

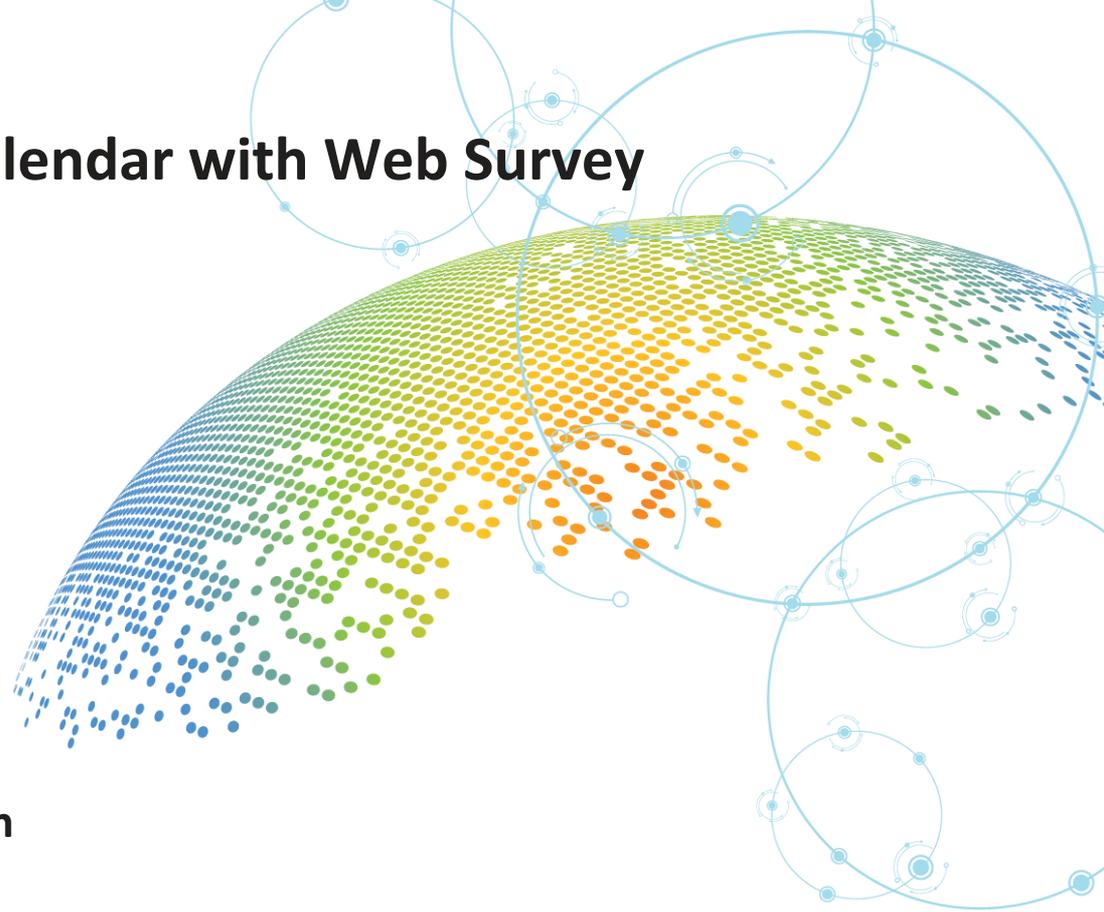
An Electronic Life History Calendar with Web Survey

Joseph Nofziger,
Lilia Filippenko,
Emilia Peytcheva

RTI International

in collaboration with

**The National Survey of Family Growth
(NCHS/CDC)**



Agenda

- ▶ Motivation
- ▶ Methodology and Usability
 - ▶ Respondent experience
- ▶ Technical
 - ▶ Integration with Survey Software
 - ▶ Customization
- ▶ Usage
 - ▶ Paradata
 - ▶ Debriefing

Life History Calendars

- ▶ Improve recall for events by linking to landmark events in a respondent's life (E.g., Belli, Shay and Stafford, 2001)
- ▶ Historically used in interviewer administered surveys
- ▶ With the move to web and mixed-mode data collections, there is a need for exploring self-administered electronic calendars
- ▶ “LHC”

Study Design

- ▶ National Survey of Family Growth
 - ▶ Conducted since 1973 by the National Center for Health Statistics (NCHS/CDC)
 - ▶ Gathers information on pregnancy and births, marriage and cohabitation, infertility, use of contraception, family life, and general and reproductive health from males and females 15-49 years of age
- ▶ Face-to-face mode of data collection; instruments programmed in Blaise since 1995
- ▶ Mixed-mode design since January, 2022
- ▶ Uses LHC to aid recall of pregnancy outcomes, sexual activity and contraceptive use by month over the past 4 years

Paper LHC

National Survey of Family Growth: Life History Calendar

	Before 2019	2019												2020												2021												2022												
		Ja	Fe	Ma	Ap	My	Jn	Jl	Au	Sp	Oc	Nv	Dc	Ja	Fe	Ma	Ap	My	Jn	Jl	Au	Sp	Oc	Nv	Dc	Ja	Fe	Ma	Ap	My	Jn	Jl	Au	Sp	Oc	Nv	Dc	Ja	Fe	Ma	Ap	My	Jn	Jl	Au	Sp	Oc	Nv	Dc	
Your Age																																																		
Education																																																		
Births & Other Pregnancies																																																		
Marriages, Cohabs, Partners																																																		
Intercourse																																																		
Birth Control Methods!																																																		

Your date of Birth: _____ Date of First Intercourse: _____

Birth or Pregnancy Ending Dates:
 1st: _____ 2nd: _____ 3rd: _____ 4th: _____ 5th: _____

NSFG Electronic Life History Calendar - Spanish

► Implementation in Blaise 5 Female Spanish Web instrument

Ocultar Calendario

Calendario más grande

Nació julio, 1997	Antes de 2019	2019	2020
Mes		E F M A M J J A S O N D E F M A M J J A S O N D E F	
Educación	HS: 05/2015	BA: 05/2019	
Nacimientos y otros embarazos		JB: convivencia 01/2017-12/2018	
Matrimonios, vida en pareja sin casarse, otras parejas	JB: convivencia		

Español ▼

¿En qué mes y año obtuvo su título o grado universitario o de 'college'?

Si usted recibió más de un título de grado universitario o de 'college', ingrese la fecha del primer título o grado.

Mes:

Mayo ▼

Año:

2019 ▼

Después de ingresar la fecha, la información aparecerá en su calendario. Si fue antes de 2019, aparecerá en el espacio que dice "Antes de 2019" en la línea de "Educación".

< Anterior

Siguiente >

Life History Calendar Tutorial

1 You can hide the calendar or display a larger calendar.

2 These rows display the months and years of the period in your life to which most questions refer.

3 Scroll to display more months and events.

4 A message tells you when your event has been added to the calendar.

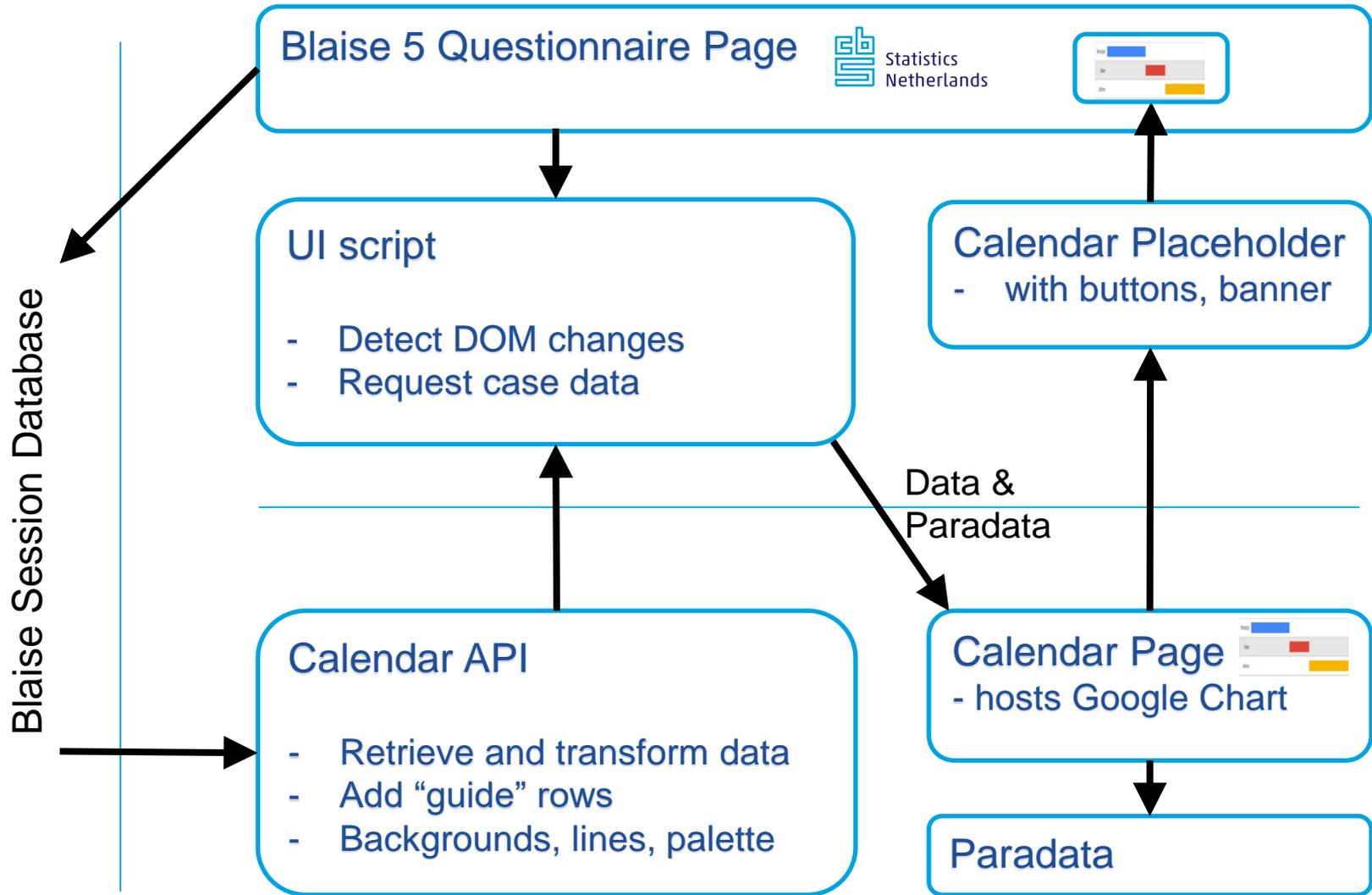
5 Point cursor or touch screen to display more text.

6 Calendar automatically displays some events after you report them.

The screenshot shows the NRTI NSFG Female interface. At the top, there are buttons for "Hide Calendar" and "Larger Calendar". Below this is a calendar grid with columns for years (Before 2019, 2019, 2020, 2021) and rows for months (J, F, M, A, M, J, J, A, S, O, N, D). The "Education" row shows a bar for "BA 06/2019". Below the calendar is a form with the question: "In what month and year did you get your Bachelor's degree? If you received more than 1 bachelor's degree, enter the date of the first one." The form has dropdowns for "Month" (set to May) and "Year" (set to 2019). Below the form is a message: "After you enter the date the information will be filled in on your calendar. If it was before 2019, it will show up in the 'Before 2019' space in the 'Education' row." At the bottom of the form are "Back" and "Next" buttons.

LHC Architecture & Implementation

- ▶ Blaise 5 site is a Single Page Application
- ▶ We add custom elements and scripts
- ▶ Calendar lives in a separate web site that includes the chart
 - ▶ Blaise 5 and LHC have different reload requirements
 - ▶ UI controls and monitoring are separate from chart functionality



LHC Components

Blaise Application Site

Blaise 5 Single Page Application (SPA)

Loads once and is updated

Custom page elements (HTML)

Added to Blaise SPA

Placeholder area for the Calendar

Buttons for Calendar control

Banner

Custom user interaction script (javascript)

Added to Blaise SPA

No knowledge of inner workings of Blaise.

Detect DOM to recognize when there is a new section, page, item, language selection, case id

Respond to screen size changes

Call Calendar API to load calendar

Send paradata and logging messages to Calendar Page

Calendar Site

Calendar Page

Hosts Google Chart from

<https://www.gstatic.com/charts/loader.js>

Included in Blaise Page

Receive show/hide/full signals and log paradata

Calendar API

Retrieve, transform, and format data

Add chart "data" for guide rows

Customized chart format backgrounds, hover text, line styles, color palette, text positioning

Blaise Services

Blaise API

Serves data requests

Database

Use session database to get the latest data as it is being entered

Blaise Interaction – Data & Design

▶ Session DB

Use the Blaise Session database to get the latest data as it is being entered

▶ Raw Structure

We sometimes use the Blaise raw structure for improved performance over the item-wise API – e.g., `GetField()` vs `GetBlaiseItem()`

▶ Coordination

Coordinate closely with Blaise programming to ensure reliability of data structure



Blaise instrument changes to integrate with the LHC

- ▶ An “LHC” block holds data and associated text to display on calendar
- ▶ Text value of role “ShowCalendar” indicates, on each field, whether to show the calendar by default
- ▶ A Hidden “PageFooter” on the Master Default Page always contains the current page number, case id, name of active field, and a flag whether to show calendar, so the client-side script can react to changes on the page

The screenshot shows the configuration for the 'bLHC' block. On the left, a tree view lists 'Functions', 'Blocks', and 'Fields'. The 'Fields' section includes various data types and arrays, such as 'R_DOB: DATETIME', 'R_AGE: 15..50', and 'Pregnancy: ARRAY[1..20] OF BDateRange'. On the right, a data table displays information for a person born in January 1982, before 2019, with a current age of 36. The table includes sections for Education (HS: 05/2000, BA: 06/2004), Births & Other Pregnancies (M: ended 02/..., B: ended 04/...), Marriages, Cohabs, Partners (FSEX: 04/1995, LSEXFP: 05/1..., DIM: Cohab 0..., FSEX T.J: 06/...), Intercourse, Birth Control Methods (WD: 10/1996), and various Birth Control Methods (P, C, WD).

The screenshot shows the configuration interface for the 'ValueAsString' field. The 'Actions' section includes 'AssignField' and 'ValueAsString: String'. The 'Properties' section includes 'FieldName' (set to 'FullName') and 'ValueAsString'. A code editor shows the following logic:

```
IF Page.ActiveField.RoleTextExists
('ShowCalendar') THEN
Page.ActiveField.Name
ELSE
'N'
ENDIF
```

The 'Constructs' section shows a dropdown menu for 'IF...THEN...ELSE...ENDIF' and a '+' button. The 'Functions' section is currently empty.

Live History Calendar for Birth Control Series

- ▶ Questions about 20 types of contraceptive use in respondent's life
- ▶ Collect and display data for up to 48 months about sexual activity and contraceptive use in those months
- ▶ Blaise checks implemented for data consistency before displaying the grid

RTI INTERNATIONAL NSFG Female

Hide Calendar Larger Calendar

	FSEX TJ: 06/2018																
Intercourse	Withdrawal: 10/1996	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Birth Control Methods	WD: 10/1996																
Birth Control Methods-P							P			P			P			P	
Birth Control Methods-C				C							C			C			C
Birth Control Methods-WD											WD						

English

Earlier you mentioned you had used the birth control pill.

If you have used it at any time since January 2019, check the box for each month that you used it at least once, going back to January 2019. It will show as the letter "P" on the "Birth Control Methods" row of the calendar.

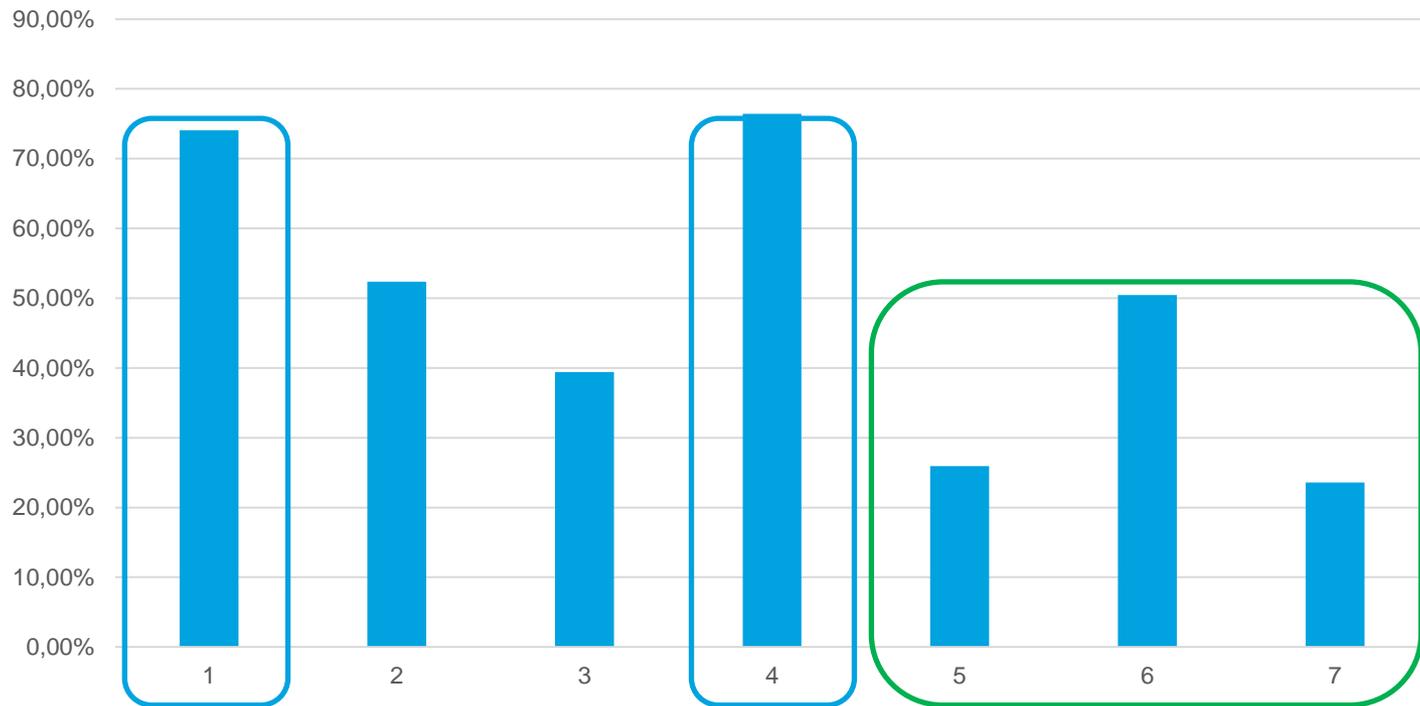
Please report use even if you did not have sexual intercourse in that month.

Please select "All" if you used this method at least once each month. Please select "None" if you did not use the method at all that year.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All	None
2022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2021	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2020	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2019	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

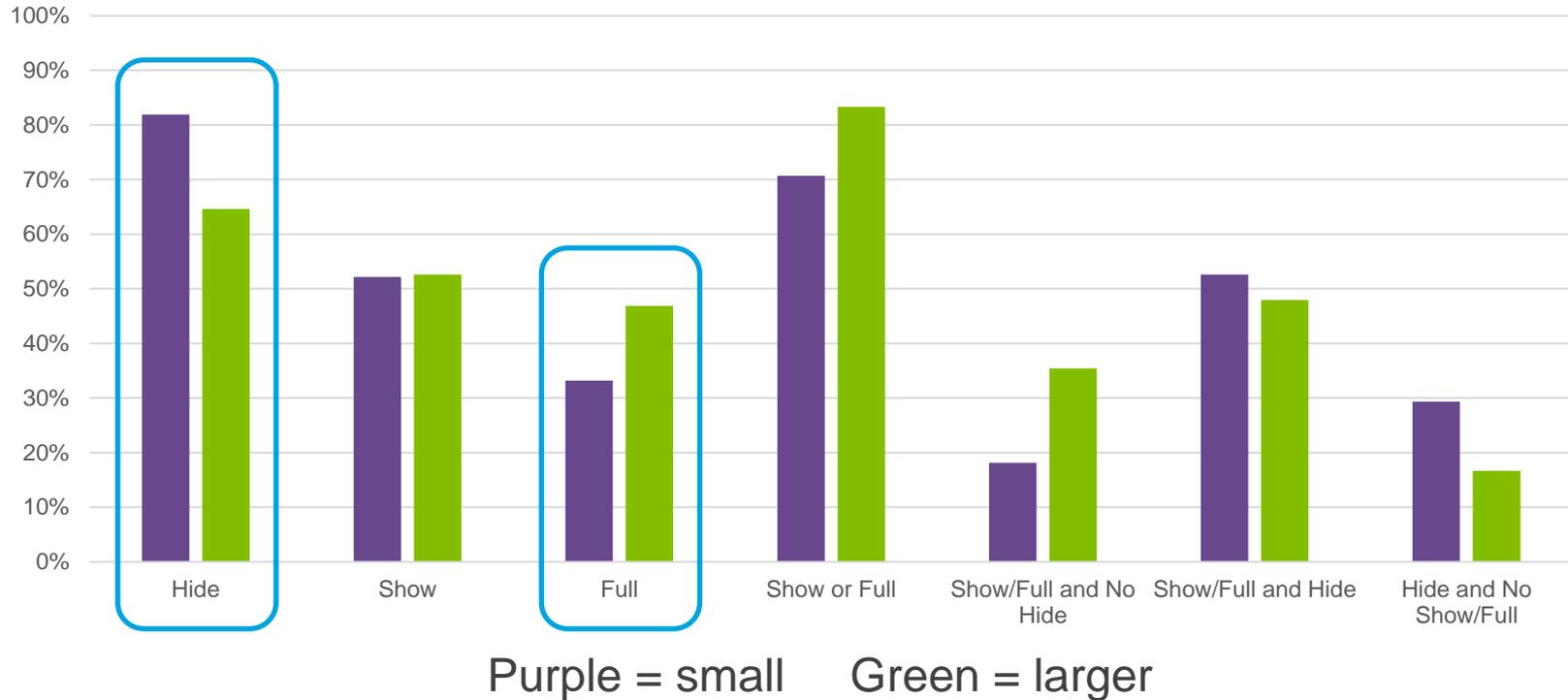
< Back Next >

Paradata on calendar use - overall



- ▶ About the same number of respondents overall (76% vs 74%) used the show or full screen buttons as the hide button. (blue outline)
- ▶ Just over 50% used both options. About 25% used only one of either hide or show/full. (green outline)

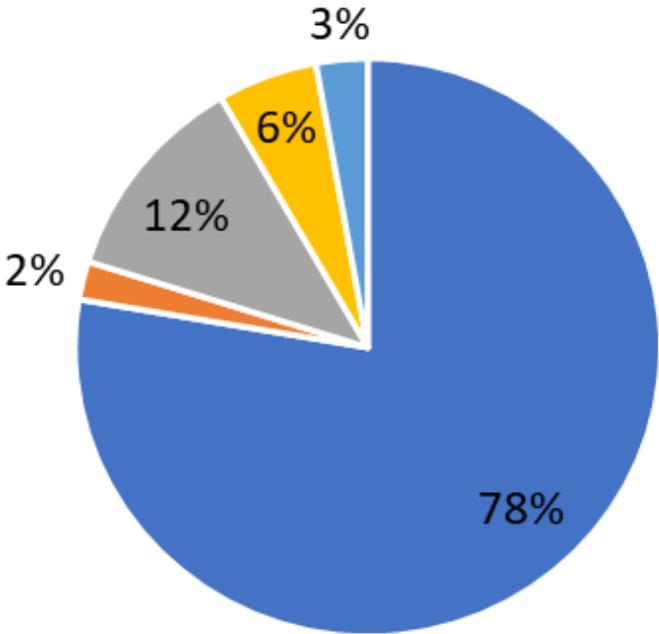
Paradata on calendar use – by screen size



- ▶ Respondents using larger screens were, predictably, less likely to hide the calendar, and more likely to use the full screen option.
 - ▶ Small defined as width of screen ≤ 600 px

Debriefing Questions – Self-reported LHC Use

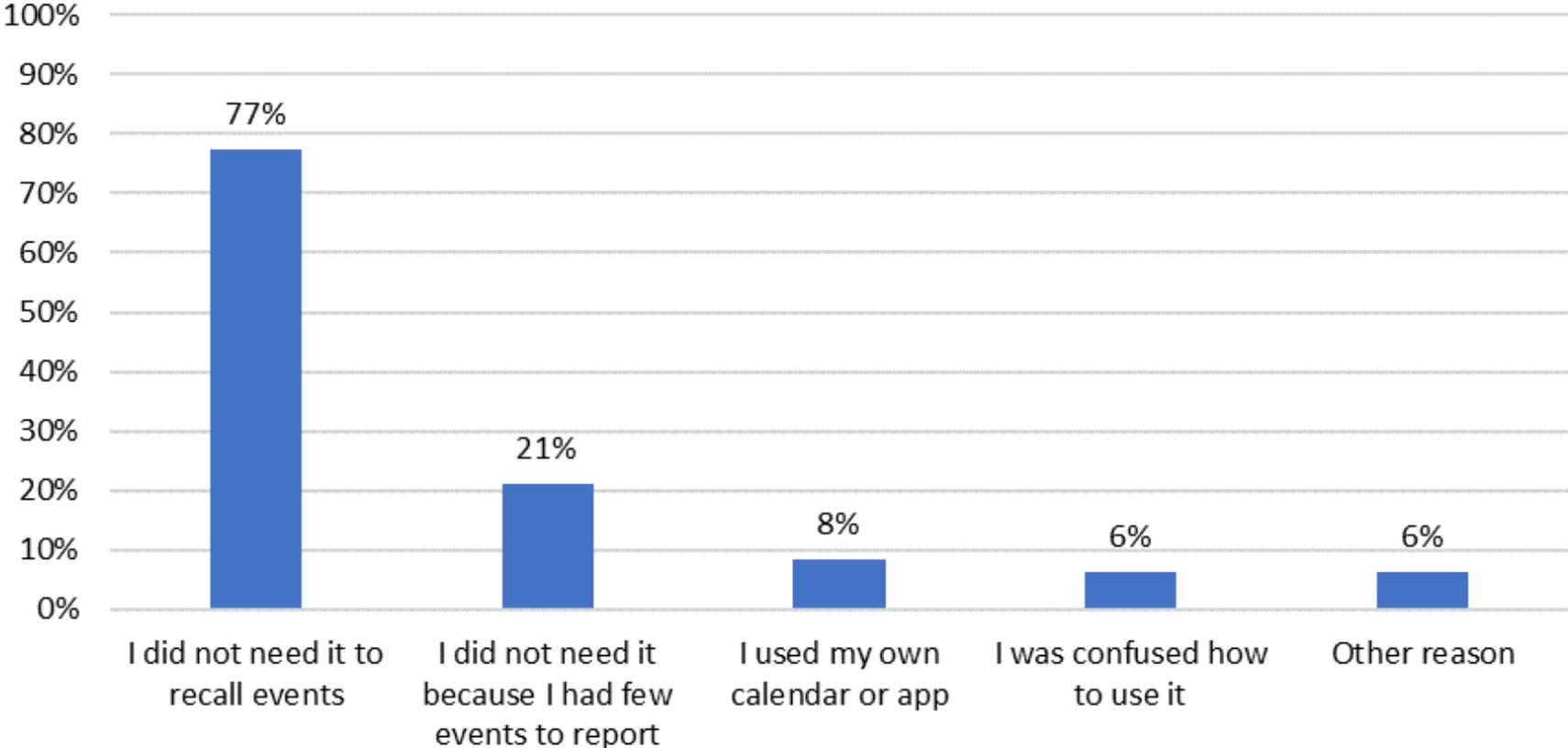
Self-reported Calendar Use - CAWI



- I did not look at or use the calendar while completing the survey
- Calendar was essential
- Calendar was helpful, but not essential
- Calendar was neither helpful nor unhelpful
- Calendar was not helpful

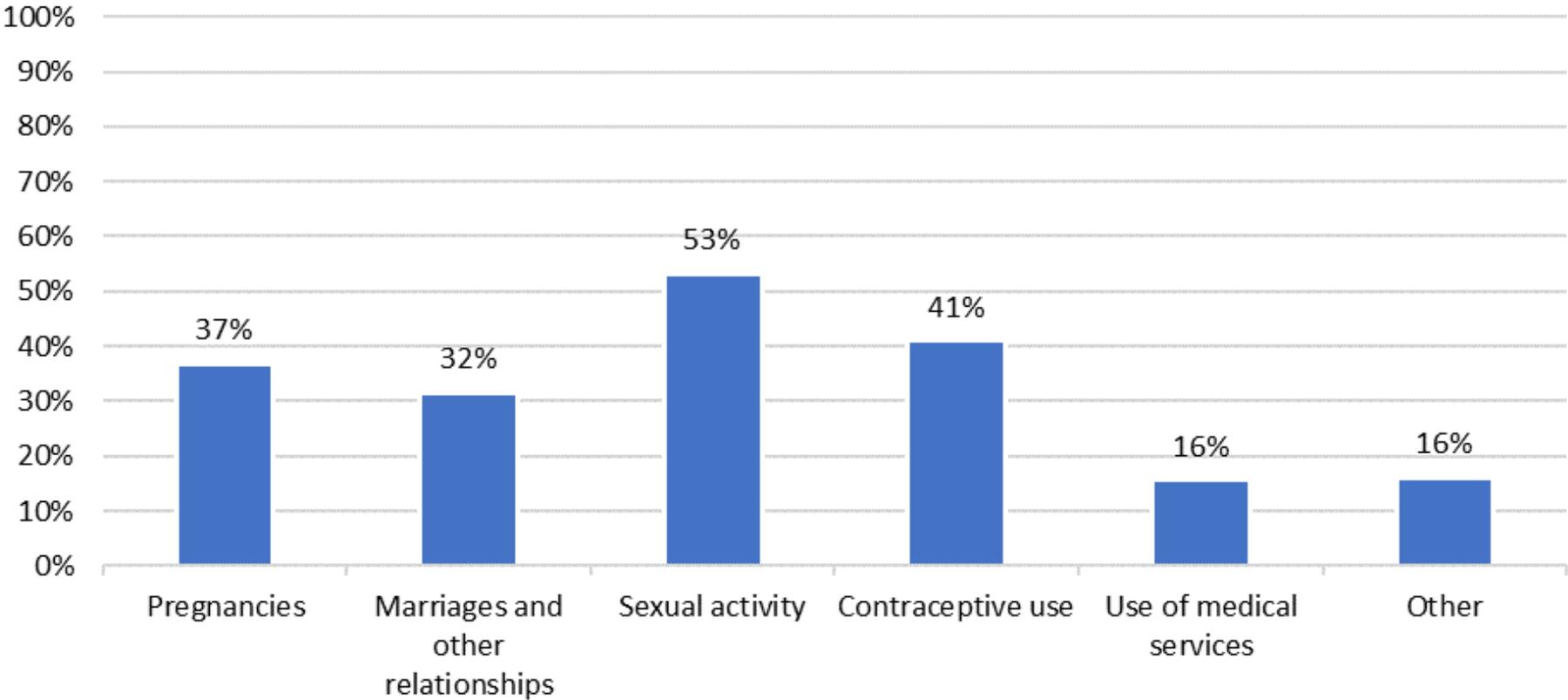
Self-reported Reasons for not Using LHC

Self-reported Reasons for not Using the Calendar - CAWI



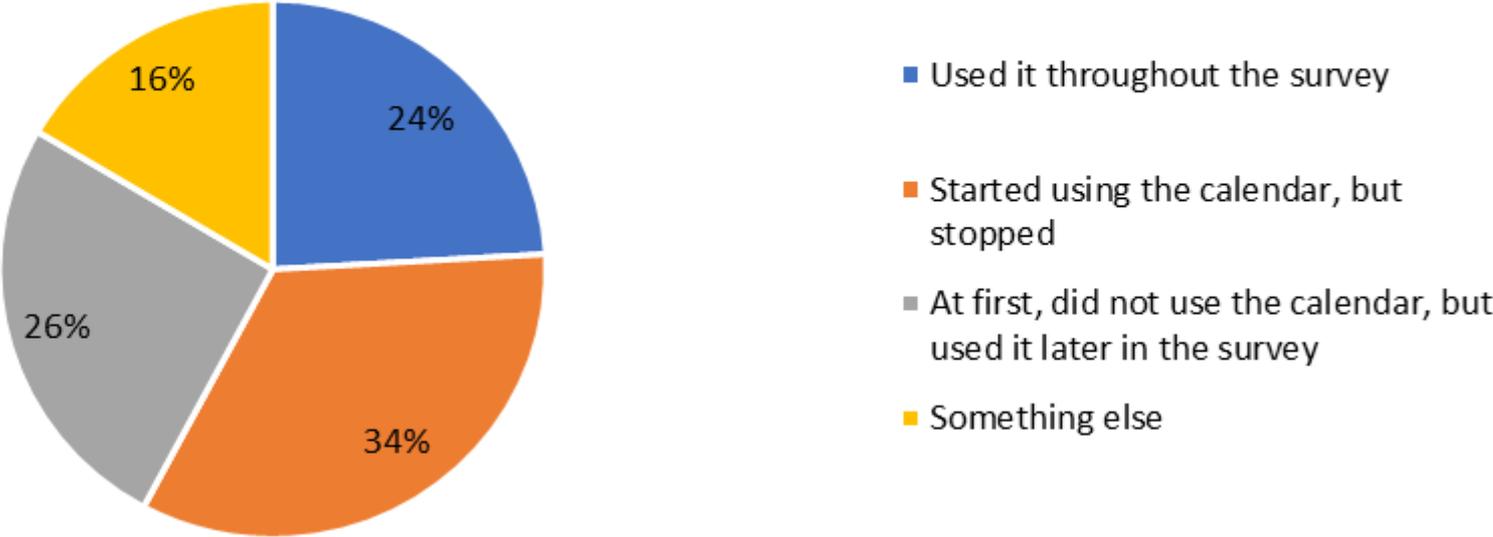
Sections where Respondents Used the Calendar

Self-reported Calendar Use by Section - CAWI



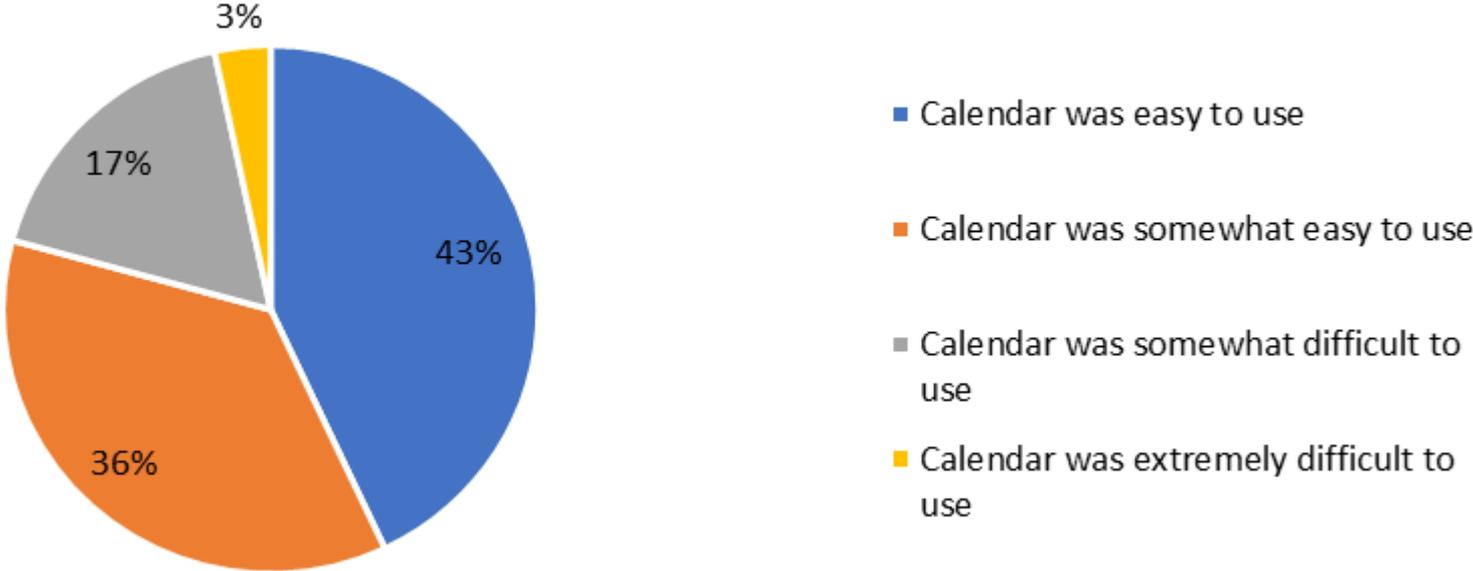
Self-reported Frequency of LHC

Self-estimate of How much Used/Looked at Calendar - CAWI



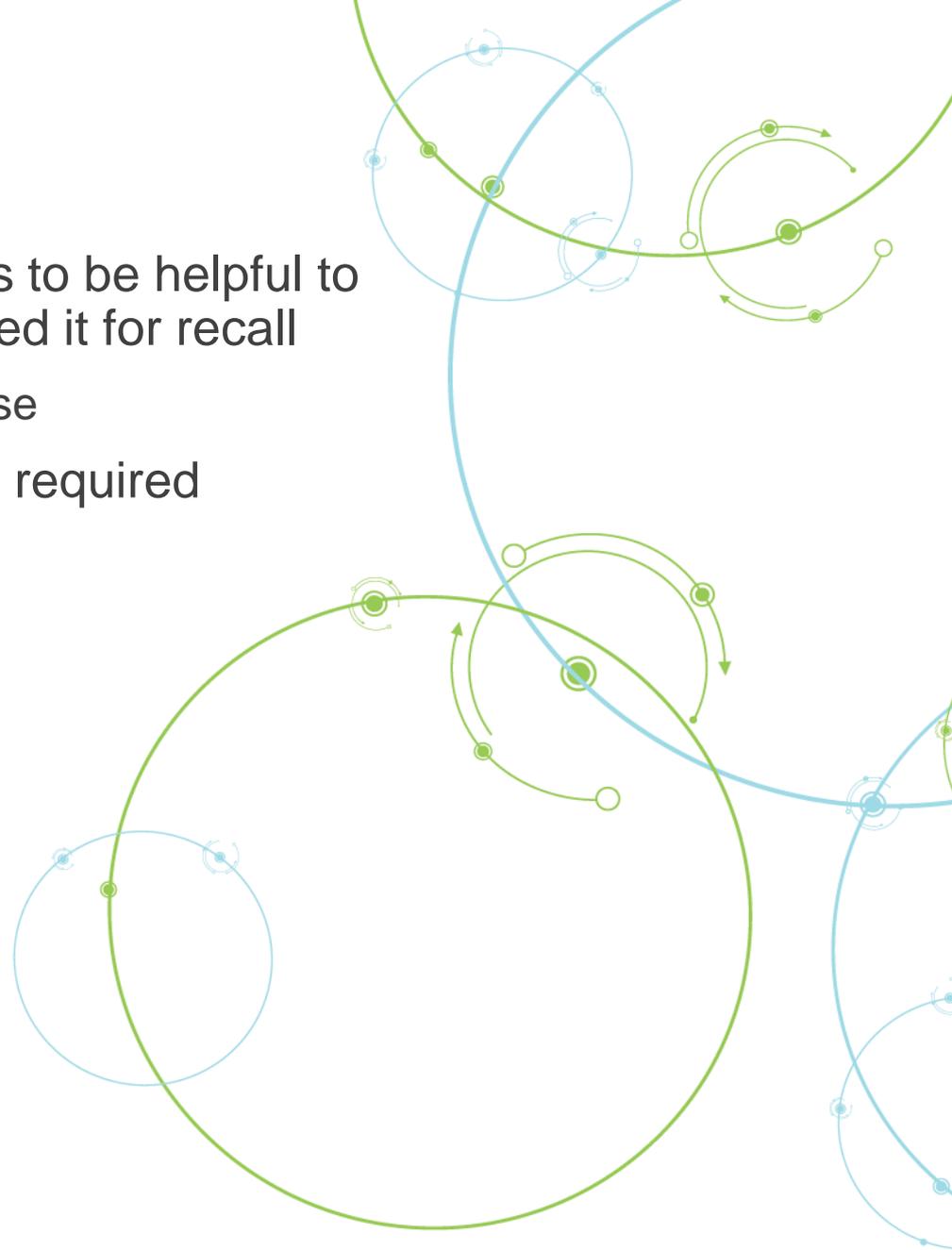
Ease of Calendar Use

Self-reported Ease of Calendar Use - CAWI



Conclusions

- ▶ The Life History Calendar appears to be helpful to the subset of respondents who need it for recall
 - ▶ sexual activity and contraceptive use
- ▶ Blaise integration was successful, required customization
 - ▶ Usability and performance





Thank you

Joseph Nofziger
Lilia Filippenko
Emilia Peytcheva

jmn@rti.org
lfilippenko@rti.org
epeytcheva@rti.org