

# Using an Access Database to Increase the Ease and Efficiency of Performing Quality Control for Data Entry

Kate Krueger  
University of Wisconsin Survey Center  
University of Wisconsin-Madison

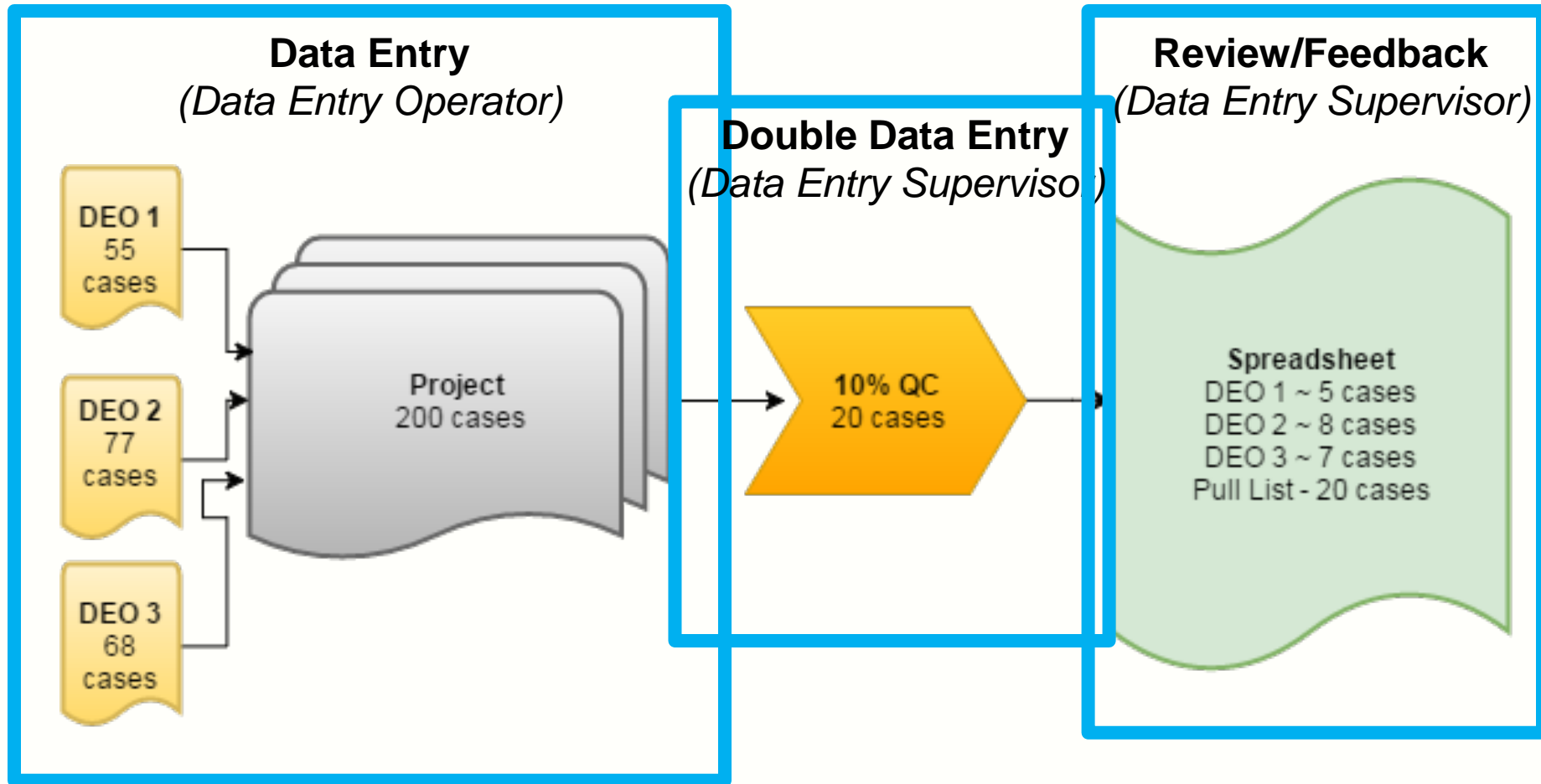
International Field Directors and Technologies Conference  
Austin, TX  
May 17, 2016

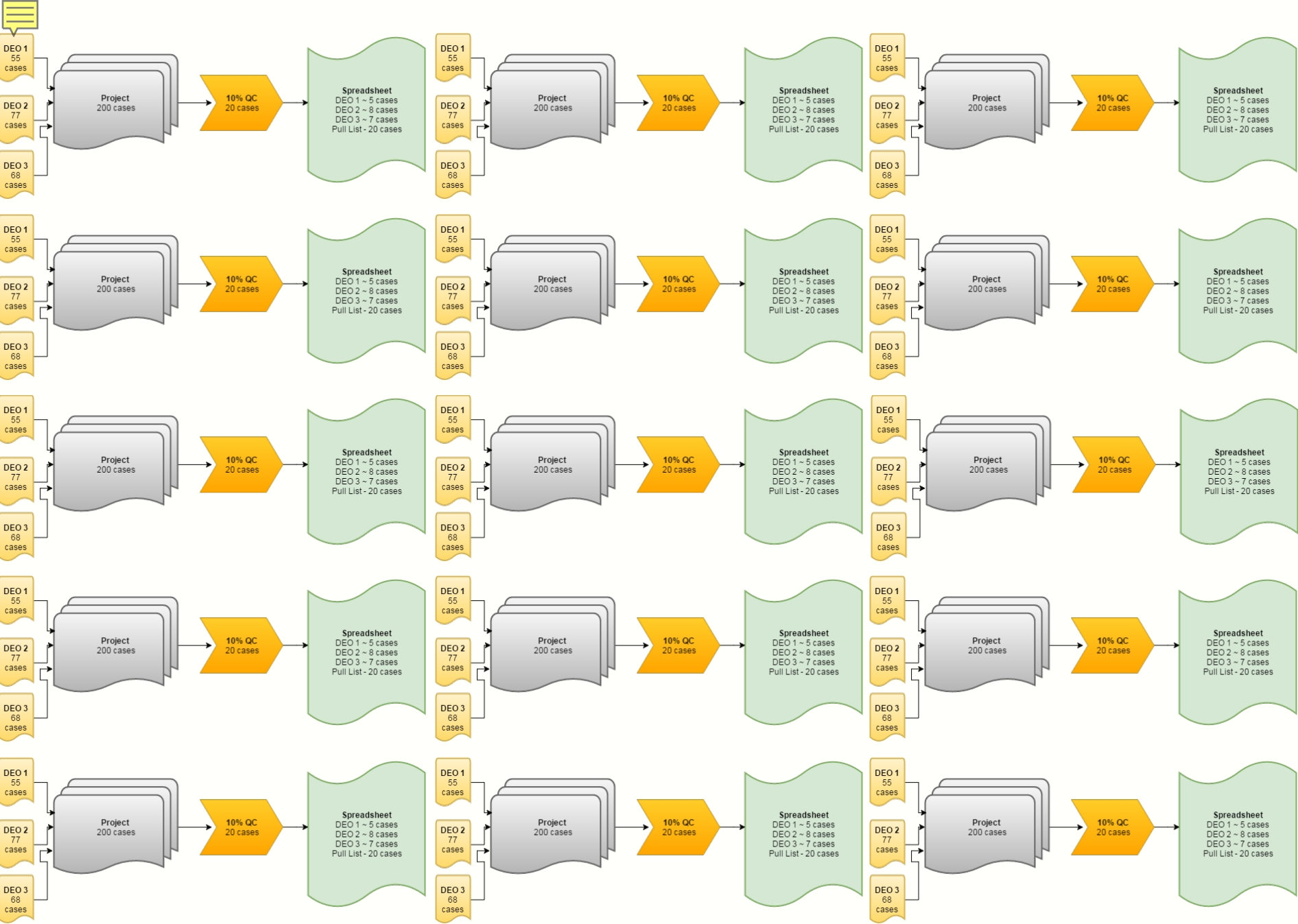
© 2016. Materials may not be reproduced without permission of the author.

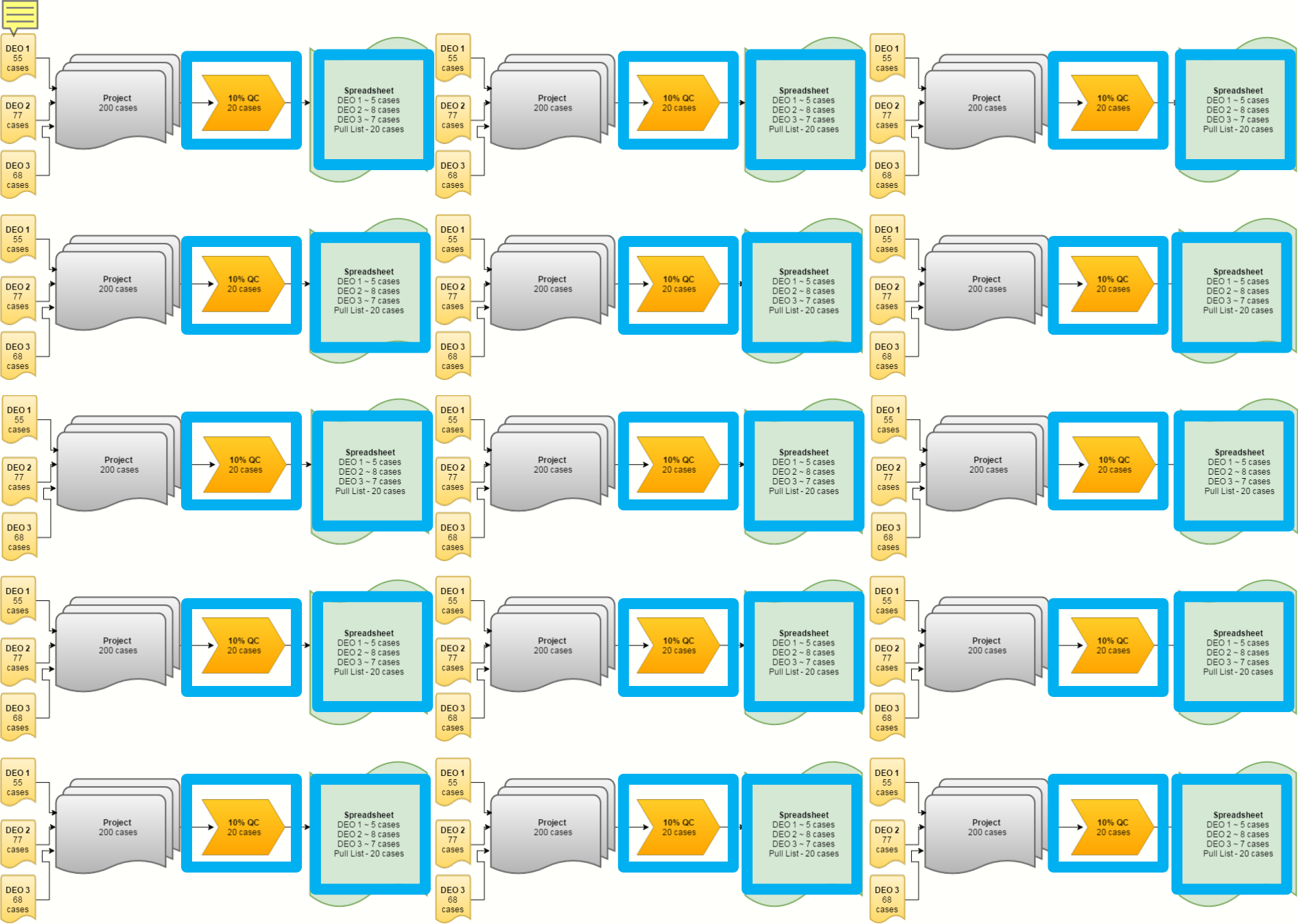
# Identifying the Problem

© 2016. Materials may not be reproduced without permission of the author

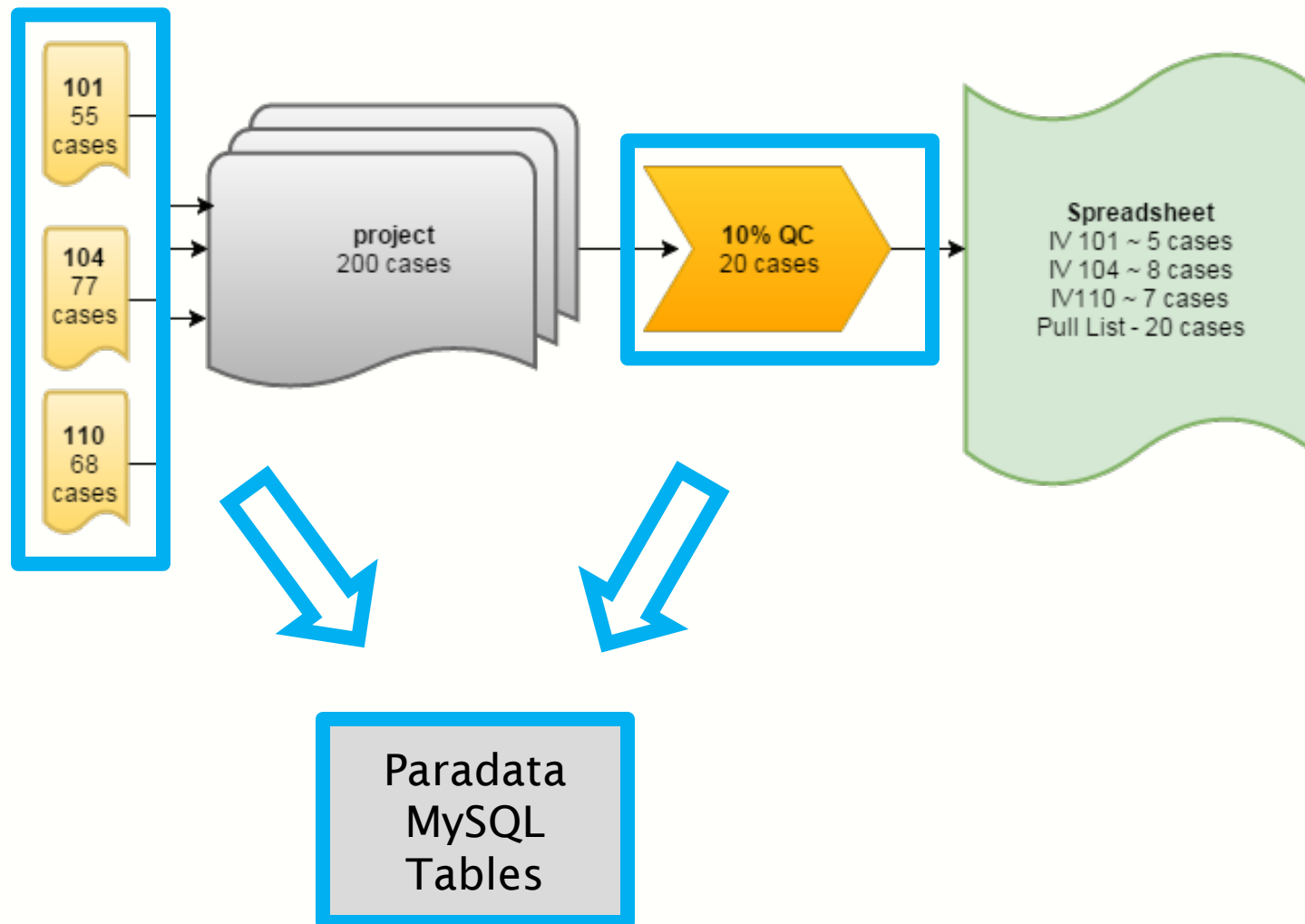
# Data Entry Quality Control (QC) Process for a Single Project







# Metadata/Paradata Logging





# The Solution: Data Entry QC Database

© 2016. Materials may not be reproduced without permission of the author





# The Solution: Data Entry QC Database

---

- Low tech solution
  - Access Database
  - Dashboard qualities
  - Quick to implement
  - Easy to use/modify





# Data Entry QC Database: Tables

---

- ODBC links
- Paradata Information – MySQL tables
  - *dedata*
    - General information about the case
    - Project number, Start and end times, DEO ID number, etc.
  - *verifylog*
    - Log of discrepancies encountered during 2<sup>nd</sup> pass of double data entry during QC
    - Caseid, item name, 1<sup>st</sup> pass response and 2<sup>nd</sup> pass response, item changed?
- Notes Output – CSV file
  - *All\_workednotes*
    - Notes attached to all cases data entered



# Mail and Data Entry Quality Control Tool

Project Overview

Project Error Report

DEO Error Report

DEO Production Report

QC Random Selection

QC Review Cases

QC Pull Report

QC Feedback Form

Feedback History

**SELECT PROJECT:**  ▼

csid	ecmpldate	ecmplid	code	EID	EDATE	vcode	VID	VDATE	ENTRY (MINUTES)	VERIFICATION (MINUTES)

# Information Tabs: Project Overview

Navigation Form

## Mail and Data Entry Quality Control Tool

[Project Overview](#)
[Project Error Report](#)
[DEO Error Report](#)
[DEO Production Report](#)
[QC Random Selection](#)
[QC Review Cases](#)
[QC Pull Report](#)
[QC Feedback Form](#)
[Feedback History](#)

**SELECT PROJECT:**

<b>CASES SETUP</b>	949	<b>TOTAL ENTRY TIME</b>	2830.93
<b>EDITED</b>	0	<b>TOTAL VERIFICATION TIME</b>	373.66
<b>DATA ENTERED</b>	948	<b>AVG ENTRY TIME</b>	2.99
<b>VERIFIED</b>	98	<b>AVG VERIFICATION TIME</b>	3.81
<b>PERCENT QC COMPLETE</b>	10.34%		
<b>NUMBER LEFT FOR QC</b>	0		

csid	ecmpldate	ecmplid	code	EID	EDATE	vcode	VID	VDATE	ENTRY (MINUTES)	VERIFICATION (MINUTES)
6116			1100	2624	5/5/2015				3.87	0
5093			1100	2624	5/5/2015				6.11	0
6341			1100	2869	5/5/2015	1100	2624	5/5/2015	4.93	2.53
4149			1100	2869	5/5/2015	1100	2624	5/5/2015	8.25	5.68
3141			1100	2869	5/5/2015	1100	2624	5/5/2015	4.27	3.11
4098			1100	2869	5/6/2015				5.27	0
4285			1100	2869	5/6/2015				4.22	0
4164			1100	2869	5/6/2015				8.12	0
4063			1100	2869	5/6/2015				5.15	0
4140			1100	2869	5/6/2015				5.22	0
4221			1100	2869	5/6/2015				6.44	0
4425			1100	2869	5/6/2015				4.19	0
4148			1100	2869	5/6/2015				4.58	0
4375			1100	2869	5/6/2015	1100	2624	5/19/2015	6.71	6.21
4237			1100	2869	5/6/2015				3.87	0
4389			1100	2869	5/6/2015				4.17	0
4289			1100	2869	5/6/2015				3.49	0
4368			1100	2869	5/6/2015				5.28	0

Record: 1 Unfiltered Search

# Information Tabs: Error Report by Project

Navigation Form

## Mail and Data Entry Quality Control Tool

Project Overview | **Project Error Report** | DEO Error Report | DEO Production Report | QC Random Selection | QC Review Cases | QC Pull Report | QC Feedback Form

SELECT PROJECT: P1076

### PROJECT REPORT

STUDY	DATA ENTERED	VERIFIED	TOTAL ANSWERS CHANGED	ERROR RATE	PERCENT QC COMPLETE
P1076	948	98	30	0.00147	10.34%

### DEO REPORT

ID	DATA ENTERED	VERIFIED	TOTAL ANSWERS CHANGED	PERCENT QC	ERROR RATE	EVALUATION
2683	276	30	4	10.87%	0.00064	Meets Expectations
2819	233	26	2	11.16%	0.00037	Meets Expectations
2869	434	42	24	9.68%	0.00275	Meets Expectations

# Information Tabs: Error Report by DEO

Navigation Form

## Mail and Data Entry Quality Control Tool

- Project Overview
- Project Error Report
- DEO Error Report
- DEO Production Report
- QC Random Selection
- QC Review Cases
- QC Pull Report
- QC Feedback Form
- Feedback History

SELECT DEO:  ▼

### DEO PROJECTS REPORT

STUDY	DATA ENTERED	VERIFIED	TOTAL ANSWERS CHANGED	PERCENT QC	AVG ENTRY TIME	PROJECT AVG ENTRY	DEO ERROR RATE	PROJECT ERROR RATE	EVALUATION
P1004	429	376	736	87.65%	23.62	22.61	0.0012	0.00011	Meets Expectations
P1004_W3_CONTACT	303	39	45	12.87%	1.74	1.77	0.01861	0.00693	Needs Improvement
P1031	95	6	2	6.32%	2.32	2.23	0.00855	0.00488	Meets Expectations
P1040	73	12	7	16.44%	2.25	2.39	0.00566	0.00607	Meets Expectations
P1054_CHILDDDE	233	26	1	11.16%	0.68	0.78	0.00065	0.00035	Meets Expectations
P1054_PARENTDE	168	16	5	9.52%	1.36	1.45	0.00651	0.00417	Meets Expectations
P1069_PRE	266	37	13	13.91%	0.88	0.8	0.00764	0.00345	Meets Expectations
P1077	280	33	21	11.79%	1.58	1.59	0.01248	0.00448	Meets Expectations
P9710_SAQ_DE	156	156	78	100.00%	9.13	8.49	0.00216	0.00086	Meets Expectations
P9904_MROSAQ	126	126	285	100.00%	25.96	26.76	0.00134	0.00009	Needs Improvement
P9904_P9904MRO_CON	350	36	23	10.29%	1.33	1.45	0.01521	0.0068	Meets Expectations

# Information Tabs: DEO Production Report

Navigation Form

## Mail and Data Entry Quality Control Tool

[Project Overview](#)
[Project Error Report](#)
[DEO Error Report](#)
[DEO Production Report](#)
[QC Random Selection](#)
[QC Review Cases](#)
[QC Pull Report](#)
[QC Feedback Form](#)

**SELECT DEO:**

**SELECT DATE:**

Number of Cases: 15  
Number of Completes: 15

PROJECT	CASE ID	DATE	SINCE LAST	START TIME	END TIME	LENGTH	CODE
P9710_SAQ_DE	226034s	3/4/2015	00:00:00	11:33:03 AM	11:39:35 AM	00:06:32	1100
P9710_SAQ_DE	293091g	3/4/2015	00:00:46	11:40:21 AM	11:52:02 AM	00:11:41	1100
P9710_SAQ_DE	293249g	3/4/2015	00:01:24	11:53:26 AM	12:03:31 PM	00:10:05	1100
P9710_SAQ_DE	307022g	3/4/2015	00:03:17	12:06:48 PM	12:15:19 PM	00:08:31	1100
P9710_SAQ_DE	307022s	3/4/2015	00:01:45	12:17:04 PM	12:27:06 PM	00:10:02	1100
P9710_SAQ_DE	307081s	3/4/2015	00:35:40	1:02:46 PM	1:14:13 PM	00:11:27	1100
P9710_SAQ_DE	322040g	3/4/2015	00:00:42	1:14:55 PM	1:26:02 PM	00:11:07	1100
P9710_SAQ_DE	393061g	3/4/2015	00:01:02	1:27:04 PM	1:33:49 PM	00:06:45	1100
P9710_SAO_DF	440083p	3/4/2015	00:00:41	1:34:30 PM	1:41:28 PM	00:06:58	1100

# Action Tabs: QC Random Selection

Navigation Form

## Mail and Data Entry Quality Control Tool

Project Overview | Project Error Report | DEO Error Report | DEO Production Report | **QC Random Selection** | QC Review Cases | QC Pull Report | QC Feedback Form

### Quality Control

SELECT PROJECT: P1177

SELECT DEO: 2841

#### QC Summary

ENTERED: 214	LEFT FOR 10% QC: 5	PROJECT ERROR RATE: 0.00084
VERIFIED: 16	LEFT FOR 15% QC: 16	DEO ERROR RATE: 0.00035
LAST QC DATE: 4/5/2016	LEFT FOR 100% QC: 198	EVALUATION: Meets Expectations
LAST PULL DATE: 4/5/2016	PERCENTAGE QC'D: 7.48%	

#### Random Selection

SELECT % QC: 10%

#### Manually Add Cases

SELECT CSID:



# QC Random Selection: Pull List

---

STUDY	csid	PullDate
P1177	10090	4/5/2016
P1177	10219	4/5/2016
P1177	10396	4/5/2016
P1177	11045	4/5/2016
P1177	11489	4/5/2016
P1177	11864	4/5/2016
P1177	12042	4/5/2016
P1177	12109	4/5/2016
P1177	12159	4/5/2016
P1177	12392	4/5/2016
P1177	12562	4/5/2016
P1177	12619	4/5/2016
P1177	20196	4/5/2016



# Action Tabs: QC Review Cases

Navigation Form

## Mail and Data Entry Quality Control Tool

Project Overview | Project Error Report | DEO Error Report | DEO Production Report | **QC Random Selection** | **QC Review Cases** | QC Pull Report | QC Feedback Form | Feedback History

### Review QC'd Cases

SELECT PROJECT: P1177  
SELECT DEO: 2841  
SELECT PULL DATE: 3/15/2016

CSID: 12272    PULL DATE: 3/15/2016    ITEM: q13b

1ST PASS	DATE: 3/14/2016	2ND PASS	DATE: 3/15/2016	ERROR TYPE
6		5		Protocol Error <input type="checkbox"/> Entry Error <input checked="" type="checkbox"/> Ignore (No Error) <input type="checkbox"/>

◀ ▶

# Action Tabs: QC Pull Report

---

Navigation Form pull\_report\_subreport

## Mail and Data Entry Quality Control Tool


Project Overview | Project Error Report | DEO Error Report | DEO Production Report | QC Random Selection | QC Review Cases

### QC Pull Report

**SELECT PROJECT:** P1177

**SELECT DEO:** 2841

**SELECT PULL DATE:** 3/15/2016



# Action Tabs: QC Feedback Form

Navigation Form

## Mail and Data Entry Quality Control Tool

Project Overview | Project Error Report | DEO Error Report | DEO Production Report | QC Random Selection | QC Review Cases | QC Pull Report | **QC Feedback Form** | Feedback History

**SELECT PROJECT:** P1160

**SELECT DEO:** 3159

**SELECT PULLDATE:** 5/5/2016

### OVERALL TOTALS

TOTAL CASES QC'D	TOTAL ERRORS	PROTOCOL ERRORS	ENTRY ERRORS	CASES W/O ERRORS
18	2	0	2	16


### ERRORS BY CASE

CASEID	TOTAL ERRORS	PROTOCOL ERRORS	ENTRY ERRORS	VERIFIED DATE
10161	0	0	0	5/5/2016
10167	0	0	0	5/5/2016
10198	0	0	0	5/5/2016
10301	0	0	0	5/5/2016
10325	0	0	0	5/5/2016
10376	0	0	0	5/5/2016
10410	0	0	0	5/5/2016

**FEEDBACK GIVEN**

**ID** 2871 **DATE** 5/5/2016

**OUTCOME** Two small entry errors. Great overall.



# Information Tabs: Feedback History

Navigation Form

## Mail and Data Entry Quality Control Tool

Project Overview | Project Error Report | DEO Error Report | DEO Production Report | QC Random Selection | QC Review Cases | QC Pull Report | **QC Feedback Form** | Feedback History

SELECT DEO: 3159

STUDY	PULL DATE	NUMBER OF CASES	TOTAL ERRORS	PROTOCOL ERRORS	ENTRY ERRORS	CASES W/O ERRORS	ERROR RATE	FEEDBACK GIVEN	FEEDBACK ID	FEEDBACK DATE	QC SUMMARY AND FEEDBACK COMMENTS
P1160	4/25/2016	17	0	0	0	17	0	<input checked="" type="checkbox"/>	2871	4/27/2016	No mistakes.
P1160	5/5/2016	18	2	0	2	16	0.0024691	<input checked="" type="checkbox"/>	2871	5/5/2016	Two small entry errors. Great overall.



# Conclusion

---

- Access database – low tech solution
- Central location
- No more spreadsheets!
- Short development time
- Logging metadata information across projects is key

# Acknowledgements

---

- Data Entry Department
  - Carrie Barrett, *DE Supervisor*
  - Leo Schultz, *DE Shift Leader*
  - Robbie Wuetrich, *DE Shift Leader*
  - Carol Wintheiser, *CAPI Supervisor*

Thank You!

For copies of this presentation or more information, contact:

Kate Krueger  
kgolen@ssc.wisc.edu

Please visit us at:  
**[www.uwsc.wisc.edu](http://www.uwsc.wisc.edu)**