- Templates and best practices
- Maturity in data language
- Data Governance Office
Unlocking new paradigms

Large latency reporting cycle

Visualization needed to convey story
Expanding our thinking of custody

- Data source
- Dashboard
- Permissions
Data custody as a conversation

Data source owner
Dashboard designer
Subject matter expert
“Let’s Tableau this discussion”

Visualization at moment of discovery

Visualization needed to convey story
A New Frontier
New frontier

“
We stand today on the edge of a new frontier - the frontier of the 1960's - a frontier of unknown opportunities and perils - a frontier of unfulfilled hopes and threats.

- John F. Kennedy

”
Lessons

- Getting data fast / mistakes can have large consequences
- Hoarding knowledge defeats transparency
- Audience may not be ready – It’s okay to be uncomfortable and / or insecure
Trade-off frontier

Immediacy without sacrificing accuracy
Subject matter experts and data engineers working in congruence

Immediacy without sacrificing accuracy
Trade-off frontier

Immediacy without sacrificing accuracy

Subject matter experts and data engineers working in congruence

You can have both data and insights

EXPLORATION

STORYTELLING
Adoption curve

<table>
<thead>
<tr>
<th>Version</th>
<th>Licenses</th>
<th>Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Q4</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>2013 Q2</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>2013 Q4</td>
<td>8.1.6</td>
<td></td>
</tr>
<tr>
<td>2014 Q2</td>
<td>8.2.2</td>
<td></td>
</tr>
<tr>
<td>2014 Q4</td>
<td>9.0.2</td>
<td></td>
</tr>
<tr>
<td>2015 Q2</td>
<td>9.3</td>
<td></td>
</tr>
<tr>
<td>2016 Q4</td>
<td>10.3.1</td>
<td></td>
</tr>
<tr>
<td>2017 Q2</td>
<td>10.5.2</td>
<td></td>
</tr>
<tr>
<td>2018 Q2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018 Q4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019 Q2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- Viewer
- Interactor
- Explorer
- Desktop
- Creator

Server Version:
- Hardware Installation
- 8 Core Virtual Machine
- 8 Core Physical Server
- 24 Core Physical Server
- Distributed Installation

Languages and Users:
- Next Level
- Experiment
- Early
- Widespread
Tableau model

- Server access for all
- Curated datasets for consumer server development
- Crowdsourced permission governance
- Business users as desktop developers
Taking Data to the Edge at Premera
**Employer Group Report**

**REAL-TIME VISIBILITY**
Available as a self-servicing tool for 150 employer groups.

**REPLACED TIME-INTENSIVE WORK**
- One hour to run the data
- One hour to link templates
- Manual processes required review

**MAJOR EFFICIENCY GAINS**
- Moved data sources to Teradata
- Cut report calculation/render time by 60%

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**Focus Opportunities**
- Promote Virtual Care
- Promote the mobile app which can help members locate urgent care and PCP providers
- Consider promotion of the 24-hour NurseLine to improve the utilization of the appropriate treatment setting

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**ER Visits per 1,000 by Member Relationship**

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Prior</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract Holder</strong></td>
<td>126.4</td>
<td>128.8</td>
</tr>
<tr>
<td><strong>Dependent</strong></td>
<td>139.8</td>
<td>141.9</td>
</tr>
<tr>
<td><strong>Spouse/Domestic Partner</strong></td>
<td>152.6</td>
<td>163.0</td>
</tr>
</tbody>
</table>

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**ER Visits per 1,000 per year**

- 2014-2015: 147.3
- 2015-2016: 149.7
- 2016-2017: 136.5
- 2017-2018: 140.6

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*Metrics Represent Synthetic Data*
Customer Service Calls*

**REAL-TIME VISIBILITY**
Provide a more consistent customer experience through the day

**REFINES OUR FOCUS**
High-impact actions targeting areas of greatest need

**EASILY CONSUMABLE**
Skips reporting intermediaries
Tells a more concise story

*Metrics Represent Synthetic Data
### Process Improvement

45% more policies processed in 12% less time and 18% less re-work over year prior.

### Consolidation

Provides for a shared definition which allows dependable forecasting metrics for processing time and staffing needs.

### Visibility

Added visibility up and down the organization structure. Expanded participating work groups.

---

*Metrics Represent Synthetic Data*
Real Time Encounters

**VISIBILITY**
Clinical case managers know when their patients are experiencing events.

**CONNECTS CARE**
Connects emergency caregivers with maintenance caregivers.

**ERROR REDUCTION**
Reduce errors and redundant care such as duplicate imagery and avoiding adverse medication interaction.
Web Metrics

**COMMON DEFINITIONS**
Allowed for a defined metrics that drive the business case.

**COST SAVINGS**
Highlighted key groups to target for better utilization.

**BENCHMARK**
ROI tracking on marketing investments targeting new member registration and paperless adoption.
Enterprise Performance*

**EXPOSURE**
Greater exposure of performance to a wide variety of stakeholders

**DETAILS**
Answers immediate high-level performance questions
Allows drill down views for specific inquiry and discovery

**SOURCED FROM MANY DATA OWNERS**
Integrates reporting activities from many separate corporate divisions

*Metrics Represent Synthetic Data*
The Future of Taking Data to the Edge
## The future

<table>
<thead>
<tr>
<th>Agility to adapt to new technology as it is available</th>
<th>Delivering data to those who need it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration of insights with write-back API’s</td>
<td>To member at point of care</td>
</tr>
<tr>
<td>Integration of insights with data science models</td>
<td>To group at benefit selection</td>
</tr>
<tr>
<td></td>
<td>To provider at appointment</td>
</tr>
<tr>
<td></td>
<td>To customer service at member interaction</td>
</tr>
<tr>
<td></td>
<td>To leadership at strategy planning</td>
</tr>
</tbody>
</table>
Making healthcare work better
Three things to take away

DATA IMMEDIACY
is worth investing in

DATA CUSTODY
best when distributed and made visible

DATA LANGUAGE
is the wave of the future
Thank you!

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Valpidated

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Naomilynne
naomi.raymond
Please complete the session survey from the Session Details screen in your TC18 app.