Use Business Intelligence Tools to Help Reduce Wait Times
Extended delays in accessing services for the treatments, known as “wait times” broken down into three time segments.
Definitions of Wait Time Segments

Wait 0
• Time from date referral is received to date when the referral is complete with all required information

Wait 1
• Time from date when a referral is complete to the date when a decision is made to accept/decline a referral for services.

Wait 3
• Time from data a decision is made to accept a referral to date of first appointment take place
Measures in Timeline

- Referral Received Date
- Referral Completed Date
- Decision Made Date
- First Appointment Post-Decision Date

Wait 0: Referral Received Date
Wait 1: Referral Completed Date
Wait 3: Decision Made Date
First Appointment Post-Decision Date
Definitions of Holds

Holds also needs to be integrated to wait time period. When a patient is placed ‘on hold’ at any point between Wait 1 to Wait 3 in the referral process, wait time accumulation is stopped for specified time for this patient.
Trend in Average Wait Days Between Apr-16 and Mar-18

Average # of Days Patients Waited

Increasing trend accelerated in 2017 Q2
Workflow with underlying DQ risks

- Information Assurance Framework is a formal mechanism for reviewing and assuring the quality of data within data collection and validation process used as a source.
- It helps to identify risks and underlying process issues and actions.
- They are used as a starting point to improve practice and data quality.
Snapshot of Data Quality Issues — August-18

<table>
<thead>
<tr>
<th>Category</th>
<th>Wait 0</th>
<th>Wait 1</th>
<th>Wait 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Dated Elements</td>
<td>236</td>
<td>80</td>
<td>49</td>
</tr>
<tr>
<td>Greater than 1000 days</td>
<td>31</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>Sequence of Data Element</td>
<td>203</td>
<td>49</td>
<td>31</td>
</tr>
<tr>
<td>Total # of DQ Issues</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

236 2 31 203 80 28 18 49 49 31
## Resources and Tools

<p>| | |</p>
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</table>
| **1 - Information Assurance Framework** | A formal mechanism for reviewing and assuring the quality of data within data collection and validation process  
  Quality of data is assured in its five dimensions: Timeliness, Standards based, Accuracy, Completeness, and Usability. |
| **2 - Power BI Dashboards** | Interactive charts with slicers to narrow down wait time dataset by Program, Unit level, Time periods  
  Lowest granularity of data provided by drill through dashboards  
  Provide the flexibility to allow users enter thresholds |
| **3 - SSRS Reports** | Multiple SSRS reports created for different users  
  ??? |
| **4 - Automated Email Notification** | Configured to produce email notifications to alert users when any data quality related issues detected  
  Notification emails will automatically be produced for issues |

These are main **Resources and Tools** used to control increasing trend in overall Average Wait Time and its underlying segments.
Workflow integrated with Tools and Users
Power BI Dashboards

Dashboards are powerful data pictures pulling together views of disparate information into one place.

Two Power BI Dashboards have been developed to summarize Wait Time Related Data. Both reports have drill through capabilities to patient level. User can easily increase and decrease the **granularity** of data as needed.

From the high level to the details at the patient level view makes it easy to investigate and monitor underlying data.
Main report page focuses on following entities:

- Average Wait Times
- Median Wait Times
- # of Registration and Discharges
- # of Referrals Received and Accepted Referrals
- # of Recorded Holds
- Distribution of Holds
Master page with Drill through Filter:

- Users navigating through summarized column value to specified sub report
- Ability to drill down into one of the program or units to monitor wait times by program or units
- Easy to navigate between the master page to the details page
Power BI Report Master Page
Outpatients Wait Times

Sub Report with Drill-through Filter:

- Users navigating through summarized column value to specified sub report
- Ability to drill down into one of the program or units to monitor wait times by program or units
- Easy to navigate between the master page to the details page using BACK button added to the top left-hand side of the page.

To go back to master page

The threshold slicer helps user to enter the input, Avg Wait Time calculations interact with it accordingly

Slicer options to change the Programs and Units
### SSRS BI Reports
#### Current Waiting List by Priority

#### Current Wait List for monitoring Priority Levels:
- Current Waiting List broken-down by priority level:
  - High
  - Medium
  - Low
- Drill down by Locations up to patient level information
- Easy to investigate possible issues in priority level
SSRS BI Reports
Phone Calls Summary Reports

Phone Calls Summary Report:

- Three individual reports as sub-reports are combined under one reporting page mainly monitoring phone calls:
  1. Listing all phone calls
  2. Only the last phone call information
  3. Listed patients have not been contacted
- Sub-reports are linked to the main page
One of the sub reports:
List of Patients need to be contacted

- Providing the list of patients with their contact information
- Filtering options by location and appointment status
- Ordered Days since Acceptance (accepted to the wait list) helps to arrange phone calls by priority
SSRS BI Reports
Data Quality Master Dashboard

- Total number of Data Quality instances are broken into their related time segments in wait time period.
- Closely monitoring issues: Missing data, future date entries and time sequence related issues.
- Each box is linked to another drill through reports which provide to the detail data.
- All of these drill through reports have commonalities, but they cover different time segment in wait time.
- User clicks to reveal details.

Wait0-Wait1-Wait3
Data Quality Main Dashboard

\[
\begin{align*}
\text{# of Wait 0 DQ Instances} & : 0 \\
\text{# of Wait 1 DQ Instances} & : 0 \\
\text{# of Wait 3 DQ Instances} & : \text{will be released shortly}
\end{align*}
\]
SSRS BI Reports
Delivering DQ Report by Email

E-Mail Delivery Options:

- Email delivers a way to send the report to individual stakeholders.
- The report is delivered by the e-mail message as a preschedule time on regular basis.
- The e-mail message includes a hyperlink to the report along with embedded report.
- It is scheduled to deliver every morning to
  - following groups:
    - OSRT and Central Intake groups
    - Directors and Managers
- Master report provides total # of issues in Wait0, Wait1, and Wait3

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Wait0-Wait1-Wait3
Data Quality Main Dashboard

# of Wait 0 DQ Instances

# of Wait 1 DQ Instances

# of Wait 3 DQ Instances

*Please click on the number to drilldown dashboard
Trend in Average Wait Days between Apr-16 and Dec-18

Significant Improvement in avg wait time has been experienced!
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Thank You

Q & A