



# Moving from Blaise 4.8 to Blaise 5: Preparing a prototype survey based on the NSDUH



Gilbert Rodriguez, Martin Meyer, Vorapranee Wickelgren,  
Emily Geisen, Hilary Zelko and R. Suresh



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# NSDUH Study Background

- The National Survey on Drug Use and Health (NSDUH) provides national, state and sub-state data on substance use and mental health in the civilian noninstitutionalized population ages 12 and older.
- Approximately 700 field interviewers (FIs) working in all 50 states & D.C.
- Approximately 140,000 household screenings and 67,500 interviews are completed annually.
- Conducted by RTI under contract with SAMHSA's Center for Behavioral Health Statistics and Quality (CBHSQ).



# NSDUH Survey Instrument

- NSDUH survey instrument run on Windows laptops
- Programmed in Blaise 4.8 and includes approximately 40 modules/3000 question screens
- Key functions:
  - Uses alien router to play text-to-speech audio
  - Pop up calendars for particular questions
  - Images for prescription drugs in some questions
  - Question help for some questions



# Blaise

- Programming language widely used for computer-assisted surveys
- Created by Statistics Netherlands in the mid 1980s; written in Turbo Pascal to run in an MS-DOS environment
- Late 1990s - Blaise 4 for Windows, written in Delphi
- 2008 - StatNeth created Blaise 5 using .NET; a complete overhaul, extends Windows/web survey capabilities and targets mobile platforms

*\*<http://www.blaise.com/products/general-information>*



Blaise



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# Motivation for Moving to Blaise 5

- Emerging technology
- Take advantage of its features
- Will eventually become the industry standard



# Changes in Blaise 5 that impact NSDUH

- No “alien routers” to perform external tasks (handled with Blaise 5 Data Entry API)
- Data stored differently
- Screen layouts defined in “resource database” file (no more modelib.bml file)

NSDUH 2018 Instrument - Quest ID #2000006

Forms Answer Navigate Options Help Show Watch Window

PRESS [F1] TO SHOW CALENDAR

Please look at the names and pictures of the pain relievers shown below. Please note that some forms of these pain relievers may look different from the pictures, but you should include any form that you have used.

Vicodin® Lortab® Norco® Zohydro® ER Hydrocodone (generic)

In the **past 12 months**, which, if any, of these pain relievers have you used?

To select more than one drug from the list, press the space bar between each number you have typed. When you have finished, press [ENTER].

1. Vicodin
2. Lortab
3. Norco
4. Zohydro ER
5. Hydrocodone (generic)
95. I have not used any of these pain relievers in the past 12 months

PR01



NSDUH 2018 Instrument - Quest ID #2222222

Please look at the names and pictures of the pain relievers shown below. Please note that some forms of these pain relievers may look different from the pictures, but you should include any form that you have used.

In the **past 12 months**, which, if any, of these pain relievers have you used?

To select more than one drug from the list, press the space bar between each number you have typed. When you have finished, press [ENTER].

Vicodin® Lortab® Norco® Zohydro® ER Hydrocodone (generic)

1  2  3  4  5

I have not used any of these in the past 12 months.

Select all values that apply

In Laptop Mode - Change to Tablet Mode Change to Spanish

# Changes in Blaise 5 that impact NSDUH (cont'd)

- Differences in working with media files
- Audit trail data generated differently (no more audit.dll)
- No longer supports HTML help files





# Key features needing to be reprogrammed

- Text-to-speech audio
- Image display
- Pop-up calendars
- Question help
- Screen layouts



# Going from Blaise 4.8 to Blaise 5

- Blaise 4 to 5 utility converted much survey code successfully, still needed some manual modifications (for layouts, some comparison logic, fix warnings)
- Sample C# project SpeechWPF included with Blaise 5 was very helpful!
- Modified SpeechWPF to run the NSDUH survey and use RTI's implementation of text-to-speech audio and display question helps.
- OnEnter and OnLeave event handlers for a field pane useful for managing pop-up calendars



# Touchscreen laptop capability and touchscreen-related features of Blaise 5

- Enlarged size of radio buttons and checkboxes
- Response selection by tapping on images
- Added buttons for navigation and feature controls (replay audio, calendar display, question help)
- Issues:
  - Larger buttons/controls, less room for screen text
  - No scrolling by touching main screen
  - No finger tip zoom-in
  - Virtual keyboard



# Example screens







# Screen with enumerated response categories

NSDUH 2018 Instrument - Quest ID #2222222

The last question was a Yes-No question. Other questions will have more answers to choose from, and you will pick your answer from a list.

Practice Question #2: What color are your eyes? Put in the number that best fits you and press [ENTER].

- 1 Blue
- 2 Brown
- 3 Gray
- 4 Green
- 5 Some other color

# Set type question ("all that apply" responses)

NSDUH 2018 Instrument - Quest ID #2222222

Some questions will let you choose more than one answer. For these questions, you will use the space bar to separate the answers you type in. Practice this now.

Practice Question #3: What kinds of music do you listen to?

To select more than one kind of music from the list, press the space bar between each number you type. When you have finished, press [ENTER] to go to the next question.

- 1 Classical
- 2 Country
- 3 Hip Hop
- 4 Jazz
- 5 Latin American/Spanish
- 6 Folk/Traditional
- 7 Pop/Rock
- 8 Soul/R&B
- 9 Something Else

4-7



# Calendar display

A number of questions will ask about the past 12 months, that is since this date last year. According to the calendar **February 20, 2017** was 12 months ago. That will be your 12-month reference date and can be found in **red** on the calendar. Today's date can be found in **green**.

Press [ENTER] to continue.



## Reference Calendar

### February 2017

S	M	T	W	T	F	S	
				1	2	3	4
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28					

### March 2017

S	M	T	W	T	F	S	
				1	2	3	4
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30	31		

### April 2017

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

### May 2017

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

### June 2017

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

### July 2017

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

### August 2017

S	M	T	W	T	F	S			
					1	2	3	4	5
6	7	8	9	10	11	12			
13	14	15	16	17	18	19			
20	21	22	23	24	25	26			
27	28	29	30	31					

### September 2017

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

### October 2017

S	M	T	W	T	F	S	
	1	2	3	4	5	6	7
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30	31					

### November 2017

S	M	T	W	T	F	S		
					1	2	3	4
5	6	7	8	9	10	11		
12	13	14	15	16	17	18		
19	20	21	22	23	24	25		
26	27	28	29	30				

### December 2017

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

### January 2018

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

### February 2018

S	M	T	W	T	F	S	
					1	2	3
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28				

12-Month Reference Date: **February 20, 2017**

30-Day Reference Date: **January 22, 2018**

Today: **February 20, 2018**

# Set type question with clickable images

NSDUH 2018 Instrument - Quest ID #2222222

Please look at the names and pictures of the pain relievers shown below. Please note that some forms of these pain relievers may look different from the pictures, but you should include any form that you have used.

In the **past 12 months**, which, if any, of these pain relievers have you used?

To select more than one drug from the list, press the space bar between each number you have typed. When you have finished, press [ENTER].



1



2



3



4



5

I have not used any of these in the past 12 months.

Select all values that apply





# Numeric response question with question help

NSDUH Demo x

In some questions, you can click on a question mark button to see and hear extra information to help you answer a question.

First listen to the question.


**Practice Question #6: In the past 30 days, on how many days did you eat any kind of fried potatoes?**







Now click on the question mark button to see and hear examples of fried potatoes.

Examples of fried potatoes:

- French fries,
- Home fries,
- Hash brown potatoes

Now, type in your response to the question.



# Future Development

- Ensure that all previous features (TTS audio, images, calendars, question help) are integrated, well-tested, and working reliably
- All screens will need to be reviewed and possibly modified, due to differences in how Blaise 5 handles screen layouts
- Writing out survey and audit trail data to a SAS-readable format for data processing



# Future Development (cont'd)

- Retesting survey logic to make sure that it still works
- Survey interaction with external applications
- Take advantage of new Blaise 5 features/ functionality that continues to be added
- Evaluate usability



# Summary

- Blaise 5 does many things differently than Blaise 4
- Much of our Blaise 4 code was converted to Blaise 5 using the conversion utility, but layouts and special features needed to be implemented differently
- There's still work to be done



# Questions?



Thank you!

## **Gilbert Rodriguez**

Research Computing Division

Phone: 919.248.5825

[grod@rti.org](mailto:grod@rti.org)

RTI International

3040 Cornwallis Road, PO Box 12194

Research Triangle Park, NC 27709-2194 USA

[www.rti.org](http://www.rti.org)

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