Region Scale Impacts of an Audiovisual Touch-Screen Computer-Assisted Self-Interviewing (AVT) System

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Minor Edits for Standalone Web Presentation 12/11/06 PDC
Socially Sensitive Questions* Queried by Face-to-Face† Versus A-CASI‡: Multiplier Effects, Ranges & Means

See Appendix for Details

*Study populations: 3 - STD clinic patients; 2 – IVD Users; 1 - male adolescents; 1 - 1st time blood donors
† 1 study (Turner et al, 1998) male adolescents, compared A-CASI to paper self-interview questionnaire, not face-to-face
‡ 1 study (Katz et al, 2005) used AVT-CASI technology compared to face-to-face - - - 10/18/06 JCJ/PDC
All High-risk Behavior Deferrals of First Time Donors Pre and Post QDS

Deferrals for HIV and STD risks, excludes tattoos, body piercing, and other blood exposure

Rate per 1,000 Donors

- **Center A**:
  - PRE: 1.12
  - Post QDS: 10.28

- **Center B**:  
  - PRE: 5.8
  - Post QDS: 11.22

<table>
<thead>
<tr>
<th></th>
<th>Center A</th>
<th>Center B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of high-risk deferrals</strong></td>
<td>1 19</td>
<td>31 60</td>
</tr>
<tr>
<td><strong>Number of total first-time donors</strong></td>
<td>890 1849</td>
<td>5346 6149</td>
</tr>
<tr>
<td><strong>p</strong></td>
<td>0.017</td>
<td>0.0004</td>
</tr>
<tr>
<td><strong>OR</strong></td>
<td>9.15</td>
<td>1.94</td>
</tr>
<tr>
<td><strong>95% CI</strong></td>
<td>1.3 – 183.8</td>
<td>1.02 – 2.85</td>
</tr>
</tbody>
</table>
Permanent (Only) High Risk Deferrals: Center C Deferrals per 1000 Donors

2001 and 2002 center specific donor history questionnaire. Transition to QDS UDHQ during 2003. 100% QDS in 2004. Total high risk questions were 13 pre QDS and 15 post QDS/UDHQ. Permanent deferral questions: 3 pre and post QDS.
Reductions in Staff Errors and Omissions Post QDS

Rate per 1,000 Interviews

<table>
<thead>
<tr>
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<th>Center A</th>
<th>Center B</th>
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</thead>
<tbody>
<tr>
<td>PRE</td>
<td>3.78</td>
<td>1.48</td>
</tr>
<tr>
<td>Post QDS</td>
<td>1.70</td>
<td>5.09</td>
</tr>
</tbody>
</table>

Interviews with error or omissions = 250 20 170 58
Error-free interviews = 65,934 13,542 33,200 34,124
2 sided p (Chi Square) = 0.00004 5.39 E-14
OR = 0.39 0.33
95% CI = 0.24 – 0.63 0.17 – 0.49
85% of residual errors & omissions will be eliminated by planned upgrades (2002 analysis and basis for 2006 QDS R2.03)

- Donor signature missing: 20
- Historian signature missing: 20
- No donor or unit number: 25
- Incomplete physical: 20
- Insufficient documentation: 15
12 Mo. Moving Average PDIs at Center B
(Scaled to per 1000 Donations)

100% QDS interviewing achieved August 2003. New UDHQ implemented January/February 2005
Rate of Blood Units Testing Positive on Initial Screening Tests First Time Donors – Center B

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Number</td>
<td>134</td>
<td>112</td>
<td>-16.4%</td>
</tr>
<tr>
<td>Rate/1000</td>
<td>25.07</td>
<td>18.21</td>
<td>-27.33%*</td>
</tr>
</tbody>
</table>

* Statistical Significance: Chi-Square = 54.71, df = 1, p < .001
Average Time (in minutes) Required per Donor Interview at Three Regional Blood Centers

- **Center A** - 61 pre and 61 post QDS questions
  - Pre: 7.4 minutes
  - QDS: 1.9, 2.4, 5.5 minutes
  - Staff Time Reduction: 5.5 minutes

- **Center B** - 35 pre QDS questions
  - Pre: 3.6 minutes
  - QDS: 1.6, 1.7, 5.8 minutes
  - Staff Time Reduction: 2 minutes

- **Center C** - 32 pre QDS questions
  - Pre: 2.8 minutes
  - QDS: 3.2, 2.9, 6 minutes
  - Staff Time Reduction: -0.4 minutes

- QDS = 61 standard AABB questions
- Center A: PRE = 61 FTF questions
- Center B: PRE = 35 questions, 16 paper self administered plus 19 staff administered FTF
- Center C: PRE = 32 questions, 19 paper self administered plus 13 staff administered FTF
Summary & Conclusions (1 of 2)

1. CASI improvements appear to be impacted by:
   - Sample Population, e.g., STD clinic patients vs. blood donors, males vs. females
   - Sample Size
   - Comparative Interview Method, i.e., paper vs. face-to-face
   - Specific Socially Sensitive Question, e.g., sex trade vs. IVDU
   - Specific A-CASI Technology, e.g., vs. QDS AVT-CASI

2. Risky behavior self reporting by blood donors (rate/1000) may be very different pre QDS AVT-CASI but is quite similar post QDS (10 or 11/1000)

3. QDS staff error reductions are large (e.g., 61% to 67%) and can be improved substantially with experience. (Current version should increase to over 90% reduction.)
Summary & Conclusions (2 of 2)

4. QDS staff time savings vary greatly depending on pre QDS interview methods, i.e., face-to-face vs. paper & pencil vs. combination

5. QDS results in increased PDI reporting due to memory enhancement of multimedia and/or increased attention

6. NHLBI supported large studies underway at 5 centers with expanded set of performance variables, including reductions is transmissible test positive results.
Data Appendix to Slide 2: Variability in Responses to Socially Sensitive Questions

(Originally a hand out during AABB presentation October 22, 2006)
Any Male-Male Sex

<table>
<thead>
<tr>
<th>Face-to-Face*</th>
<th>ACASI*</th>
<th>Multiplier</th>
<th>Study</th>
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<tr>
<td>50</td>
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<td>1. DeJarlais et al, 1999</td>
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<td>4</td>
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<td>3.50x</td>
<td>3. Ghanem et al, 2005</td>
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<td>85</td>
<td>101</td>
<td>1.19x</td>
<td>4. Rogers et al, 2005</td>
</tr>
<tr>
<td>15**</td>
<td>55</td>
<td>3.67x</td>
<td>5. Turner et al, 1998</td>
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</tbody>
</table>

1. DeJarlais, Paone & Milliken, 1999; Used injecting IVDUs, N=1481, Males/Females
2. Kurth, Martin, Golden et al, 2004; Used STD clinic patients, N=609, Males/Females
3. Ghanem, Hutton, Zimba & Erbelding, 2005; Used STD clinic patients, N=671, Males/Females
4. Rogers, Willis, Al-Tayyib, et al, 2005; Used STD clinic patients, N=1350, Males/Females
5. Turner, Ku, Rogers, et al, 1998; Used adolescents, N=1690, Males
Male-Male Anal Sex

<table>
<thead>
<tr>
<th>Face-to-Face*</th>
<th>ACASI*</th>
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<td>659</td>
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<td>3. Rogers et al, 2005†</td>
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<td>10**</td>
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<td>4. Turner et al, 1998</td>
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</table>

1. Kurth, Martin, Golden et al, 2004; Used STD clinic patients, N=609, Males/Females
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3. Rogers, Willis, Al-Tayyib, et al, 2005; Used STD clinic patients, N=1350, Males/Females
Male-Male Oral Sex

<table>
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<td>50**</td>
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<td>1.79x</td>
<td>3. Turner et al, 1998</td>
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1. Ghanem, Hutton, Zimba & Erbelding, 2005; Used STD clinic patients, N=671, Males/Females
2. Rogers, Willis, Al-Tayyib, et al, 2005; Used STD clinic patients, N=1350, Males/Females
3. Turner, Ku, Rogers, et al, 1998; Used adolescents, N=1690, Males
## Transactional Sex

<table>
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<td>3. Ghanem et al, 2005</td>
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<tr>
<td>257</td>
<td>327</td>
<td>1.27x</td>
<td>4. Rogers et al, 2005†</td>
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</table>

1. Dejarlais, Paone & Milliken, 1999; Used injecting IDUs, N=1481, Males/Females
2. Kurth, Martin, Golden et al, 2004; Used STD clinic patients, N=609, Males/Females
3. Ghanem, Hutton, Zimba & Erbelding, 2005; Used STD clinic patients, N=671, Males/Female
4. Rogers, Willis, Al-Tayyib, et al, 2005; Used STD clinic patients, N=1350, Males/Females
## Injecting Drug Use

<table>
<thead>
<tr>
<th>Face-to-Face*</th>
<th>ACASI*</th>
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<td>1. DeJarlais et al, 1999</td>
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<tr>
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<td>9.18x</td>
<td>2. Katz et al, 2005</td>
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<td>5. Turner et al, 1998</td>
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<td>67</td>
<td>147</td>
<td>2.18x</td>
<td>6. Metzger et al, 2000‡</td>
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</tbody>
</table>

1. DeJarlais, Paone & Milliken, 1999; Used injecting IDUs, N=1481, Males/Females
2. Katz, Cumming, Wallace & Abrams, 2005; Used prospective blood donors, N=2739, Males/Females
3. Kurth, Martin, Golden et al, 2004; Used STD clinic patients, N=609, Males/Females
5. Rogers, Willis, Al-Tayyib, et al, 2005; Used STD clinic patients, N=1350, Males/Females
6. Metzger, Koblin, Turner, et al, 2000; Used gay male IDUs, N=2877
Footnotes

* Numbers reflect positive responses per 1000 interviewees

** Turner used self-administered paper questionnaires

† Sample included males and females

‡ Question was whether they used a needle after another user without cleaning
References


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  Talisman Limited
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