



UK Health Report

Data-driven perspectives and opportunities to improve health equity & access in the UK



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www.sisuhealth.co.uk
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Introduction

SiSU Health's Mission is simple, "To help people live a healthy life".

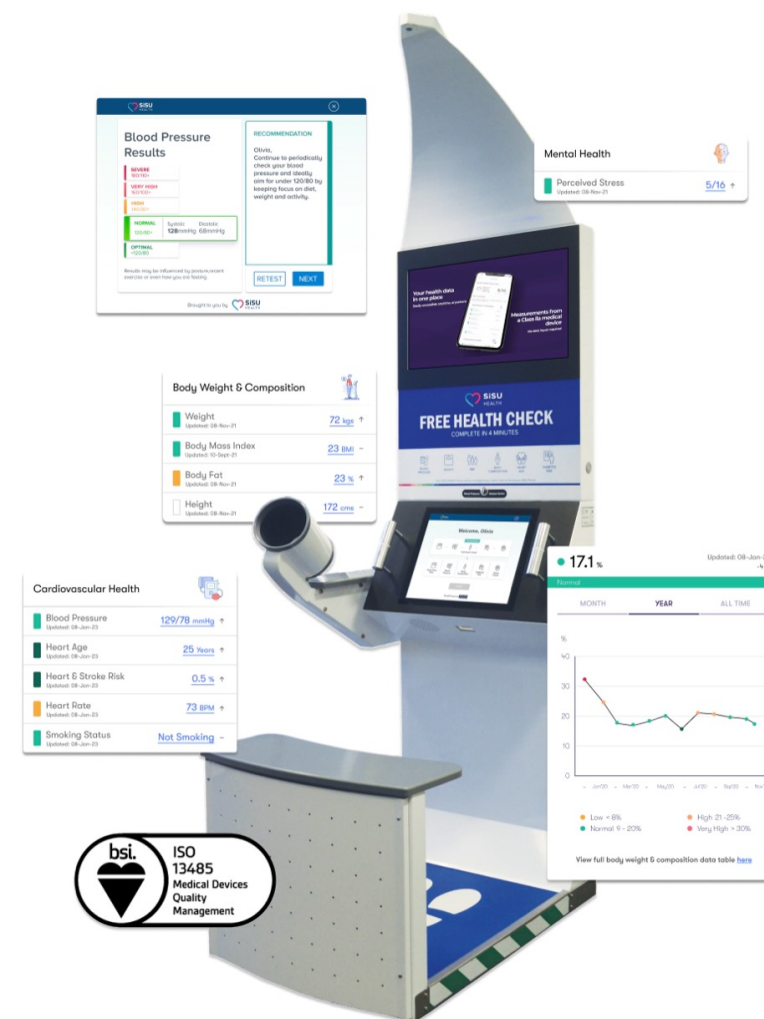
As part of our mission, we are passionate about addressing health inequalities through the provision of highly accessible, free to the public, self-service, machine measured health checks.

Health inequalities are avoidable differences in health across the population, and between different groups within society.

People living in areas of high deprivation, those from Black, Asian and minority ethnic communities and those from inclusion health groups, are most at risk of experiencing these inequalities.¹

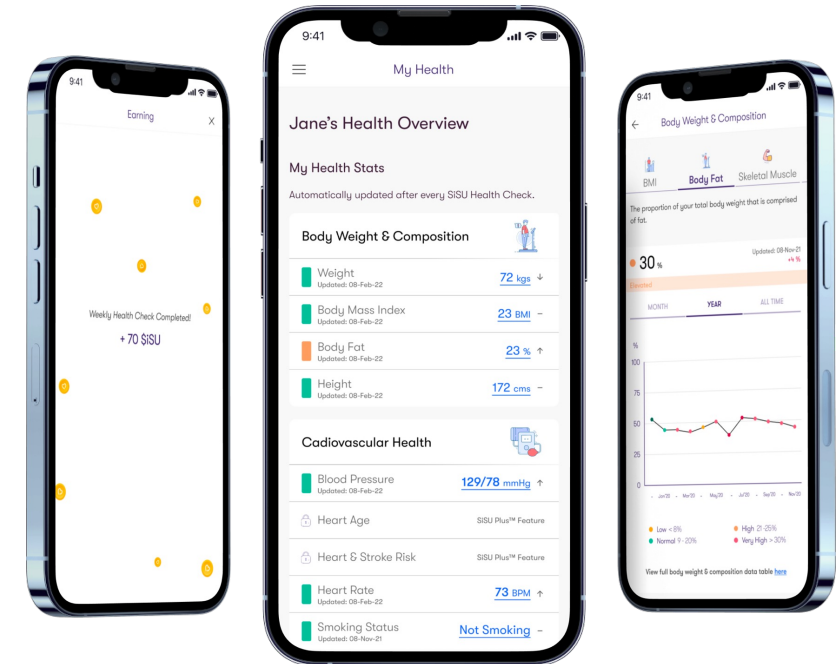
SiSU Health has undertaken analyses of its own data and created this report to demonstrate the power and potential of medical-grade, consumer digital health platforms to improve health access, equity and outcomes for those most impacted by health inequalities.

Primary audiences for this report are NHS and local authority management, policymakers, public health researchers and parties interested in population and preventive health.



1. <https://www.england.nhs.uk/about/equality/equality-hub/national-healthcare-inequalities-improvement-programme/what-are-healthcare-inequalities/>

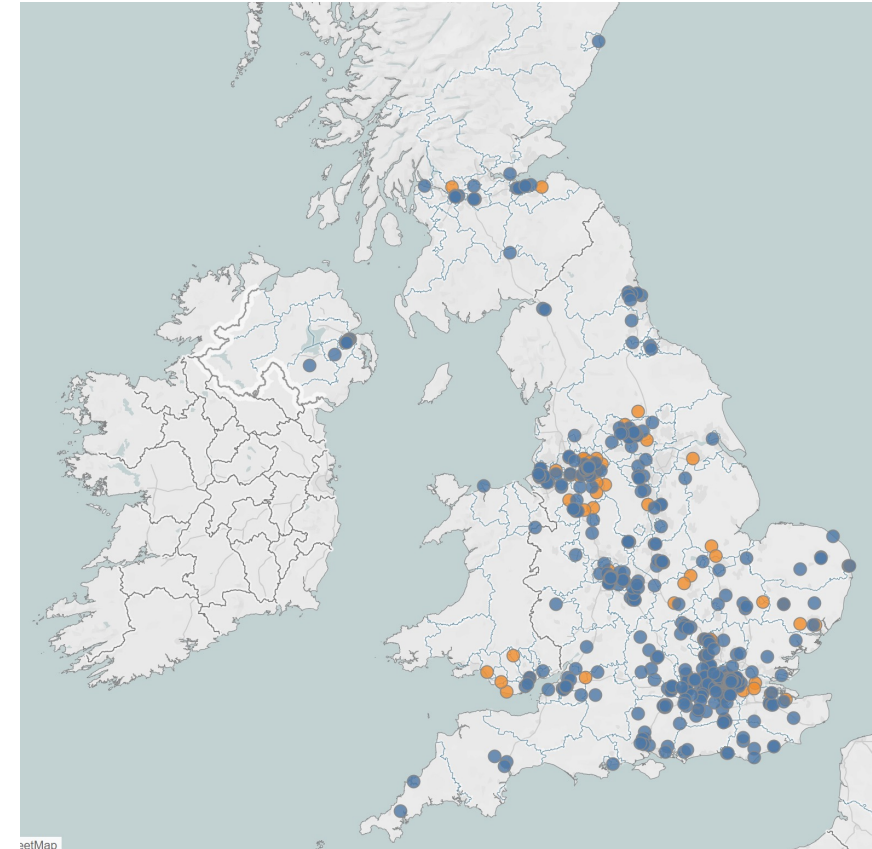
- SiSU Health provides highly accessible, self-service health checks in the community, utilising a medical device (class 11a) health check machine, the SiSU Health Station.
- A typical health check takes about 5 minutes and includes Height, Weight, BMI, Blood Pressure (BP), BP medication and recency of check, Heart Rate, Body Fat, Smoking, CVD risk, Alcohol, Physical Activity and Perceived Stress.
- We locate the health check machines in locations where people live their daily lives e.g. workplaces, supermarkets, pharmacies, leisure centres, libraries, vaccination centres etc. No appointment or supervision needed.
- By providing high accessibility, we can increase health engagement and health literacy at scale in the population.
- The health check journey is personalised according to the demographic and health risks of the User and signposts pathways according to the health services available locally.
- We direct at risk people to locally available healthcare services and empower people to improve their health with access to support tools on our app.



SiSU Health Data

To date, we have provided over 685,000 health checks for people in the UK, producing more than 20 million data points.

- Analyses presented in this report explore a range of de-identified data generated from people using SiSU Health Stations across the UK in a broad range of public and workplace settings.
- Across 561 locations of all types (public and workplace).
- Access and equity in this report is represented by deprivation (IMD) and ethnicity, selected by the User.
 - To date we have over 61,000 health checks with ethnicity data.
 - To date we have over 58,000 health checks with IMD data.
- We believe this report provides compelling insights and opportunities to support and improve the health of those most impacted by health inequalities in the UK, as well as the broader population, by scaling medical-grade digital platforms.
- The 2021 Health Survey for England & OECD confirms the weaknesses of self-reported data and the value of machine-measured data (Appendix 1)



Locations of SiSU Health Stations deployed at various times in the UK (coloured by channel – Blue: Workplace & Orange: Public)

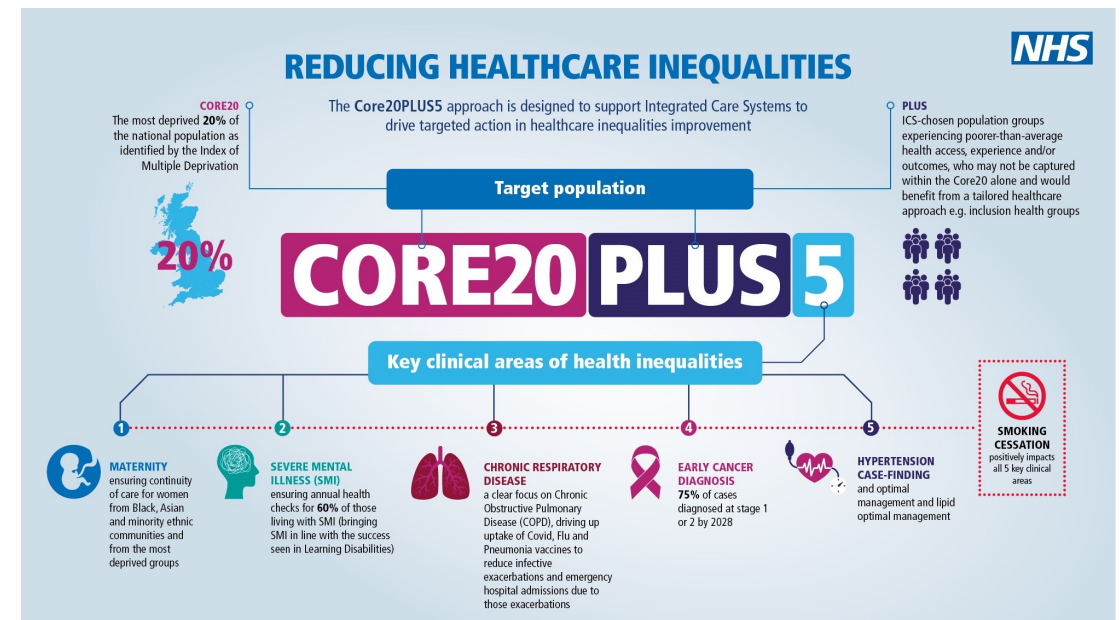
Context: Health Inequalities and Core20PLUS5

Core20PLUS5 is a national NHS England approach to inform action to reduce healthcare inequalities at both national and system level. The approach defines a target population – the ‘Core20PLUS’ – and identifies ‘5’ focus clinical areas requiring accelerated improvement.

This report from SiSU Health particularly focuses on the Core 20, ethnic minority communities, and on the hypertension focus area. However, the 5 minute SiSU health check is accessible for a wide range of PLUS population groups and also identifies risks of obesity, CVD risk, diabetes risk and mental health risks as shown in this report.

Core20PLUS5 Overview

- **Core 20:** The most deprived 20% of the national population as identified by the national Index of Multiple Deprivation (IMD). The IMD has seven domains with indicators accounting for a wide range of social determinants of health.
- **PLUS:** PLUS population groups might include ethnic minority communities; people with a learning disability and autistic people; people with multiple long-term health conditions; other groups that share protected characteristics; groups experiencing social exclusion and inclusion health groups.
- **5 Clinical Areas of Focus:** Five areas:- Maternity, Severe Mental Illness, Chronic Respiratory Disease, Early Cancer Diagnosis, Hypertension.



[Core20PLUS5 link](#)

Health Check Distributions by IMD & Ethnic Group

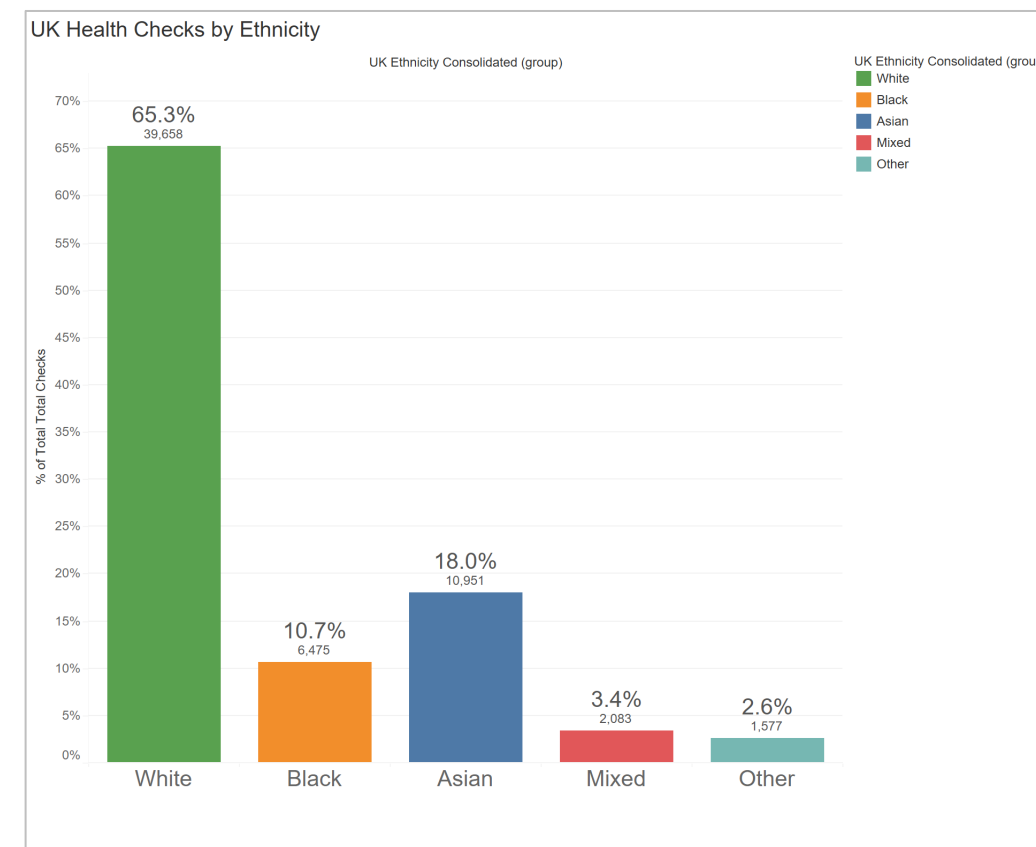
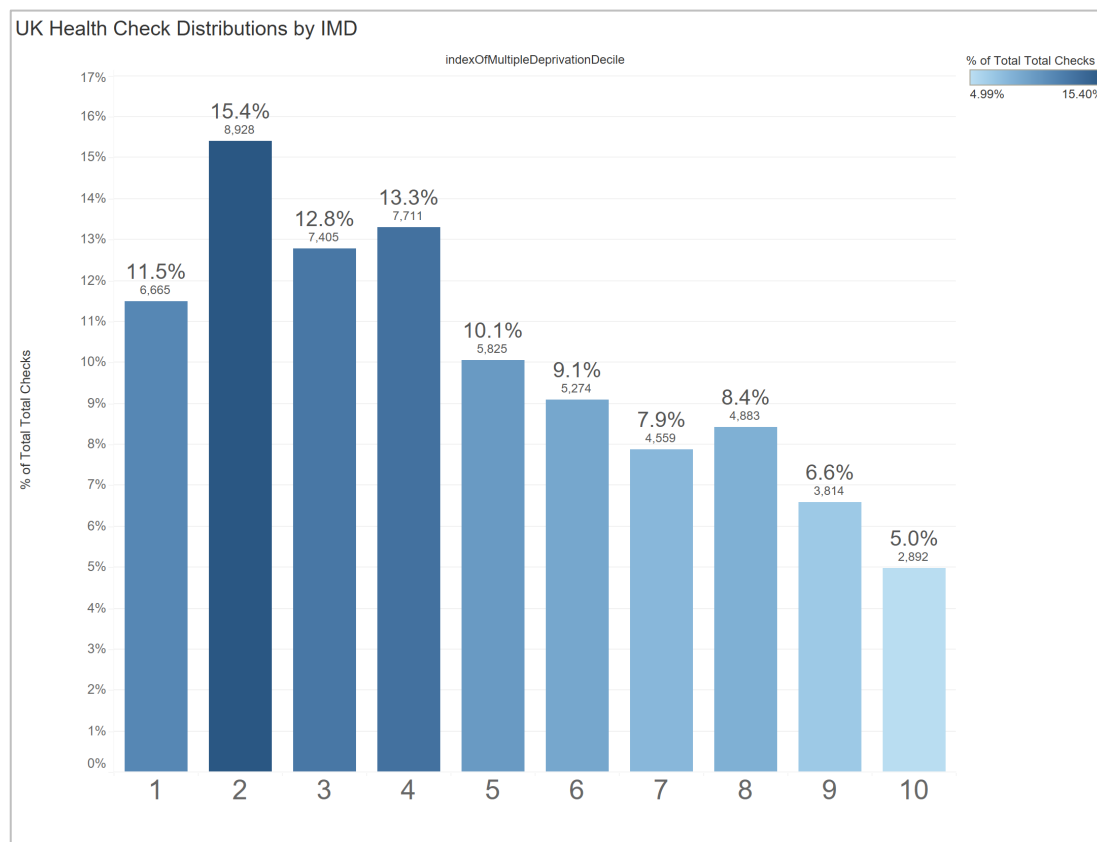
CORE20 over-indexation by checks (n 58,503)

CORE20 deciles account for 26.9% of all health station checks.

IMD deciles 1-4 account for 53% of all health station checks

Ethnic minority over-indexation by checks (n 61,258)

Ethnic minority groups account for 34.7 % of all health station checks. This represents total over-indexation of ~19% versus population estimates by ethnic group, England and Wales: 2019



Key Findings

Health Check Engagement

- In a recent survey 70% reported completing a health check because it was in a visible, accessible public location.
- SiSU Health Checks appeal to a wide range of populations, with an overall pattern of usage by the more deprived and with health check skews to more deprived IMD quintiles across all ethnic groups
- The most deprived Users, record the highest satisfaction (NPS) for the health check, of all deciles.

Health Literacy

- A large proportion of people (73.7%) who perform a health check on a SiSU health station have not had their blood pressure measured in the last 12 months, with 62.3% of those recording a high blood pressure. Users identifying as Asian, Mixed or Other, reported higher rates of no recent BP measurement.
- 53% of Users identifying as Asian reported that they were not aware of the health risks highlighted by the health check, compared to 35.5% of people overall.

Health Risks

- Users identifying as Black, reported the highest levels of BMI and blood pressure risk.
- The prevalence of people with BMI obesity (BMI 30+) is strongly aligned to their deprivation.
- Users identifying as White reported the highest level of alcohol risk, elevated QRisk and smoking.
- The most deprived decile, IMD1, shows the highest rate of elevated QRISK score.
- Smoking prevalence rates align with rising deprivation. Rates of smoking in IMD 1 and 2 (CORE20) are twice that of the least deprived 20% of the UK population
- Elevated alcohol risk rises in a linear pattern from the most deprived to the least deprived.
- Users identifying as Asian reported the highest level of physical activity risk.

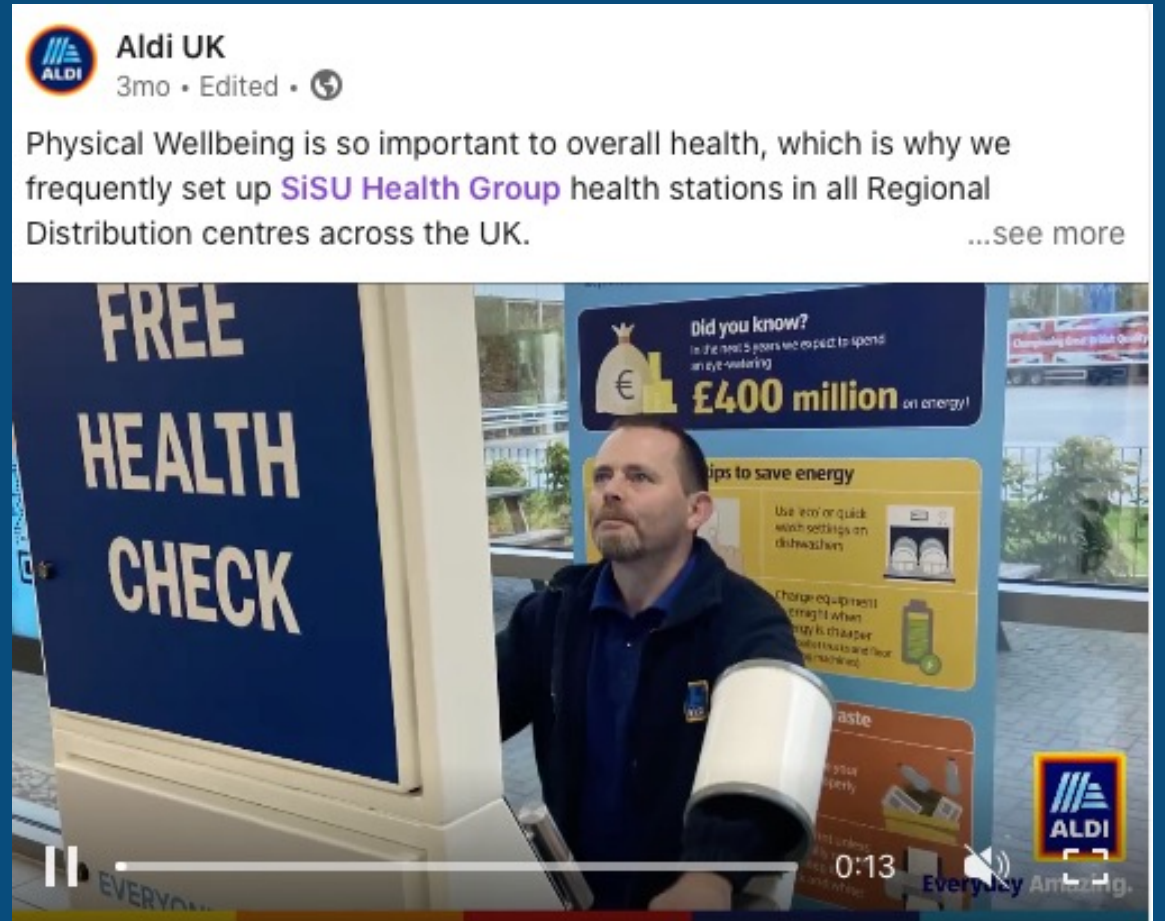
Health Impact

- Over 47,000 Users have repeated the health check enabling SiSU to track changes in health over time.
- We see health improvements across the board for the different health metrics.
- Digital health platforms provide an ability to quantify the longitudinal impact of population and preventive health programs.



Health Access & Equity

- Health check engagement



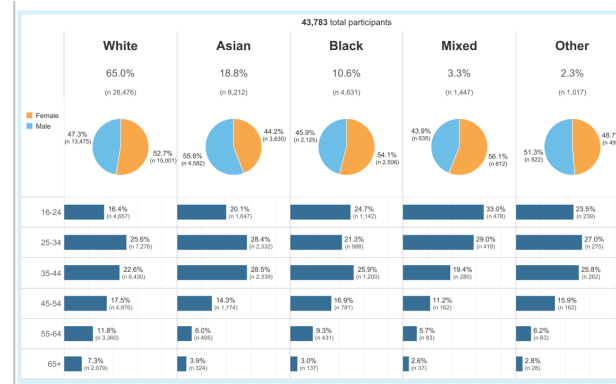
SiSU Health Checks appeal to a wide range of populations, with an overall pattern of usage by the more deprived.

Key Insights

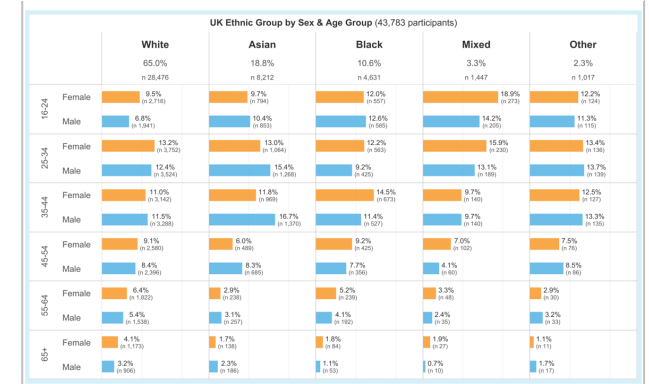
- Both sexes show strong health station usage, with slight under-indexation by Asian females
- Health checks skews to more deprived IMD quintiles across all ethnic groups (n 36,843)
- SiSU Health Stations currently located in publicly accessible settings in the UK are generating over-indexed usage by ethnic minorities across all UK regions (n 34,429 individuals)*

***Note:** This is calculated using the user Postcode captured with each check which is then mapped to UK geographic region. Indexation is calculated by comparing usage of health stations by region versus UK ONS Population estimates by ethnic group, England and Wales: 2019

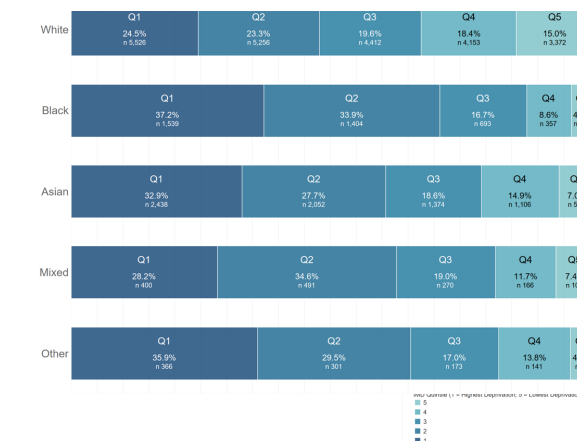
Health Checks by Ethnicity



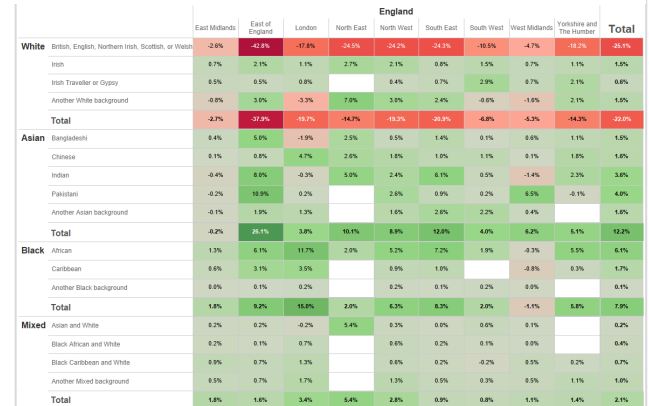
Health Checks by Ethnicity, Age & Sex



Health Checks by Ethnicity & IMD



Health Checks by Ethnicity & Region Compared to Census



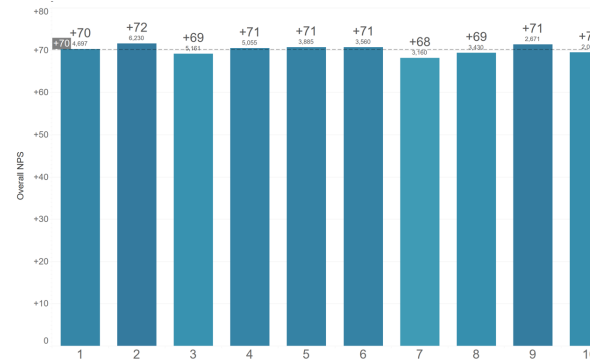
Health Station Users report exceptionally high user satisfaction (NPS) across all IMD deciles.



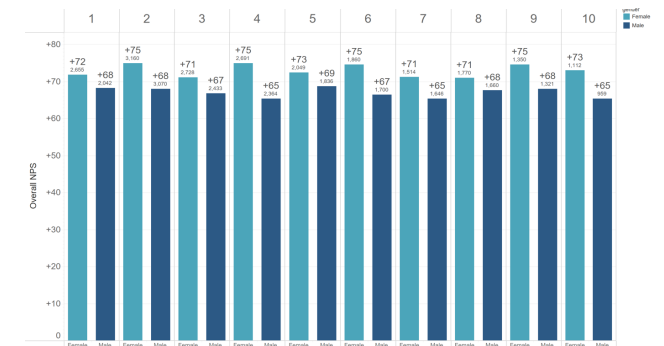
Key Insights

- Users from all IMD deciles record high satisfaction (NPS +70)
- The most deprived Users, record the highest NPS of all deciles (+70 & +72).
- The highest NPS for males (+68) was recorded in the most deprived male Users. The highest NPS is recorded by Users identifying as Black (+74) or Other (+76).
- Generally, satisfaction rates increase with age and possibly reflects a growing awareness and appreciation of health as people begin to work and start families.
- Lower NPS for young adults aged 16-24 is a global pattern that SiSU Health observes in the UK and every other country where it operates health stations

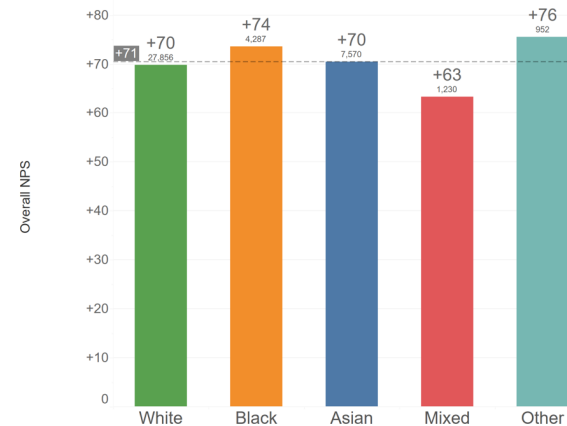
NPS by IMD Decile



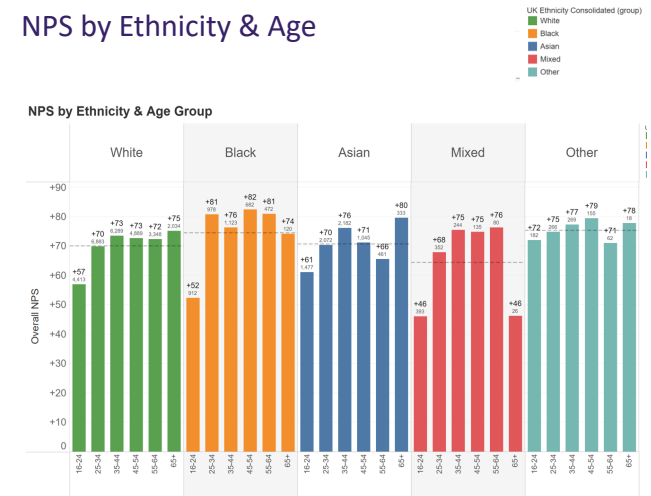
NPS by IMD Decile & Sex



NPS by Ethnicity



NPS by Ethnicity & Age



People from Black and Asian ethnic groups confirmed the importance of accessibility of the health check

Key Insights

The majority of people, 72%, completed a health check because it was in a visible, accessible public location.

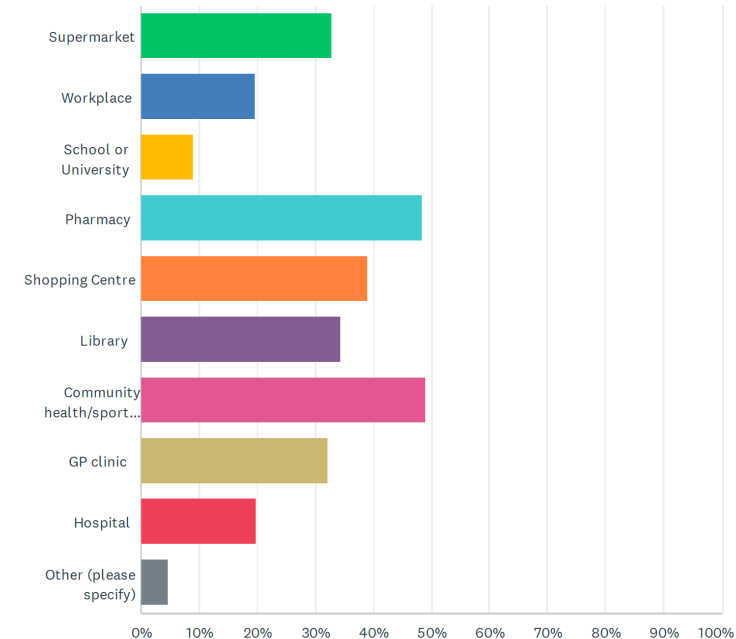
- Over 50% reported doing a health check in a place they visit regularly.
- Being able to check health for free, without speaking to anyone, and track health metrics over time were the top 3 advantages people reported for using the SiSU health station.
 - Users identifying as Black and Asian, on average ranked the 'free' aspect of the health check higher.
- With the main disadvantage reported was that the health check isn't available in enough locations, with pharmacy and community locations the most suggested. .

Quotes from the Survey

“Any of the above, just need more of them in the UK”

Q16 What kinds of settings would be the most convenient locations for Health Stations for you? Select up to three options.

Answered: 271 Skipped: 102



People from Black and Asian ethnic groups reported higher motivation to improve health

Key Insights

The health check motivated people to improve their health, particularly Black and Asian Users.

- 72% of people reported being motivated by the health check to make changes to improve their health.
- People from Black and Asian ethnic groups report higher levels of motivation to make changes to improve their health, with the nudge factor the highest for Blacks, the least healthy of the ethnicities measured on the health stations
 - 90% of Black people reported being motivated by the health check to make changes to improve their health.
 - 74% of Asian people reported being motivated by the health check to make changes to improve their health.
- 57% reported making a lifestyle change after using the SiSU Health Station, 20% sought further information and 17% accessed a health service or purchased a health related product.

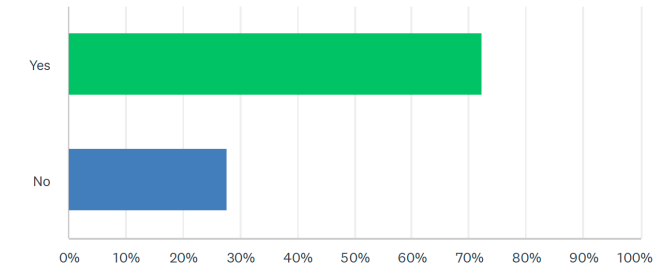
Quotes from the Survey

“I decided to go back to exercise, I have recently let lapse”

“I have cut out sugar in my coffee, changed my diet....”

Q7 Has the health check motivated you to make any changes to improve your health?

Answered: 317 Skipped: 56



Motivation to Change Health by Ethnicity

		ethnicity (group)		
		White	Black	Asian
Yes	Has the health check motivated you to make any changes to improve your health?	66%	90%	74%
	% of Total Count of User ID along ..			
No	Count of User ID	93	18	25
	% of Total Count of User ID along ..	34%	10%	26%
	Count of User ID	48	2	9



Health Awareness & Literacy

- Health measurement recency (BP)
- Awareness of Health Risks



Working with SiSu has enabled localised, tailored, opportunistic health screening aiming to tackle modifiable health risks among some of our poorest and marginalised communities in the town. The high proportion of the calls to action identified has enabled greater support to be provided by our local integrated wellbeing service already tackling health inequalities faced by such communities.

Christina Gleeson- Public health manager- Healthy Lives, Luton Public Health

Christina Gleeson

People from Black and Asian ethnic groups reported far lower levels of health risk awareness

Key Insights

The health check raised awareness of health risks, particular for Black and Asian Users:-

- 35% of people reported the SiSU Health Check made them aware of health risks they did not know about.
 - 53% of Asian people reported the SiSU Health Check made them aware of health risks they did not know about.
 - 42% of Black people reported the SiSU Health Check made them aware of health risks they did not know about.

Quotes from the Survey

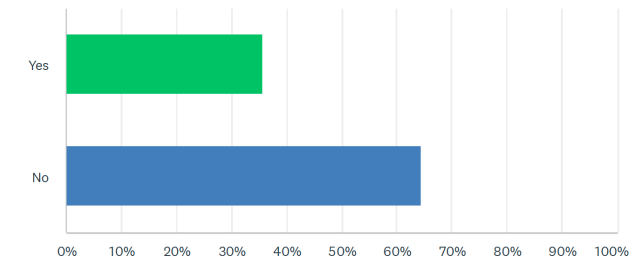
“...high BMI, obese and I’ve sought support”

“Now I am more aware that if I do not keep my weight and Bp in check, I might suffer stroke, heart diseases...”

“...High blood pressure, made me aware of pending heart problems due to family history, weight and BMI too high”

Q6 Has using the Health Station made you aware of any health risks you otherwise would not have known about?

Answered: 318 Skipped: 55



Raised Awareness of Health Risk by Ethnicity

Has using the Health Station made you aware of any health risks you otherwise would not have known about?		ethnicity (group)		
		White	Black	Asian
Yes	%	29%	42%	53%
	Count of User ID	41	8	18
No	%	71%	58%	47%
	Count of User ID	100	11	16

Nearly 3 out of 4 people had not measured their BP in the last year

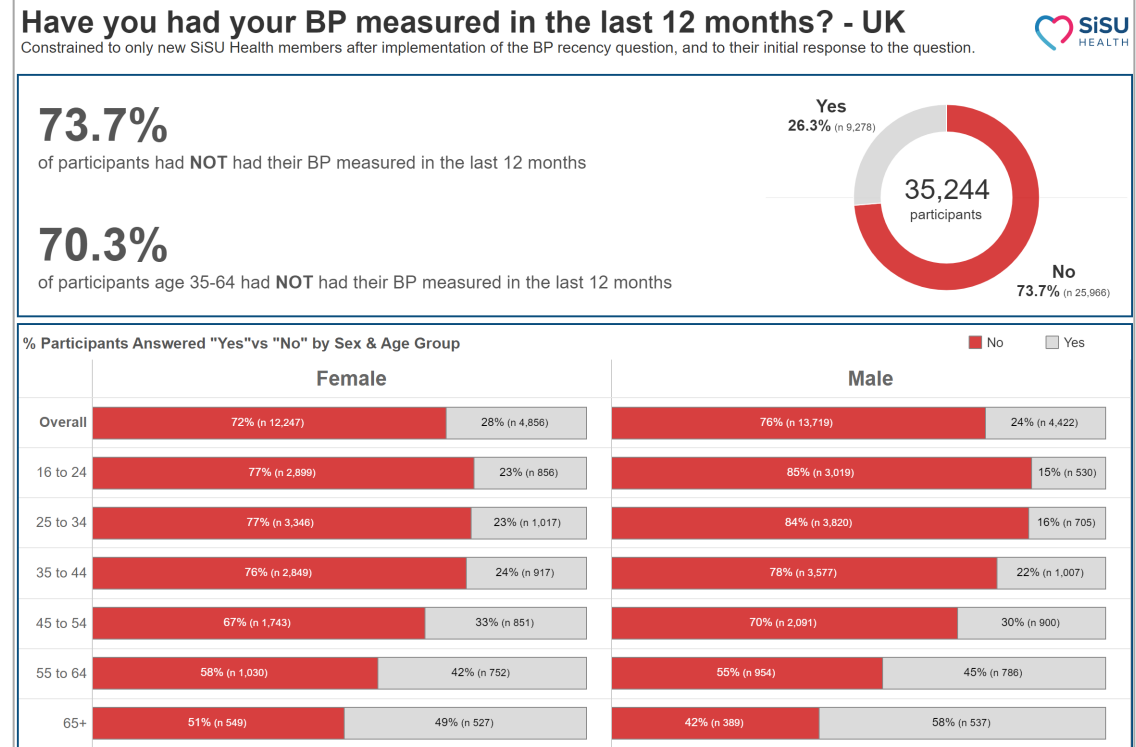
Key Insights

- To date, 35,244 responses from first time BP check users have been captured.
- 74% of those conducting a first time BP check (n 35,244), had not had their blood pressure checked in the last year, despite high Blood Pressure being the leading global preventable risk factor for cardiovascular disease & death.
- 15% of all people measured recorded high BP and of that cohort, 62.3% had not had their BP measured in the last 12 months.

Context

- Current NHS guidelines state that healthy adults aged over 40 should have their blood pressure checked at least once every 5 years, unless they are at increased risk of high blood pressure, then ideally annually.
- However, the list of dimensions for BP risk are long, potentially impacting approximately 80% of people over 40yrs.

Users of the SiSU Health Station are presented the following on-screen question before the blood pressure check:



Note: Responses constrained to only new SiSU Health members after implementation of the BP recency question, and to their initial response to the question.

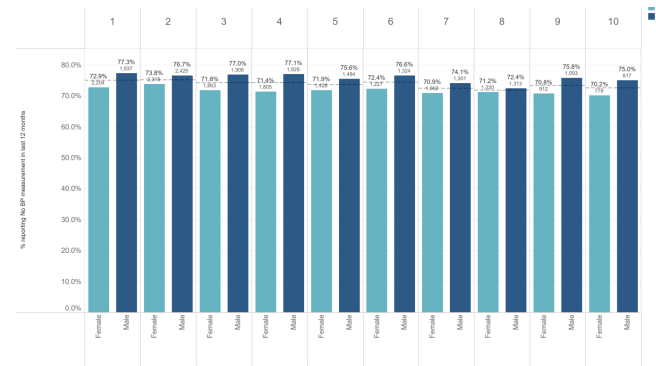
High rates of no recent BP measurement are evident across all ethnic groups, with men from “Mixed” ethnic groups the highest.

Key Insights

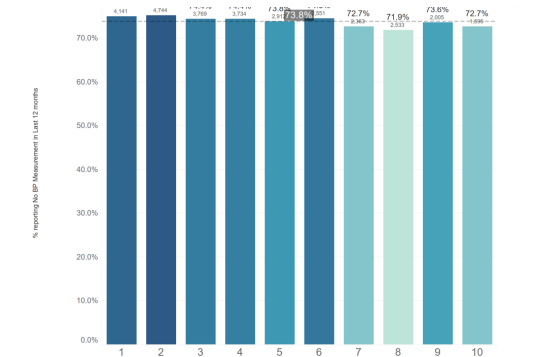
- Males average a slightly higher rate than females. (75.8% versus 71.7%). (n 30,347)
- BP awareness was consistently low across all IMDs, with rates of no recent BP measurement averaging 73.8%, suggesting a systemic, population-wide lack of BP measurement irrespective of socio-economic advantage.
- Users identifying as Asian, Mixed or Other, reported higher rates of no recent BP measurement, compared to Users identifying as Black or White. This is insufficient to address their significantly higher rates of measured high blood pressure. (n 30,347)
- Viewing BP measurement recency at the level of ethnicity and sex reveals Men identifying as “Mixed” reported the highest rate of no recent BP measurement and Female Users identifying as Black reported the lowest rate. (n 26,190)

Note: Responses constrained to only first time health check Users, after implementation of the BP recency question, and to their initial response to the question.

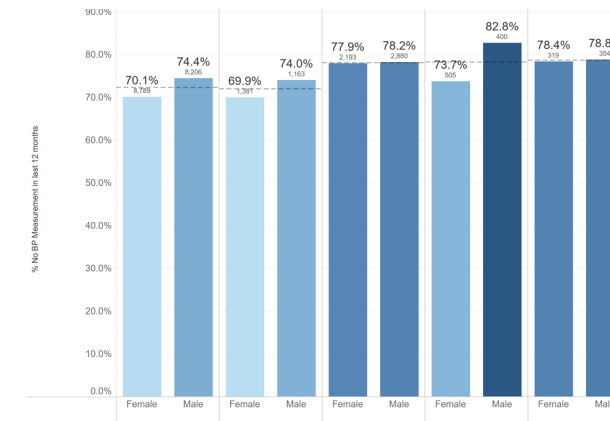
No BP measurement in last year by IMD and Sex



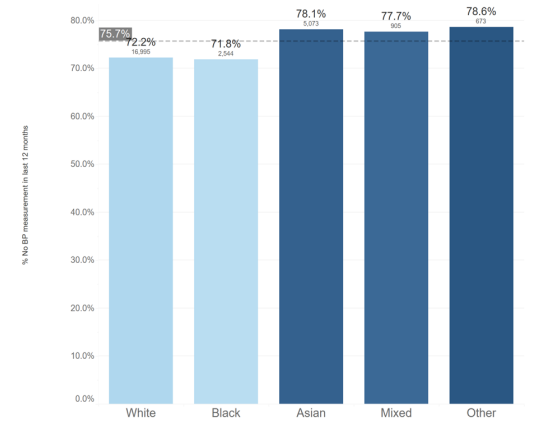
No BP measurement in last year by IMD



No BP measurement in last year by Ethnicity and Sex



No BP measurement in last year by Ethnicity



Rates of no recent BP measurement improve with age, but remain high.

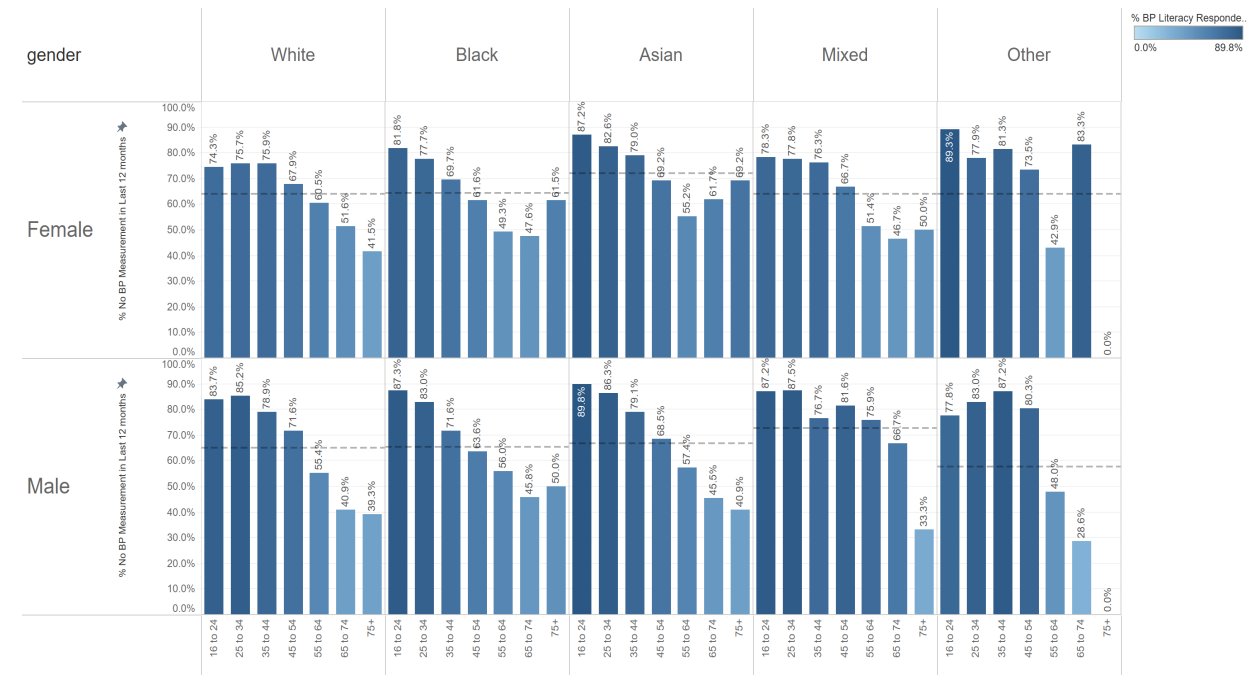
Key Insights

- BP measurement recency averages 67.7% of people not measured in the last year.
- BP measurement recency improves with age for all ethnic groups, particularly for those Users identifying as Black and over the ages of 35-64. (n 26,401)
- BP measurement recency amongst younger White females is significantly higher than other ethnic groups.

Conclusion

- When viewed by ethnic group, sex and age group, improvement opportunities for hypertension case-finding and intervention are evident.

No BP measurement in last year by Ethnicity, Sex and Age





Health Access & Equity

- Health risks
 - High blood pressure (BP)
 - Body Mass Index (BMI 30+)
 - Smoking
 - QRISK[®]3
 - Physical inactivity (PAI)
 - Alcohol consumption (AUDIT-C)
 - Perceived stress (PSS-4)
 - BP and BMI combined (Cardiometabolic)



SiSU Health platform data provides scaled, accurate, real-world insights into population health risks



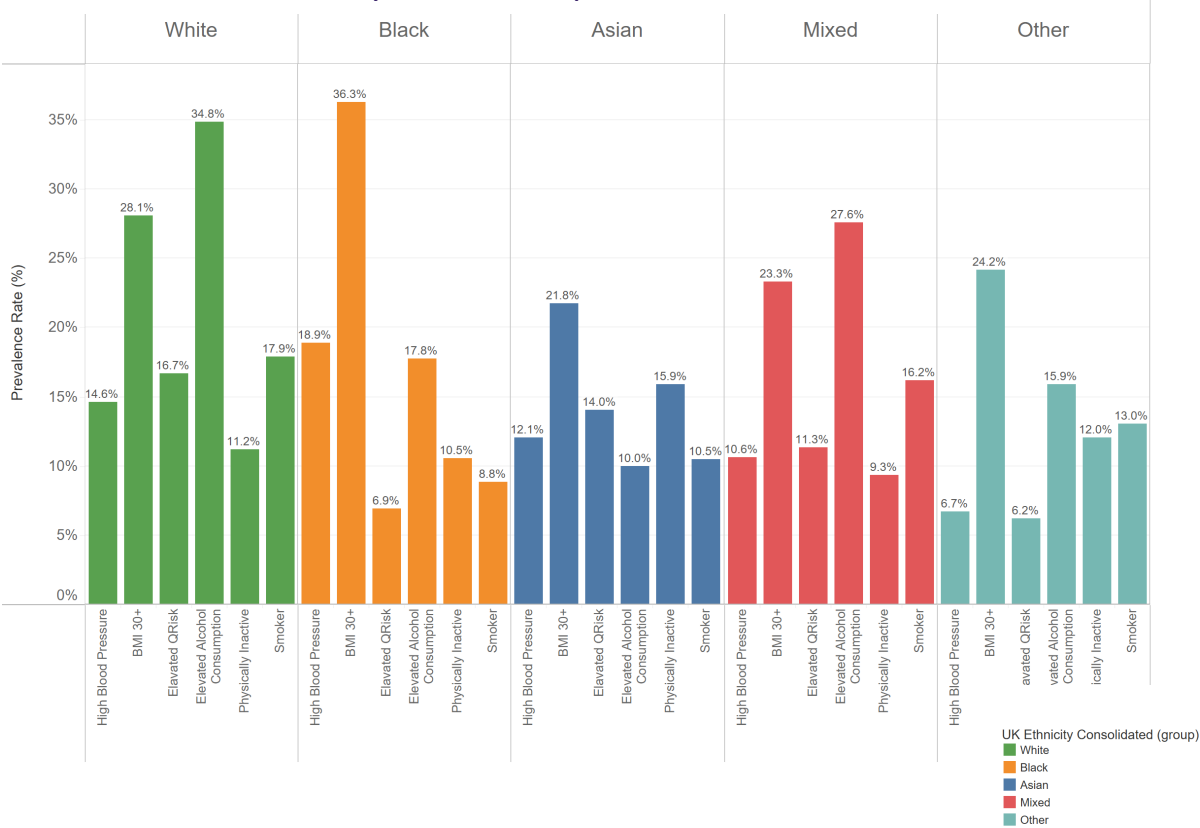
Key Insights

- SiSU Health platform data provides scaled, accurate, real-world insights into health risk rates and co-morbidities across ethnic groups e.g.
 - Users identifying as Black, reported the highest levels of BMI and blood pressure risk.
 - Users identifying as White reported the highest level of alcohol risk, elevated QRisk and smoking.
 - Users identifying as Asian reported the highest level of physical activity risk.

Context

- A typical health check takes about 5 minutes and includes Height, Weight, BMI, Blood Pressure (BP), BP medication and recency of check, Heart Rate, Body Fat, Smoking, CVD risk, Alcohol, Physical Activity and Perceived Stress.

Health Risks Prevalence by Ethnic Group

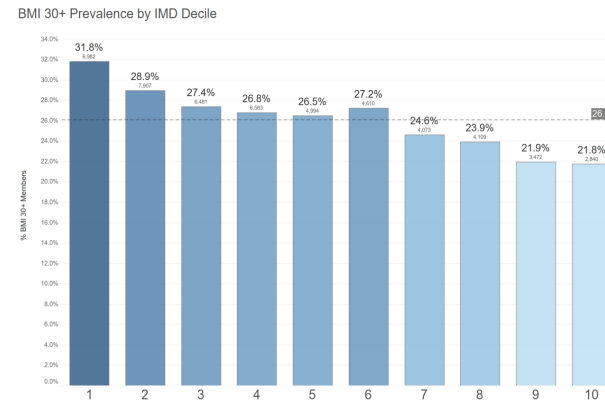


Obesity rates are aligned with greater deprivation, with the highest rates of obesity risk for Black Users

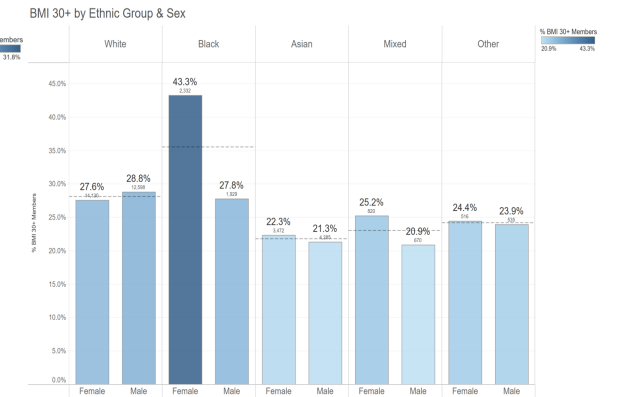
Key Insights

- The prevalence of people with BMI obesity (BMI 30+) is strongly aligned to their deprivation.
- Users identifying as Black had the highest rates of obesity risk, at 36%
- Black and White ethnic groups combined, measured significantly higher rates of obesity (BMI 30+) on average versus Asian, Mixed and Other ethnic groups. Combined, these two ethnic groups account for 88% of the population of England.
- Rates of obesity by sex within ethnic groups are largely similar.
- Obesity rates for Black females exceed that of females across all other groups, starting from young adulthood and persisting over a lifetime.
- Obesity rates of Black women exceed 43%, approximately 80% higher than the unweighted average of females from all other ethnic groups.
- n 41,287 individuals / n 58,904 BMI measurements

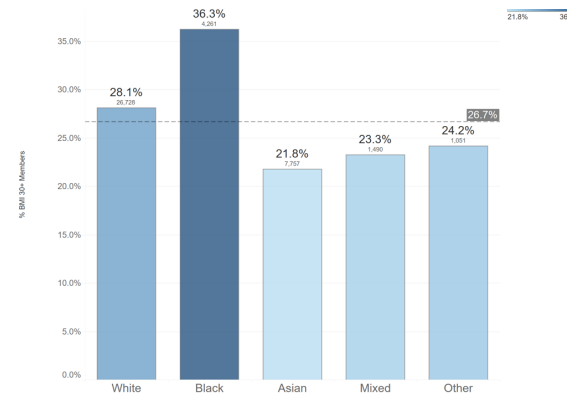
BMI 30+ Prevalence by IMD



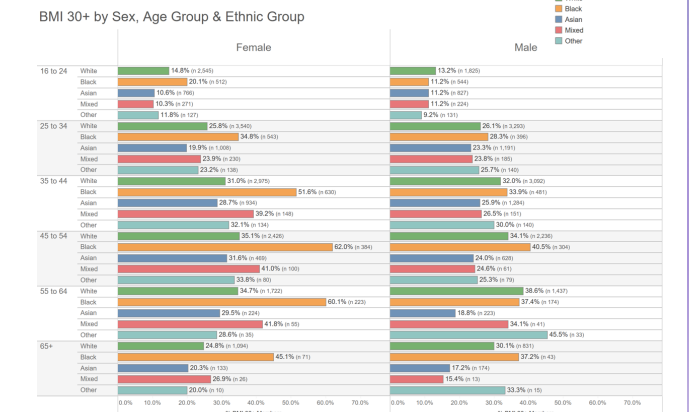
BMI 30+ Prevalence by Ethnicity & Sex



BMI 30+ Prevalence by Ethnicity



BMI 30+ by Sex, Age & Ethnic Group

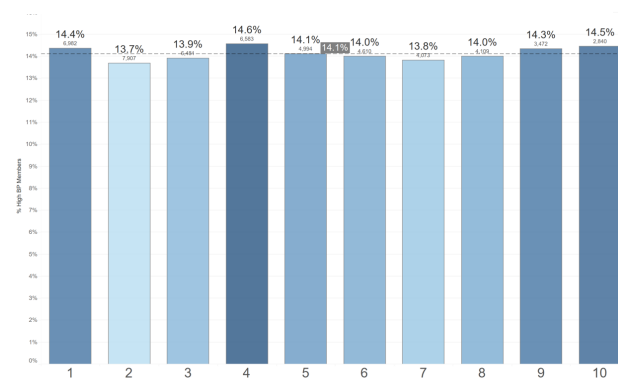


High blood pressure is a serious health risk across all IMD deciles, with the highest rates of BP risk in Users identifying as Black.

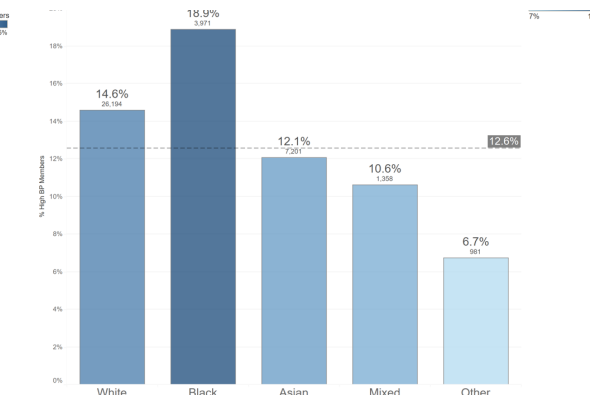
Key Insights

- Rates of high BP are uniformly similar across all IMD deciles. n 48,487
- Users identifying as Black measure the highest rates of high BP, exceeding other ethnic minorities by a range of 50% - 200%.
- Males from all ethnic groups measure higher rates of high BP versus females, with males identifying as Black the worst.
- High blood pressure rates for Black females exceed that of females across all other groups in every age group, except young adulthood
- Users of both sexes identifying as Black or as White, record higher rates of high BP from their mid-20s, with rates persisting with age.
- n 39,705 / n 54,924 BP responses

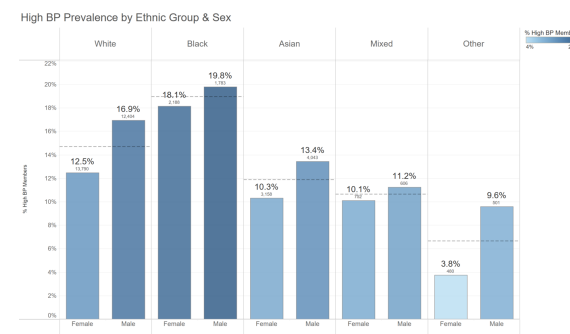
High BP Prevalence by IMD



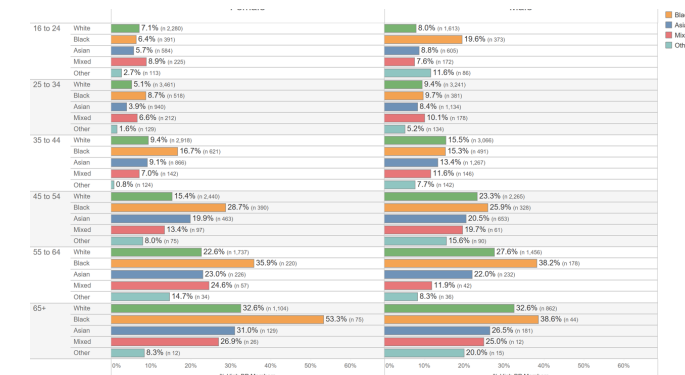
High BP Prevalence by Ethnicity



High BP Prevalence by Ethnicity & Sex



High BP Prevalence by Ethnicity, Age & Sex



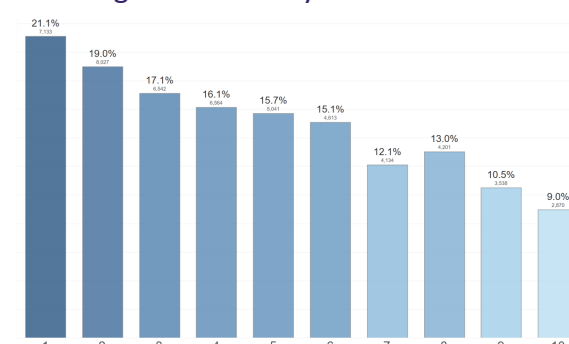
(Note: These rates have not been weighted by age and do not include people already on BP medications.)

Smoking rates in the most deprived areas are twice that in the less deprived areas

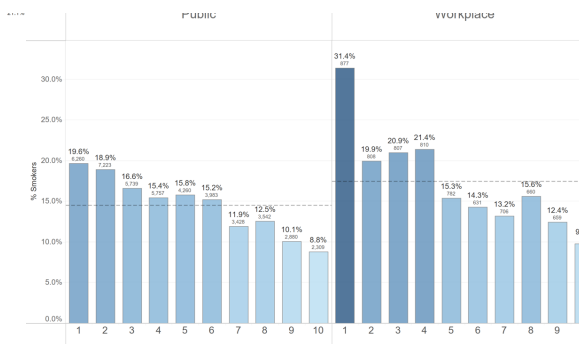
Key Insights

- Smoking prevalence rates align with rising deprivation
- Rates of smoking in IMD 1 and 2 (CORE20) are twice that of the least deprived 20% of the UK population
- Smoking rates in workplaces show very high rates of smoking clustered in more deprived workplace deciles. This identifies the value of workplace settings to engage smokers and provide workplace supported cessation programs. For employers, an average smoker in the UK £3,429 in lost productivity per annum. (using avg. annual salary £39,184) * (n 80,063 smoking)
- Users identifying as White and mixed report double the rate of smoking when compared to those identifying as Black and on average 70% higher than Asian and Other groups. (n 59,513 smoking)
- Younger users identifying as White and mixed ethnic groups report much higher rates of smoking versus Asian and Other mixed ethnic groups in same age groups. These high rates persist into middle life, demonstrating the value of early intervention.

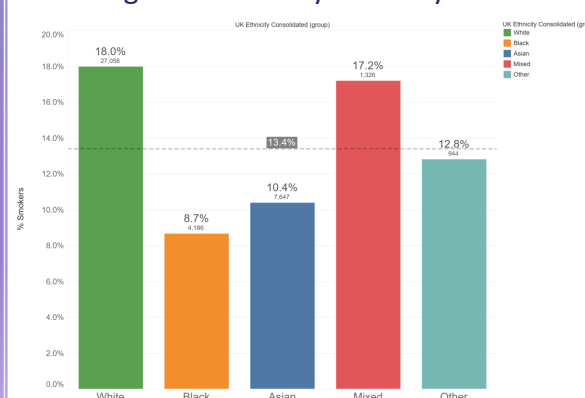
Smoking Prevalence by IMD



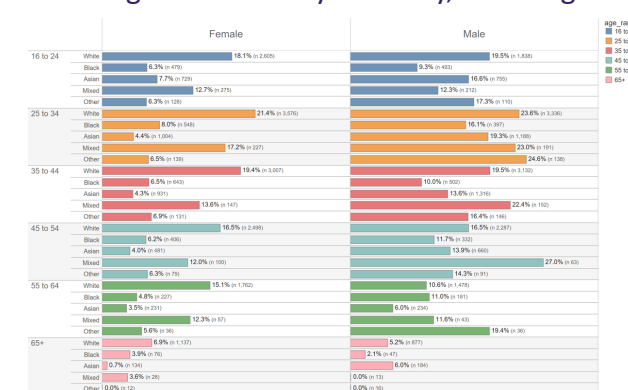
Smoking Prevalence by IMD – Public vs Workplace



Smoking Prevalence by Ethnicity



Smoking Prevalence by Ethnicity, Sex & Age



* Berman, M., Crane, R., Seiber, E., & Munur, M. (2014). Estimating the cost of a smoking employee. Tobacco control, 23(5), 428–433. <https://doi.org/10.1136/tobaccocontrol-2012-050888>

QRISK scores are worst for Male Users identifying as White & Asian

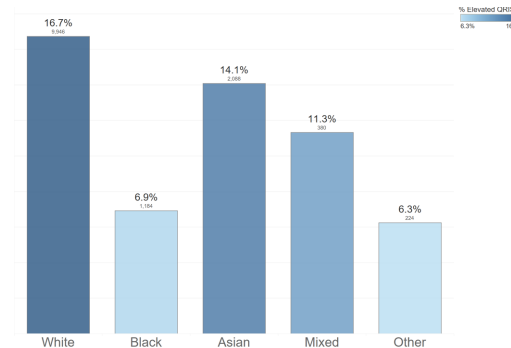
Key Insights

- The QRISK®3 algorithm calculates a person's risk of developing a heart attack or stroke over the next 10 years.
- Male users identifying as White and Asian show significantly increased risk of a cardiovascular event relative to all other ethnicities. (n 13,842)
- The most deprived decile, IMD1, shows the highest rate of elevated QRISK score. (n 13,629)

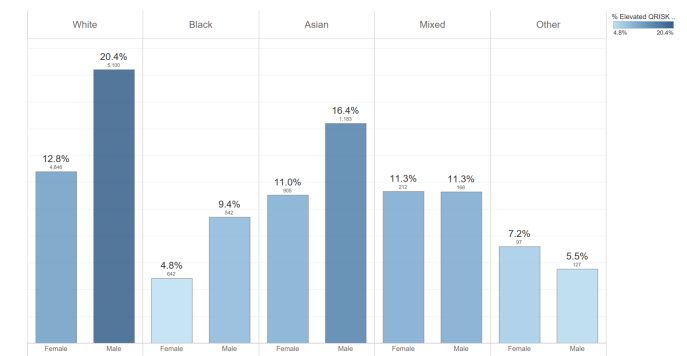
Important note:

The QRISK®3 algorithm uses significant ethnicity based weightings to calculate a risk score for an individual. In this algorithm (<https://www.qrisk.org/three/src.php>), White ethnicity is treated as neutral and control value with significant additive and decreative coefficients for Asian and Black ethnicities which generate risk distributions that are different from BMI30+ and high BP risk plots seen prior. This algorithm in no way dilutes the importance of discrete health risks such as high BP or BMI 30+.

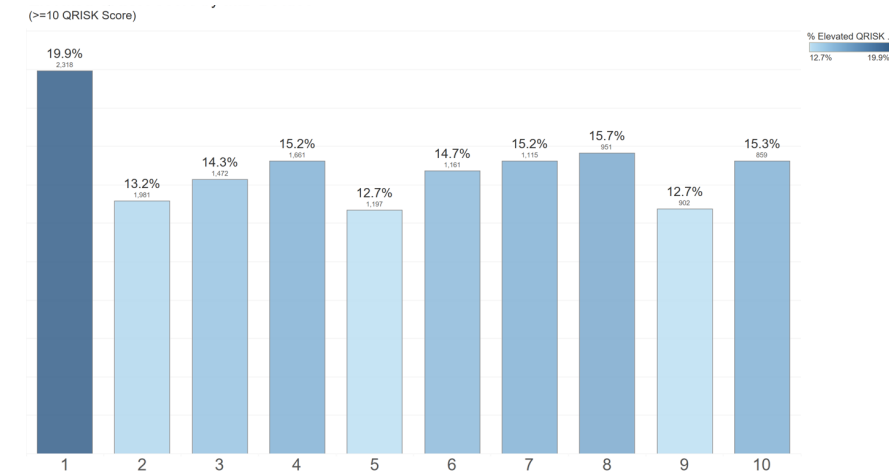
Elevated QRISK Score by Ethnicity



Elevated QRISK Score by Ethnicity & Sex



Elevated QRISK Score by IMD Decile



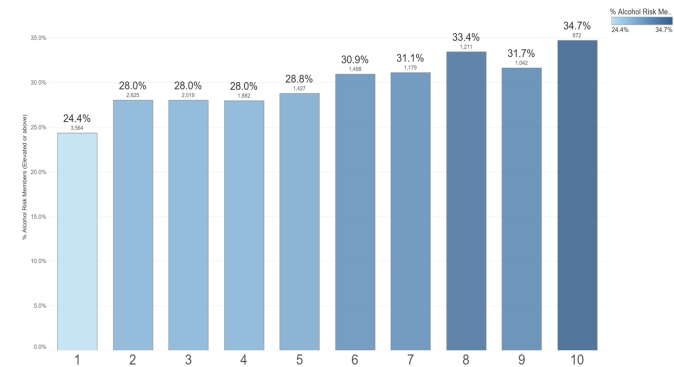
Alcohol Risk is highest for Users identifying as White & Mixed

Key Insights

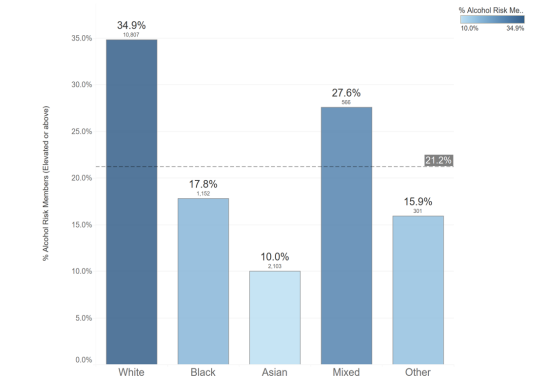
- Elevated alcohol risk rises in a linear pattern from the most deprived to the least deprived.
- The gradation rises from approximately 1-in-4 people in the CORE20 to 1-in-3 people in the most advantaged 3 IMD deciles. (n 17,303)
- Male Users across all ethnicities report higher alcohol risks.
- Male users identifying as White and Mixed, report significantly higher rates of risky alcohol consumption than other groups. 43% of White Males.
- The risk rates for those identifying as White and Mixed are 2-3X higher than other groups. (n 14,945)
- Users from White and Mixed Ethnic groups report higher rates of alcohol risk starting in early adulthood and persisting throughout life. (n 15,048)

Elevated Alcohol Risk by IMD Decile

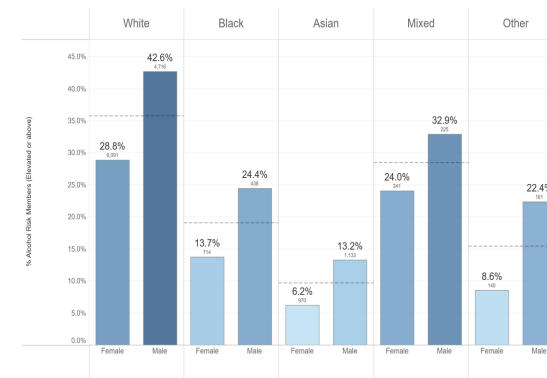
Alcohol Risk by IMD Decile
(>= 5 score in AUDIT-C)



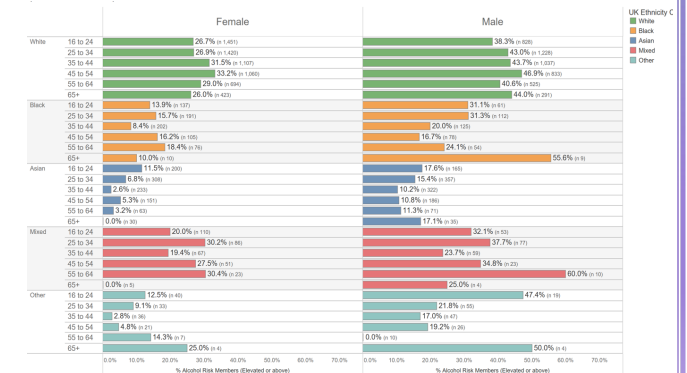
Elevated Alcohol Risk by Ethnicity



Elevated Alcohol Risk by Ethnicity & Sex



Elevated Alcohol Risk by Ethnicity, Age & Sex

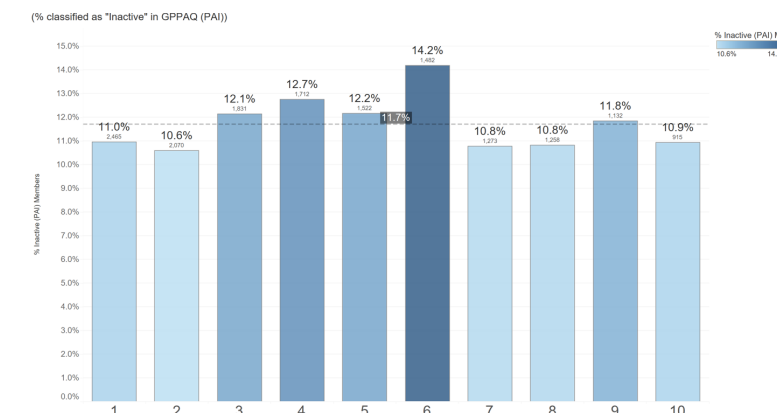


Physical Inactivity are highest in lower-to-middle IMD deciles 3-6

Key Insights

- Rates of physical inactivity across IMD deciles are highest in the lower-to-middle deciles (3-6) where rates average 12.8% versus the lowest and highest deciles of deprivation (1-4 & 7-10) where average rates are identical at 11.7% each. (n 15,665)
- Respondents from Asian ethnic groups report markedly higher rates of physical inactivity versus all other groups (n 13,552)
- Rates of female physical inactivity are higher than males for all ethnic groups, whilst average rates for Asian and Mixed ethnic females are significantly higher than other groups (17.1% versus 11.7%)

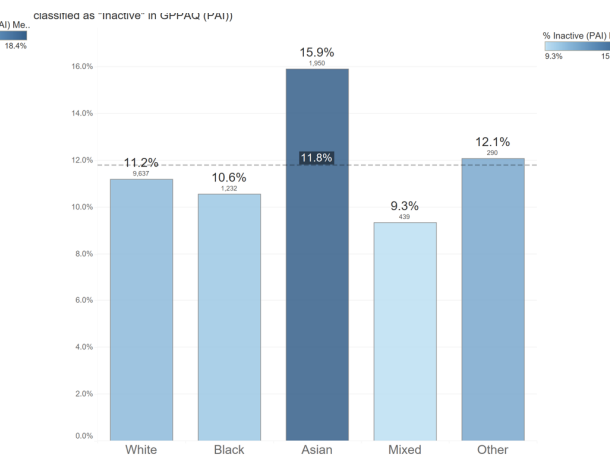
Physical Inactivity Risk by IMD Decile



Physical Inactivity Risk by Ethnicity & Sex



Physical Inactivity Risk by Ethnicity

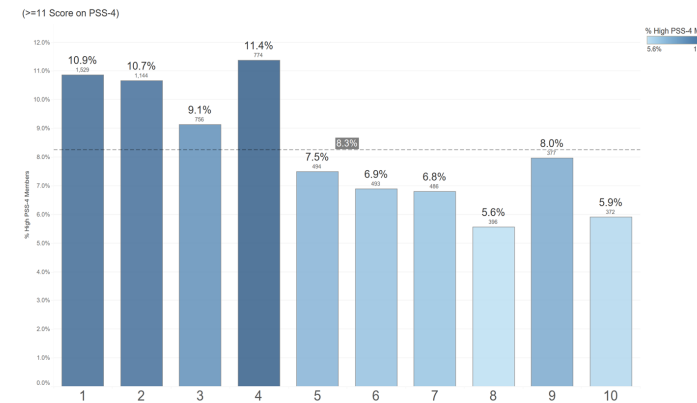


High Perceived Stress is reported by people living in the most deprived deciles

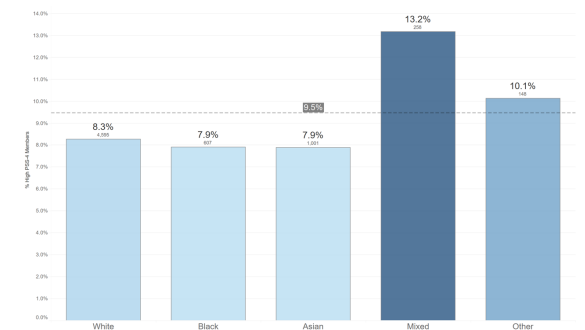
Key Insights

- The PSS-4 is a validated mental health instrument deployed on SiSU Health Station in the UK.
- High Perceived Stress is reported by people living in the most deprived deciles (n 6,821)
- Highest Perceived Stress is reported by people who identify as Mixed ethnicity.
- Females reported a higher level of perceived stress in all groups.
- Younger people reported higher levels of perceived stress in all groups.
- Studies show a clear association between perceived stress and health-risk behaviour such as smoking, physical inactivity and low intake of fruit and vegetables in deprived neighborhoods.*

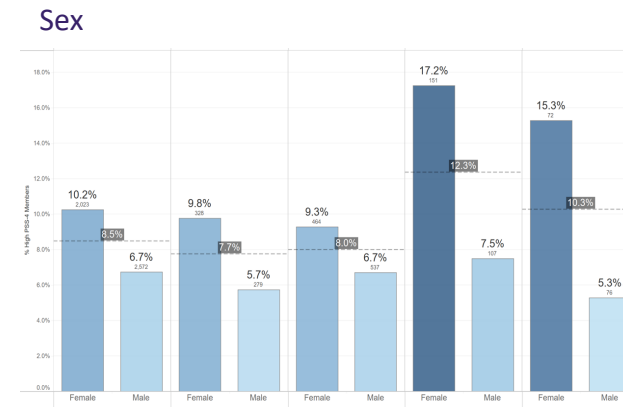
High Perceived Stress by IMD Decile



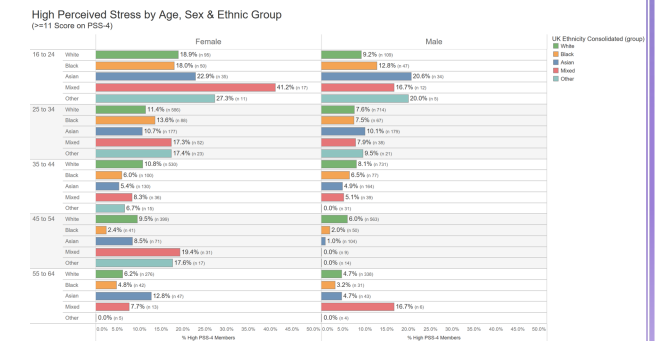
High Perceived Stress by Risk by Ethnic Group



High Perceived Stress by Ethnic Group & Sex



High Perceived Stress by Age Group, Sex & Ethnic Group



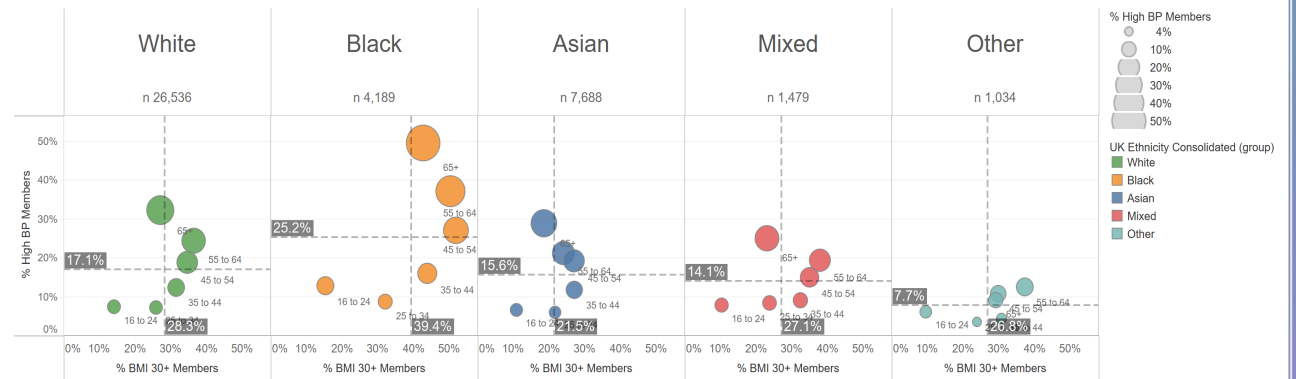
*Algren, M.H., Ekholm, O., Nielsen, L. *et al.* Associations between perceived stress, socioeconomic status, and health-risk behaviour in deprived neighbourhoods in Denmark: a cross-sectional study. *BMC Public Health* **18**,

High BP and BMI combined, show significant elevated rates of cardiometabolic risk for Users identifying as Black

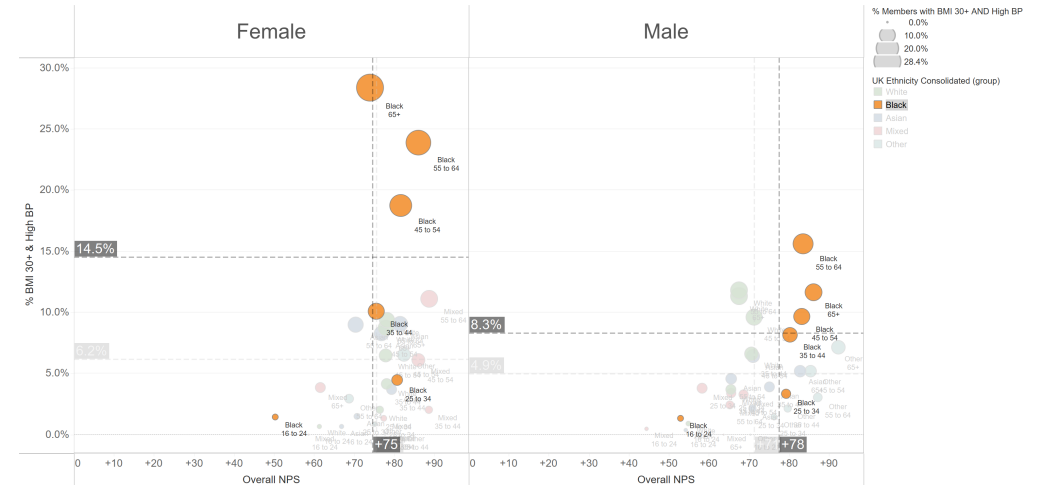
Key Insights

- SiSU Health risk data which is used to plot both high bp and BMI 30+ by ethnic group and age group shows significant, elevated rates of cardiometabolic risk for large cohorts of Black and White people aged 35+.
- Whilst Black people account for ~3.5% of the English population, their cardio-metabolic risk rates of Black females 35+ are 2.5x–3x higher than all other ethnicities.
- When the combined cardiometabolic risk rate (high BP and BMI 30+) are plotted against health check satisfaction scores (NPS), by ethnic group and age group, we see the highest engagement from those with the highest risk. Black females and males record outlier rates of cardiometabolic risk but also the highest satisfaction scores when using the SiSU Health Station. With Black males recording higher NPS than females, a very rare pattern.

Prevalence of Metabolic Risk (BMI 30+ & High BP) by Ethnicity & Age Group



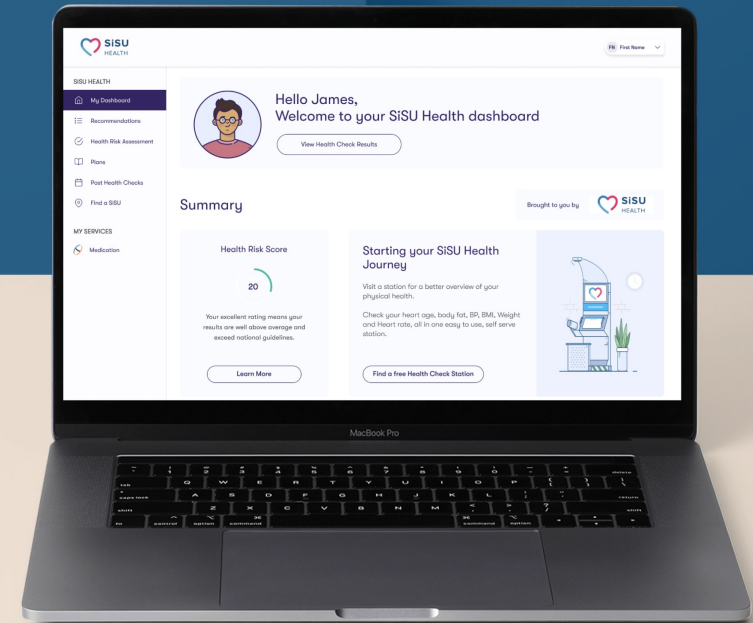
Scatter Plots of Metabolic Risk (BMI 30+ & High BP %) -v- NPS (by Sex, Age Group & Ethnicity)





Health Access & Equity

- Health impact over time

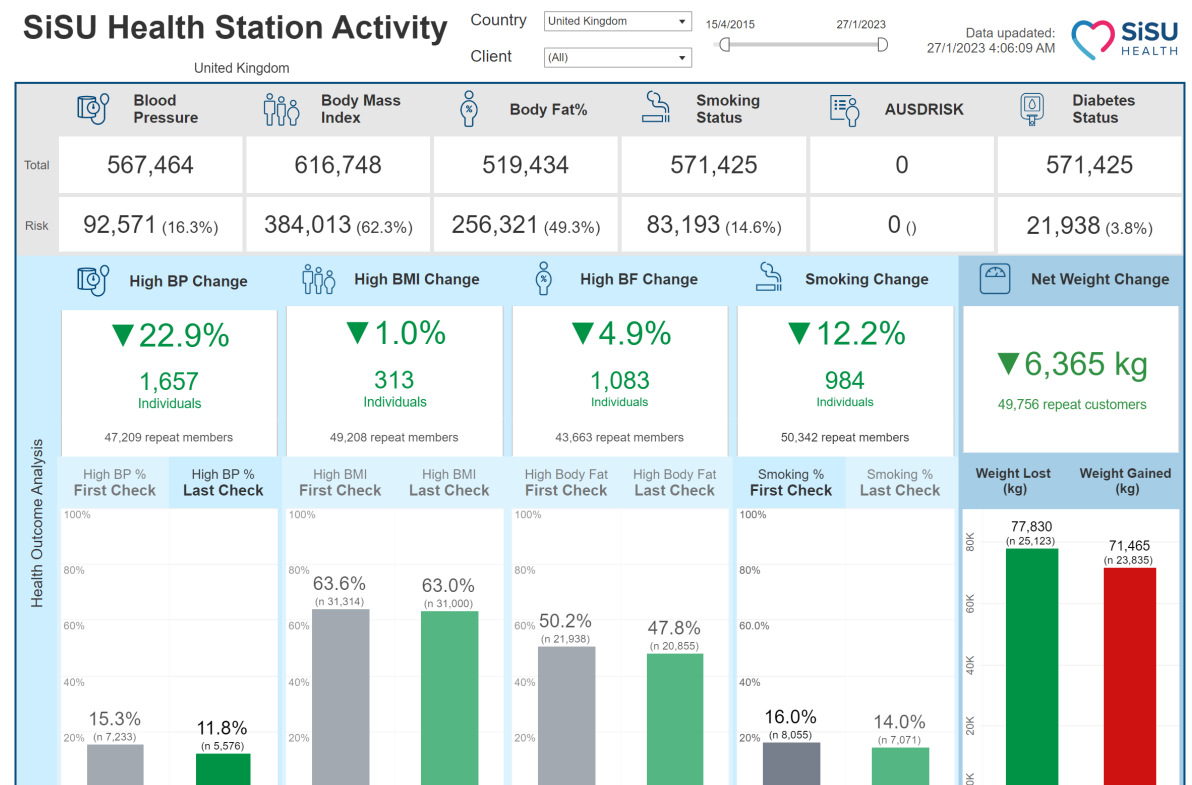


Health impact over time shows an overall picture of improving health for repeat Users of the Health Station

Key Insights

- Over 47,000 Users have repeated the health check enabling SiSU to track changes in health over time.
- We see health improvements across the board for the different health metrics
- For further information on the health improvement of Users, see the following paper [The Demographic Representativeness and Health Outcomes of Digital Health Station Users: Longitudinal Study. Flitcroft et al \(2020\)](#)
- The following report produced in Australia also shows fascinating seasonal patterns of health and the impact of the Covid lockdowns on those patterns. Read more here [Canary in the Mine: A unique analysis of the impact of the COVID-19 pandemic on the physical & mental health of Australians](#) (Appendix 4)

Health Impact over Time (UK impact results – 15 April 2015– 27 Jan 2023)





Health Access & Equity

- Case Studies



Working with SiSu has enabled localised, tailored, opportunistic health screening aiming to tackle modifiable health risks among some of our poorest and marginalised communities in the town. The high proportion of the calls to action identified has enabled greater support to be provided by our local integrated wellbeing service already tackling health inequalities faced by such communities.

Christina Gleeson- Public health manager- Healthy Lives, Luton Public Health

Christina Gleeson

Case Study - The Luton Wellbeing Hub



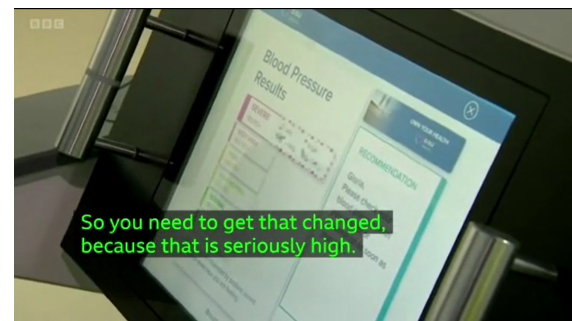
Bringing healthcare to where people live their lives

The Luton Wellbeing Hub was launched in May 2022 and provides the opportunity for local residents to be vaccinated against COVID-19 but also a range of wellbeing services. Including health checks from the innovative SiSU Health Station, which is free for all residents.

The Wellbeing Hub is also able to offer support with healthy lives services such as support to quit smoking and is located in Old Post Office next to Lidl in the Luton Mall.

To date the SiSU Health Station has served almost 1,600 checks with an exceptionally high NPS of +90 (N 1,450)

[View BBC news story here](#)

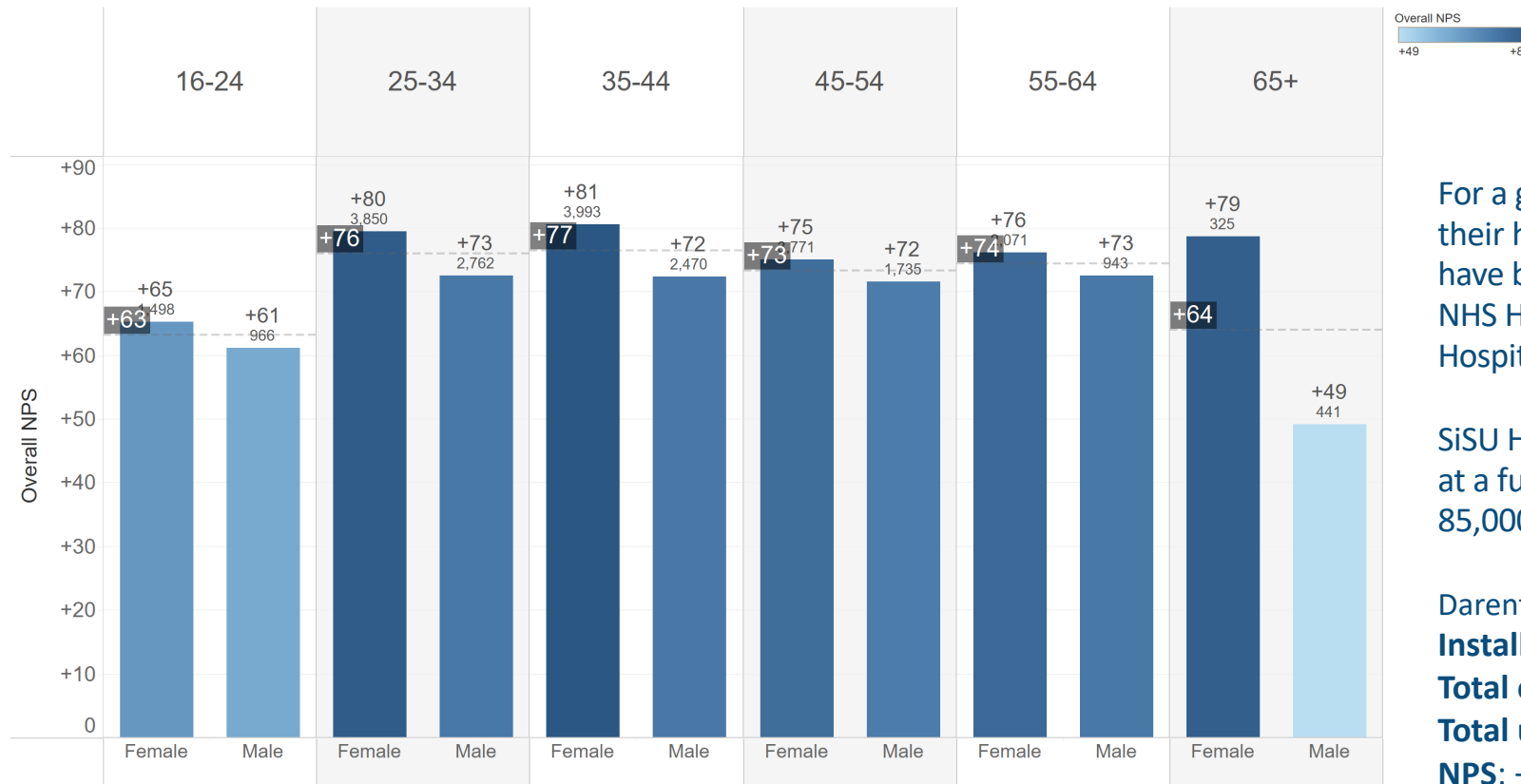


Mini health check at a health station

- The Wellbeing Hub, 42 - 44 The Mall, Luton, LU1 2TE
- Luton Central Library (first floor), St George's Square, Luton LU1 2NG
- Inspire Sports Village, Butterfield Green Road, LU2 8DD
- Harris Pharmacy, 165 Dunstable Road, Luton, LU1 1BW

Case Study - SiSU Health Stations provide health support to NHS Hospital Staff

NHS Hospital Staff - NPS by Age Group & Sex



For a group of people on whom the nation relies to support their health, it is gratifying to see how SiSU Health Stations have been so well used and welcome by staff at several NHS Hospitals with long term installations at Darent Valley Hospital and University Hospital Southampton.

SiSU Health Stations have been installed from time-to-time at a further six NHS Hospital sites, serving more than 85,000 checks to staff and visitors.

Darent Valley Hospital Post Graduate Training Centre

Installed: Sept 2017 to current day

Total checks: 32,955

Total users: 12,119

NPS: +74 (n 23,111)



Health Access & Equity

- Conclusions



Conclusions

Highly accessible health services provided where people live their lives attract high use and engagement.

Scaling digital solutions such as the SiSU Health Check could deliver significant steps in addressing health inequalities.

Consumer-centric digital health services can revolutionise UK population health surveillance

- SiSU Health data confirms known patterns of risk rate difference by IMD and ethnic groups but also nuanced and counter-intuitive ones.
- Populations impacted by health inequalities show a clear willingness and appreciation for health check services that are free, accessible and non-judgemental with SiSU data revealing new engagement pathways for those at highest risk.
- Services provided to people to where they live their lives achieve high engagement and enable more effective self-care and integrated support.
- Digital platforms can scale where other approaches such as the current NHS Health Check simply cannot.
- The SiSU Health Check machine measurement of blood pressure, BMI and body fat delivers the most accurate and scalable way to non-invasively screen cardiometabolic risk across multi-ethnic populations.
- Public-facing digital health platforms can reduce coverage gaps and increase the area of health coverage for all. (Ref. The Tanahashi framework in appendix)
- Trusted, consumer-centric and highly accessible digital health services can reach and enable more effective self-care but also revolutionise the way that service providers like the NHS can use data to allocate and target support for whole populations, including the most deprived. (Appendix 3)

Context, Caveats & Copyright

SiSU Health Group (SHG) has undertaken analyses of its own data and created this report to demonstrate the power and potential of medical-grade, consumer digital health platforms to improve health access, equity and outcomes for the most deprived citizens of the UK, and the promise of more effective population health surveillance and support programs.

This report has been created in good faith and all reasonable efforts have been made to ensure the accuracy of data presented, however SHG provides no warranty for such.

Primary audiences for this report are NHS management, local and national public health policymakers, medical and public health researchers and their sponsoring institutions, peak health bodies and parties interested in population and preventive health.

All data presented in this report has been captured with the express, explicit and informed consent of users of SiSU Health Stations across the UK. All data presented is aggregated and fully de-identified. SiSU Health Group (SHG) complies with all principles, components and requirements of both the UK-GDPR and EU-GDPR and has done so since their respective dates of introduction.

SiSU Health uses the English indices of deprivation 2019 and its Index of Multiple Deprivation (IMD 2019) and the UK 2021 Census list of Ethnic Groups to analyse patterns of usage, user satisfaction and health risks etc. Both the IMD and Ethnic Group mappings are relatively recent additions to data captured on the SiSU Health Station and it is this mapped data is used primarily in this analysis.

The SiSU Health Station is a self-service Class IIa medical device (ISO 13485) on which, to date, more than 1.5 million individuals have completed almost 4.3 million digital health checks across four countries. SHG manufactures these health stations and also maintains quality certifications for Information Security (ISO 27001), Operational Health & Safety (ISO 45001) and CE Mark (CE 698848). All current quality certificates can be viewed here: <https://sisuhealthgroup.com/quality-compliance/>

This report remains the copyright and intellectual property of SHG and SiSU Health UK.

The report has been authored by Patrick Hannebery, Fleur Streets and Nick Wei, members of SHG's Analytics & Insights Team.

Appendix

- Supporting narratives, insights & concepts



SiSU Health Group

Awarded

Company generating the greatest NHS benefit

30 November 2022 – London, UK



Appendix 1 - The 2021 Health Survey for England & OECD data both confirm the critical value of machine-measured data versus self-reported in measuring Overweight & Obese in the population

Objective, accurate, scaled and real-time machine measurement of BMI is the only way to effectively measure, understand and address rising rates of obesity and metabolic risk from individual to population level.

Health Survey for England: Overweight and obesity in adults

Excel tables

Publication date: 15 December 2022

Link to publication: <http://digital.nhs.uk/pubs/hse2021>

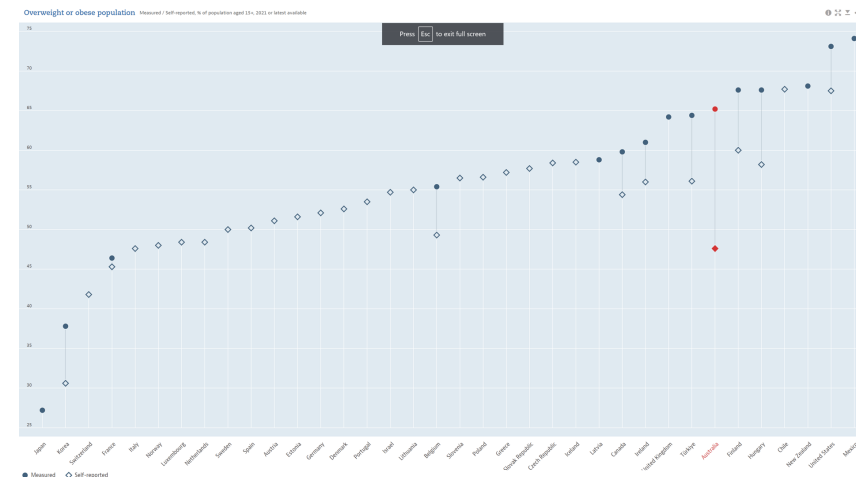


- In the most recent Health Survey for England (HSE 2021), algorithmic adjustments were required and applied to correct human bias in self-reported height and weight which is used to calculate BMI.
- The adjustment algorithm used estimates that an average male aged 50 over-estimates his height by 2cm and under-estimates his weight by 1.6 kgs
- The adjustment algorithm used estimates that an average female aged 50 over-estimates her height by 1.2cm and under-estimates her weight by 2.2 kgs
- The report also notes that that the corrected data is likely being less accurate at the low and high ends of the BMI scale.

Sources: <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england>

OECD – Overweight or Obese Population (2021 or latest available)

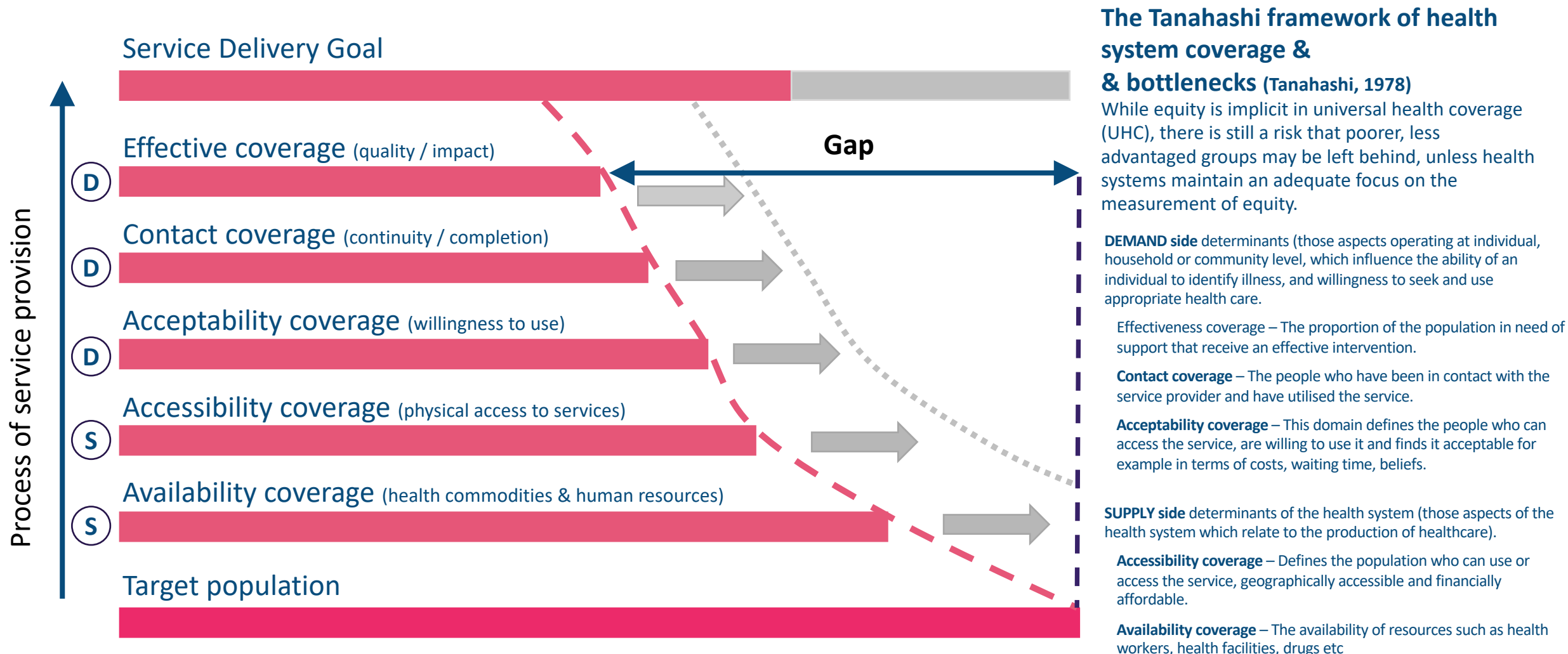
- Of the 10 OECD countries tracking the rate of overweight and obesity using both self-reported and machine measured data, all self-reported BMI measures are lower than machine-measured BMI.



Sources: <https://data.oecd.org/healthrisk/overweight-or-obese-population.htm>

*Self-reported versus measured body height and weight in Polish adult men: the risk of underestimating obesity rates - DOI: [10.1127/anthranz/2015/0467](https://doi.org/10.1127/anthranz/2015/0467)

Appendix 2 - Public-facing digital health platforms can reduce the gap loss and increase the area of health coverage for all



Appendix 3 - Consumer-First, NHS-Integrated Digital Health Services & Infrastructure can transform Population & Preventive Health



- National network (UK)
- Locally integrated
- 5,000 Stations
- Retail, community, schools
- 18 – 20 million checks per annum



- High accessibility
- Consumer-first & focused
- Personalised & context aware
- Consent enabled
- Empowering & non-judgmental
- Secure, trusted & loved

- Cardio-vascular
- Metabolic / Cardio-metabolic
- Mental health & cognitive health



- Measurement
- Immersive literacy
- Risk Screening
- Signposting & integrated triage
- Chronic disease monitoring

- Supported by new funding & business models (Govt & Commercial)

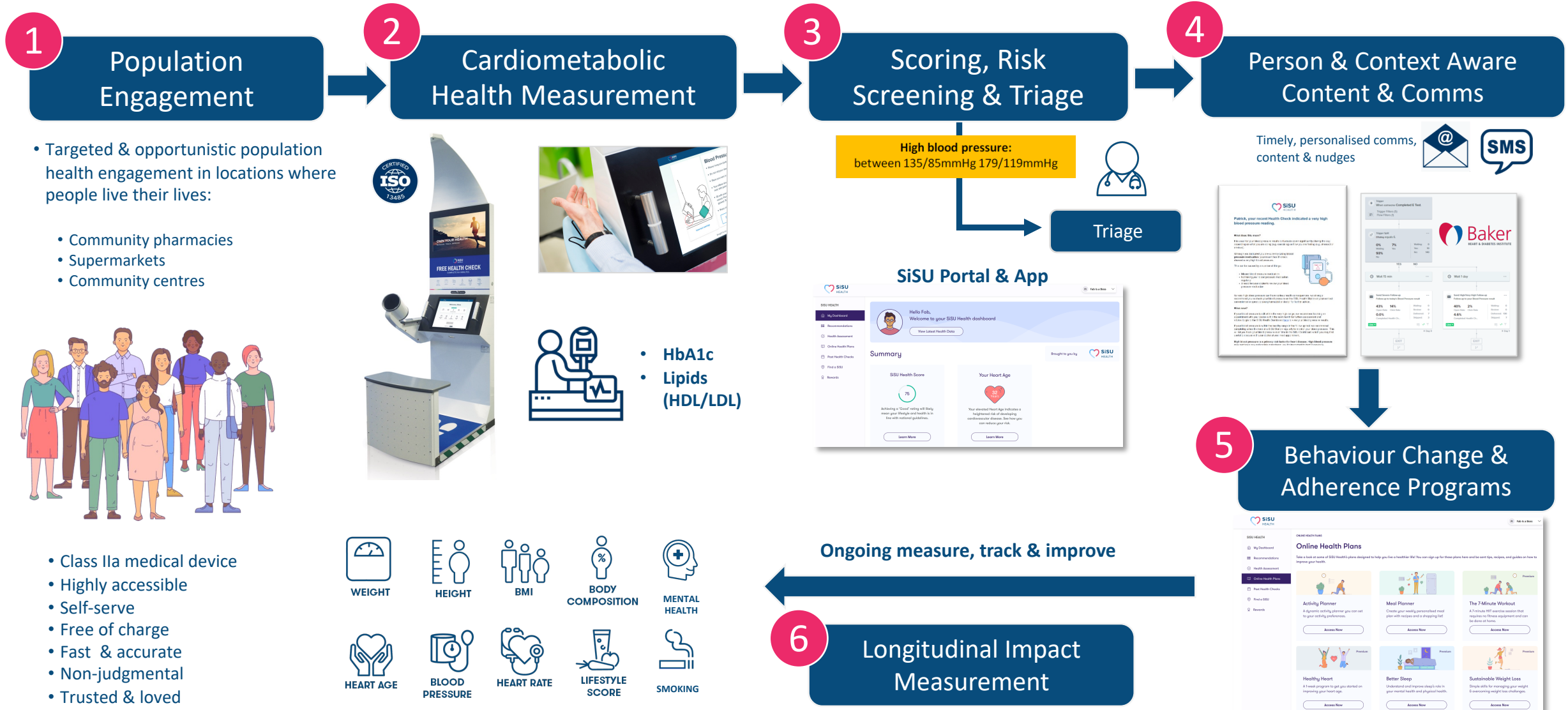


Specialist, Acute & Residential Care



Concept:

National Cardiometabolic Health Impact Platform



Appendix 4 - COVID's impact is real, broad, measurable & persistent. What we know from our Australian health station network...

SiSU HEALTH

Population Health Study
Canary in the Mine: A Unique Analysis of the Impact of the COVID-19 Pandemic on the Physical & Mental Health of Australians

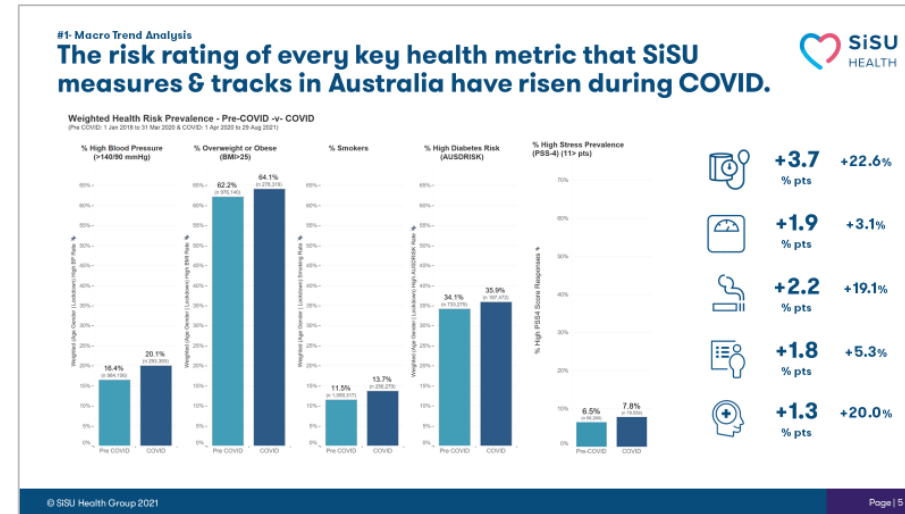
22 October 2021

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Patrick Hanneberg
Nick Wei
Fleur Streets
Samantha Fay

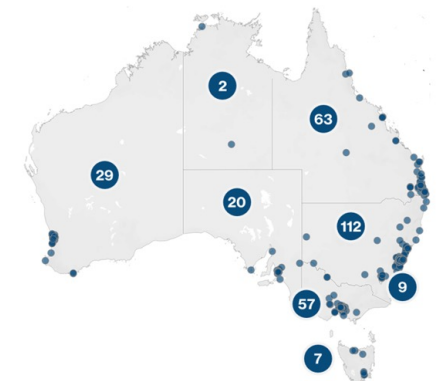
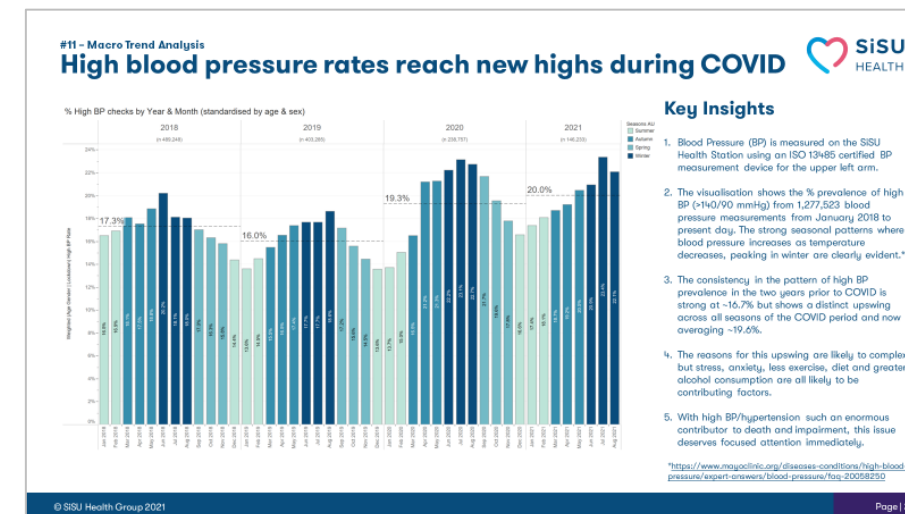
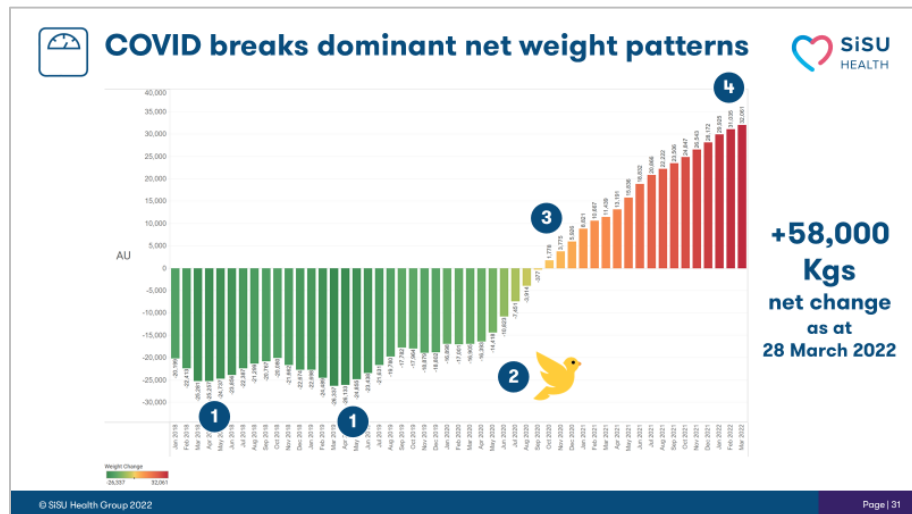
priceline pharmacy
api

Extended & Standardised Version



Key Insights

- SiSU Health Station network data shows that the risk rating of every key health metric that SiSU measures & tracks in Australia has risen during the COVID period - and remains elevated. (n 1.6 million checks)
- The health stations proved their remarkable real-time health surveillance potential.
- Download the full report [here](#)





Thank you



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