Appendix A.   Detailed Methodology

Questionnaire development

The questionnaire for Wave 4 of the Monitor was developed by NatCen in consultation with Wellcome. The resulting questionnaire contained questions adapted from previous waves of the Monitor in addition to new questions developed for Wave 4 that aimed to explore issues that have become more salient since 2015. Questionnaire development involved cognitive testing in addition to a split-sample experiment on the NatCen panel.

Cognitive testing

Cognitive interviewing methods provide insight into the mental processes respondents use when answering survey questions, thus helping researchers identify problems with question wording and questionnaire design. These methods investigate four cognitive stages: how respondents understand and interpret survey questions, how they recall information that applies to the question, the judgements they make as to what information to use when formulating their answers, and the response mapping process.

The interviews tested new questions that were developed for the Wellcome Monitor survey. The cognitive interviews aimed to test the new questions about knowledge and interest in health research.

A cognitive testing protocol was developed in consultation with the Wellcome research team. The protocol incorporated think-aloud, observation and probing techniques. The questions were tested with interviewer administered techniques where the interviewer read out the survey questions and responses were either read out, displayed on a Showcard or open. The testing explored:

- Comprehension of key terms within the questions;
- Whether respondents were able to select a suitable response option;
- Time frames used to answer the questions;
- Preferences for different question formats and response options;
- Sensitivity of questions and levels of comfort answering them.

Interviews were carried out by researchers at NatCen who are experienced at carrying out cognitive interviews. Interviews were audio recorded with participants consent. They were given £30 cash as a thank you for their time and help.

Participants were recruited for round one and round two through a recruitment agency. A total of 16 interviews were conducted, eight in Crawley and eight in London. The table below shows the composition of the cognitive interviewing sample.

Table **Error! No text of specified style in document.**:1 Cognitive testing, participant characteristics		
Characteristics		**Number achieved**
Gender	Male	8
	Female	8
Age	18-30	5

	31-59	6
	60+	5
Education	A level or above	8
	GCSEs or below	8
Interest in science	Very interested	3
	Fairly interested	7
	Not very interested	4
	Not at all interested	2
University degree	1 BSc – maths & MSc – economics & finance	
	1 currently studying construction	
Occupation	Care manager	
	Student	
	Credit controller	
	Works planner – construction	
	Part-time administrative assistant x2	
	Work experience coordinator	
	Online seller – beauty products	
	Accounting and finance	
	Building surveyor	
	Receptionist	
	Personal trainer	
	Retiree	
	Passenger escort	
	Business development manager	
	Customers services agent	

The interviews were summarized by researchers who reviewed the audio recording of each interview. All interview summaries were written into a structured Excel template. Responses to each test question were recorded, along with observations made by interviewers, any think aloud and the responses to each of the scripted probes. Once the matrix was completed, the data in the matrix was reviewed thematically. The analysis was written into a report and discussed with Wellcome Trust, from which recommendations for the Monitor questionnaire were made.

Split-sample experiment
Previous waves of the Monitor have consistently referred to 'medical research' in the questionnaire. For the fourth wave, a split-sample experiment was conducted on the October 2018 wave of the NatCen panel in order to inform the decision of whether to continue referring to 'medical research' or to switch to 'health research'.

Respondents were randomly split into two groups. One group of respondents were asked the extent to which they were interested in medical research, and half were asked the extent to which they were interested in health research.

Significantly more people said they were very or fairly interested in health research than in medical research (88 per cent compared to 83 per cent). It was decided that for

the fourth wave of the Monitor the questionnaire would switch to using 'health research', reflecting the current terminology used by Wellcome.

Fieldwork

Fieldwork was conducted using the random-probability NatCen Panel[1]. The NatCen Panel is a panel of people recruited from the British Social Attitudes (BSA) survey, a high-quality, random probability face-to-face survey. Respondents interviewed as part of BSA were asked at the end of the interview to join the Panel. For this survey, all panel members recruited from BSA 2017 and 2018 and who had not subsequently left the panel were invited to participate and the random probability design was therefore maintained.

Fieldwork was conducted using a sequential mixed-mode web/telephone design over a four-week fieldwork period to allow those without internet access, or those who might not be 'readily available' to take part. Participants were initially invited to take part online, and web fieldwork ran from 16 November to 16 December 2018, those not completing an online interview were issued to telephone fieldwork which ran from 22 November to 16 December 2018. A total of 2,708 people took part in the survey, of whom 2,336 (86%) completed online and 372 (14%) completed on the phone. A £5 love to shop gift card was sent as a 'thank you' to those who participated.

Response rates are a simple indicator of quality for surveys based on probability samples and are summarised in Table **Error! No text of specified style in document.**:2. This survey achieved a 57% response rate among those panellists invited to participate. When taking account of non-response at the BSA interview and then also at the point of recruitment to the panel, our overall response rate was 15%.

Table **Error! No text of specified style in document.**:2 Survey response	
Response to the survey	
Issued	4,775
Deadwood	0
Achieved	2,708
Survey response rate	**57%**
Overall response	
BSA issued	19,942
BSA deadwood	1,914
BSA productive	7,867
Recruited to panel	4,993
BSA response rate	44%
Panel recruitment rate	63%
Panel deadwood	5
Overall survey response rate	**15%**

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[1] More information on the design of the NatCen Panel can be found at http://www.natcen.ac.uk/media/1484228/Developing-the-NatCen-Panel-V2.pdf.

Questionnaire error

During early data checking, two routing errors were identified in the questionnaire affecting a sub-group of the sample. This resulted in some people not being asked the questions HlthInfWho (source of health information), EthnicCat (ethnicity), or CareResp (whether they have any caring responsibilities). This error was promptly corrected, and participants with missing data were re-contacted to answer the missing data. Overall, this error resulted in 11 participants having missing data at HlthInfWho, and 187 participants having missing data at EthnicCat and CareResp.

Analysis

Weighting

The data used in the report have been weighted to adjust for non-response at three stages: non-response at BSA[2], non-response at point of recruitment to the Panel, and non-response to the Monitor survey itself.

Statistical significance

All estimates have been tested for statistical significance, and all differences between groups reported are statistically significant unless stated otherwise. Statistical testing was conducted at the 95 per cent level[3].

Coding of open-text responses

Three open-text questions about mental health were coded by NatCen (see Main Report, Chapter 8) Code-frames were developed in consultation with Wellcome and were refined following an initial review of the data. The full code frame was as follows:

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[2] BSA weights also adjust for selection probabilities within households.
[3] This means that 19 times of 20 the observed results (for example, differences between groups) are 'real' and not caused by random variation in the sample.

UndMH1: What do you understand by the term 'mental health problem'?

CODE	DESCRIPTION	EXAMPLES
Specific condition named		
01	A phobia	"anxiety, depression, forming obsessions, phobias, etc." "Depression anxiety bi polar schizophrenja phobias anorexia"
02	Panic attacks	"People who suffer from mental health problems may suffer from anxiety /panic attacks." "Problems with interacting with other people, depression, anxiety, panic attacks"
03	Post-traumatic stress disorder	"Mental health problems can cover a number of problems. Depression, autism, bi-polar, dementia, Post traumatic syndrome" "Post Traumatic Stress Disorder (PTSD), depression, anxiety, agoraphobia and other phobias, hyper arousal."
04	Attention Deficit Hyperactivity Disorder (ADHD) or Attention Deficit Disorder (ADD)	"Depression, Axniety, ADHD, Phycosis, OCD, Bipolar, Schizophrenia" "I think there is all kinds of mental health depression Anxiety bipolar personality disorder ADHD and lots more a lot runs in my family"
05	Bipolar disorder (or 'manic depression')	"Mental health issues could be depression, bipolar,anxiety." "Somebody who is suicidal, manic depressive"
06	Depression	"People that get very depressed" "Clinical depression" "Any issues that affects your mental wellbeing, such as depression."
07	Post-natal depression	"Mental health is how a person feels and acts. Like post natal depression, depression, bi pola,and dementia, etc"
08	Dementia (including Alzheimers)	"Various illnesses which affect a persons wellbeing like depression, anxiety bi polar,dementia" "Bipolar disorder, autism, Asperger, alzheimers"
09	An eating disorder (e.g. anorexia, bulimia, binge eating disorder)	"Problems include depression,anxiety,ptsd,anorexia and bulimia amongst others." "Anything that affects the health of your mind, including but not limited to, depression, eating disorders, bipolar etc"
10	Nervous breakdown	"Nervous breakdown, anxiety, panic disorders."
11	A personality disorder	"Behavioral problems, Personality problems or medical problems relating to how one is feeling or thoughts they are having." "Depression, anxiety, problems with eating, personality" "Depression Schizophrenia Addiction OCD Personality Disorders"

12	Psychosis or schizophrenia	"psychotic illnesses such as schizophrenia" "psychotic episode depression schizophrenia anxiety delusions hallucinations" "Anything from anxiety and paranoia to depression and mental disorders such as bipolar or psychosis."
13	Obsessive compulsive disorder	"Any mental health problem from anxiety to OCD to schizophrenia." "People suffering with anxiety/ depression/ obsessive disorders."
14	Seasonal affective disorder	
15	Alcohol or drug dependence	"Depression, alcohol abuse, loneliness,aging financial problems that are often related" "People with addictions that need help to combat those."
16	Any other anxiety disorder	"People with depression, anxiety, ocd, bipolar disease. Many people are undiagnosed." "There are different types of mental health problems, I think the most common mental health problem is anxiety brought on by stress from work and/or money problems."
17	Any other mental, emotional or neurological problem or condition	"Insomnia" "People with special educational needs"
Specific condition not named		
20	Generally described as an illness or a condition related to the mind or brain	"Health problems that stem from, physical ailments of the brain, brain disorders" "Symptoms relating to disorders of the mind" "Problems relating to the brain and memory" "Where a person suffers from a condition that effects their state of mind" "Ilness affecting your brain function, emotional health" "Illnesses which relate to how people feel and think rather than physical symptoms alone." "People with mind problems"
Other codes		
995	Other relevant answer not in code-frame	• Causes, such as stress of modern life, substance abuse, trauma. • Impacts, such as symptoms, impact on personality, wellbeing, health. • Whether MH issues are severe or not • Whether MH issues can be cured • Whether MH issues are real or not • Whether MH are diagnosable • Whether MH issues are something that can be experienced by anyone
996	Vague or irrelevant answer	"It's complex" "Yes"

997	Editor unable to code	
998	Refused	
999	Don't Know	"I don't know the answer to that and that is from experience."

MHResAim: What do you think mental health research **aims to achieve**?

CODE	DESCRIPTION	EXAMPLES
1	Understanding how mental health conditions/the brain works	"Understanding of why people get mental health illness and what can be done to prevent and / or treat it." "To understand underlying factors which may cause mental health issues" "Clarification of what's going on in your hear head."
2	Developing ways to prevent people developing mental health conditions	"Understanding of why people get mental health illness and what can be done to prevent and / or treat it." "find new ways to prevent / cure mental health" "How to prevent and cure and understand mental illnesses."
3	Developing ways to help people manage mental health conditions	"To alleviate the distress caused by any mental health disturbance" "How to help someone to understand and control it better instead of using tablets"
4	Developing ways to cure or treat mental health conditions	"Understanding of why people get mental health illness and what can be done to prevent and / or treat it." "find new ways to prevent / cure mental health" "cures/alleviation by therapy or drugs"
Other codes		
995	Other relevant answer not in code-frame	
996	Vague or irrelevant answer	
997	Editor unable to code	
998	Refused	
999	Don't Know	

MHResInv: What sort of things do you think researchers do to understand mental health problems?

CODE	DESCRIPTION	EXAMPLES
1	Lab-based scientific research, e.g. • Drug development/trials • Brain scans • Developing/trialling new therapies • Etc.	"Drug trials and research into how the brain works to find out if certain therapies are beneficial" "Test on Animals, Sometimes paid Human Trials, Just guessing." "MRI and other scans on the brain and psychological research" "Studies on affected groups, drug trials, social research" "Interviews, brain scans, testing of hormones, diaries, studies, A LOT!" "Study people, behaviour, etc. Trial new drugs." "clinical trials, studies, obtaining anonymous medical records"
2	'Social' research, e.g. • Surveys • Qualitative interviews • Ethnography • Environmental studies • Longitudinal studies of individuals groups • Etc.	"Surveys Interviews Focus groups" "Conduct interviews, compile case studies, conduct questionnaires, undertake physical tests" "Studies on affected groups, drug trials, social research" "Survey sufferers and see how trends change over time, giving an insight into what social/economic/etc. pressures may contribute." "i don't really know. I assume they do such things as surveys, studies and interviews."
Other codes		
995	Other relevant answer not in code-frame	
996	Vague or irrelevant answer	
997	Editor unable to code	
998	Refused	
999	Don't Know	