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Innovative Methods for Surveying Difficult-to-reach Populations

A MENU-DRIVEN SYSTEM USED TO COLLECT, TRACK, MONITOR, AND SUMMARIZE YOUTH SMOKING CESSATION PROGRAMS ACROSS THE UNITED STATES

Annette M. Green[1], Henry E. Wells[2], and Paul D. Mowery[3]

ABSTRACT

A survey of existing youth smoking cessation programs in the U.S. was conducted to identify and interview key informants at the local level who are knowledgeable about their programs (often the programs' key leaders or similarly qualified individuals). The primary goal of the design was to select and interview a national sample of programs from a representative sample of U.S. communities. The process of finding respondents via referrals from key informants is often referred to as snowball sampling. A big challenge when building a snowball sample is tracking the calling process and keeping records of information obtained during the telephone calls. Not only is it necessary to record contact information for informants such as name, address, and phone number, but it is also necessary to record the call history. Using paper and pencil, or even Excel spreadsheets, too much time would have been wasted entering data. Also, interviewers needed to be able to record information as they conversed with informants on the telephone. As a solution, RTI designed a Microsoft® Access database and tracking system. The database was used to store all of the informant information and track the snowball sampling process. The Access database system is menu-driven for ease of use by interviewers, managers, and project team members. This system allows users to choose from a number of different features including the ability to enter or edit data on informants, check for duplicate informants, or move into the Management or Report menus.

KEY WORDS: Snowball Sampling; Tracking; Youth Smoking Cessation.

1. BACKGROUND

1.1 Recent History

From 1991 to 2000, the prevalence of past 30 day smoking among U.S. high school students increased from 27.5% to 34.8% (CDC, 2000). In 2000 there were about 2.7 million U.S. established smokers aged 18 years and younger (Mowery, Farrelly, et al, 2004). These established smokers as well as experimenters are at increased risk of premature death or illness due to smoking related diseases such as lung cancer, coronary heart disease, stroke, and chronic obstructive pulmonary disease.

Approximately 60% of adolescent smokers try to quit each year (CDC, 2001), but fewer than 15% succeed in staying abstinent long-term (Stanton et al., 1996; Engels et al., 1998). Programs effective with adult smokers may not be effective for youth (Mermelstein et al., 2002). Treatment programs to promote youth quitting could yield major public health dividends, but little is known about what works to motivate and assist youth smokers to quit, or even about the natural quitting processes and methods youth use on their own (Sussman et al., 1999; Zhu et al., 1999).

[1] Annette M. Green, RTI International, 3040 Cornwallis Road, Research Triangle Park, NC, U.S.A., 27709, agreen@rti.org
[2] Henry E. Wells, Sr., Medical Information Management Analyst, Blue Cross Blue Shield of Tennessee, 801 Pine Street, Chattanooga, TN, U.S.A., 37402, Henry_Wells@bcbst.com
[3] Paul D. Mowery, Centers for Disease Control and Prevention, Office on Smoking and Health (K-50), 4770 Buford Highway NE, Atlanta, GA 30341

1.2 Focus

The focus of this paper will be the description of an electronic tracking system used to identify existing youth smoking cessation programs in the U.S. The design to select a national sample of programs from a representative sample of communities was a combination of probability and convenience sampling. At the first stage, all U.S. counties with a total residential population of 10,000 or more were placed in mutually exclusive strata prior to selection and a desired sample size of counties was assigned to each stratum. Counties were selected from each stratum using probability proportional to size sampling. At the second stage, cessation programs were not selected from a pre-defined frame. Instead, cessation programs were listed and interviewed as they became known during the identification of and interviews with key informants. The process of finding respondents via referrals from key informants is often referred to as snowball sampling. Key informants are persons with specific knowledge of youth smoking cessation programs. Some key informants had detailed information about specific programs, while others provided contact information of other cessation programs in the same county.

1.3 Problems

A big challenge when building a snowball sample is tracking the calling process and keeping records of information obtained during the telephone calls. The system needs to record contact information for informants such as name, address, and telephone number, record the call history; and enable interviewers to record and review information as they converse with informants on the telephone. A brainstorming session took place to determine the best way to handle these issues. Using paper and pencil, or even Excel spreadsheets, would be too time-consuming. Data would have been difficult to utilize quickly since each record would be on one line rather than captured on one screen. The system needed to be inexpensive yet reliable, of high quality, and tailored to the needs of the study and project members.

1.4 Low Cost but High-Quality Solution

RTI designed a Microsoft® Access database and tracking system as a solution to the low-cost, high-quality requirement. The database was used to store all of the informant information and track the snowball sampling process. It was tailored to study and project team members needs:

- The Access database system is menu-driven for ease of use by interviewers, managers, and project team members.
- This system allows users to choose from a number of different features including the ability to enter or edit data on informants, check for duplicate informants, or move into the Management or Report menus.
- The system allows multiple users to access it simultaneously.

2. PRIMARY FOCUS – THE TRACKING SYSTEM

2.1 Main Menu

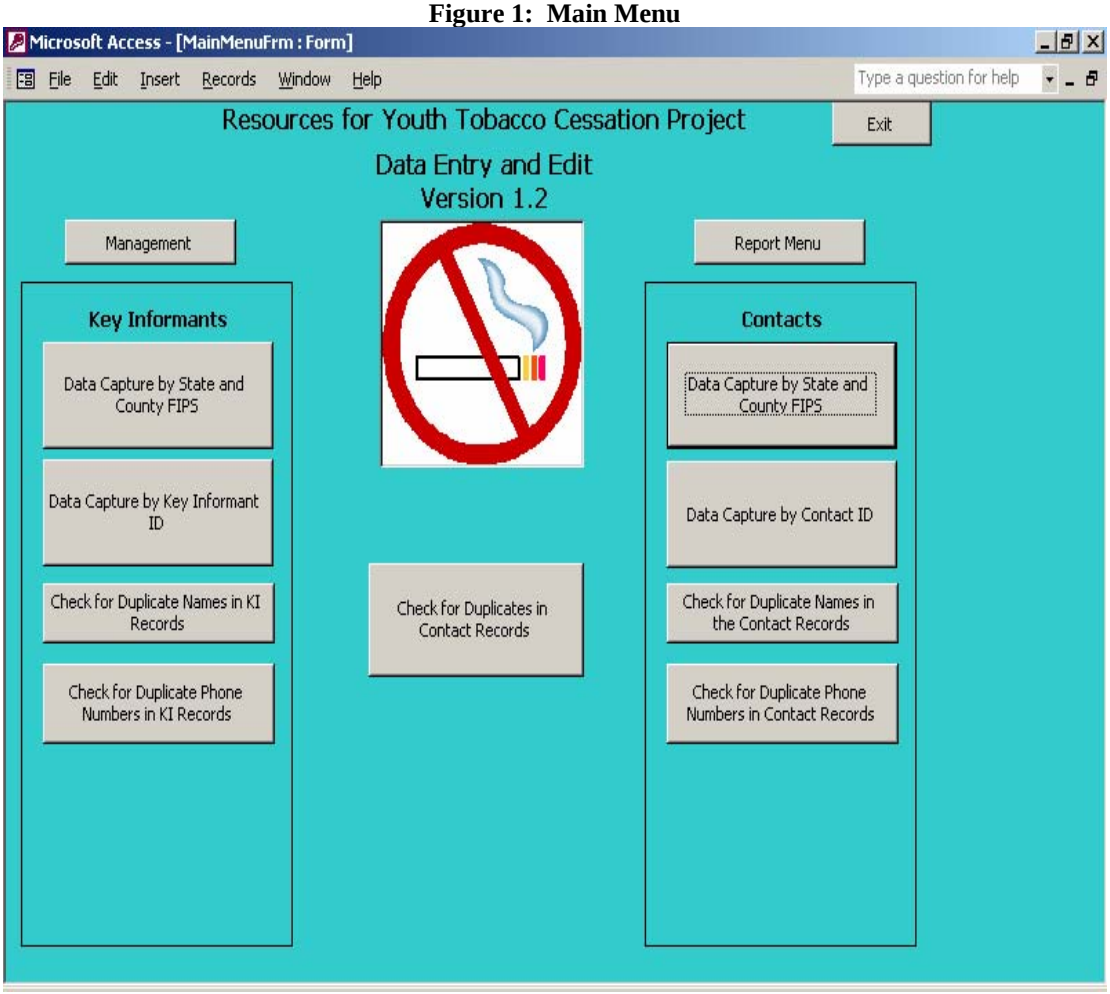
The Main Menu (Figure 1) was designed to be user-friendly and to accommodate the needs of various types of users. The telephone interviewers were by far the biggest users of the system. They utilized the system to begin initial contact and capture information that could eventually lead to a key informant. Others users of the system included managers of the interviewers and statisticians.

Potential key informant records were loaded into the system prior to the telephone interviewer's initial stage. RTI staff had previously searched the Internet and various other sources to obtain information in the chosen counties. They identified at least one key informant in each of the following domains: (1) county department of health (DOH); (2) department of education (DOE); and (3) the following voluntary organizations – American Cancer Society (ACS), American Lung Association (ALA), and American Heart Association (AHA). RTI did not identify state-level organizations (state departments of health, etc.) unless no contacts could be identified through the above county-level domains. The telephone interviewers were assigned specific counties by their manager. This

assignment was performed using the tracking system. The manager had the ability to enter names of interviewers for specific counties and this information was then carried throughout the forms the interviewer used.

Once the telephone interviewers received their list of assigned contacts, they would enter the tracking system by selecting the appropriate button. They could choose, 'Data Capture by State and Country FIPS' or 'Data Capture by Key Informant ID".

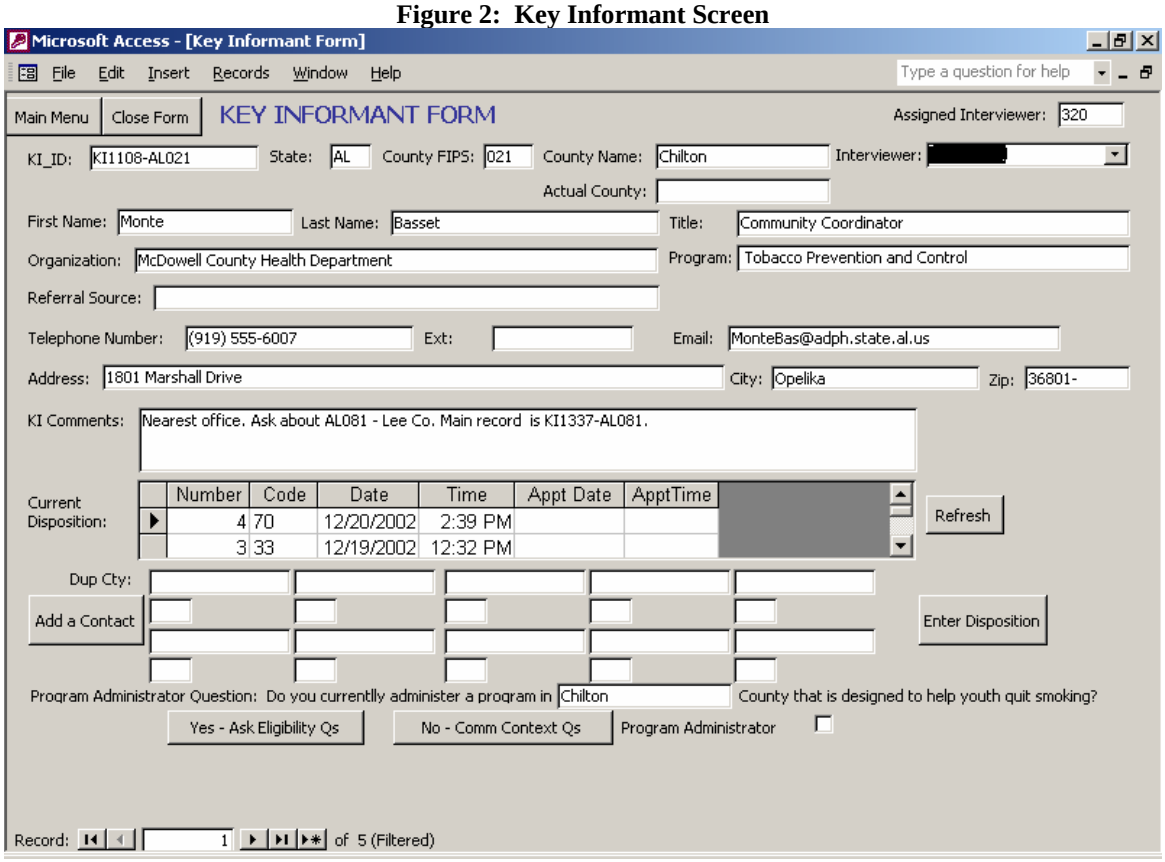
Figure 1: Main Menu



2.2 Key Informant Screen

Once the interviewer enters the state and county FIPS or a key informant ID, he/she is placed in the key informant form (Figure 2). This form contains initial information already entered into the system from previous RTI searches and provides the interviewer with numerous fields in which to enter additional information. Data which may already be in the system could include: First and Last Name, Organization, telephone number, and other identifying information. Additional information which may be collected by the interviewer include: missing identifying data such as address, title, program, or e-mail address. The assigned interviewer identifier appears on the form but if the interviewer conducting the interview had changed since assignment, the data could be updated for that record. The interviewer would begin his/her conversation with information as to why he/she is contacting the respondent and if allowed would go through a series of questions to ascertain if the respondent was indeed the person who is knowledgeable about youth smoking cessation programs for that particular state and county.

Figure 2: Key Informant Screen



Respondents are asked if they currently administer a program that is designed to help youth quit smoking. If the response is 'Yes', the interviewer is taken to an Eligibility Screening form. This form contains six questions to capture particulars of the program.

If the response to the questions indicates the program is focused on youth cessation, the interviewer clicks the 'Method of Sending Questionnaire' button. The respondent is told we would like to schedule an appointment to conduct an interview regarding their tobacco cessation program. Before the interview, a copy of the questionnaire would be sent for their review. The respondent may then provide their preferred method to receive the questionnaire; previous contact information would appear in the form.

The Preferred Method screen also allows the interviewer to set up an appointment with the respondent in order to call them to complete the questionnaire. This information is stored in the database and thus begins the calling history and status for that individual.

If the program is deemed ineligible the respondent is asked three community context based questions and the conversation is ended.

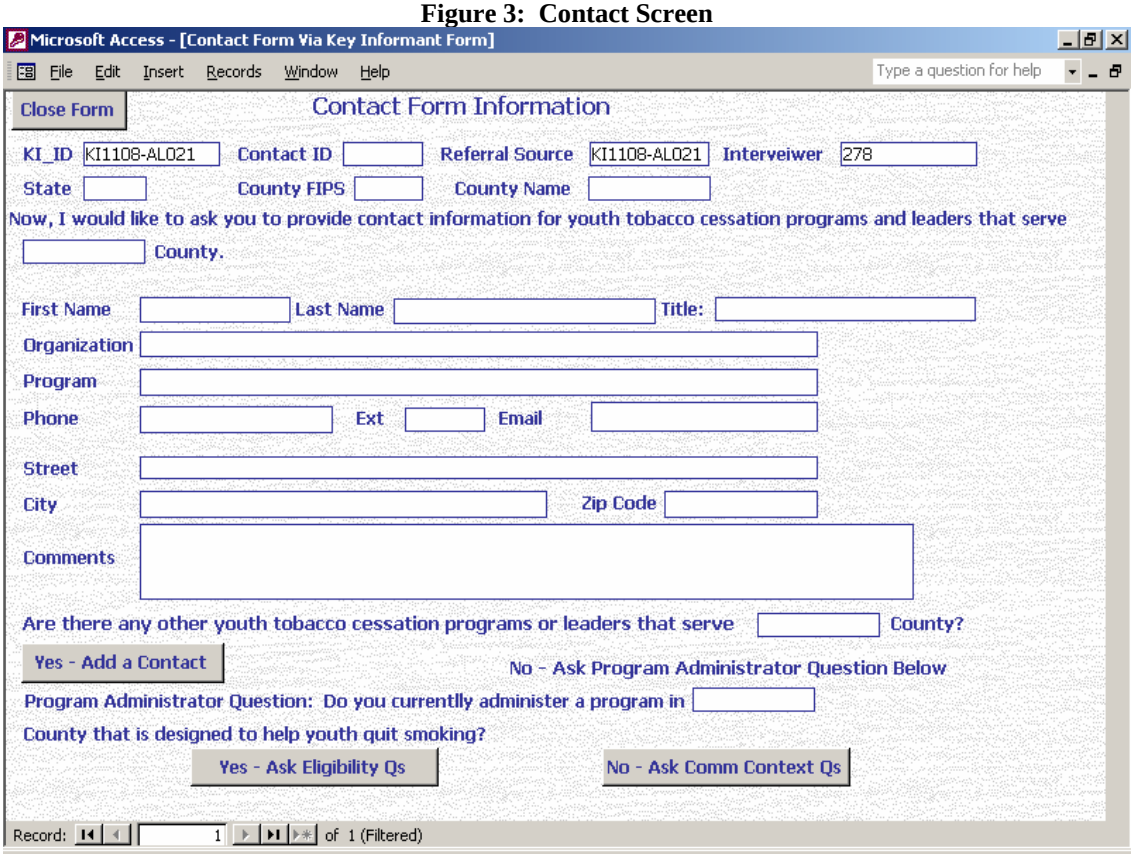
As the interviewer moves from one screen to another, ID information flows from the parent form to the child.

2.3 Contact Screen

If the key informant does not administer a program designed to help youth quit smoking they are asked the community context questions mentioned above. They are also asked if they can provide information for someone else who administers youth cessation programs for a specific state and county. If the respondent provides a name or list of names, the interviewer can enter this information by clicking the 'Add a Contact' button. The contact screen (Figure 3) is very similar to the key informant screen. The key informant information remains with the record to

continue the link as the snowball progresses. Contacts themselves may provide additional contacts and as this happens the link remains so each record can be traced to its originator.

Figure 3: Contact Screen



2.4 Reports

A large number of reports are available from the tracking system. They are accessed via a Report Menu with a user-friendly screen to choose each report with the click of a button. Due to the multiple interests with access to the system, reports are generated for telephone interviewers, supervisors, project coordinating staff, project task leaders, and statisticians. The reports resemble Word documents and compile, sort, and display the data as requested by the specific project member who needs the report in order to carry on their role in the study.

2.5 Additional Features

The system also contains a separate section for interviewer management. In this section the managers can enter interviewer information, assign interviewers to specific states and counties, and check on key informants/contacts awaiting disposition. The ability to look at records with dispositions by state/county and by interviewer is also available. This section is password protected.

3. LOGISTICS

3.1 Updating the Database

Initial records were uploaded into the tracking system via another tracking system which was created to allow RTI staff the ability to enter information for youth smoking cessation programs in the various states and counties. The telephone interviewers updated the records in real-time. Periodic record uploads were performed since interviewers

were given a set number of records to work at a time. As they were nearing completion of one set of records others would be added. This process enabled interviewing to begin while initial information was still being collected.

The survey operations supervisor would file transfer protocol (ftp) the database to RTI on a specified evening. New key informant records were added and the supervisor was able to ftp the file back to his server before interviewers began working that day. This was necessary since survey operations were conducted at a different site than the one at which the database was maintained.

3.2 Why Microsoft® Access?

Microsoft® Access was chosen due to several issues. First the cost is low since the software is part of the Microsoft ® Office suite and was already accessible to all users of the database. The study contained several members who had expertise in programming the software as well as a good working knowledge of Visual Basic which was needed for some of the more complex features of the system. The first two factors combined to allow the developers the ability to tailor the system to the needs and requests of the study and project staff. The software also allowed for multiple users to access the system simultaneously.

4. CONCLUSIONS

Some of the pros of Microsoft® Access for this type of data collection and tracking were that it allowed input from all levels. Staff from phone interviewers, supervisors, and other project staff were able to discuss features with developers that would make their job easier and were very happy to see the changes occur. This was not only good for moral but it made the system as efficient as possible.

The software also allowed developers the ability to make changes mid-study with little downtime. Even though much thought was put into the planning of the system, certain issues did not appear until mid-collection. At that point, the system was updated to handle these issues without disrupting or biasing the previous data. One such instance was the discovery of one county servicing several area counties. Therefore the addition of 'Dup County' was added to the key informant and contact forms.

The biggest con for this type of data collection and tracking was the transfer of data. This transfer is discussed above as sending the file from RTI to the survey operations site via ftp. The upload of data could have been handled differently by automating the database but it was decided the staff were more comfortable transferring the database and letting RTI staff update the new records. This process also allowed RTI to get the current respondent information so analysis could begin on the data. Overall, the tracking system preformed well and accomplished its initial goals.

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