JOIN THE RESULTS REVOLUTION

Government That Works
Using Data Analytics to Improve Outcomes: State and Federal Examples

Washington Lean Transformation Conference
October 17, 2017 – 12:45 p.m. - Ballroom D

Presenters: Scott Harra & Robert Shea
Data Analytics in Government

✓ How the use of data has matured in government
✓ Practical uses in managing organizations
✓ Moving to a predictive analytics state
✓ How expectations are changing
Evolution of Data in Government

- Not collected
- Collected, but not analyzed
- Fear that “data will be used against us”
- Used to manage core processes
- Used to identify problems & to take corrective action – continuous improvement
- Used as a predictive analytical tool
Running an organization without data is like:
Running an organization without data is like:
Running an organization without data is like:
Running an organization without data is like:
Journey to Data Maturity
Fundamentals Map
### Journey to Data Maturity

#### Scorecards

**OYA Agency-Wide: All Measures: Q1 2016**

**Data collection through 3/31/2016**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 2.3</td>
<td>Victims notified of rights</td>
<td>Percent or percent of victims notified of rights within 30 days of an OYA youth’s commitment to a CFP.</td>
<td>&lt; 91</td>
<td>91</td>
<td>91</td>
<td>97</td>
<td>&gt; 97</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 95</td>
</tr>
<tr>
<td>OP 2.4</td>
<td>Victims notified prior to release of parole</td>
<td>Percent of OYA youth’s victims in contact with Social Services prior to actual parole release.</td>
<td>&lt; 91</td>
<td>91</td>
<td>97</td>
<td>&gt; 97</td>
<td>&gt; 97</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 100</td>
</tr>
</tbody>
</table>

**Managing youth intake and assessment**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.1a</td>
<td>Intake RNA completion - facility</td>
<td>Percent of facility youth whose RNA assessments are completed within 30 days of intake to facility.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 95</td>
</tr>
<tr>
<td>OP 3.1b</td>
<td>Intake RNA completion - probation</td>
<td>Percent of probate youth whose RNA assessments are completed within 30 days of commitment to probation.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 100</td>
</tr>
</tbody>
</table>

**Case plan relevance to RNA (facilities)**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.2a</td>
<td>Case plan relevance to RNA (facilities)</td>
<td>Percent of audited case plans which reflect the needs assessment.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 100</td>
</tr>
</tbody>
</table>

**Case plan relevance to RNA (field)**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.2b</td>
<td>Case plan relevance to RNA (field)</td>
<td>Percent of audited case plans which reflect the needs assessment.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 100</td>
</tr>
</tbody>
</table>

**Intake length of stay**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.3</td>
<td>Intake length-of-stay</td>
<td>Average LOS during facility intake process.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 95</td>
</tr>
</tbody>
</table>

**Timely case plan audits - facilities**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.4a</td>
<td>Timely case plan audits - facilities</td>
<td>Percent of case plan audits due that were completed during the quarter.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 95</td>
</tr>
</tbody>
</table>

**Timely case plan audits - field**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.4b</td>
<td>Timely case plan audits - field</td>
<td>Percent of case plan audits due that were completed during the quarter.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 95</td>
</tr>
</tbody>
</table>

**Initial psychological evaluations**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.5</td>
<td>Initial psychological evaluations</td>
<td>Percent of youth referred for an initial psychological evaluation within 30 days of admission.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 95</td>
</tr>
</tbody>
</table>

**ATOD assessments**

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure</th>
<th>Definition</th>
<th>Score</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Data collection period</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 3.6</td>
<td>ATOD assessments</td>
<td>Percent of youth referred for an ATOD assessment within 30 days of admission to a certified OYA facility ATOD program.</td>
<td>&lt; 95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>95</td>
<td>Updated: Q1, Q2, Q3, Q4, Current target: 95</td>
</tr>
</tbody>
</table>

**Note:** Updated: Q1, Q2, Q3, Q4, Current target: 95
Building up the Scorecards
Connecting the Organization

UNIT SCORECARD

DIVISION SCORECARD

AGENCY SCORECARD

MassIngenuity
SEE. BELIEVE. ACHIEVE.

Grant Thornton
NOW Management System® and RESULTS Software
Creating Capacity to Implement Change

If we can reduce the time we need to spend on the ROUTINE work of the business...

ON THE BUSINESS

IN THE BUSINESS

...We can spend more time on the work that delivers new value to our customers.
Using Data, Research, and Predictive Analytics to Inform Decisions and Improve Outcomes
Credit goes to

✓ Colette S. Peters – former Director of the Oregon Youth Authority and current director of the Oregon Department of Corrections

✓ Fariborz Pakseresht – former Director of the Oregon Youth Authority and current director of the Oregon Department of Human Services

✓ Paul Bellatty – Manager of the Research Unit at Oregon Youth Authority
Driving Questions for the Oregon Youth Authority

✓ Are we bringing the right youth into the system and placing them in the right environment?
✓ What should the length of stay be in each part of the continuum?
✓ What interventions do youth need to maximize their opportunities to be successful?
✓ How do we know our investments are effective and achieving desired results?
ORRA

OYA Recidivism Risk Assessment: predicts the likelihood a youth will recidivate with a felony conviction or adjudication within 36 months of commitment to probation or release from OYA close custody.

ORRA-V

OYA Recidivism Risk Assessment - Violent Crime: predicts the likelihood a youth will recidivate with a violent* felony conviction or adjudication within 36 months of commitment to probation or release from OYA close custody.

*Violent felonies include, but are not limited to assault, murder, rape, and robbery.
Typologies: Groups of youth based on need and protective factors to inform assessment considerations, case planning, and treatment considerations.

• For males, there are 6 typologies that inform the treatment decisions made by the staff at the Oregon Youth Authority

• For females, there are 4 typologies
**Typology E - Male**

**Assessment Considerations:** Many of these youth struggle academically for various reasons, which indicates the need for further assessment to determine sources of academic struggles. Such assessment may include behavioral functioning, cognitive functioning, potential learning disabilities, visual and/or hearing deficits, ability to focus, language barriers, etc. Educational assessment should be coordinated with clinical assessments focusing on behavioral or physical health to ensure a holistic perspective on the youth’s needs.

**Case Plan Essentials:** Case planning should focus on use of the youth’s strengths, including positive relationships and engagement in prosocial activities, to assist the youth in developing and generalizing his skills in areas of need. Especially for youth in this typology, ensuring appropriate services are provided is independent of location or type of placement. When considering placement options, priority should be given to placing the youth where he will be able to receive appropriate services while maintaining a high level of continuity with existing support systems and prosocial activities. Failure to meet identified expectations (including case plans, treatment plans, and probation/parole agreements) should be understood by the youth’s team as an indication that current services are not adequately addressing the treatment need and should not be automatically viewed as noncompliance or deliberate on the part of the youth. Any such failure to meet identified expectations should be reviewed to determine what additional supports need to be provided to reestablish positive behavioral change.

**Treatment Approach:** Given these youth’s protective factors, it is especially important to take steps to preserve positive, ongoing relationships and supports as they will assist in the successful implementation of treatment interventions. Regardless of living environment, maintaining supportive contact with these individuals, and continued participation in the youth’s current interests and activities, is critical to their ability to progress and succeed in treatment.
Predicted Success Rates: The likelihood that a youth will be successful in each of three environments.
Interpreting Scores

Each youth will receive three scores between 0-100 (one for each environment)

Closer the score is to 100 the more "successful" they are likely to be in that environment

• **Defining "success"**: NOT recidivating with a felony conviction or adjudication within 36 months of commitment to probation or release from OYA close custody.
• Success does not mean engagement in treatment and/or school, working, good behavior, etc.
Scenario: Matt

Matt is a 13 year old who received his first referral for Sex Abuse 1.
- His victim was his younger cousin who does not live in the same household as him.
- He is living with his paternal aunt and uncle who adopted him at the age of 3.
- His biological parents have severe drug dependencies and Matt tested positive for drugs at birth.
- Matt is very attached to his aunt and uncle who are very supportive of his treatment process.
- Matt is engaged at school and attends school on a regular basis.
Scenario: Matt

Typology: E
RNA: High

ORRA: 6
ORRA-V: 6

<table>
<thead>
<tr>
<th></th>
<th>County Probation</th>
<th>OYA Community Placement</th>
<th>OYA YCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Success Rates</td>
<td>87</td>
<td>92</td>
<td>79</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>1</td>
<td>35</td>
<td>90</td>
</tr>
</tbody>
</table>
Next on the Horizon
Early Warning System

✓ Grant Thornton and Mass Ingenuity are working together using predictive analytics to develop an Early Warning System for state agencies

✓ Pilot case study is Arizona Department of Corrections

✓ How to predict prison disturbances before they happen
Early Warning System

✔ Talking to subject matter experts, we have learned there are indicators we can use to predict a disturbance before it occurs

• Contraband volume
• Inmate work/program involvement
• Detention bed utilization
• Higher than average meal attendance
• Increased commissary purchases
Early Warning System

✓ Predictive analytics will allow state agencies to head off problems before they occur
✓ Saving human and financial costs
The Nurse-Family Partnership program provides nurse home visits to pregnant women with no previous live births, most of whom are:

i. low-income

ii. unmarried, and

iii. teenagers.

The nurses visit the women approximately once per month during their pregnancy and the first two years of their children’s lives.
Three randomized controlled trials – each carried out in a different population and setting – found the program to produce sizable, sustained effects on important mother and child outcomes.

The specific types of effects differed across the three trials, possibly due to differences in the populations treated. Effects found in two or more trials include:

i. reductions in child abuse/neglect and injuries (20-50%)

ii. reduction in mothers’ subsequent births (10-20%) during their late teens and early twenties;

iii. improvement in cognitive/educational outcomes for children of mothers with low mental health/confidence/intelligence (e.g., 6 percentile point increase in grade 1-6 reading/math achievement).
The importance of rigorous evidence

Evaluations show social programs produce modest or no impacts on the problems they were meant to address.

But too few are evaluated.
The result of discussions on **opportunities for better using evidence** to inform decision-making

Created by legislation **co-sponsored by Speaker Paul Ryan and Senator Patty Murray**, enacted March 30, 2016 (P.L. 114-140)

Members appointed by President, Speaker of the House, House Minority Leader, and Senate Majority and Minority Leaders (1/3 on privacy; 2/3 experts on program administration, data, or research)

Report submitted on **September 7, 2017**
Commission on Evidence-based Policymaking

Major Themes:

☑ Improved Access to Data
☑ Stronger Privacy Protections
☑ Greater Capacity
Commission on Evidence-based Policymaking

**Improved Access to Data** –

- Establish National Secure Data Service
- Address inconsistencies and barriers in law for better use of existing data
- Streamline process by which researchers access data

**Stronger Privacy Protections** –

- Conduct and disclose comprehensive risk assessments
- Improve protections with better technology and greater coordination
- Strengthen OMB’s existing guidance on maintaining public trust by codifying SPD1

**Greater Capacity** –

- Align capacity for statistics, evaluation, and policy research within and across departments
- Better coordinate these efforts and consider strategies to prioritize evidence building within OMB
Contact Information

Scott Harra
Executive Vice President
Mass Ingenuity

sharra@massingenuity.com

Robert Shea
Principal
Grant Thornton, LLP

robert.shea@us.gt.com