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Consultation response: Health Index (Beta Release)

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Office for National Statistics

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Accessibility

All material relating to this consultation can be provided in braille, large print or audio formats on request. British Sign Language interpreters can also be requested for any supporting events.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles, available here https://www.gov.uk/government/publications/consultation-principles-guidance.

If you have any complaints about the way this consultation has been conducted, please email: ons.consultations@ons.gov.uk.

Background

The Office for National Statistics (ONS) is developing a composite Health Index. The proposal for a health index was made in the 2018 annual report of the government's then Chief Medical Officer (CMO), Dame Sally Davies, entitled Health 2040 – Better Health Within Reach.

The idea of the Health Index was to be inclusive in the concept of health, incorporating measurement not only of health outcomes, but also of factors which are known to contribute to health at both individual and collective levels.

The ONS released a provisional, or 'beta' version of the Health Index in December 2020, covering England at upper-tier local authority (UTLA) level with data for the years 2015 to 2018. It provides an illustrative presentation of what a Health Index could look like and how this could enable new analysis.

We ran this consultation because we plan to develop this version of the Health Index into a finalised product, and are keen to understand which aspects of the beta version are the most useful, and how it can be improved. We welcomed feedback from anyone with an interest in health and health policy, but in particular, from analysts working in government, local government, business and the third sector.

We would like to thank all respondents for their valuable feedback. The feedback received will inform design decisions for developing the 'full' version of the Health Index following the beta, for release later in 2021.

Summary of responses

The Health Index consultation ran for three months, from 3 December 2020 to 3 March 2020. During this period there were several events to promote the release and consultation including webinars by the Health Foundation and Royal Statistical Society's Official Statistics Section, and roundtables hosted by the Royal Society of Public Health and the Health Foundation, engaging potential users in central government, local government and the voluntary sector.

In total, we received 131 total responses. These consisted of:

- 46 questionnaire responses from the public
- 42 questionnaire responses from analysts
- 8 questionnaire responses from government decision-makers
- 14 questionnaire responses from other respondents
- 21 responses via email

Responses could represent individuals or organisations, and some respondents provided feedback based on the views of multiple organisations. For example, the Royal Society of Public Health considered perspectives collected in their roundtable events.

The majority of responses were supportive of both the concept of a health index in general, and the ONS's beta version as a means of achieving that concept.

Many suggestions were made for improving the Health Index's content, methodology and presentation, which we will be critically considering with our expert advisory group. Amendments which we can act upon will be incorporated into the next version of the Health Index, to be released later in 2021, and others will be considered for improving the Health Index over a longer period of time.

The most frequent suggestions which ONS will be improving for the next release in 2021 are:

- **Increased disaggregation.** Many respondents requested we present Health Index scores for smaller geographies, including some users who stated the Health Index would not be useful to them at its current upper-tier local authority (UTLA) level. There was also much interest in presenting demographic splits, such as Index scores by age and sex.

  To address this feedback, the ONS team are aiming to present all indicators in the next version of the Health Index at lower-tier local authority (LTLA) level. We are also investigating what could be presented at even lower geographies, and for demographic breakdowns, for future releases.

- **Clarity on appropriate use.** Respondents named many potential uses for the Health Index, both for their own analyses and how they would want others to use it. They also suggested case studies on how and when the Health Index should be used would be helpful, and some expressed confusion or concern over how the Health Index differs from existing products.

  We agree that the Health Index and its broad data coverage will have plenty of applications, but some uses suggested were more suitable than others. As such we will present case studies of analyses the Index can support, and present these alongside data visualisations so these messages are clear. We will also clearly compare and contrast the Health Index with other existing health data repositories and frameworks so users can understand which tool is most useful for their projects.

- **Health Index content.** Many respondents suggested further information relevant to health which they felt the Health Index should include. The list of recommended topics is presented later in this document.

  We have begun a detailed review of all suggestions within the consultation that relate to data. Where concepts or alternative measures meet the criteria for inclusion in the Index, we are investigating potential data sources and will include them where possible. We have sourced data for some already, and this work will form an integral part of the ongoing development of the Health Index.

- **Improvements to weighting and methodology.** Various suggestions were made for changes to weighting, imputation and factor analysis approaches. These ranged from general amendments to how these were conducted for the beta Health Index, to the positioning of specific indicators within domains and subdomains.

  The ONS will develop subdomain weighting for the next version of the Health Index, likely with a participatory methodology using our expert advisory group, but also considering alternatives mentioned in this consultation. The factor analysis process for determining weights at indicator-level will be compared to other suggestions made, and will be tested with changes to indicator positions recommended here.

Detailed responses

This section will go through the consultation questions in turn, and provide details of what the responses said and the ONS response for each.

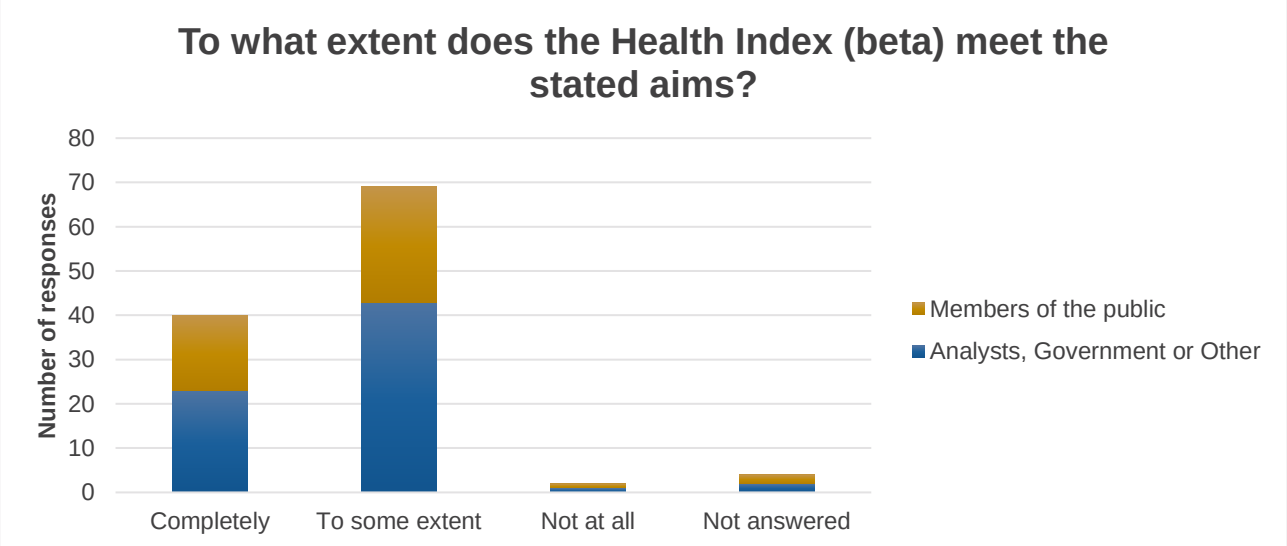
Meeting the aims

All respondents were asked: To what extent do you feel the Health Index as we have presented it fulfils the aims we presented? (completely, to some extent or not at all). These aims being:

- to improve the health of the nation by helping to focus public debate and policy attention across government on a broad concept of health and 'healthiness';
- to do this by providing a highly visible, top-level indicator of health, independent of specific policies and not limited to healthcare availability and quality;
- to sustainably track change over time, with potential to break down changes in health to monitor equity and better understand the drivers of health for different groups.

Most respondents felt that we had met these aims to some extent (69 respondents), or completely (40 respondents), as shown in Figure 1.

Figure 1: Chart showing the extent to which respondents felt the Health Index (beta) meets the stated aims



1. Numbers of responses presented do not account for how many individuals or organisations an individual response represented.
2. Responses received via email did not necessarily respond to each consultation question in turn. As such, they are only included in the chart where they answered at least one of the questions with a set response format.

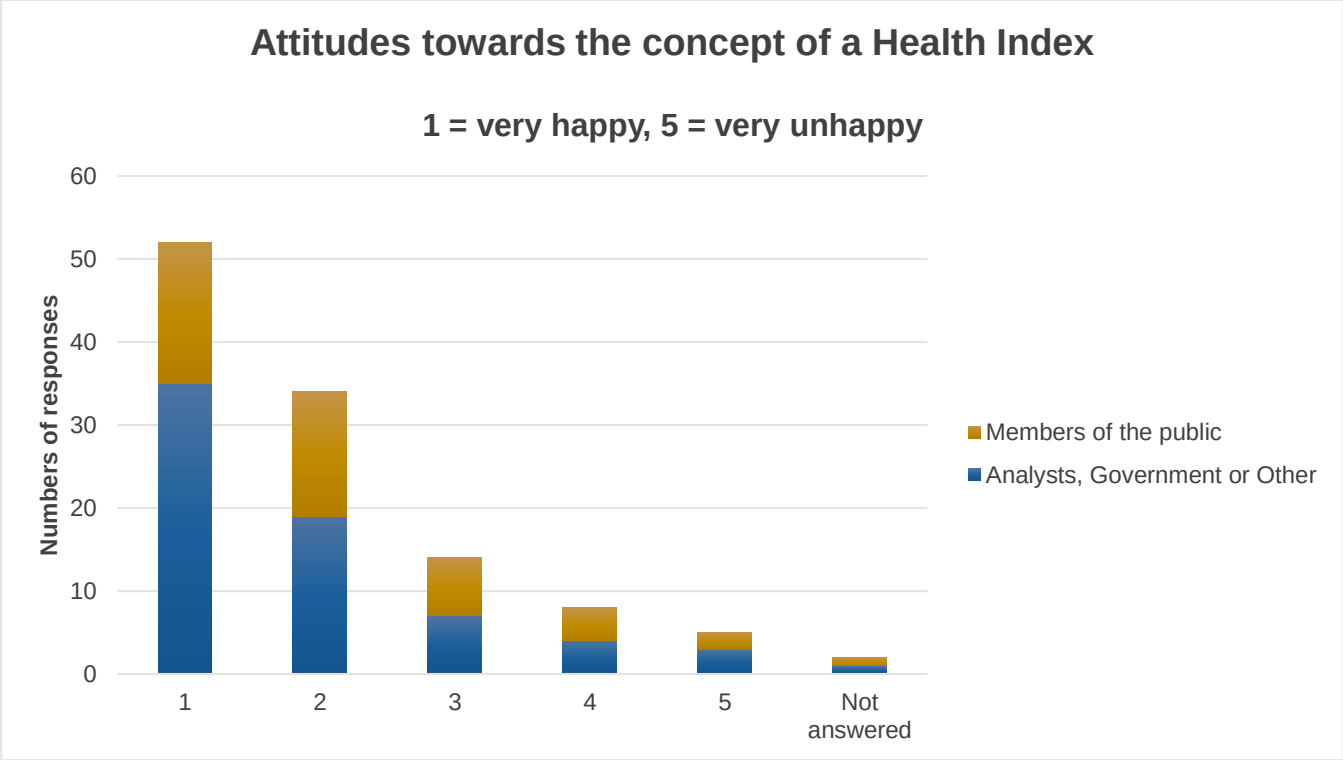
Our response: It is encouraging that so many respondents felt we had gone some way to achieving these aims, though we recognise that most felt these were not fully met. As we continue with the work to develop the Health Index, we hope to more fully realise these aims.

Concept of a Health Index

All respondents were asked: On a scale of 1 to 5, where 1 is very happy and 5 is very unhappy, what do you think of the concept of a health index as a way to measure health?

Most respondents were either happy (34 respondents) or very happy (52 respondents) with the concept of a Health Index, as shown in Figure 2.

Figure 2: Chart showing how happy respondents were with the concept of a Health Index



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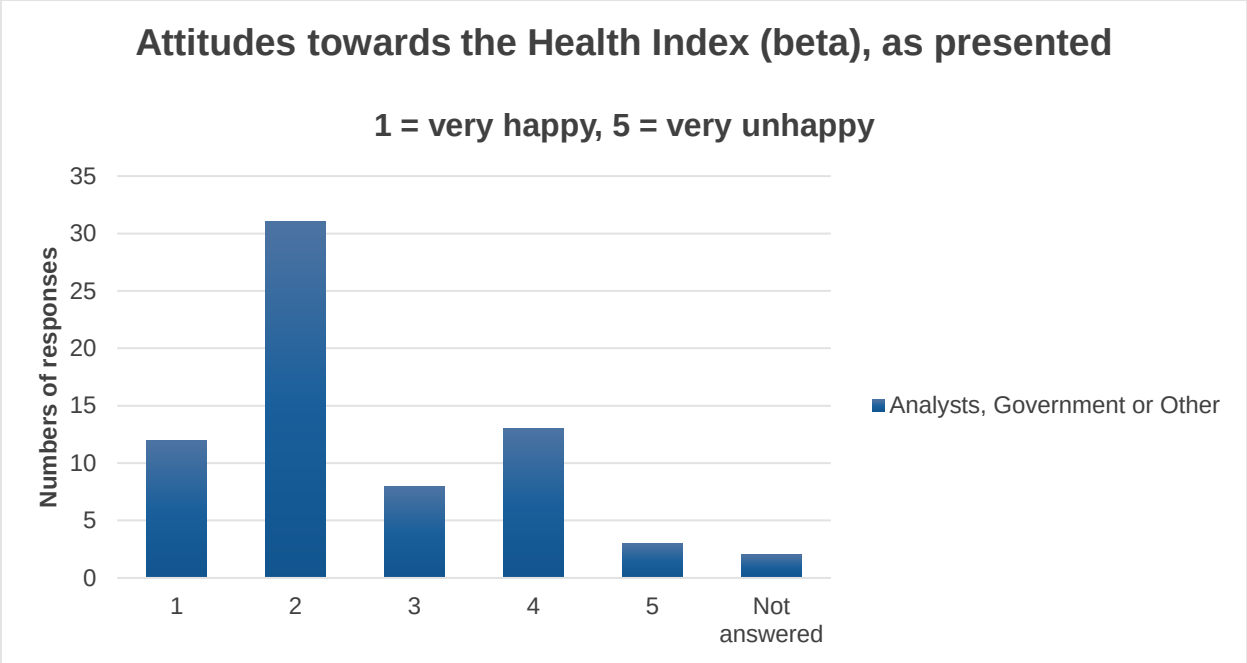
Analysts, Government decision-makers, and others were also asked: On a scale of 1 to 5, where 1 is very happy and 5 is very unhappy, what do you think of the Health Index as presented in this consultation, as a way to measure health?

This was answered by 67 respondents. Responses to this question were a little more mixed than for the previous question, although a majority were still either happy (31 respondents) or very happy (12 respondents), as seen in Figure 3.

Figure 3: Chart showing how happy respondents were with the Health Index, as presented



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The written responses for further questions added support for the concept of a Health Index, and many positive comments were made in this area. There were a lot of comments providing general support or appreciation for the work we have done, and plan to do. Some more specific comments included being positive about the following:

- That the Health Index is based on a broad definition of health, including risk factors and wider determinants, as well as health outcomes; and the coverage achieved.
- That this broader definition of health also means there is a focus on prevention and health promotion, as well as outcomes and treatment.
- The opportunity to focus on health, putting health centre stage, to measure it alongside economic measures such as GDP, and promote health as an asset.
- The ability to track changes over time.

- That the Health Index can provide the single value for health that can also be broken down to:
    - Explore what is driving change.
    - Focus on a particular aspect of the Index.
    - Highlight important areas.
    - Give an insight into the priorities for the nation's health.
- The ability to break down by geography and compare different areas (see the section on Geography for more detail).
- That it could be suitable for use in a wide range of sectors and for a range of purposes (see the section on Uses of the Health Index for more detail).
- That it is being produced by ONS and is independent of Government.
- That the work done is open and comprehensive in coverage.

There were, however, also some concerns raised, the most common of which involved concerns about misuse of the Health Index, specifically:

- Not being used to affect change.
- Stigmatising sections of the population, such as by the media reinforcing regional stereotypes, by organisations for financial gain, and in reinforcing existing challenges in the health sector (especially mental health).
- Misallocation of resources by targeting areas that result in the biggest change in the Index value, neglecting other areas; because measures in the Health Index do not necessarily equate to the best areas to target; or by giving the impression that interventions focusing on specific aspects of health are too narrow to be effective.
- Using the overall Index value at all, with the preference being to highlight the key indicators for change. There is also a concern that having an overall Index value may detract from focusing on single-issue health initiatives, or decrease their perceived value.
- Being used as a performance management tool.

- Local authorities measuring their performance against the Index value, rather than a healthy benchmark, and this leading to a lowering of standards.
- The Index becoming too complicated and trying to achieve too many things.
- The responsibility for differences between areas being placed on local government or individuals, rather than acknowledging the role of national government in this.
- It is likely to be miscommunicated and misinterpreted, especially by non-technical audiences.

Several other concerns were raised, each being mentioned in fewer responses than those above:

- The cost and value of the Health Index.
- The feasibility of successfully realising the concept and producing a meaningful measure.
- The possibility that it is subjective.
- That data chosen for inclusion could be subjective, selected for statistical ease, based more on what is available than what would ideally be included, or influenced by differences in reporting or help seeking for conditions, and misses some important concepts.
- International comparability (see Geography section for more detail).
- That it may hide already-disadvantaged groups, such as those with rare conditions.
- That it does not enable individuals' health and wellbeing.
- That the single, overall value could mask large indicator variations; it does not measure inequality or the distribution of the indicators.
- The meaning of the overall Index value.

Our response: We are pleased that there is a high level of support for, and engagement with, the Health Index, and that respondents could see value in it for a range of reasons. This support tells us both that we should continue to

develop the Health Index, and why we should, by demonstrating the value it would bring. It also helps us to understand what the priorities are for us to focus on, both in terms of resource and in terms of the way we present the Health Index.

We acknowledge the areas where there are concerns and will review our methodology and the way we present the Health Index as appropriate, with the aim of addressing some of these concerns. With regards to the concerns over misuse specifically, it is clear there is work we can do to ensure the Health Index is presented in a way that helps to mitigate this as much as possible, while still highlighting the Index as a valuable tool used to drive change and improve health.

Uses of the Health Index

All respondents were asked about potential uses for the Health Index, not necessarily for their own use but in general, including how they would like to see others using it. These uses are summarised as follows:

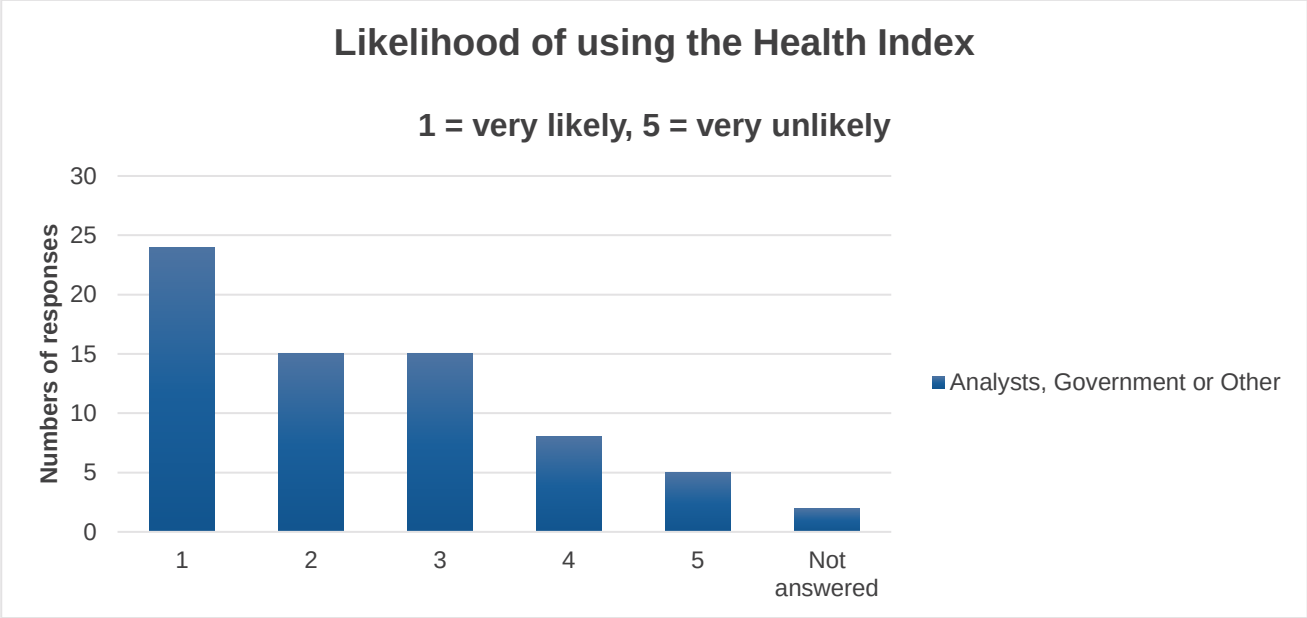
- Policy making and measurement, including:
    - Encouraging a greater focus on health (alongside GDP).
    - Enabling and encouraging a focus on the impact of policies.
    - Overcoming short-term thinking and focusing on prevention and health promotion.
    - Tackling inequalities (also mentioned outside of a policy-making context)
    - Identifying areas for improvement (also mentioned outside of policy).
    - Targeting resources (also mentioned outside of policy).
- Encouraging joined up thinking about health, its drivers, and impacts, across different disciplines, departments, and organisations, including in policy making. This includes those beyond the health community.

- Promoting a focus on health in measuring the progress of the nation, alongside economic measures such as GDP, and reframing health as an asset.
- To empower or motivate individuals to improve their health.
- In research.
- To drive the need for better data.
- To identify under-funded, under-recognised areas, or individuals at risk of missing support.
- To improve lives, quality of life, life chances, health education, and access to services, for all.
- To support the Integrated Care System reform, and the levelling up agendas.
- By communities for local initiatives, planning and promoting activities and services, understanding a range of support needs.
- As a single place to source a wide range of health data.
- To evaluate service provision.
- To compare areas.
- By particular user groups:
    - Health and care professionals, to understand local and national issues;
    - General Practitioners (GPs) for social prescribing;
    - Health-related organisations, to evidence how to improve staff wellbeing (with a subsequent impact on population health);
    - The private sector, to target products and services for a positive impact on health;
    - Town planners, for development.

Analysts, Government decision-makers and others were also asked: On a scale of 1 to 5, where 1 is very likely and 5 is very unlikely, how likely are you to use the Health Index as it is currently proposed for your own analysis? Over half of the 67 respondents in these groups were either very likely (24 respondents) or likely (15 respondents) to use the Health Index in their own

work, but around 1 in 5 would be unlikely or very unlikely to use it themselves (see Figure 4).

Figure 4: Chart showing how likely respondents were to use the Health Index in their own work



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The written responses included much additional detail about how respondents could use the Health Index in their own work. These can be summarised as follows:

- To provide evidence, for example, for funding bids, campaigning or advocating for change.
- To help stress the importance of health, including the wider determinants or drivers, and the role of prevention.
- To demonstrate or explore inequalities, including how they change over time.
- To track changes in health over time, both at the level of the overall Index and in specific areas or indicators of interest.

- In a range of research, including to identify important areas to address.
- To target resources, funding, interventions, and policy.
- For comparison between areas, using statistical and geographical neighbours.
- At a local level, for example, to help improve health and to track important issues.
- To inform policy and measure its efficacy.
- Supporting healthcare improvement and access to services.
- To promote healthy lives for all.
- In teaching.
- For risk assessments.
- To assist in finding specific statistics.

Some respondents reiterated here that they would not use the Index in their own work, often without expanding on this but sometimes providing more detail. Reasons given were that they would not use the overall Index but may use the indicators or specific aspects, that it would need to be available at a lower geography to be useful to them, or that there was an existing product that they would continue to use as it served their purpose.

Our response: It is encouraging that many important uses have been identified by respondents, both in how they would like to see others using it, and for their own purposes. We will use this to help prioritise our work and make it as useful as it can be, and to inform how we present the Health Index.

We recognise that not all respondents would find the Health Index useful, and these respondents do not always see the value over other, existing products. The Health Index is not aiming to replace existing products, so for some purposes, other products will still be most appropriate. In those cases, it may be that the Health Index could add value if comparisons between the Health Index and existing products are explained clearly. We will consider which of these comments we can act upon to improve the Health Index's usefulness,

and will review our presentation of the Health Index to see if we can clarify suitable uses (see the Presentation of the Health Index section for more detail).

There are areas where the uses identified are perhaps not as suitable. For example, one use identified was as a single place to source a wide range of health data. Although a large number of data sources are used in the Index, due to its nature it is not an exhaustive list. There will be key measures missing if they were not suitable for inclusion in the Index (if, for example, the timeseries was not sufficient, or the level of geography). It is important we emphasise the limitations of the Index and point to existing products which would be better suited, such as the Health and Care Statistics Landscape for England.

Further analyses with the Health Index

In addition to the uses identified above, there were further analyses or breakdowns that respondents would like us to provide or enable with the Health Index. Analysis by different geographies was very frequently of interest, details of which are included in the Geography section. The next most common of these by far was in relation to demographics (mentioned by 21 respondents), including:

- 11 with specific reference to ethnicity.
- 10 with specific reference to age.
- 9 with specific reference to sex.
- 5 mentions of protected characteristics.

Other areas of interest for further analyses included:

- Deprivation.
- Inequalities within as well as between places in the overall Index value, and changes in inequality over time.
- Comparison to health and care service provision.
- International comparisons.

- Facility for individuals to compare own health to national and local averages.
- Health projections, to model the impact of different policy interventions on health outcomes.
- Identify the most significantly correlated indicators or subdomains.
- Develop different versions of the Health Index that focus on specific groups, for example, children and young people.

Our response: Exploring demographic breakdowns by age, sex and ethnicity is already in our plan of future work, although the interest gives insight into the priority this should be given. The extent to which we can achieve this, however, will be largely dependent on the characteristics of the data underlying the Health Index.

The modelling of health projections is also an existing focus: substantial work has already taken place on this and is ongoing. We intend to publish a first version of the projections model later in 2021 for iterative development.

The extent to which we can provide or facilitate other analyses will be considered and factored into future work planning. It is likely that where these are possible, they would largely form longer-term aims, rather than be presented in the next version of the Health Index for release in 2021.

Structure of the Health Index

Analysts, Government decision-makers and others were asked: Which elements of the Health Index's proposed structure would you want us to improve for you to be more likely to use it?

In general, there was a lot of support for the structure of the Health Index, and the associated domains of Healthy People, Healthy Lives, and Healthy Places. There was comment from some that it is useful that it is similar to the

Index of Multiple Deprivation (IMD) or the structure of the work of their public health department.

There were two main areas of concern where suggestions for improvement were made. The first of these involved recommendations to change the positioning of indicators and/or subdomains within the Index, of which there were several. For example:

- Anxiety should be included in the Mental Health subdomain, in the Healthy People domain, rather than in Personal Wellbeing in Healthy Lives.
- Social and economic factors, such as Unemployment, should all be in Healthy Places, leaving Healthy Lives containing only modifiable risk factors.

The second area of concern was with how outcomes and risk factors have been used in the Index, with two main points being raised. The first point related to the validity of combining outcomes and risk factors in the same measure, with one suggestion to split outcomes and risk factors into different domains. Concerns were raised around the double-counting introduced here, and the need for careful consideration, particularly when attributing drivers of change. The second point surrounds the complexities involved where indicators serve as both risk factors and outcomes, and the relationships between indicators. Specific comments included:

- There is a need to be more consistent in the positioning of indicators, where they serve as both a risk factor and an outcome. Physiological conditions that are also risk factors are split across Healthy People and Healthy Lives, while mental health conditions are only in Healthy People.
- It is important that users are aware indicators are not isolated variables or outcomes but interact in complex ways with others across domains.

Our response: As part of the next phase of work it is our intention to undertake a review of the positioning of indicators and subdomains within the Index. Our indicator placement is informed by factor analysis, to confirm there is a statistical basis for the grouping of indicators. This approach will continue to be used, but where specific suggestions have been made about indicator positioning, we will test the suggested alternatives more thoroughly. The comments about anxiety highlight another aspect that we will be reviewing, which is the naming of the individual indicators, to ensure they clearly represent the measure underlying them. Anxiety as measured in the Health Index (beta) is part of the measures of personal wellbeing, so represents self-reported feelings of anxiety, rather than a diagnosis of an Anxiety Disorder. It is clear that this caused some confusion, and it will be important to address this and ensure there are no other instances of a similar nature.

There is a complex interplay between risk factors and outcomes, with some indicators being both. Children's measures are a good example of this, because while they can represent an outcome now, they are often also a strong predictor of future health. Many health outcomes are risk factors for developing comorbidities, so outcomes and risk factors cannot be fully separated. How we manage this is one of the key challenges in developing the Index, and something which will be under review as we look to finalise the structure of the Health Index.

Content of the Health Index

Analysts, Government decision-makers and others were asked: Which elements of the Health Index's data and content would you want us to improve for you to be more likely to use it? The following mostly represents responses received to this question, but there were also comments from members of the public for other questions which are relevant to this question.

The responses can be summarised as follows:

- Comments on the number of indicators included:

    - With considerably fewer indicators than the Public Health Outcomes Framework (PHOF), unsure whether the Index offers a complete and accurate picture of health.
    - Concern that there are too many indicators to give adequate weight to important concepts, and full transparency over what is driving change.
- Comments about indicator selection:
    - Consider the normative (explicit and implicit), moral aspect that has informed indicator selection.
    - Concerns over exclusion of concepts solely based on data availability.
    - The fact the Healthy Lives score is increasing, while Healthy People and Healthy Places are declining, suggests that the indicators selected are wrong.
- Importance of certain aspects, for example exercise, and prevention over cure.
- Support provided for the process, theoretical framework and selection criteria.

Our response: There are a lot of useful responses here for us to consider within our ongoing development work. The comments about the number of indicators highlight the balance that is required within the Index, between having sufficient coverage of health and being able to assign adequate weights to individual indicators. This has been a consideration of the work to date, and we have refrained from using some measures that were too detailed or specific, whilst striving for good coverage of the broad definition of health. It will continue to be important and considered as we develop the Index further.

Much consideration has gone into the specific indicators selected for inclusion. We think it important to specifically address the comment regarding the change in domain scores going in opposite directions suggesting the indicators used are wrong. We expect the interplay between domains to occur

on different timescales, that is, if outcomes are declining, and we start to improve individual circumstances, we do not expect to see improvements in outcomes immediately. Therefore, these results are not unexpected but there is a need for us to communicate this interaction clearly to users.

Data used to produce the Health Index

Members of the public were asked: What additional information about health do you think the Health Index should include?

Analysts, Government decision-makers, and others were asked: Which elements of the Health Index's data and content would you want us to improve for you to be more likely to use it?

The responses took the form of suggestions for adding concepts or ways of improving the ways in which we measure certain concepts. The responses here were numerous and detailed, therefore a lot more information was contained within them than in this summary. The full consultation responses will be published in due course, should you be interested in more information. We are considering the fuller detail in our work to further develop the Health Index.

A summary of the concepts suggested is as follows:

- Rare and/or hidden physical health conditions.
- Multimorbidity.
- Dental or oral health.
- Pain.
- More on disability.
- Sensory loss.
- More on mental health, including broad stressors that affect mental health and illness.
- Self-rated health, and health-related quality of life.

- Health effects of providing care to people with a health condition.
- Loneliness and social capital, including social support, social interactions, social cohesion.
- Effects of stigma.
- Attitudes to health-related behaviours.
- Additional measures of smoking, including smoking intensity, and electronic cigarette use.
- Access to services other than GPs and pharmacies, including hospitals, dentists, psychiatry, complementary health practitioners, community projects, opticians, audiologists, maternity care, policy and fire stations, childcare facilities, job centres, libraries.
- Public transport accessibility and affordability.
- Access to healthy or unhealthy foods or other goods and services.
- Food security.
- Food safety.
- Consumption of red and processed meats.
- Access to arts and culture.
- Access to blue space.
- Digital inclusion, connectivity and accessibility.
- Service provision.
- Pollution, water and soil in addition to air.
- Unreported concerns, for example unreported crime.
- Add to personal crime with other, persistent, low-level crimes, for example vandalism, fly-tipping.
- Natural light.
- Nature connectedness and engagement.
- Ecological, environmental and climate factors.
- Accident prevention, for example, cycle ways.
- Housing: size and quality of homes, sharing of sanitation, overcrowding bedroom measure (alongside room measure).
- Financial health.

- Local economic performance.
- Affordability of renting in addition to buying homes.
- Fuel poverty.
- Job satisfaction, job security, gig economy.
- More on income and unemployment.
- Individuals' health literacy.
- Measures of inequality.

In terms of the way concepts already included in the Health Index are measured, two areas attracted the most comment.

- The use of the Quality and Outcomes Framework (QOF) to measure the prevalence of health conditions was a concern for respondents, due to QOF not including some of the most common or impactful health conditions. Alternative sources suggested included the using the GP Patient Survey.
- The use of distance to services and green spaces was a concern because distance was not the best indicator of access, or likely use or engagement with services or green space. For example, distance to GP may be irrelevant if it is not easily possible to get an appointment; and the quality of the green space may impact on use of green space. How distance is measured was also questioned, as a straight-line distance was used for the calculation.

Several other areas were identified where it was felt that improvements could be made to the ways in which concepts are measured. These can be summarised as follows:

- Life expectancy:
    - The use of life expectancy over healthy life expectancy (HLE) was preferred by some because of double-counting or overlap between HLE and the rest of the Index.
    - Suggestion to use disability free life expectancy over HLE.
    - Measure life expectancy gaps to capture inequalities.

    - Measure standard period life expectancy, for example ages 0, 30, and 65.
- Frailty: improve measure as hip fractures alone is inadequate. Specific suggestions given, for example, strength measures such as grip strength and sit-to-stand, using data from the e-Frailty Index.
- Air pollution: suggestions to measure the percentage of people exposed to harmful levels or taken into account where residential buildings are near main roads, rather than measuring average pollution over a whole local authority.
- Noise pollution: caution has been advised as the impact depends on the quality of buildings, and some causes can benefit wellbeing and social interaction.
- Physical health conditions: measures of poor control are more meaningful than prevalence.
- Physical activity: measure levels of activity to make more of a distinction between lower and no activity.
- Alcohol consumption: concerns about the current measure not capturing this adequately, and suggestions for alternatives.
- Drug misuse: suggestion to measure drug-related crime as a proxy for drug misuse.
- Homelessness: encouragement to expand beyond rough sleeping to include measures of housing insecurity, with some favouring alternative measures due to the volatility of the rough sleeping data.
- Urged to include more sources that are not publicly available.
- Questions and cautions raised over age-standardisation.
- Questions about how measures will be impacted by the coronavirus (COVID-19) pandemic.

Several concepts were mentioned in the responses that were already included in the beta version, at least to some extent. For example, crime, obesity, psychological wellbeing, education, leading causes of mortality, and health conditions. Two concepts were mentioned that we have already

explored and were unable to include due to the lack of suitable data: sleep or tiredness, and cold homes. Both of these aspects were mentioned in the documentation provided with the beta version of the Health Index.

Analysts, Government decision-makers, and others were additionally asked: Is there any health data proposed for inclusion which you think the Health Index should not include?

Most respondents who provided an answer to this question indicated that there was no data they would like to see removed, with one suggestion that there should be as many variables included as possible. There were suggestions to remove specific variables in few responses.

Aside from suggestions for adding or removing data, or improving measures, some additional points made regarding data stated throughout consultation responses, can be summarised as follows:

- Strong encouragement to participate in, and drive the need for, improving public health data (problems with underlying data will feed into the Index).
- A longer timeseries would be required.
- Questions should be included in the Census.
- Keep data up to date, and maintain quality with constant checking, past inception.
- Tie into the Inclusive Data work as fully as possible.

Our response: We have begun a detailed review of all the suggestions within the consultation that relate to data. Where concepts or alternative measures meet the criteria for inclusion in the Index, we are investigating potential data sources and will include them wherever possible. We have sourced data for some already, and this work will form an integral part of the ongoing development of the Health Index.

Where respondents have suggested including a topic we have already included or for which we have already determined there is no suitable source, we have assumed this response is requesting further research or investigation. It could also mean the information on content and excluded content is not accessible, so we will consider how this is presented in the next release too.

Methodology used to produce the Health Index

Analysts, Government decision-makers, and others were asked: Which elements of the Health Index's methodology would you want us to improve for you to be more likely to use it?

Fewer respondents had specific feedback on the methodology, but there were still several comments. Responses to this question mainly contained suggestions for change but there was support expressed for the current methods as they stand, and for the proposals for development detailed within the published documentation.

The weighting methods received the most attention with comments and concerns around this as follows:

- Using factor analysis (FA):
    - Concerns about suitability of use of FA, and validity of weightings, the meaning if causes and consequences are included, and the assumptions that underlay it.
    - Concerns about how each new year of data will be handled.
- Support for methods whereby variables are weighted by relative ability to explain variance.
- Support for equal weighting of domains.
- More thought should be given to weighting methods used and rationales.
- With many indicators, it is important to understand which could be significant drivers in the Index, both locally and nationally.

The next most commented-on area was the method of scaling; there were several respondents who believed this should be changed, as they felt that the current method is unclear. Using a baseline of England in 2015 was specified as being unsuitable as it is a low baseline for health, appears random, and could be misleading at a local level if an area has, for example, improved on the England 2015 value but not to the same extent as the latest average for England. Using standard deviations in scaling was identified as problematic, given that they are not understood by all users. Some alternatives were suggested. Related to this, there were also some concerns raised about making comparison to the England average, as above average could still equate to being worse than the recommended level for good health. There was some suggestion that we should measure against an absolute value, rather than the Index value.

Several respondents also had comments about the responsiveness of the Index. These mostly surrounded the need for greater clarity around the meaning of changes in the Index value, and some detail on the expected variability of indicators. Some respondents made comment around the risk of the Index changing too little to be useful.

The remainder of the comments about methodology, which were mentioned by between one and four respondents, can be summarised as follows:

- Aggregation: concerns over current methods, with specific comments for improvement.
- Imputation:
    - Avoid wherever possible.
    - Make clear where it has been used.
- Concerns over lack of confidence intervals/error ranges.
- Concerns about data changing over time and losing comparability with earlier releases.

- Transformation: dislike of ad-hoc nature of current method, suggestions made for alternatives.
- Sensitivity analysis:
    - Needs to be robust so users can be confident in reliability.
    - To include relative weighting of components.
    - Results should be published.
- Questions over the use of age standardisation.
- Combining data: question whether simple mean is appropriate.
- Concerns about how the current data and methodology account for the relationships between indicators.

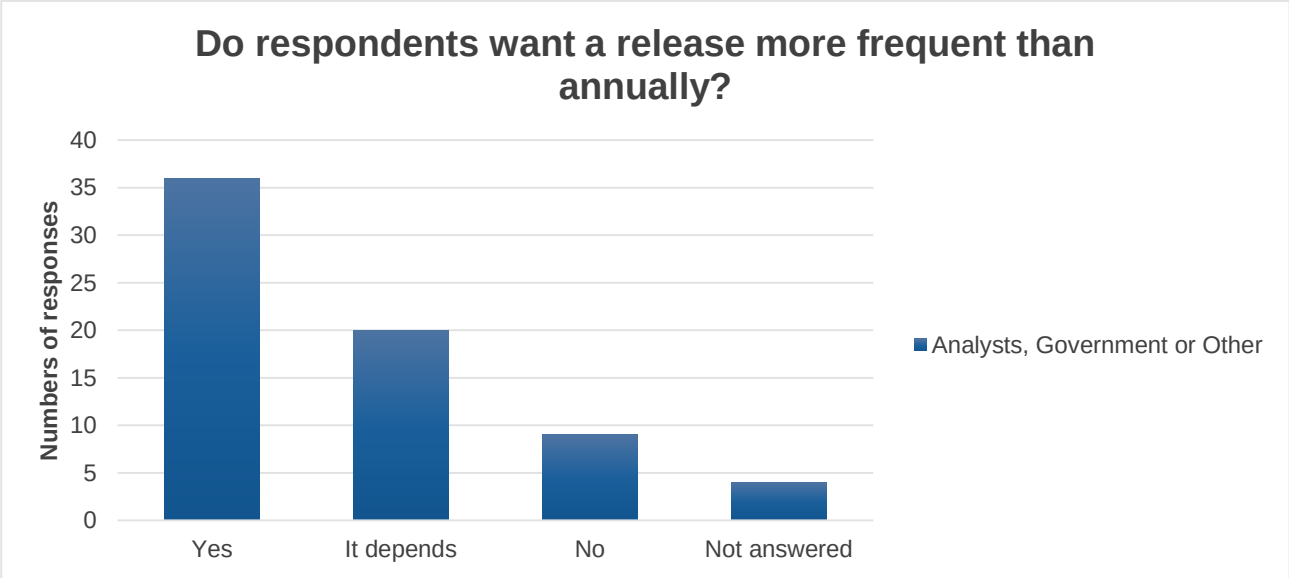
Our response: We will be reviewing our methods during the next phase of work and will consider the suggestions made at this time. With regards to subdomain weighting, we were aware this would be a key area to improve upon after the beta version of the Index was released. We have plans to use a participatory approach by gaining expert feedback on the weights that should be applied to the subdomains, utilising our expert advisory group.

Much consideration has gone into the appropriate methods for the Index, given we need to produce a score which can be tracked over time, disaggregated by topic and geography, and allow those disaggregations (and combinations of both) to be tracked over time. Some suggested methods which work for existing products would therefore not be suitable for these purposes. We will ensure some of the points arising which have already been considered in our methodology decisions are included or described more clearly in future publications.

Frequency of the Health Index

Analysts, Government decision-makers, and others were asked whether they would prefer it if the Health Index were released more frequently than annually. Most respondents stated that they would (36 of 65 respondents), or that it depends (20 respondents), as shown in Figure 5.

Figure 5: Chart showing whether respondents would prefer a more frequent than annual release



1. Numbers of responses presented do not account for how many individuals or organisations an individual response represented.
2. Responses received via email did not necessarily respond to each consultation question in turn. As such, they are only included in the chart where they answered at least one of the questions with a set response format.

The written responses alongside this question provided more detail. Reasons for wanting the Health Index to be published more frequently included wanting to see seasonal changes, and for there to be a quarterly release so that it is in line with GDP. However, there were several caveats to this, and some respondents said the Health Index should be no more frequent.
The reasons given for this hesitance or opposition to a more frequent release can be summarised as follows:

- Concerns about the detail that could be lost. Several respondents suggested that a more frequent release should only be provided alongside a more detailed annual release, and there were concerns from some that having more than one version would be confusing.
- The pace of change does not support it, that is, there is little change quarterly, or within one year.

- It is not a priority, compared to other things, for example improving geographical disaggregation.

In addition to the comments on frequency, responses mentioned the timeliness of the release and wanting this to be improved. The Health Index beta was published in December 2020 and included data up to 2018; there was a specific comment that the more recent the data, the more uses the respondent would have. There was also a question around whether statistical methods could be used to account for a lack of timely data at local level.

Our response: Providing a more frequent than annual release has been on our agenda for the Health Index. There are difficulties in that much of the underlying data are published on an annual basis, or at times even less frequently. This presents a clear challenge for producing a more frequent Index.

Although the responses shown in Figure 5 suggest the largest number of respondents support a more frequent release, some of these responses are caveated. Taken with the written responses, a detailed annual release is the priority over more frequent releases if this would lose detail. We have been considering having more than one version to produce a detailed, annual release and a simpler, quarterly (or similar) release, and are also concerned about creating confusion so would only do so with careful consideration.

The points about being more frequent to align with GDP, and not being more frequent because little change will have occurred, are both of particular interest. These will likely form key considerations in how we take this forward. However, overall, it appears that this is unlikely to be an important immediate priority and will be a longer-term consideration for after the 2021 release.

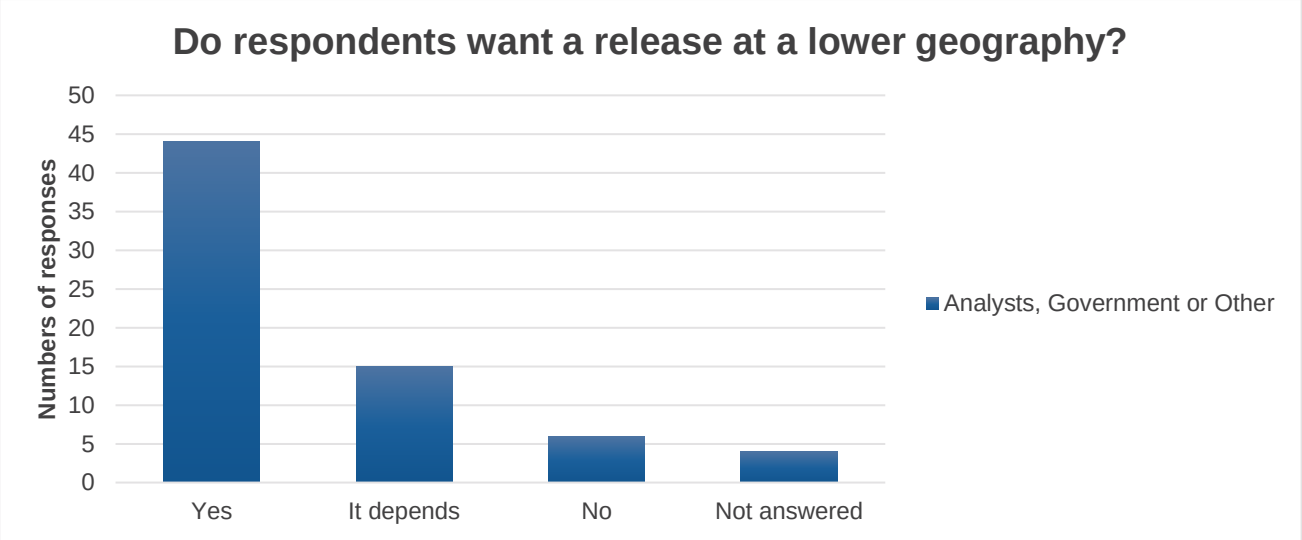
With regards to the timeliness of the release, some of the delay seen in the release of the beta version of the Health Index is due to it being under development, and the additional time this adds to our processes. Once the

Health Index is more developed, we should be able to improve on this, particularly as we are working to automate as many of our processes as possible. However, there will be a limit to how timely we can make this, as we are reliant on the underlying data being published before we can then produce the Index. As with a more frequent release, we will investigate how any missing data for the latest year could be modelled or imputed, but will consider feedback we have received on imputation and other methodologies when considering this.

Geography

Analysts, Government decision-makers and others were asked whether they would prefer the Health Index to be produced at a lower level of geography. For the beta version, the geography used was upper tier local authority (UTLA). Around two thirds of respondents stated that they would like the Index to be at a lower geography. Of the remainder, most said that it would depend, as shown in Figure 6.

Figure 6: Chart showing whether respondents would prefer the Health Index at a lower geography



1. Numbers of responses presented do not account for how many individuals or organisations an individual response represented.

2. Responses received via email did not necessarily respond to each consultation question in turn. As such, they are only included in the chart where they answered at least one of the questions with a set response format.

The written responses provided more detail on this, and there were some comments within responses from members of the public that also mentioned geography. The specific geographies required ranged from lower tier local authority (LTLA) either being sufficient, or being an acceptable minimum, down to much smaller areas such as Lower-Layer Super Output Areas (LSOAs), wards, or even postcodes or Output Areas (OA). There was some mention of being able to produce the Index for health geographies or organisational level.

There were concerns that the Index presented at UTLA would mask inequalities, and respondents would have a greater number of uses for a lower-level index. Some respondents stated that not producing the Index at a lower level of geography would mean they could not use it at all, and others that it would be a welcome addition, but not all respondents made that distinction.

Some respondents felt that it was not necessary or not a priority to produce the Index at a lower geography. It was especially clear in several cases that this should not be at the expense of a more detailed release.

As well as responses on the level of geography, several other comments were made concerning geography, which can be summarised as follows:

- Encouragement to go beyond England, developing a Health Index for the other UK nations, the UK as a whole, and to work internationally, but some also stressed the importance of comparability here.
- It was stated that it would be useful to have a way of combining UTLA data to combined authority or integrated care system level.
- Some would like there to be an urban-rural split and the ability to compare and contrast these areas.

Our response: It was evident early in the process of receiving consultation responses and feedback from online events that exploring producing the Index at a lower level of geography was popular. We therefore examined the data used in the beta version of the Health Index, as a starting point to understand how many of the underlying sources were available at lower geographies. This revealed that only around one third of the sources used are available at Middle-Layer Super Output Area (MSOA) or LSOA level. These are also not evenly distributed throughout the domains of the Index, and there are some very notable gaps that would not result in it being feasible to produce an Index at this level using a broad definition of health, at present.

For the lower tier local authority level (LTLA), around 85% of sources used in the beta version are available, which makes it more feasible to explore alternative sources, and any trade-offs required. Alternatives have been sourced for a majority of indicators that would have been missing at this level. These are still being sought for some but we currently believe that the trade-off will be sufficiently minimal that the Health Index will be produced at LTLA level for the next release.

With regards to producing results for nations beyond England, there was some communication with the Devolved Administrations early in the Health Index development, and these have been taken further recently with the formation of a group specifically focused on taking this work beyond England: to the other UK nations, the UK as a whole, and internationally. One of the primary priorities of the group is comparability. Organisations represented in the group include: Welsh Government, Public Health Wales, Scottish Government, the Organisation for Economic Co-operation and Development (OECD) and the Health Foundation. Northern Ireland Government are represented in the Health Index expert advisory group and have been invited to the Health Index expansion discussions.

Alongside the next Health Index publication we will provide instructions explaining how users can combine data to combined authority or integrated care system level.

Regarding the urban/rural split, we plan to include instructions for users to produce their own combinations of geographies, such as for producing the Health Index at a combined authority level. This could include tags for characteristics of local authorities to aid comparisons, such as urban, rural, coastal, etc. We will explore options for how these can be presented in our data visualisation.

Presentation of the Health Index

The written responses included a lot of comments relating to the way the Health Index is presented. They were not in response to one specific question but within answers to several of the questions.

The positive feedback regarding presentation can be summarised as follows:

- Clear, accessible, easy to understand, and engaging presentation.
- Easily accessible data.
- Open and transparent about how the Health Index has been developed and constructed.
- Positive about the detail and coverage of the materials.
- It is flexible.
- It is possible to cross-reference information.
- Positive about the data synthesis, data and information provided.
- Positive about the tabs for all data, data extraction and each year.

The largest area of attention about what is important and/or requires improvement in the presentation of the Health Index, was to clarify the intended uses and limitations, and provide guidance to users. Several respondents suggested case studies or worked examples as a way of supporting this, by demonstrating practical ways the Index can be used, its

responsiveness, and highlight the conclusions that can and cannot be drawn from it. Further suggestions made about providing guidance were:

- Provide a clear, easy to understand user guide showing how to interpret different values and changes, and purposes it can and cannot be used for.
- Guidance informed by user journey testing.
- Support users in further investigating datasets.
- Guidance in different formats, such as onsite videos, written materials, training sessions, briefings.
- To make clear that the Index does not demonstrate causality.

The next most common concern here was the need to be clearer about how the Health Index differs from other, existing products, and how it fits in with them. This includes:

- Demonstrating the added value.
- Showing that it is viable to use alongside, or as an alternative to, GDP.
- Comparing it to simpler measures to see if there is a gain in predictive power and actionable policy.
- Discussing with organisations responsible for existing products, where there is a risk of diluting their impact.

Additional areas where further clarity was recommended are as follows:

- The definition of health, being clear about its breadth, and of some of the indicators.
- The direction of scoring, the meaning and magnitude of scores.
- The rationales for inclusion of indicators, and their groupings.
- Elements of the methodology, including weighting, standardisation, imputation, and the implications of age- or sex-standardised inputs.
- The interactions between different elements of the Index:
    - Use currently requires an understanding of health and these interactions.
    - Distinguish between correlation and causation.

    - Make clear the lag effect of preventative measures.

Other areas of importance were described as:

- The ability to compare local data to recommended benchmarks for health.
- Using accessible language and the ease of understanding.
- The facility to compare areas, for example, statistical or geographical neighbours.
- Providing notes where results might seem counterintuitive.
- Presenting the extent of health inequalities more explicitly (between and within areas), including changes over time.
- Highlighting the most significantly correlated issues or factors.
- Including the assumptions and reservations experts have about it.
- Providing reassurance that the Index is generally accepted, and unlikely to change until an agreed date.
- Making it clear it relates to public health, rather than the NHS.
- Being transparent.
- Providing clear confirmation of the mechanisms for introducing new metrics.
- Providing reassurance of data protection, that individuals are not identifiable in the data.
- Integrate an action plan or target setting into future releases.

With regards to the data and code, comments were about additional materials or details to publish, namely:

- The code used to create the Index (on GitHub).
- Details of the quality and robustness of each measure included, and the interpretations, biases, or limitations, including flagging where there are large confidence intervals.
- Pre-prepared data in different formats (for example, STATA, R).
- All data in .csv (or .json) files, with:
    - Ideally an API

    - Counts and denominators by measure and area.
    - Links to sources.
- Downloadable data.
- The data used to construct the map.
- Raw data values alongside transformed values.
- Links to the comprehensive underlying datasets.
- Detail on data behind each indicator more readily available, and more comprehensive, for example, including the age ranges covered.
- Correlation matrices.

For comments about the data visualisations (charts, maps, and the web tool), some were specifically about the web tool produced by Lane, Clark, and Peacock (LCP) and others were more general. The general comments included some positivity but there were also some specific suggestions for improvement, for example using more distinct colours and using different line styles as well as colours. There were points made about what is important when presenting the Health Index, and suggestions for areas that could help to present it clearly, which can be summarised as follows:

- It is important data are presented in a clear and consistent way.
- Provide a user-friendly front-end for others to access the tool and discuss areas that can be focused on.
- A dashboard could help clearly present data.
- It is important to be able to drill down and see what is driving changes.
- Would like to be able to assign own weights like in the OECD Better Life Index, or toggle on or off certain elements, to be flexible to local interpretation.

There were some positive comments about the web tool produced by LCP, including that it:

- Is user-friendly and clear.
- Is a good start to presenting in a digestible form.
- Is a helpful visualisation.

- Is engaging; could effectively communication how multiple factors, incorporating a wide range of policy areas, impact health.
- Includes the ability for the user to develop their own analysis.

There were some reservations about the tool, however, with some respondents not seeming to find it as user-friendly. It was stated that there is a particular need to improve the usability and accessibility for non-specialists, and the suggestion was made to conduct user testing with a broad audience to understand different user journeys and requirements.

Our response: We will be reviewing all materials ahead of the next publication of the Health Index. The comments made will be pivotal in the work we are doing here. It is clear there are both aspects that were popular that we need to keep, and areas where we could provide further detail or clarity. Some of the points made here are also relevant to suggestions summarised earlier in this document. For example, the case studies and other guidance for using the Health Index that we plan to produce will help to clarify suitable uses and provide more detail on what changes in scores mean.

Trust, engagement, ownership and promoting the Health Index

This section includes comments made about trusting the Health Index, the engagement of stakeholders, the ownership of the Health Index, and the promotion of the Health Index. With the exception of trust, these are not topics that were explicitly asked about in the consultation, but there were several mentions of them.

With regards to trust, members of the public were asked: What additional information would you need about the Health Index to like or trust it more?

Responses to the ‘like it’ aspect of this question were closely aligned with the topics covered in other sections of this report, and as such have been discussed elsewhere. The remaining comments were therefore about what is important in being able to trust the Health Index:

- More detail on the concepts included:
    - Rationales for the inclusion or exclusion of concepts.
    - Detail who was involved in the decisions to include or exclude concepts.
    - More detail about the indicators.
    - Greater clarity about the weights and the rationales for them.
- Assessed and awarded an appropriate standard by a recognised, independent organisation.
- Independence of Government.
- Transparency, including providing an understanding of statistics and data for the lay user.

The remainder of this section is based on responses throughout the consultation questions. The first area this applies to is the diversity of the Expert Advisory Group (EAG), and stakeholders involved. One respondent stated there was only representation from one academic institution in the EAG, and that this was problematic in terms of diversity. There were some suggestions made from others about increasing diversity by involving specific organisations, groups, or individuals in the development of the Index, namely: patients and patient organisations, public contact stakeholders, young people, a mental health charity. There were also recommendations to:

- Build a user community to share good practice and knowledge in use of the Health Index.
- Develop more granular data with local people.

The second area here is the ownership of the Health Index. Respondents asked for this to be clearer, and in the main wanted there to be ownership by a Government department (Cabinet Office and Treasury mentioned), with

ministerial responsibility. There were further suggestions that there should a legislative requirement for an annual report to be produced on the Health Index. The reasons stated for this were that it would ensure sustained use and impact. There was also some suggestion that ONS should own the Health Index, supported additionally by the previously mentioned positivity about the Index being apolitical.

Finally, the promotion of the Health Index was mentioned by some respondents. Most commonly this was about the need to ensure that it is publicised widely, including to promote public awareness, to different Government bodies, to the wider voluntary and community sector, to frontline staff, and businesses and trade associations. There were two comments about the mode of promotion, the first suggesting that social media is important, and the second suggesting a wide range of places that the Health Index should be available, namely there should be the ability to: access a physical version in public places, download a copy across all devices, request one via the post, and for all vulnerable people to be sent one.

Our response: The purpose of the consultation was to gain feedback from a wide range of organisations and individuals while the Health Index was still under development. Therefore, although only consulting a smaller EAG to develop this beta version, we could gain diverse views in this way. We had input from a wider EAG in the early stages of the development of the Health Index, capturing a broader range of perspectives, and continue to do so now the beta version has been released. In addition to this, the diversity of those within ONS who have contributed to the development of the Index may not be as immediately obvious, but those involved have different professional and personal backgrounds, and have drawn on experience and knowledge in the relevant health concepts, data, and methodologies. We have noted the suggestions for improving the diversity of the input received and will look to use them wherever possible. It is likely that this will be especially relevant for user testing of specific aspects of the Health Index, such as charts, maps, and other visuals.

We will seek to make ownership clearer, but ONS will continue to own the Health Index, as an independent, apolitical organisation. Initially the Cabinet Office led a governance group for this project which agreed ONS would lead development; but we are keen to increase engagement within government to maximise the Index's use and influence.

Promotion and trust will be key to ensuring the engagement, use and impact of the Health Index. We are working to ensure promotion is an integral part of future releases, and to do all we can to maximise trust in the Health Index. The suggestions made will be useful considerations in this work.

Annex A – List of organisations that responded

Below is a list of organisations and individuals that responded to the consultation. This does not include all respondents as some asked us not to publish their details, and others could not be clearly named using the information provided.

- A. J. Cairns, Heriot Watt University
- Action on Smoking and Health
- Adi Jones
- Alan Taman, Birmingham City University
- Andrew Brownsell, Norfolk County Council
- Anna Prytherch, NHS Wales
- Arianne Matlin, British Dental Association
- Ben Baumberg Geiger, University of Kent
- Ben Lacey, University of Oxford
- Benjamin Butterworth, NHS England and NHS Improvement
- Benjamin Goodair, University of Oxford
- Bryan Jennet
- C. Falconer, Somerset County Council
- C. M. Shearer
- C. R. Angus, University of Sheffield
- Care Quality Commission
- Carol Brayne, University of Cambridge
- Chartered Institute of Housing
- Crisis, the homelessness charity
- D. E. Kornbrot, University of Hertfordshire
- Daniel Pearmain, People’s Health trust
- Dave Byrne, Durham University
- David Armstrong
- David Evershed
- Department of Health and Social Care, mental health colleagues
- Ellie Gennings, University of Winchester
- Elliott Oakes
- Emily Murray, University College London
- Emma Stone, Good Things Foundation
- Eric Pinks

- Food Standards Agency
- Geoff Farrell
- Geoffrey Briggs
- Haydn Jones, NHS England
- Hilary Chapman
- Hilda Hayo, Dementia UK
- Ian Clements
- J. Galbraith, University College London
- Jane Mindar, Age UK West Cumbria
- Jennifer Summers, Ageing Better
- Jill Clark
- Joanne Smithson, What Works Centre for Wellbeing
- Joe Farrington-Douglas
- Kate Mulley, Sands
- Ken Edwards
- Lizzie Skillen
- Louis Allwood, Centre for Mental Health
- M. Richardson, University of Derby
- Margaret Blount, Active Partners Trust
- Mark Green, University of Liverpool
- Martin Yuille, University of Manchester
- Mary Seacole House
- Matt Thomas, Red Cross
- Mental Health Foundation
- Michele Peters, University of Oxford
- Money and Mental Health Policy Institute
- Natural England
- Nicola Stingelin-Giles, University of Basel Institute for Bio- and Medical Ethics
- P. Allin, Imperial College London
- Peter Bradley, Public Health England (in a personal capacity)
- Peter Haughton
- R. J. Fry, University of Swansea
- Research Advice Service
- Richard Ebley
- Robert Farnes
- Roger Lane-Nott

- Rosie Polya, Lane Clark and Peacock
- Royal College of Physicians
- Royal Society of Public Health
- Rupert Suckling, Doncaster Council
- Ruth Speare, Sheffield City Region
- S. Easton, University of Lincoln
- Simon Mansfield
- Stefan Scholtes, University of Cambridge
- Suna King, New Milton Town Council
- The Association for Young People's Health
- The Health Foundation
- Theo Rashid, Imperial College London
- Tim Emery, Town and Country Planning Association
- UK Faculty of Public Health in collaboration with the Health Statistics User Group
- Versus Artritis
- Wayne Barker

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