GIG CYMRU NHS WALES

Iechyd Cyhoeddus Cymru
Public Health Wales

The Contribution of the NHS to the Welsh Economy: Driving a Well-being Economy in Wales

Summary Report

Canolfan Gydweithredol Sefydliad Iechyd y Byd ar Fuddsoddi ar gyfer Iechyd a Llesiant

World Health Organization Collaborating Centre on Investment for Health and Well-being

Authors and contributors

Timotej Jagrič[1], Mariana Dyakova[2], Kathryn Ashton[2], Anna Stielke[2]

[1]Institute of Finance and Artificial Intelligence, Faculty of Economics and Business, University of Maribor, Slovenia

[2]World Health Organization (WHO) Collaborating Centre on Investment for Health & Well-being, Public Health Wales

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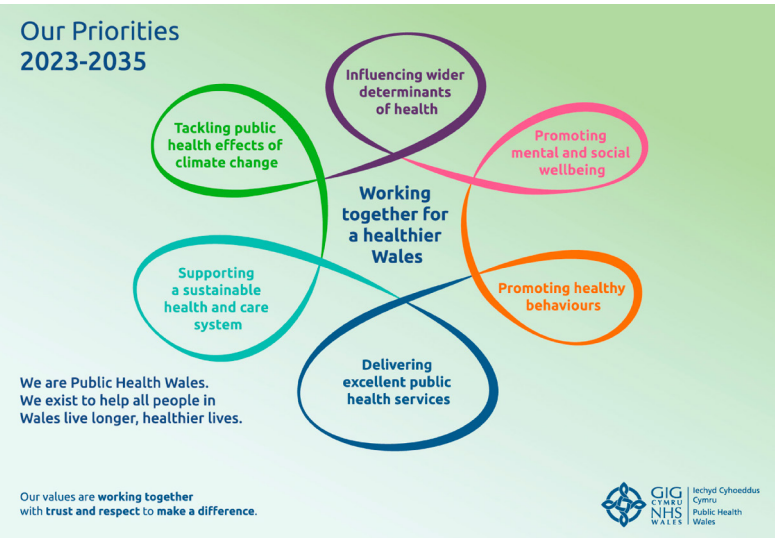
Who we are and what we do

We are Public Health Wales – the national public health organisation for Wales. Our purpose is working together for a healthier Wales. We are working towards a Wales where people live longer, healthier lives and where everyone has fair and equal access to the things that lead to good health and well-being. Our Long-Term Strategy (2023-35) sets out our vision for achieving a healthier future for people in Wales by 2035.



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Contents

Glossary

Term	Definition
Input-output tables	Input-Output Tables (IOTs) describe the sale and purchase relationship between producers and consumers within an economy. They show how products (and primary inputs) are used to produce further products and satisfy final use. They can either show flows of final and intermediate goods and services defined according to industry outputs (industry x industry tables) or according to product outputs (product x product tables).
Direct effects	Direct effects are the set of expenditures applied to IOTs for an impact analysis. It is one or more production changes or expenditures made by producers/consumers as a result of an activity or policy. Direct effects can be positive or negative.
Indirect effects	Indirect effects are the business to business purchases in the supply chain taking place in the region that stem from the initial industry input purchases. As the industry specified spends their money in the region with their suppliers, this spending is shown through the indirect effect.
Induced effects	Induced effects are the values stemming from household spending of Labour Income, after removal of taxes, saving, and commuter income. These effects are generated by the spending of the employees within the business' supply chain.
Multiplier	Multipliers can be used to calculate total change in an input generated by a given direct change.

Policy context

This analysis fills a gap in a critical moment in time, facing the threat of a perma-crisis following the Coronavirus pandemic as well as the rising cost of living, escalating inequality and the health impacts of climate change. It delivers to a Memorandum of Understanding between the Welsh Government and the WHO Regional Office for Europe towards healthy prosperous lives for all, leaving no one behind.

At a national level, Wales has a commitment to ***A Healthier, More Equal, Prosperous, Resilient and Globally Responsible Wales***, improving population health and societal well-being through world-leading legislation, policies, and programmes (1). The NHS receives around half of the Welsh Government's budget; it is the biggest employer in Wales with a vital role to regional economies and businesses, providing a unique opportunity to influence the wellbeing of the population. ***'A Healthier Wales Foundation Economy Programme'*** aims to ensure that NHS funding benefits people, communities, and the wider economy in Wales, but there is little awareness of the major contribution that NHS makes to the national and local economy, including as an anchor institution (2).

At a global level, there is a growing movement towards building ***'Wellbeing Economies'*** that place people, social values, and the planet at the heart of economic progress (3). The Policy and International Health Directorate, a World Health Organization Collaborating Centre on Investment for Health and Well-being (WHOCC) at Public Health Wales works closely with the WHO Regional Office for Europe and the European Office for Investment for Health and Development in Venice, Italy to explore and strengthen the key role of the health sector as a driver of sustainable, socially responsible, equitable and Value-Based economic development and prosperity for all (4).

Purpose

This economic modelling, known as 'the footprint analysis', aims to **quantify the contribution of the healthcare sector (the National Health Service, NHS) to the wider economy in Wales,** looking at the economic output, population income, value added imports, and employment.

The analysis can help strengthen the role of the healthcare sector in the **Foundational Economy** in Wales (2) and inform decision making and budget allocation towards investing in population health and maximising value and wellbeing impacts for people, communities, society, and the planet. It provides useful information and opportunities to support procurement, employment, supply chains, and service provision towards enhancing **NHS role as an anchor** at a local level (5).

This analysis applies an innovative methodology, reinforcing **Wales' standing as a leading nation and a 'live innovation site' globally.** This contributes to the Wales' commitment to becoming a Wellbeing Economy, improving population health, and building sustainable resilient value-based health systems within and beyond Welsh borders.

Target audience

This summary document has been developed to support and inform the following national and international stakeholders:

- Wales' economists, finance and health experts, policy- and decision-makers, especially in relation to the *Foundational Economy, Social Value and Wellbeing Impacts and Value-Based Health Care*
- NHS budget holders, finance and planning directors and teams on national and local levels
- Health economists, modelling and health scientists nationally and internationally
- Other countries' finance, economy and health sector leads, policy- and decision-makers

Key messages

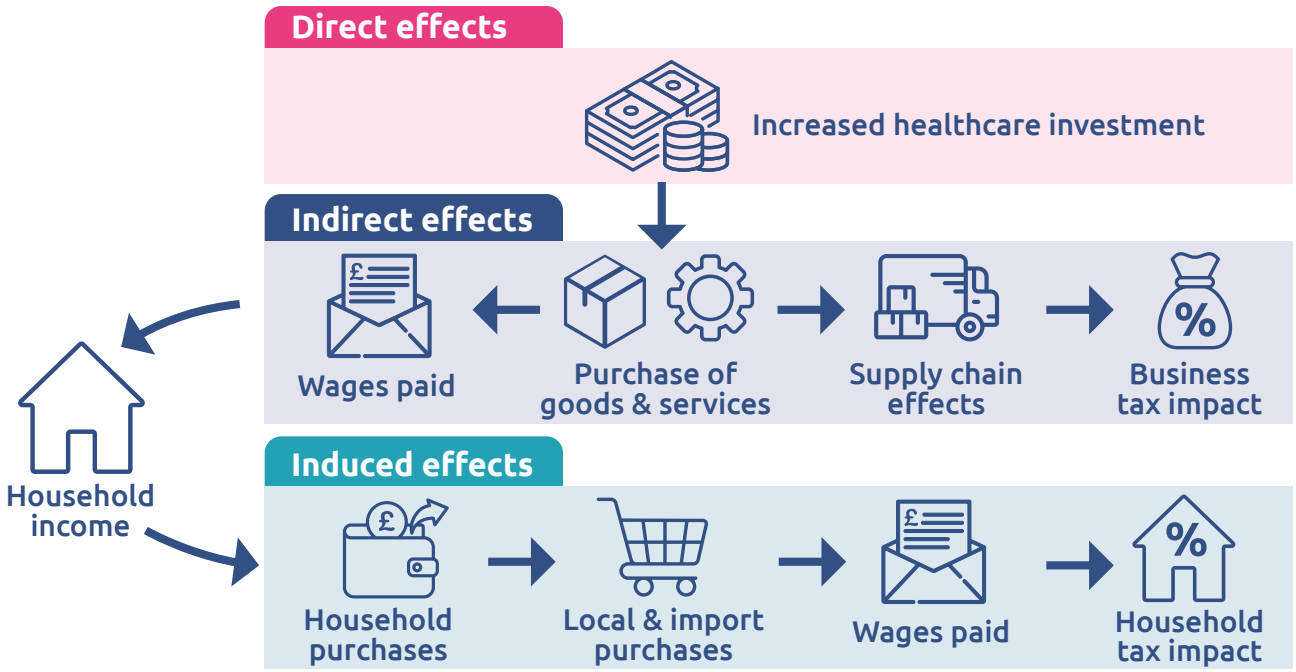
1. The **NHS in Wales is one of the most significant economic sectors, a powerful stabiliser and investment multiplier**[1], rather than an economic drain.

2. The NHS in Wales plays an **increasingly important role in generating sustainable development** by ensuring high-quality employment and responsible and sustainable purchasing (procurement) of goods and services.

3. Increased **spending in the NHS benefits local economies**, such as procuring local suppliers (for example, food and estate maintenance) and job creation.

The healthcare sector in Wales is **one of the most effective sectors in driving increases in income and employment,** by stimulating economic output through investment and job creation through **direct**, **indirect**, and **induced effects** (Figure 1).

Figure 1: Direct, indirect and induced effects* of the healthcare sector on the Welsh economy



**The 'induced effects' is the added value of increased spending in the healthcare sector, which is often not included in standard multiplier methodologies.*

1 After also considering induced effects.

The NHS is **consistently among the most influential sectors on the Welsh economy** across the entire range of economic measures explored in this analysis, in addition to its health and well-being outcomes.

For each additional pound spent in the Welsh Health Sector (NHS):

Overall output of the Welsh economy would increase by **£2.47 – above average**

Income generation across all sectors of the Welsh economy would increase by **£0.60 – one of the most effective sectors (total income multiplier ranking 7th from 79 sectors)**

£0.90 additional **value added** in the economy **– above average**

Just **£0.30** of additional economic output spent on **imports – means greater benefit to Wales (rather than externally)**

28 new jobs created per **£1,000,000** invested into products and services produced by the health sector **– one of the most effective sectors (ranking 14th out of 79 sectors)***

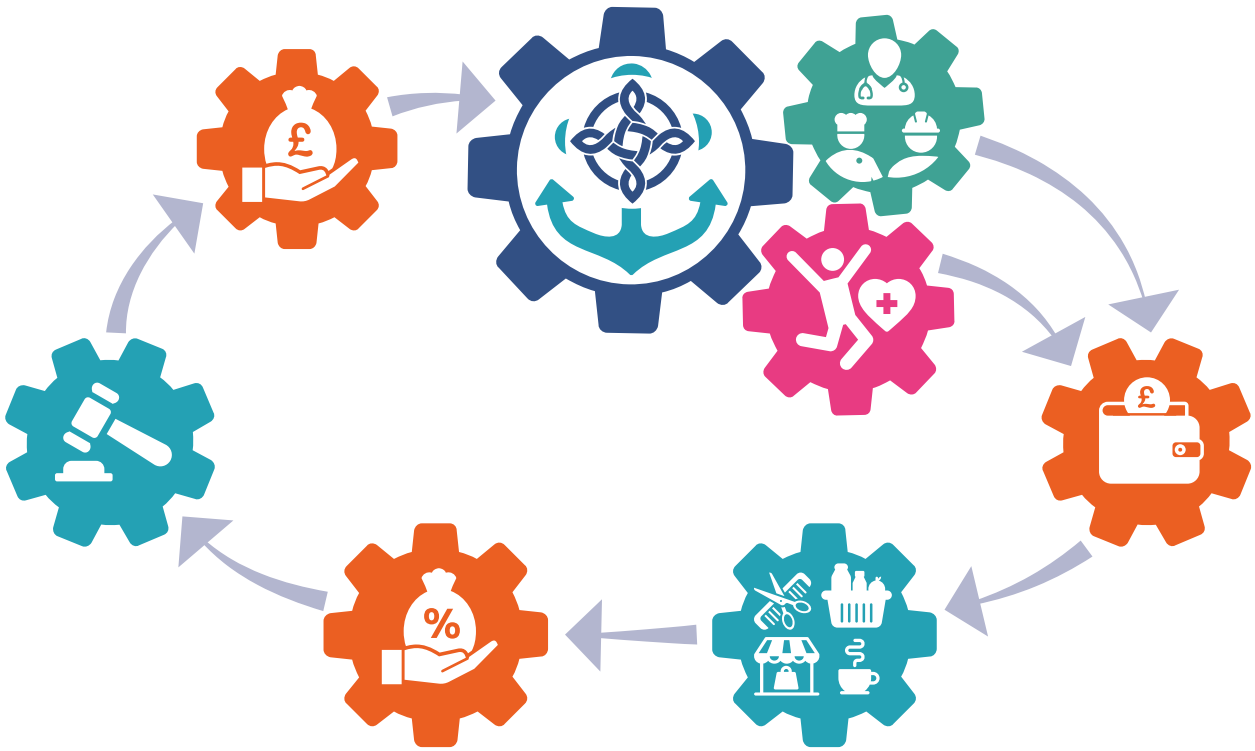
*The ranking refers to employment effects. The health sector demonstrates a relatively high ranking (14th out of 79 sectors), highlighting its effectiveness in generating employment per unit of investment compared to other sectors analyzed.

The term "above average" indicates that the health sector has a higher-than-average contribution to the Welsh economy compared to other sectors. Specifically, "above average" refers to the fact that the total output multiplier (when considering induced effects) is higher than the average multiplier for the entire economy.

"Most effective" reflects the sector's **efficiency in converting investment into employment and economic activity** relative to other industries. *The health sector is among the most impactful sectors in terms of job creation per unit of investment. Only 13 other sectors achieve higher employment effects than the health sector.*

Policy implications

- As Wales faces the challenges and consequences of the Coronavirus pandemic, Brexit, persisting and widening inequalities, climate change and global supply chain threats, there is an opportunity to **invest in and grow the NHS as an anchor and engine for sustainable, Value-Based, people-centred economic development.**
- Capturing and quantifying the **wider social, economic, and environmental impact and value** of the healthcare sector is critical to show its full contribution as a **Foundational Economy** in Wales, not limited to narrow financial returns.
- This work also provides empirical evidence to **help Wales on the road to a Wellbeing Economy** based on the principles of solidarity, fair work, sustainability, equity, and societal values and showcasing NHS as its driver and enabler.
- **Future opportunities** to progress this economic modelling include:
  - Application on a **local level**, quantifying the wider economic value of NHS organisations, strengthening the case for their anchor role for local communities.
  - Applying a **health equity lens** to ensure budget prioritisation, service provision and further decision-making is leaving no one behind.
  - Applying other methods to help shift health budgets towards **prevention and early intervention**, increasing population health and societal well-being.



Introduction

Human health and wellbeing is interrelated with sustainable development in a complex reciprocal way. Investment in health for all supports social, economic and environmental sustainability, while investment in a healthy planet with inclusive and sustainable economies, and fair and secure societies, supports health and well-being for individuals, families and communities (6).

In the context of growing challenges and threats from the Coronavirus pandemic, climate change, cost of living increase, and global social and economic unrest, there is a growing concern about increasing health gaps and emerging socio-economic vulnerabilities across the life course and geographies. This can increase levels of social exclusion, contribute to unbalanced economic recovery within and between counties, and generate unsustainable levels of demand on health and social care systems and services. It is crucial to mitigate population well-being harms and promote a recovery that leverages health and well-being, social, economic, and environmental co-benefits of policies and investments across sectors in rebuilding healthy prosperous lives for all, now and in the future.

Wales has developed world leading sustainability and wellbeing legislation and policies, including the Wellbeing of Future Generations Act 2015 (1) and the Socio-Economic Duty 2021 (7). This provides a unique opportunity and lever to promote population health and wellbeing for all policies, as well as to uncover and strengthen the vital role the NHS plays in Wales in driving and enabling a 'Wellbeing Economy' (8,9), supporting a shift from the dominance of markets and profit towards a more inclusive and sustainable society.

Although the primary function of the healthcare sector is to deliver effective and high-quality care to everyone living in Wales, it also represents a significant sector of the Welsh economy. The NHS in Wales directly employs just over 100,000 staff, with employees distributed across many staff groups, grades, and areas throughout Wales (10). In addition to the NHS, there is also a range of private sector healthcare providers. As such, the healthcare sector in Wales plays an increasingly important role in generating sustainable development by ensuring high-quality employment and responsible and sustainable purchase of goods and services.

The healthcare sector in Wales influences the wider economy through **direct**, **indirect**, and **induced** effects *(Figure 1)*. **Direct effects** are the impact that investment has on the healthcare sector; this increased spend will have an **indirect effect** of increasing the purchase of goods and services by the healthcare sector, which also has a wider effect on supply chains across other sectors of the Welsh economy, and ultimately leading to increased tax receipts from impacted businesses. A key component of those goods and services purchased by the healthcare sector are in the form of wages paid to employees of the healthcare sector and affects their household income. Changes in household income will result in changes in purchasing habits within that household, and as a result have an **induced effect** on the wider economy. **This induced effect is the added value of increased spending in the healthcare sector, which is often not included in standard multiplier methodologies.**

As a consequence of these direct, indirect, and induced effects, additional demand on healthcare results in a benefit to local economies, such as additional business for local suppliers of food, maintenance as well as newly created jobs. These employees then spend their wages and income in the local economy. The same logic may be applied to a reduction in healthcare service provision, which could result in a negative impact on the local economy (Figure 1).

This analysis aims to quantify the economic contribution of the healthcare sector (NHS) to the Welsh economy. Further, it aims to provide empirical evidence to help build an economy based on the principles of fair work and sustainability.

This work has been undertaken by researchers at the University of Maribor, Slovenia in collaboration with Public Health Wales and the WHO European Office for Investment for Health and Development in Venice, Italy, delivering to a Memorandum of Understanding between the Welsh Government and the WHO Regional Office for Europe (11).

Methodology

Input-output tables

This analysis relies on **input-output tables,** which show the interdependencies between different sectors of the economy. For example, the healthcare sector will rely on purchasing goods and services from many other sectors:

- Hospitals require power, water, and food supplies
- NHS employees require uniforms
- Ambulances need to be maintained and fuelled

Input-output tables quantify these interdependencies, highlighting which sectors from across the economy as a whole, are most influential on the wider economy, and where changes in demand in different sectors might propagate through the wider economy.

Currently, Wales is the only nation in the UK that does not routinely generate national input-output tables; the last comprehensive set of Welsh input-output tables were generated in 2007 (12). As a result, UK input-output tables from 2017 (13) were used as a base to estimate current Welsh input-output tables through the incorporation of additional Wales specific data. The approach used in this study to derive Welsh input-output tables followed the Generation of Regional Input-Output Tables (GRIT) methodology. Since its initial development (14), this approach has been used to generate input-output tables internationally (15). Its application to Wales along with data sources is described comprehensively in an academic journal paper (16).

Multipliers

Using the estimated input-output tables for Wales, analysis was conducted in terms of **multipliers** and **key-sector analysis** with respect to economic metrics.

Multipliers often describe the **cross-sectoral effect** of **an additional pound of direct healthcare spend**, including direct, indirect and induced effects on the Welsh economy. Figure 2 presents the multipliers considered in this study and their interpretation. These have been used in previous studies (17,18).

In this summary, multipliers based on direct, indirect, and induced effects are presented. A sensitivity analysis exploring different approaches for their estimation is included in the full report (16).

Figure 2. Interpretation of economic multipliers

Output

For each additional pound spent on the healthcare sector, how much does the output of the overall economy increase?

Income

For **each additional pound spent on the healthcare sector,** how much does **the increase in income of employees** effect **income in the overall economy?**

Employment

For every **£1,000,000 spent on the healthcare sector,** how many **additional jobs are created in the overall economy?**

Value added

For **each additional pound spent on the healthcare sector,** how much **additional value is added in the overall economy?**

Value added is the **difference** between **the price** of a product or service and **the cost** of producing it.

Import

For **each additional pound spent on the healthcare sector,** how much of **the resulting increase in economic output is spent on imports**?

Unlike the other multipliers, a lower value is preferable for import multipliers. The **lower the import multiplier**, the **more** that increased spending in a sector will result in increased output in the **local economy**.

Results

The healthcare sector in Wales was consistently amongst the most influential sectors when considering overall economic output, income, new employment and value added, while resulting in comparatively small import leakage.

For each additional pound spent in the Welsh Health Sector (NHS):

Overall output of the Welsh economy would increase by **£2.47 – above average**

Income generation across all sectors of the Welsh economy would increase by **£0.60 – one of the most effective sectors (total income multiplier ranking 7th from 79 sectors)**

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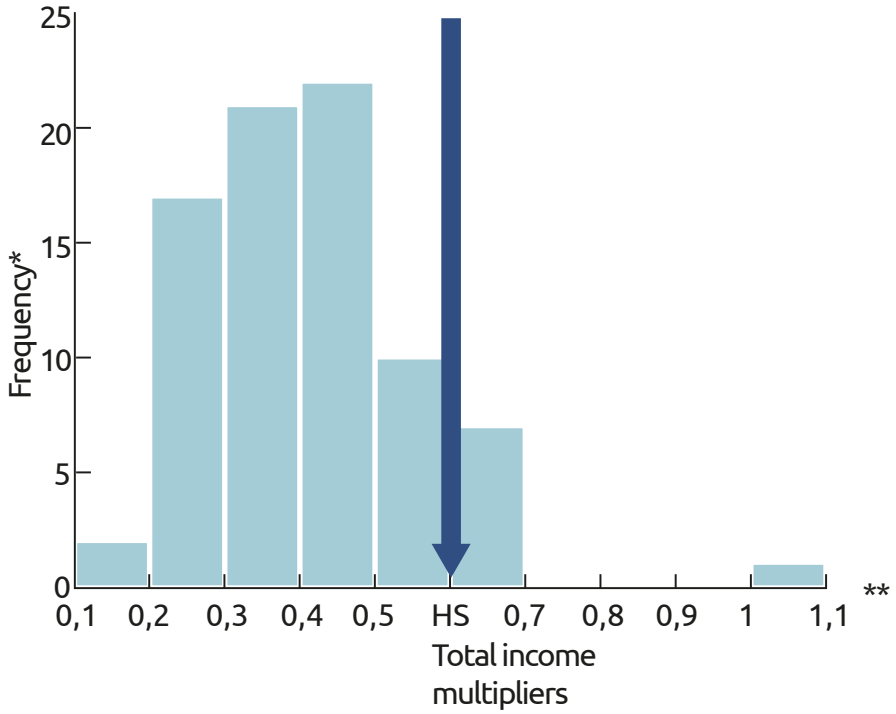
"Most effective" reflects the sector's **efficiency in converting investment into employment and economic activity** relative to other industries. *The health sector is among the most impactful sectors in terms of job creation per unit of investment. Only 13 other sectors achieve higher employment effects than the health sector.*

Multiplier estimates for the healthcare sector[2] compare favourably with other sectors of the economy. The healthcare sector is one of the most effective sectors in driving increases in income and employment, behind only six other sectors with respect to income generation, and 14th for job creation out of 79 sectors (in total) of the Welsh economy. In addition to this, jobs created in the healthcare sector tend to be local, stimulating regional economies, and of a high quality with the potential of increasing population well-being.

The healthcare sector is above average in improving economic output and value added, ranking 30th and 21st, respectively. It is also above average with respect to import leakage, ranking 54th in the Welsh economy for stimulating imports; this means that additional economic activity that would result from increased healthcare spend will result in a greater benefit to Wales than the same increased spend in most other sectors of the economy.

Figure 3. Example of results: income multipliers



*Frequency refers to the **number of sectors** that fall within each class range of income multipliers. This provides a distribution of sectors based on their economic impact.

** Values on the x-axis present lower and upper limits of each sector.

Total income multiplier: for each additionally spend pound for the healthcare sector's services on average, the income in all sectors of Welsh economy will increase by approximately £0.60 (direct, indirect, and induced effects are taken into account).

2 After considering also induced effects.

Ranking of the Healthcare Sector

Rank	Sector
1	Services furnished by membership organisations
2	Security and investigation services
3	Services of head offices; management consulting services
4	Employment services
5	Public administration and defence services; compulsory social security services
6	Remediation services and other waste management services
7	Human health services
8	Architectural and engineering services; technical testing and analysis services
9	Postal and courier services
10	Travel agency, tour operator and other reservation services and related services

Interval Estimate (a=10%)							
Type	Value	Rank	Percentile	Average	St. Dev.	L. Bound	U. Bound
Total	0.6	7	7.7%	12.1%	6.9%	3.2%	20.9%

Limitations

- The economic benefits of a healthier workforce provided by increased healthcare funding were not considered. Examples of such benefits include improved productivity and longer healthy life expectancy.
- The lack of Wales specific input output tables is a source of uncertainty. Bespoke input-output tables would provide more reliable estimates of economic multipliers.
- This analysis also assumes a static model, that is that there is assumed no supply constraints, and no major changes in sector compositions, tax policy or prices, and relies on data collected prior to COVID-19.
- The analysis does also not consider that increases in healthcare funding may result in decreases in funding in other sectors, which would also have an impact on the overall economic system.

Data requirement for further analysis

Required data and possible results

There are three possible levels of analysis, which require different data:

	Result	Data
National	Analysing the **economic effects** of the health sector **on the whole economy**	• Latest IO tables for 64 sectors classification
Regional	Analysing the **economic effects** of the health sector **on the regions** in the observed countries	• Regional sectoral employment and value added • Regional productivity by NACE sectors • Regional household account and household structure of spending • Regional investments • Regional exports
Individual Healthcare Institution	Analysing the **effects of selected institutions on local (regional) and national economy**	• National tables and regional analysis data **(see above)** • Detailed financial statement of the studied health care unit *(e.g. costs of material and services separated in domestic and imported part, value added, fixed capital consumption, operating surplus (gross) and compensation of employees)*

Conclusion and implications

This analysis has estimated the economic footprint of the NHS and demonstrated that it is an important engine of economic activity in Wales. It challenges misperceptions of the healthcare sector being a drain to the economy, rather than as an economic stabiliser and shows that it is highly interconnected with the rest of the economy.

This analysis supports an argument for increased spend in healthcare to improve economic output, population income and generate new employment opportunities locally in Wales. These economic benefits are generated in addition to the direct health and well-being benefits of improved healthcare provision in Wales, with the potential to reduce inequalities and help tackle the triple challenge of the coronavirus pandemic, Brexit, and climate change.

The results of this study are applicable to the Welsh healthcare sector on a national average, however previous studies conducted in other European countries have shown that the effect of the healthcare sector on local and regional economies may differ significantly. As a result, it may be beneficial for future analysis to explore the impact of these regional differences, and the role that increased spend in healthcare might have on reducing regional inequalities in Wales. Furthermore, with the development of up-to-date Wales' specific input-output tables, there would be the potential to explore the impact of individual components of the Welsh healthcare system. For example, the relative impact of different health boards, or even individual hospitals on the local economy could be robustly explored to inform more targeted policy solutions.

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GIG CYMRU NHS WALES
Iechyd Cyhoeddus Cymru
Public Health Wales

Iechyd Rhyngwladol
International Health

Public Health Wales
Number 2 Capital Quarter
Tyndall Street
Cardiff CF10 4BZ

Tel: +44 (0)29 2022 7744

phw.nhs.wales

Email: generalenquiries@wales.nhs.uk

@PublicHealthW
/PublicHealthWales

phwwhocc.co.uk

@phwwhocc
/Phwwhocc

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