Assessing the Economic Impact of the Arts on Health and Healthcare Services in Wales

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Background and purpose of report

This report provides an assessment of the economic impact of the arts on the NHS and social care in Wales, as well as wider population health and societal impacts. This is first time the economic impact of the arts on the NHS and social care in Wales has been investigated at national level.

This report was produced by researchers at the Centre for Health Economics and Medicines Evaluation (CHEME) at Bangor University and the Research Centre for Arts and Wellbeing at Edge Hill University. The project team combines world-leading expertise in health economics, the arts and arts psychotherapies research.

The report was commissioned by Arts Council of Wales (ACW), an independent charity organisation established in 1994. ACW is a development agency, of which distributing funds to arts organisations, communities and artists in Wales is a core remit. The funds distributed by ACW are primarily provided by both the National Lottery and the Welsh Government.

Executive Summary

- There is a growing body of evidence linking engagement in arts and culture to better physical and mental health across the life-course. Establishing the financial value of these benefits, and possible savings for the NHS and social care, is an important emerging area of research.

- This report builds on a 2024 report by Frontier Economics that explored these economic impacts at UK level. It applies the models used therein to Welsh population figures and attendance and participation data for Arts Council of Wales (ACW) multi-year funded organisations 2019-2024. It also explores specific healthcare challenges where the arts may have the most to offer in terms of NHS and social care cost savings in Wales.

Key findings

1. The estimated financial value of health and productivity benefits through all arts engagement in Wales (including but not limited to ACW activity) **is at least £588m a year.**
2. We estimate ACW's investment in multi-year funded organisations generates a financial ROI of **£11.08 in for every £1 invested in terms of health, wellbeing and productivity benefits**.
3. Evaluations of specific ACW funded projects that target particular health conditions indicate:
    - A dance for strength and balance programme has the potential to save **£5m a year in healthcare costs by preventing falls amongst the elderly.**
    - If arts programmes could reach 5% of young people in NHS mental health pathways, this would generate **annual mental health and wellbeing benefits of £9.5m.**
    - If 5% of all adult mental health GP appointments were avoided following engagement in the arts, this would save **£17m per year.**
    - Arts programmes that support the health and wellbeing of NHS staff have the potential to save up to **£3.5m a year through reductions in staff sickness and attrition costs.**

- These findings point to significant, monetary health and wellbeing benefits of arts engagement in Wales.
- Our literature review suggests that investing in more economic research in this area would help strengthen these findings and allow for comparison of return on investments in different types of arts and culture programmes in Wales.

Funding statement

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Contents

The relationship between arts and health in policy and research

The Welsh Government's Priorities for Culture: integrated impact assessment 2025 makes consideration of the strong link between individual and community participation and engagement with culture and the arts and improved health and wellbeing outcomes[1]. The Welsh Government's Mental Health and Wellbeing Strategy 2025-2035 also considers how community assets (including arts and cultural centres) can be leveraged to promote good mental health and wellbeing across Wales[2].

Unique to Wales, the Wellbeing of Future Generations Act 2015[3] requires all listed public bodies to work to achieve seven wellbeing goals. Two goals of pertinence to the arts and health are *A Healthier Wales* and *A Wales of Vibrant Culture* and a *Thriving Welsh Language*[3].

Beyond Wales, there is an ever-growing evidence base exploring the benefits of arts-based activities for participant health and wellbeing[4–9] and resultant economic impacts through reductions in healthcare resource utilisation (HCRU) and wider societal benefits, such as returning to paid employment and social cohesion[10]. Further examples from across the UK suggest that the arts can act as an approach to tackling health inequalities through influencing social determinants of health[11].

Purpose of report

To date, there have been no assessments of the economic impact of the health and wellbeing benefits of the arts in Wales. Through this work we, therefore, sought to add value to this area by using robust existing models, Welsh demographic data and Arts Council of Wales (ACW) participation and attendance data to estimate the economic impacts across Wales.

Our analysis builds upon the pioneering methods developed in the Frontier Economics (2024) report: *Culture and heritage capital: Monetising the impact of culture and heritage on health and wellbeing*[12]. The models used in that report were created using evidence of health and wellbeing benefits of different types of arts engagement within different populations, with only the most robust evidence being used to calculate the economic impact of engagement with the arts across the life-course. For this report, we used the evidence and models in Frontier Economics (2024) in two ways. Firstly, we re-estimated all Frontier Economics (2024) models with respect to Welsh population figures to generate estimates of the financial impacts generated through all arts engagement in Wales. Secondly, we took the most applicable models (and their respective per-person financial benefits) and applied them to ACW arts participation data to calculate estimates of the financial impacts generated through ACW-specific arts engagement.

To supplement these estimates, we presented case studies from across the ACW funding portfolio with evidenced change in NHS and social care resource use, participant health, wellbeing and wider societal outcomes. These case studies reflect programmes targeting some of the most pertinent health and wellbeing threats to the Welsh population, Welsh NHS and care systems, and show the potential financial returns of scaling up investment in these areas.

As detailed in the Technical Appendix of this report and Section 4.2.5 of Frontier Economics (2024), the Frontier Economics (2024) models largely underestimate the impact the arts have on the NHS and social care. Further, given we present only a handful of case studies, **results in this report likely underrepresent the true**

economic impact of health and wellbeing benefits from arts participation and attendance in Wales.

Arts Council of Wales's investments and health and wellbeing

In line with its mission to widen engagement with the arts in Wales[13], Arts Council of Wales (ACW) currently invests in 81 arts organisations on a multi-year basis (known as 'multi-year funded organisations'), with investment contributing towards core operating costs. This investment is currently around £29.3m per year. ACW also fund individual projects such as productions, tours, events, and programmes to increase engagement in the arts, often working in partnership with other sectors such as education and health. The current evidence base suggests that all such programmes have the potential to support the NHS, its workforce, and reduce demand on NHS resources by keeping people well in their communities[14].

Dedicated arts projects in health settings (sometimes known as 'arts and health' or 'creative health' programmes) have added potential to support patient treatment, management and recovery. Following a mapping study of its activity in 2018[15], ACW invested in several strategic programmes in this area, including co-funding arts and health coordinator posts in Welsh Health Boards, supporting the 'Health Arts Research People' (HARP) innovation and research programme and creating a dedicated funding stream for arts and health projects in Wales.

These strategic programmes form a core part of delivering ACW's mission as set out in its Strategy 2024-2034: *to create an environment where the knowledge, understanding and practice of the arts can flourish and where everybody in Wales can engage with the arts*[16].

Study aims and approach

This study aims to establish a financial value for health and wellbeing benefits, productivity and potential costs savings to the NHS and social care systems generated by arts programmes in Wales, including those funded by Arts Council of Wales (ACW). This was achieved through three work packages:

1. Applying Welsh population data to all economic models in Frontier Economics (2024) to estimate the financial value of NHS and social care cost savings, individual health and wellbeing, and productivity benefits generated through all arts engagement across Wales.

2. Applying appropriate Frontier Economics models to annual participation and attendance figures from ACW's multi-year funded organisations to estimate the financial return on ACW's investment in terms of health, wellbeing and productivity benefits generated across those funded organisations.

3. Presenting examples of ACW funded arts programmes that target particular health challenges in Wales and estimating a financial value for the evidenced impacts on participant outcomes in those programmes. This allows us to demonstrate, from a financial perspective, the potential of these programmes in addressing key health and wellbeing challenges across Wales and the Welsh health and care systems.

Work package 1: valuing population benefits of all arts engagement in Wales

Summary

The financial value of health and productivity benefits generated through all arts engagement in Wales, is at least £588m a year.

To estimate the financial value of population benefits of all arts engagement in Wales, we re-estimated the models presented in Frontier Economics (2024) using respective Welsh population data to pro-rate the engagement figures used in that report. As population data was used, this analysis is representative of all arts engagement in Wales, inclusive of activity outside of the Arts Council of Wales (ACW) portfolio.

The Frontier Economics models from its 2024 report were used as it offered the most comprehensive analysis of the economic impacts of the arts identified in our review of the published and grey literature. The robust derivation of financial values and assumptions within their analyses provided the best approach to generating estimates for Wales.

Frontier Economics designed each of their models through first searching the literature for evidence of the links between culture, heritage and health and wellbeing in respective populations (by age, cultural activity engaging in, frequency of engagement and engagement while living with a specific health condition). From this evidence, the authors then measured quality of life changes from cultural engagement through changes in quality adjusted life years (QALYs). QALYs are a generic measure of the quantity and quality of life lived, with one QALY representing a year of perfect health. QALYs were used as the measure of effect in most of these models given they are monetisable, using HM Treasury[17] (£70,000 per QALY) and the lower end of the National Institute of Health and Care Excellence (NICE)[18] (£20,000 per QALY) values. Wellbeing years (WELLBYs) were used in models

where identified evidence was not reported in terms of quality of life, but rather where mental health and self-esteem impacts were reported. WELLBY values followed valuations reported in Fujiwara et al., 2021[19].

The main assumption made in producing these estimates is that the people of Wales have the same opportunity to engage in the arts as the UK-wide evidence used in Frontier Economics (2024) model derivation. We recognise there will be variation in opportunities to engage in the arts across countries in the UK.

Through doing this, we estimate all arts engagement in Wales generates:

- Annual society-wide **general health** benefits of at least **£506m** (Table 1).
- Annual society-wide **productivity benefits** of at least **£81m** (Table 1).

We also estimate all arts engagement in Wales generates:

- Annual **NHS and social care cost savings** of at least **£26m** (Table 2).

To generate the headline figures for general health and productivity presented above, Frontier Economics Model 1 (general participation and general health in all adults aged 30 to 49), has been used. This approach was taken as it is the largest single estimate of all models; this approach is consistent with that of Frontier Economics (2024). The estimates generated by respective Frontier Economic models are not additive, meaning we cannot generate a single total value figure inclusive of all model estimates. Further, not all Frontier Economics model estimates are directly comparable given differences in methodologies and data used. However, the individual model estimates present illustrative benefits in each of the respective populations and forms of arts engagement. Therefore, the estimates from Model 1 presented as headline figures give as close an indication as possible of the total economic impact of annual, all arts engagement in Wales on health, wellbeing and productivity but **considerably underrepresent the true economic impacts.** For more information on why model estimates cannot be added, please see Frontier Economics (2024) Section 4.2.5.

In our analysis used the same evidence-informed assumptions presented in Frontier Economics models, but applied them to respective Welsh population data, obtained from StatsWales Population estimates by local authority and age[20].

A brief description of the respective populations in the models included in the Frontier Economics (2024) report is presented in the first column of Table 1. The inclusion of populations at different stages of the life-course[21] is considerate of the different benefits that may be experienced through arts engagement at different life-course stages. These different benefits may in turn produce different economic impacts to the health system and the wider Welsh economy. The consideration of inter-generational health challenges follows the guidance of the Well-being of Future Generations (Wales) Act 2015[3]. For more information on assumptions made, please see Frontier Economics (2024) Annex B.4.

Table 1 presents individual annual health, wellbeing and productivity benefits across each model. Respective population numbers for each model are presented, which were multiplied by individual financial benefits to generate annual, society-wide financial benefits.

Table 1: Health, wellbeing and productivity benefits of arts engagement in Wales, by age group and type of engagement

Age group and arts attendance models *Frontier Economics (2024)*	**Annual per-person health and wellbeing individual benefits (£)**	**Annual per-person productivity benefits (£)**	**Respective model populations (using Welsh population data)**	**Total society-wide value of health and wellbeing benefits (£)**	**Total society-wide value of productivity benefits (£)**	**Total society-wide value of health and wellbeing and productivity benefits (£)**
1) General participation and general health in adults 30-49	£992	£138	592,910	£506,345,032	£81,821,563	**£588,166,595**
2a) General attendance and mental health in adults (30-49)	£649	£91	214,952	£120,158,291	£19,560,652	**£139,503,991**
2b) General participation and	£386	£63	668,740	£258,133,733	£42,130,635	**£299,595,628**

mental health in adults (30-49)						
3) Extracurricular activities and externalising behaviour in children (10-14)	£122	-	106,775	£13,026,581	-	**£13,026,581**
4a) Art and self-esteem in children (10-14)	£134	-	15,735	£2,108,530	-	**£2,108,530**
4b) Music and self-esteem in children (10-14)	£68	-	42,710	£2,904,287	-	**£2,904,287**
5a) Weekly organised arts activities and mental health in young adults (18-29)	£662	£86	54,537	£36,103,282	£4,690,154	**£40,793,437**
5b) Daily organised arts activities and mental health in young adults (18-29)	£1,098	£142	29,747	£32,662,513	£4,224,114	**£36,886,627**
6) Arts-based museum activities and general health in older adults	£1,164	£333	768	£893,388	£112,057	**£1,005,445**
7) Choirs and general health in older adults (65+)	£481	£71	6,822	£3,281,555	£484,388	**£3,765,943**
8) Engagement with cultural venues and depression in older adults (50+)	£232	£56	497,427	£115,403,064	£27,855,912	**£143,258,976**
9) Engagement with cultural venues and dementia in older adults (50+)	£66	£7	259,697	£17,139,981	£1,817,877	**£18,957,858**
10) Museums and dementia in older adults (50+)	£160	£21	139,280	£22,284,730	£2,924,871	**£25,209,600**

Table 2 presents the financial estimates of NHS and social care savings derived from Frontier Economics (2024) Models 8, 9 and 10. Research on the causal links between engagement with or attendance of the arts and healthcare resource use (HCRU) has been quite limited up until this point, so Frontier Economics note it was only possible to generate top-down estimates for groups where robust evidence of cost savings exists. These are older adults with depression and dementia engaging with cultural venues and older adults with dementia attending museums. These estimates assume that people living in Wales have the same access to NHS and social care services as those living in other areas of the UK. We acknowledge there will be variation in access to these services across the UK.

As with the health, wellbeing and productivity topline figures, the largest financial estimate across the models in Table 2 was presented due to limitations in comparing and adding models. Therefore, the estimates from Model 10 presented as headline figures give as close an indication as possible of the total economic impact of annual, all arts engagement in Wales on NHS and social care cost savings but **considerably underrepresent the true economic impacts.**

Table 2: NHS and social care cost savings of arts engagement in Wales (older adults and cultural venue engagement only)

Age group and arts attendance (from Frontier economics report)	Annual per-person NHS cost savings (£)	Annual per-person social care cost savings (£)	Participating Wales population in this age group	Total health and care cost savings
8) Engagement with cultural venues and depression in older adults	£26*	-	497,427	**£12,933,102**
9) Engagement with cultural venues and dementia in older adults (50+)	£11	£64	259,697	**£19,477,252**
10) Museums and dementia in older adults (50+)	£27	£162	139,280	**£26,323,837**

**£26 in Model 8 is reported as NHS and social care savings in Frontier Economics (2024), no disaggregation of how much of this figure is NHS or social care are provided for this model estimate*

Work package 2: return on Arts Council of Wales's investment in terms of health, wellbeing and productivity

Summary

The average annual financial return on Arts Council of Wales's investment in multi-year funded organisations is £11.08 in health and productivity benefits for every £1 invested.

To estimate the average annual financial value of health, wellbeing and productivity benefits generated across Arts Council of Wales (ACW) multi-year funded organisations, we applied the annual, per-person financial benefits presented in the most comparable Frontier Economics (2024) models to average annual participation and attendance figures reported to ACW by its multi-year funded organisations between 2019-2024.

Attendance and participation figures for ACW multi-year funded organisations across the period 2019/20 to 2024/25 were supplied by ACW. **Participation** in this context refers to individuals actively engaging and participating in arts/cultural projects. **Attendance** in this context refers to individuals visiting/attending art exhibits or cultural events. This differentiation is made as financial estimates of impacts vary by whether someone engages in or attends arts/cultural activities.

Participation figures reported to ACW by its multi-year funded organisations were disaggregated by Children and Young People (CYP) or General Participation. Attendance figures were not disaggregated. The period 2019/20 to 2024/25 was chosen as it provided the latest estimates available at the time of this study. It is worth noting that this period was inclusive of the COVID-19 pandemic and the emergence out of it, so we would expect participation and attendance figures to be lower during this period than in non-COVID times. This figure also excludes participation or attendance in ACW's projects funded separately through its National

Lottery grants, because such data are not reported on those projects in the same way, although they are estimated to be significant.

These annual average attendance and participation figures were multiplied by per-person financial benefits from Frontier Economics Models 2a (cultural arts attendance by adults aged 30 to 49) and 2b (cultural arts participation by adults aged 30 to 49) for adults. These estimates of adult participation and attendance were inclusive of health and productivity benefits. For CYP participation figures, an average of financial benefits from Models 4a and 4b (children's participation with arts and music aged 10 to 14, respectively) was used. CYP estimates represented wellbeing benefits only, as such, we expect this to be an **underrepresentation of the true benefits**. See the Technical Appendix for further details on model inputs.

Through doing this we estimate ACW multi-year funded organisations generated **average annual financial benefits of at least £316m** (Table 3).

Table 3: Annual total society-wide financial benefits generated through participation & attendance to ACW multi-year funded organisation arts and cultural activities

Form of engagement	Average annual engagement: ACW multi-year funded orgs	Annual per-person productivity benefit	Annual per-person health and wellbeing benefit	Total annual per-person benefit	Total society-wide benefit
Participation (adult)	270,926	£63	£386	£448	£121,374,848
Participation (CYP)	430,535	-	£101	£101	£43,485,045
Attendance (adult)	233,348	£91	£559	£649	£151,442,852
Annual society-wide productivity benefit generated (participation & attendance)					£37,798,732
Annual society-wide health and wellbeing benefit generated (participation & attendance)					£278,504,013
Annual total society-wide benefits generated (participation & attendance)					**£316,302,745**

Average annual ACW investment into multi-year funded organisations during this period was £28,571,699, so this is an estimated 1008% annual return on investment (ROI): £11.08 generated in health, wellbeing and productivity benefits per £1 invested by ACW.

Models 2a and 2b relied on evidence from the same study, had the same outcome measure and were valued in the same way. With each sub-model estimating the impact of a different type of engagement (2a, attendance and 2b, participation). CYP estimates were derived differently and used different outcome measures and valuation methods but are combined to produce the holistic headline figure estimate to be illustrative of the considerable engagement of CYP across ACW multi-year funded organisation arts and cultural activities.

All models used in this work package do not consider impacts on healthcare resource use (HCRU) so we expect them to underestimate true effects. The ROI figures therefore are indicative rather than representative, but we are confident the actual benefits will be larger given that this analysis does not include other ACW funded activity through its lottery portfolio and also the lack of HCRU in Frontier Economics models used for this analysis.

In a systematic review of return on investment of public health interventions conducted by Masters et al. (2022), mean ROIs for local public health interventions were £4.10 per £1 invested[22]. Using examples from that review, the annual average return on investment of ACW arts activities was comparable to home blood pressure monitoring for hypertension diagnosis and treatment for 16,000 participants and an intensive early education programme for socioeconomically deprived families. Note these are not direct comparisons as the methods of calculation differ. But these offer illustrative examples and context for the returns evidenced through ACW investment.

Although it is important to note that these organisations receive and raise investment from many sources other than Arts Council of Wales, ACW's investment in these

organisations' 'core' costs is a fundamental part of their ability to operate and engage people at this scale.

Work package 3: potential cost-saving arts programmes targeting particular health challenges

Summary

Evaluations of specific Arts Council of Wales (ACW) funded projects that target particular health conditions show these programmes demonstrate great potential to generate significant savings in NHS and social care costs, as follows:

1. A national dance for strength and balance programme has the potential to save NHS Wales £5m per year through preventing falls amongst the elderly.

2. If 5% of the young people referred to Childhood and Adolescent Mental Health Services (CAMHS) in Wales engaged in specialist arts programmes as part of their treatment pathway, £9.5m in mental health and wellbeing benefits would be generated.

3. Arts-based interventions for people with mild-to-moderate mental health could reduce the need for up to 3.1m adult mental health related GP appointments per year. If just 5% of these adult mental health GP appointments were avoided through engaging with arts-based programmes, this would generate savings of £17m per year.

4. Arts programmes that support the health and wellbeing of NHS staff have the potential to save up to £3.5m a year through reductions in staff sickness and attrition costs.

In these exemplar case studies, we used published evaluation data on the health and wellbeing benefits of individual projects and their monetary (or monetisable) benefits, then extrapolated that evidence to population level.

To select case studies, we screened project evaluation reports from Arts Council of Wales (ACW) funded arts and health projects and the wider published evidence base to identify those that contained evidenced impacts on participant outcomes. These were used to demonstrate, from a financial perspective, the potential of these interventions/projects in addressing key health and wellbeing challenges across Wales and the Welsh health and care systems. Outcomes of interest for the exemplar case studies included:

- **NHS and social care resource use** (including change in primary and secondary care contacts),
- **Health and wellbeing of participants** (including health-related quality of life, wellbeing, confidence),
- **Wider societal impacts** (employment, productivity, absenteeism).

These results are largely illustrative rather than representative but present the potential economic benefits of expanding targeted arts and health activity across Wales.

Case study 1: Falls prevention

Amongst the elderly, falls and subsequent injuries are a considerable health risk. 30% of people over the age of 65 will fall at least once a year, this increases to 50% of those aged over 80[23]. Over 130,000 older people will fall at least once in Wales each year[24]. The high prevalence of falls and likelihood of subsequent injury cost the NHS £2.3bn per year[25]. Almost half of this (£1.1bn) is attributed to hip fractures[23].

One project ACW has supported is the *Iechyd Da-wns!/Dance to Health* structured falls prevention dance programme for the over 60s, which was devised by the charity Aesop Arts and Society Ltd. *Iechyd Da-wns!/Dance to Health* is currently operating in four locations in Swansea. The Sheffield Hallam University Evaluation (2020) of *Dance to Health's* UK programme suggested the sessions had the potential to save over £79m per year to NHS England by reducing the healthcare costs associated with falls[26].

Pro-rating these impacts to the Welsh population over 65 (and assuming prevalence of falls amongst over 65s same in England and Wales), falls prevention through a national **dance programme like Dance to Health could save NHS Wales £4,998,257 a year.**

Case Study 2: Children and Young People's Mental Health

1 in 5 children and young people (CYP) aged 8 to 25 had a probable mental health disorder in 2023[27]. The literature suggests there is an opportunity for the arts to play a role in supporting young people at both an individual level with their mental health, and subsequently through reducing demand on NHS mental health services[10].

Working with Health Boards in Wales, Arts Council of Wales and Baring Foundation have made a strategic investment in this area through their 'Arts and Minds' programme, funding arts activities for young people in NHS Children and Adolescent Mental Health Services (CAMHS) across Wales. Within this, Hywel Dda University Health Board's Arts & Minds project, *Arts Boost*, offers creative activities for CYP who are experiencing mild-moderate mental health problems and are known to the CAMHS team.

In early evaluations of the *Arts Boost* programme[28], changes in CYP's mental health and wellbeing were measured by asking them to complete the Short Warwick Edinburgh Mental Wellbeing Scale, SWEMWBS, before and after the programme and comparing results. Using published SWEMWBS valuations (as used in Granger et al., 2025)[29] and applying them to the mean changes in wellbeing reported by CYP in the first two cohorts, we estimate the mental health and wellbeing benefits of *Arts Boost* to be £3,621 per year, per participant.

Estimates of the number of CYP with mild-to-moderate mental health problems known to CAMHS teams in Wales is not currently available. But assuming the 8% prevalence figure amongst children in England[30] holds in Wales, we can estimate approximately 52,500 children may currently be known to CAMHS in Wales. If 2,625 (5%) of these young people engaged in arts programmes such as *Arts Boost* each year and this is multiplied by the per-person benefit, it suggests there could be potential annual mental health and wellbeing benefits generated of **£9,505,125**.

Case study 3: Adult Mental Health in Primary Care

Poor mental health amongst adults is a considerable economic and public health challenge in Wales. Mental health problems are estimated to cost the Welsh economy at least £4.8bn per year[31] and Mind, the mental health charity, estimate that 40% of all adult GP appointments are associated with mental health[32]. Latest estimates suggest there are 19.4m unique GP appointments in Wales per year[33]. Therefore, **7.8m GP appointments per year** could be associated with **adult mental health in Wales**. This figure is an estimate as GP appointment activity is not reported publicly by adult or CYP in Wales.

With population-level data from cohort studies revealing that adults who engage in arts every few months or more have a 32% lower risk of developing depression[34], this is clearly a promising area for exploration. Indeed, a study from Whiteley et al. (2025), assessing the impact of a therapeutic craft programme for individuals with mild-to-moderate mental health issues in Wales found that demand for GP appointments fell by 40% across the cohort for those that engaged regularly in the programme[35].

Considering the estimated 7.8m GP appointments offered per year in Wales related to mental health and applying the reduced level of demand for GP appointments from Whiteley et al. (2025), similar arts-based interventions for people with mild-to-moderate mental health could reduce overall demand for GP appointments by 3.1m per year. We appreciate roll-out at such scale is unlikely, therefore, if only **5% of all mental health GP appointments in Wales each year** were avoided through engaging with arts programmes (388,618), this could generate savings of approximately **£17,487,810 per year**. This cost considers the published unit cost for a single GP consultation as presented in the Personal Social services Research Unit (PSSRU) unit costs 2024 (£45)[36].

Case Study 4: The NHS Wales Workforce

The National Health Service (NHS) is the largest employer in Wales, with over 112,000 employees. Sickness absenteeism costs the NHS at the UK-level approximately £2.4 bn per year across its 1.3m employees, with an annual average of just under 10 absence days per employee[37]. Costing approximately £184 per day missed by a single employee, and £1,840 per average 10 days of absence. Pro-rating this to the **Welsh NHS workforce** (112,135) the estimated sickness costs (assuming average 10 days of absence per employee) are **£206m**.

Evidence from an evaluation of *Musical Hospitals* in Swansea Bay University Health Board suggested that having live musicians playing in various locations (including neuro-rehabilitation, stroke rehabilitation and adult mental health wards) across Neath Port Talbot and Tonna hospitals and helping staff to integrate music into day-to-day care had a hugely positive impact on patients' agitation, need for medication and physical assaults against staff. Total projected savings for Swansea Bay University Health board were closer to £110,000 per ward per annum, as the study factored in reduction of 1:1 staffing, medication use, and other care efficiencies - highlighting the wider benefits of creative arts within healthcare, and potential to deliver both human and economic value.

Through supporting staff wellbeing, healthcare support worker sickness on the ward fell by **53%** and registered nurse sickness **by 32%,** leading to potential weekly savings of **£318** (healthcare support workers) and **£356** (registered nurses) in sickness costs. **Scaled up annually, this equated to health board cost savings associated with reductions in staff sickness of £35,042**.

If similar interventions could reach 10% of all healthcare support workers and registered nurses in NHS Wales, this could translate to annual savings of **£248,000** (healthcare support workers[38]) and **£1,061,211** (registered nurses[39]).

Evidence from another ACW-funded creative mindfulness programme evaluation found that decreases in NHS staff absence and attrition after engaging with the

programme saved **£79.10 per staff member per month**. Using the estimated attendance rate for this programme (33%) and applying it to **10% of the current NHS workforce**, could generate up to **£3,512,040** per year by reducing NHS staff absence and attrition in 3,700 NHS staff.

Discussion

For the first time, this report has produced compelling new estimates of the economic benefit the arts in Wales produce with respect to NHS and social care, individual and population health, and wider societal impacts. This adds to the evidence base of the arts in Wales. At a time when public sector resources are under considerable pressure, presenting the financial impact of the sector can inform future funding and investment decisions that best allocate scarce public sector resource. Given that per-person public funding on arts and culture in Wales is currently among the lowest in Europe[40], it is clear that additional investment in the arts would generate even greater health and wellbeing benefits and help reduce demand on the NHS in Wales.

The financial estimates presented in this report underrepresent the actual impacts. The difficulties in estimation of causal links between engagement with or attendance of the arts and NHS and social care resource use (see Technical Appendix) meant it was only possible to generate top-down estimates amongst older adults with depression and dementia engaging with cultural venues and older adults with dementia attending museums. **Thus, estimates considerably underrepresent impacts with regards to NHS and social care impacts.**

This report has evidenced that the arts in Wales generated considerable economic returns to the Welsh economy through improvements in individual health and wellbeing, reductions in healthcare resource use (HCRU) and productivity impacts. Further to this, when applying estimates to Arts Council of Wales (ACW)-specific data, we evidence strong annual average return on investment for ACW.

Recommendations for policy and future research

- Policy makers could consider scaling up investment in supporting arts and cultural activities given their evidenced benefits to society-wide health, wellbeing, productivity, reductions in healthcare resource use (HCRU) and associated economic returns across the life course.
- The arts offer policy makers an alternate route to improving population health and wellbeing in Wales outside of traditional health and care systems. This is particularly pertinent at a time when Welsh health and care systems are facing considerable demand pressures.
- Commissioners and funders of arts programmes requiring end of project evaluations should provide guidance on appropriate evaluative tools for arts-based projects to ensure they capture evidence that can be used to measure economic benefits of programmes, at a time where competition for budgets and requirements for effective use of resource is of utmost importance.
    - We are aware from reading evaluation reports that extensive evaluation capturing self-reported questionnaires is often avoided to reduce participant burden. However, we have seen validated questionnaires effectively used.
    - Using validated tools can facilitate the generation of new, robust evidence of project-level economic impacts. This robust evidence will in turn benefit future evaluations at the national level that may draw from such evidence.
- Particular consideration is needed for the employment of trained practitioners such as arts psychotherapists as part of routine provision in healthcare services, enabling the economic benefits from the use of the arts not only at a population level and with those with mild and/or moderate difficulties but also for those experiencing severe health problems e.g., advanced dementia or severe mental health problems.
- Project evaluations in future should consider capturing evidence of project influence on HCRU, if appropriate. Effective capture of this enables the production of stronger economic arguments concerning the impacts of the arts, at a time when NHS and social care systems in Wales are under unprecedented pressure.

- Future research on the impacts of the arts may wish to consider the role they play in reducing health inequalities and reaching under-served groups. Such as the work of Disability Arts Cymru that produces art that shares the lived experience of disability, develops disabled and deaf creative talent, and delivers disability access and inclusion training.
- Future research at population level may wish to explore the feasibility of using the Secure Anonymised Information Linkage (SAIL) databank to capture participant HCRU use through a central, national data warehouse.

Conclusion

This report has provided evidence on the considerable economic impacts of the arts in Wales and the role Arts Council of Wales has played in facilitating these impacts through their investments. Although the impacts presented are considerable, actual impacts are expected to be considerably greater than results presented in this report.

Comparing the economic impacts generated by the arts in Wales with evidence of preventative public health interventions, the evidence of this report suggests investments in arts programmes and interventions can offer strong value for money compared to other alternatives when considering investment into health promoting and disease preventing initiatives in Wales.

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Technical Appendix

Work Package 1

Much of the economic estimation in the main report draws upon the detailed estimation conducted within Frontier Economics (2024). A brief overview of model inputs is offered here, but for more detailed information on model-specific derivation, see Annex B.4 of Frontier Economics (2024).

The authors of Frontier Economics (2024) note that due to evidence availability, health and social care impacts are estimated only in the models where specific health conditions are assumed to be 'avoided' due to cultural engagement. This estimation applies to the models that focus on either depression or dementia as the health outcome. Meaning health and social care estimates underestimated total healthcare costs avoided. This caveat is important when interpreting our results as this underestimation holds given we followed the same methodologies and assumptions when applying the models to Welsh populations.

Every model has been re-estimated in the main report, applied to the respective Welsh populations in each model scenario. Annex B of the Frontier Economics (2024) report presents the populations used in each model. Population estimates for respective categories in Wales were derived from StatsWales Population estimates by local authority and age.

The authors of Frontier Economics (2024) note that:

"Not all the estimates are additive or representative of the health-economic benefits of the sector as a whole, so we do not arrive at a 'total' value figure for the impact of culture and heritage on health and wellbeing. The estimates are produced using different methodologies and data and are not directly comparable. The estimates focus on the health and wellbeing benefits and do not consider the costs associated with culture and heritage services and engagements". (Section 4.2.5 of Frontier Economics (2024) provides more information on these issues).

An implication of the above statement is that the society-wide estimates presented in our main report cannot be summed to generate an overall annual figure.

The £8billion figure reported in Frontier Economics (2024) concerned Model 1: General engagement and general health in adults. In our main report, we similarly present that the largest economic impact of the arts in Wales is generated through our respective Model 1 estimate. We acknowledge the methodological limitations restricting the presentation of a single, annual economic impact, but we can confidently say the total annual economic impact is considerably greater than the Model 1 estimate headline figure alone given the elements (health and social care resource use) and populations (children, young people and those over 50) the model excludes. Financial benefits of adult participation comprised of QALY gain (mapped from SF-36 results) at the £70,000 HM Treasury valuation and productivity benefits. Annual per-person impacts equalled £992.

Therefore, the estimates from Model 1 presented as headline figures give as close an indication as possible of the total economic impact of annual, all arts engagement in Wales on health, wellbeing and productivity but **considerably underrepresent the true economic impacts.** For more information on why model estimates cannot be added, please see Frontier Economics (2024) Section 4.2.5.

Figure T1 presents the estimated impacts of each of the respective models when applied to Welsh population data.

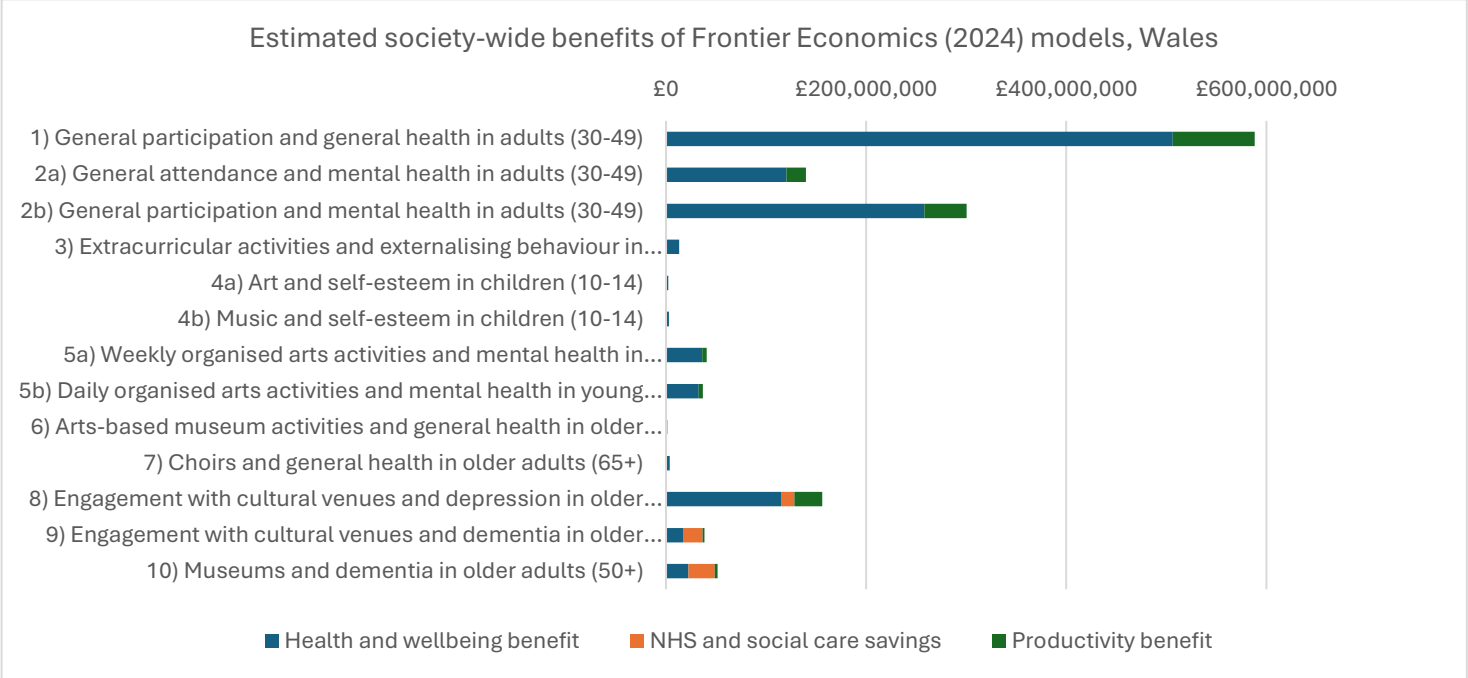


Figure T1: Estimated society-wide benefits from Frontier Economics (2024) models, using Welsh population data.

Work Package 2:

This analysis assigned relevant per-person financial estimates from Frontier Economics (2024) models to ACW-specific participation and attendance figures across the evaluative period.

Frontier Economics (2024) presented financial estimates of the health gain and productivity benefits associated with adults and children participating in the arts.

The financial estimates for adult participation were drawn from Frontier Model 2b (cultural arts participation). The model presents these estimates as being representative of adults aged 30 to 49 years. Financial benefits of adult participation comprised of Quality Adjusted Life Year (QALY) gains, valued at £70,000 per QALY following HM Treasury Green Book guidance and productivity benefits. Annual per-person financial impacts equalled £448. Given there was no age profiling of participation in our ACW data, we acknowledge this estimate is therefore illustrative rather than representative and likely underrepresents actual impacts.

ACW data disaggregated between general participation programmes and programmes targeted towards children and young people (CYP). For this reason, we assigned child participation estimates to the programmes targeting CYP.

The financial estimates for child participation were drawn from Frontier Models 4a and 4b (child engagement with art and music respectively). We calculated average per-child benefit of engaging with either art or music. The financial benefits of both Models 4a and 4b were expressed as WELLBYs so the estimation of an average from both was justified. Mean annual financial wellbeing benefit across both models, measured by WELLBYs, equalled £101 per child. Again, this estimate is illustrative rather than representative and likely underrepresents actual impacts, especially concerning wider life-course impacts of improved wellbeing in children such as educational attainment and associated earning potential.

The attendance figures captured by ACW are not individual attendances but rather aggregate attendances. The estimated £649 in financial benefits from attending the arts presented in Model 2a reflects per-person estimates for adults aged 30-49. To estimate the number of unique adults within this age range, we first estimated the

proportion of 30-49 year olds as a % of all adults (16+ in Wales) in Wales (45%). This figure was then multiplied by the 18% estimated to be attending regularly as presented in Frontier. We acknowledge this underrepresents the actual figure but the approach allowed us to be confident that we did not overestimate the financial impacts of attendance.

The financial estimates for adult attendance are drawn from Frontier Model 2a (cultural attendance, defined as: visiting exhibitions, film screenings, performances by touring companies and performances at presenting venues). As in Model 2b, the model presents the financial estimates as being representative of adults aged 30 to 49 years, leading to a general underrepresentation of actual impacts. Financial benefits of adult participation comprised of QALY gain at the £70,000 HM Treasury valuation and productivity benefits. Annual per-person impacts equalled £649. Again, this estimate is illustrative rather than representative and likely underrepresents actual impacts.

Work package 3

Brief methodologies, assumptions and data sources included within the case study estimates are presented in the ACW report. These case studies use evidenced impacts of programmes from across the ACW portfolio and used their results to demonstrate how they could contribute, from a financial perspective, to addressing the following key health and wellbeing challenges across Wales:

- Falls prevention
- Children and Young Peoples mental health
- Adult mental health
- Health and wellbeing of NHS workforce

In Case Study 1, we assumed the prevalence of falls amongst over 65s was the same in England and Wales. We assumed this as the evidence used in the case study reflected an evaluation of the programme in England, which used estimates of prevalence of falls in the over 65s in England only. Given the same programme has now been rolled out across Wales, when pro-rating to the population of over 65s in Wales, in the absence of publicly available Welsh data, we assumed the same prevalence between populations.

In Case Study 2, SWEMWBS values from Granger at al., 2025 were applied to the evidenced changes in SWEMWBS scores presented in the evaluation. Estimates of the number of CYP with mild-to-moderate mental health problems known to CAMHS teams in Wales is not currently available. So, English prevalence data was assumed to hold in Wales.

In Case Study 3, our cost-saving results centred around estimates of the number of GP appointments for a mental health condition. No Welsh data was identified, so estimates from a UK-wide analysis by Mind was used and applied to the number of GP appointments in Wales to estimate a Welsh figure. Our GP appointment data is representative of all appointment statuses (attended and missed). GP data does not disaggregate appointment by age group, so we assume the total figure of GP appointments are adult. There is no publicly available record of CYP GP appointment figures in Wales.

In Case Study 4, we focussed on the health and wellbeing impacts on the NHS workforce only. We acknowledge there were wider impacts identified that are presented in the case study but these were not extrapolated. The evaluation presented wellbeing benefits in two staff categories: healthcare support workers and registered nurses. The other mindfulness programme did not strategy by staff categories. In both instances, pro-rated extrapolations were made respective of the different categorisations reported. In the first instance, impacts were extrapolated to estimates of the number of healthcare support workers and registered nurses employed by NHS Wales. In the second instance, impacts were extrapolated to estimates of the overall NHS Wales workforce.

Supplementary literature review

To supplement our understanding and decide on the best approach to generating our estimates in this report, we conducted a rapid review of the published and grey literature. We searched for economic evidence on the impacts that arts programmes have on healthcare resource use (HCRU), health and wellbeing and wider societal outcomes in the UK and Ireland. A systematic database search strategy was developed, informed by and building upon searches of previous reviews in this topic area[6,10].

The review aimed to identify relevant, contemporary evidence to be used to inform our economic estimates. Searching for published estimates provided guidance on appropriate methodological approaches and financial valuations used in this space. Articles were screened by two reviewers. Data from included articles were extracted and synthesised narratively. Review methods were conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidance 2020 where applicable[41].

Six peer-reviewed journal articles met the criteria for inclusion. Five reports from the grey literature were identified and included.

Included studies were conducted across the UK and Ireland (2 studies took a pan-UK perspective), England (4 studies), Wales (2 studies), England and Wales (1 study), Scotland (1 study) and Ireland (1 study). Ireland was included due to its geographical proximity to the UK and similarities in the country's mixed healthcare system model.

HCRU impacts in identified studies included: primary care contacts (General Practitioner (GP) and GP nurse contacts), secondary care contacts (inpatient and outpatient contacts, hospital length of stay), medication (acute pain relief and prescriptions), community-based services (including direct school costs) and personal social services contacts (including social work).

A number of studies concerned examples where arts and health programmes were used as a direct alternative to clinical treatment i.e., referred through social prescribing. One study considered the impacts on healthcare staff through a programme targeting their wellbeing. Social Return on Investment (SROI) studies often used the counterfactual proposition that no service would be in place if the programme under evaluation didn't exist. Data extraction is presented as Table T3.

Headline findings:

- Three studies evidenced reductions in visits to GPs after engaging in arts programmes (crafts and creative). Each of the respective arts programmes that evidenced this reduction targeted participant mental health or mental wellbeing.
- Two studies assessed hospital admissions following engagement with creative art programmes and found a reduction in hospital admissions.
- One study found a creative arts programme targeting health care professionals reduced both presenteeism and absenteeism amongst the study population.
- One study assessing a community singing initiative for older people found service use costs increased for both those engaging in the initiative and those not. With those engaging in the initiative displaying a greater increase in service use costs.
- Two studies modelled NHS and social care impacts to a whole systems level (one considered impacts to NHS Wales, and the other to NHS and social care in England).
- One SROI study of older people living in care homes found that participating in various arts activities (e.g. visiting virtual art galleries, attending theatre productions, listening to live streamed piano recitals etc) yielded a social return on investment of £1.20 for every £1 of expenditure. Material outcomes for the primary stakeholders, which could have impacts on healthcare resource use, included improved mental health, improved mobility, improved cognition, and decreased social isolation.

- One study conducted a Cost-Benefit Analysis (CBA) of a music project for children aged 6 months to 9 years old. The project delivered more social benefit than the resources used to fund it, irrespective of the timescale of appraisal, participation rates, and other factors. At each time horizon considered, and for all scenarios analysed, the project demonstrated its potential to increase net worth for society over its lifetime.
- One study of a programme that integrated various arts programmes into schools found the monetary average lifetime benefit per child to be up to £2,300, mostly through higher lifetime earnings and lower societal spending. It estimated for every £1 invested in the programme, there was a collective £32 gain to the child, government, and society, and that 97% of the programme's benefits would need to fade out over time before its costs outweighed its benefits.
- Two studies used SROI methodologies to estimate the social value of a music programme, or of various arts sessions (e.g. visual arts, craft, and design, media, theatre etc). Both studies' primary beneficiaries were CYP. Base case SROI ratios were £6.69 for the music programme, and €1.98 for various arts sessions. Sensitivity analyses ranged between €1.70 to £8.95 returned for each €1 or £1 invested. For the primary beneficiaries, the social value received was 48% and 64% respectively.

Review Discussion

The current evidence base of direct impacts that arts-based programmes or interventions have on HCRU does suggest that their use can support reduction in primary and secondary care contacts. However, the number of studies is relatively small at present, and most identified studies had very small sample sizes, expected given the nature of the interventions.

Most identified studies targeted the improvement of mental health and wellbeing of participants, which appears to have indirect impacts on HCRU. This is potentially illustrated in the SROI studies identified in this review, which often chose healthcare services to attribute proxy values for improvements in physical and mental health

outcomes (e.g. a participant experiencing improved mobility being valued as attending a session of physiotherapy[42] improved wellbeing being valued as the cost of attending 6 sessions of play therapy[43], or improved capacity to cope with a long-term health condition being valued as the cost of a child counselling course[43]. While proxy values are only used as estimates, their choice should be grounded to avoid overstating or undervaluing outcomes. The HACT Social Value Bank[44] emphasises that wellbeing valuations should be evidence-based, consistent, and linked to real changes in people's lives, ensuring that proxies genuinely reflect the scale and significance of the outcome experienced.

Measuring improvements in mental health early in the life course with the strengths and difficulties questionnaire (SDQ) can be converted to wider societal benefits realised between the ages of 11 and 60[45]. This includes savings to NHS and social care services, savings to other governmental departments, and greater taxation through improved productivity and lifetime earnings[46].

This rapid review did not consider an evaluation of study quality given time constraints, but future assessment of impacts that arts-based programmes or interventions have on HCRU should do so.

Review Conclusions

There is a considerable research gap concerning the direct impacts that arts-based programmes/interventions have on healthcare resource use. Identified evidence did report reductions in HCRU, mostly through reductions in primary care contacts. However, the majority of identified studies used SROI or CBA methods to monetise the overall benefits of an arts programme to individuals, society and the wider environment.

This review searched the following electronic databases: MEDLINE, EMBASE, Cumulative CINAHL and PsycINFO. Searches of the grey literature included Google Advanced Search and content expert signposting.

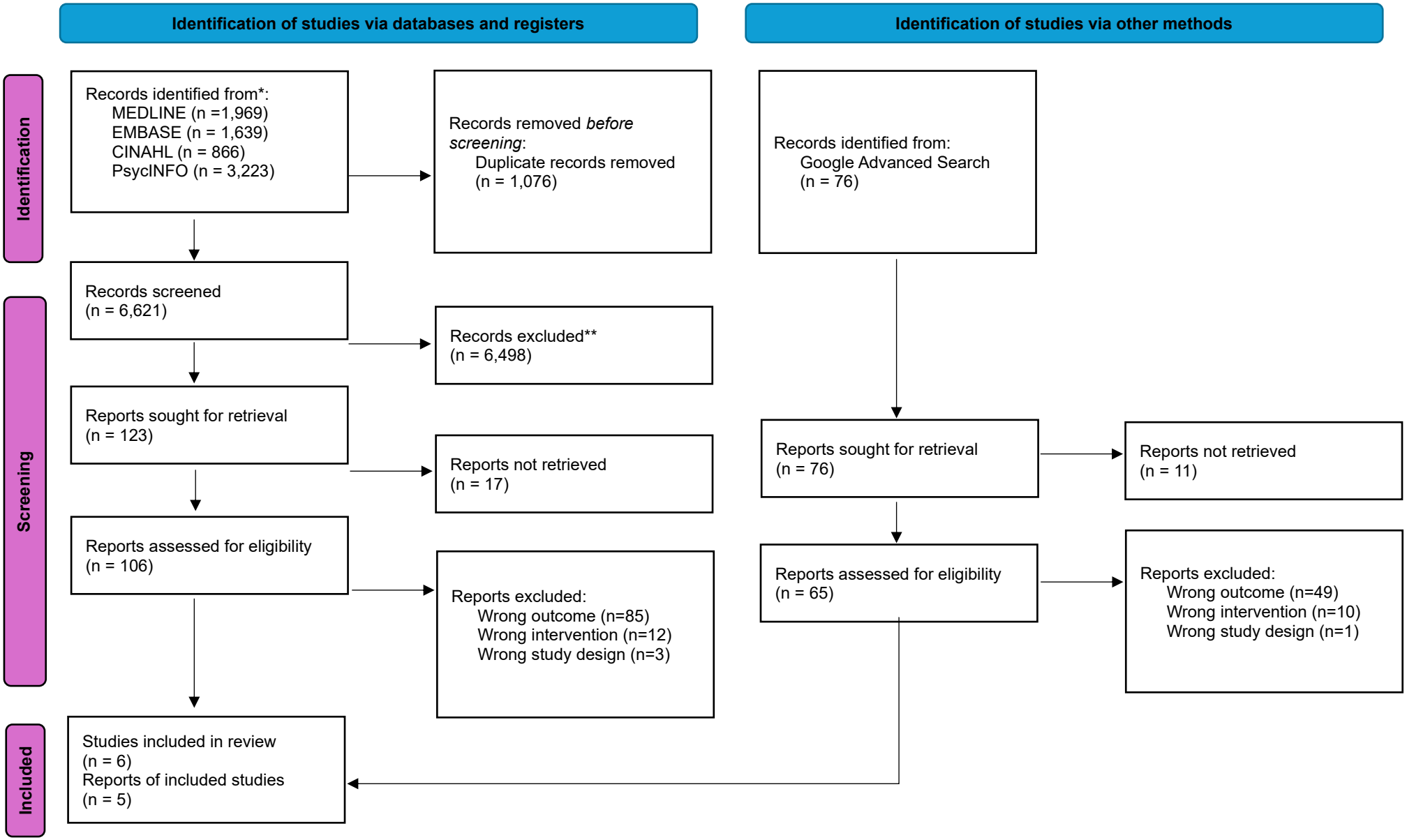
The search strategy combined terms with comprehensive coverage across arts-based terminology, modalities, and health economic terms. A UK filtering strand was incorporated into the search strategy to filter UK evidence. The search strategy was guided by a simultaneous systematic review of the cost-effectiveness of arts based programmes for CYP conducted by members of the report team, plus other published reviews in the subject area. This review changed the population terms to be inclusive of all stages of the life course, not just children and young people. The full search strategy is presented below:

Screening of titles and abstracts was conducted between 2 reviewers (JD, GF) against the inclusion criteria presented below. The inclusion criteria was developed following the Population, Intervention, Comparator, Outcome (PICO) framework (Table T1). The same approach was taken for screening of full texts. Study screening and selection was captured using the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow chart (Figure T2).

Table T1: Review inclusion and exclusion criteria

	Inclusion criteria	**Exclusion criteria**
Population	No restriction	No restriction
Intervention	In line with *Sonke et al. (2024),* there will be no restriction on level of engagement with the arts, their focus, or modality	Arts interventions that are mixed with another non-arts clinical intervention e.g. cognitive behavioural therapy, talking therapy, medications etc., or studies that do not have an element of community setting e.g. are run solely in clinical environment
Comparator	Any comparator or no comparator	No restriction
Outcome	Any study design that reports on outcomes relevant to economic evaluations in relation to arts engagement	Studies that do not report on outcomes relevant to economic evaluations
Study design	No restriction on study design, primary studies only	No restriction, secondary studies including reviews of primary evidence
Countries	UK (England, Wales, Scotland, Northern Ireland)	Outside of the UK
Language of publication	English	Not available in English
Publication date	January 2015 – September 2025	Before January 2015
Publication type	Published full-text peer-reviewed or grey literature articles	Not full-text article (such as abstracts/posters)

Figure T2: PRISMA flow chart



Data extraction was completed by the 2 reviewers (JD, GF). Study, population and intervention characteristics such as study design, country, population, and arts intervention/modality were extracted, as well as extraction of evidence. Each reviewer independently conducted extraction, with the review team coming together to cross-reference extraction to assess uniformity in the process. The data extraction is presented in Table T3.

Table T3: Data extraction table

Study characteristics	Arts Modality and programme definition	Target population	Outcomes assessed (and measurement tool)	Results
(Whiteley et al., 2025) Wales, UK N=15 study population. Mean age 46.5 years, SD: 11.46.	**Crafts** Therapeutic craft and horticulture programme for mental health.	Individuals with mild-to-moderate mental health socially prescribed to programme.	Mental health (SWEMWEBS), Overall wellbeing (ICECAP-A), Self-confidence (GSES), Healthcare service use, General Practitioner (CSRI).	Overall wellbeing captured by the ICECAP questionnaire improved by 0.1 from baseline to 9-week follow-up [(0.611, SD: 0.2) to (0.711, SD: 0.167)]. **This improvement in overall wellbeing was valued at £6,107 per participant.** Mental health as measured by the SWEMWEBS improved by 4.2 at follow-up [(20.07, SD: 6.86) to (24.27, SD: 4.30)]. **This improvement in mental health was valued at £4,290 per participant.** Social connection as measured by question 6 of the SWEMWEBS improved by 0.87 ay follow-up [(2.60, SD: 10.6) to (3.47, SD: 0.64)]. **This improvement in social connection was valued at £1,365 per participant.** Self-confidence as measured by the GSES improved by 2.77 at follow-up [(23.93, SD: 6.03) to (26.7, SD: 5.3)]. **This improvement in self-confidence was valued at £3,173 per participant.**

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				The number of GP appointments at follow-up dropped by 12 across the cohort, a decrease of 40%. **Average cost savings per participant due to reduced GP appointments were £32.80.**
(Jones et al., 2020) England and Wales, UK N=125 people with dementia, mean age 81.4, SD: 8.5. N=146 caregivers.	**Visual arts** The program comprised two underpinning factors: dynamic and responsive artistic practice, and a provocative and stimulating aesthetic experience.	People living with mild-to-severe dementia from across residential care homes, hospital, and community venues.	*People living with dementia* Wellbeing/mood (DEMQOL), Confidence/self-esteem, (DEMQOL, Q5) Feeling of control over their life/personal environment (DEMQOL, Q13) Social isolation/sense of belonging (T3 question) Physical activity (DEMQOL, Q10) Engagement with art (activities attended over 12 months)	People living with dementia (£2,424 per person), their family caregivers (£1,515 per person) and staff caregivers (£1,515 per person) all experienced increased engagement with art, leading to a modest generation of **social value**. The outcome that led to the most social value across the cohort was improved **wellbeing for people with dementia**, which generated a social value of £373,350. This was followed by increased feeling of control over their life/environment, which generated the social value of £150,889 and increased confidence, which generated the social value of £109,003. The value of inputs over the 132 art group sessions was £189,498 and the value of outputs was £980,717, leading to a base case scenario of £5.18 of social value generated for every £ invested in Dementia and Imagination. Our base

Study characteristics	Arts Modality and programme definition	Target population	Outcomes assessed (and measurement tool)	Results
			Families/friend caregivers Engagement with art (activities attended over 12 months) Increased social support network (T3 question) Change in attitude toward participants (Dementia questionnaire) *Care home staff* Engagement with art (activities attended over 12 months) Opportunity for professional development/ feeling of prestige (T3 question) Change in attitude toward participants (Dementia questionnaire)	case analysis took a cautious approach and assumed that outcomes lasted for 1 year as the health and wellbeing of participants with dementia is likely to decrease over time. Changing this assumption to outcomes lasting for 2 years resulted in a higher SROI ratio of 6.36:1. All tested scenarios resulted in a positive SROI ratio, meaning that for every £1 invested in the arts activities over £1 of social value was generated in return.

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			Community engagement (T3 question)	
(Coulton et al., 2015) England, UK N=258, mean age: 69 years, SD: 7.14.	**Music** Community singing group with support from professional musicians.	Community singing initiative that targets provision of opportunities for older people to come together and sing.	Mental health-related quality of life (York SF12) Physical health-related quality of life (York SF12) Health-related quality of life (EQ-5D) Depression and Anxiety (HADS) Healthcare service use (CSRI)	The mean difference in SF12 mental health-related quality of life score between intervention and control at 6 months was 2.35 (0.06–4.76), and this was significant (P = 0.05). At 6 months, no significant differences were observed between the groups in terms of SF12 physical health-related quality of life components, anxiety, or depression. At 3 months, significant differences between the groups were observed in terms of mental components of SF12 health-related quality of life and mean difference intervention compared with control 4.77 (2.53–7.01), anxiety −1.78 (−2.50 to −1.06) and depression −1.52 (−2.13 to −0.92). No other significant differences were observed between the groups at 3 months. Service use costs increased in both groups between baseline and 6 months, but although the increase was greater in the intervention

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				group, £315.89 versus £281.14 for the control group, this difference was not significant. Participants in the control group gained 0.008 QALYs between baseline and 6 months compared with a gain of 0.023 QALYs in the intervention group, the difference between the groups of 0.015 (95% CI 0.014–0.016) was significant.
Frontier Economics, 2024 Pan-UK Economic modelling study using national datasets and published evidence	Engagement with cultural venues (attending theatre, a concert, an opera, art gallery, exhibition or museum) and museums considered in models assessing NHS and social care impacts of engaging with the arts.	Age groups defined in models that included NHS and social care impacts of engaging with the arts: Adults aged 50+ with depression, Adults 50+ with dementia.		NHS and Social care savings estimated at £26 per person per year for older adults (50+) with depression engaging in cultural venues. Annual society-wide impacts are £255million across England. NHS savings estimated at £11 per person per year for older adults (50+) with dementia engaging in cultural venues. Annual society-wide impacts are £54million across England. Social care savings estimated at £64 per person per year for older adults (50+) with dementia engaging in cultural venues. Annual society-wide impacts are £322million across England.

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				NHS savings estimated at £27 per person per year for older adults (50+) with dementia going to museums. Annual society-wide impacts are £100million across England Social care savings estimated at £162 per person per year for older adults (50+) with dementia engaging in cultural venues. Annual society-wide impacts are £700million across England.
(Ellis-Hill et al., 2019) England, UK N=56, mean age 69.8, SD:12.13	Ten 2-hour arts and health practitioner-led group sessions held in community venues over 14 weeks.	Support psychological wellbeing in people following stroke.	Mental wellbeing (SWEMWBS), Anxiety and depression (HADS), Capability (ICECAP-A), HCRU (resource use questionnaire) – costed using 2015 PSSRU and NHS reference costs	**Inpatient and A&E resource use (Intervention arm):** Inpatient admissions rate: 3/25, with mean cost of £49 (SD:£136), A&E or hospital admissions rate: 4/25, with mean cost of £22 (SD:£53) Inpatient and A&E resource use (usual care arm): Inpatient admissions rate: 3/25, with mean cost of £96 (SD:£308),

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				A&E or hospital admissions rate: 6/25, with mean cost of £34 (SD:£61). **Outpatient appointments resource use (Intervention arm):** Stroke rehab appointment rate: 1/25, with mean cost £10 (SD:£50), Physiotherapy appointment rate: 1/25, with mean cost £6 (SD:£23), Occupational therapy appointment rate: 3/25, with mean cost £1 (SD:£4), Speech and language therapy appointment rate: 2/25, with mean cost £4 (SD:£16), Psychologist appointment rate: 0/25, with mean cost £0 (SD:£0), Dietitian appointment rate: 0/25, with mean cost £0 (SD:£0), Other outpatient appointments rate: 14/25, with mean cost £140 (SD:£210).

Study characteristics	Arts Modality and programme definition	Target population	Outcomes assessed (and measurement tool)	Results
				Outpatient appointments resource use (usual care arm): Stroke rehab appointment rate: 2/25, with mean cost £20 (SD:£69), Physiotherapy appointment rate: 4/25, with mean cost £20 (SD:£56), Occupational therapy appointment rate: 3/25, with mean cost £3 (SD:£9), Speech and language therapy appointment rate: 2/25, with mean cost £7 (SD:£30), Psychologist appointment rate: 0/25, with mean cost £0 (SD:£0), Dietitian appointment rate: 0/25, with mean cost £0 (SD:£0), Other outpatient appointments rate: 13/25, with mean cost £196 (SD:£393). **Community-based service use (intervention arm):**

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				GP contacts rate: 17/24, with mean cost £92, (SD:£79), GP nurse contacts rate: 11/25, with mean cost £22, (SD:£44), Physiotherapy contacts rate: 3/25, with mean cost £6, (SD:£23), Speech and language therapy contacts rate: 3/24, with mean cost £25, (SD:£82), Occupational therapy at home contacts rate: 1/25, with mean cost £5, (SD:£25), Repeat prescriptions from GP rate: 16/23, with mean cost £5, (SD:£7), Other community-based appointments rate: 2/21, with mean cost £25, (SD:£77). **Community-based service use (usual care arm):** GP contacts rate: 18/24, with mean cost £72, (SD:£83),

Study characteristics	Arts Modality and programme definition	Target population	Outcomes assessed (and measurement tool)	Results
				GP nurse contacts rate: 16/25, with mean cost £26, (SD:£40), Physiotherapy contacts rate: 2/25, with mean cost £19, (SD:£78), Speech and language therapy contacts rate: 3/25, with mean cost £94, (SD:£308), Occupational therapy at home contacts rate: 2/25, with mean cost £7, (SD:£27), Repeat prescriptions from GP rate: 18/24, with mean cost £5, (SD:£5), Other community-based appointments rate: 1/24, with mean cost £28, (SD:£143). **Personal social services (intervention arm):** Home care worker contacts rate: 0/25, with mean costs £0, (SD:£0), Social worker contacts (hours): 2/25 with mean cost £28, (SD:£127), Food at home services (meals), 0/25 with mean cost £0, (SD:£0).

Study characteristics	Arts Modality and programme definition	Target population	Outcomes assessed (and measurement tool)	Results
				Personal social services (usual care arm): Home care worker contacts rate: 2/24, with mean costs £11, (SD:£41), Social worker contacts (hours): 3/25 with mean cost £24, (SD:£72), Food at home services (meals), 1/25 with mean cost £4, (SD:£21).
(Tymoszuk et al., 2021) Pan-UK N=5,338 completing survey after removal of missing data. Mean age: 46, SD: 16.6.	**Various, inclusive of receptive and participatory arts** Spanned participatory arts activities including crafts, literature, dance, and music. Receptive activities included	Adults engaging in broadly defined and inclusive arts activities in the UK.	General health (SF-36) Physical Activity (Physical Activity Scale) Depression (CES-D) Wellbeing (Mental Health Continuum Short Form 14-item scale) Loneliness (UCLA Loneliness Short Form scale) Social Connectedness (Social Connectedness Revised 15-item scale)	A positive association between arts engagement and wellbeing was found and was consistent across both measurement approaches. Overall, participatory, and receptive arts engagement scores were positively associated with wellbeing, with marginally larger effect size for receptive arts score before adjustment for health and fitness variables and social circumstances in particular. Using the UCLA loneliness scale and the threshold of six or more for loneliness cases (n = 2,448, 45.86%), no consistent association between arts engagement and loneliness was

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	theatre, art exhibitions and literary events.			found for both summative arts activities scores and art clusters. A somewhat consistently positive association between arts engagement and social connectedness across both measurement approaches was identified. Using summative arts engagement scores, only receptive arts engagement was consistently positively associated with social connectedness. Relationships between arts and general health were not reported in the analysis.
Bosco et al., 2019 England, UK N=267 older people living in care homes	**Various participatory arts** Professionally-led artistic programmes including virtual art galleries, visits to arts venues, digital	Older care home residents with and without dementia	For residents, the outcomes of interest were: community inclusion, improved mental health, improved mobility, improved cognition, and decreased social isolation For care home personnel and activity co-ordinators the outcomes were: improved skills in caring for older people	The analysis yielded an SROI of £1.20 for every £1 of expenditure. The sensitivity analysis revealed that when we consider a displacement rate of 15% for all the outcomes of all participating stakeholders, the Imagine study is unlikely to report a ratio that is less than £1.02 for every £1.00 invested. 'Decreased social isolation' was operationalised as *the number of older* people attending more than one workshop and for at least two quarters. The financial proxy used was the unit cost of the

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	technologies, theatre productions, and live streamed classic piano recitals. The programmes ran over 12 months in 17 care homes		and increased confidence in using arts interventions	attendance to a local authority day care (seven attendances): £59 per client attendance (Unit Costs of Health and Social Care). Workshops were attended by 181 people for at least two quarters and the monetary equivalent was estimated as £50,256.44. 'Improved mental health' was operationalised as *the number of older people* attending more than one activity promoting enjoyment through creative stimulation and for at least two quarters. The financial proxy adopted was six sessions of Singing for the Brain – a widely-used community singing intervention for people with dementia and their carers: £111.24 per client, based on 6 sessions, £18.54 per session (personal communications with the Alzheimer's Society). A total of 156 individuals achieved this outcome and the financial equivalent estimated was £11,666.71. The criterion for 'improved mobility' was attending at least one form of art activity involving physical activity (e.g. engaging with

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				marionettes in a puppetry workshop). The financial proxy identified was the session of physiotherapy, valued at £240.00 per client (based on a package of 4 sessions). The impact generated was £16,941.96 (from 105 instances). 'Greater community inclusion' was judged as attending at least one community event. The financial proxy used for community inclusion was the cost associated with one attendance to the local authority day care: £59 per client (Unit Costs of Health and Social Care). The impact generated by the outcome was £2,935.26 (from 74 individuals). The indicator adopted for 'Improved cognition' was attendance on at least one creative workshop. The financial proxy used was cognitive stimulation therapy: £105.00 per client (based on a package of 7 sessions, £15 per session, two sessions each week). (Cognitive Stimulation Therapy (CST): Summary of evidence on cost-effectiveness. A paper by Comas-Herrera and Knapp. The impact

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				generated was £11,859.37 (from 168 individuals)
Glasgow Centre for Population Health, 2015 Scotland, UK N=~800 children	**Music** Big Noise Govanhill is based on the El Sistema model. It consists of singing and musicianship for younger children, and instrumental and orchestral tuition for children in Primary 3 and above, ran over 12 month periods.	Children 6 months to 9 years' old.	Measures of benefit were derived from logic models, evidence from the literature, and discussion, to inform a cost-benefit analysis (CBA) of Big Noise Govanhill. Outcomes evaluated were Improved employment, Improved engagement with education, Increased social skills, Stronger social support mechanisms, Reduced expenditure on social work support, Increased health and wellbeing, Improved health outcomes, and Impact on health and premature death. All outcomes were forecast (i.e. predicted impact of the intervention) and monetary values were identified using a	The CBA results indicate that the project delivers more social benefit than resources used, from a social perspective at baseline scenario, yielding an overall net present value (NPV) of £28.91 million. Testing the timescale for the appraisal period demonstrated that NPV remains positive (range 9.18 to 89.37). Sensitivity analysis of the costs and benefits indicated that the assumptions underlying participation rates had the most influence upon project NPV. At each time horizon considered, and for all scenarios analysed, the net present value of Big Noise Govanhill remained positive, indicating that the project has the potential to increase net worth for society over its lifetime.

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	Instrumental and orchestral tuition for adults is in early stages and not included in the analysis		benefits transfer approach. Detailed sensitivity analyses tested assumptions by making changes to e.g. time horizons, health and wellbeing atrophy, costs etc.	
Winrow & Edwards, 2018 Wales, UK N = 282	**Music** Codi'r To is based on the El Sistema method. It includes playing in a samba band and a brass band, music and movement sessions using the principles of Dalcroze Eurhythmics, and musicianship sessions.	School children of different ages	SROI looks at a range of stakeholders who are involved in the programme or affected by the results. 'Financial proxies' put a potential value on the outcomes identified as material to the stakeholders. For the purposes of this report only outcomes contributing to the health and wellbeing for the target population are described. *Pupils who participate* Increased confidence (parent reported, £238 per child)	Over a three-year period, Codi'r To generated social value across a range of £4.49 to £8.95 for every pound invested. Using the best assumptions from our research, for every £1 invested, a base case social value of £6.69 is created Of the total social value return, 48% went to the pupils, 51% to the family members, 0.2% to the wider school, and 0.8% to the community. Sensitivity analyses adjusted deadweight and attribution discount percentages to test the assumptions of the social value generated. Regarding children feeling more confident, changing the number of pupils in the study, the deadweight, or the attribution did not materially

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			Improved behaviour elsewhere / school (parent reported, £132 per child) *Their family members* Improved behaviour at home (parent reported, £711 per family) *The wider school* Improved behaviour elsewhere / school (parent reported, £149 per classroom) Decreased SDQ scores (£419 per school)	change the SROI ratio (range between £6,51 to £6,80 per £1 invested).
S3 Solutions, 2021 Ireland, UK Findings from small samples	**Various, including Visual arts, craft and design; Media; and Theatre/ performance**	Children and teenagers aged 6 to 18 living with long-term medical conditions	*Children and young people* Reduced isolation (parent reported, €153, or €307.50 depending on programme) Improved wellbeing (parent reported, €35, €104, or €626 depending on programme)	The Helium Arts Creative Health Hub returned 1.98 times the initial investment in the outcomes that it delivered for its stakeholders. The Helium Arts Creative Health Hub over the two-year period 2019-20 generated a social value of €1: €1.98. This is based on a Total

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extrapolated to N=2,348 children and young people and 323 other stakeholders	Helium Arts Creative Health Hub offer weekly workshops, seasonal camps, and remote programmes in hospitals, community venues, or at home		Improved capacity to cope with their condition (parent reported, €58, or €348 depending on programme) *Families* Stronger family unit (resilience and relationships) (parent reported, average value reported) *Volunteers* Improved mental health (volunteer reported, €35) *Health Sector* Improved collaboration across arts, culture, health, and community sectors (health professional reported, €30,000) *Patient Support Groups*	Present Value of €671,593.45 created against the input of €340,000. The sensitivity analysis indicated that, when some of the values were decreased, the SROI ratio did not fall below 1:1.70. Cumulatively the Creative Health Hub participants accrued in excess of €434,208 of social value accounting for over 64% of the total value calculated. The benefits to the Health Sector of the collaboration with other Government Departments through the Helium Arts Creative Health Hub were highlighted and valued at 4% of the total SROI value.

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			Reduced costs (qualitative data, €250)	
Kara & Sheikh, 2022 England, UK N=128 children, extrapolated to 10,400 children who took part in Artis sessions over one academic year	**Various performing arts, including Music; Theatre/ Performance; and Dance/ Movement** The Artis programme provides weekly arts sessions in the classroom for children aged 4 to 11	Children aged 4 to 11	Mental health of children (teacher-reported change in Strengths and Difficulties Questionnaire (SDQ) scores pre- and post-programme) Lifetime outcomes are calculated by converting SDQ scores to Value Added scores, and linking these to 7 key outcomes between the ages of 11 and 60: reduced truancy, reduced exclusion, reduced crime, reduced smoking, reduced depression, improved employment, and improved wages	The monetary average lifetime benefit per child of the Artis programme is estimated to be up to £2,300. This benefit accrues to individuals from higher lifetime earnings, and to the government from increased tax revenue and lower spending on public services related to crime, depression, truancy and exclusion. There is also a marginal gain to society due to reduced smoking The cost of putting a child through one academic year of the weekly Artis programme is calculated as £72. This suggests that for every £1 invested in the Artis programme, there is a collective £32 gain to the child, government, and society. Sensitivity analysis suggests that more than 97% of these benefits would need to fade out over time before the benefits of the Artis programme are outweighed by its costs. A first comparison of before and after SDQ scores for all 128 pupils in the study showed a

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				small fall in SDQ scores (improvement in difficulties) from 7.8 to 7.3 although this difference was not statistically significant. The average SDQ score for the 34 children who presented with higher difficulties at the start of the programme fell sharply from 14.4 to 10.9. About 60% of the total benefit from the arts programme accrues to the children enrolled on it.