Multi-Mode User Input for Mobile Clinical CASIC Systems

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IDCRP conducts clinical trials and other medical research of significant interest to the United States Department of Defense, including a US military travel-related illness study.

The TravMil study prospectively evaluates infectious disease risks, and the effectiveness of prevention and treatment strategies, in DoD beneficiaries traveling outside the continental United States.

Subject enrollment and data collection is conducted at six clinical sites.
TravMil Requirements

Four different versions of similar survey content depending on:

- Enrollment before or after travel
- Traveling for leisure vs. deployment

Subjects complete the self-guided survey on mobile system

Research coordinators:

- Enter surveys
- Review surveys
- Update surveys

Options for build:

- Four stand-alone surveys
- Combine into one survey interface
Entry System Solution

Electronic forms created with Mi-Forms software

Windows 8 tablets

Offline data capture

Stylus input with immediate handwriting recognition

Dynamic adaptive design: multiple user modes for clinic employee or subject-facing survey environment

Can direct data to multiple data sets from one entry interface
Form Validation

- Validation Errors
  - TravMil Enrollment Survey
    - Itinerary Subform 1
    - Itinerary Subform 2
    - Q1. Today's date is required.
    - Q2. Gender is required
    - Q3. Age is required
    - Q3. Age (Months) is required
    - Q4. Ethnicity is required
    - Q5. Race is required
    - Q6. County of birth is required
    - Q12. Travel to developing areas is required
    - Q24. Pain/discomfort in abdomen is required
    - Q7. Life Status is required
    - Q9. Life. Affiliation is required
18. In the last 3 months, did you often* have discomfort or pain centered in your upper abdomen (above your belly button, or the pit of your stomach)?
- [ ] No (Skip to question 24)
- [x] Yes

19. Check your best description of this symptom, or the one that bothers you more . . .
- [ ] Pain in your upper abdomen or stomach (skip to Question 21)
- [ ] Discomfort (that is not painful) in your upper abdomen or stomach

20. If you have discomfort, which of the following describe your discomfort? (check all that apply)
- [ ] Nausea
- [ ] Bloating (a sensation of upper abdominal swelling)
- [ ] Feeling full after eating very little
- [ ] None of the above

21. Does your upper abdominal discomfort or pain usually get better or stop after you have a bowel movement?
- [ ] No or rarely
- [x] Yes

22. When the upper abdominal discomfort or pain starts, do you usually have a change in your usual number of bowel movements (either more or fewer)?
- [ ] No or rarely
- [ ] Yes
Benefits

One front-end interface for all users

Pre-filled data and dynamic skip patterns based on setup of launch pages allows users to complete entries efficiently

Improves data quality by minimizing erroneous and inaccurate data entry
Considerations

Knowing rules for skip patterns based on user accessibility

New versions of surveys impact questions, responses, and screen design

Entry system to accommodate front-end programming for complex database design
THANK YOU
FOR YOUR ATTENTION!