Avoiding Errors and Alerts When Using UDS Forms
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Automated Data Checks Applied to UDS Packets at NACC Slide 1

Automated data checks: *Errors*

- "Hard" errors: impossible data values, or combinations of values

- Example: birth date later than visit date

- Resolution: data must be corrected for packet to be accepted

Automated data checks: *Alerts*

- "Soft" errors: suspicious combinations of data values

- Example: clinician marks "normal cognition" on form D1, but MMSE score <24

- Resolution: must either. . .

  - *Correct* a faulty data value, or

  - *Verify* that original data values were correct

Alerts

How often alerts occur

From 5/15/08 – 3/1/10:

	n	%
Total no. of UDS packets	43,217	
Total no. of alerts	5,338	
Alerts per 100 packets	12.4	
Alerts per center per week	2.0	
Unresolved alerts	194	
Resolved alerts	5,144	
Corrected	2,995	58%
Verified	2,149	42%

Alert rates vary *a lot* among centers

Each ADC (ranked)

Mean for all ADCs

No. of alerts per 100 packets
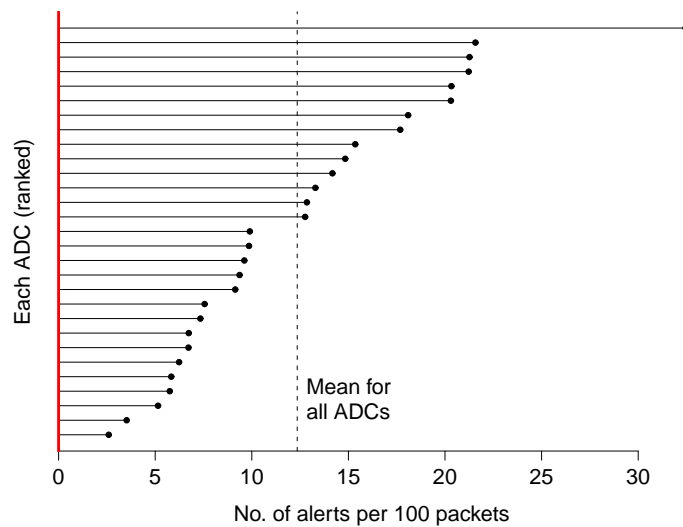
Alert *codes* and alert *topics*

Code	Description	Packet type	UDS ver. no.	Topic
724	Form D1, item 2 says normal cognition, but MMSE <24	IV	1	86
750	Ditto	FV	1	86
807	Ditto	IV	2	86
906	Ditto	FV	2	86

Of 92 alert topics, 84 have actually occurred (so far)

Some alert topics are more common than others

3
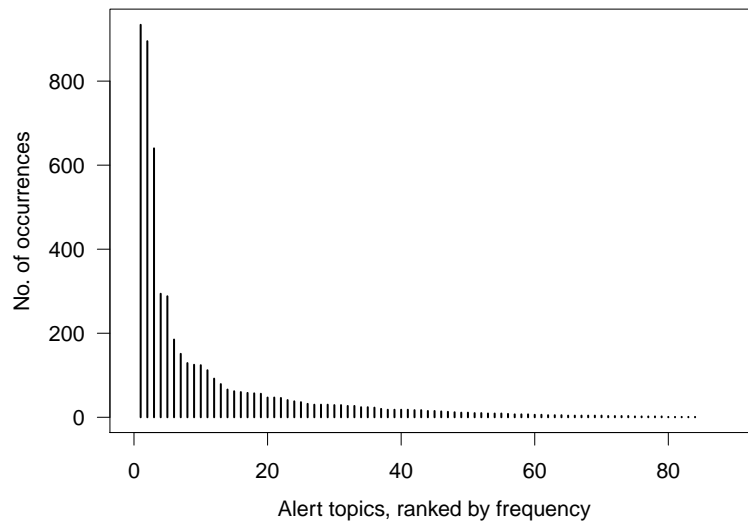
Top 10 topics account for 70% of all alerts

Cumulative percent of all alerts vs. Alert topics, ranked by frequency
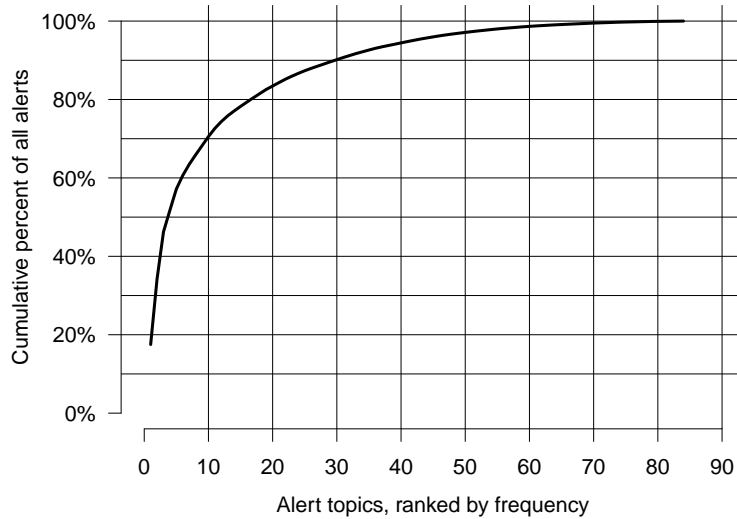
Top alerts #1–#3

Rank	Description	$n*$	How resolved: Corrected	Verified
1	Global CDR marked as 0 (B4:6), but clinician indicated that subject did not have normal cognition (D1:2)	907	32%	68%
2	Clinician indicated that subject did not have normal cognition (D1:2), but cognitive status after neuropsych testing marked as normal or better than normal for age (C1:11a)	855	25%	75%
3	Clinician marked that patient had depression for 2+ weeks (B9:7b), but patient denied active depression in past 2 years (A5:6a)	615	62%	38%

* No. resolved

Top alerts #4–#6

| Rank | Description | $n*$ | How resolved: | |
			Cor-rected	Veri-fied
4	Living situation marked as living with spouse or partner (A1:15), but marital status not marked as either married nor living as married (A1:19)	284	50%	50%
5	Personal care rated as moderately or severely impaired on CDR (B4:6), but subject marked as living either independently or requires assistance with complex activities (A1:16)	279	64%	36%
6	Clinician rated subject as having normal cognition (D1:2), but MMSE score was less than 24 (C1:1d)	179	72%	28%

* No. resolved

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Top alerts #7–#8

| Rank | Description | $n*$ | How resolved: | |
			Cor-rected	Veri-fied
7	Gait abnormality indicative of CNS disorder marked as present on neurological exam (B8:3), but gait marked as normal on UPDRS (B3:12)	140	70%	30%
8	Subject health history indicates no recent or active Parkinson's disease (A5:3a), but Parkinson's disease marked as present on clinician's diagnosis page (D1:23) [?]	124	69%	31%

* No. resolved

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Top alerts #9–#10

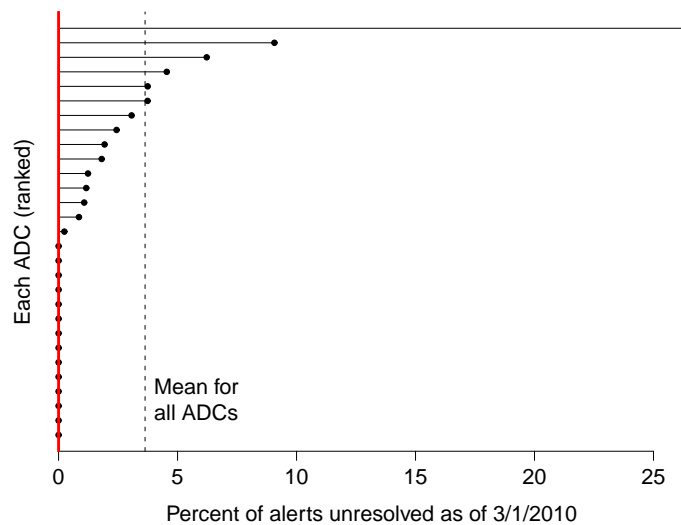| Rank	Description	$n*$	How resolved:	
			Cor-rected	Veri-fied
9	Clinician indicated that subject had normal cognition (D1:2), but overall appraisal after neuropsychological testing marked as having three or more tests with abnormal or lower-than-expected scores (C1:11a)	120	49%	51%
10	Informant for NPI-Q marked as "other," but type of informant not specified	118	96%	4%

* No. resolved

How alerts are supposed to be handled

1. Check for data entry error. If found, fix the value—problem solved.

2. If no data entry error, check with whoever recorded the relevant data value(s). If different from what was intended, make changes to both source document and computer data.

3. If original values are confirmed as correct (even if unusual), verify data values and re-finalize packet to NACC.
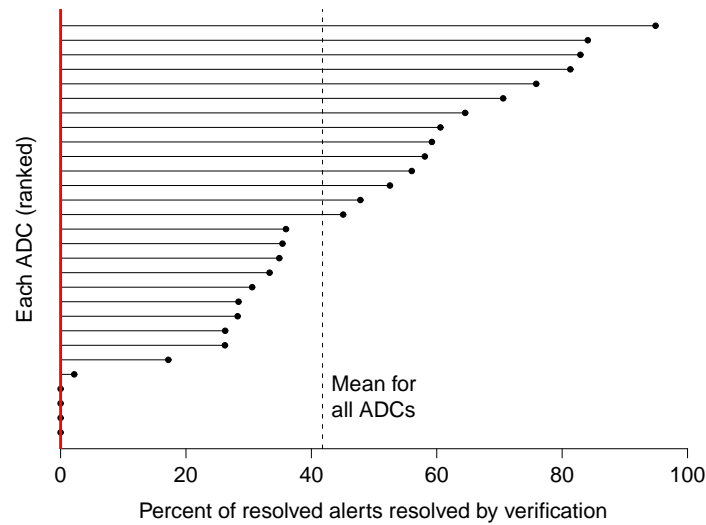

Some centers are slow to resolve alerts

Mean for all ADCs

Each ADC (ranked)

Percent of alerts unresolved as of 3/1/2010

Centers resolve alerts very differently

Each ADC (ranked)

Mean for
all ADCs

0   20   40   60   80   100

Percent of resolved alerts resolved by verification

What clinicians can do to minimize burden of alerts

- Be aware of common alert types, overall and at your ADC

- Have other information about participant handy during the encounter

  - From this visit
  - From past visits

- Maintain good communication with your data core

- Speed packets on their merry way

What NACC is doing about alerts

- Look for opportunities to reduce "false positives" while still catching true data errors
- For alerts resolved by correction, record which data item is most commonly changed
- Investigate timing of alert resolution

  - Variation across centers

  - Relation to manner of resolution

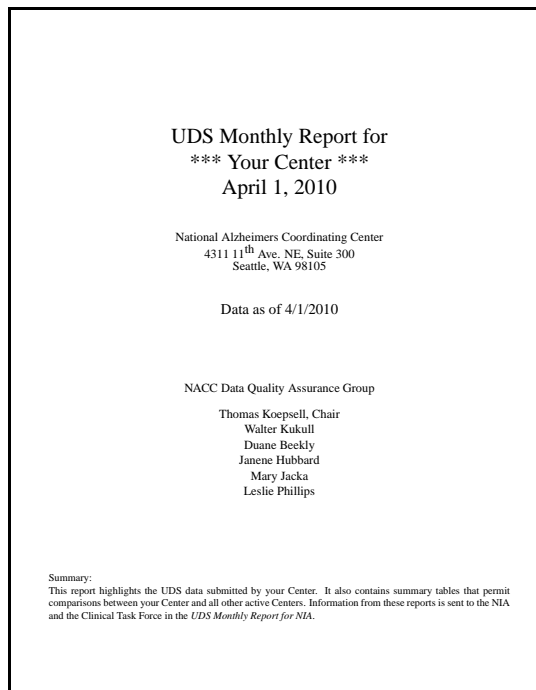- Work with individual centers as necessary to resolve local issues

Other Data Quality Assurance Activities Visible to Clinicians

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Overview of other data QA activities

- Feedback to centers
  - UDS Monthly Report — enrollment, data quality indicators
  - Certification reports — enrollment status
  - Neuropathology reports — autopsy rates, completion of NP forms
  - Occasional special reports: alerts, audits, etc.
- On-line documentation for UDS forms: guidebooks, data element dictionaries
- On-line training materials for parts of UDS
- Annual audits of source documents
- Statistical pattern monitoring

UDS Monthly Report

UDS Monthly Report for
*** Your Center ***
April 1, 2010

National Alzheimers Coordinating Center
4311 11th Ave. NE, Suite 300
Seattle, WA 98105

Data as of 4/1/2010

NACC Data Quality Assurance Group

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Summary:
This report highlights the UDS data submitted by your Center. It also contains summary tables that permit comparisons between your Center and all other active Centers. Information from these reports is sent to the NIA and the Clinical Task Force in the *UDS Monthly Report for NIA*.

- Think of as a management tool
- Key data quality indicators: subject discontinuation rate, missed-visit rates, missing forms or tests
- Important to complete a Milestone Form when a participant's status changes

Conclusion

Why data quality matters

- UDS's reason for being is to support high-quality research on dementia

- Many ADC clinicians are both data *collectors* and data *users*

You and NACC