Disability Unit

Disability and COVID-19

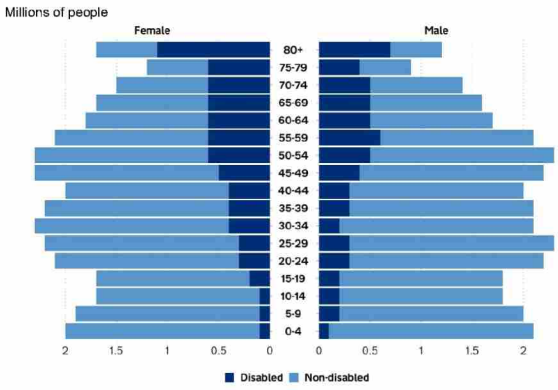
Deep Dive

30th March 2021

Disability Unit

Disability overview

- EA 2010 and DDA 1995 define an individual as disabled if they have a physical or mental impairment that has a substantial and long-term negative effect on their ability to do normal day-to-day activities.
- 21% of UK population are disabled people
- Population structure skewed towards older people
- Greater proportion of working-age population are disabled in more deprived areas
- Disability can be disaggregated into 9 functional impairment types



Source: Family Resources Survey 2018/2019

Disability Unit

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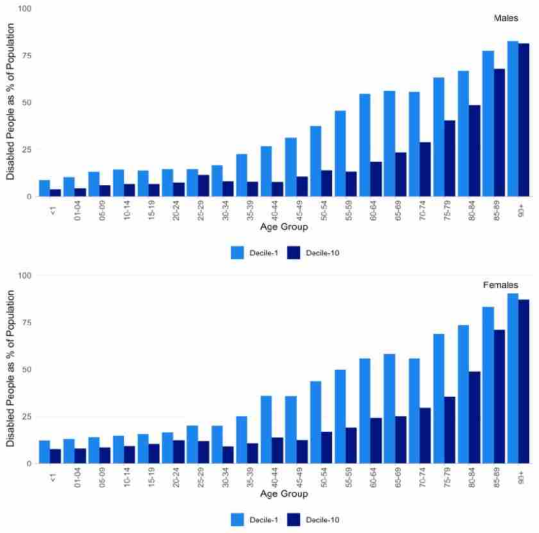

Source: Prevalence of disability by deprivation decile, England, 2014 to 2016

Disability Unit

What have we learned?

Mortality Risk
Disabled people have a higher risk of COVID-19 related mortality after accounting for wide array of variables, including age, socio-demographic factors, and health factors. Similarly, those with clinically diagnosed learning disability had higher risk of COVID-19 related mortality after adjusting for the above variables.

Infection Risk
Disabled people 'limited a lot' were significantly less likely (0.88x) than non-disabled people to test positive for COVID-19. This is likely related to lower frequency of physical and social distanced contacts when compared to non-disabled people.

Vaccination Coverage
Disabled people over 70 in England more likely to be unvaccinated (limited alot: 1.52x, limited a little: 1.17x). Other vaccination coverage data relies on the OpenSAFELY platform, reports coverage by specific health conditions but does not adequately cover the breadth of disability by Equality Act 2010 definition.

Social Impacts
Attitudes to vaccination are similar between disabled and non-disabled people. Disabled people are more likely to have had their health care disrupted by the pandemic, and this disruption is more likely to have resulted in a worsening of their health. Well-being ratings are significantly lower for disabled people, those with impairments related to mental health or social/behavioural were more severely affected.

Disability Unit

What have we learned? (lived experience)

- Quasi ethnographic research into 9 disabled people's lives during COVID-19
- Disabled people bear the social burden of shielding, whilst many others break rules while disregarding implications for others.
- Uncertainty surrounding guidelines, the availability of health services, and transport options were an issue. This is particularly confusing when information is vague or contradictory. Long-term uncertainty is a key source of negative mental health and well-being effects.
- Disabled people confronted with an array of barriers and socially imposed limitations over and above those experienced by non-disabled people. For example, the ability to observe social distancing rules or to obtain necessities.
- COVID-19 has impacted participants' independence, sometimes reducing opportunities for independence, sometimes increasing dependency. This has manifested in areas such as support and care arrangements, shopping, and transport.
- Delay to formal government services and support, including health services, as well as an impact on practices such as repairs, building improvement works, online shopping, and in other areas of necessity.

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Evidence landscape: what do we (not) know?

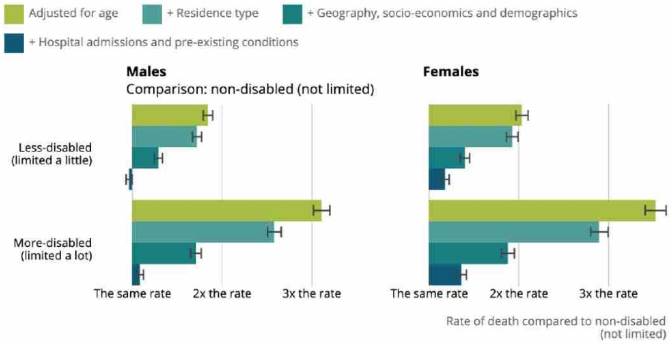
- **Lack of disability or impairment data associated with primary care records precludes their incorporation into population risk assessment tools (e.g. QCOVID) and vaccine coverage monitoring (e.g. OpenSAFELY).**
- ONS analysis of mortality risk by disability status indicates higher risk amongst disabled people. Disaggregation by impairment is not timely, and dependent on development of predictive model.
- ONS Infection risk analysis published, providing key insights. Disaggregation by impairment type unlikely due to sample size and survey questions.
- Monitoring of social impact of COVID-19 on disabled people is well developed, including disaggregation by impairment type in full bulletin publications.
- DU and ONS working together closely, with dynamic priorities. ONS flexible with incorporating DU questions into OPN survey and performing ad hoc analyses.

Disability Unit

Risk of COVID-19 related mortality

- Mortality risk remained significantly higher for more-disabled males (1.09x) and females (1.36x), and less-disabled females (1.18x) relative to non-disabled people, after adjusting for full range of variables (model 4).

Hazard ratios for death involving COVID-19 for disabled men and women relative to non-disabled people of the same sex, adjusting for age, residence type, geography, socio-economic and demographic factors, and comorbidities, England: 24 January to 20 November 2020



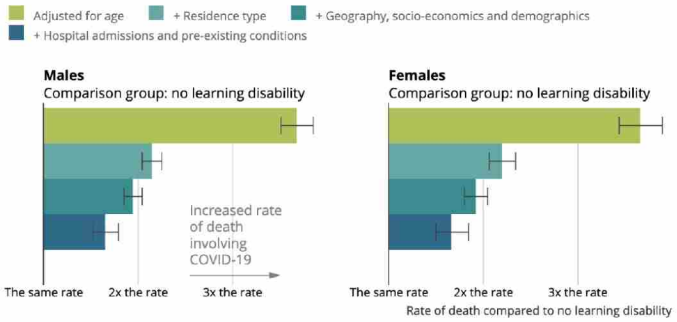
Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Risk of COVID-19 related mortality (learning disability)

- Mortality risk remained substantially higher for males (1.65x) and females (1.66x) with clinically diagnosed learning disability after adjusting for full range of variables (model 4).

Hazard ratios for death involving COVID-19 for men and women with a learning disability relative to people with no learning disability of the same sex, adjusting for age, residence type, geography, socio-economic and demographic factors, and comorbidities, England: 24 January to 20 November 2020



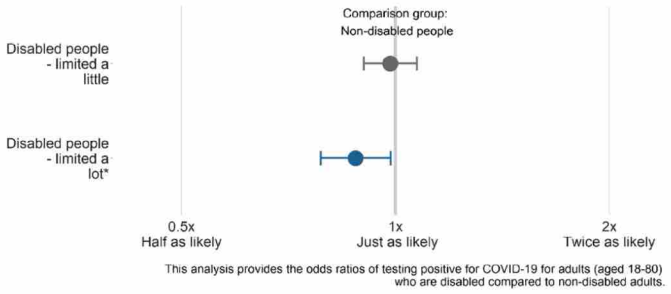
Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Infection risk

- Likelihood of testing positive for COVID-19 was lower for disabled people 'limited a lot' (0.88x) compared with non-disabled people.[1]
- Contrasts with ethnicity data, where higher likelihood of testing positive for COVID-19 is found in Black/Black British individuals and may be a significant contributor to higher mortality risk.[2]
- Suggests severe clinical outcomes for infected disabled individuals (requires further investigation).

Likelihood of disabled adults testing positive compared to non-disabled adults (England)



This analysis provides the odds ratios of testing positive for COVID-19 for adults (aged 18-80) who are disabled compared to non-disabled adults.

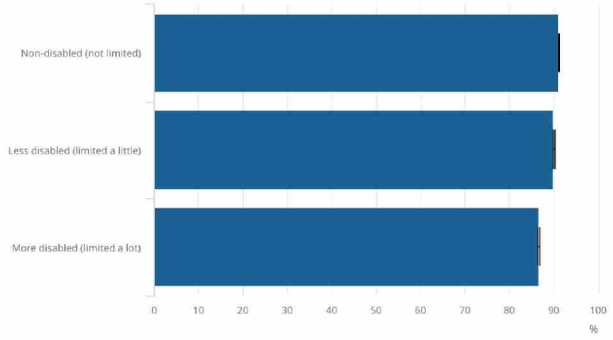
[1] Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, 25 March 2021
[2] Disparities in the risk and outcomes of COVID-19

Disability Unit

Vaccine coverage

- ONS insights into those over 70 years old living in England, in private households or communal establishments.
- Vaccination coverage significantly higher for non-disabled people (91.0%) than disabled people 'limited a little' (89.9%) and 'limited a lot' (86.6%).
- Likelihood of being unvaccinated 1.52x greater in disabled people 'limited a lot', and 1.17x greater in disabled people 'limited a little' compared with non-disabled people.
- Disparity in likelihood of being unvaccinated marginally larger in least deprived quintile (IMD)

Figure 4: Vaccination rates of adults aged 70 years or over, by disability status, 8 December 2020 to 11 March 2021, England



Source: Coronavirus and vaccination rates in people aged 70 years and over by socio-demographic characteristic, England: 8 December 2020 to 11 March 2021

Disability Unit

What and when?

11th November 2020 - ONS Coronavirus and the social impacts on disabled people in Great Britain

29th January 2021 - ONS Coronavirus and the social impacts on Great Britain: attitudes to vaccines

11th February 2021 - ONS Updated estimates of coronavirus (COVID-19) related deaths by disability status, England: 24 January to 20 November 2020

11th March 2021 - ONS Coronavirus and the social impacts on Great Britain (data tables)

25th March 2021 - ONS Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, 25 March 2021

16th April 2021 - ONS Coronavirus and the social impacts on disabled people in Great Britain (bulletin)

October 2021 - ONS Updated estimates of coronavirus (COVID-19) related deaths by disability status (including disaggregation by impairment type based on new predictive model)

Weekly - OpenSAFELY vaccine coverage updates (relevant only to specific health conditions)

Timeframes for future publications on mortality risk, infection risk, and social impacts are to be confirmed. DU is working closely and regularly with ONS to inform priorities.

Disability Unit

Disability and COVID-19

Deep Dive

26th March 2021

Disability Unit

What and when?

11th November 2020 - ONS Coronavirus and the social impacts on disabled people in Great Britain

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Disability Unit

Social impacts of COVID-19 on disabled people

- 39% of disabled people receiving medical treatment before pandemic began reported they were now only receiving treatment for some of their health conditions (24%) or their treatment was cancelled (25%), compared with 31% of non-disabled people who were receiving treatment before the pandemic.[1]
- 42% of disabled people reported their health had gotten worse as a result of reduced access to treatment during the pandemic, compared with 15% of non-disabled people.[1]
- 81% disabled people said they were "very worried" or "somewhat worried" about the effect that the COVID-19 pandemic was having on their life, compared with 72% of non-disabled people, and all well-being ratings were significantly poorer for disabled people compared with non-disabled people.[1]
- Previous full bulletin indicated that impacts of COVID-19 well-being were most severe for those with mental health impairments and social/behavioural impairments.[2]

[1] Coronavirus and the social impacts on Great Britain: attitudes to vaccines (data tables)
[2] Coronavirus and the social impacts on disabled people in Great Britain

Disability Unit

Mortality risk analysis methods

- The study population consisted of people aged 30 to 100 years in England who were alive on 24 January 2020, who could be linked to the 2011 Census and primary care records for current NHS patients.
- Linkage to hospital records from April 2017 and primary care records from January 2015 to allow modeling of health variables.
- Underlying health conditions considered as a binary variables (yes/no) rather than modeling the effect of different health conditions.
- **Highly dependent on disability status from 2011 Census which are outdated**
- **No disaggregation of disability by impairment type, as impairment question not on 2011 Census (or 2021 Census...)**

Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Age-standardised mortality rates

Table 1: Age-standardised mortality rates for deaths involving COVID-19 per 100,000 population with 95% confidence intervals by sex and self-reported disability status, England: 24 January to 20 November 2020

Disability status	Males			Females		
	Rate	Lower 95% confidence limit	Upper 95% confidence limit	Rate	Lower 95% confidence limit	Upper 95% confidence limit
More-disabled (limited a lot)	469.6	457.9	481.4	313.1	304.2	321.9
Less-disabled (limited a little)	270.7	263.8	277.6	152.8	148.3	157.3
Non-disabled (not limited)	148.5	145.7	151.2	77.1	75.3	78.8

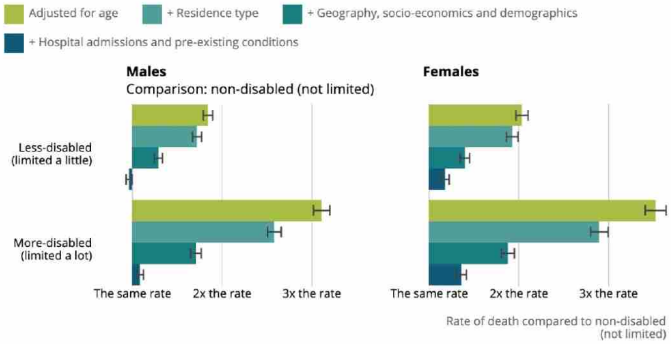
Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Risk of COVID-19 related mortality

- Mortality risk remained significantly higher for more-disabled males (1.09x) and females (1.36x), and less-disabled females (1.18x) relative to non-disabled people, after adjusting for full range of variables (model 4).

Hazard ratios for death involving COVID-19 for disabled men and women relative to non-disabled people of the same sex, adjusting for age, residence type, geography, socio-economic and demographic factors, and comorbidities, England: 24 January to 20 November 2020



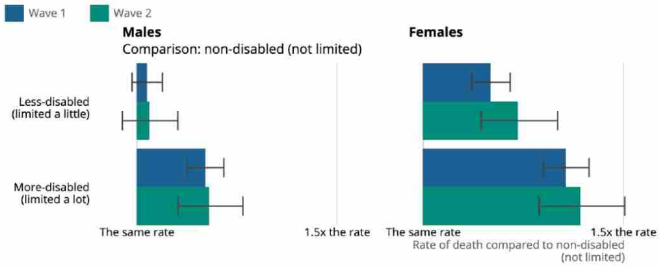
Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Comparison between waves

- Risk of COVID-19 related mortality did not significantly differ between waves.

Hazard ratios for death involving COVID-19 for disabled men and women relative to non-disabled people of the same sex, in the first (24 January to 11 September 2020) and second (12 September to 20 November 2020) waves of the pandemic, adjusting for age, residence type, geography, socio-economic and demographic factors, and comorbidities, England



Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Age-standardised mortality rates (learning disability)

Table 2: Age-standardised mortality rates for deaths involving COVID-19 per 100,000 population with 95% confidence intervals by sex and learning disability status, England: 24 January to 20 November 2020

Learning disability status	Males			Females		
	Rate	Lower 95% confidence limit	Upper 95% confidence limit	Rate	Lower 95% confidence limit	Upper 95% confidence limit
Learning disability	690.6	657.9	723.2	475.8	444.3	507.4
No learning disability	196.1	193.7	198.6	118.0	116.4	119.5

Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Risk of COVID-19 related mortality (learning disability)

- Mortality risk remained substantially higher for males (1.65x) and females (1.66x) with clinically diagnosed learning disability after adjusting for full range of variables (model 4).

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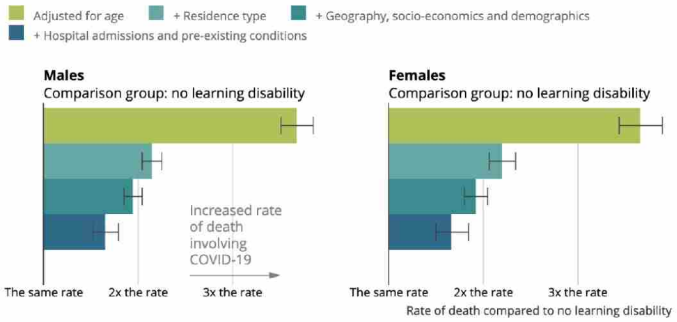


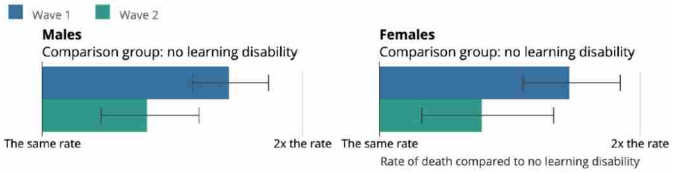
Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Comparison between waves (learning disability)

- COVID-19 mortality risk for individuals with a learning disability (relative to those without) was slightly lower during the second wave of the pandemic than the first, but this difference was not statistically significant.

Hazard ratios for death involving COVID-19 for men and women with a learning disability relative to people with no learning disability of the same sex, in the first (24 January to 11 September 2020) and second (12 September to 20 November 2020) waves of the pandemic, adjusting for age, residence type, geography, socio-economic and demographic factors, and comorbidities, England



Source: Updated estimates of coronavirus (COVID-19) related deaths by disability status, England

Disability Unit

Other key mortality risk data

- Academic research using QResearch data found that the risk of COVID-19 related mortality was 10.39 times higher in those with Down's Syndrome compared with those without Down's Syndrome, and 1.27 times higher in those with learning disabilities excluding Down's Syndrome compared with those without learning disabilities, after correcting for socio-demographic, geographic, and health variables (Clift et al. 2020).[1]

- Research from PHE reported 2.3x higher ASMR (3.6x higher after adjusting for likely level of under-notification) for those with learning disability (including Down's syndrome), compared with those with no learning disability. Findings are similar to those reported by ONS (male: 3.5x greater, females: 4.0x greater), though direct comparison is not possible due to differences in methods and underlying data. PHE report based on data from the Learning Disability Mortality Review (LeDeR) and COVID-19 Patient Notification System (CPNS; system to capture COVID-19 related hospital deaths). Coverage of England only, from Feb 1st 2020 -Jun 5th 2020.[2]

[1] COVID-19 Mortality Risk in Down Syndrome: Results From a Cohort Study Of 8 Million Adults | Annals of Internal Medicine
[2] Deaths of people identified as having learning disabilities with COVID-19 in England in the spring of 2020 (PHE)

Disability Unit

Infection risk methods

- Based on data from participants aged 18-80 who completed the coronavirus (COVID-19) infection survey between 1st September 2020 and 28th February 2021
- Likelihood of testing positive is based on a model accounting for ethnicity, household size, multigenerational household, sex, Index of Multiple Deprivation rank, age over time, region, urban/rural status and calendar time.
- It is important to note that English regions were modelled separately, allowing the effect of age to vary over calendar time, to reflect large changes in positivity that varied across regions and age groups over the period studied. Estimates were then combined to produce an average estimate by disability status across England overall in a meta-analysis. Therefore, this is a national analysis and may mask regional variation.

Source: Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, 25 March 2021

Disability Unit

Infection risk

- Likelihood of testing positive for COVID-19 was lower for disabled people 'limited a lot' (0.88x) compared with non-disabled people.[1]
- Contrasts with ethnicity data, where higher likelihood of testing positive for COVID-19 is found in Black/Black British individuals and may be a significant contributor to higher mortality risk.[2]
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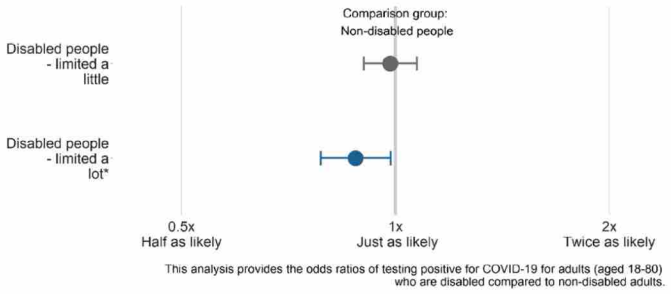
Likelihood of disabled adults testing positive compared to non-disabled adults (England)



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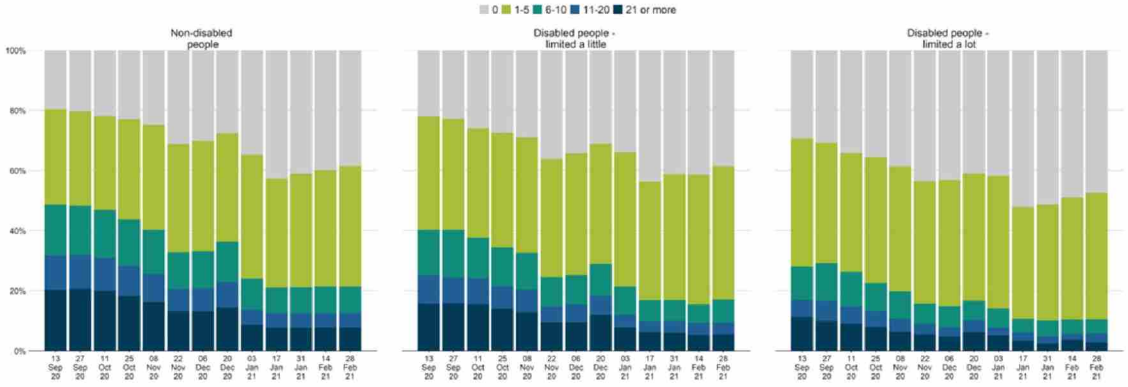
Contact behaviours

Number of socially distanced contacts with adults aged 18-69 amongst disabled and non-disabled participants



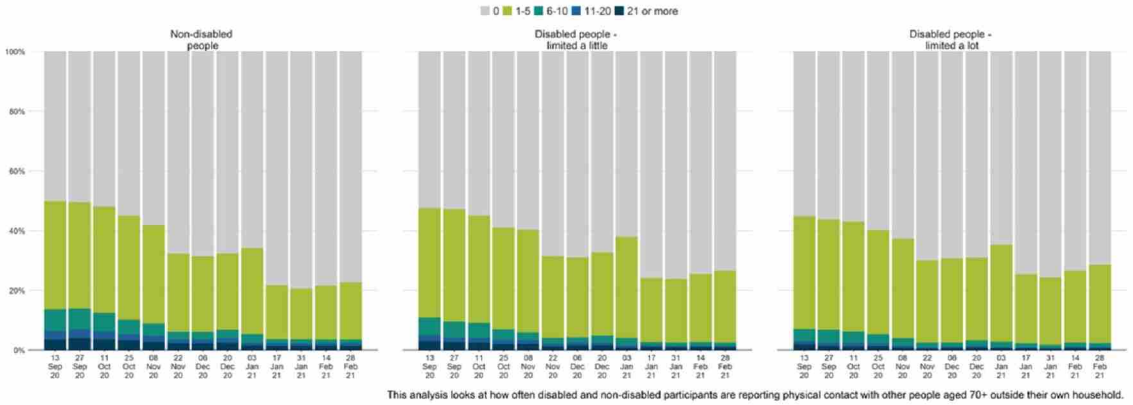
This analysis looks at how often disabled and non-disabled participants are reporting socially distanced contact with other people aged 70+ outside their own household.

Source: Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, 25 March 2021

Disability Unit

Contact behaviours

Number of physical contacts with adults aged 18-69 amongst disabled and non-disabled participants



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Disability Unit

Vaccine coverage

- ONS insights into those over 70 years old living in England, in private households or communal establishments.
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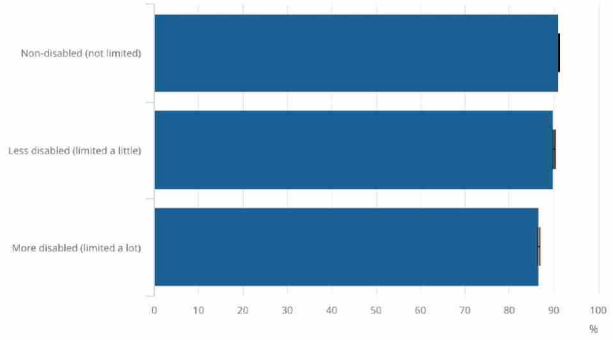
Figure 4: Vaccination rates of adults aged 70 years or over, by disability status, 8 December 2020 to 11 March 2021, England



Source: Coronavirus and vaccination rates in people aged 70 years and over by socio-demographic characteristic, England: 8 December 2020 to 11 March 2021

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Vaccine coverage

- OpenSAFELY weekly reporting
- Based on 40% of GP practices which use TPP health record software
- Clinically diagnosed health conditions; does not capture diversity of disability
- Careful interpretation necessary

	80+ years	70-79 years	65-69 years (excl. Shielding)	16-64 years (excl. Shielding)	16-69 years (Shielding)
Learning disability	91.2%	88.5%	78.3%	60.9%	83.2%
No learning disability	94.7%	94.1%	87.6%		80.3%
Psychosis, schizophrenia, and bipolar	90.0%	88.0%	77.4%		
No psychosis, schizophrenia, and bipolar	94.7%	94.1%	87.6%		
SSRI	96.3%	96.0%	89.9%		
No SSRI	94.5%	94.9%	87.3%		
Dementia	94.1%	93.6%	87.1%		
No dementia	94.7%	94.1%	87.5%		

Source: NHS COVID-19 Vaccine Coverage (OpenSAFELY)
[1]Trends, regional variation, and clinical characteristics of COVID-19 vaccine recipients: a retrospective cohort study in 23.4 million patients using OpenSAFELY

Disability Unit

Attitudes to vaccines

Attitudes to vaccination similar between disabled and non-disabled people:

- Of those who have not yet been vaccinated to offer the vaccine, 87% of disabled people said they were 'very likely' or 'fairly likely' to have the vaccine if offered, compared with 88% of non-disabled people (difference not statistically significant).
- Disabled people who answered that they were unlikely to have the vaccine most frequently cited preferring that someone more in need received the vaccine before them (35%), worries about the impact on long-term health (32%), and worries about side effects (32%) as reasons.
- Disabled people who answered that they were unlikely to have the vaccine cited worry about catching COVID-19 at the vaccination centre or GP surgery (18%) much more frequently than non-disabled people who were unlikely to have the vaccine (3%).

Source: Coronavirus and the social impacts on Great Britain: attitudes to vaccines (data tables)

Disability Unit

Social impacts of COVID-19 on disabled people

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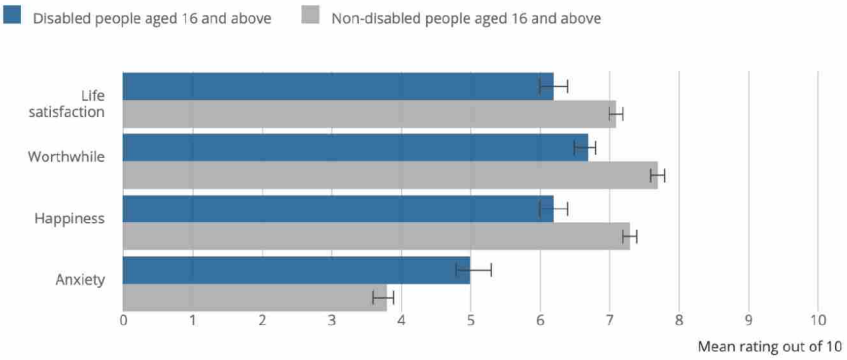
Disability Unit

Social impacts of COVID-19 on disabled people

Average well-being rating for disabled people and non-disabled people, Great-Britain, September 2020



Source: Coronavirus and the social impacts on disabled people in Great Britain

Disability Unit

Data improvement programme

Mortality Risk Analysis

Incorporate health variables into mortality risk models. Continued reporting on mortality, including by impairment type (after WP3).

Infection Risk Analysis

Analyse risk of testing positive for COVID-19 by disability status. Continue monitoring.

Mapping Health Conditions and Impairment

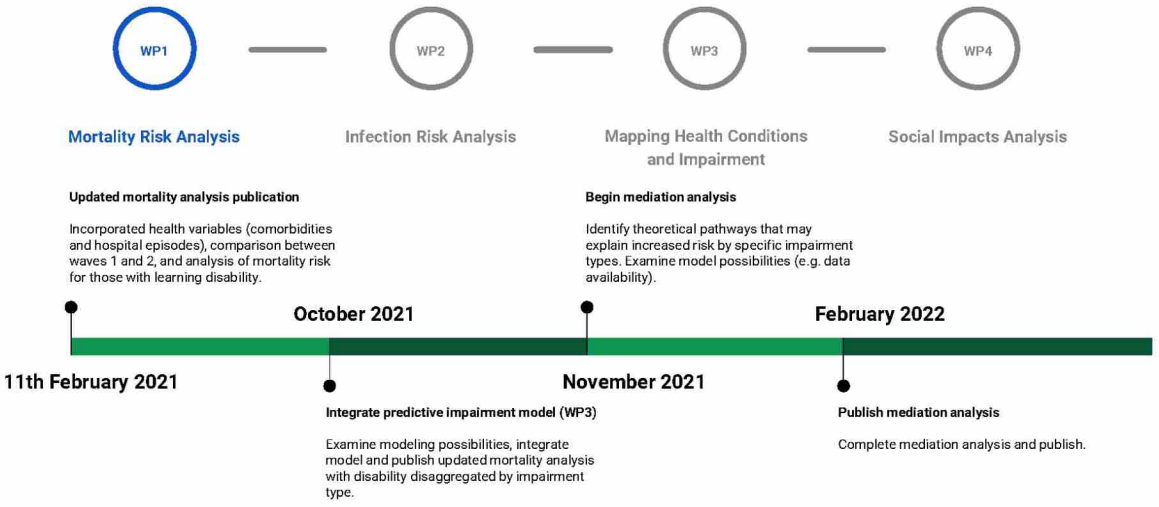
Develop model to predict impairment type from health conditions. Eventually feeding into mortality analysis.

Social Impacts Analysis

Analyse social impacts of COVID-19 on disabled people, including breakdown by impairment. Incorporation of DU questions, and continued monitoring.

Disability Unit

Data improvement programme



Disability Unit

Data improvement programme

Mortality Risk Analysis

Infection Risk Analysis

Mapping Health Conditions and Impairment

Social Impacts Analysis

First infection risk analysis publication

Publication examining likelihood of positive COVID-19 test by disability status, accompanied by data on frequency of interactions with others.

25th March 2021

Through Q1 2022

Ongoing monitoring

Assessment for need and timeframes for further publications on infection risk.

Disability Unit

Data improvement programme

Mortality Risk Analysis

Infection Risk Analysis

Mapping Health Conditions and Impairment

Social Impacts Analysis

Identify impairment indicators

Identify impairment indicators available in key data sources (for example, Health Survey for England).

Develop predictive model

Develop predictive model which estimates the relationship between health conditions and impairment type.

Consult with academic experts

Consult with academic experts to consolidate research strategy, inform model development, and steer model interpretation.

Quality assure predictive model

Following quality assurance model can feed in to WP1 to analyse mortality by predicted impairment type.

OFFICIAL SENSITIVE

Disability Unit

Data improvement programme

Mortality Risk Analysis

Infection Risk Analysis

Mapping Health Conditions and Impairment

Social Impacts Analysis

Attitudes to vaccines dataset

Publication of dataset outlining attitudes towards vaccination, and reasons for vaccine hesitancy by disability status.

Social impacts by disability status bulletin

Full statistical bulletin analysing social impacts of COVID-19 on disabled people, including disaggregation by impairment type.

29th January 2021

11th March 2021

16th April 2021

Through Q1 2022

Social impacts by disability status (dataset)

Release of data tables on the social impact of COVID-19 on disabled people, including updated attitudes to vaccines.

Ongoing monitoring

Assessment for need and timeframes for further publications on social impacts. Future publications will incorporate new DU questions (answer options).