The Indiana Family and Social Services Administration

Data Forum
Data Driven Review:
Medication Errors - Lessons Learned thus Far

November 15, 2017

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Assistant Director, Bureau of Quality Improvement Services (BQIS)
The purpose of this webinar is to provide Bureau of Developmental Disabilities Services (BDDS) Providers an overview of the data and ‘Lessons Learned’ from the completed reviews on Medication Errors in the Data Driven Review (DDR) Process, a quality improvement initiative developed by the Bureau of Quality Improvement Services (BQIS).
Today’s Topics:

I. Data Drives the Process
II. Data Analysis
III. Results of Completed Reviews
IV. Conclusion
V. Questions/Discussion
VI. Contact Information
I. Data Drives the Process
Data Drives the Process

- DDR Topic Selection
- Provider Selection for Participation
- Approach
Data Drives the Process

**DDR Topic Selection**

- **2015-2016 – Clean Incident Report data**
  - Reportable vs. Non-reportable incidents

- **BQIS reviews incident data quarterly**

- **BQIS identifies systemic areas of weakness based on reportable incidents**

- **BQIS selects Data Driven Review topic based on greatest issues/weaknesses**
### 2015 Incident Report Data - Top 20 Incident Report Types

<table>
<thead>
<tr>
<th>Rank</th>
<th>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medical Condition, Change in/Decline</td>
<td>Medical Condition, Change in/Decline</td>
<td>Medical Condition, Change in/Decline</td>
<td>Medical Condition, Change in/Decline</td>
</tr>
<tr>
<td>2</td>
<td>Medication Error, Missed Medication, Not given</td>
<td>Medication Error, Missed Medication, Not given</td>
<td>Medication Error, Missed Medication, Not given</td>
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</tr>
<tr>
<td>3</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
</tr>
<tr>
<td>4</td>
<td>Aggression to housemate/peer</td>
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</tr>
<tr>
<td>6</td>
<td>Alleged Neglect</td>
<td>Alleged Neglect</td>
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</tr>
<tr>
<td>7</td>
<td>PRN Medication - Behavioral Purposes</td>
<td>Elopement</td>
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<td>Elopement</td>
</tr>
<tr>
<td>8</td>
<td>Elopement</td>
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<td>Elopement</td>
<td>Elopement</td>
</tr>
<tr>
<td>9</td>
<td>Alleged Abuse, Emotional/Verbal</td>
<td>Injury of Unknown Origin</td>
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</tr>
<tr>
<td>10</td>
<td>Injury of Unknown Origin</td>
<td>Seizure</td>
<td>Alleged Abuse, Emotional/Verbal</td>
<td>Seizure</td>
</tr>
<tr>
<td>11</td>
<td>Medication Error(s), Wrong Dose</td>
<td>Alleged Abuse, Emotional/Verbal</td>
<td>Medication Error(s), Wrong Dose</td>
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</tr>
<tr>
<td>12</td>
<td>Seizure</td>
<td>Alleged Abuse, Physical</td>
<td>Alleged Abuse, Physical</td>
<td>Alleged Abuse, Physical</td>
</tr>
<tr>
<td>13</td>
<td>Peer to Peer Aggression</td>
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<td>Alleged Abuse, Physical</td>
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<td>Alleged Exploitation, Financial</td>
</tr>
<tr>
<td>15</td>
<td>Injury of Known Origin</td>
<td>Injury of Known Origin</td>
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<td>16</td>
<td>Self-Injurious Behavior</td>
<td>Self-Injurious Behavior</td>
<td>Injury of Known Origin</td>
<td>Environmental/Structural relocation required</td>
</tr>
<tr>
<td>17</td>
<td>Medication Error, Given Outside Window</td>
<td>Alleged Exploitation, Financial</td>
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<td>Environmental/Structural relocation required</td>
<td>Medication Error, Given Outside Window</td>
<td>Self-Injurious Behavior</td>
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<td>19</td>
<td>Medication Error(s), Wrong Medication</td>
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<td>Environmental/Structural Relocation Required</td>
<td>Self-injurious Behavior</td>
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<td>Medication Error(s), Wrong Medication</td>
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## 2016 Incident Report Data - Top 20 Incident Report Types

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<td>4</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
</tr>
<tr>
<td>5</td>
<td>Restraint, Manual/Physical</td>
<td>Alleged Neglect</td>
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<td>Restraint, Manual/Physical</td>
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</tr>
<tr>
<td>19</td>
<td>Environmental/Structural Problems No Relocation</td>
<td>Widespread rodent or infestation of any kind</td>
<td>Widespread rodent or infestation of any kind</td>
<td>Alleged Exploitation, Financial</td>
</tr>
<tr>
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<td>Alleged Exploitation, Financial</td>
<td>Environmental/Structural Problems No Relocation</td>
</tr>
</tbody>
</table>
Provider Selection for Participation

- Providers grouped by size (statewide)
  - 5 groupings

- State broken into 4 quadrants
  - Allows Data Driven Review Team to concentrate resources (maximum Provider benefit)

- Providers selected for a topic based on the number of incident reports in that area (per capita incident report ratio) or uniqueness of Provider operations
Approach

- The DDR Team schedules a face-to-face meeting with the Provider to discuss the process and review data.
- The Provider performs a root-cause analysis.
- The Provider develops a Quality Improvement Plan based on the root-cause analysis and reviews with the DDR Team.
- The DDR Team provides on-going support (via phone or in-person) throughout entire process.
- BQIS supplies the Provider with data for 12 months.
- Provider adjusts Quality Improvement Plan based on results of data analysis.
II. Data Analysis
BQIS’ Baseline Data:

How is it calculated?

The baseline data is calculated by BQIS during the provider selection and is a Medication Error to Residential Consumer Ratio for each provider during a prior quarter (3 months).

For example, Company ABC has 54 residential consumers and 14 medications errors during the time frame of 1/1/16-3/31/16. The baseline = 14/54 = 0.259.
BQIS’ data and method to measure improvement may not be the same used by the Provider to measure whether a Goal Performance was met.
Data Analysis

Provider Performance Data:

- The Provider submits a Root Cause Analysis and Quality Improvement Plan
- BQIS sends the Provider quarterly reports of incident report data.
- BQIS calculates the provider performance for the accumulative 12 months after the implementation of the Quality Improvement Plan.
Provider Performance Data: Company ABC

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/1/2015</td>
<td>BQIS establishes Baseline</td>
</tr>
<tr>
<td>4/5/2016</td>
<td>Provider submits a Root Cause Analysis and Quality Improvement Plan</td>
</tr>
<tr>
<td>4/12/2016</td>
<td>DDR Team convenes a conference call with the Provider and discusses submitted plan</td>
</tr>
<tr>
<td>5/1/2016</td>
<td>Provider implements Quality Improvement Plan</td>
</tr>
<tr>
<td>10/1/2016</td>
<td>Data sent to Provider for 3\textsuperscript{rd} Quarter 2016 (7/1/2016-9/30/2016)</td>
</tr>
<tr>
<td>1/1/2017</td>
<td>Data sent to Provider for 4\textsuperscript{th} Quarter 2016 (10/1/2016-12/31/2016)</td>
</tr>
<tr>
<td>4/1/2017</td>
<td>Data sent to Provider for 1\textsuperscript{st} Quarter 2017 (1/1/2017-3/31/2017)</td>
</tr>
<tr>
<td>7/1/2017</td>
<td>Data sent to Provider for 2\textsuperscript{nd} Quarter 2017 (4/1/2017-6/30/2017)</td>
</tr>
</tbody>
</table>

BQIS calculates the Medication Error/Residential Consumer Ratio for the entire 12 months (7/1/2016-6/30/2017)

BQIS calculates Provider Performance by subtracting the 12 month calculation from the baseline.
## Provider Performance Data: Company ABC

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Residential Consumers</th>
<th>Med Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/1/2015</td>
<td>Baseline</td>
<td>58</td>
<td>17</td>
</tr>
<tr>
<td>10/1/2016</td>
<td>Data for 7/1/2016-9/30/2016</td>
<td>64</td>
<td>17</td>
</tr>
<tr>
<td>1/1/2017</td>
<td>Data for 10/1/2016-12/31/2016</td>
<td>61</td>
<td>13</td>
</tr>
<tr>
<td>4/1/2017</td>
<td>Data for 1/1/2017-3/31/2017</td>
<td>58</td>
<td>13</td>
</tr>
<tr>
<td>7/1/2017</td>
<td>Data for 4/1/2017-6/30/2017</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>243</strong></td>
<td><strong>55</strong></td>
</tr>
</tbody>
</table>

Baseline Medication Error/Residential Consumer Ratio

\[
\frac{17}{58} = 0.293
\]

Medication Error/Residential Consumer Ratio for the entire 12 months (7/1/2016-6/30/2017)

\[
\frac{55}{243} = 0.226
\]

Provider Performance by subtracting the initial baseline from the final ratio:

\[
0.293 - 0.226 = 0.067
\]
BQIS’ Baseline Data as of Launch Date:

Baseline calculated as of launch date for the 31 Providers:

- Total Residential Consumer Population = 4,902
  (Includes CIH Waiver and SGL)
- Total Medication Errors = 902
  (Includes Missed Medication, Wrong Dose, Given Outside Window, Wrong Route, and Wrong Medication)
- Overall Medication Error/Residential Consumer Ratio = 0.184
Provider Performance Data:

For the 31 Providers that have completed the DDR process thus far:

- Total Residential Consumers Population as of end of Data Tracking (12 months of data tracking) = 15,855
- Total Medication Errors as of end of Data Tracking = 3,650
- Overall Medication Error/Residential Consumer Ratio as of end of Data Tracking = 0.230
III. Results of Completed Reviews
Results of Completed Reviews

Data Driven Review Topic Area: Medication Errors

2016
- Quarter 1 (Pilot) – January 4, 2016 (5 Providers – All Complete)
- Quarter 2 (Full roll-out) – April 5, 2016 (15 Providers – 12 Complete)
- Quarter 3 – July 5, 2016 (15 Providers – 14 Complete)
- Quarter 4 – October 3, 2016 (13 Providers – Data monitoring)

2017
- Quarter 1 – January 3, 2017 (14 Providers – In Progress/Data monitoring)
- Quarter 2 – April 3, 2017 (15 Providers – In Progress/Data monitoring)
- Quarter 3 – July 3, 2017 (13 Providers – In Progress)
- Quarter 4 – October 3, 2017 (15 Providers – In Progress)
Provider Demographics:

- 35 Providers initiated the DDR process
  - Group 1 – Launch Date 1/5/2016
  - Group 2 – Launch Date 4/5/2016
  - Group 3 – Launch Date 7/5/2016

- 31 Providers completed the entire DDR process
  - Three providers closed
  - One provider did not have Medication Errors reported and no further data to track
## Results of Completed Reviews

### Provider’s Root Cause Analyses:

<table>
<thead>
<tr>
<th>Root Cause</th>
<th>Count on Provider Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>All providers of the individual are not implementing the medication administration plan</td>
<td>2</td>
</tr>
<tr>
<td>Clients who self-medicate</td>
<td>4</td>
</tr>
<tr>
<td>Disconnect between transitioning providers</td>
<td>1</td>
</tr>
<tr>
<td>Family/Guardian Not Medicating Correctly During Individual’s Home Visits</td>
<td>6</td>
</tr>
<tr>
<td>Frequent interruptions/distractions during med pass time.</td>
<td>13</td>
</tr>
<tr>
<td>Inconsistent forms/documentation standards throughout organization</td>
<td>4</td>
</tr>
<tr>
<td>Lack of communication</td>
<td>10</td>
</tr>
<tr>
<td>Lack of consistent staff</td>
<td>5</td>
</tr>
<tr>
<td>Lack of supervisory oversight</td>
<td>16</td>
</tr>
<tr>
<td>Medication storage issues</td>
<td>6</td>
</tr>
<tr>
<td>Need for increased staff training</td>
<td>8</td>
</tr>
<tr>
<td>Need for updated policies/procedures</td>
<td>4</td>
</tr>
<tr>
<td>Pharmacy issues</td>
<td>7</td>
</tr>
<tr>
<td>Staff not following med training protocols</td>
<td>27</td>
</tr>
</tbody>
</table>

*Provider may have listed more than one root cause.*
Results of Completed Reviews

Providers utilized the Root Cause Analysis to develop a Quality Improvement Plan
Results of Completed Reviews

Provider’s Quality Improvement Plans:

**Frequent Interruptions/Distractions During Medication Pass Times**

- When staffing permits, have a second staff block the Med Pass area to prevent disruption.
- Reiterate to individuals that during the Med Pass Process is not the appropriate time to raise other concerns.
- Ensure only one consumer is in the Med Pass area at a time.
- Implement a visual indicator that Med Pass is in process to indicate that distractions should be kept to a minimum.
- Separate consumer med passes by a few minutes to ensure the environment is calm and there are no distractions.
Results of Completed Reviews

Provider’s Quality Improvement Plans:

Frequent Interruptions/Distractions during Medication Pass Time

- Complete individualized activity schedules to include medication administration times.
- Ensure Med Pass area is not in a high traffic area.
- Develop a plan for each site with suggestions on how to minimize distractions during medication passes.
- Utilize a ‘STOP’ sign on the table/designated medication passing area at the time of each medication pass and remove at the end of each medication pass to remind all individuals to not interrupt.
Results of Completed Reviews

Provider’s Quality Improvement Plans:

Family/Guardian Not Medicating Correctly During Individual’s Home Visits

- Provide an extra dose of medication in the event individual is late returning from home visit.
- Include a detailed list, by date and time, of when each medication should be administered.
- Provide detailed instructions as to how to administer each medication—crushed in applesauce, with food, etc.
- Provide a contact number for family members to call with medication administration questions/concerns.
- Educate family on the consequences of missed medications.
- Allow staff to send text messages to family at medication administration time.
Results of Completed Reviews

Provider’s Quality Improvement Plans:

Staff not Following Medication Training Protocols

- Retrain staff to utilize the MAR at each medication pass.
- Train all staff to initial the MAR at the same place each time.
- Check MAR against received medications after each pharmacy delivery/pick up.
- Indicate on MAR when medications are stored in different areas-refrigerator, locked cabinet, etc.
- Implement buddy reviews of MAR at shift change with oncoming staff and notify QIDP of unsigned boxes on the MAR or medication still present upon arrival at site.
Results of Completed Reviews

Provider’s Quality Improvement Plans:

Lack of Supervisory Oversight

- Establish work group with Supervisors and Direct Support Professionals to identify root cause of medication errors.
- Supervisors/Leads are present at the site and are required to review the MAR for accuracy.
- Medication passes observed by the QIDP/nurse prior to solo medication passes in addition to the required training.
- Observe medication administration in homes to ensure staff are implementing training on reducing distractions and provide feedback to staff on what is observed.
Results of Completed Reviews

Provider’s Quality Improvement Plans:

Provider’s Innovative Ideas

- Establish a Med Error Committee, comprised of a nurse and different levels of staff to review, with staff, each med error before the staff can perform another med pass. Determine what happened, why it happened, and how it could have been avoided. Share any insights with all staff.

- Establish tiered DSP roles, allowing staff to move up through the tiers as they do a certain amount of med passes with no errors.

- Establish a DSP support position to assist staff that are new, or uncomfortable with the med pass process so staff does not have to contact supervisory personnel for assistance.

- Have staff perform a modified root cause analysis exercise after each med error and submit to management. Management can then review the information and track findings to quickly identify any required changes.
Results of Completed Reviews

Provider’s Quality Improvement Plans:

Provider’s Innovative Ideas

- Have staff create alarms on their phones or supply site with alarm clocks and set times to correspond with site’s medication times.
- Utilization of a chronological MAR instead of alphabetical.
- Implementation of a medication communication sheet to ensure issues with medications are communicated among staff.
- Organize medication administration and storage areas similarly at each location to minimize errors as staff transition from home to home.
- Creation of a reminder card for storage of special medications.
IV. Conclusion
Conclusion

What does the data say so far…

- 39% of the 31 Providers saw improvement in the Medication Error/Residential Consumer ratio
- Seven (7) Providers had a significant increase in the Medication Error/Residential Consumer ratio which increased the combined results;
- The overall Medication Error/Residential Consumer ratio increased by 0.046;
- Limited data is currently available to make a full analysis of the impact of DDR (med errors) as 85 providers are still completing the process.
Conclusion

What does the data say so far...

Medication Error Type Rank by Quarter 2015-2017 Comparison

NOTE: a ranking with a lower number indicates a more significant issue
Provider’s Goals, Metrics and Data:

- Providers goals and benchmarks were focused on reducing medication errors without taking into account the change in residential consumer count;

- Some goals established by providers were unrealistic (e.g. reduce med errors by 50% in 3 months);

- Quality improvement plans were not always aligned with a root cause.
Moving forward:

- BQIS will be including more data in the information given to the providers to support the data analysis and tracking;
- BQIS will be revising the root cause analysis and quality improvement plan templates to facilitate better outcomes;
- BQIS will continue tracking and reporting out the data.
The Bureau of Quality Improvement Services (BQIS) would like to thank those Providers that have completed this process, as well as those Providers currently involved in the process. We feel this is a critical step in identifying steps to improve the lives and health of the individuals we serve.
V. Questions/Discussion
VI. Contact Information
Contact Information

Bureau of Quality Improvement Services

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