



**Understanding Society**  
THE UK HOUSEHOLD LONGITUDINAL STUDY

# The collection of bio-markers: nurses, interviewers, or participants?

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**Economic  
and Social  
Research Council**

An initiative by the Economic and Social Research Council, with scientific leadership by the Institute for Social and Economic Research, University of Essex, and survey delivery by NatCen Social Research and Kantar Public



# A number of surveys include collection of bio-measures

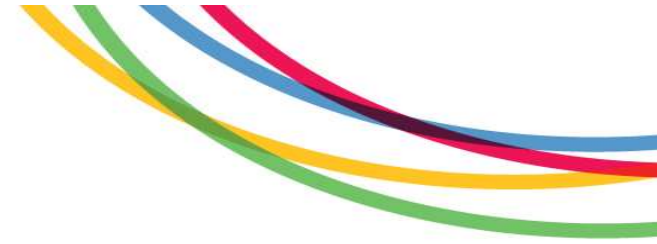


- More detailed health data than other social studies
- More detailed social data than other health studies
  - Identify health effects of social and economic policy initiatives...
  - ... and relationship of health on social and economic outcomes
- Substantially enhances interdisciplinary research possibilities
  - Health economics, epidemiology, behavioural science, health psychology, medical sociology
- Provide objective health measures in order to understand the interactions of individuals' behaviour, well-being, health, and disease within social context.

(McFall et al, 2012)

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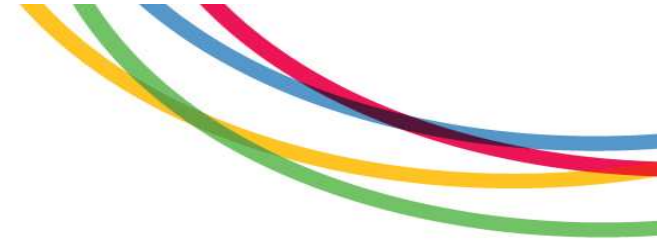
# Models of biosocial collection



## Clinic-based

- Centralised or mobile
  - Detailed and high quality measurements
  - High level of time commitment, increased burden to attend – higher selection effects?
  - Expensive
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- E.g., The Irish Longitudinal Study on Aging (TILDA); National Study of Health and Development (1946 Birth Cohort); UK Biobank; Avon Longitudinal Study of Parents and Children (ALSPAC); Whitehall II
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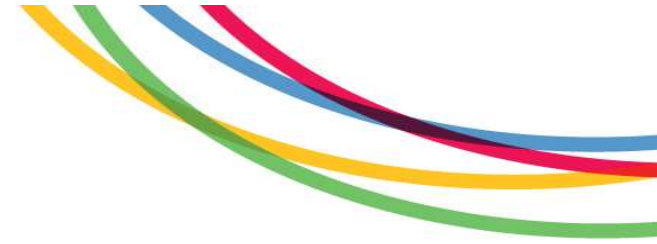
# Models of biosocial collection



## In-home collection by nurses

- Separate visit from interviewers – additional cost and potential for attrition between interview & nurse visit
  - High quality measurements, but lower tech equipment (than clinic)
  - Collected in participant's home – lower burden, no travel time
  - E.g., English Longitudinal Study of Ageing (ELSA); Health Survey for England (HSE), Understanding Society (Waves 2/3)
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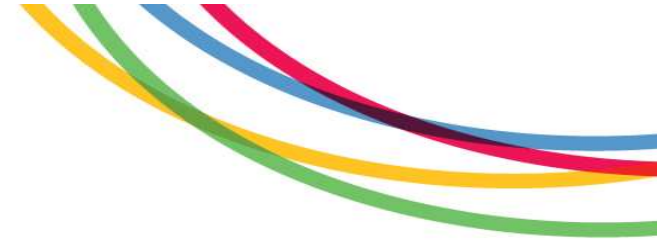
# Models of biosocial collection



## Biomeasures collected by interviewers

- Non-clinically trained interviewers – same visit, lower cost, less attrition, longer interview (increased burden)
  - More limited set of measures – no whole blood sample
  - E.g., Health and Retirement Study (HRS), National Social Life, Health, and Aging Project (NSHAP)
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# Models of biosocial collection



Biomeasures and social interview carried out by nurses

- Nurses as interviewers – same visit, lower cost, less attrition, longer interview (increased burden)
  - High quality measurements, but lower tech equipment (than clinic), includes whole blood
  - E.g., 1970 British Cohort Study (2016 sweep)
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# What have we used on *Understanding Society*? Nurse collection



- Nurse visit some months after annual interview at Wave 2
- Nurse collection of:
  - Physical measures (height, weight, waist circumference, percent body-fat)
  - Lung function
  - Blood pressure, pulse
  - Grip strength
  - Blood samples (inc. for DNA, epigenetics)
- Around 58% successful nurse assessment

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“Implementing the biosocial component of Understanding Society – nurse collection of biomeasures”, Stephanie L. McFall, Cara L. Booker, Jonathan Burton and Anne Conolly, Understanding Society Working Paper, 2012-04.

<https://www.understandingsociety.ac.uk/research/publications/520753>

# What have we tested on *Understanding Society*? Interviewer collection

- Small piloting/feasibility study of interviewer-led collection of biomarkers (“iBio”)
- Interviewers trained to collect:
  - Physical measures
  - Blood pressure
  - Grip strength
  - Saliva/dried blood spots

“Collecting biomarkers using trained interviewers. Lessons learned from a pilot study”,  
Stephanie L. McFall, Anne Conolly and Jonathan Burton, *Survey Research Methods*,  
April 2014. <http://dx.doi.org/10.18148/srm/2014.v8i1.5471>

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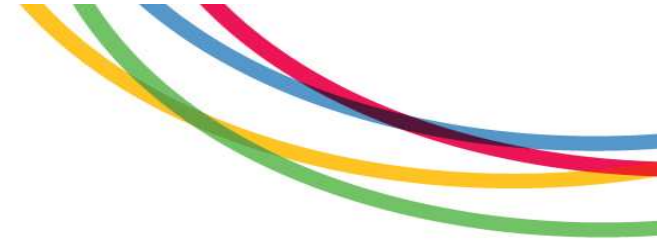


# What have we used on *Understanding Society*? Nurse/Interviewer/Web



- Innovation Panel Wave 12 (IP12)
- Experiment with modes of biomeasure collection
  - Survey response?
  - Biomeasure take-up?
  - (Cost? Sample quality?)

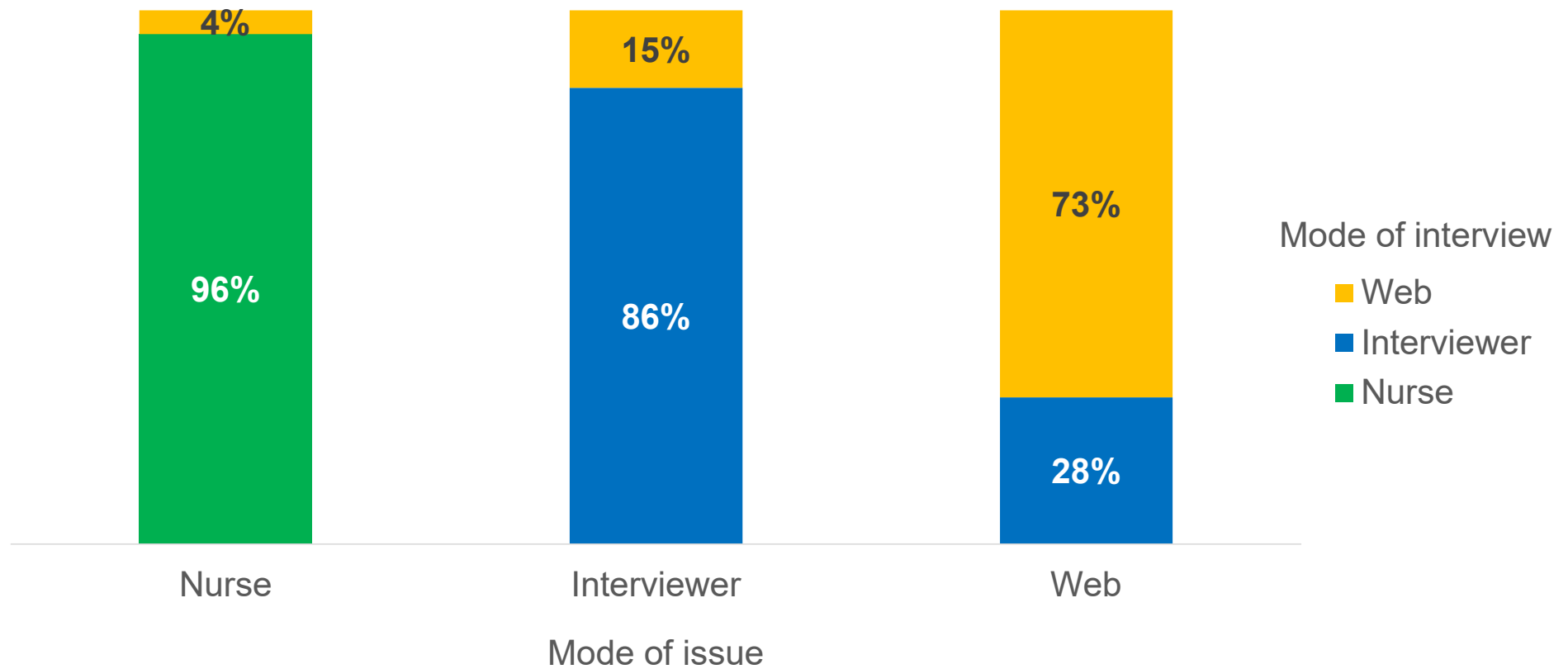
# IP12 basic design



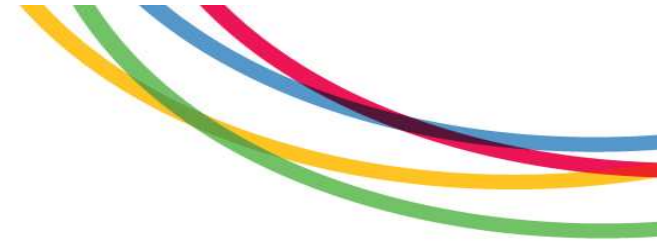
Households randomly allocated:

- Nurse visit
  - Nurse contact household, conduct annual IP interview, collect biomeasures
- Interviewer visit
  - Interviewer contact household, conduct annual IP interview, collect *some* biomeasures, introduce self-collection kit
- Web interview
  - Adults invited to complete annual IP interview online, self-collection kit introduced and posted out after interview if permission given

# IP12 mixed mode design



# Who collected what in IP12?

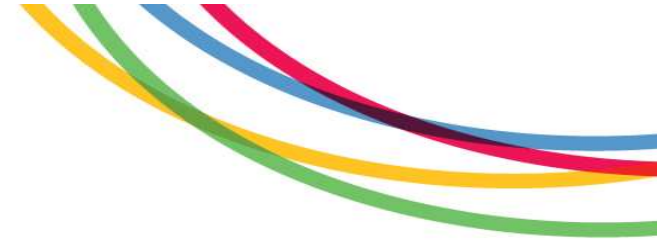


<b>Nurses</b>	<b>Interviewers</b>	<b>Web</b>
Blood pressure pre-interview	Blood pressure pre-interview	Blood pressure pre-interview
Self-reported height/weight	Self-reported height/weight	Self-reported height/weight
Height/weight	Height/weight	X
Blood pressure	Blood pressure	X
Hair sample	Leave hair sample kit	Send hair sample kit
Dried Blood Spot sample	Leave DBS kit	Send DBS kit
Whole blood	X	X

# Key difference in sample kit (hair, dried blood spot)

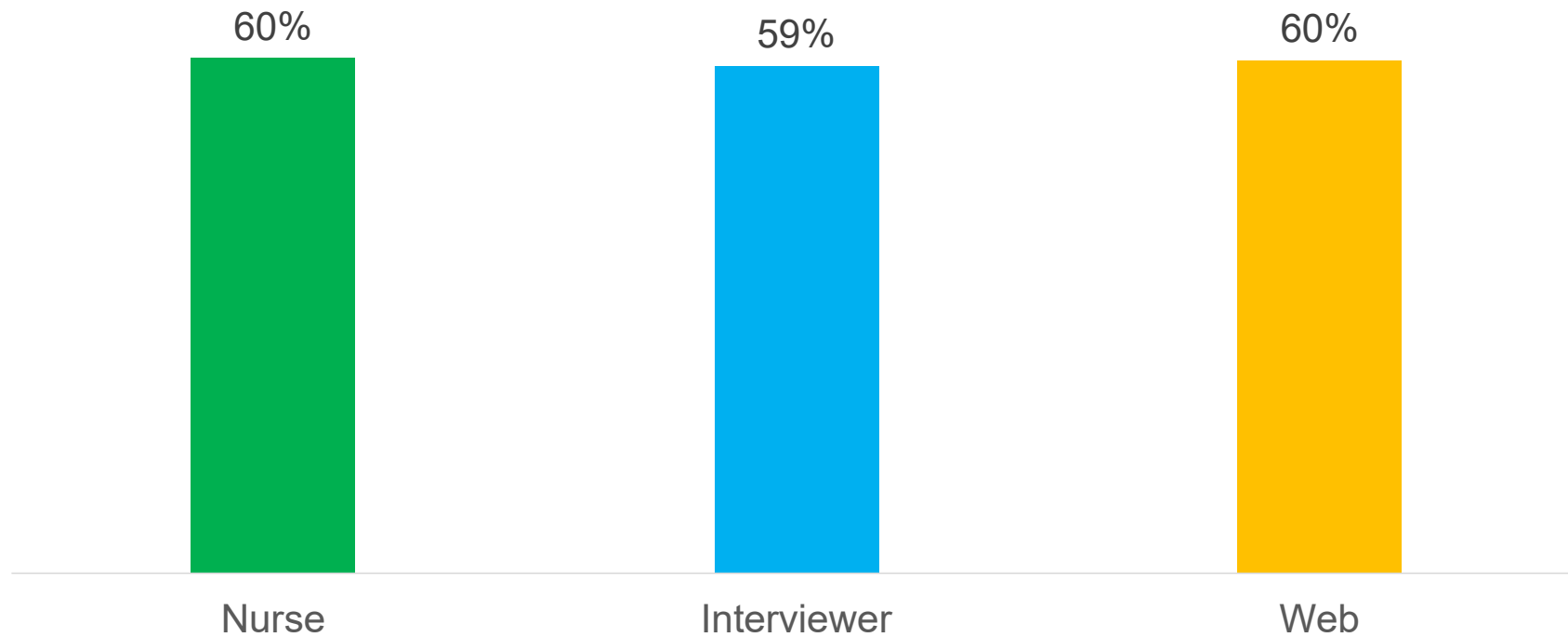
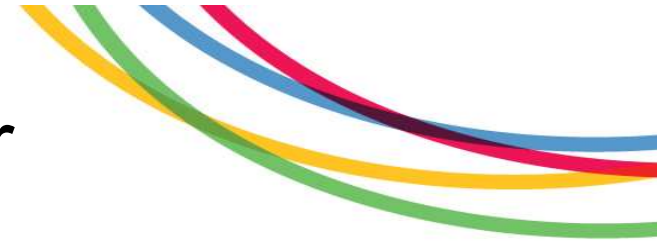
- Nurse
  - **Use** the kit to take the sample
- Interviewers
  - Introduce the kit during the interview, explain what it is for and what is required
  - “Are you happy for us to leave these kits with you?”
  - Kit **handed over** by interviewer at point-of-interview
- Web
  - On-screen, participant read information about the kit, link to FAQ
  - “Are you happy for us to send these kits to you?”
  - Kit **sent** to participant through post after interview

# Main Research Questions

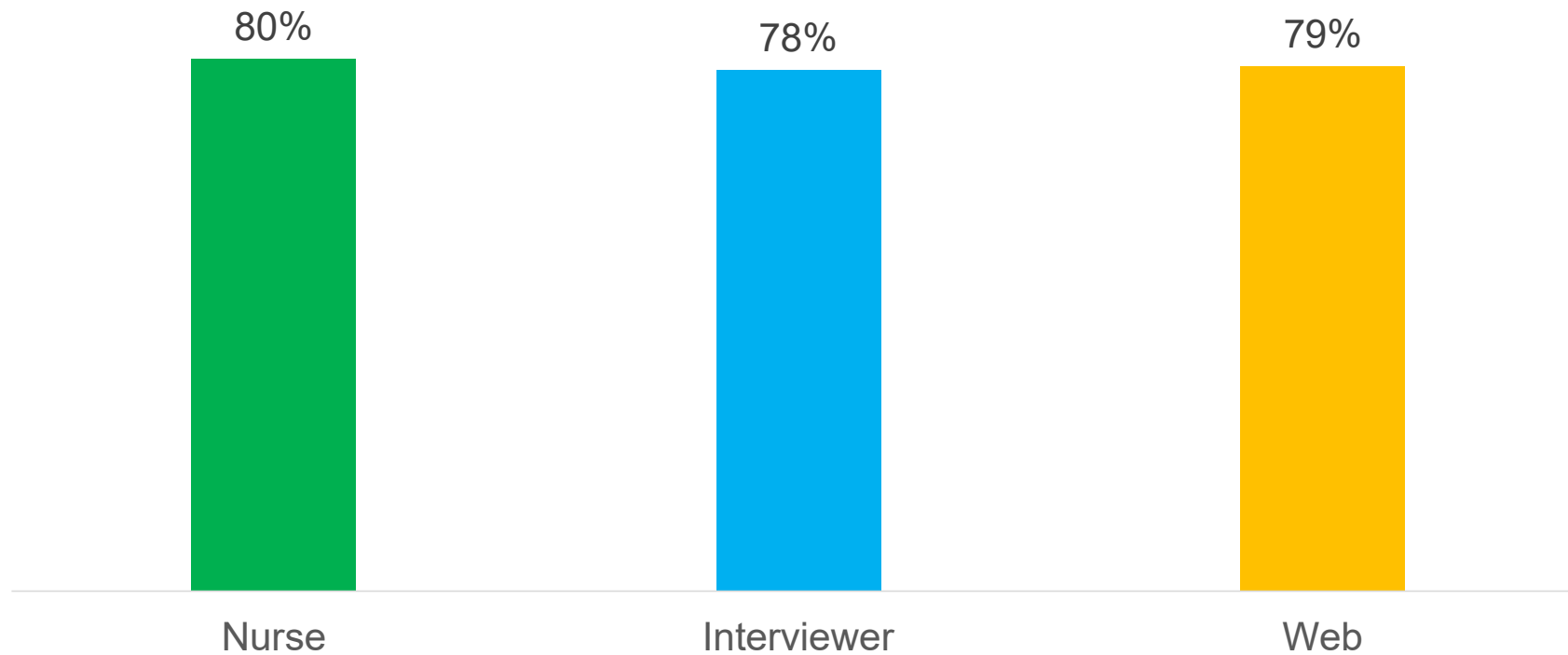


1. Is there a difference in response to the annual interview between nurses and interviewers (and web)?
  - Some evidence suggests that nurses may be less successful at gaining co-operation for social surveys than interviewers: lower response, slower progress (Brown, Gilbert, Calderwood, Taylor, Morgan, 2019)

# No difference in household response for mode of issue

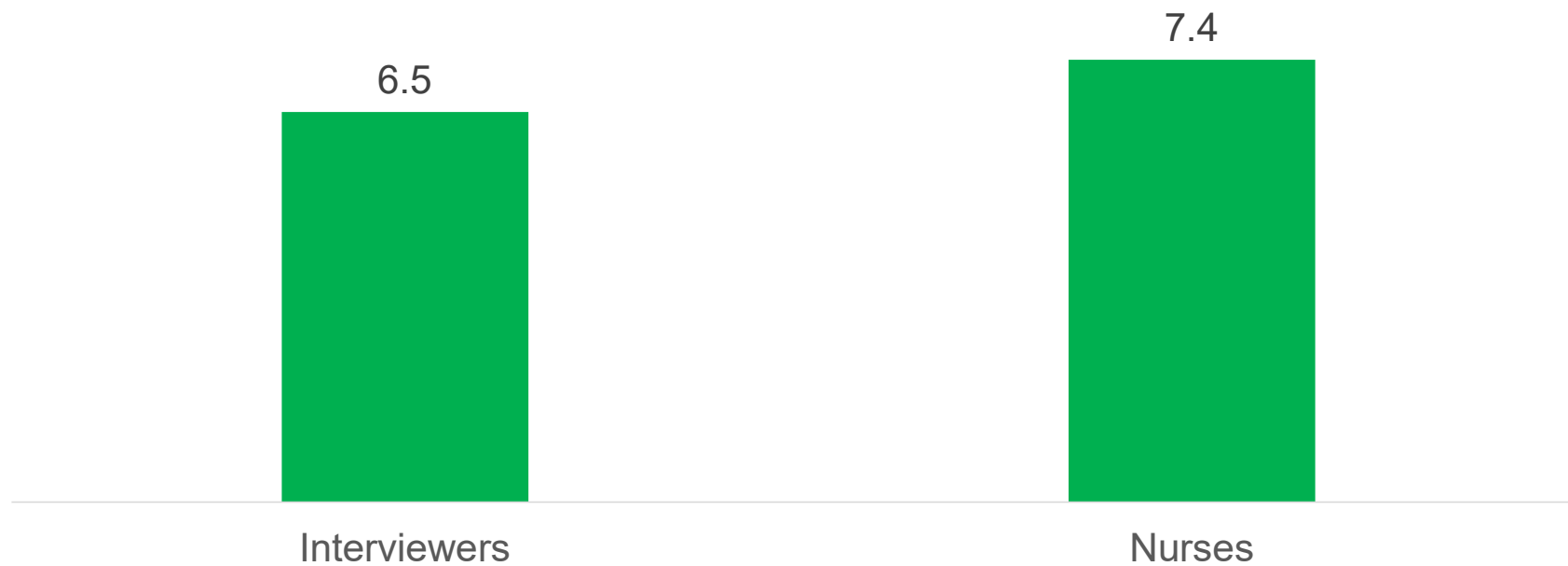
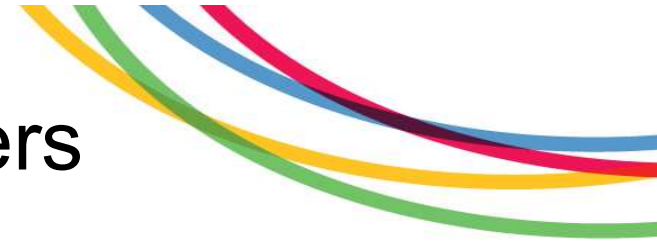


# Within responding households – no differences in adult response rates

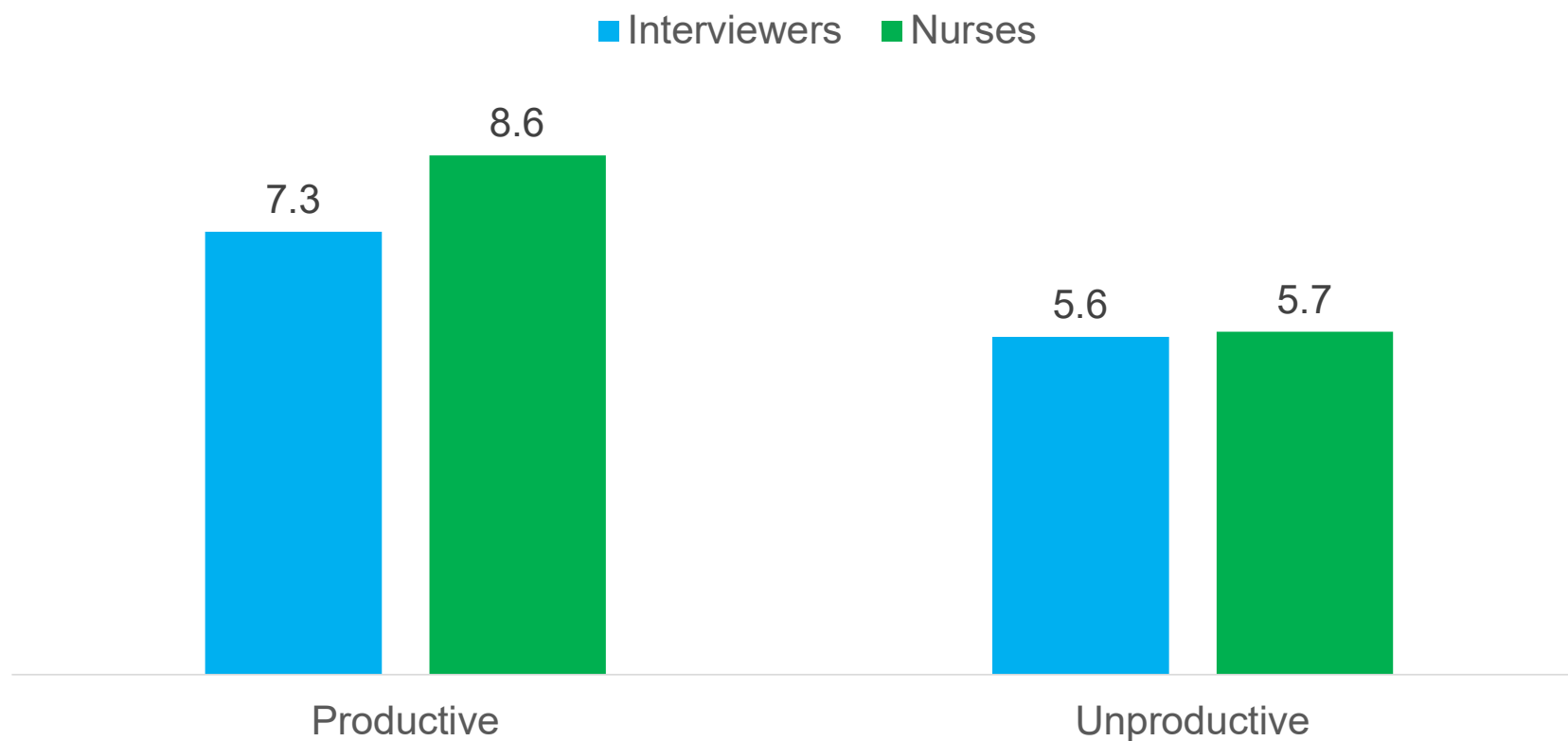
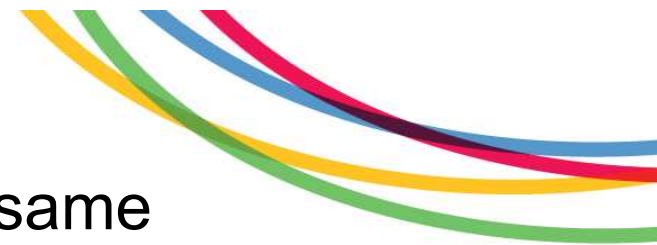




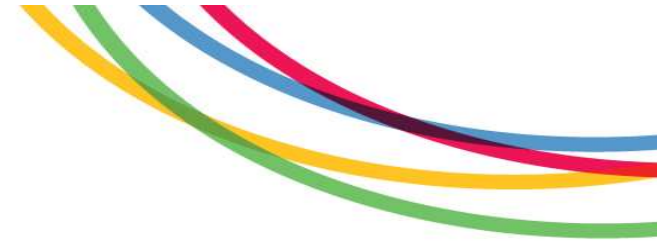
# Nurses make more calls than interviewers



And these calls are on households that end up as productive – nurses working harder to achieve the same response

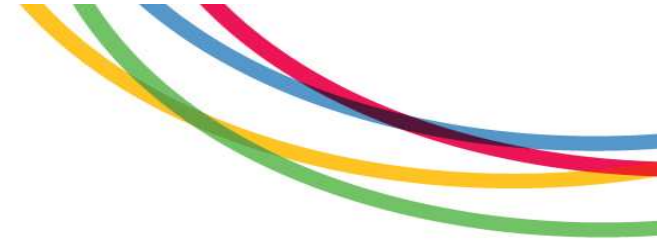


# Main Research Questions



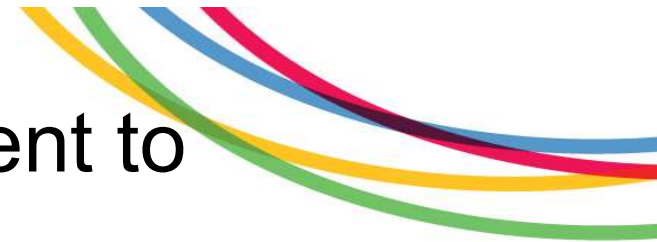
1. Is there a difference in response to the annual interview between nurses and interviewers (and web)?
  - No

# Main Research Questions

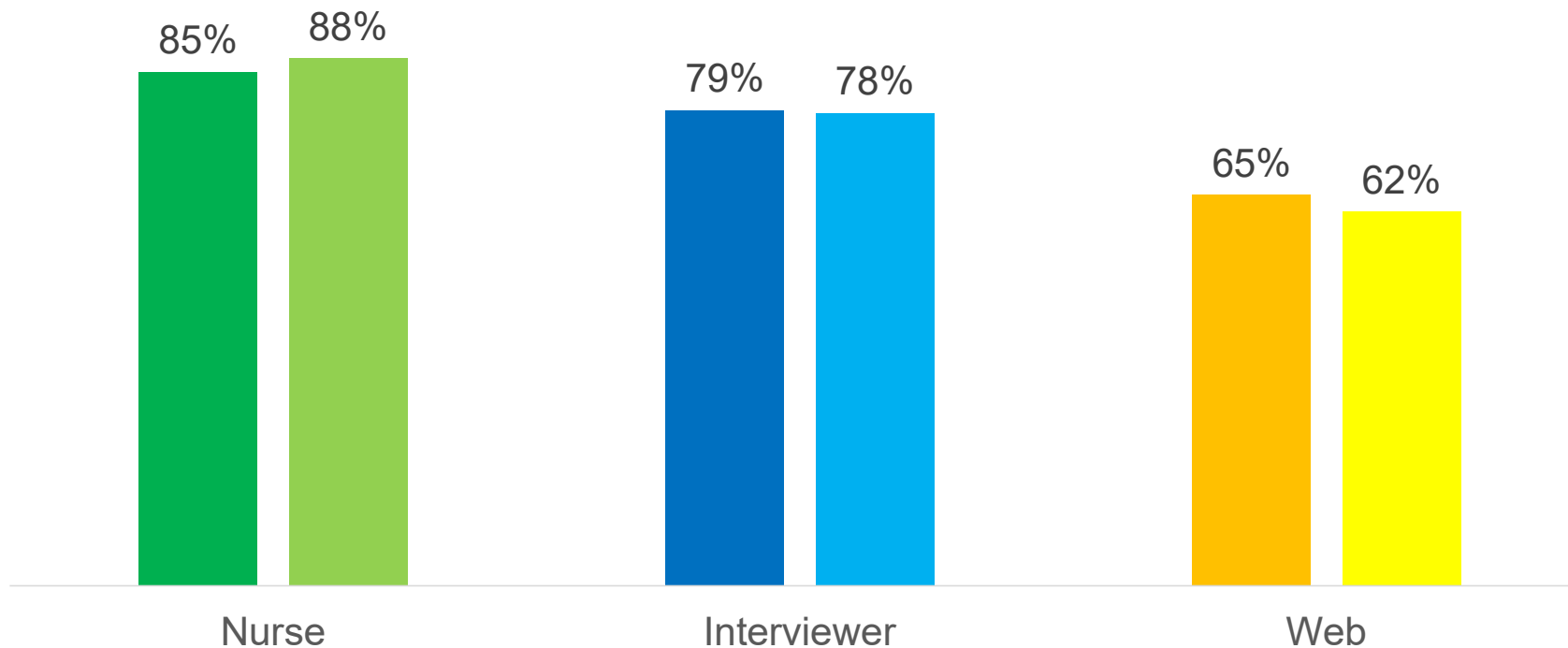


1. Is there a difference in response to the annual interview between nurses and interviewers (and web)?
  - No
2. Is there a difference in take-up of biomeasures between nurses, interviewers, and web?

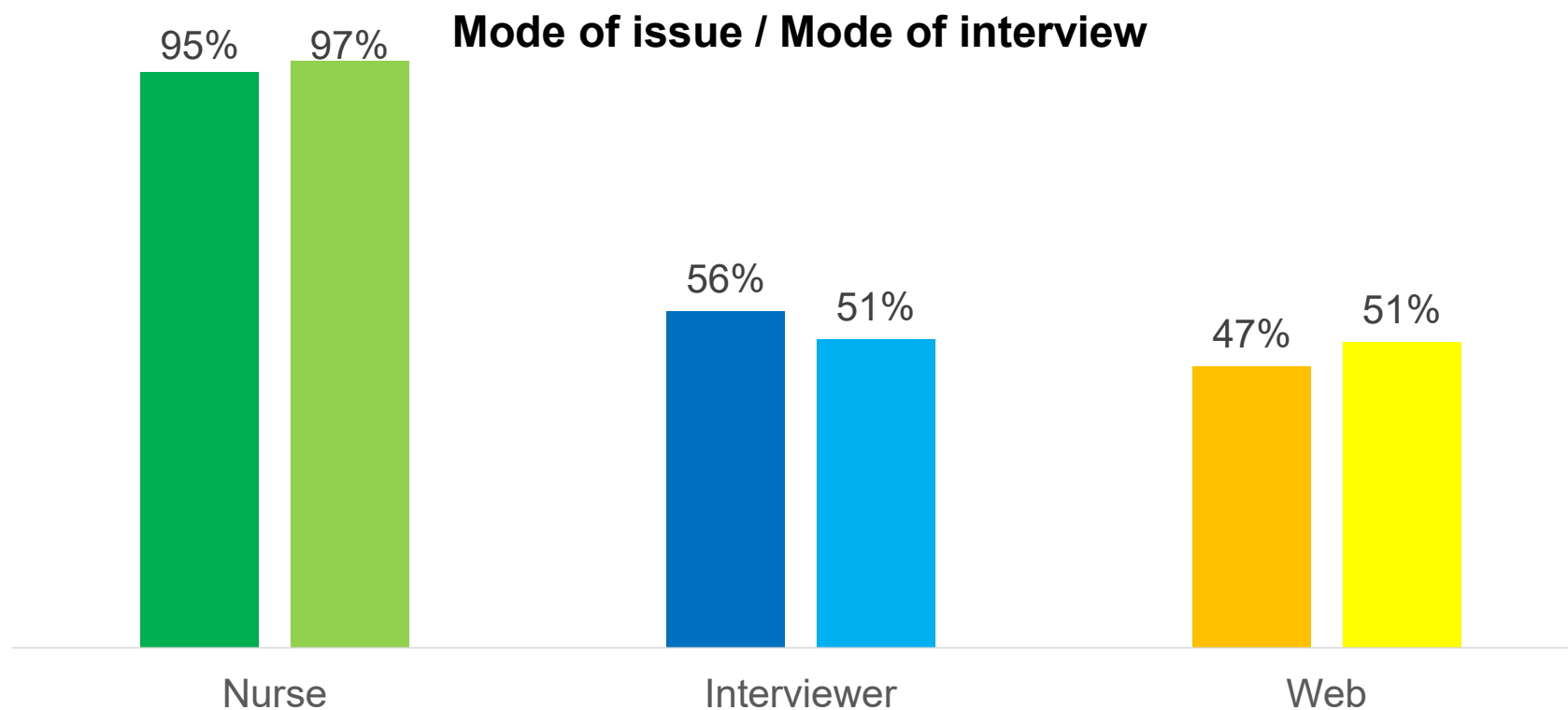
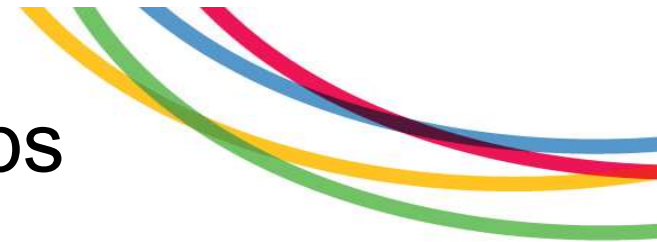
# During the interview, high rates of consent to DBS taken/kit handed over/kit sent



**Mode of issue / Mode of interview**

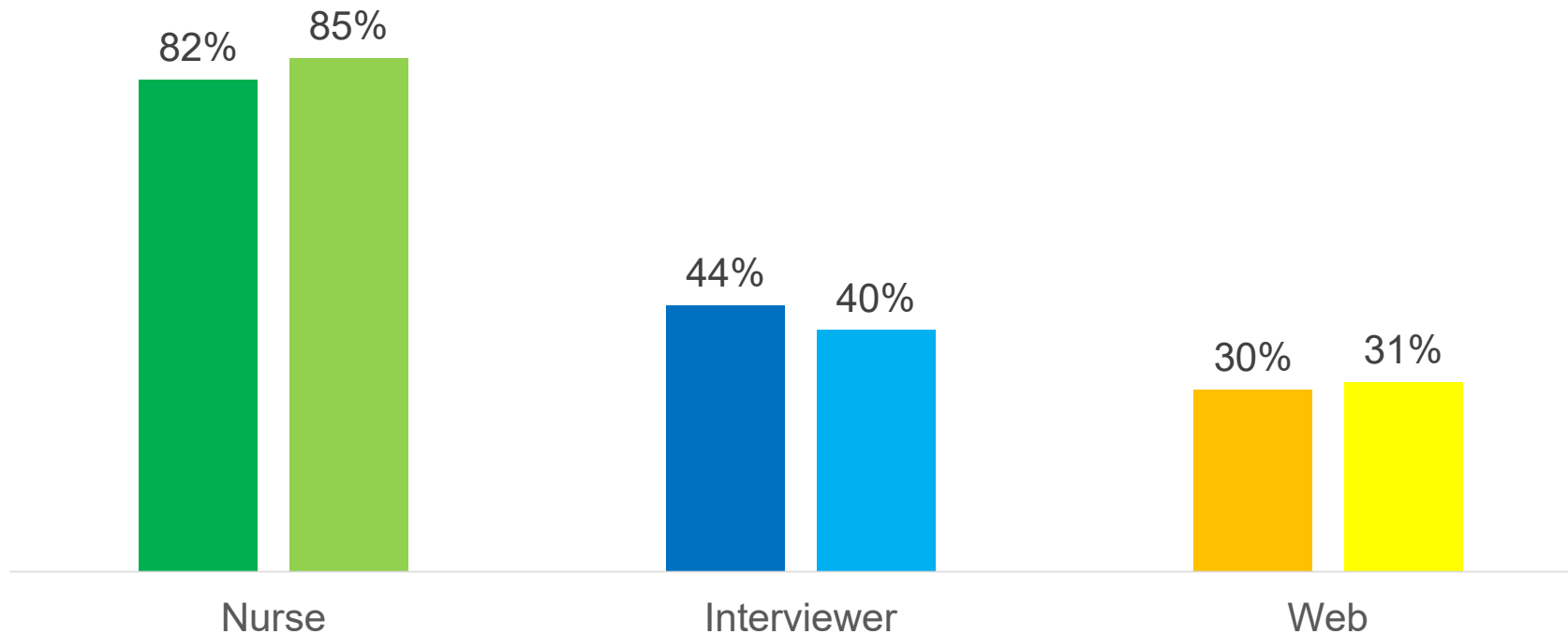


# But lower rates of return of kits for groups issued to interviewer & web



So overall, lower rates when participant is in charge of taking samples and returning them

Mode of issue / Mode of interview



# Main Research Questions



1. Is there a difference in response to the annual interview between nurses and interviewers (and web)?
  - No
2. Is there a difference in take-up of biomeasures between nurses, interviewers, and web?
  - Yes
  - Nurses > Interviewers > Web self-completion

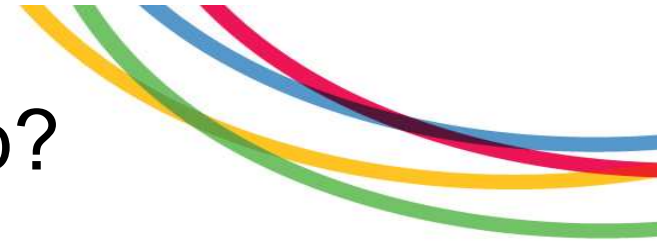


# Additional experiments: Blood pressure

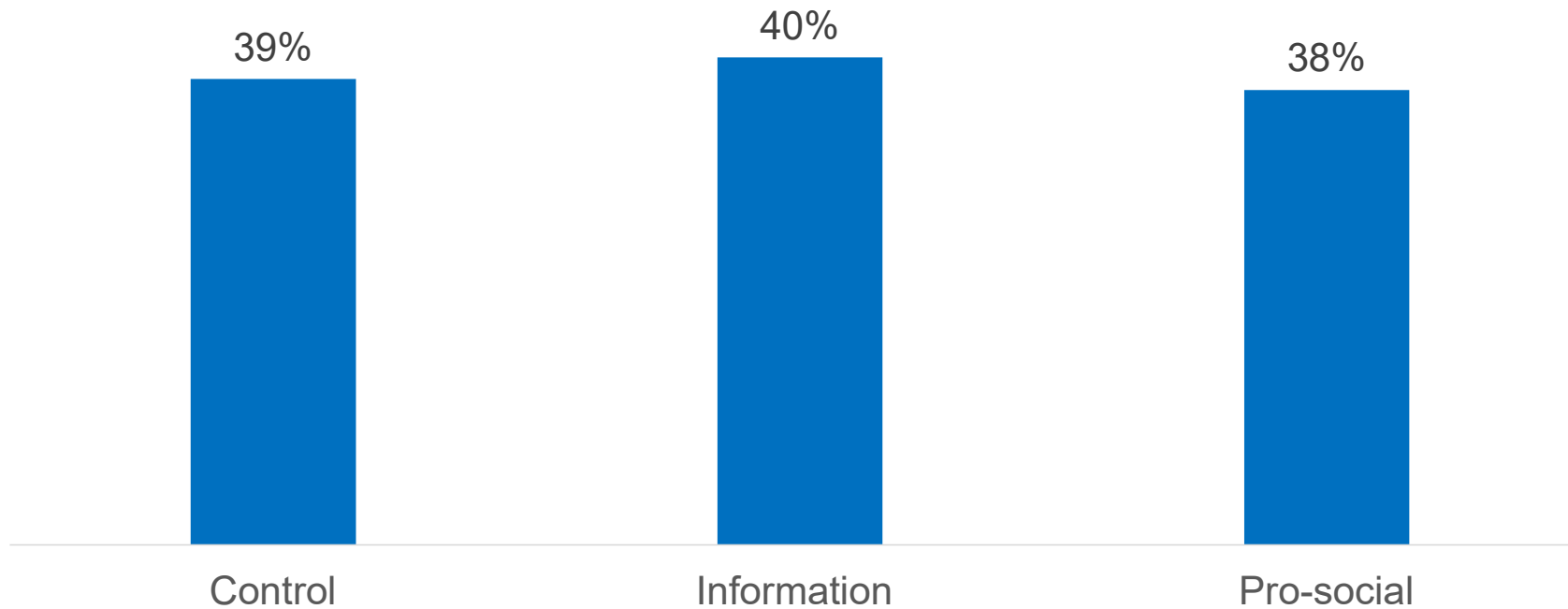


- Try to encourage participants to get their blood pressure measured before interview
- Request in advance letter
- 3 random groups
  - Control: Request to get BP measured
  - Information: Request plus address of local venue for BP measurement
  - Pro-social: Request plus rationale in letter
    - “High blood pressure has been called the ‘silent killer’ with 1 in 10 people living with undiagnosed or untreated high blood pressure. Researchers would like to use *Understanding Society* to investigate the causes and consequences of high blood pressure, but the data would be much less useful if we were not able to get information about blood pressure from a whole range of people.”

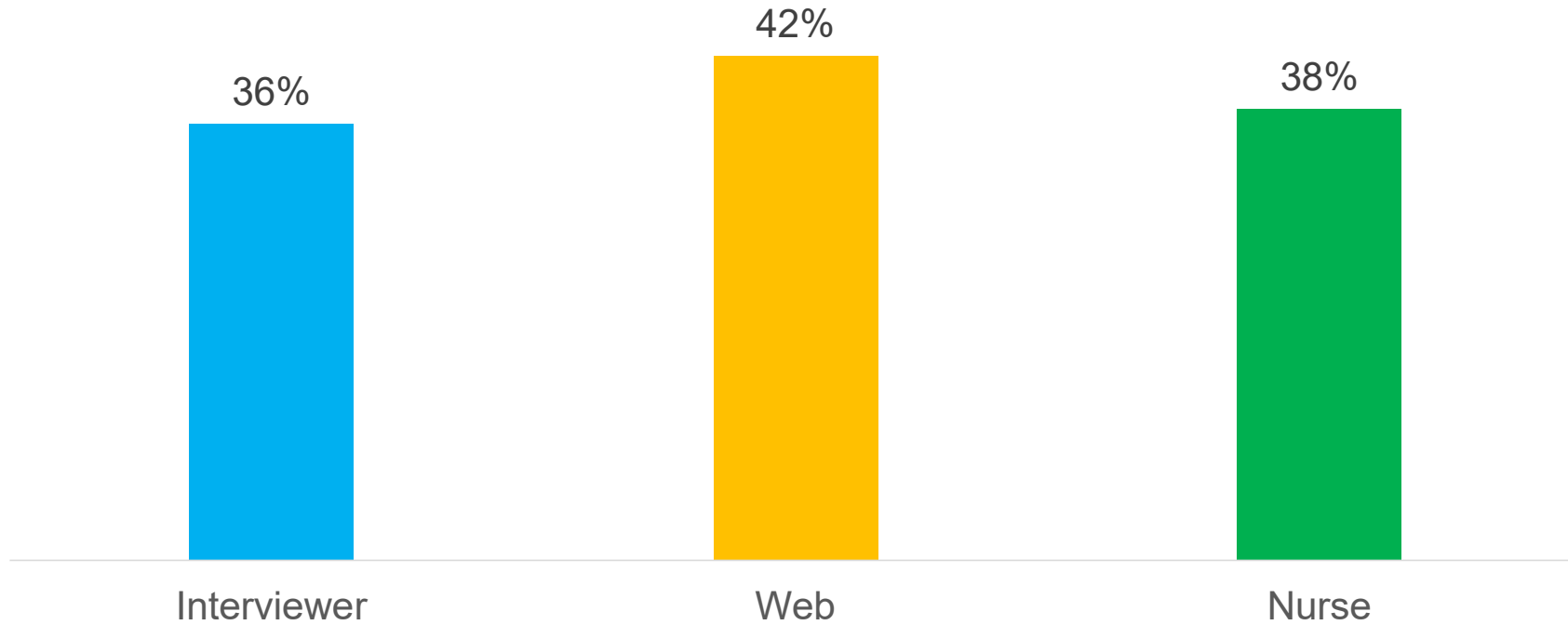
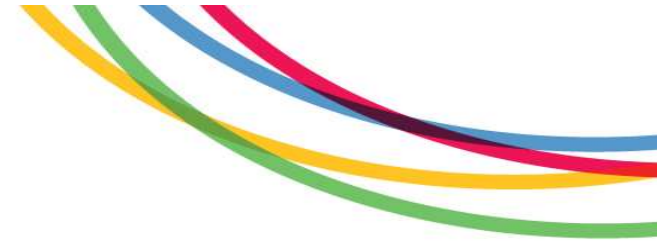
# Did information or pro-social nudge help?



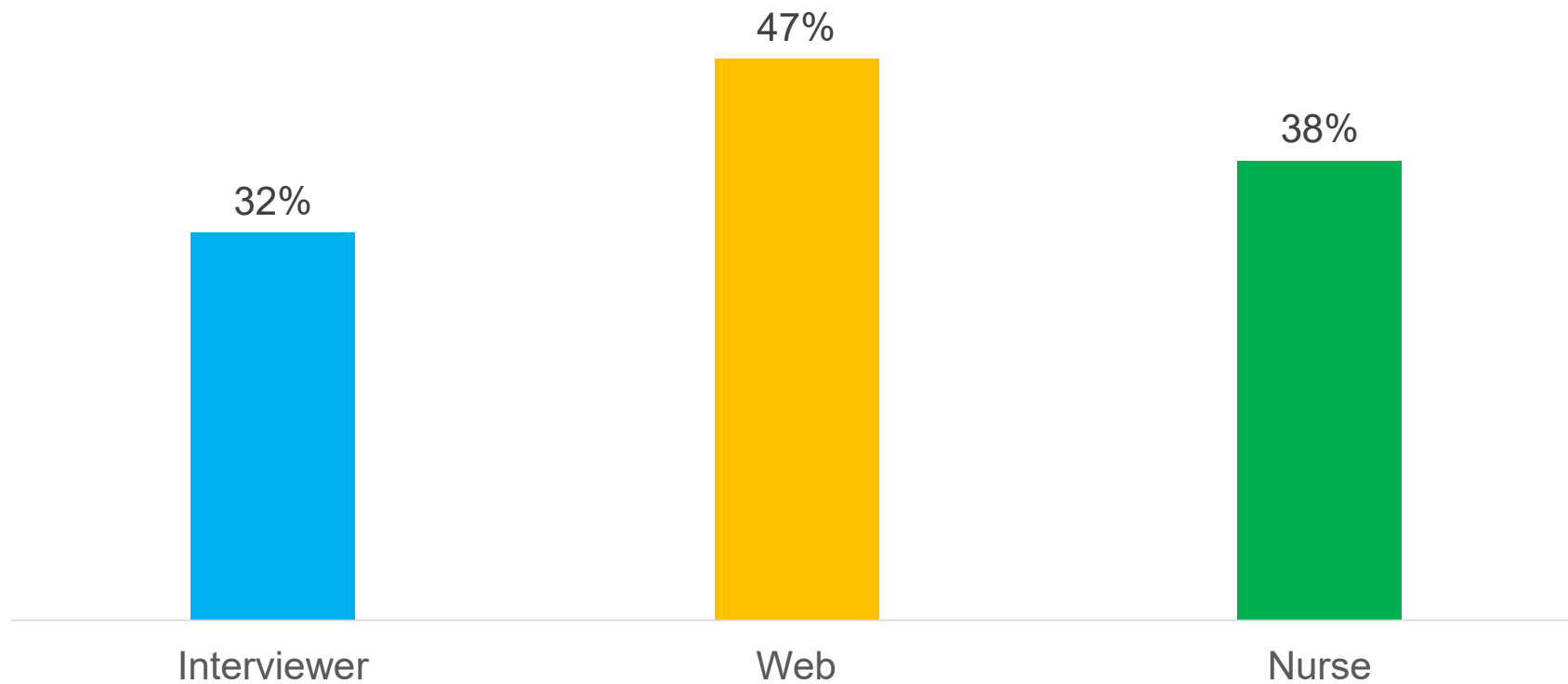
No – and no effect within modes



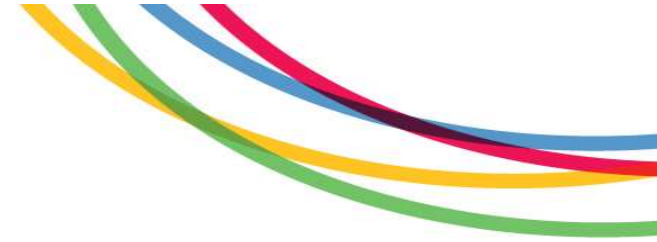
# No significant difference by mode of allocation



But those who completed online were more likely to provide a pre-interview blood pressure

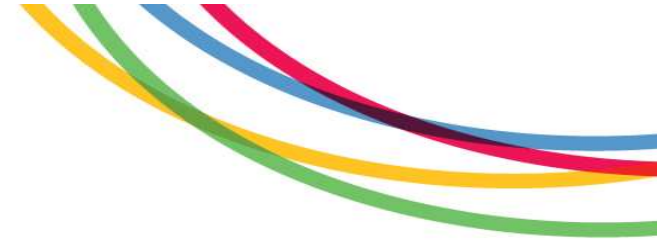


# Additional experiments: Feedback



- Random half of households – participants offered feedback of blood / dried blood spot results
- Feedback mentioned in advance letter, information leaflets, consent documents, questionnaire text

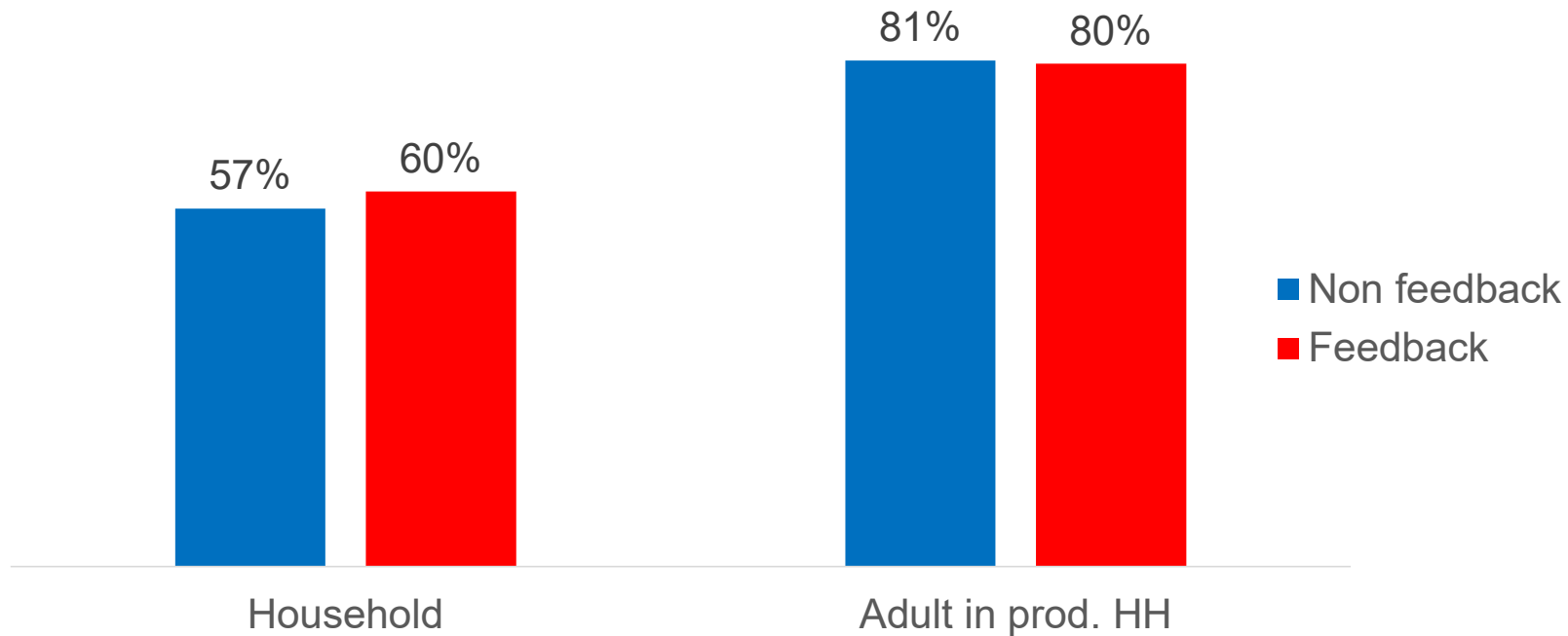
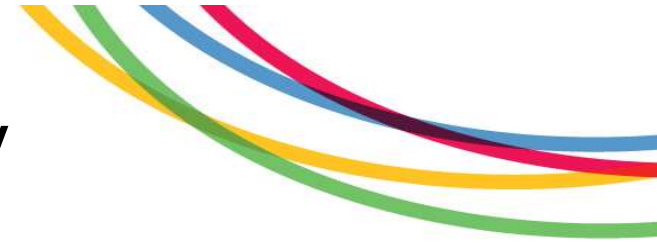
# Other experiments: Feedback



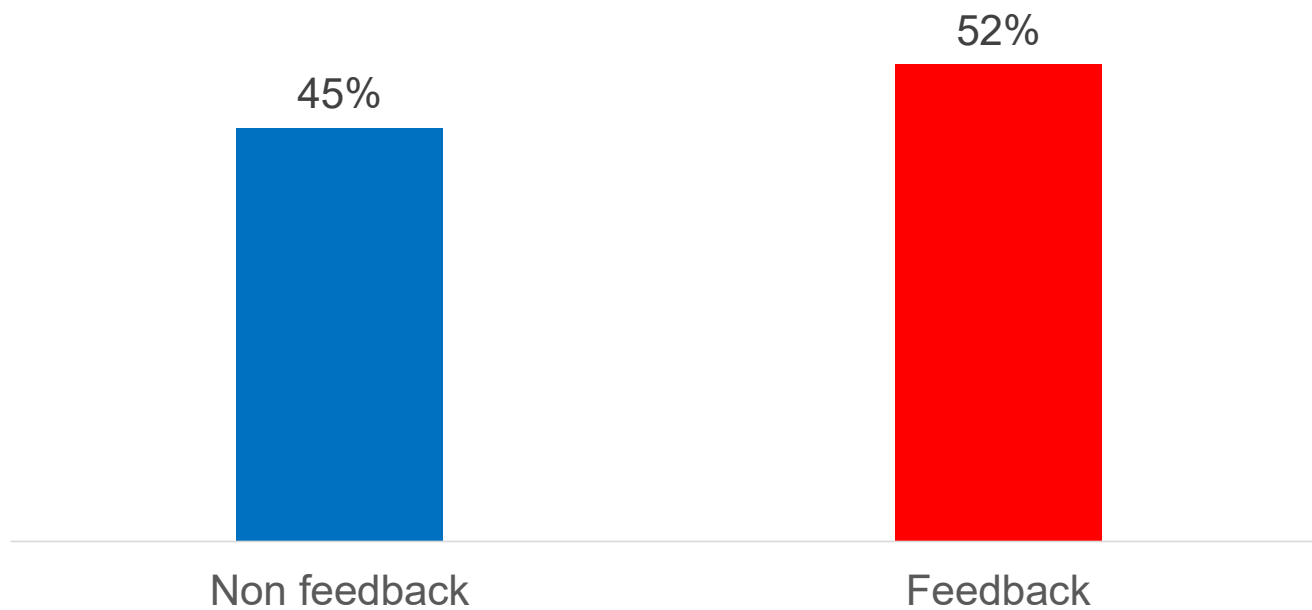
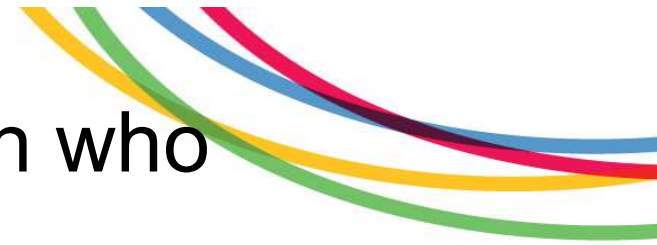
Effect of offering feedback on blood results on...

- Response to the survey
- Giving a blood sample

# No effect of offering feedback on survey response



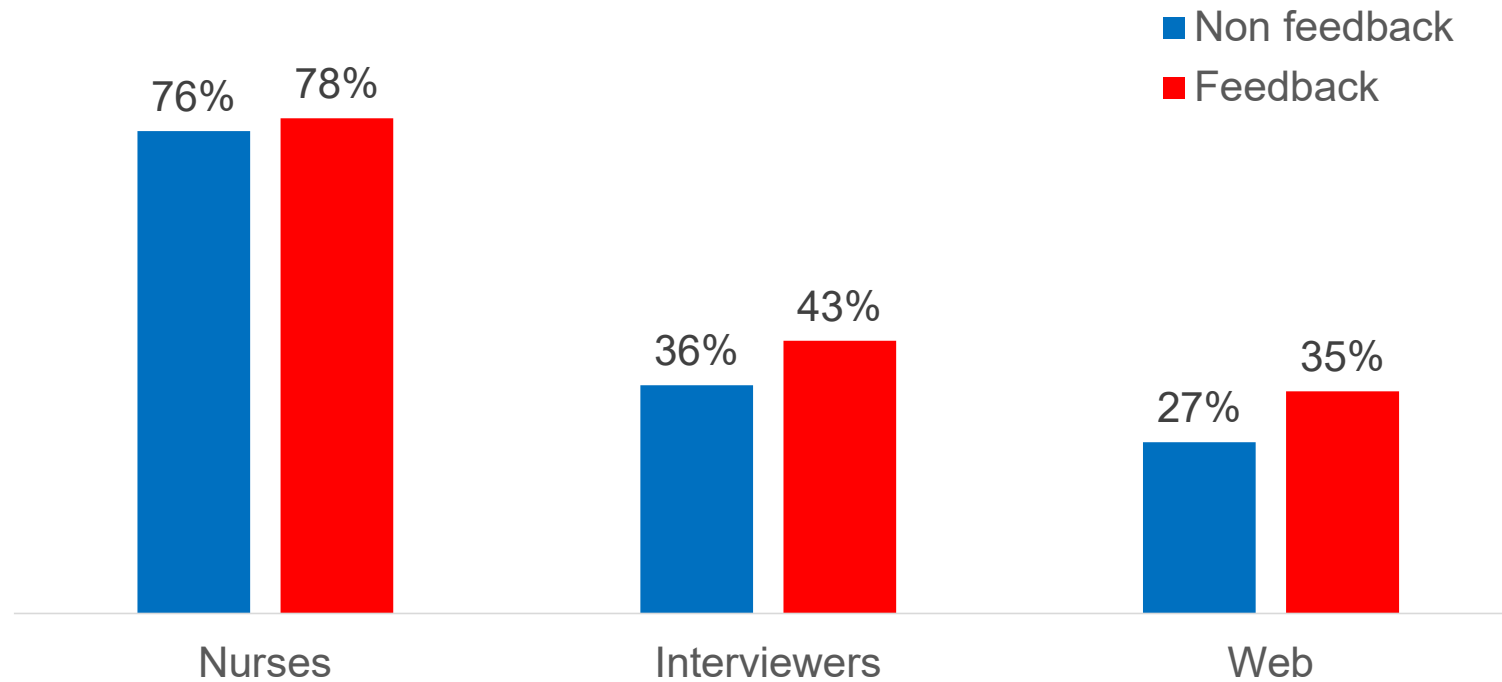
# But feedback did increase the proportion who gave a blood sample



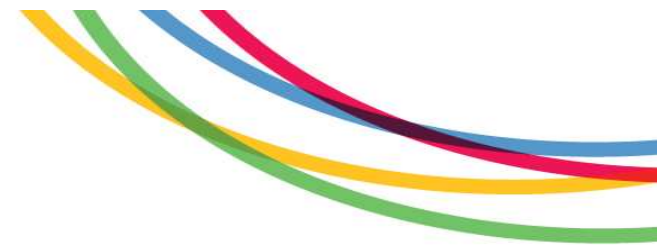
Controlling for participant characteristics, those offered feedback are 1.36 times as likely to give a blood sample (logistic OR)



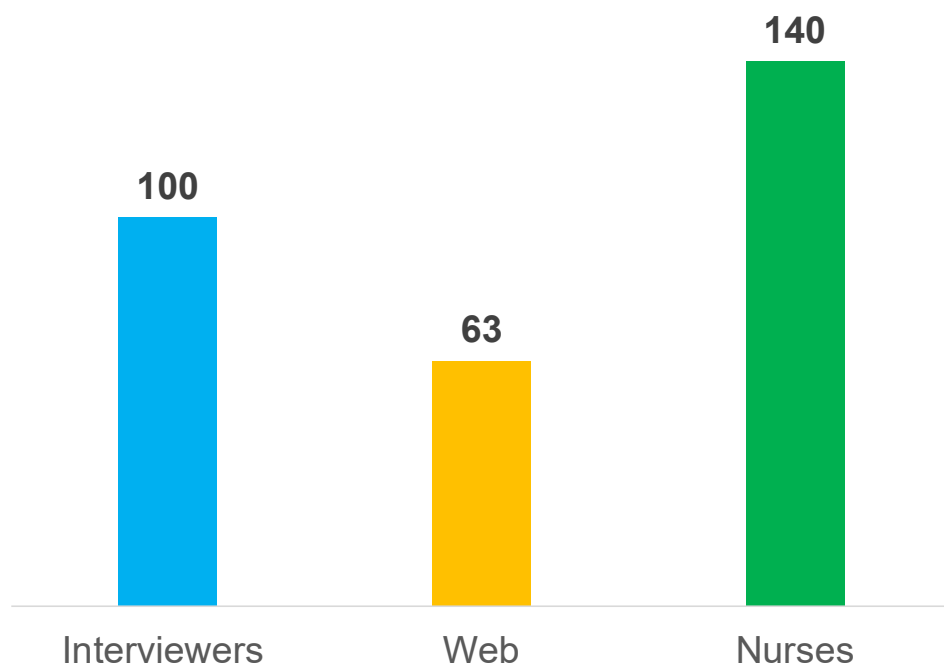
# Feedback had a greater effect for interviewers and web participants



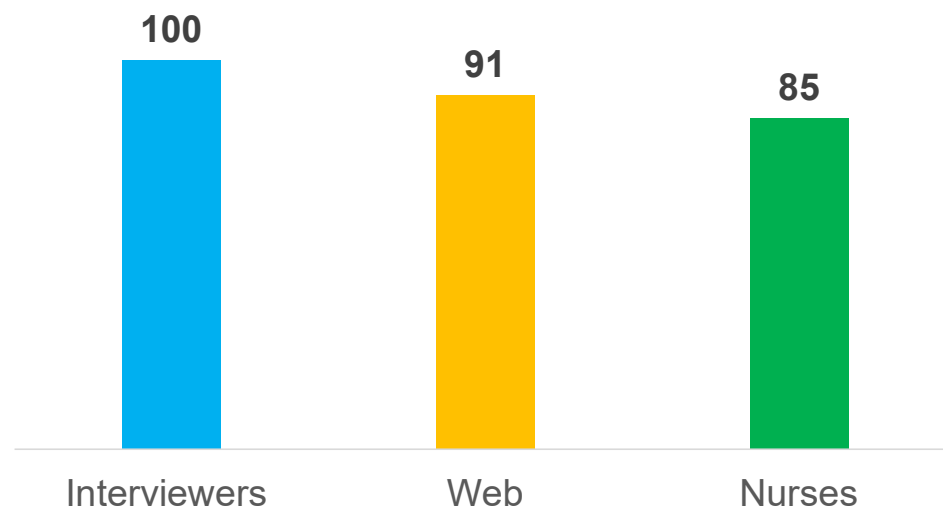
# Early look at costs – compared to interviewers (= 100)



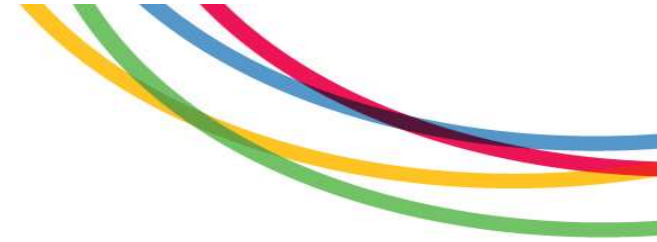
## Per completed interview



## Per returned DBS sample



# Summary

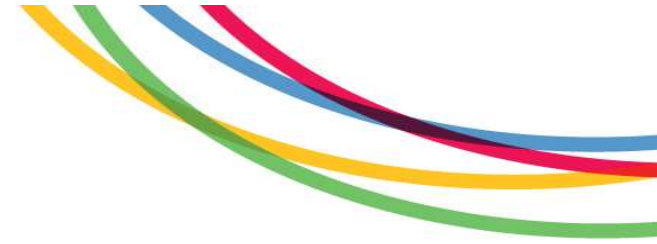


- We were able to use nurses to carry out social interviews at the same level as interviewers
- Interviewers were more effective at getting participants to accept kit to take samples than in a web self-completion mode – but nurses were most successful
- Offering feedback for results was effective, especially in modes with a lower take-up rate
- Nurses were the most expensive per interview, but in terms of returned bio-samples they had the highest success and so per sample were the cheapest

# Next steps...?

- Understanding Society COVID-19 Study, March 2021
- Web-only survey
- Asked people for consent to send blood sample kit to test for COVID-19 antibodies
- 78% take-up rate (62% among web at IP12)
- 69% return rate (51% among web at IP12)
- Increased salience of COVID-19?
- More familiarity with home-testing?
- Possible implementation on main Understanding Society in 2024?

# Thank you



More information online:

- <https://www.understandingsociety.ac.uk/>
- <https://www.understandingsociety.ac.uk/topic/biomarkers-genetics-and-epigenetics>
- <https://www.understandingsociety.ac.uk/documentation/health-assessment>

IP12 data: Will be here soon!

- <https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=6849>