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Investigating the Use of Nurse Paradata in Understanding Nonresponse to Biological Data Collection

Fiona Pashazadeh
University of Manchester, United Kingdom, fiona.pashazadeh@manchester.ac.uk

Alexandru Cernat
University of Manchester, United Kingdom, alexandru.cernat@manchester.ac.uk

Joseph W. Sakshaug
University of Mannheim and Institute for Employment Research, Germany, Joe.Sakshaug@iab.de

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Investigating the Use of Nurse Paradata in Understanding Nonresponse to Biological Data Collection

Fiona Pashazadeh, *University of Manchester*

Alexandru Cernat, *University of Manchester*

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Bio-social surveys have a great potential

Combining the advantages from both data

- "Representative" samples
- Info on social background

- "Objective" health measures
- Wealth of biological measures

Examples of such surveys

Health and Retirement Study

SHARE/English Longitudinal Study of Ageing

UKHLS

Health Survey for England

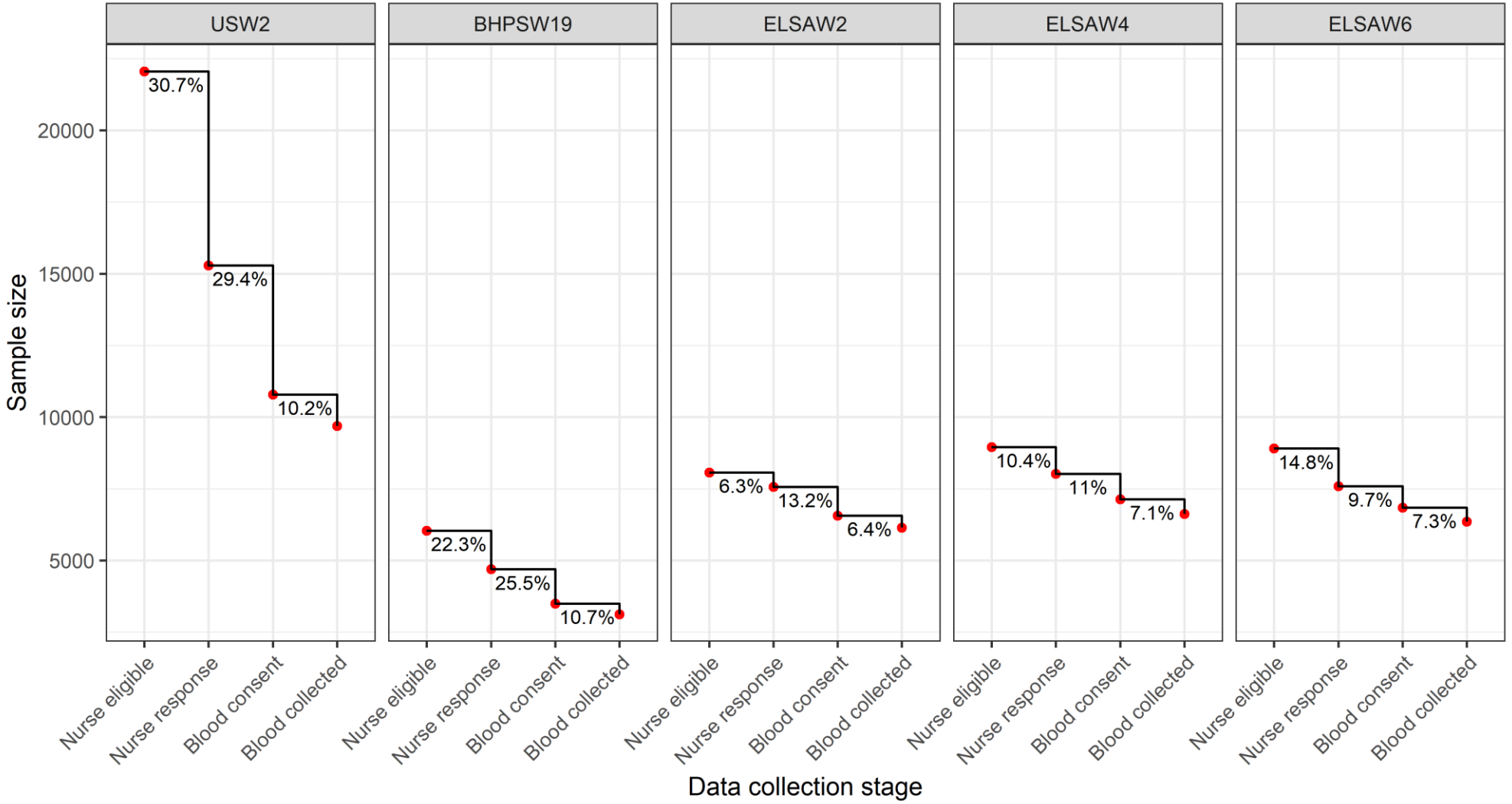
Models for data collection

1. Interviewer biological data collection
2. Nurse home visit
3. Hospital visit

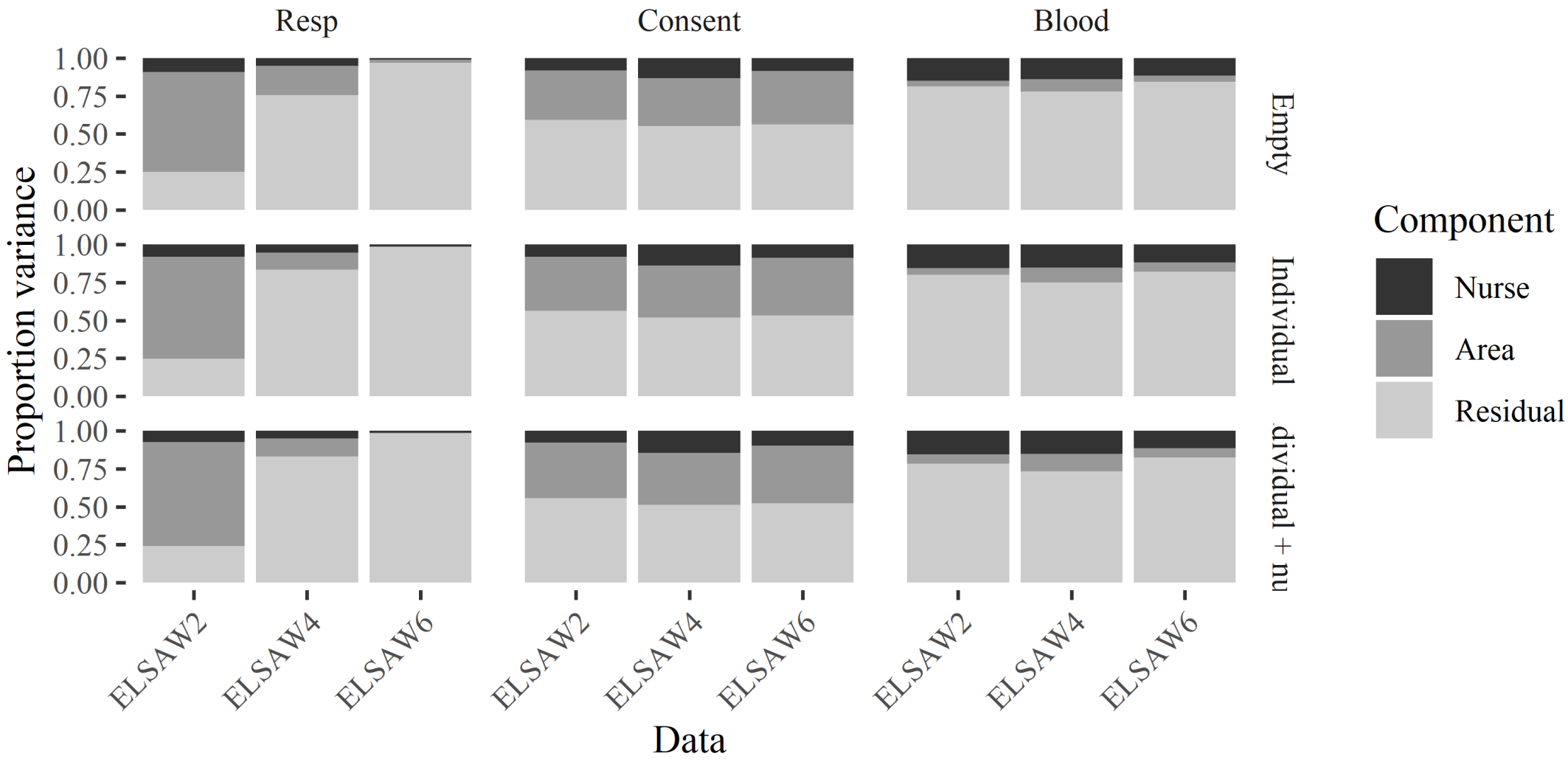
Issue with this type of data collection

- Nurse visit can be burdensome and intrusive
- Multiple stages of missing data

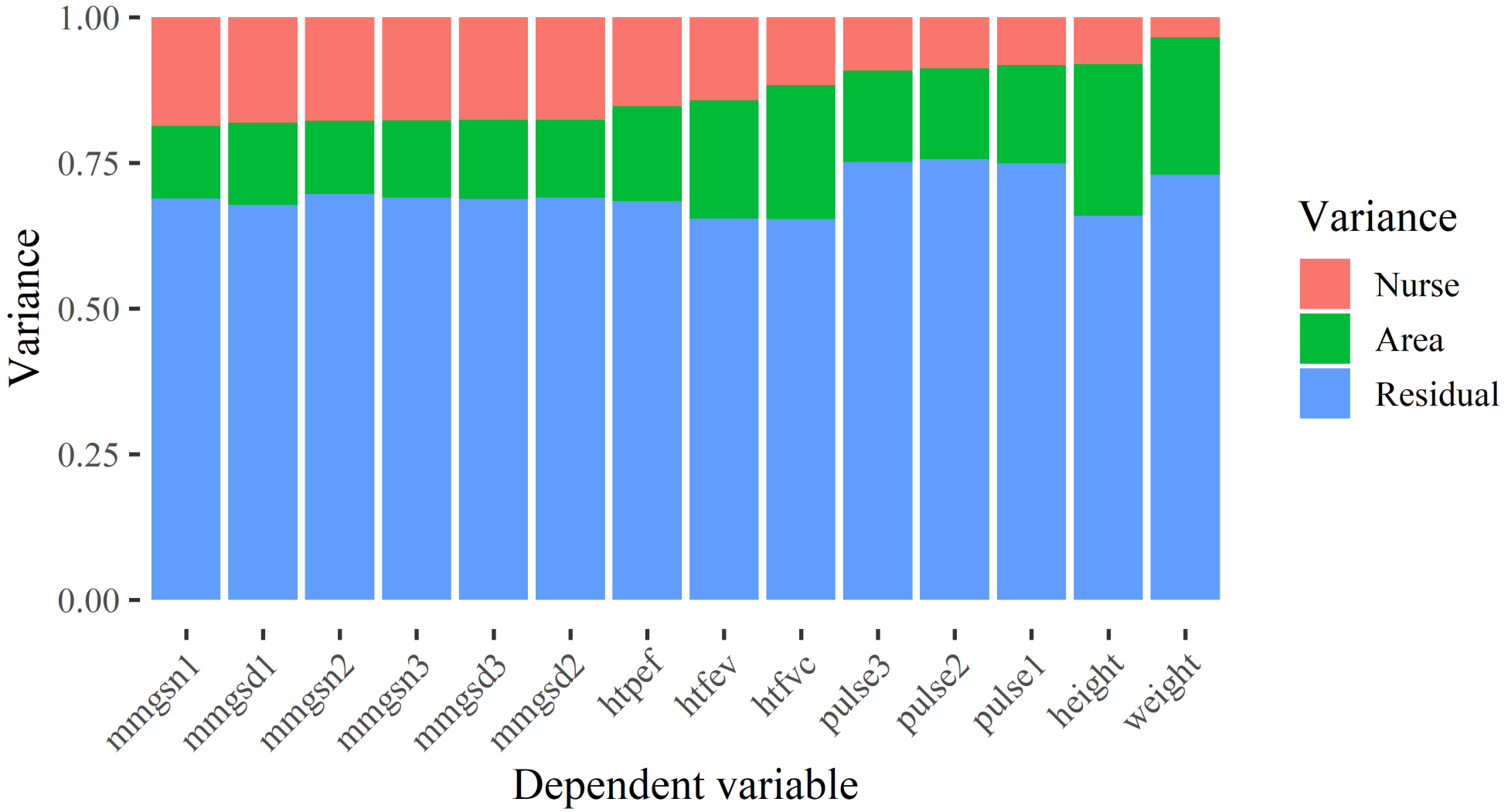
Example of missing data patterns



Nurse also can have an important role in data collection



Nurse impact on measurement error



Can paradata help use understand nurse behaviour?

Can paradata help us understand the nurse non-response?

1. What **types of paradata** is available from the nurse visits?

2. What is the **quality of the available paradata**?

3. Can paradata variables **improve existing models** of nonresponse?

Data used - Understanding Society

One of the largest longitudinal studies in the world

Collected biological data in waves 2 and 3

Wealth of methodological data

Data collection process

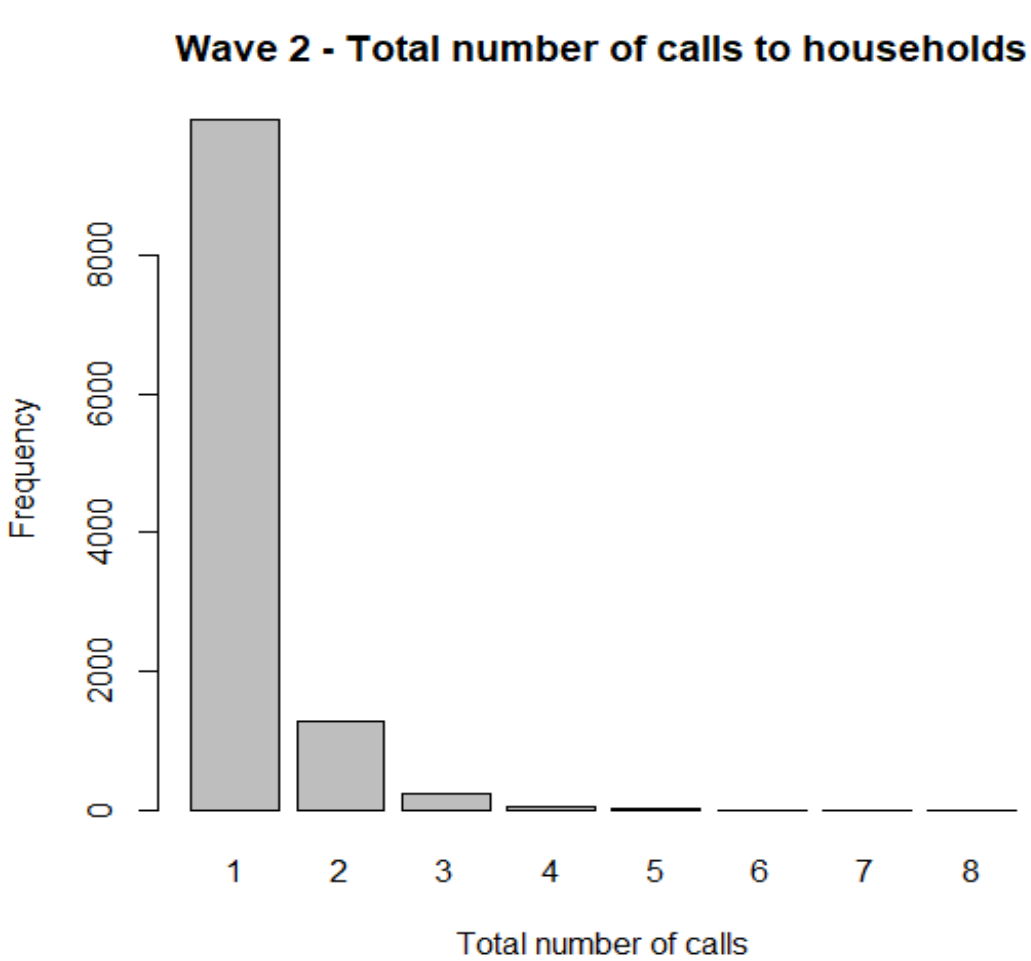
Main wave interview

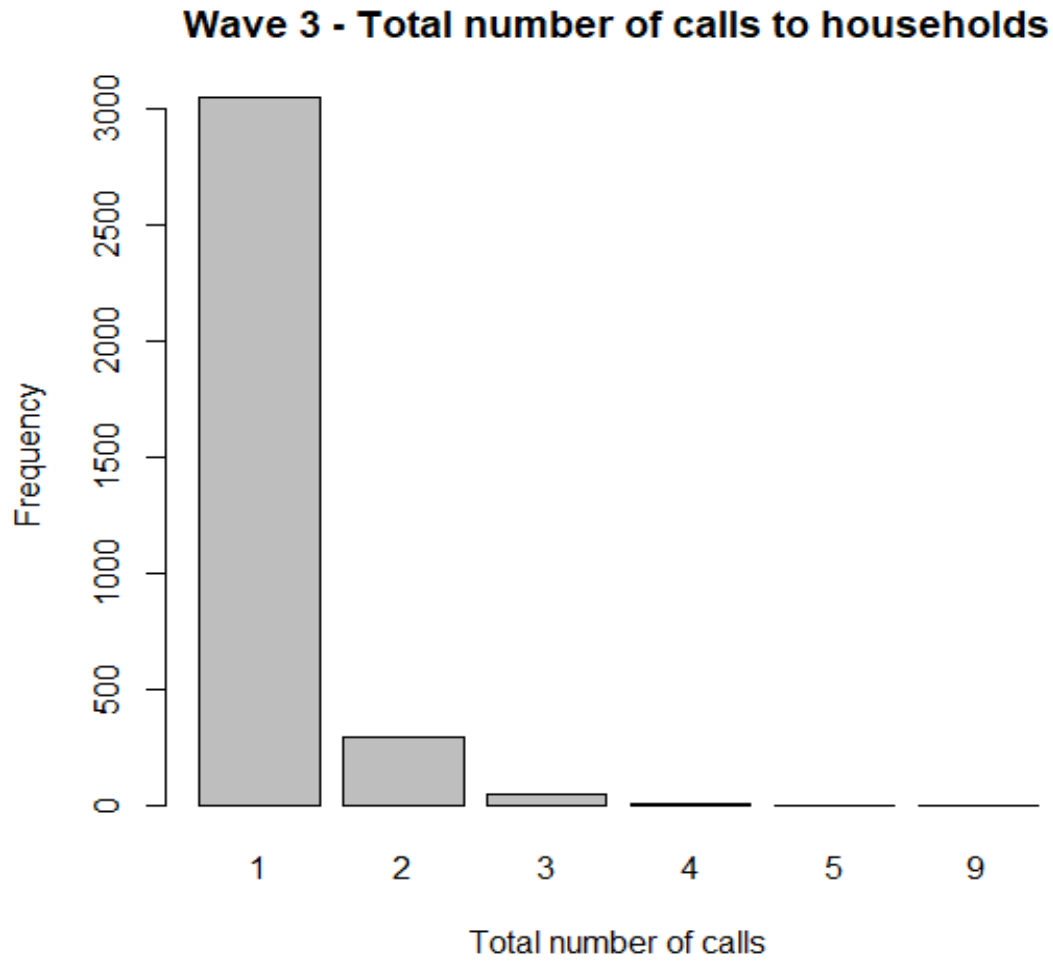
Six months latter contact regarding a nurse visit

Big proportion had appointments made in advance

Potential paradata to use

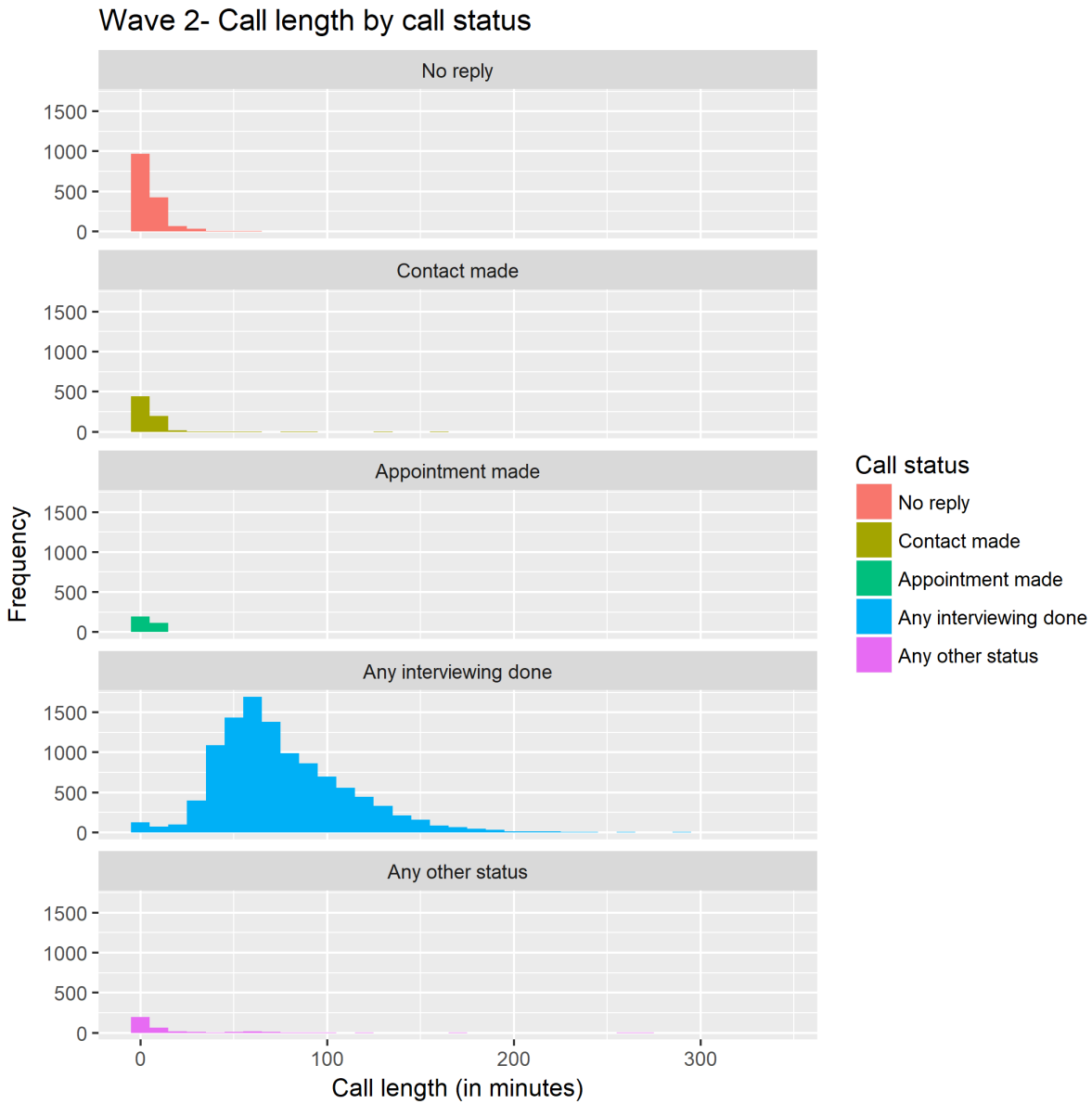
- Contact sequence and type
- Contact and interview length
- Nurse observations
- Estimates from statistical models

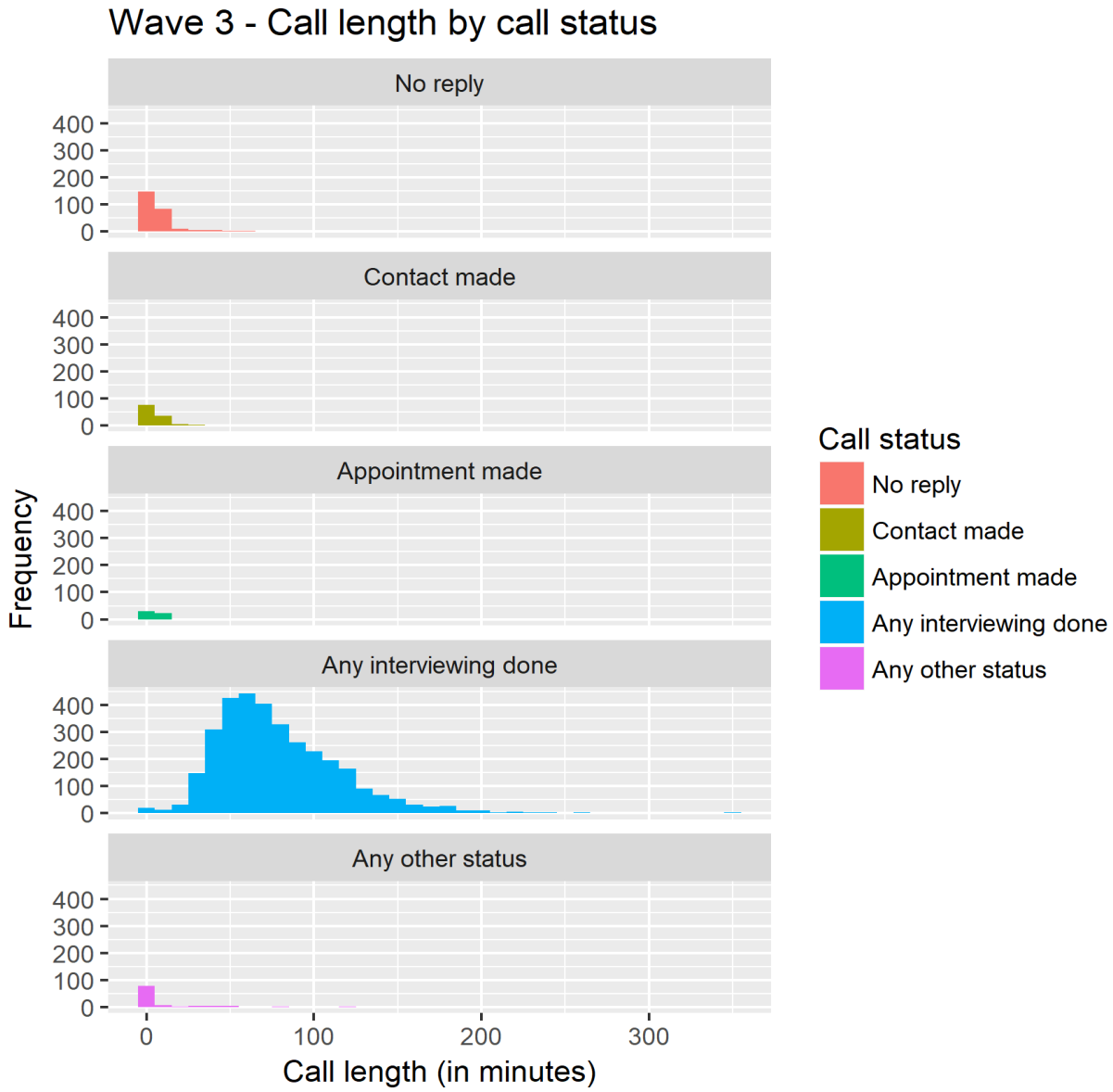

Wave 2 - Total number of calls to households
Frequency
0
2000
4000
6000
8000
1
2
3
4
5
6
7
8
Total number of calls


Wave 3 - Total number of calls to households
Frequency
0
500
1000
1500
2000
2500
3000
1
2
3
4
5
9
Total number of calls

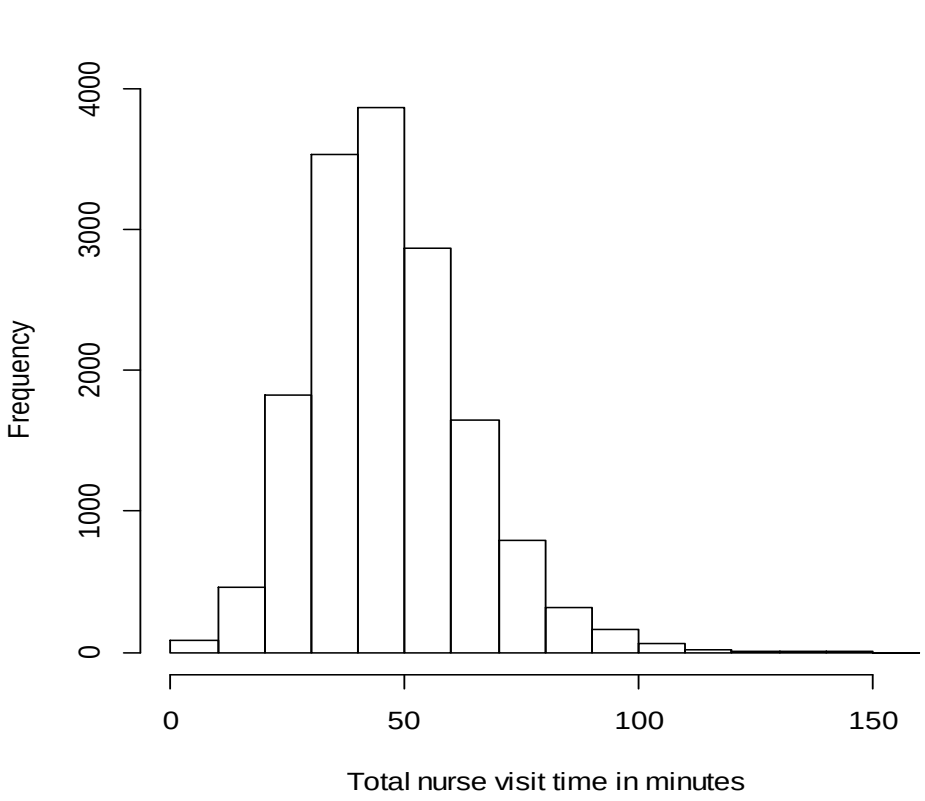
Missing data in call record

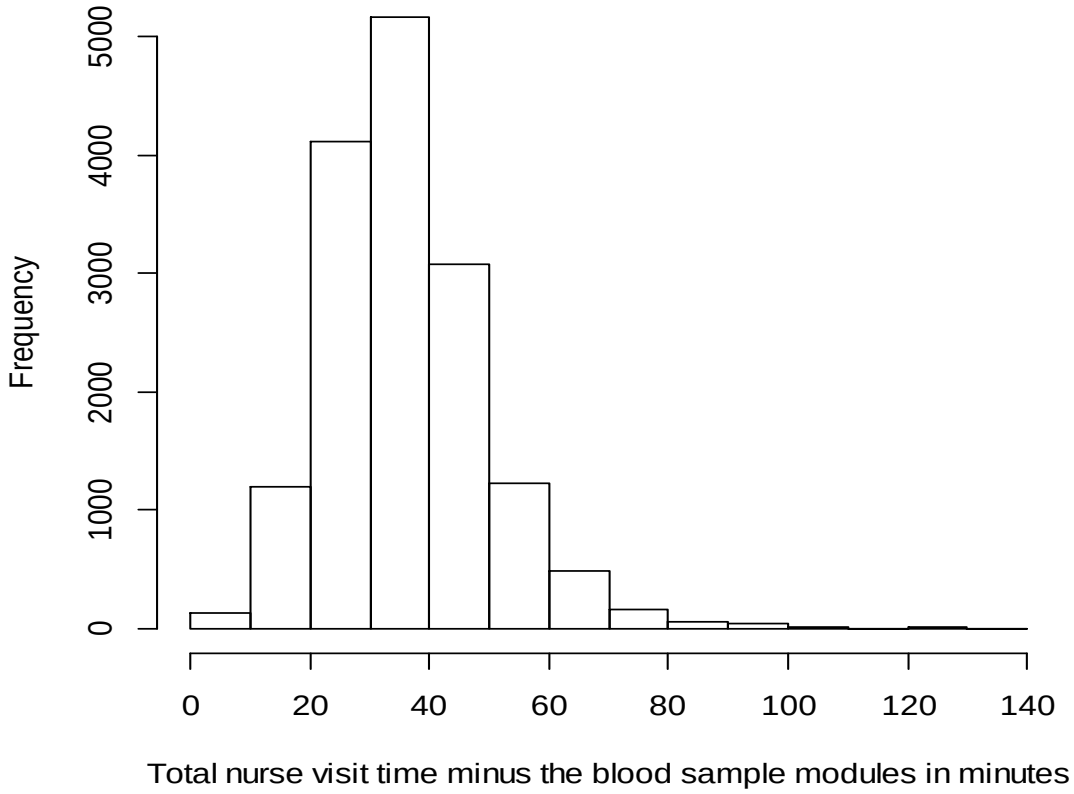
Stage of biological data collection	Number of eligible individuals	Number with call record data	Number with missing call record data	Percentage with call record data
Wave 2				
1) Nurse visit	21161	18408	2753	86.99%
2) Consent to the blood sample	14264	14196	68	99.52%
3) Obtaining blood sample given consent	11018	10965	53	99.52%
Wave 3				
1) Nurse visit	6604	5779	825	87.51%
2) Consent to the blood sample	4857	4845	12	99.75%
3) Obtaining blood sample given consent	3741	3732	9	99.76%


Wave 2- Call length by call status
No reply
Contact made
Appointment made
Any interviewing done
Any other status
1500
1000
500
0
Frequency
0
100
200
300
Call length (in minutes)
Call status
No reply
Contact made
Appointment made
Any interviewing done
Any other status


Wave 3 - Call length by call status
No reply
Contact made
Appointment made
Any interviewing done
Any other status
Frequency
0
100
200
300
400
Call length (in minutes)
Call status
No reply
Contact made
Appointment made
Any interviewing done
Any other status

Distribution of response times

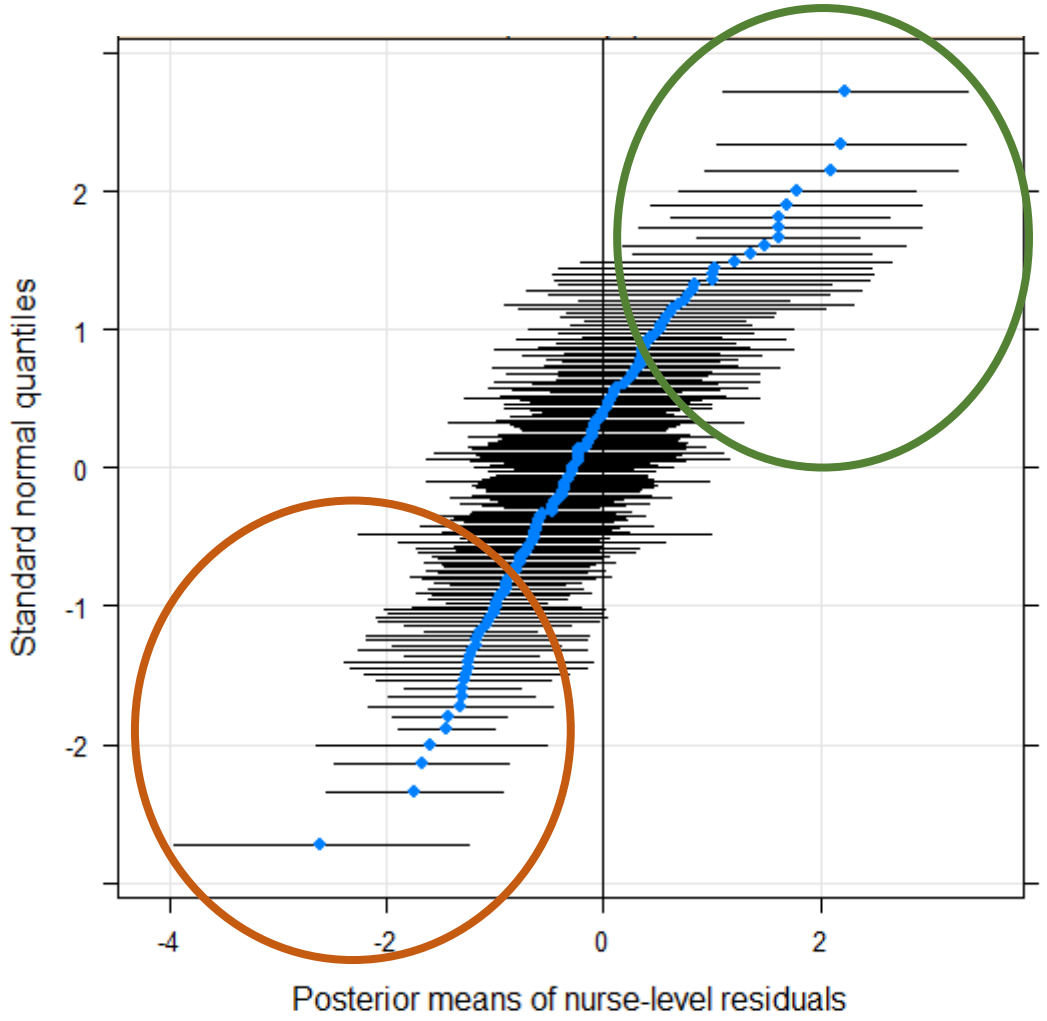




Nurse characteristics and paradata used

Variable	Description
Nurse characteristics	Nurse age Nurse years of experience working for NatCen
Nurse observation	Suspicious Non-cooperative
Outcome of first call to the household	"No reply", "Contact made", "Appointment made", "Any interviewing done", "Any other status", “Missing”
Main interview length	Time in minutes of main survey interview
Length of nurse visit excluding the blood sample (stages 2 and 3)	Time in minutes to complete the nurse visit excluding all blood sample components

Developing nurse performance indicators



Regression models explaining three stages of participation wave 2

Nurse visit:

- Non-cooperation & Suspicious
- Nurse age
- Positive first visit outcome
- Missing paradata

Consent:

- Suspicious
- Main interview and start of nrs. interview length

Collecting blood

- Non-cooperative
- Main interview length

Regression models explaining three stages of participation wave 3

Nurse visit:

- Positive first visit outcome
- Missing paradata
- Nurse performance (prev. wave)

Consent:

- Suspicious

Collecting blood

Conclusions

Large(r) amounts of **missing paradata**

Less variation than normal interview in contact seq.

Some differences between the effects on the two data

Models for nurse visit more useful

Low predictive power

Useful variables to use in the future

- Nurse observations
- First outcome
- Time latencies
- Missing indicator
- Nurse performance

You the guy who donated his body to science?

Understanding Nurse Paradata and Nonresponse

Alexandru Cernat
@cernat_a
www.alexcernat.com

MANCHESTER 1824