

Economic Consequences of COVID-19 Pandemic Outbreak on Health Indicators and Health Service Use in Wales

Longstanding Illness Projection 2020/21 – 2022/23

September 2020

WHO Collaborating Centre on Investment for Health and Well-being at Public Health Wales
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Key messages

Unemployment Rate (*Page 6*)

- Without reparative interventions, unemployment rate is expected to increase sharply from **3.8% in 2019 to about 7% in 2020 following COVID-19** and then gradually increase over the projected period

Longstanding Illness (*Pages 7 to 8*)

- With increased unemployment, longstanding illness (LSI) would be expected to increase gradually following COVID-19, with an estimated increase of **around or exceeding 4% over three years** depending on the LSI measure
- There would be a **higher increment in the percentage of adults with limiting LSI** compared with adults with any LSI, suggesting implications for wider health and social care services

Chronic Health Conditions (*Pages 9 to 11*)

- With current unemployment predictions, **percentage of adults with chronic health conditions is projected to increase** following the COVID-19 pandemic over the projected period, with a **higher increment for mental health and endocrine/metabolic problems**

Background

- The coronavirus (COVID-19) pandemic and response may cause the **global economy to decline by 4% (more than \$6 trillion)**, assuming that recovery starts in the second half of 2020 (*Bosley, 2020*)
- A recent monetary policy report has predicted that **the unemployment rate may rise to 9%** in the second quarter of 2020 in the United Kingdom (UK) (*Bank of England, 2020*)
- **Longstanding illness (LSI) is higher among unemployed people**, as shown by the Adult Health in Great Britain report (*ONS, 2013*)
- Unemployment is associated with increased risk of developing chronic health conditions (*Janke et al., 2020; Gronseth et al., 2017; Varanka-Ruuska et al., 2018*)
- COVID-19 may result in **900,000 more working-age people developing chronic health conditions due to reduced employment** in the UK - one percent fall in employment in working-age people may be associated with about two percent increase in chronic health conditions (*Janke et al., 2020*)

Aim

To forecast potential economic consequences of COVID-19 on LSI, taking into account the relationship between change in unemployment rate and LSI

Methodology

- Data required for the estimation of future unemployment rates (*ONS, 2013*) and percentage of adults with LSI (*National Survey for Wales, 2019*) was taken from government data sources for Wales / the UK
 - Data required for risk of LSI, including disease specific risk, was taken from the scientific literature (*page 12*)
 - Unemployment rate for quarter 1 of 2000 to quarter 1 of 2020 was taken from the ONS Labour Force Survey; unemployment rate for quarter 2 of 2020 was taken from the Bank of England estimated rate
 - Prediction was done using autoregressive integrated moving average (ARIMA) model. ARIMA is used for time-series data to get better understanding of the data and predict future values
 - Estimation of the percentage of adults with LSI, including disease specific rates, was done by taking into account the change in projected unemployment rates and risk probability for LSI
 - The predicted results for rates of unemployment and LSI, including disease specific rates, are presented on *pages 6 to 11*
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Peer review and acknowledgement

We would like to thank Dr Vijay GC, Research Fellow, Centre for Health Economics, University of York; and Mr Amritpal Rehil, Research Officer, Care Policy and Evaluation Centre, London School of Economics for their invaluable comments and recommendations in the peer review process

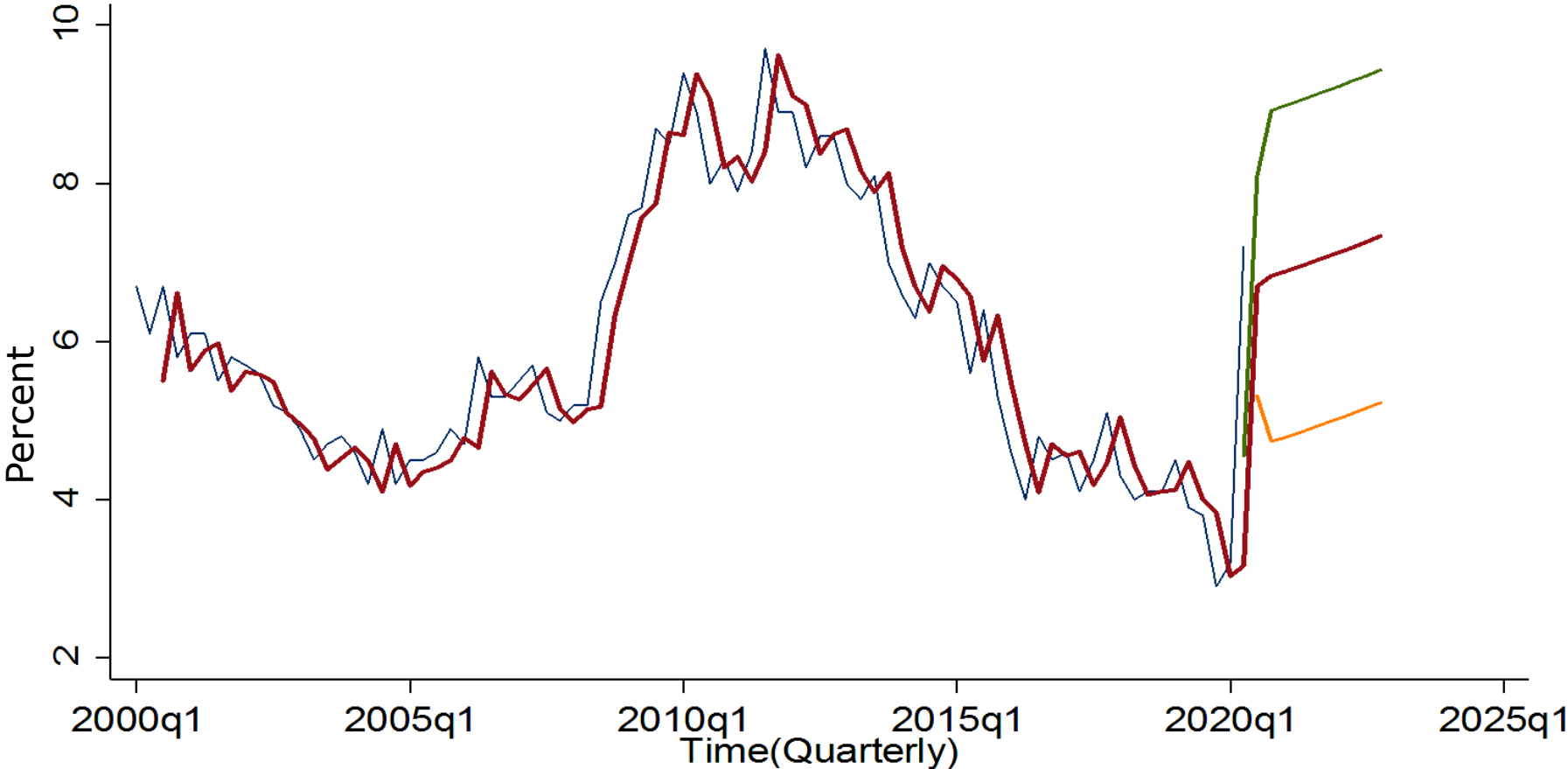
Key assumptions

- We have assumed the same rate of unemployment as the Bank of England have suggested for quarter 2 of 2020 to project further estimates (*Bank of England, 2020*)
 - Time lag for the increase in unemployment and LSI occurrence was considered in the model based on recent scientific evidence (*Janke et al., 2020*)
 - It is assumed that the risk rate for LSI among unemployed compared to employed persons remains stationary during the projection period, i.e. 2020/21 - 2022/23
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Definitions

- **Longstanding Illness (LSI)** refers to a condition that cannot currently be cured but can usually be controlled with medicines or other treatment options
- **Limiting LSI** refers to a condition that limits a person's day-to-day activities
- **Non-limiting LSI** refers to a condition that do not limit a person's day-to-day activities

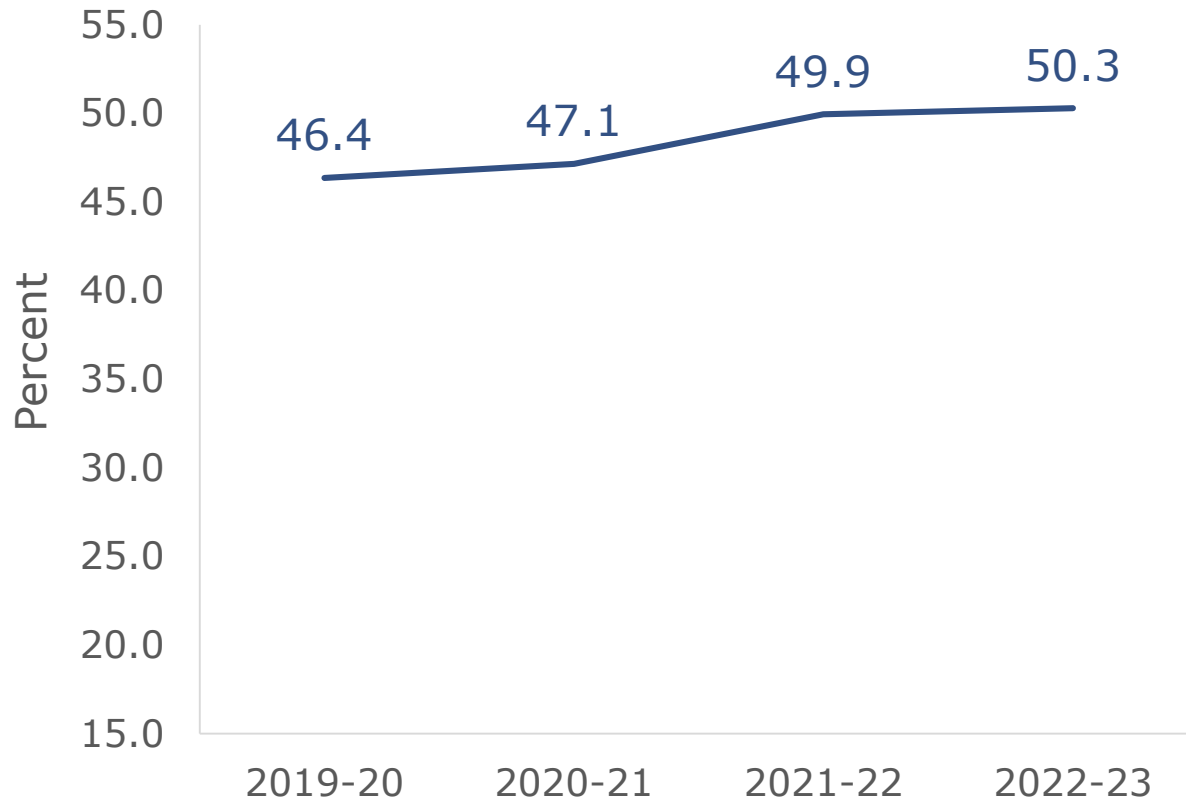
Projected unemployment rates in Wales following COVID-19



— Unemployment Rate (%) — Predicted Unemployment Rate (%)
— upper95CI — lower95CI

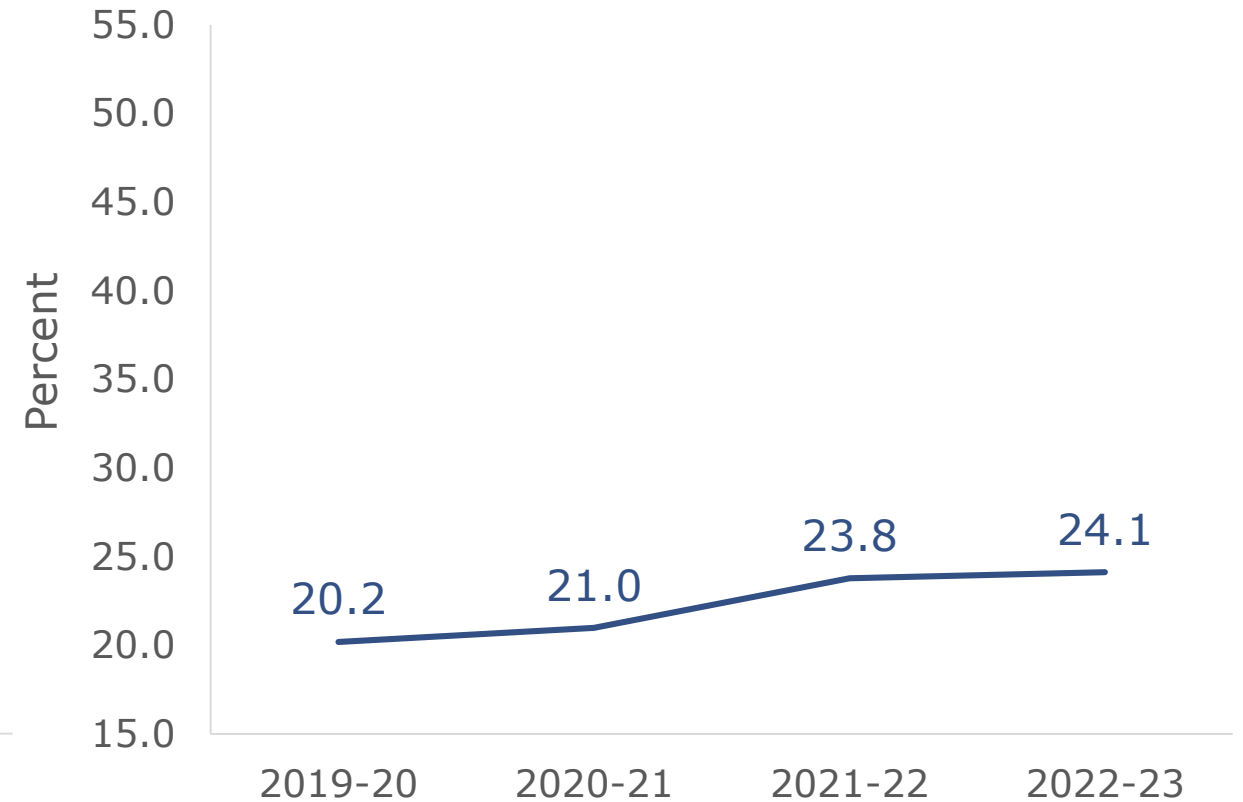
Upper/lower 95CI = 95% Confidence Interval

Projected percentage of adults with any LSI



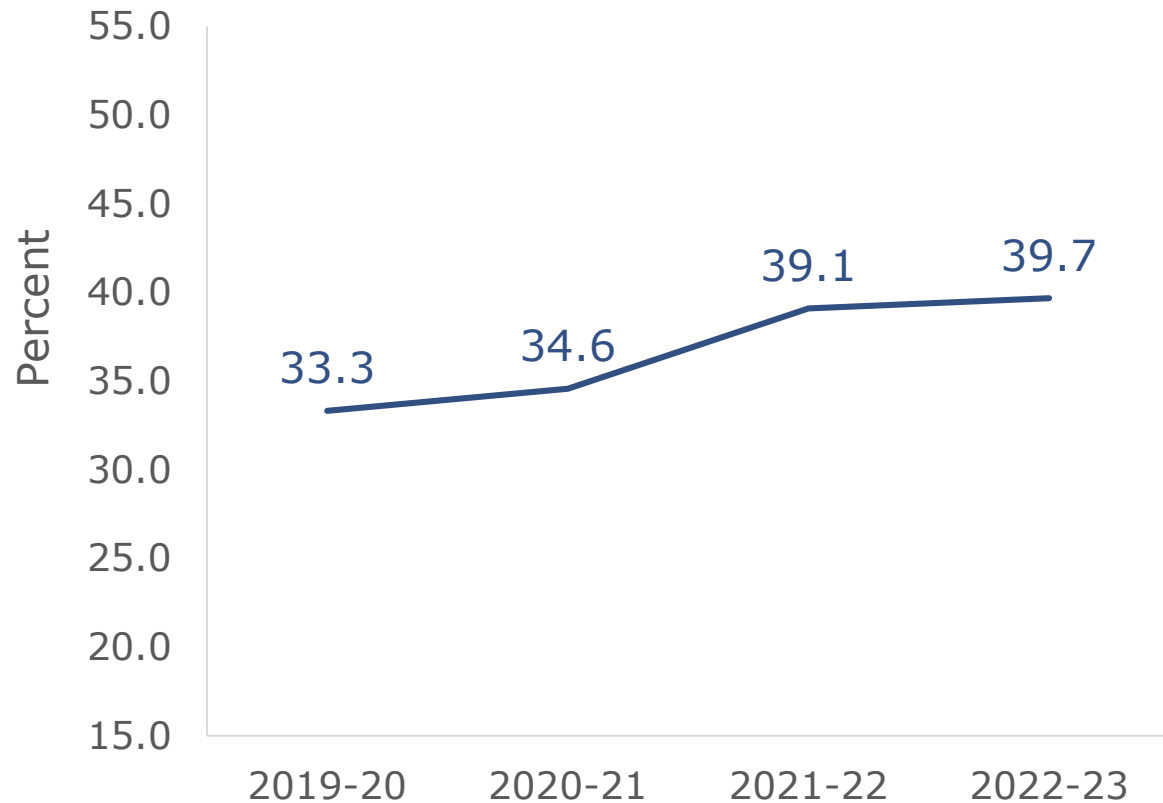
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Projected percentage of adults with 2 or more LSI



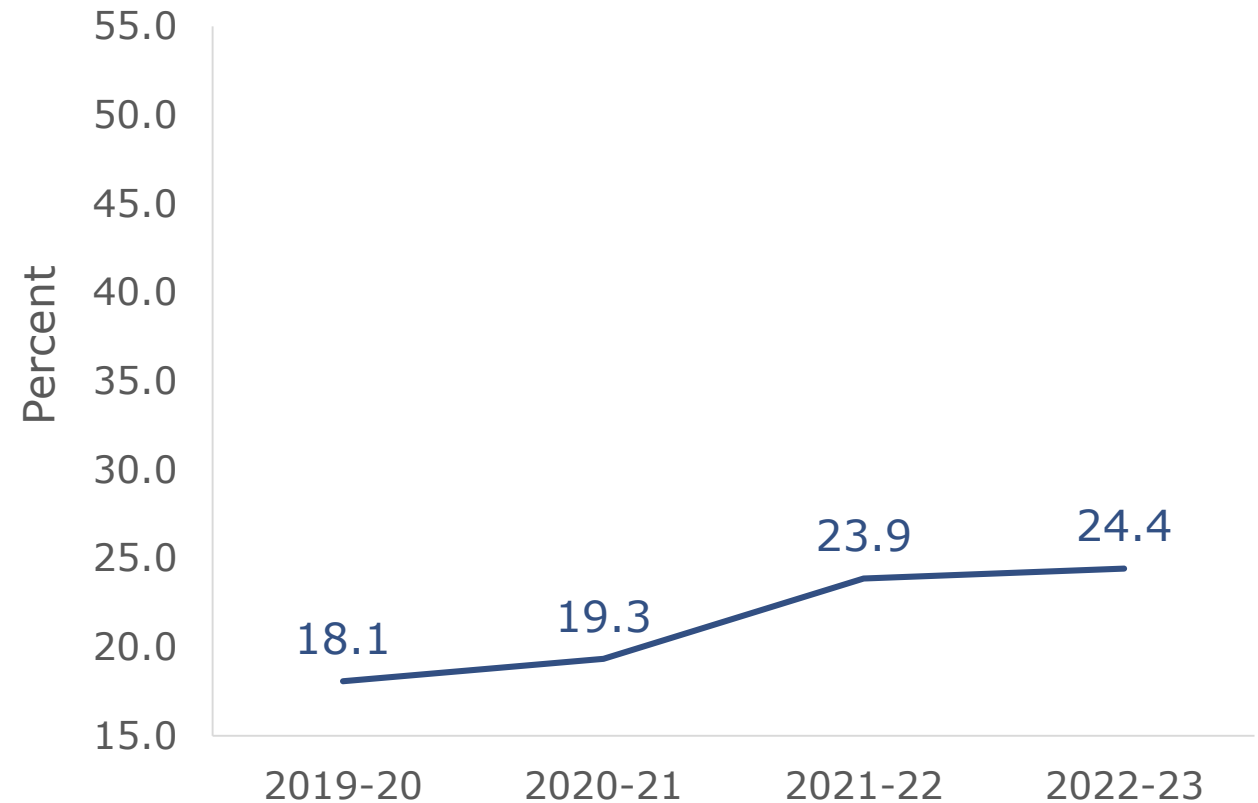
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Projected percentage of adults limited at all by LSI



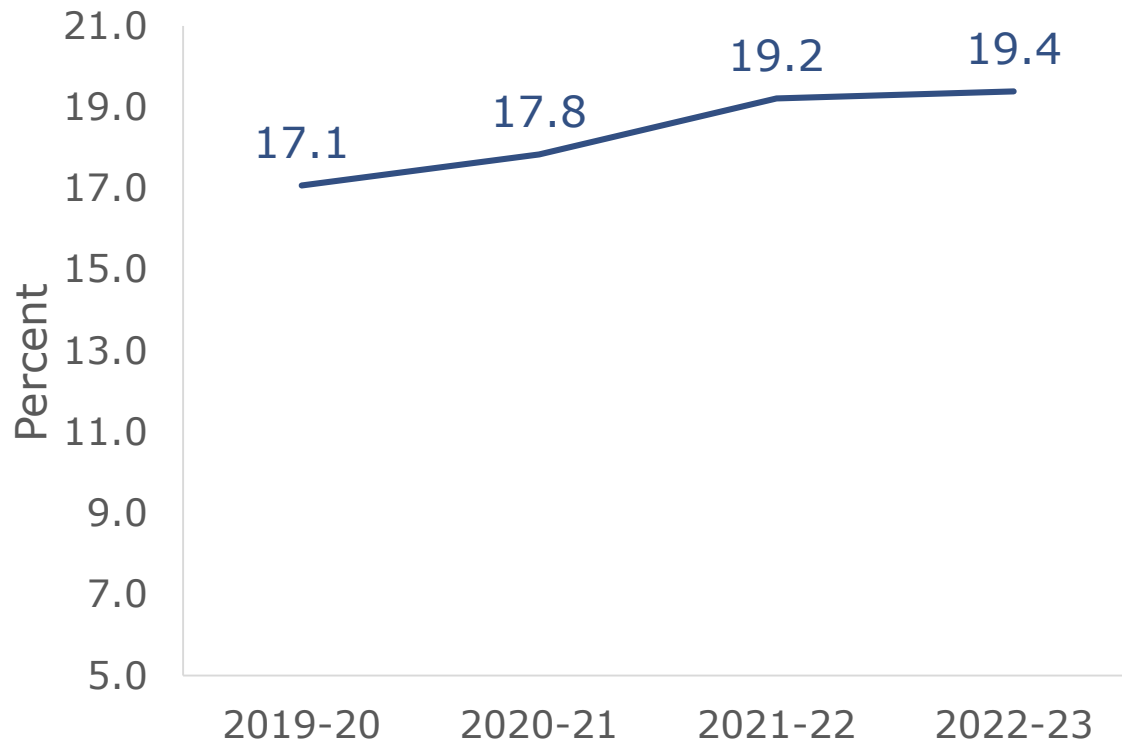
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Projected percentage of adults limited a lot by LSI



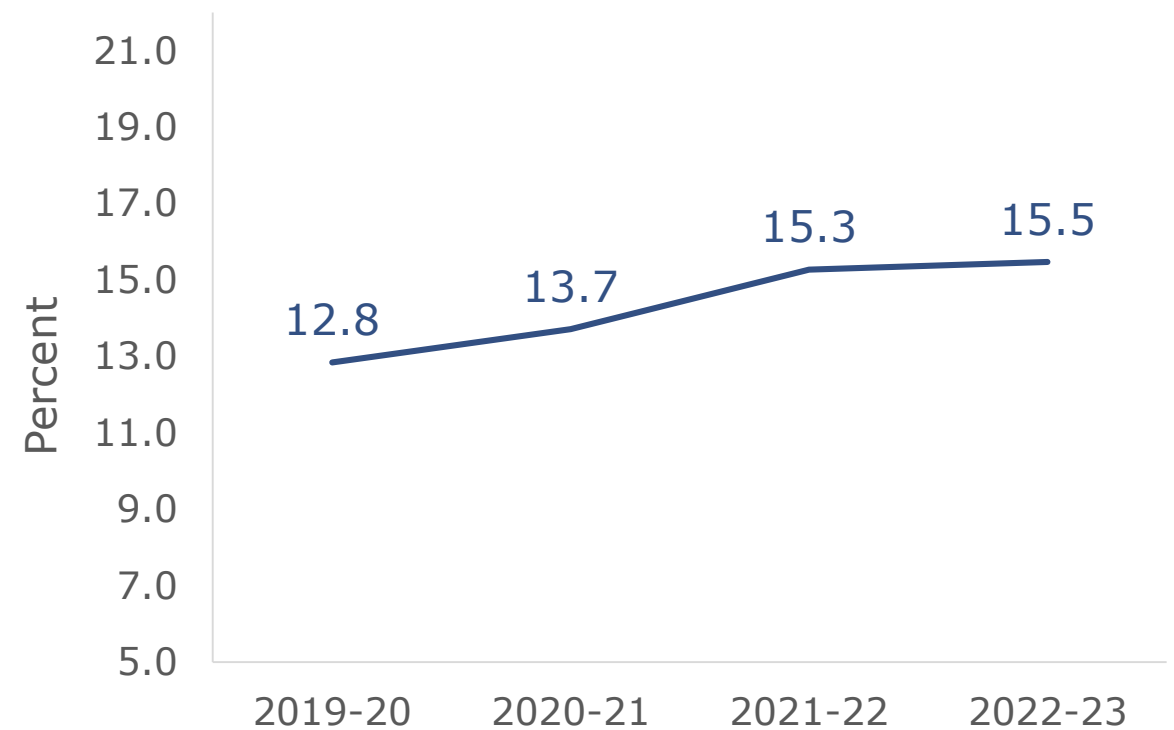
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Projected percentage of adults with musculoskeletal problems



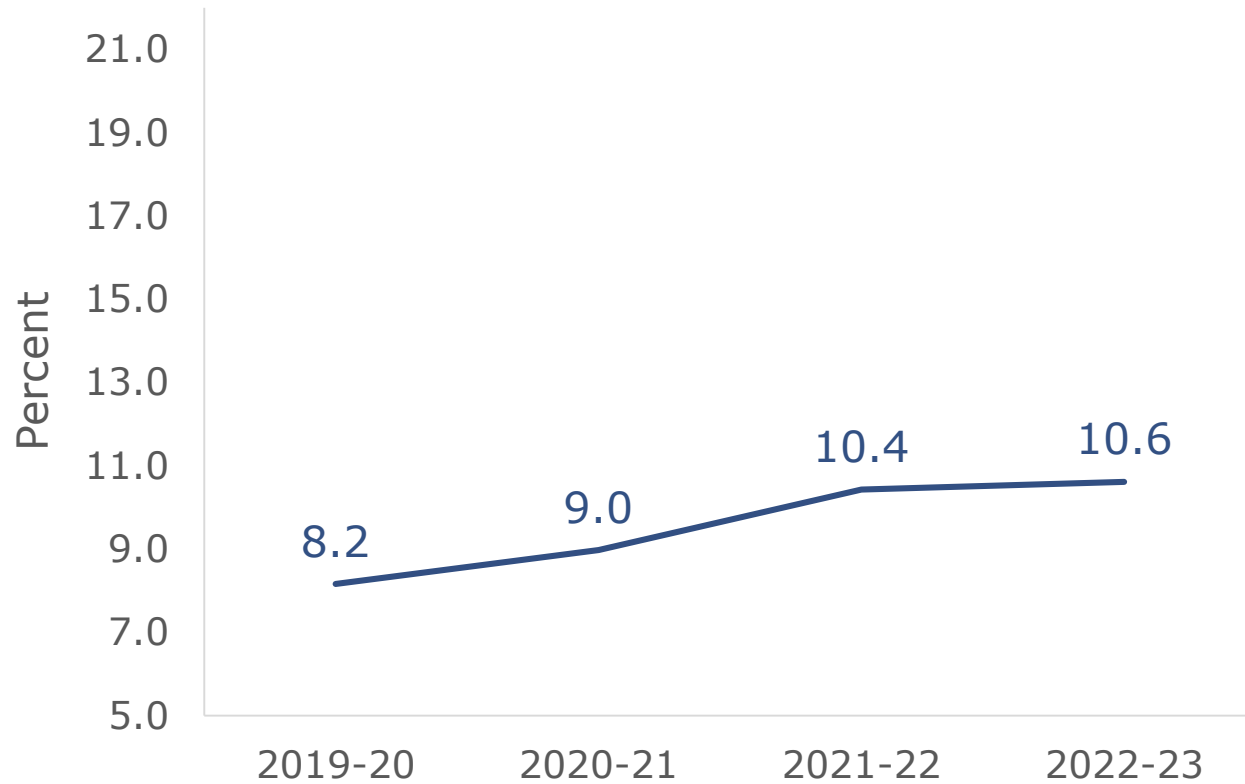
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Projected percentage of adults with heart and circulatory problems



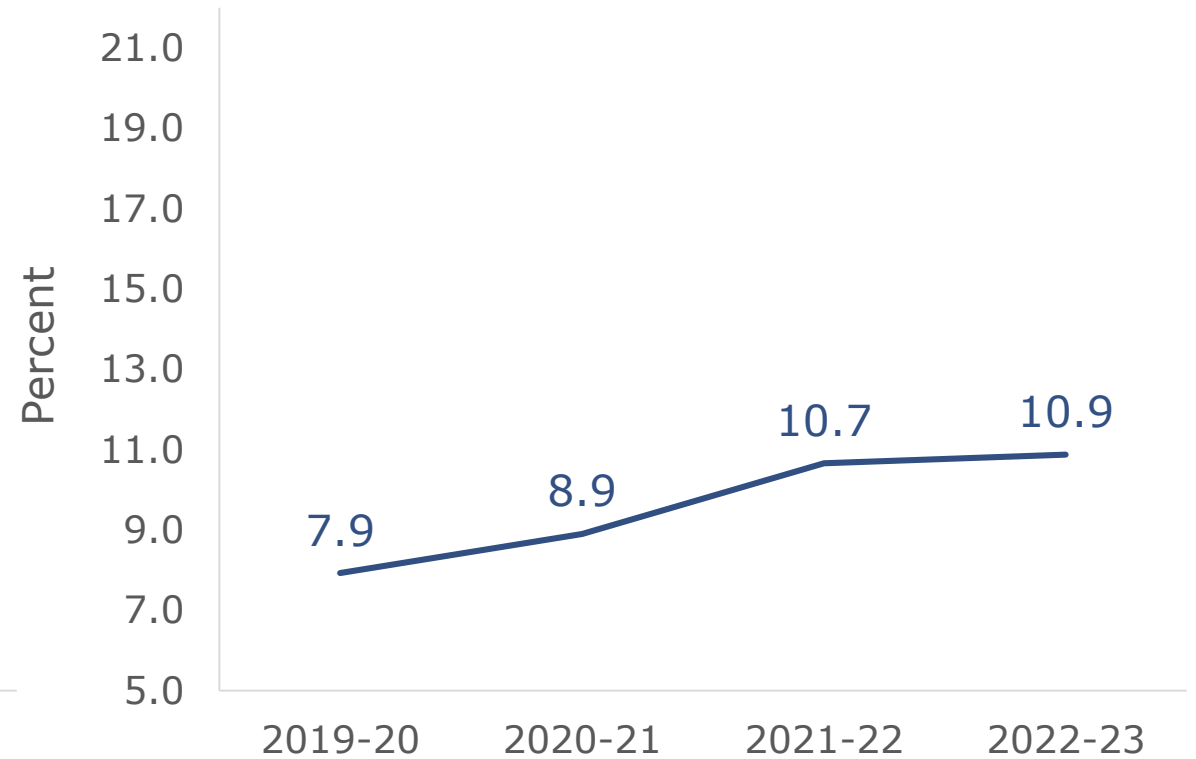
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Projected percentage of adults with respiratory problems



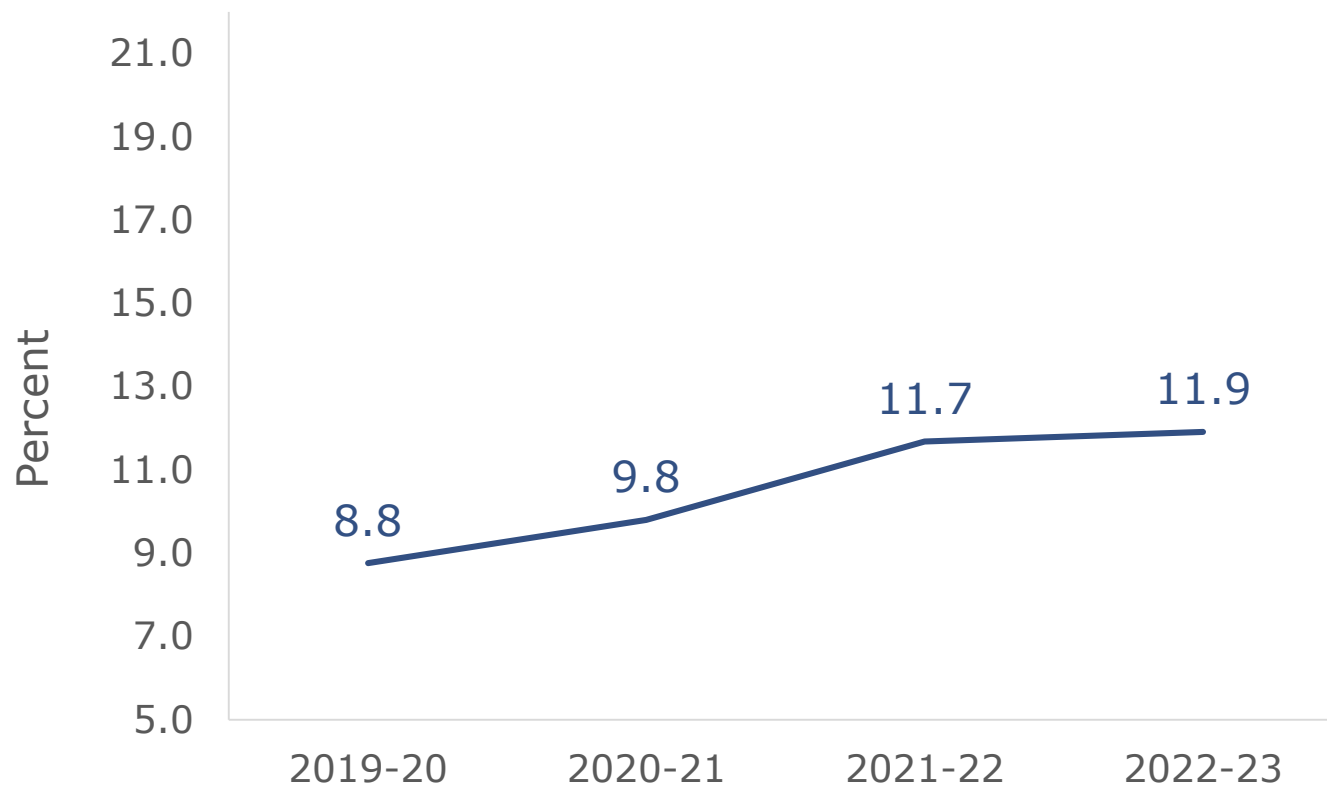
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Projected percentage of adults with endocrine and metabolic problems



* Y-axis has been truncated

Projected percentage of adults with mental health problems



* Y-axis has been truncated

Data sources

Bosley, C. 2020. Global \$6 Trillion Slump May Be Optimistic, Economists Warn. Bloomberg. Available at: <https://www.bloomberg.com/news/articles/2020-04-27/global-6-trillion-slump-may-be-optimistic-bloomberg-economics> (Accessed 28 May 2020)

Janke, K., Lee, K., Propper, C., Shields, K. and Shields, M. A. 2020. The impact of COVID-19 on chronic health in the UK [Online]. VOX CEPR Policy Portal. Available at: <https://voxeu.org/article/impact-covid-19-chronic-health-uk> (Accessed 28 May 2020)

Bank of England Monetary Policy Committee. 2020. Monetary Policy Report [Online]. Bank of England. Available at: <https://www.bankofengland.co.uk/-/media/boe/files/monetary-policy-report/2020/may/monetary-policy-report-may-2020.pdf> (Accessed 28 May 2020)

Office for National Statistics. 2020. LFS: ILO unemployment rate: Wales: All: %: SA [Online]. Office for National Statistics. Available at: <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnm/lms> (Accessed 28 May 2020)

Office for National Statistics. 2015. Adult Health in Great Britain, 2013 [Online]. Office for National Statistics. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/compendium/opinionsandlifestylesurvey/2015-03-19/adulthealthingreatbritain2013> (Accessed 28 May 2020)

Herbig, B., Dragano, N. and Angerer, P., 2013. Health in the Long-Term Unemployed. Deutsches Arzteblatt. doi:10.3238/arztebl.2013.0413

Grønseth, R., Erdal, M., Tan, W., Obaseki, D., Amaral, A., Gislason, T., Juvekar, S., Koul, P., Studnicka, M., Salvi, S., Burney, P., Buist, A., Vollmer, W. and Johannessen, A., 2017. Unemployment in chronic airflow obstruction around the world: results from the BOLD study. European Respiratory Journal, 50(3), p.1700499. doi: 10.1183/13993003.00499-2017

Varanka-Ruuska, T., Rautio, N., Lehtiniemi, H., Miettunen, J., Keinänen-Kiukaanniemi, S., Sebert, S. and Ala-Mursula, L., 2017. The association of unemployment with glucose metabolism: a systematic review and meta-analysis. International Journal of Public Health, 63(4), pp.435-446. doi: 10.1007/s00038-017-1040-z

Backhans, M. and Hemmingsson, T., 2011. Unemployment and mental health—who is (not) affected?. European Journal of Public Health, 22(3), pp.429-433. doi: 10.1093/eurpub/ckr059

van der Zee-Neuen, A., Putrik, P., Ramiro, S., Keszei, A., de Bie, R., Chorus, A. and Boonen, A., 2017. Work outcome in persons with musculoskeletal diseases: comparison with other chronic diseases & the role of musculoskeletal diseases in multimorbidity. BMC Musculoskeletal Disorders, 18(1). doi: 10.1186/s12891-016-1365-4

This health economics modelling report has been developed by the World Health Organization (WHO) Collaborating Centre on Investment for Health and Well-being (WHO CC) at Public Health Wales

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