

Data Collection and Management

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Learning Objectives:



After this workshop you will be able to:

1. Identify technologies that can ease collection of research data
2. Identify research project scale issues that impact collection methodologies
3. Identify problems that can arise using automated data collection methods



Overview

- When to use automation in data collection
- Technologies that are a good fit for data collection
- How much to budget
- Things that can go wrong



Automation: Is it right for me?



- As scale of a project increases automation of data collection becomes more attractive
- 1-3 data collectors: probably keep entry on paper
- Design your paper forms clearly
- Make transfer of data to database simple to reduce errors
- Design your database and analysis methods before collecting any data
- Pilot test / refine instruments & methods



Automation: Is it right for me?



- Multi-site research designs benefit most from automation
- Reduces data entry error by eliminating intermediate steps
- Trends, data entry issues and problem sites can be identified during the study



Input Hardware Options: Laptops

- Pro: keyboard entry
- Con: Size and weight
- Con: Awkward with patients
- Wireless/cell optional
- Cost: \$1100-\$2000



Input Hardware Options: Tablet PC

- Pro: Half the size/weight of laptop
- Pro: Pen & voice data entry
- Pro: Optional keyboard
- Pro: Runs standard Windows applications
- Wireless built in
- Cost: \$1800-\$2300
- Our pick: Mobile Computing



Input Hardware Options: PDAs

- Pro: Smallest size
- Pro & Con: Pen entry
- Con: Small screen
- Con: Keyboard awkward
- Pro: wireless/cell option
- Our pick: Palm OS
- Cost: \$200-\$600



How about qualitative data?



- Audio recording can be part of records
- Video may reveal nuances
- Hardware <\$100 option per workstation
- PDAs take photos & record voice



Make Mine Wireless



- Wireless networking eases data collection
- 802.11b - 11 mbps
- 802.11g - 54 mbps, backwards compatible to b
- 802.11i - draft secure standard
- Data over cell networks



Where do I store my data?

- Excel
 - Good for number crunching
 - Interface can cause data entry errors
- Filemaker Pro
 - Easier to use than Access
 - Strong reporting, easy to use forms
 - Web data sharing in "unlimited" version
- Institutionally supported Database
 - For larger scale web/db applications
- Pay Attention to HIPAA security plan



Moving Your Data



- Web input provides universal access
- Syncing individual databases can easily result in duplicated or lost data
- PDAs can sync offline data via AvantGo
- Small scale PDA projects could use HandiBase
- Encrypt your data during transmission



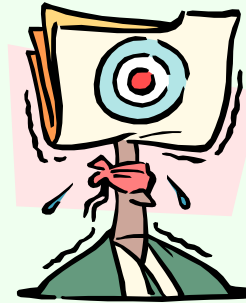
What will it cost?



- Bring in a consultant to help develop your data management plan and budget
- A large scale, multi-site project can cost \$10K-\$50K to program
- Count on annual maintenance costs/IT personnel
- Filemaker Pro a simple alternative for smaller, “do it yourself” projects



What can and will go wrong?



- Data loss due to crashes
- Delays due to networking
- Equipment gets dropped
- Dogs eats it
- Have a backup plan!



Wrapping it up...

- Small and large projects benefit from careful planning
- Automation most cost effective for larger projects
- Many hardware/software options to choose from
- Contact me with questions
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