Results and discussion on SOLABS’ 2017 Quality Metrics Data Survey
Introduction: Philippe Gaudreau

• President & CEO of SOLABS
• Co-founded SOLABS in 1999
• Chemical Engineer by Training
• Expertise as Business Analyst/Product Manager
• Passionate about quality automation, business process management and optimization, and an expertise in document life cycle management
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Acknowledgement:
• This presentation includes publicly available information for the FDA. Reference:
  https://www.fda.gov/Drugs/DevelopmentApprovalProcess/Manufacturing/ucm526869.htm
Context of our Survey

• In November 2016, the FDA issued a Draft Guidance on the Submission of Quality Metrics Data. SOLABS’ 2017 Quality Metrics Data Survey aims at understanding how Life Sciences companies have responded to these requirements.
The selected metrics are not intended to be an all inclusive set of the quality metrics that manufacturers may find useful to assess a product and manufacturer’s state of quality.

Submission of Information is Voluntary

FDA does not intend to take enforcement action based on errors in a quality metrics data submission made to this voluntary phase of the reporting program, provided the submission is made in good faith.

Inclusion on the Quality Metrics Reporters List for participants

Expected date for the electronic portal: early 2018
Metrics that FDA intends to Calculate

- Robustness of Commercial Manufacturing Process
  - Lot Acceptance Rate

- Robustness of Laboratory Operation
  - Invalidated Out-of-Specification Rate

- Voice of the Patient/Customer
  - Product Quality Complaint Rate
Between June 18, 2017 and August 13, 2017, SOLABS requested survey responses from members of the North American Life Sciences community in regard to their practices collecting Quality Metrics Data, specifically pertaining to FDA’s November 2016 Draft Guidance on the Submission of Quality Metrics Data.
SOLABS Quality Metrics Data Report

- 56 surveys submitted in total
- We hope you will find the results interesting and very useful in comparing your current practices to other companies
- It is important to remember that regulatory agencies through their inspection obtain similar data
- The practices that most companies use are considered best practices and become the current good manufacturing practices or CGMP
- The concept is that the industry would evolve and higher standards would result without regulators constantly revising the regulations
- Compare and evaluate your practices to what are the best practices and don’t fall behind!
Question #1: In what vertical of the Life Sciences does your company operate?

During the voluntary phase of the reporting program, FDA will accept voluntarily submissions of data from owners and operators of human drug establishments. FDA expects that the large majority of voluntary reports will be submitted by establishments engaged in the manufacture, preparation, propagation, compounding, or processing of finished dosage forms (FDF) of “covered drug products” or active pharmaceutical ingredients (API) used in the manufacture of “covered drug products.”

(https://www.fda.gov/Drugs/DevelopmentApprovalProcess/Manufacturing/ucm526869.htm)
Question #2: Are you currently collecting data necessary to calculate Quality Metrics as defined by FDA?

- YES: 64.2%
- NO: 35.8%

**COMMENT**: Appears that there is still some catch-up work to be done by the companies participating in our survey. The only effective way to collect the information required by FDA is to have an EQMS.

Question #2A: IF YES to 2, what data (necessary to calculate Quality Metrics) do you collect?

- Product Quality Complaint Rate (PQCR): 82.8%
- Lot Acceptance Rate (LAR): 65.7%
- Invalidated Out-of-Specification Rate (IOOSR): 65.7%

**COMMENT**: These results pretty much reflect the different business models participating in the survey.
SOLABS Quality Metrics Data Report: Q3

Question #3: Do you collect additional data to track and trend the Product Quality Performance of each of your products?

YES - 74.5%  NO - 25.5%

Question #3A: IF YES to 3, what additional data to track & trend Product Quality Performance do you collect? [Select all that apply]

- Complaint Rate- 82%
- Rejection Rate- 66.6%
- OOS/OOT Rate- 64.1%
- Rework Rate- 48.7%
- Reinspection Rate- 33.3%
- Process Capability Index- 28.2%

Other- 1 vote EACH for: APR, QMR, QMS, Root Cause on CAPA, Report/Project Turnaround Time

COMMENT: Data is not being collected regarding Deviations, NCRs and Change Controls for individual products.
Question #3B: IF YES to 3, what is the frequency of reporting Quality Metrics Data for Product Quality Performance?

**COMMENT:** From our experience regulators would be looking for at least quarterly but monthly is considered best practice.
**SOLABS Quality Metrics Data Report: Q4**

**Question #4:** Do you collect data & calculate additional metrics to measure Quality System & Sub-Systems Performance?

- **YES - 78.8%**
- **NO - 21.2%**

**Question #4A:** IF YES to 4, please select the metrics you use for each of the Quality Sub-Systems. [Select all that apply]

<table>
<thead>
<tr>
<th>Metric</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviations</td>
<td>95%</td>
</tr>
<tr>
<td>CAPA</td>
<td>92%</td>
</tr>
<tr>
<td>Change Control</td>
<td>90%</td>
</tr>
<tr>
<td>Audits</td>
<td>90%</td>
</tr>
<tr>
<td>Complaints</td>
<td>72.5%</td>
</tr>
<tr>
<td>OOS/OOT</td>
<td>70%</td>
</tr>
<tr>
<td>Supplier Performance</td>
<td>67.5%</td>
</tr>
<tr>
<td>NCR</td>
<td>65%</td>
</tr>
<tr>
<td>Employee Training</td>
<td>65%</td>
</tr>
<tr>
<td>Document Management</td>
<td>65%</td>
</tr>
<tr>
<td>Annual Product Reviews</td>
<td>42.5%</td>
</tr>
<tr>
<td>Validation</td>
<td></td>
</tr>
<tr>
<td>Review Completion</td>
<td></td>
</tr>
<tr>
<td>Quality Improvement Initiatives</td>
<td></td>
</tr>
</tbody>
</table>

**COMMENT:** There is good information here that can be used to benchmark against... Quality Control and Quality Assurance cycle times should be measured as well. Operational efficient and timely decision making is important. On-time testing percentage and on-time disposition percentage would be good additions to the list.

**Other:** 1 vote EACH for: Validation Review Completion, Quality Improvement Initiatives
**Question #4B:** If YES to 4, what is the frequency of reporting Quality Metrics Data for the Quality System and Sub-System Performance?

- **Monthly:** 47.5%
- **Quarterly:** 32.6%
- **Semi-Annually:** 5%
- **Annually:** 7.5%
- **Other:**
  - Bi-weekly: 2.5%
  - Varies: 5%

**COMMENT:** From my experience regulators would be looking for at least quarterly but monthly is considered best practice.
SOLABS Quality Metrics Data Report: Q5

Question #5: Do you collect any other data to evaluate the Quality culture at your company? If Yes, please describe briefly.

- Medwatch data
- Completed and communicated the results from a Quality Culture Survey
- Continuous Improvement protects, validation process and new product introduction
- We do employees engagement survey on a yearly basis.
- KPI for corporate reporting
- Right the first time batches
- Quality Improvement Initiatives including all the systems
- Deviation trending only
Question #6: What level of your organization reviews Quality Metrics Data?
- Executive Management: 40%
- Senior Management: 44%
- Management: 16%

Question #7: Do you hold formal meetings to review the Quality Metrics Data and determine next steps?
- Yes: 86%
- No: 14%

COMMENT: There is good information here that can be used to benchmark against.
**SOLABS Quality Metrics Data Report: Q7**

**Question #7A:** IF YES to 7, at what frequency does that meeting occur?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Monthly</td>
<td>44.2%</td>
</tr>
<tr>
<td>Quarterly</td>
<td>32.6%</td>
</tr>
<tr>
<td>Semi-Annually</td>
<td>7%</td>
</tr>
<tr>
<td>Annually</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

**COMMENT:** From our experience regulators would be looking for at least annually.
Publishing quality metrics on a periodic basis

WORK SHOP

Understanding what is expected from the guidance.

Process to submit data and records.

Gather questions that can be submitted to the FDA (responses would be shared)
Submission of Quality Metrics Data

Benefits of Participation

- Work with establishments towards early resolution of potential quality problems
- Improved inspection effectiveness
- FDA is considering use of calculated metrics as an element of the post-approval manufacturing change reporting program
- Reduction in inspection frequency
- Inclusion on the Quality Metrics Reporters List
Submission of Quality Metrics Data

• 5 minutes to go through reference no. 1 for everyone.
Submitting Data – Who is more likely to submit?

Quality Metrics Data Reports

• Product reports submitted by product reporting establishments
  – The subject of a product report is a covered drug product or an API used in a covered drug product
    OR
• Site reports submitted by site reporting establishments
  – The subject of a site report is a single covered establishment, individually listing data associated with each covered drug product or API used in a covered drug product

References:
To add...
### Submitting Data – Ownership within organizations

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Site Reporting</th>
<th>Product Reporting</th>
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</thead>
<tbody>
<tr>
<td>Medical Device</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Biotechnology/Pharma (No Commercial Product)</td>
<td>Unlikely</td>
<td>Unlikely</td>
</tr>
<tr>
<td>Integrated Biotech/Pharma</td>
<td>Most likely</td>
<td>Most likely</td>
</tr>
<tr>
<td>Virtual Biotech/Pharma</td>
<td>Unlikely</td>
<td>Most likely</td>
</tr>
<tr>
<td>CRO</td>
<td>Unlikely</td>
<td>Unlikely</td>
</tr>
<tr>
<td>CMO</td>
<td>Most likely</td>
<td>Participant</td>
</tr>
<tr>
<td>Contract laboratory</td>
<td>Unlikely</td>
<td>Participant</td>
</tr>
<tr>
<td>Importer/Distributor of drug products</td>
<td>Unlikely</td>
<td>Most likely</td>
</tr>
</tbody>
</table>
FDA believes that the quality control unit (QCU) in each reporting establishment for a covered drug product or API used in a covered drug product will generally be best positioned to compile reports for submission to FDA, considering the QCU responsibilities and authorities for the oversight of drugs as described in 21 CFR 211.22.

Do we agree?
### Submitting Data – Information to submit

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Label</th>
<th>Data Element Type</th>
<th>Data Element Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONOGRAPH</td>
<td>Applicable Monograph</td>
<td>Text</td>
<td>PRODTYPE = API, FDF</td>
</tr>
<tr>
<td>PRODTYPE</td>
<td>Drug Product Type</td>
<td>Text</td>
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</tr>
<tr>
<td>APPLICNT</td>
<td>Applicant Name</td>
<td>Text</td>
<td></td>
</tr>
<tr>
<td>FINLBLER</td>
<td>Final Labeler Name</td>
<td>Text</td>
<td></td>
</tr>
<tr>
<td>LABELER</td>
<td>Final Labeler Codes</td>
<td>Num</td>
<td></td>
</tr>
<tr>
<td>APPLTYPE</td>
<td>Application Type</td>
<td>Text</td>
<td>APPTYPE = NDA, ANDA, BLA DMF, or NA</td>
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<tr>
<td>APPNUM</td>
<td>Application Number</td>
<td>Text</td>
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</tr>
<tr>
<td>NDCCODE</td>
<td>NDC Product Code</td>
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<td></td>
</tr>
<tr>
<td>TIMEPRD</td>
<td>Time Period Start</td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>TIMEPRD</td>
<td>Time Period End</td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>LTSATT</td>
<td>Lots Attempted</td>
<td>Num</td>
<td>Number of lots attempted of the product</td>
</tr>
<tr>
<td>LTSREJ</td>
<td>Lots Rejected</td>
<td>Num</td>
<td>Number of specification-related rejected lots of the product</td>
</tr>
<tr>
<td>APRWIDD</td>
<td>Attempted Lots</td>
<td>Num</td>
<td>Number of attempted lots pending disposition (more than 30 days)</td>
</tr>
<tr>
<td>OOSRES</td>
<td>Out-of-Specification Results</td>
<td>Num</td>
<td>Number of OOS results - Finished product (including stability testing)</td>
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<tr>
<td>LTRELST</td>
<td>Lot Release Tests</td>
<td>Num</td>
<td>Number of lot release tests conducted for commercial use</td>
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### Submitting Data – Information to submit

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<thead>
<tr>
<th><strong>OOSRESIN</strong></th>
<th>Out-of-Specification Results Invalidated</th>
<th>Num</th>
<th>Number of OOS results for finished product and stability tests for the product that are invalidated due to lab error</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRODCOMP</strong></td>
<td>Product Quality Complaints</td>
<td>Num</td>
<td>Number of product quality complaints received for the product distributed in the United States</td>
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<td><strong>LTSREL</strong></td>
<td>Lots Attempted and Released</td>
<td>Num</td>
<td>Number of lots attempted that are released for distribution or for the next stage of manufacturing the product</td>
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<td><strong>APRWIDD</strong></td>
<td>APR/PQR Completed</td>
<td>Text</td>
<td>Have associated APRs or PQRs been completed within 30 days of annual due date for the product? APRWIDD = Y or N</td>
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<tr>
<td><strong>APRPQRS</strong></td>
<td>APR or PQR Required</td>
<td>Num</td>
<td>Number of APRs or PQRs required for the product</td>
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<tr>
<td><strong>DUNSNUM</strong></td>
<td>DUNS Number</td>
<td>Num</td>
<td>A unique nine-digit identification number for each physical facility</td>
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<tr>
<td>Data Element Name</td>
<td>Data Element Label</td>
<td>Data Element Type</td>
<td>Data Element Description</td>
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<tr>
<td>DOSAGE FORMS</td>
<td>Dosage Form</td>
<td>Text</td>
<td>Associated finished dosage form</td>
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<td>FEINUM</td>
<td>Facility Establishment Inventory Number</td>
<td>Num</td>
<td>Facility Establishment Inventory Number</td>
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<tr>
<td>ACTIVITY</td>
<td>Establishment Activity</td>
<td>Text</td>
<td>Subset of Business Operations: Analytical testing, Pack, Manufacture, Other</td>
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<tr>
<td>QUARTER</td>
<td>Reporting Quarter</td>
<td>Text</td>
<td>QUARTER = 1, 2, 3, or 4</td>
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Submitting Data – Format

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Submitting Data – Format

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<th>APRAPV</th>
<th>APRAPVY</th>
<th>APRPQRS</th>
<th>APRWIDD</th>
<th>CAIRTP</th>
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<tbody>
<tr>
<td>Establishment Activity</td>
<td>Applicant Name</td>
<td>Application Type</td>
<td>Application Number</td>
<td>APR/PQR Approved</td>
<td>APR/PQR Approved by Quality and/or Operations Unit</td>
<td>APR or PQR Required</td>
<td>Attempted Lots</td>
<td>CAPAs Requiring Re-Training</td>
</tr>
</tbody>
</table>
**Typical Flow**

- Create repository for this program
- Decide which appendices is relevant for your organization
- Create template
- Collect data and generate calculations for year 2017
- Exchange with FDA (Email: OPQ-OS-QualityMetrics@fda.hhs.gov)
- Prepare report (Optional 300 word field for reporters)
- Format data and report
- Archive and store data reported
- Upload on FDA’s portal