

Valuing the health and wellbeing benefits of NHS Scotland's outdoor estate

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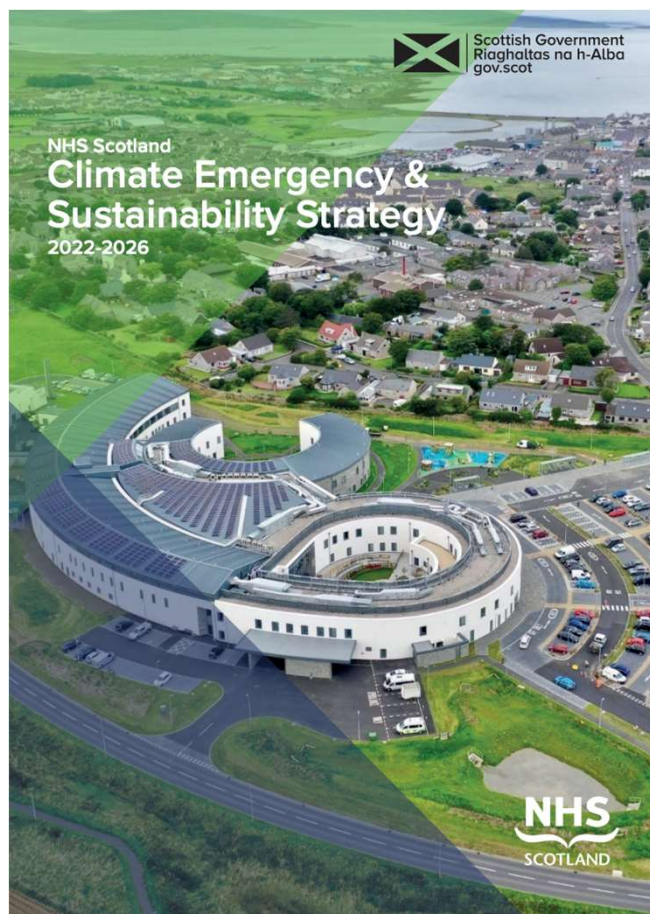
b. Public Health Scotland

EUROPARC WEBINAR

Magical Places, Magical Numbers

Quantifying the health and well-being benefits of
Green Spaces

3rd of September – 10:00 - 11:00 CEST



ABERDEEN 2040

NHS Scotland is a custodian of significant areas of greenspace and we are committed to working with our local communities and other partners to develop and manage this public asset in a way which improves public health, reduces health inequalities and helps to address biodiversity loss and the climate emergency.

107. To ensure the development and management of NHS greenspace in a way which supports staff, patients and local communities, improves public health and reduces health inequalities, and helps to address biodiversity loss and climate change we will:

- ✓ digitally map the extent, quality and accessibility of NHS greenspace
- ✓ develop and implement a strategic framework for greenspace at the local Health Board level
- ✓ use natural capital approaches to assess and value the contribution of NHS greenspace to delivering climate, sustainability and health outcomes, including carbon sequestration

Why NHSS open spaces (OS)?

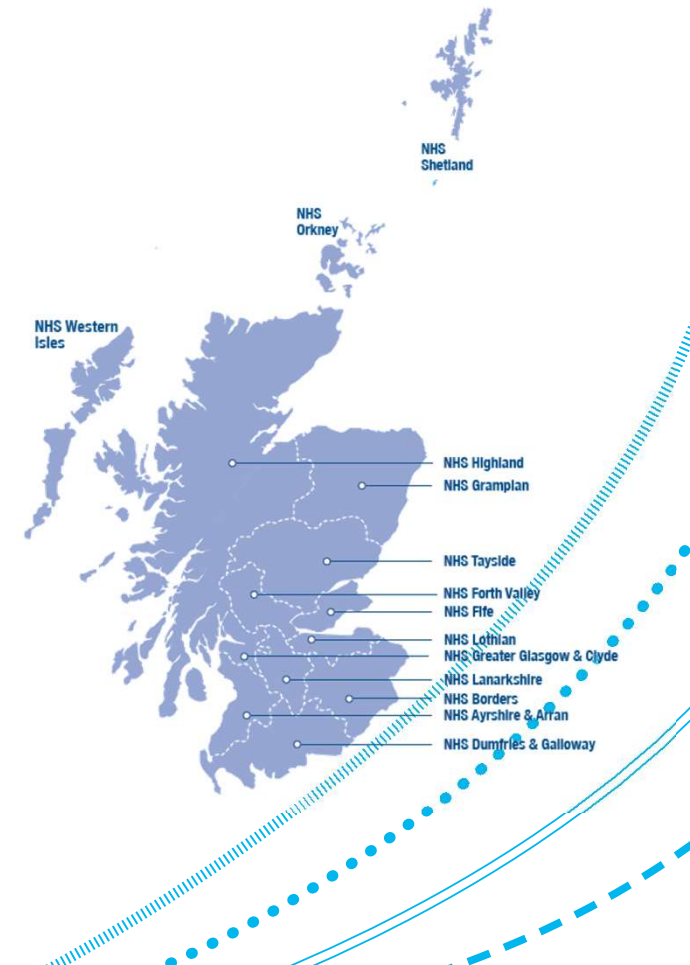
Exposure to open (green, blue or open) spaces offers many **health and wellbeing benefits**.

NHS Scotland (NHSS) OS can contribute to these benefits, but their use and value is **not fully understood**.

- The size of the NHS estate in Scotland is 1,572 hectares. Almost the size of the city of Stirling.

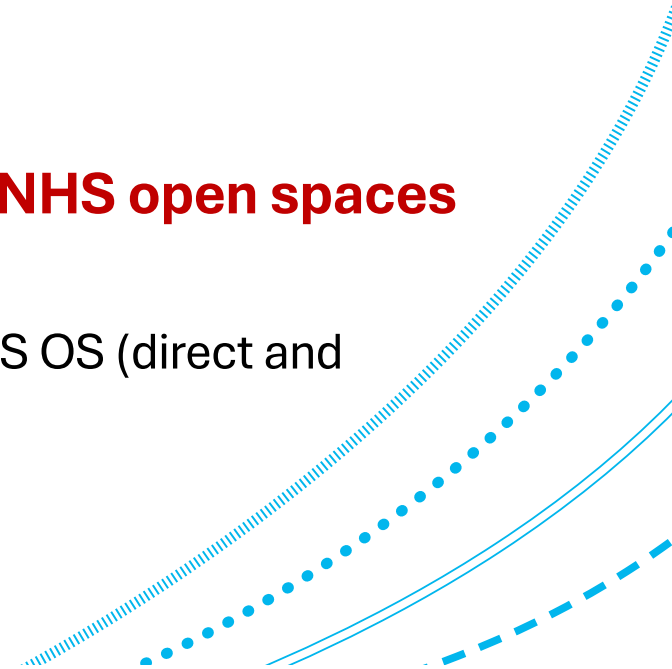
Half of NHSS estate is OS, covering **825 hectares** (about 1,500 football fields) almost twice the size of Loch Lomond Nature Reserve (430 hectares)

- Percentage of NHS greenspace range on area board estates between 24% (Shetland) and 63% (NHS Fife)



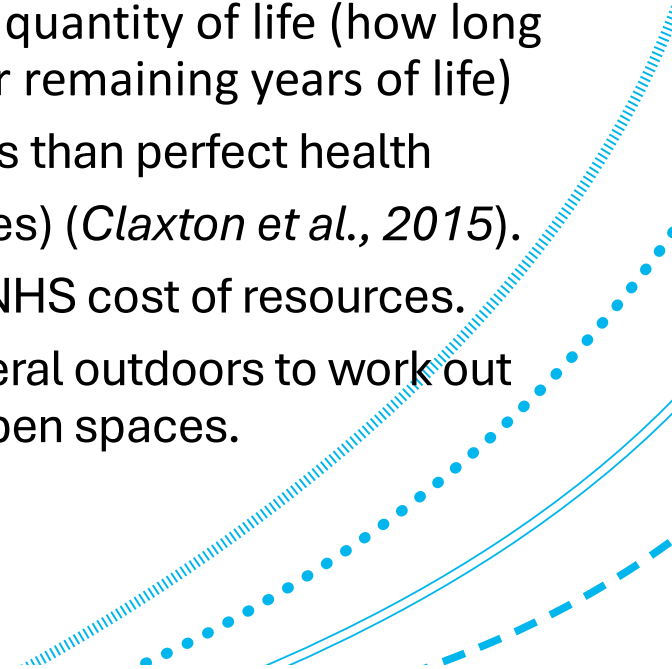
Then, collect primary data...

- Cross sectional **survey** of Scottish adults (n = 2,449).
 - Drawing from Scotland's People and Nature Survey (SPANS).
 - Fielded October-November 2024.
 - Pretested with members of the public.
- **Characterise use** of NHSS open spaces.
- Estimate and assess the **value of the benefits of NHS open spaces** consistent with Natural Capital Accounting.
 - Health and wellbeing from exposure to nature in NHSS OS (direct and attributable)
 - Wider benefits from use



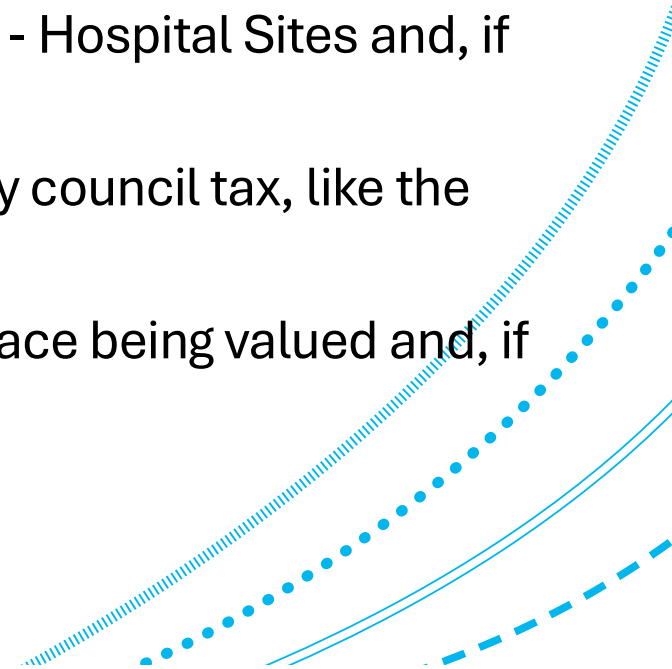
Estimating value:

- **Exposure-based** approach
 - Spending 120+ minutes per week in nature leads to health gains (QALYs) (*White et al., 2015*).
 - A QALY combines health gains into one measure: (1) quantity of life (how long you live for) and (2) quality of life (the quality of your remaining years of life)
 - QALY = 1 year in perfect health or its equivalent in less than perfect health
 - NHS cost of resources: 1 QALY = £18,295 (2022 prices) (*Claxton et al., 2015*).
 - Health gain from exposure = 0.01995 QALYs = £356 NHS cost of resources.
 - Adjust for seasonality and combine with visits to general outdoors to work out who derives benefits based on time spent in NHSS open spaces.



Estimating value:

- **Contingent valuation** study
 - Hypothetical market to estimate willingness to pay for preserving and maintaining local NHSS open spaces.
 - Scenario: open spaces in your local NHSS site(s) - Hospital Sites and, if existing, Primary Care Sites - will be removed.
 - Payment mechanism: levy as part of your monthly council tax, like the Water and Sewage Charge.
 - Respondent was reminded of amount of open space being valued and, if two tasks, their previous answer.



Results – Visit characteristics



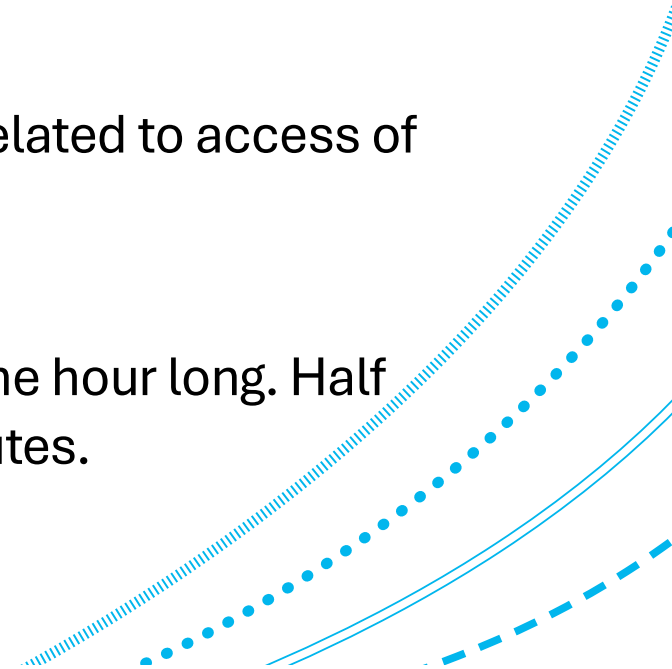
53% of adults have spent time in an NHSS open space in the previous twelve months.



65.9% site trip purpose was related to access of NHS services.



Most visits (**78%**) are under one hour long. Half (**53.5%**) are less than 30 minutes.





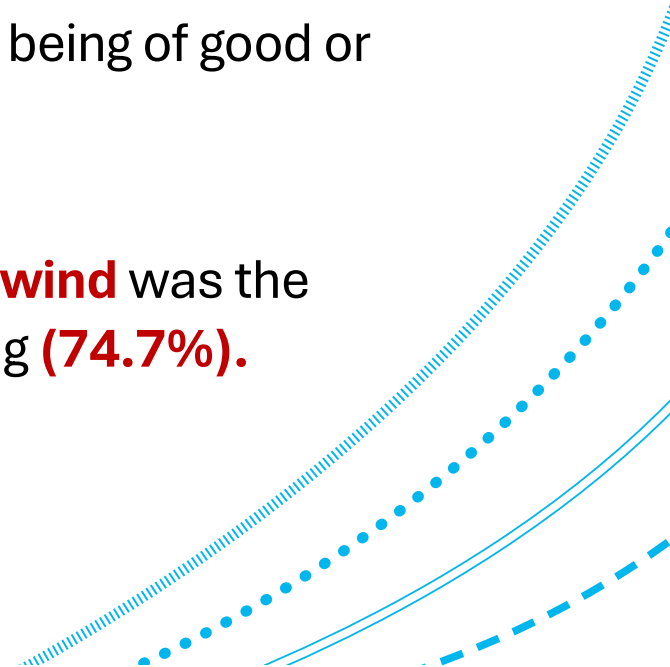
Walking and **relaxing** were the most common activities.



84.1% rated the open space as being of good or very good quality.



Helped destress, relax and unwind was the most agreed benefit from visiting (**74.7%**).



Results – Characteristics of NHSS OS use



Male



Higher income



Younger age



Living with **at least one under-18**

NHSS shares inequalities with other traditional open spaces



No private garden at home



> 1 mile

Living over **1 mile from nearest open space**

NHSS facilitates access when not easily available



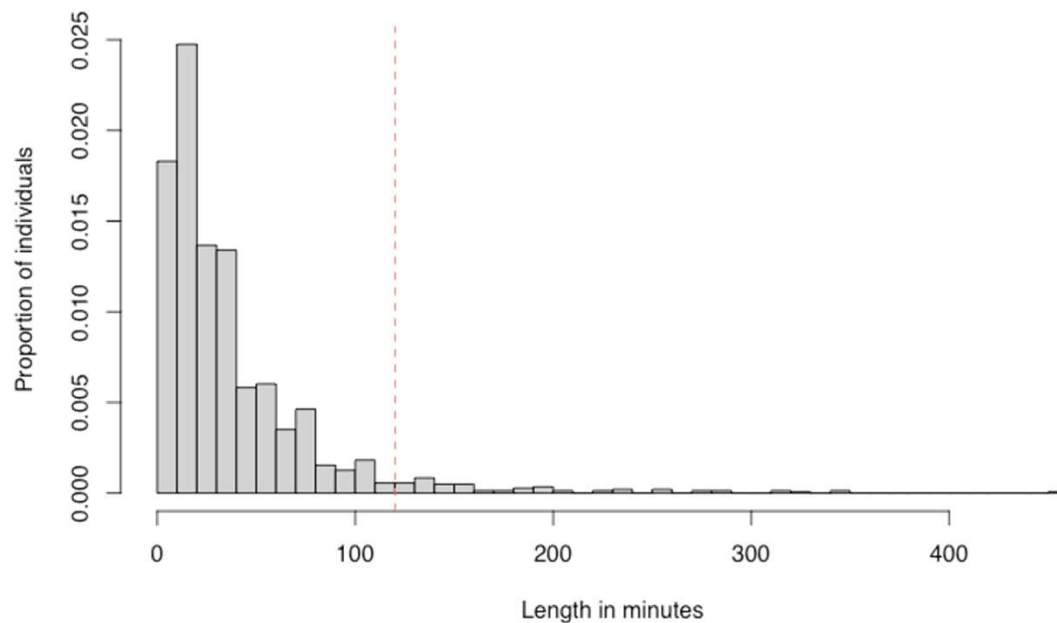
Living with **physical disability**



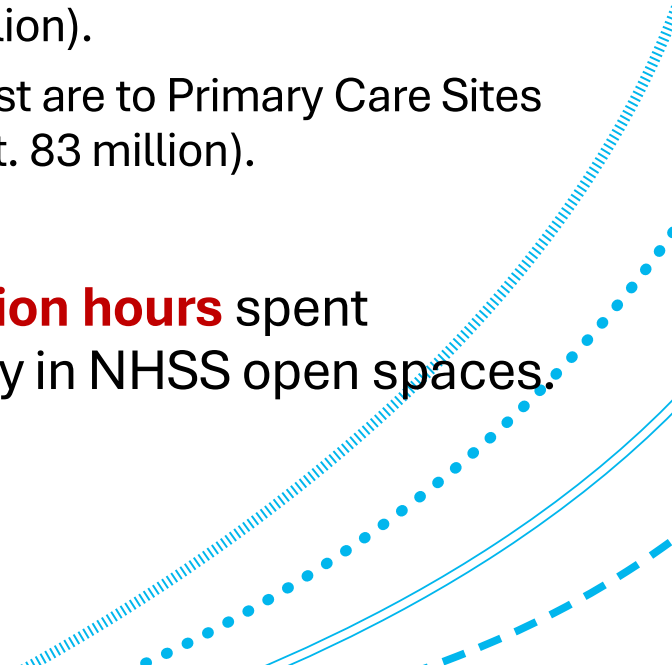
Living with **mental health condition**

NHSS facilitates access that can reduce health inequities

Results – Exposure-based



- **128 million annual visits** to NHSS open spaces.
 - Most are to local sites (est. 92 million).
 - Most are to Primary Care Sites (est. 83 million).
- **91 million hours** spent annually in NHSS open spaces.





(in 2022 prices)

QALYs

Direct health
benefits:

5.1% population
Est. 230,318

£82.0 million

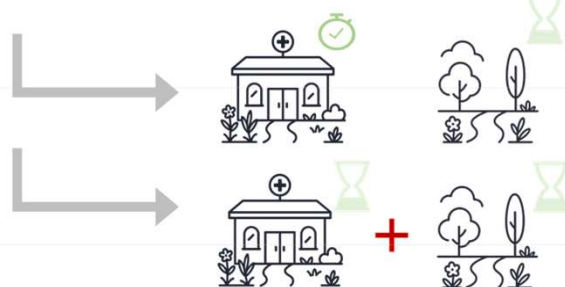
4,595

Attributable health
benefits:

4.8% population
Est. 205,155

£73.0 million

4,093



2.6% population
Est. 111,270

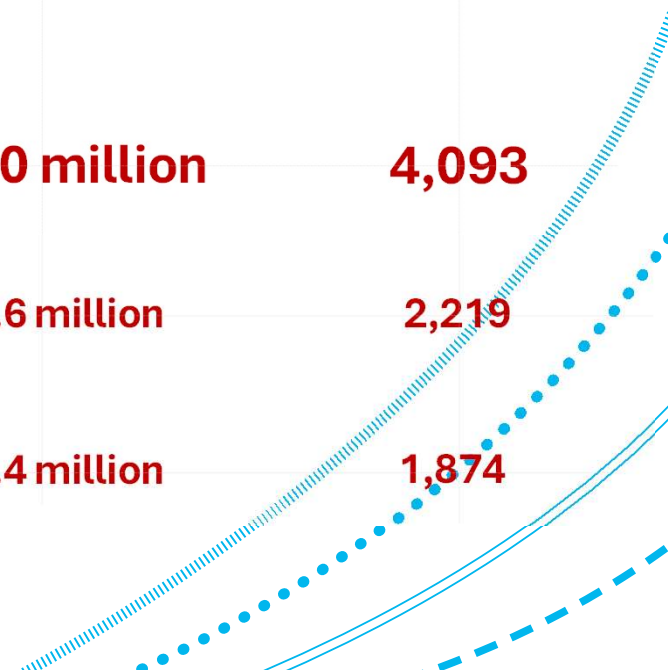
£39.6 million

2,219

2.2% population
Est. 93,885

£33.4 million

1,874

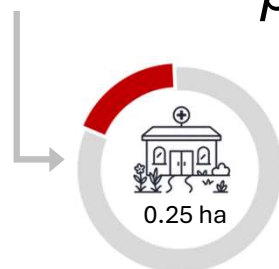




At least **65.1%** of the **direct health benefits (£53.4 million)** comes from **Primary Care Sites**



At least **44.6%** of the **direct health benefits (£31.3 million)** comes from **sites with less than 0.85 hectares of open space** (*1x football pitch*).



At least **17.9%** of the **direct health benefits (£12.5 million)** comes from **sites with less than 0.25 hectares of open space** (*2x 50m swimming pools*).

Results – Contingent Valuation

Higher WTP (monthly household £)
for Primary Care Sites than Hospital
Sites.



£560M per year
(£125 per adult)

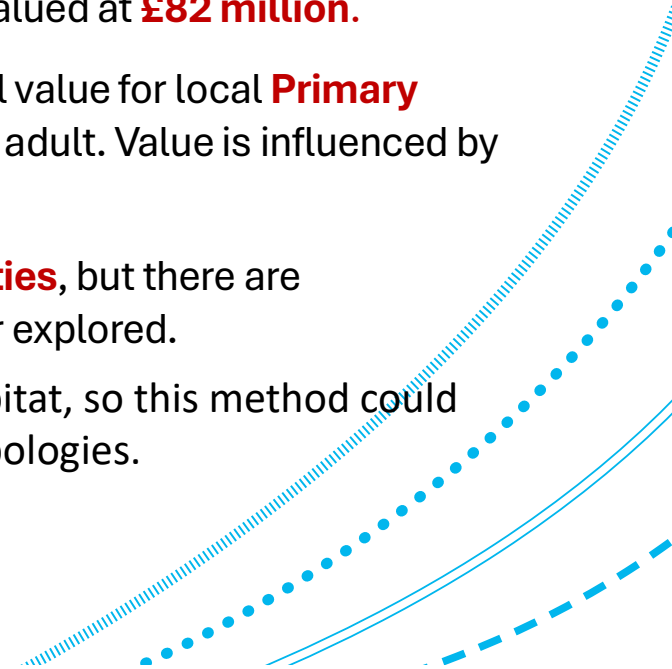


£653M per year
(£145 per adult)

- Higher WTP is linked to **perceived locality** of NHS sites and **open space area** as a percentage of total site size.
- Value increases with **direct use** and **experience** of the site and open space, though there is evidence of some value from other non-use components (e.g., existence, bequest).

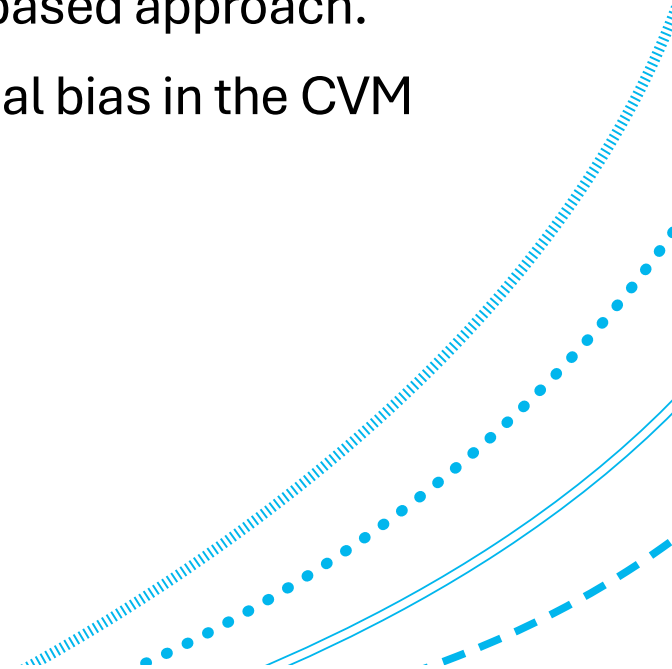
NHS Scotland (NHSS) offers significant open space use and value:

- **53% of Scottish adults** visit NHSS open spaces every year, amounting to **128 million visits** and **91 million hours** of exposure.
- The **annual health and wellbeing benefits** of NHSS open spaces is valued at **£82 million**.
- **Value beyond health and wellbeing:** Based on mean WTP, the annual value for local **Primary Care Sites** is up to **£125**, and for **local Hospital Sites**, up to **£145** per adult. Value is influenced by **location, experience** and **size of space***.
- NHS open spaces can **help realise health benefits within communities**, but there are **inequalities of access and use** that need to be addressed and further explored.
 - Current ONS NCA health benefit values only breakdown by habitat, so this method could explore the specific direct and attributable value of specific typologies.



Strengths and Limitations

- ✓ First known application
 - ✓ Results benchmarking
 - ✓ Survey tailoring
 - ✓ Adaptation of known method
 - ✓ Policy relevance
 - ✓ Adaptability to other health and care services
- ❖ Cross sectional nature of survey
 - ❖ Methodological limitations of the exposure-based approach.
 - ❖ Hypothetical bias in the CVM estimates.



Thank you.

Contact Information:

Report Link: <https://doi.org/10.57064/2164/25103>



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Appendix

First, site mapping...



Foresterhill Health Campus (Aberdeen Royal Infirmary, Aberdeen Maternity Hospital, Royal Aberdeen Children's Hospital). NHS Grampian.

Total Area: 46.75 ha

Open Space: 15.56 ha (33.29%)



Loch Leven Health Centre. NHS Tayside.

Total Area: 0.991 ha

Open Space: 0.34 ha (33.29%)

Results – Contingent Valuation

- Higher WTP (monthly household £) for Primary Care Sites than Hospital Sites.

Estimate	Hospital Sites	Primary Care Sites
Median	4.32	16.00
Mean	21.48	29.33
Mean Confidence interval (95%)	18.08 - 26.55	25.95 - 48.51