



Centre for excellence
for Children's Care and Protection

CHILDREN'S SERVICES REFORM RESEARCH:

MAPPING INTEGRATION AND OUTCOMES ACROSS SCOTLAND: A STATISTICAL ANALYSIS

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Table of Contents

Table of Contents	1
How to read this report	3
Overview of Children’s Services Reform Research.....	6
Introduction to this strand of work	8
Updating our analysis.....	9
Background	11
Policy context.....	11
Scottish Government rationale for the integration of health and social care services	13
Previous research on the impact of integration on outcomes	15
Rationale for our analysis of the effects of structural integration	17
Methodology	18
The research question	18
What we mean by integration and delegation in the context of this research	18
Approach to mapping integration across Scotland.....	20
Assessment and selection of indicators	25
Modelling the data	35
Trend analysis.....	35
Assessing the impact of structural integration on outcomes	37
Overview of the analysis process.....	39
An alternative approach to integration: Highland.....	41
Results.....	42
Trend analysis.....	42
Assessing the impact of structural integration on outcomes	47
Assessing the impact of other contextual factors	59
Discussion	62
Limitations of the research.....	67
Areas for future research	69
Contributions of the research	71
References	73
Appendix 1. Local Authority characteristics.....	78

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CELCIS, the Centre for Excellence for Children's Care and Protection, is a leading improvement and innovation centre in Scotland. We improve children’s lives by supporting people and organisations to drive long lasting change in the services they need, and the practices used by people responsible for their care.

How to read this report

Thank you for reading this report. We recognise that the report is long and you may not have the time to read it cover to cover. This section explains the report structure and helps you to get to the sections that will interest you.

This report is for everyone

This report details how we investigated, through the use of statistical techniques, whether there was any association between the structural integration of children's services and children's outcomes. As such, it is by nature a complex piece of work that at times requires the use of technical language in order to explain it fully.

Despite this, we have tried to convey all information within this report in the most accessible way possible. It is important to stress that it is not necessary to understand all details of the statistical methodology in order to understand what the key pieces of learning have been from this piece of research. Where possible, we have tried to emphasise key pieces of information within the text as 'Key Findings', and we present an overview of these within the Discussion section.

For those who would prefer an overview of the work undertaken and resulting findings, there is also a summary version of this report available.

Supplementary materials

In an effort to keep this report as accessible as possible, some of the more technical detail of the statistical modelling approach has been made available in the accompanying Technical Report. In addition to this, an example dataset has been provided, along with a copy of the code that was utilised to conduct the analysis. We hope that together these will provide full clarity and transparency to those interested in the specifics of the modelling approach that was used.

The language used in this report

Some of the language used in this report is technical because of the work we did, techniques we used, information we used and models and platforms we used in statistical analysis. Some of the terms we have used are explained here.

In addition, the language used when describing the experience of children and families who receive services is important. Language can be stigmatising, and where possible we have tried to avoid using terms that could contribute to this. Where our analysis refers to data already collected by organisations, we refer to the terms they use to identify and describe the data. This includes where organisations provide services that are defined in law or national guidance where terms that have a specific meaning in law or guidance are used.

Children's fieldwork services

Children's fieldwork services is the term used by the Scottish Social Services Council to describe social workers who mainly work directly with children and families that need the support of services.

Dataset

A dataset is a set collection of agreed measurements, criteria, or categories required to create a robust understanding of information about something which can be a topic, people or a service. The data is used to provide a baseline from which to measure the progress made about that topic, the people concerned, or the service developed and delivered.

Delegation

Delegation means where an organisation has passed the responsibility for the management of the budgeting for, the planning and the delivery of a service it has previously managed and provided to a new or existing body to oversee provision of this service instead. This is greater than the operational delivery of the service.

Indicators

The word indicator in this research and report is used to mean experiences (that are measured) that the researchers identified might give us an indication of the wellbeing and support needs of children. The indicators used for our analysis are taken from existing service and monitoring data recorded by local and national organisations in Scotland.

Integration

Integration itself is a complex concept covering a variety of components. This can range from services sharing a workspace and being co-located to sharing information systems, or working towards the same goals, through to services merging into a new or existing organisation with shared finances. In the context of public services, integration means service providers coming together to collaborate and co-ordinate the support they provide. The rationale for doing so is usually the intention to deliver more responsive, effective and efficient services to improve the experiences and outcomes for people who use services.

Looked after children

'Looked after' children is the legal definition used to refer to children who are currently in the care of a local authority in Scotland.

People needing the support of services

This research study uses the phrase 'people needing the support of services' or 'children needing the support of services' to identify any and all who may at any time need the support of public services, which might include social care services, or social work services, or health services, for example. There are many different terms used as an alternative to this form of words and some of these will be more commonly used in

different contexts and places. This study's researchers acknowledge that the terms 'service-user' and 'client' are used by services and others, but these are not the terms the researchers choose to use.

Placement

Placement is the term given to where a child is being cared for away from their parents' home. A placement could be living with foster carers, living with kinship carers, or being cared for in residential child care such as a children's home.

Social care services

In the context of this analysis and the research study, the phrases social care and social care services can be understood as the care and services designed to meet the needs of children, young people or adults who need extra support. This might take the form of personal care or other practical assistance. Worldwide, social care is provided through national and local public services, not for profit organisations, and commercial providers.

Social work services

In the context of this analysis and the research study, the phrases social work and social work services can be understood as the specialist services that operate at a local government level that have a statutory responsibility to meet the welfare needs of children, young people and adults who need support. Their responsibilities are discharged in line with the relevant national and local laws and policies where the services are located.

Structural integration

Structural integration is where integration is specifically focused on bringing together services previously delivered by separate organisations under a new or existing body which becomes responsible for management and delivery of these services. The rationale for doing so is the intention to deliver more responsive, effective and efficient services to improve the experiences and outcomes for people who use services.

We hope that you enjoy reading our report, and come away with a greater understanding of the complex relationship between the structural integration of children's services and children's outcomes.

Overview of Children's Services Reform Research

This is a Scotland-based research study being undertaken by CELCIS, the Centre for Excellence for Children's Care and Protection. CELCIS was asked by the Scottish Government to carry out this research study with the aim of gathering evidence to inform decision-making about how best to deliver children's services in Scotland in light of the proposed introduction of the National Care Service, and its commitment to Keep the Promise of the Independent Care Review.

The purpose of the research is to answer the question: "**What is needed to ensure that children, young people and families get the help they need, when they need it?**"

The [Children's Services Reform Research](#) study has four separate strands of work, which together aim to provide a comprehensive and holistic approach to answering this question. The findings of each strand of work will be published separately, in a full research report and a shorter summary report. We hope that this overview acts as a guide to help you to navigate through each strand of the research, and the different evidence that these will present. A final report will be published at the end of the study which will draw together and synthesise all four strands of the findings to address the research question.

This report is Strand 3: Mapping Integration and Outcomes Across Scotland: A statistical analysis, and all strands of the research study are outlined below:

Strand 1: Rapid Evidence Review is a review of existing published national and international research evidence focused on better understanding the evidence associated with different models of integration of children's services with health and/or adult social care services in high income countries, as defined by the World Bank. The research questions which this review seeks to address are:

What models of integration exist for the delivery of children's social work services with health and/or adult social care services in high income countries, and what is the strength of evidence about their effectiveness in improving services, experiences and outcomes for children, young people and their families?

Strand 2: 'Deep Dive' is examining a range of approaches to the delivery of children's services, from national to highly decentralised structures and modes of delivery, in five high-income countries: Finland, Northern Ireland, the Netherlands, New Zealand and the Republic of Ireland. A sixth case study is drawing on learning from Scotland's experiences of national service reorganisation through the development of Police Scotland. These country case studies have been brought together in one report to consider the key learning and messages for Scotland.

Strand 3: Mapping integration and outcomes in Scotland: A statistical analysis is mapping the different approaches to integrated service delivery across Scotland's 32 local authority areas and investigating, through the statistical modelling of administrative data, any potential effects of integration on a range of outcomes over time for people being supported by public services. In doing this, we are also taking into account different factors such as geography, poverty and the impact of the COVID-19 pandemic to increase the likelihood that any findings are directly about integration rather than as a result of other factors.

Strand 4: Children's Services workforce experiences of supporting children, young people and families is exploring, through an online survey, interviews and focus groups, the opportunities, challenges, barriers and facilitators that are found to bring about high quality experiences and outcomes for children, young people and families using services; close multi-agency working between professionals across different services; continuity of support when young people transition to adult services; and high quality support for the workforce and transformational change in services. This strand of work will also aim to produce additional insights regarding workforce perceptions of the association between integration and outcomes for children, young people and families and the wellbeing of the workforce that will complement and contextualise emerging findings from Strand 3.

An [Independent Steering Group](#) chaired by Professor Brigid Daniel, Professor Emerita at Queen Margaret University, Edinburgh, has supported the design, implementation and delivery of this research study. Their remit has been to provide independent support and oversight to the research team, and to ensure the research is robust and will provide the best possible evidence.

Throughout the Children's Services Reform Research study, we have taken very careful account of existing evidence which details the views that children, young people and their families have already shared about their experiences, the support and services they have identified as being needed, and what matters to them. This information has been taken from relevant research and reviews of services for children, including the Independent Care Review in Scotland (2020), and is included in a range of ways within the different strand reports. In this research, it is important to acknowledge that there is limited availability of data in Scotland that reflects the experiences of children, young people and families who are in need of services and are supported by services in general, and in particular where these services have been restructured. There is also a similar lack of comparable wellbeing outcome indicators data for children and young people currently (2023) available in Scotland.

Introduction to this strand of work

The Scottish Government commitment to introduce a National Care Service in response to the Independent Review of Adult Social Care in Scotland (2021) is the latest development in a process of public service reform intended to improve health and wellbeing outcomes for the Scottish population, with further integration of health and social care services a key element of the proposed reform. The Scottish Government will decide if children's health and social care services are to be included in the National Care Service, so it is important to understand and learn from how children's services are currently delivered.

This strand of the Children's Services Reform Research study mapped the different approaches to integrated delivery of health and social care services across local authority areas in Scotland over the last decade and investigated the relationship between the level of structural integration of children's services and a range of outcome indicators. For the purposes of this study, we have used the extent to which children's services have been structurally integrated into each of Scotland's Health and Social Care Partnerships (HSCPs) as the measure of integration.

Using statistical techniques, we explored whether or not the level of structural integration of children's services was associated with changes in outcomes across a variety of domains – including education, health and child protection outcomes for children and young people, and a social work workforce measure. This analysis was conducted through the use of quantitative administrative data, which is data that is routinely collected by governments and other public bodies for the purposes of enabling and enhancing service delivery and assessing performance of those services.

It is important to emphasise that this strand of the research study only assesses the effects of 'structural integration', and that structural integration is just one aspect of integration. By structural integration we mean bringing together services previously delivered by separate organisations under a new or existing body which becomes responsible for management and delivery of these services.

Integration is a complex concept with many components. To understand the conclusions that can and cannot be drawn from this research, readers may wish to familiarise themselves with the [What we mean by integration and delegation in the context of this research](#) section of our report during their exploration of this research strand and its findings.

Updating our analysis

An earlier version of this report was published in July 2023, and was withdrawn after we were notified of a change in delegation arrangements in one local authority area ([What we mean by integration and delegation in the context of this research](#)). This statistical analysis is based on an understanding of the type and level of integration of each of the 32 local authority areas in Scotland (the full detail of our approach is set out in the [Methodology](#) section of this report). It was therefore imperative to verify delegation arrangements to ensure that our categorisation of local authority areas by level of integration was accurate.

Two issues emerged during our verification process. Firstly, our source of information on delegation arrangements reflected initial arrangements as outlined in published Integration Schemes and had not been updated to reflect subsequent changes. Secondly, it emerged that the binary description of children's health services as delegated or not delegated was not universally understood, and did not reflect substantial variation in the range of children's health services that were delegated across local authority areas.

Our initial report assigned each local authority area to a category of integration (Full, Partial or No structural integration) based on public information made available by Health and Social Care Scotland¹ (a national collaboration of leaders from HSCPs), with each HSCP area described as having children's health services either delegated or not delegated, and children's social care services as either delegated or not delegated.

The Public Bodies (Joint Working) (Scotland) Act 2014 requires HSCP areas to review their initial Integration Scheme within five years of the scheme receiving ministerial approval. Local authority and health board partners can also decide at any time that changes to their Integration Scheme are desirable or necessary and can vary the scheme by submitting a revised Integration Scheme for ministerial approval. North Lanarkshire was the only HSCP area to submit a revised Integration Scheme with a substantial change of delegation arrangements for children's health and social care services during our period of study up to 2021. In 2018, the area had decided that it was desirable to reverse the delegation of children's social care services to the Integration Joint Board by transitioning responsibility for these services back to North Lanarkshire Council. The Integration Scheme incorporating this revision received ministerial approval in 2019. Information about this change had not been updated to the source material we used for our study, leading to the North Lanarkshire local authority area being assigned to our Full structural integration category because both children's health services and children's social care services were delegated in the original Integration Scheme. As a result of the reversal of delegation of children's social care services in the revised Integration Scheme, we have reassigned the North Lanarkshire local authority area to our Partial structural integration category, because only children's health services, not children's

¹ <https://hscscotland.scot/hscps/>

social care services, were delegated in the area for a substantial part of the period of time covered by our period of study.

Our verification process included discussions with Health and Social Care Scotland and the Integration Governance and Support team at the Scottish Government to determine if other changes to delegation arrangements that could affect our categorisation had taken place. It became apparent that there was a recognised lack of clarity about definition and description of delegation arrangements for children's health services. This led to Health and Social Care Scotland contacting all HSCP areas, asking them to verify their delegation arrangements for children's health and social care services. Responses from some HSCP areas confirmed that there were misconceptions about description of delegation. We then contacted all HSCP areas where there were discrepancies and reached agreement on what the delegation arrangements were for children's health services and confirmed the categorisation of integration. This did not lead to any further changes to categorisation for our research: only the North Lanarkshire local authority area was re-categorised.

As the sample size for this study was relatively small (with our units of interest being the 32 local authority areas within Scotland), the results of our analysis are more sensitive to the change of category for one area than a study with a larger number of local authority areas would be. This is particularly true when the area in question, North Lanarkshire, has one of the largest population sizes. The change in categorisation of this local authority has led to some minor changes in results for a few of the indicators, however this has not had an impact on the overarching conclusion of our analysis.

Background

Policy context

The Scottish Government's commitment to introduce a National Care Service which could potentially include children's health and social care services continues a process of public sector reform which has increasing the integration of health and social care services as a central element. The recent history of reform of health and social care services, as well as current integration arrangements, provides important context for this research study and the methodology adopted. Further detail on the wider legal and policy context can be found in the Rapid Evidence Review strand of our research study (Porter et al., 2023).

As an introduction to policy relevant to current integration of health and social care services in Scotland, a key step was in 2010 when the Scottish Government established the Commission on the Future Delivery of Public Services led by Dr Campbell Christie, with a remit to undertake a strategic review of public service delivery in Scotland, and to provide a road map to guide future reform. A key recommendation of the Christie Commission report was that "Public service providers must be required to work much more closely in partnership, to "integrate service provision" (Christie 2011, pVI). The report acknowledged that further streamlining of public services was likely to be required but warned that reform should be driven by how best to achieve improved outcomes, "otherwise, we risk bearing the significant costs of structural change, without reaping any real rewards" (Christie 2011, pX).

In response to the Christie report, two key pieces of legislation which underpin the Scottish Government's public service reform agenda were introduced in 2014. The Public Bodies (Joint Working) (Scotland) Act 2014 (Public Bodies Act 2014) primarily focused on integration of adult health and social care services but also had implications for integration of children's services; and the Children and Young People (Scotland) Act 2014 introduced a requirement for local authorities and health boards to jointly produce integrated Children's Services plans. With both these landmark Acts impacting on children's services, concerns have been expressed about the potential detrimental effect that a lack of clarity about the relationship between the Acts could have on children's services (Brock & Everingham, 2018). Concerns include a risk of fragmentation of children's services because responsibility for parts of services may lie within different structures, a risk that the improvement opportunities which can come from bringing adult and children's services together could be made more difficult (Stephen et al., 2015a), and a risk that the profile and needs of children's services may not be prioritised in comparison to adult services (Brock & Everingham, 2018). In our analysis, we focus on the effects of integration of children's services resulting from the implementation of the Public Bodies (Joint Working) (Scotland) Act 2014.

With adult services the main focus of reform, the Public Bodies (Joint Working) (Scotland) Act 2014 required local authorities and health boards by law to form new structurally integrated partnerships known as Integration Authorities by April 2016, to

deliver adult community health and social care services through Health and Social Care Partnerships (HSCPs) (Scottish Government 2011b).

In addition to the statutory requirement to integrate community health and social care services for adults, Integration Authorities could choose to integrate other services, such as children's health services, children's social care services, homelessness services and criminal justice. The extent of integration of children's health and social care services varies across local authority areas.

All 32 Scottish local authorities collaborate with health boards in the 31 Health and Social Care Partnerships that have been established, with Stirling and Clackmannanshire contributing to a single partnership with NHS Forth Valley health board. The Public Bodies (Joint Working) (Scotland) Act 2014 allowed a choice between two integration models:

1. The health board and local authority delegate health and social care services that they provide to a new body called the Integration Joint Board, which takes on the responsibility for management and delivery of delegated services. This is known as the 'body corporate model', and all Health and Social Care Partnerships in Scotland apart from Highland HSCP have taken this approach to service integration; or
2. The alternative 'lead agency model' which allows the health board and local authority to delegate services between each other. Highland HSCP uses the lead agency model.

The unique approach taken in the Highland local authority area pre-dates the Public Bodies (Joint Working) (Scotland) Act 2014 and can be traced back to the area's participation as a test site for the Integrated Resource Framework from 2009. This framework was a joint development between the Scottish Government, NHS Scotland and the Convention of Scottish Local Authorities (COSLA) to take forward priorities articulated in the Scottish Government Better Health, Better Care: Action Plan (Scottish Government, 2007) in response to concerns that existing models of health and social care delivery were not producing the outcomes expected, with significant variation across the country (Scottish Government 2012). Integrated Resource Framework test sites were expected to trial small-scale models of integrated working, but the Highland Partnership between The Highland Council and NHS Highland health board decided to introduce more ambitious structural change to integrate services. The Highland Partnership used existing legislation (the Community Care and Health (Scotland) Act 2002) to take forward the integration of health and social care through a lead agency Partnership Agreement in 2012. Under this lead agency arrangement, NHS Highland has lead responsibility for adult health services as well as adult social care services delegated to the board by The Highland Council. The Highland Council has lead responsibility for children's health services delegated to the Council by NHS Highland, joining children's social care services, which the council already delivered. With the introduction of the Public Bodies (Joint Working) (Scotland) Act 2014, Highland established an Integration

Authority, and the lead agency arrangement continues. The partnership between NHS Highland and The Highland Council is overseen by a Joint Monitoring Committee.

Progress with health and social care integration since the introduction of the Public Bodies (Joint Working) (Scotland) Act 2014 has been closely monitored, and Audit Scotland released the second of two update reports in 2018 (Audit Scotland 2018). Progress was acknowledged, but substantial shortcomings were identified. A lack of integrated financial planning was described as a fundamental issue limiting the ability of Integration Authorities to improve services, and poor strategic planning, a lack of collaborative leadership, and poor governance were also highlighted. The Ministerial Strategic Group for Health and Community Care acknowledged these observations in their review of progress published in February 2019, and proposed a series of actions to address these shortcomings (Scottish Government, COSLA 2019).

In September 2020, the First Minister announced the Independent Review of Adult Social Care in Scotland chaired by Derek Feeley, with the principal aim to recommend improvements to adult social care. The review report (often referred to as the Feeley Report) published in February 2021 recommended the creation of a National Care Service for adult social care, highlighting issues with the Health and Social Care Partnership model as one reason for change (Feeley 2021). The report recommended that the new National Care Service be delivered locally through reformed Integration Joint Boards, with the lead agency model used in the Highland area discontinuing because it was judged not to be delivering additional benefits. In August 2021, the Scottish Government launched a consultation on the National Care Service, which included a proposal that children's social work and social care services should be included in the service (Scottish Government 2021a). In the National Care Service Statement of Benefits report produced by Scottish Government in June 2022, the extension of the National Care Service to include children's social care services was considered in more detail, with a recognition that further evidence is required to inform future decisions around inclusion or exclusion (Scottish Government 2022).

Scottish Government rationale for the integration of health and social care services

Across children's and adult services in Scotland, there is a coherent and consistent rationale behind the Scottish Government's reform agenda, based on greater integration, shared ownership, participation of people receiving services, and regular, robust performance monitoring (CELCIS 2018).

Although not explicitly presented as a theory of change, the rationale for structural integration presented in the 2016 Scottish Government Health and Social Care delivery plan (Scottish Government, 2016) is that reform and integration will lead to "better care", "better health", and "better value". Better care here includes the provision of the right help at the right time via services with sufficient capacity, focus and workforce to improve the experience for people receiving care and support. Better health is to be achieved through better care, with a shift to anticipation, prevention, and self-

management to tackle key causes of preventable ill health at an early stage. Better value is to be achieved through better care and better health, and a shift in the balance of where care and support is delivered from hospital to community settings.

Evidence of achievement of change resulting from health and social care integration is expected to be quantifiable. Integration Authorities were expected to produce plans to achieve nine national health and wellbeing outcomes (Box 1), and to report annually on progress against a core suite of indicators developed specifically to measure progress against these nine outcomes (Scottish Government. 2015a, 2015b). These outcomes and core indicators focus heavily on adult services.

Box 1: National health and wellbeing outcomes

1. People are able to look after and improve their own health and wellbeing and live in good health for longer
2. People, including those with disabilities or long-term conditions, or who are frail, are able to live, as far as reasonably practicable, independently and at home or in a homely setting in their community
3. People who use health and social care services have positive experiences of those services, and have their dignity respected
4. Health and social care services are centred on helping to maintain or improve the quality of life of people who use those services
5. Health and social care services contribute to reducing health inequalities.
6. People who provide unpaid care are supported to look after their own health and wellbeing, including to reduce any negative impact of their caring role on their own health and wellbeing
7. People who use health and social care services are safe from harm
8. People who work in health and social care services feel engaged with the work they do and are supported to continuously improve the information, support, care and treatment they provide
9. Resources are used effectively and efficiently in the provision of health and social care services.

Audit Scotland used a set of six priority areas (Box 2) with associated indicators to monitor progress of Integration Authorities, and all of these also related to adult health services, though children could be included in some indicators (Audit Scotland 2018).

Box 2: Audit Scotland national indicators

1. Acute unplanned bed days
2. Emergency admissions
3. Accident and Emergency performance (attendance and waiting time)
4. Delayed discharge bed days
5. End of life spent at home or in the community
6. Proportion of over-75s who are living in a community setting.

There was a clear expectation that structural integration of services for adults would lead to observable change in specific outcome indicators. Reported progress against the six national indicators was mixed. There were some signs of improvement, with a reduction

in acute unplanned bed days and delayed discharge bed days, and an increase in the percentage of people's time spent at home or in a homely setting at the end of their life. In contrast, there was an increase in emergency admission to hospital, and a decline in achievement of the four-hour accident and emergency waiting time target.

As integration of children's health and social care services was not mandated by the Public Bodies (Joint Working) (Scotland) Act 2014, no equivalent national health and wellbeing outcomes and indicators were specified by the Scottish Government for children's services, leaving areas that did delegate children's health or health and social care services free to decide how to measure and monitor these services.

Previous research on the impact of integration on outcomes

Our Rapid Evidence Review (Porter et al., 2023) strand of this research study found a continuing lack of national and international research on the effects of reorganisation to achieve better outcomes for children, young people and families through integration of children's services with health and/or adult social care services in high income countries. To a large extent, the papers reviewed looked at service and team integration, with our research team being unable to find much evaluation of the outcomes of integration at a wider systemic and structural level.

This reflects the findings of the literature and policy review carried out in 2018 by CELCIS (Integrating Health and Social Care in Scotland: The Impact on Children's Services, Part 1) that also found a lack of in-depth, comparative research, exploring the impact of public service reorganisation on the experiences of people interacting with services and their outcomes across an administrative area, and a continuing focus on adult care services within the limited available research, with little or no reference to children, young people, or families (CELCIS 2018).

A systematic review of the effects of integrated healthcare or integrated health and social care (Baxter et al., 2018) also found that the studies included rarely focused on organisational change within integrated care models, with UK research in particular evaluating lower-level integration with just one component, such as integrated care plans for those receiving services. Some studies looked at integration of services for children and young people, but the majority looked at integrated care for older adults, and no particular trends in effectiveness were observed when integration between health services was compared to integration across health and social care. There was some evidence of new integrated models of care improving patient satisfaction, but little evidence of impact beyond this. Existing experience and relationships, and a history of collaboration were identified as enablers of integrated working. One study included in this review which looked at structural integration of adult health and social care services in Herefordshire warned that "service integration and the associated changes in the purpose and orientation of services represent more than a 'technical' exercise. Rather, they require an approach encompassing all dimensions of organisational development: strategy, systems, structures, human resources and culture" (Coupe, 2013, p205).

In their evaluation of the impact of the introduction of Children's Trust Pathfinders in England on outcomes for children, O'Brien et al. (2009 p323) note "inherent methodological challenges in linking public policy reform (primarily concerned with organisational arrangements) to local processes of service delivery, children's wellbeing and outcomes". This study is of particular interest because it looked for evidence of improvement in defined outcomes resulting from organisational change. Children's Trusts in England were initially conceived as bodies which would transform children's services by bringing together health, education and social care organisationally and structurally (DfES, 2003). This proposed structural integration gave way to inter-agency governance when pathfinder Trusts were established in 35 areas across England in 2004, with integrated strategy and processes underpinning integrated service delivery. A sub-set of indicators was chosen from those used to measure Every Child Matters (DfES, 2003) outcomes. These indicators covered different populations of children, including children with a disability, and children on the child protection register, and were considered most likely to be most impacted by service integration. Statistical models were used to analyse indicator data from 1997 to 2004. This showed general improvement on many indicators prior to the introduction of pathfinder Trusts, such as a fall in the annual rate of teenage pregnancies, and a reduction in the percentage of children in need referred again within 12 months of a previous referral, but no consistent evidence of better outcomes in more integrated areas. With data available for just one year after the introduction of Trusts, evidencing difference at such an early stage after integration was clearly a challenge, and subsequent evaluation of pathfinder Trusts did not include analysis of indicator data over a longer period.

Bachmann et al.'s (2009) follow-up evaluation of the same 35 pathfinder Children's Trusts in England also found no evidence of improvements in children's outcomes that were directly attributable to Trusts, and the difficulty in showing the immediate effects of preventative services is acknowledged as a factor. The evaluation used a mixed-methods approach, consisting of interviews with managers and professionals, questionnaire surveys of Children's Trusts, and analysis of official documents. The views of children and families receiving services from Trusts were not sought. Interestingly, initial change was perceived to be more about management structures and practices rather than service delivery. In most Trust areas, changes have involved local authority education and social care services, with limited involvement of health services.

There are particular challenges from a research perspective in knowing how to measure the success of integration. Findings from the Case Studies of Transformational Change Programmes (McTier et al., 2023) strand of this research study concurred with the review of international models of care conducted during the Independent Care Review in Scotland (McCaulay, 2019). Both found that, while improving children's outcomes was widely stated as a key aim of reforms, there was very little evidence of the specific outcomes, measures or indicators that success could be assessed against. Agreement on a set of outcome indicators that national, regional and local providers can work towards will be important to provide a robust evidence base upon which success and progress can be measured. Existing indicators tend to focus on activity and outputs that are

captured in administrative systems. Some of these indicators are valuable and show evidence of change, but sometimes the right thing is not being measured. An important challenge remains to develop more meaningful indicators that capture experience, and reflect what matters to children, young people and their families.

Rationale for our analysis of the effects of structural integration

Whether or not to integrate systems, processes, services, or agencies is a big decision. When the systems in question include the nationwide delivery of support through children's social work and social care services, the implications are even wider. Such a decision will impact on the lives of thousands of families, directly affecting their wellbeing and health. The decision also has ramifications for the workforce delivering services across many agencies. It is important to note that this is true *regardless of whether changes are made*. A decision not to include children's services in the National Care Service is a decision with consequences as much as a decision to make a change.

In this context, it is important that any decision is made with the fullest understanding of all the available evidence and information. There are many sources of such information and evidence which are accessed across the different strands of this research study. This strand of the study focuses on one particular source of evidence: the available quantitative data on children's outcomes, and what it can tell us about the impacts of previous structural reform to integrate services in Scotland.

However, the available quantitative data is not necessarily the right data to measure the impact of integration, so we have also highlighted the limitations of available indicators and apparent gaps, some of which are being addressed by initiatives led by The Promise Scotland and the Scottish Government (The Promise Scotland, 2023).

It is entirely reasonable to expect structural change to result in improved outcomes for those requiring the support of services, and to measure change using appropriate indicators ([Scottish Government rationale for integration of health and social care services](#)). Change can be quantified, but it is surprising how few studies we have found that sought to determine what role structural reform has played in changes to outcomes. We have sought to develop a methodology to address this directly, by identifying a set of outcome indicators, looking at change over time for each of these indicators, then seeking to determine if change could be attributed to different approaches to the structural integration of children's services.

The process through which structural reform can lead to change in outcomes takes time and is undoubtedly complex but, before embarking on further structural reform, it is vital to understand what we can learn from previous reform that was intended to achieve largely the same aims. This analysis is one contribution towards a greater understanding of the impact of integration that will help inform decision-making around any future reforms within children's services.

Methodology

The research question

In the development of this study, the research team, with guidance and approval from the Independent Steering Group, sought to identify a clear research question to guide our integration mapping and outcome analysis work. The overarching question that this piece of research seeks to answer is:

Is the level of structural integration of children's health and social care services associated with changes in outcomes for children, young people, families, and the workforce?

What we mean by integration and delegation in the context of this research

Integration of public services can mean many things. The term is used to describe everything from different services or agencies working from the same location (that is, co-location) or sharing information, through to services coming together under one management structure with shared finances and personnel. In the context of this research, we focus specifically on the structural integration of health and social care services that resulted from the introduction of the Public Bodies (Joint Working) (Scotland) Act 2014.

The Public Bodies (Joint Working) (Scotland) Act 2014 required local authorities and health boards to come together in newly created Integration Authorities and jointly prepare Integration Schemes for each local authority area to bring together adult health and social care services. Integration Authorities deliver these services through Health and Social Care Partnerships, and they could choose between two forms of structural integration.

For every local authority area apart from Highland, structural integration has involved the transfer of responsibility for strategic planning, resourcing and delivery of services previously managed and delivered by the local authority and the relevant health board to newly established Integration Joint Boards. Transfer of overall responsibility for services from local authorities and health boards to Integration Joint Boards is referred to as delegation.

Each Health and Social Care Partnership area is required to produce an Integration Scheme which details their delegation arrangements, and these schemes are approved by the Scottish Government at ministerial level.

In addition to the requirement to integrate adult health and social care services, Integration Authorities could also choose to extend integration of generic health services such as primary and general medical services, and dental, ophthalmic and pharmaceutical services to include provision for under 18s in delegation arrangements.

Integration Authorities could also choose to integrate health services that are specifically for children, which had previously been provided by the NHS health board, to their Integration Joint Board, and could also choose to delegate children's social care services previously provided by the local authority. Examples of specific children's health services that have been delegated include health visiting, school nursing, family nursing, and the Child and Adolescent Mental Health Service (CAMHS). Some Health and Social Care Partnership areas (HSCPs) have chosen to delegate specific children's health services to their Integration Joint Board, and some have also delegated children's social care services to their Integration Joint Board. Delegation of health services specifically for children was much more extensive in some areas than others, and we consider the implication of this in this report ([Developing a typology of integration](#)).

Highland HSCP uses the alternative lead agency model, whereby The Highland Council has transferred responsibility for adult social care services to NHS Highland, and the health board has transferred responsibility for most children's community health care to the council, including the school nursing and health visiting services. This transfer of responsibility is also referred to as delegation but, under the lead agency model, services are delegated to existing organisations rather than a newly created body.

Our research focuses solely on structural integration, but it is important to recognise that this is just one aspect of integration. Integration is a complex concept, and our Rapid Evidence Review (Porter et al., 2023) conducted as part of this wider Children's Services Reform Research study suggests that integration should be viewed as an outcome of a range of components, which may or may not include structural integration. Successful integration of services may either require or be enabled by many other components such as co-location, shared culture and governance, aligned policy and having systems in place to facilitate information/data sharing.

The determination of how integrated services truly are is not a trivial matter. While we can identify services that have been brought together structurally, this does not necessarily mean that these services are delivered with a joined-up approach or that they are experienced as integrated by the children, young people and families who require their support. Conversely, it is possible for services that are not integrated in a structural sense to work with children, young people and families in a manner that is experienced as holistic, cohesive and integrated. While integrated structures can enable the integrated delivery of services, this does not on its own ensure it.

While most HSCPs were formed in 2015 and 2016, local authority areas may have had other components of integration in place before this point, resulting in an integrated experience for those accessing services before HSCPs were introduced.

We recognise the importance of other components of integration, but we have focused on structural integration because the rationale behind reform of service delivery through structural integration includes the improvement of outcomes: "The purpose of health and social care integration is to transform people's experience of care and the outcomes they experience." (Health and Social Care Scotland, 2023)

We have used the extent to which children's health and social care services are delegated to HSCPs and integrated with delegated adult services to categorise local authority areas by their level of structural integration. We then used these defined 'levels' of structural integration to explore whether differences in structural arrangements were linked to changes in outcomes for children, young people and families or not.

Approach to mapping integration across Scotland

With the Integration Authorities established by the Public Bodies (Joint Working) (Scotland) Act 2014 able to choose if and to what extent children's health and social care services are integrated through delegation, approaches have varied across the country. This variation in the local delegation of services to HSCPs allows a categorisation/typology of integration structures to be developed from a children's services perspective.

Developing a typology of integration

To be able to explore whether a relationship was present between the level of structural integration of children's health and social care services and a range of outcomes for children, young people, families and the workforce, we first had to categorise the level of integration within each local authority area. Our categorisation is based on the structure of HSCPs in each area from the time these were established to the end of our period of analysis, 2021. Health and Social Care Scotland collates information on delegated services beyond the minimum requirement to deliver integrated adult community health and social care services and makes this information publicly available on their website. Using this information on delegation of children's health and social care services, three categories were developed for our research and analysis to describe the level and type of integration of children's health services and children's social care services in Scotland. These categories simply reflect different approaches to structural integration of services, and all approaches are equally valid. Each category has been given a name:

- **Full structural integration** – these are local authority areas where both children's health services and children's social care services are delegated to the Health and Social Care Partnership along with adult community health and social care services. Ten local authority areas in Scotland are in this category.
- **Partial structural integration** – these are local authority areas where either health services specifically for children or children's social care services are delegated to the Health and Social Care Partnership along with adult services. Eight local authority areas which have children's health services but not children's social care services delegated are within this category. In addition, one local authority area (Highland) which delegates children's and adult services between the local authority and NHS Highland health board under its alternative 'lead agency model', is included in this category.

- **No structural integration** – these are local authority areas where neither children’s health services nor children’s social care services are delegated to the Health and Social Care Partnership. Thirteen local authority areas are in this category.

As the sole HSCP in Scotland with a lead agency model of integration, the Highland local authority area does not fit neatly into this typology. The research team discussed this with Highland HSCP, and they have been included in the ‘partial structural integration’ category because although children’s and adult services are both delegated, these are delegated to separate bodies, which means that children’s services and adult services are not integrated. The health board has lead responsibility for adult health and social care services, while The Highland Council has lead responsibility for children’s health and social care services.

Measures were implemented in the analysis approach to account for the differences present in the Highland area, details of which are given in [An alternative approach to integration: Highland](#).

Changes to the source information used for our analysis

Following the initial publication of our analysis in July 2023, we became aware that information about some changes in details and the level of integration which had taken place in a small number of local authority areas during the period we analysed had not been known and therefore had been unaccounted for.

Public information on delegation of children’s health and children’s social care services is available on the Health and Social Care Scotland website. This information was used to categorise areas in relation to their delegation arrangements. However, the information did not reflect subsequent changes to delegation arrangements in one area. Health and Social Care Scotland has subsequently addressed this and contacted all HSCP areas to confirm delegation arrangements within each Integration Scheme. We also contacted all HSCP areas to confirm that our categorisation of their level and type of integration accurately reflects delegation arrangements in each of their areas.

In the North Lanarkshire local authority area, both children’s health and children’s social care services were delegated to the Integration Joint Board when it was formed in 2016. In 2018, these arrangements were reviewed locally, and it was decided that responsibility for children’s social care services would transition back to North Lanarkshire Council, and this received Ministerial approval in 2019. We therefore re-assigned the North Lanarkshire area from our Full to our Partial structural integration category because children’s social care services were not integrated by delegation for the full period we studied.

In 2022, partners in the Moray local authority area agreed to delegate children’s social care services to the Moray Integration Joint Board. The revised Moray Integration Scheme was approved by the Scottish Government in 2023. As this change happened after our period of focus for this study (2010-2021), the Moray local authority area remains in our No structural integration category.

Understanding the delegation of children's health services

The updated delegation information on the Health and Social Care Scotland website also indicated that children's health services had changed from not delegated to delegated in the Moray HSCP area. We sought to verify the status of children's health services delegation in the NHS Grampian health board area. Health and Social Care Scotland and the Integration Governance and Support team at the Scottish Government confirmed that there was a recognised lack of clarity about delegation arrangements for children's health services, and an inconsistency in how the term delegation was used to describe a variety of arrangements across Scotland. The binary distinction between areas described as having children's health services delegated and those as not delegated is not sufficiently clear.

For the purposes of this research, areas which we describe as having children's health services delegated must have delegated universal health services specifically for children. So, for example, simply extending delegation of generic health services such as primary and general medical services and general dental services to include children under 18 is not sufficient for inclusion in this model. All local authority areas described as having children's health services delegated have as a minimum, delegated health visiting services for children, and almost all have also delegated school nursing services. Delegation of children's health services in some local authority areas does however extend well beyond universal community health services for children, to include services such as the Child and Adolescent Mental Health Service (CAMHS).

The three HSCP areas in the NHS Grampian health board area describe children's health services including health visiting and school nursing as 'operationally devolved' in their Integration Schemes. Integration Joint Boards are responsible and accountable for the operational delivery and performance of these services, but do not hold budgets or carry out strategic planning for them. We have therefore classified these services as 'not delegated' in our analysis.

Our typology

The level of structural integration within local authority areas in each of the three categories (or 'levels') is summarised in Table 1.

Structural integration of children's services in Health and Social Care Partnerships		Integrated Joint Board (IJB) model		Lead agency model (Highland only)	
Level of structural integration	Children's services	Delegated to IJB	Integrated with adult services	Delegated to lead agency	Integrated with adult services
Full	Children's health	✓	✓		
	Children's social care	✓	✓		
Partial	Children's health	✓	✓	✓	×
	Children's social care	×	×	✓	×
None	Children's health	×	×		
	Children's social care	×	×		

Table 1. Overview of the structural integration of children's services in the local authority areas within the three categories of our typology.

Areas where children's social care services are delegated but children's health services are not would also be included in the Partial structural integration category, but it is important to note that no local authority areas had this delegation arrangement during the period of time we studied. Any research using this approach and data from 2023 onwards would see the Moray local authority area included in this category because of the recent change to delegation of children's social care services in this area.

Our research aimed to use statistical testing to understand whether the level of structural integration present (that is, Full structural integration, Partial structural integration, or No structural integration of children's services) had an impact on a range of indicators.

Local authority areas are displayed by category of structural integration in Figure 1. It is noteworthy that all but one of the local authority areas with both children's health and social care services delegated were part of the former Strathclyde Regional Council area, which was reorganised into 12 local authority areas in 1996. All local authority areas with no children's services delegated were in the east of the country during our period of analysis, though the recent delegation of children's social care services in Moray changes this picture for 2023 onwards.

Further information on the characteristics of Scotland's local authority areas, including the characteristics used in our analysis, is provided in Appendix 1. The table in Appendix 1 additionally includes the category of structural integration to which each local authority area was assigned.

- **Full structural integration**
Both children's health and social care services integrated along with adult services
- **Partial structural integration**
Children's health services integrated along with adult services, or children's health and social care services integrated but separate from adult services
- **No structural integration**
Neither children's health nor children's social care services integrated with adult services

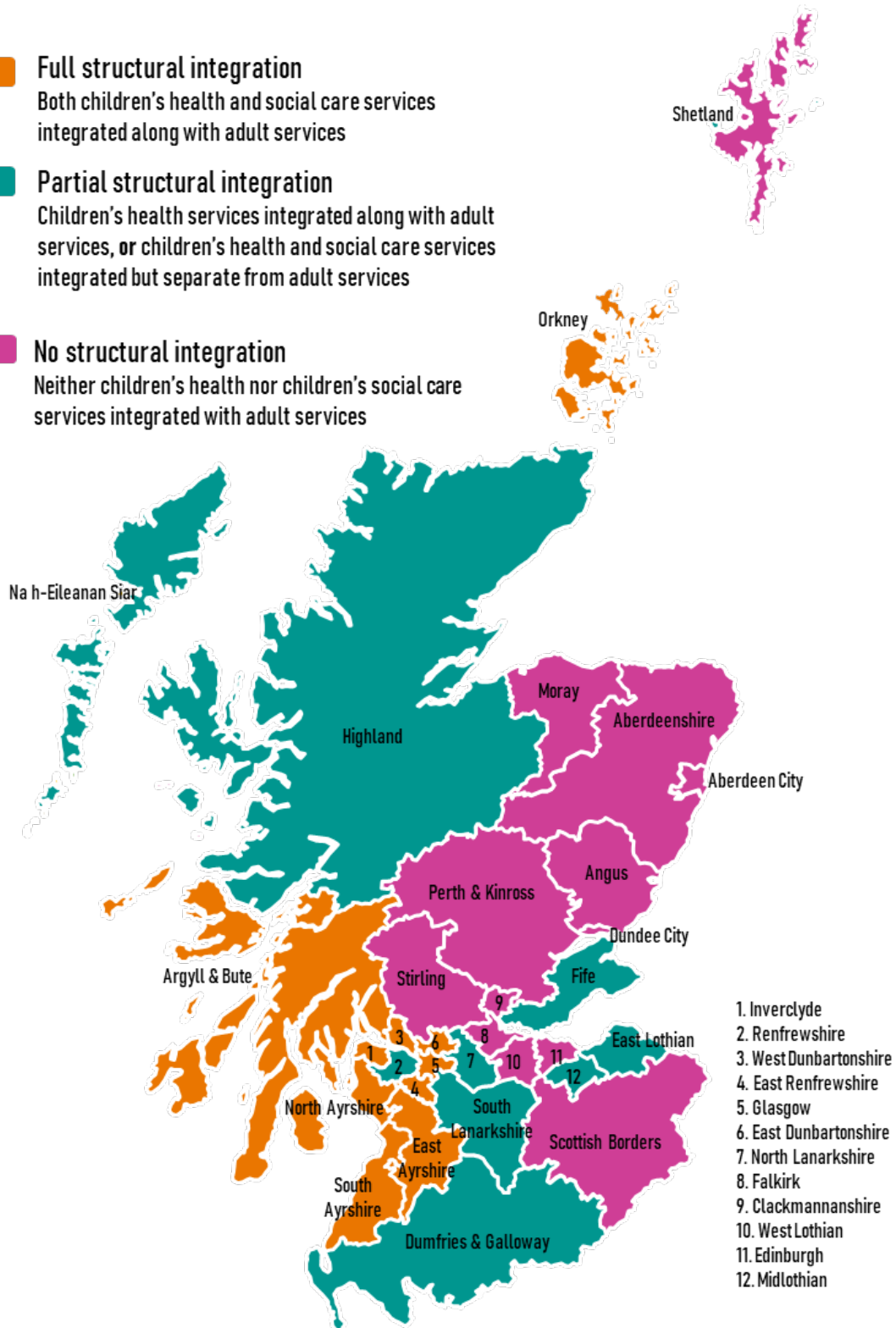


Figure 1. Level of structural integration through delegation of children's services within Health and Social Care Partnerships across Scotland during our period of study to 2021.

Assessment and selection of indicators

To assess the impact of structural integration on outcomes for children, young people, families and workforce-related indicators, we sought to compile a set of indicators relating to service outputs, wellbeing outcomes and the workforce that could be expected to show a measurable impact of change resulting from structural integration.

Our approach to how we selected our indicators is summarised in the flowchart seen in Figure 2, and consisted of two stages:

1. Identification of data sources and potential indicators
2. Assessment of indicators against inclusion criteria.

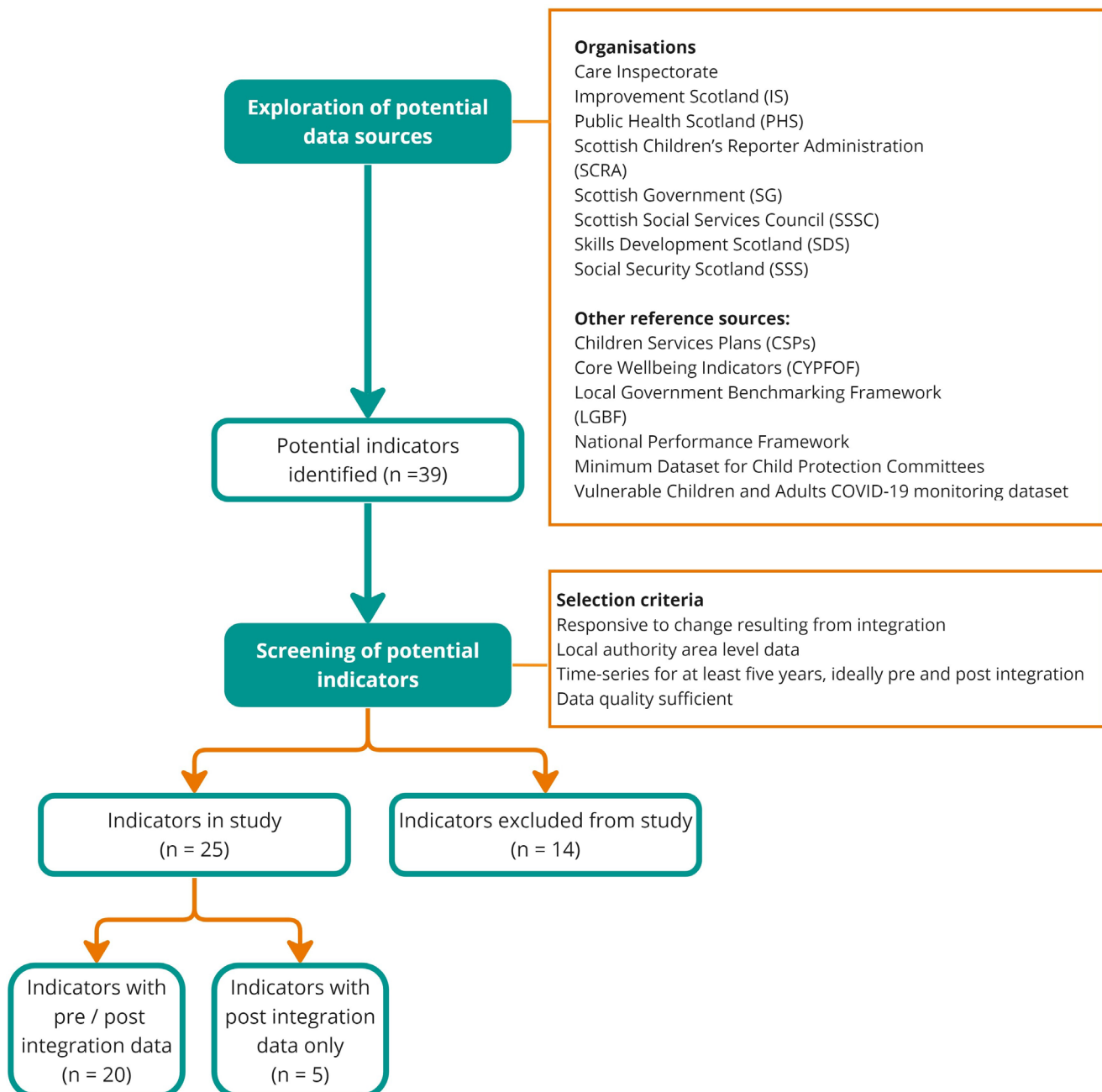


Figure 2. Flowchart illustrating the process for identification and selection of indicators.

Identification of data sources and potential indicators

A substantial amount of information about services delivered in local authority areas is collected by local authorities and partner agencies. This is often referred to as 'administrative data'. Some of this anonymised data is collated and published to produce a national picture, and to allow comparison across local authority areas. As it would not have been feasible to approach local authorities or partner agencies for additional information within the timeframe of this research exercise, we have primarily relied on data that has already been collected and published nationally, though we have included some amended or additional indicators that organisations were able to provide by analysing national data they collect in a different way specifically for us to use in this research.

We looked at a wide range of information collected by national organisations, including the Scottish Government, Public Health Scotland, the Scottish Children's Reporter Administration, the Scottish Social Services Council, Skills Development Scotland, and Social Security Scotland. The Improvement Scotland Local Government Benchmarking Framework brings together a series of local-authority level indicators based on administrative data, and these were assessed for inclusion in our analysis model. We reviewed indicators used in Children's Services plans, and those included in the National Minimum Dataset for Child Protection Committees (CELCIS, 2022). We were able to draw on learning from the Scottish Government-led initiative to develop a Children, Young People and Families Outcomes Framework, which includes a set of 21 core wellbeing indicators for children and young people (Scottish Government, 2022a). These wellbeing indicators are to be used to provide more consistency and comparability in future children's services plans. In addition, we reviewed the 'Vulnerable Children and Adults' dataset (often referred to as the 'SOLACE' dataset because the Society of Local Authority Chief Executives were involved in its development) which was introduced by Scottish Government to monitor the impact of the COVID-19 pandemic and the associated public health restrictions, as this had some relevant newly available national indicators. We also considered existing outcomes frameworks for children's services (La Valle et al., 2019), as well as learning from evaluation of the Children's Social Care Innovation Programme in England (Sebba et al. 2017) and the indicators used to evaluate Children's Trust Pathfinders in England (O'Brien, 2009).

We had direct discussions with the Children and Families Analysis team at Scottish Government, and with Public Health Scotland, the Scottish Children's Reporter Administration, and the Scottish Social Services Council to explore if data that was already collected nationally could be used to provide more relevant and informative indicators for this study than some of those already in the public domain. This resulted in the provision of data for a range of child protection and 'looked after children' indicators by the Children and Families Analysis team (Tables 2 and 3), and data on the conversion of referrals to children's hearings from the Scottish Children's Reporter Administration.

As well as providing assistance with access to data for several indicators, Public Health Scotland carried out a piece of bespoke analysis looking at children and adolescent

mental health service (CAMHS) referrals by local authority of residence. The Scottish Social Services Council also provided bespoke analysis of stability rates showing the proportion of social workers who mainly work directly with children and families (fieldwork services) that remain in the same post as the previous year, in the absence of data on vacancy and retention rates.

Our exploration of data sources and discussions with organisations collecting national data led to identification of thirty-nine indicators that could potentially be included in our analysis model. These indicators were then assessed against a set of criteria to determine their suitability.

Assessment of indicators against inclusion criteria

Each of the thirty-nine identified indicators was assessed against these criteria. Each indicator was required to:

- Be responsive to change resulting from the integration of health and social care services
- Be available at the local authority area level, and ideally for all 32 of Scotland's local authority areas
- Provide annual time series data for at least a five-year period, and ideally pre-date 2015 when most health and social care integration began in Scotland
- Be of sufficient quality for inclusion in the analysis model.

Indicator responsiveness to change

The reform of services is intended to result in change that leads to improved outcomes, with evidence of improvement shown by indicators that increase or decrease as a result of change. Improvement could be an increase or decrease depending on the indicator, but it should be responsive in that it moves to reflect change.

Indicator availability at local authority level

Eight of the fourteen NHS Health Boards cover more than one local authority area (Appendix 1). Some (particularly health-related) indicators were only available at health board level and could not be disaggregated for the local authority areas within each health board area. This presents problems in linking these outcomes to the level of structural integration of local authority areas.

Time series availability for indicators

In order to account for changes taking place in the indicators prior to the formation of Health and Social Care Partnerships, it was desirable for this study to have annual data for multiple years both before and after integration. As almost all local authority areas integrated in 2015 or 2016, data was sought from 2010 until 2021 where possible. Given that the time period for collation of the data for our research was in 2022, data for 2022 was not yet available for the vast majority of the indicators meaning that the most recent data available was for 2021.

Some indicators were only available for the most recent years, while others were only collected on a biannual basis. Where data was only available after integration had occurred, the decision was taken that indicators would be included in the analysis but with an amended approach to analysis, as is outlined later within this methodology section.

Quality of indicator data

Assessment of the quality of data available for each indicator involved consideration of each of the following limiting factors:

- High levels of data suppression, which is the practice of removing or withholding information to protect identities or privacy, generally where the numbers involved are small
- Unreliable data because of inconsistency in recording and reporting across areas
- Differences in practice across areas making comparisons hard to interpret
- High levels of missing data making the dataset incomplete
- Obvious errors (such as extreme high or low values, and percentages over 100%)
- A problematic number of zero or 100% values (that may be valid in some circumstances), which limits the usefulness of the measure when comparing local authority areas.

Although guidance and validation processes are in place to enhance the quality and consistency of data collected from and about local authority areas at a national level, there are known issues about accuracy, completeness and consistency for some indicators which make these unreliable. For example, we considered inclusion of two indicators which looked at the proportion of children and young people coming into care or having a child protection registration where a disability was recorded, but excluded both because of reliability issues. These issues included high proportions where disability status was not known or not recorded, and there was questionable variation in recording across local authority areas. The lack of robust disability data in Scotland has been recognised and is being progressed as a key area for data improvement as part of the review of children's social work statistics led by the Scottish Government which started in 2020 (Scottish Government, 2021b), as improved data collection will help evidence the scale and diversity of children and young people with a disability who need support.

Indicators included in analysis model after evaluation

Twenty-five indicators (Table 2) were selected for inclusion in our analysis model. These include indicators relating to child protection and children in care from the Scottish Government (SG) and Scottish Children's Reporter Administration (SCRA) data collection; youth justice indicators from the same sources; education indicators from the Scottish Government and Skills Development Scotland (SDS); health indicators from Public Health Scotland (PHS); housing indicators from the Scottish Government; and a social work workforce indicator from the Scottish Social Services Council (SSSC). Table 2 shows how each indicator is measured, along with a brief rationale for their inclusion.

For a small number of indicators, data was only requested for children within a restricted age range where this was felt to be a more responsive indicator. For example, by solely looking at those aged 0-15 who have left care, we can be more confident that they left care because statutory intervention in their life was no longer required, as opposed to children and young people getting older and 'ageing out' of the care system. Where no age range is specified in the table below, the data covers the full population of children and young people as is usually supplied by the data provider.

Indicator	Measure	Data source	Rationale
CHILD PROTECTION			
Child protection registrations (including pre-birth)	Rate per 10,000	SG	Indicator of children and young people most at risk, as registration is based on risk of significant harm and abuse.
Child protection de-registrations	Rate per 10,000	SG	Indicator of how well risks are being reduced for children and how well multi-agency child plans are working.
Pre-birth, initial and transfer-in case conferences to registration conversion rate (0-15 years) ¹	%	SG	Indicator of thresholds within local child protection processes.
Hearings arranged for children for non-offence grounds ²	Rate per 10,000	SCRA	Indicator of volume of children and young people with care and protection concerns that progress to a children's hearing.
YOUTH JUSTICE			
Children referred to Children's Reporter on offence grounds	Rate per 10,000	SCRA	Indicator of the volume of (mostly older) children and young people referred to the Children's Reporter because of alleged offending.
Children and young people aged 12 to 20 proceeded against	Rate per 10,000	SG	Additional youth justice indicator showing proportion of children and young people involved in the court system in Scotland.
LOOKED AFTER CHILDREN			
Children starting to become looked after	Rate per 10,000	SG	Indicator of support needed for children and families which requires statutory intervention in family life, or the care of a child away from their parents. Generally interpreted as a negative indicator, but can also be viewed as preventative.
Children starting to be looked after at home as proportion of all children becoming looked after	%	SG	Indicator of balance of children and young people coming into care but remaining at home, and those coming into care away from their parental home.
Children ceasing to be looked after (0-15 years) ¹	Rate per 10,000	SG	Indicator of end of need for statutory intervention in child's life.
Children aged 0-15 leaving care to return home ¹	%	SG	Indicator of cessation of statutory intervention in family life with children returning to live with in the family home.
Children with 3+ placements in last 12 months ¹	%	SG	Indicator of stability of relationship-based practice experienced by children and young people.
School attendance for looked after children	%	SG	Indicator of the wellbeing of children receiving support from multi-agency services.
Looked after school leavers with 1+ qualifications as SCQF level 4	%	SG	Indicator of attainment for children receiving support from multi-agency services.
Looked after school leavers with a positive follow-up destination	%	SG	Indicator of attainment and transition support for young people receiving support from multi-agency services.

EDUCATION AND EMPLOYABILITY			
Unauthorised absence rates of primary school pupils	% of half-days	SG	Indicator of primary school attendance. Absence rates can indicate a lack of inclusion and engagement in education.
Unauthorised absence rates of secondary school pupils	% of half-days	SG	Indicator of secondary school attendance. Absence rates can indicate a lack of inclusion and engagement in education.
16-19 year olds not in education, training or employment	%	SDS	A national indicator of 16-19 year olds' participation in education, training or employment.
HEALTH			
Teenage pregnancy rate (<18)	Rate per 10,000	PHS	Indicator of the effectiveness of preventative sexual health and education measures, and wellbeing of teenage girls.
27-30 month old children reviewed by health visitors	%	PHS	Indicator of quality of relationships between families and their health visitors.
27-30 month old children with a developmental concern	%	PHS	Indicator of young children's development and wellbeing, and extent to which their development needs are being identified.
Body Mass Index of P1 Children in Scotland – overweight or obese	%	PHS	Indicator of 5-year-old's health and level of activity - and impact of public health messaging and initiatives.
Children (0-17 years) registered with an NHS dentist	%	PHS	Indication that child's oral health needs are being met. Poor oral and dental health can be part of a picture of child neglect, but can also reflect a lack of provision of dental services.
HOUSING			
Children associated with applications assessed as homeless or threatened with homelessness	Rate per 10,000	SG	Indicator of child/family poverty and precarious living circumstances for children and families coming to the attention of housing services.
Children in temporary accommodation	Rate per 10,000	SG	Indicator of child/family poverty and insecure accommodation, for children and families involved with housing services.
WORKFORCE			
Whole-time equivalent rates for social workers in fieldwork services for children	Rate per 100,000	SSSC	Indicator of ratio of social workers working mainly with children and families against local authority population which allows comparison between local authority areas and analysis of change over time within local authority areas.

Table 2. Description of and rationale for the indicators included in the analysis.

¹This indicator was provided to our research team by the Scottish Government's Children and Families Analysis team for the purposes of this study. This data is not routinely published at the local authority level or for the particular age group given here.

²This indicator was provided to our research team by the Scottish Children's Reporter Administration. This data is not routinely published.

Indicators excluded from analysis model after evaluation

Table 3 shows indicators that we excluded after evaluation against the criteria, and the reason for exclusion from the analysis model in each case. Common reasons for exclusion included a lack of consistency in how the indicator was reported across different local authority areas, problematic levels of missing or suppressed data, and data only being available at health board level (as opposed to local authority level).

Public Health Scotland carried out bespoke analysis of a national dataset that is still in development to show the proportion of referrals accepted by Child and Adolescent Mental Health Services (CAMHS) in each local authority area. This indicator was excluded from our analysis because data was only available from 2020 onwards, and there were issues with the quality of data in terms of completeness. Comprehensive data on CAMHS referrals is available at health board level and, with further development, similar data at local authority level would be useful and informative.

The workforce continuity indicator provided by the Scottish Social Services Council which applied their 'stability in post' index to social workers who mainly work directly with children and families (children and families fieldwork services) was also excluded, primarily because of errors resulting from inaccuracies in data supplied by local authorities such as incorrect job titles.

Three indicators were only available at health board level. These were:

- Percentage of CAMHS patients starting treatment within 18 weeks
- Whole-time equivalent rates for CAMHS clinical staff
- Whole-time equivalent rates for Health Visitors.

These indicators could therefore not be included in our statistical modelling, however a graphical overview of the data for these indicators is provided in Appendix 2.

With three workforce-related indicators excluded after evaluation, we were able to include just one workforce-related indicator in our analysis model. We had initially hoped to gather data on workforce recruitment and retention, as well as comparative caseload data, and the lack of appropriate available data has restricted our ability to look at the effects of structural integration on workforce-related indicators, which was an important element of our research question.

Indicator	Measure	Source	Reason for exclusion
CHILD PROTECTION			
Children re-registered within 18 months of de-registration (0-15yrs) ¹	Rate per 10,000	SG	Low numbers leading to high levels of data suppression ⁴ . Substantial number of zero percents.
Children newly registered on the child protection register during the year by disability status ¹	%	SG	Low numbers leading to high levels of data suppression ⁴ . High proportions 'Not known/not recorded', substantial variation across local authority areas.
Registrations where parental substance use (drug and alcohol) and/or parental mental health recorded as a concern at case conference ¹	%	SG	Inconsistency in how concerns are recorded across local authorities (some report only one, some report many).
Children referred to the Children's Reporter on care and protection (non-offence) grounds	Rate per 10,000	SCRA	Replaced with indicator showing referrals converting to arranged hearings.
LOOKED AFTER CHILDREN			
Children looked after away from home on a Section 25 (voluntary) agreement ¹	%	SG	Substantial variation in use across local authorities, reasons for variation poorly understood.
Children starting to be looked after during the year by disability status ¹	%	SG	Low numbers leading to high levels of data suppression ⁴ . High proportions 'Not known/not recorded', substantial variation across local authority areas.
Young people eligible for aftercare services who are receiving aftercare services	%	SG	Known inconsistencies in reporting across local authorities, with some reporting 100%.
Care leavers with a pathway plan	%	SG	Known inconsistencies in reporting across local authorities. Reasonable levels of data suppression ⁴ .
HEALTH			
CAMHS patients starting treatment within 18 weeks	%	PHS	Only available at health board level.
Referrals to CAMHS that are accepted by local authority where resident ²	%	PHS	Dataset is still at developmental stage and covers a limited time period, with some missing data.
Under 25 year-olds presenting for initial assessment at specialist drug treatment services	Rate per 10,000	PHS	High levels of missing data, and concerns around data quality.
WORKFORCE			
Whole-time equivalent rates for CAMHS clinical staff	Rate per 100,000	PHS	Only available at health board level.
Whole-time equivalent rates for Health Visitors	Rate per 100,000	PHS	Only available at health board level.
Stability Index of practising social workers in children's fieldwork services ³	%	SSSC	Missing data for some local authorities and known errors due to misclassification of social workers.

Table 3. Description of and rationale for the indicators that were excluded from the analysis.

¹This indicator was provided to our research team by the Scottish Government's Children and Families Analysis team for the purposes of this study. This data is not routinely published at the local authority level or for the particular age group given here.

²Bespoke request for local authority-level data from experimental Child, Adolescent, and Psychological Therapies National Dataset (CAPTND). This data is not published.

³Bespoke request to Scottish Social Services Council to apply stability index to social workers mainly working with children and families.

⁴Data suppression is the practice of removing or withholding information to protect identities or privacy, generally where the numbers involved are small.

Modelling the data

This strand of the research study aims to determine whether there is an association between the level of structural integration present in children’s services and a variety of outcomes for children, young people, families and workforce-related indicators. The word ‘association’ in this context refers to a relationship between the two variables such that as the values of one variable (such as the level of integration) change, the values of the other variable (the indicator) also change in some systematic way.

Throughout the study, all data were analysed through the use of statistical models known as ‘multilevel models’, with analysis being completed within the R Statistical Software environment (R Core Team, 2022).

Multilevel models

Multilevel models (also known as mixed effects models) are statistical models used to analyse data that can vary at more than one level – often due to a hierarchical structure in the data. For example, across a cluster of schools the test results of individual pupils will vary due to their unique abilities, but there may also be variation in the average results seen across different schools due to the performance of specific teachers or other contextual factors, such as the level of deprivation of the school neighbourhood. Likewise, weekly blood pressure readings on a group of patients will vary dependent on the individual (with some patients tending to high measurements and others to low measurements), but they will also vary over time for each individual. Multilevel models are equipped to incorporate both sources of variation and can therefore provide more accurate estimates than models that do not incorporate information on the secondary level of variation (such as the school that a particular pupil attends, or the patient that provided a particular blood pressure reading).

Within the context of this research, the variation present in our indicators can be attributed to two factors – differences between distinct local authorities, and changes within local authorities over time.

Multilevel models were used to analyse the selected indicators in two ways:

1. A description of the overall trend in each indicator over the available time period, providing an overview of ongoing changes in children’s outcomes; and
2. An investigation of the contextual factors that may be influencing any changes seen – with a specific focus on the level of structural integration of children’s services.

Further information on multilevel models, including a description of the specific models applied for this study, can be found in the accompanying Technical Report.

Trend analysis

Prior to assessing the impact of integration, it is important to acknowledge that there are many other factors which may impact upon outcomes for children, young people and their families. Whether due to policy interventions, cultural shifts or socio-economic

changes, it is expected that the values seen for a particular indicator will differ over time (Rodriguez et al., 2022; Bywaters et al., 2020).

As a first step, we therefore explored the overarching trend within each indicator. This was assessed in two ways:

1. The annual national average was calculated for each indicator through compilation of the measurements provided for each local authority; then
2. A multilevel model was fitted to the local authority data for each indicator. This provided a description of the overall trend evident throughout the full period of available data.

Figure 3 provides an illustration of both types of trend descriptor. The annual national average (in black) and modelled trend (in pink) are shown for a given indicator - specifically the number of children referred to Children's Reporter on offence grounds per 10,000 children. The raw data for each of the 32 individual local authority areas have been marked as light grey dashed lines.

As numbers for the national trend have been calculated through compilation of local authority data, these may not exactly match nationally published values due to revisions by data owners over time or the presence of missing and/or suppressed data.

National trend: Actual vs modelled

Number of children referred to Children's Reporter on offence grounds per 10,000 children

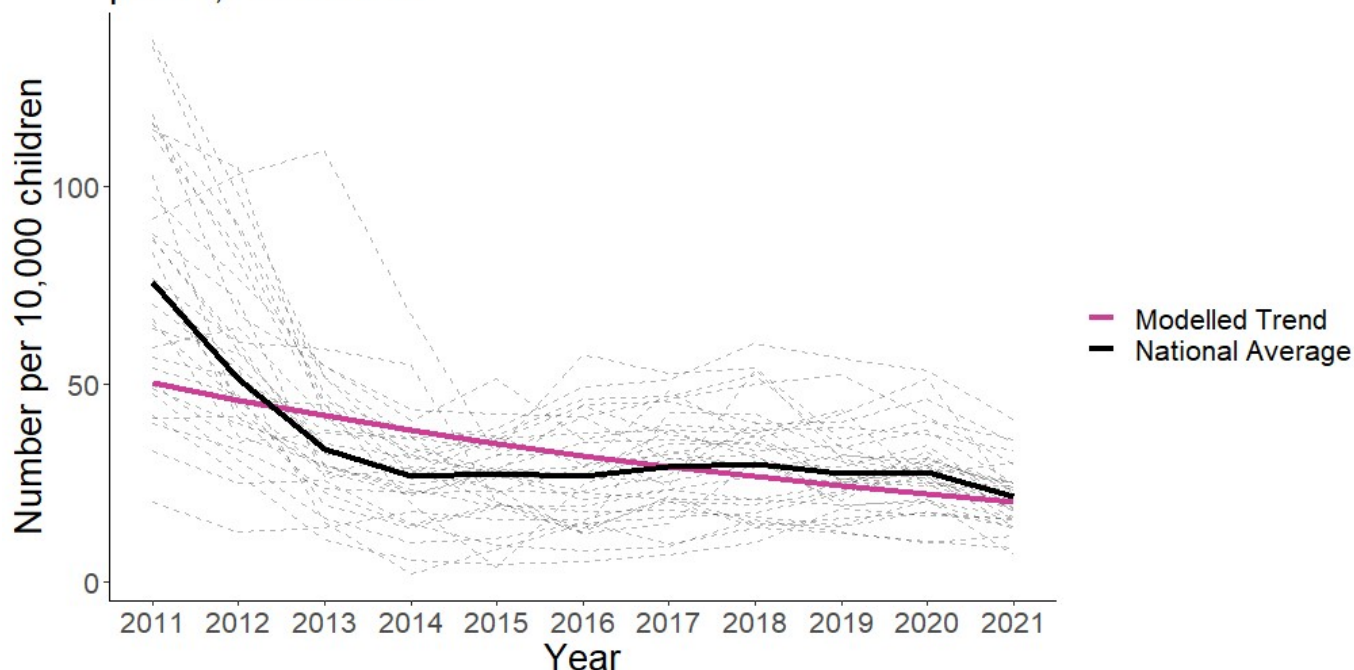


Figure 3. The raw data (grey), annual national average (black) and modelled trend (pink) for one of the indicators in our dataset.

For the purposes of this trend analysis, the assumption was made that the changes seen in each indicator are constant over time. While this does not capture the complexity of changes that can take place (as illustrated by the steep decline in the earliest years for

our example indicator in Figure 3, followed by a period of relative stability), it provides us with an indication of whether the values seen for a given indicator have been largely increasing or decreasing over time. While there would be great value in a more in-depth exploration of the trends seen in these indicators over time, that would be beyond the scope of our current research study and is therefore an important topic for future research.

Assessing the impact of structural integration on outcomes

The trend analysis provides a useful starting point for exploration of the indicators. However, this analysis does not explicitly inform us about the effect of integration. While we wished to determine whether any changes occurred in each indicator as a result of the level of structural integration of children's services, there are some complicating factors in determining this.

We can reasonably expect that there will be changes in many of our indicators over time, with a variety of factors potentially influencing these changes. As such, attempts were made to ensure the analysis was robust by:

1. Wherever possible, ensuring that a sufficient period of data was collected to enable an assessment of trends within each indicator both prior to and after integration. This provides a pre-integration baseline to which post-integration differences between the three categories of local authority areas (that is, those with Full, Partial and No structural integration) can be compared.
2. Including information in our models about other variables (or 'contextual factors') that may be influencing changes in the indicator.

Adjusting for contextual factors

For each of our 25 indicators, we wanted to determine whether there is an association between the level of structural integration of children's services in local authority areas and their performance on the indicator in question. In order to be confident that any differences seen between the three categories of local authority areas (that is, those with Full, Partial and No structural integration) can be attributed to integration, the models were also adjusted for other 'contextual' factors that may contribute to any existing differences. By including these contextual factors in the statistical model, we could ensure that any variability in the indicator value that is strongly associated with any of these factors (as opposed to the levels of structural integration) could be determined. This approach allowed us to separate out the effect of each contextual factor from the effect of the level of integration of children's services.

The contextual factors used within this study were selected as they are understood to have an impact on many of the indicators (Bywaters et al., 2020; McTier and Soraghan, 2022). The contextual factors included in the model were:

1. The levels of deprivation within a local authority (taken as the percentage of data zones within the local authority that fall within the 20% most deprived in

Scotland, as stated in the Scottish Index of Multiple Deprivation (SIMD) (Scottish Government, 2020b²)

2. The population density of the local authority, calculated using Mid-Year Population Estimates published by National Records of Scotland (2021) and the area in km² of local authorities as provided by the Office for National Statistics (2022)
3. An indicator for whether a local authority had a coterminous health board (that is, the local authority and health board had the same boundary)
4. A variable specifying whether or not a given data point (that is, a given measurement of the outcome indicator) was recorded during the COVID-19 pandemic.

Adjusting for these contextual factors was important to increase confidence that any effects that were found could be directly attributable to integration as opposed to other wider changes taking place.

Analysis of indicators with data available both prior to and after integration

As illustrated in our indicator identification flowchart (Figure 2), sufficient data was available both prior to and after Health and Social Care Partnership integration for the majority (20 of 25) of the indicators of interest. For the purposes of this research, 'sufficient' was defined as indicators where indicator data is available from 2012/13 or before. As almost all local authority areas integrated in 2015 or 2016 (31 of 32), this cut-off provided an adequate amount of data prior to integration to allow for the estimation of a pre-integration trend.

Hypotheses

For a given outcome Indicator X, it is plausible that there were pre-existing differences between the local authority areas that went on to have Full, Partial or No structural integration of children's services. This could be due to random fluctuations across local authority areas, or perhaps something more systematic such as higher-performing local authority areas feeling more capable of integrating services fully, or conversely feeling more reluctant to make changes to a service that is running well.

As such, for indicators where data was available prior to integration, we were interested in the following hypotheses:

Null Hypothesis: Differences in Indicator X between the three categories of local authority areas *did not* change after Health and Social Care Partnership integration.

Alternative Hypothesis: Differences in Indicator X between the three categories of local authority areas *did* change after Health and Social Care Partnership integration.

² To cover the full time period available for the indicators, data was utilised from SIMD 2009, 2012, 2016 and 2020.

Analysis of indicators with data only available after integration

For the small number of indicators (5) where sufficient data was not available prior to integration, there was not scope to adjust for or compare to the pre-integration performance of the local authority areas. Instead, it was only possible to determine whether there were significant differences between the three categories in the post-integration period.

Hypotheses

As such, the relevant hypotheses were:

Null Hypothesis: There *is no* difference in Indicator X between the three categories of local authority areas after Health and Social Care Partnership integration.

Alternative Hypothesis: There *are* differences in Indicator X between the three categories of local authority areas after Health and Social Care Partnership integration.

Due to the lack of prior information for these indicators, however, it would not be possible to explicitly determine that any changes found had arisen as a result of integration for these indicators.

Overview of the analysis process

Figure 4 provides an overview of the analysis process that was conducted on the data. For each indicator, we conducted a trend analysis before the data was then analysed to explore any impacts of structural integration. The latter analysis of integration required two separate multilevel models to be fitted and compared for each indicator, with the models that were used differing slightly dependent on whether or not data was available prior to integration for the indicator in question.

For indicators with data available prior to integration, the models were used to determine whether any pre-existing differences between the three categories of local authority areas had changed after integration had taken place. For indicators with only post-integration data available, the models were used simply to determine whether there were differences between the three categories of local authority areas in the post-integration period.

For each indicator, comparison of the two relevant multilevel models led to a p -value representing the strength of association between the level of structural integration adopted and changes in the indicator after integration. As is common statistical practice when testing many hypotheses (in this case, by conducting a test on many indicators), these p -values were adjusted for 'multiple comparisons' to minimise the likelihood of finding a significant effect by chance alone. After adjustment, p -values lower than the traditional statistical threshold of $p = 0.05$ were taken to indicate that there was evidence of a significant association.

Further detail on the issue of multiple comparisons and how it was approached can be found in the Technical Report published alongside this document. The Technical Report also contains a full description of the specific models referred to in Figure 4, alongside a graphical representation of each model.

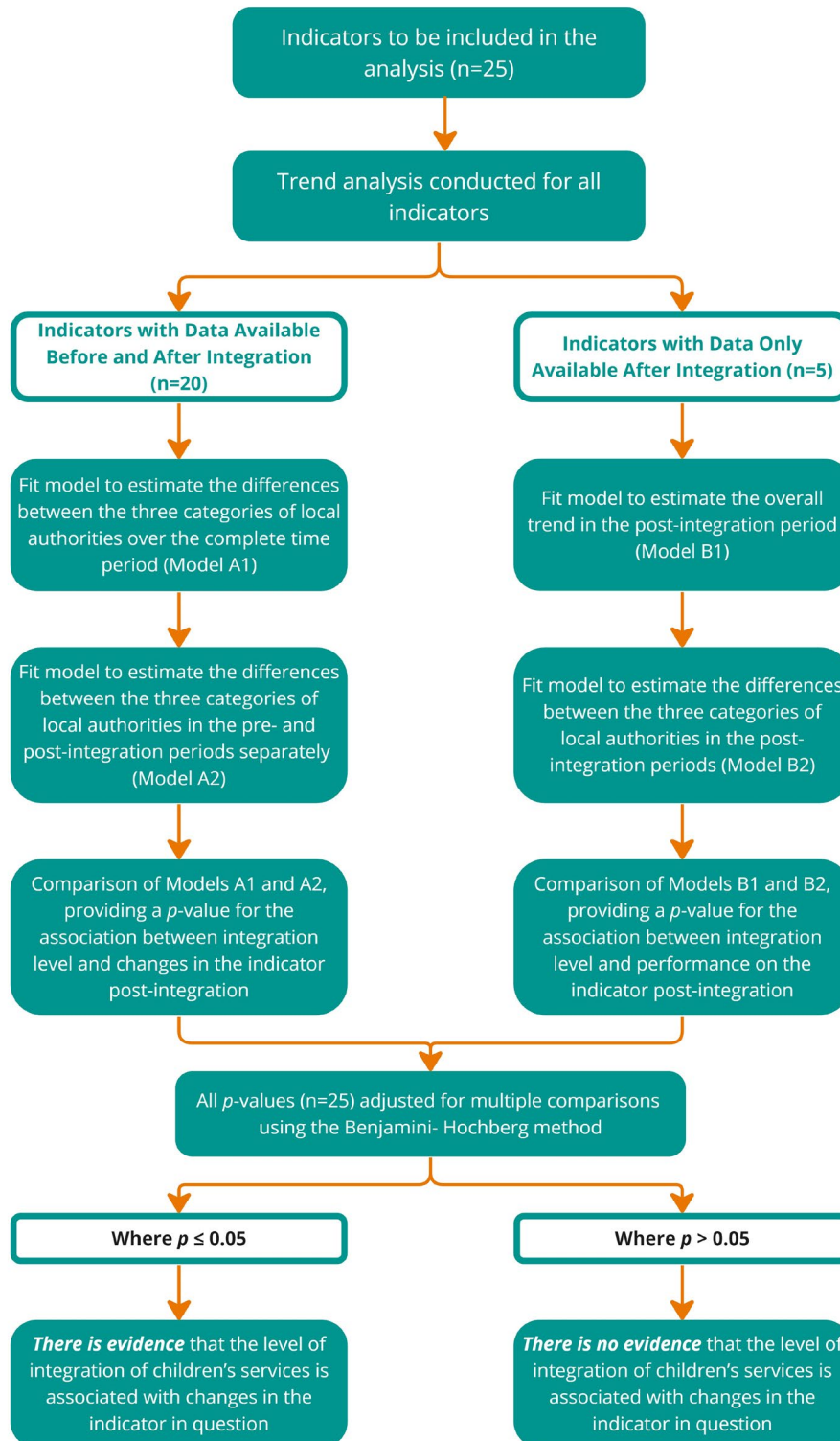


Figure 4. Flowchart illustrating the analysis process for all 25 indicators. More detail on all models named in the flowchart can be found in the accompanying Technical Report.

An alternative approach to integration: Highland

The Highland local authority area is different to other areas in the context of this research ([Background](#)). This is for two key reasons:

1. The Highland Council and NHS Highland health board established a lead agency Partnership Agreement in 2012, so their integration model was in place well before the other 31 local authority areas created Health and Social Care Partnerships in 2015/16. This means that, given the chosen time period for this study, there is at most one or two years of pre-integration data available for Highland for any given indicator, and there can be up to nine years of post-integration data (as opposed to five/six years both pre- and post-integration for the remaining local authority areas).
2. Public services in the Highland area decided to adopt a different approach to Health and Social Care Partnership integration. As a result, this area does not fit neatly into our categorisation by the extent of delegation of children's health and social care services. After discussion with Highland HSCP, it was agreed that this area would most suitably be placed in the Partial structural integration category for this study.

Due to these substantial differences for the Highland area, the analysis process described in Figure 4 was carried out twice – once with data for all local authority areas included, and once with data from Highland excluded from the analysis. This was done in order to confirm that data from this local authority was not having an undue effect on the statistical models and the results derived from them. Results for both analyses (that is, including and excluding data from the Highland local authority area) are provided within the [Results](#) section of this report.

Results

Trend analysis

Table 4 provides a description of the trend seen in each of the 25 indicators throughout the period for which data was available. Figures for the national average have been calculated through compilation of local authority data and may not exactly match nationally published values, due to revisions by data owners over time and the presence of small proportions of missing and/or suppressed data. In order to standardise the visual description of the trend, the y-axis on each plot within the table is scaled to reflect the level of variation in the indicator data (by scaling to one standard deviation above/below the mean value of the indicator, or the range of the national average in the few instances where this is larger).

The *p*-values provided in Table 4 illustrate the strength of evidence for there being changes in the indicator over time, with the conventional threshold of $p < 0.05$ being utilised to determine statistical significance. Values lower than this threshold of 0.05 suggest that a significant change has occurred in the indicator values over the period studied, and these have been denoted in bold in Table 4. As can be seen in the table, there have been statistically significant changes in most of our indicators (22 of 25) over the time period for which data was available.

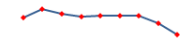
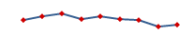
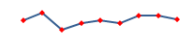
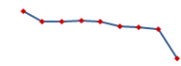
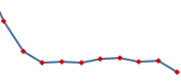
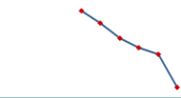
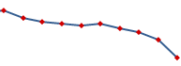
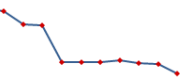
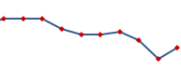
For some indicators the rate of change has been fairly constant, while for others there have been periods of rapid change alongside periods of relative stability. There will be many factors driving these changes, both at a local and national level. Inspection of these trends therefore illustrates the complexity that is encountered in determining the effects of individual factors, such as integration, on these indicators.



KEY FINDING

Our trend analysis found that the vast majority of indicators explored had undergone significant changes during the period studied. The trend analysis did not include any data on integration or other contextual factors, and purely focused on change in the indicators over time. Our findings show that the values for 22 of our 25 indicators had been largely increasing or largely decreasing over time.

When considering the trends seen in Table 4, it is important to note that there is difficulty in defining what a 'positive' direction of change would be for many of these indicators. While for some indicators (for example, the number of 'looked after' school leavers with qualifications at SCQF 4) an increase would wholly be considered a positive change, for other indicators there is less clarity. For example, an increase in referrals to the Children's Reporter on care and protection grounds could indicate that there are higher numbers of children who are at risk of harm, or alternatively it could mean that

there are improved processes in place for detecting the risk that exists. As such, for indicators where a change has been detected in the indicator over time, the direction of travel has been defined in Table 4 simply as 'increasing' or 'decreasing', as opposed to 'positive' or 'negative'.

Indicator	Years available	Mean (SD)	Value in Initial Year	National Average	Value in Most Recent Year	95% C.I. for trend ¹	p-value	Direction of Trend
CHILD PROTECTION								
Child protection registrations (including pre-birth)	9 (2013-2021)	40.5 (16.7)	41.0		33.7	(-0.02, 0.00) ^a	.093	-
Child protection de-registrations	9 (2013-2021)	40.8 (16.9)	40.9		38.9	(-0.01, 0.01) ^a	.747	-
Pre-birth, initial and transfer-in case conferences to registration conversion rate (0-15 years)	9 (2013-2021)	77.3 (13.9)	75.9		76.2	(0.00, 0.02) ^b	.018	↑
Hearings arranged for children for non-offence grounds	9 (2013-2021)	39.2 (17.3)	44.3		23.0	(-0.05, -0.03) ^a	<.001	↓
YOUTH JUSTICE								
Children referred to Children's Reporter on offence grounds	11 (2011-2021)	35.8 (22.7)	75.6		21.7	(-0.10, -0.08) ^a	<.001	↓
Children and young people aged 12 to 20 proceeded against	6 (2016-2021)	59.2 (26.7)	88.8		28.1	(-0.22, -0.17) ^a	<.001	↓
LOOKED AFTER CHILDREN								
Children starting to become looked after	11 (2011-2021)	40.0 (15.9)	45.4		26.7	(-0.04, -0.02) ^a	<.001	↓
Children starting to be looked after at home as proportion of all children becoming looked after	11 (2011-2021)	33.4 (13.2)	43.6		21.6	(-0.09, -0.08) ^b	<.001	↓
Children ceasing to be looked after (0-15 years)	12 (2010-2021)	34.3 (14.0)	33.3		27.2	(-0.03, -0.02) ^a	<.001	↓

Children aged 0-15 leaving care to return home	12 (2010-2021)	71.3 (13.2)	70.5		68.1	(-0.04, -0.02) ^b	<.001	↓
Children with 3+ placements in last 12 months	12 (2010-2021)	6.6 (5.8)	6.9		3.8	(-0.05, -0.04) ^b	<.001	↓
School attendance for looked after children	4 ² (2015-2021)	87.0 (2.8)	85.3		87.9	(0.00, 0.01) ^a	<.001	↑
Looked after school leavers with 1+ qualifications as SCQF level 4	11 (2011-2021)	69.9 (15.2)	54.5		71.0	(0.05, 0.08) ^b	<.001	↑
Looked after school leavers with a positive follow-up destination	11 (2011-2021)	69.3 (15.0)	54.3		71.3	(0.05, 0.08) ^b	<.001	↑
EDUCATION AND EMPLOYABILITY								
Unauthorised absence rates of primary school pupils	6 ² (2012-2021)	1.3 (0.6)	1.2		1.9	(0.02, 0.04) ^a	<.001	↑
Unauthorised absence rates of secondary school pupils	6 ² (2012-2021)	3.1 (1.4)	2.7		4.6	(0.04, 0.06) ^a	<.001	↑
16-19 year olds not in education, training or employment	6 (2016-2021)	3.2 (1.3)	4.0		3.2	(-0.07, -0.06) ^b	<.001	↓
HEALTH								
Teenage pregnancy rate (<18)	10 (2010-2019)	221.2 (90.4)	341.1		151.3	(-0.10, -0.09) ^a	<.001	↓
27-30 month old children reviewed by health visitors	8 (2014-2021)	89.9 (5.2)	87.0		90.8	(0.06, 0.07) ^b	<.001	↑
27-30 month old children with a developmental concern	8 (2014-2021)	16.6 (5.6)	19.2		14.9	(-0.83, -0.82) ^c	<.001	↓
Primary 1 children overweight or obese	9 (2011-2019)	22.6 (3.0)	21.5		22.4	(0.01, 0.01) ^b	<.001	↑

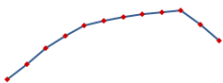
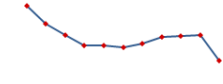
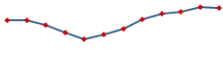
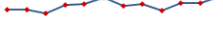
Children (0-17 years) registered with an NHS dentist	12 (2010-2021)	88.1 (6.1)	79.2		86.9	(0.82, 0.83) ^c	<.001	↑
HOUSING								
Children associated with applications assessed as homeless or threatened with homelessness	11 (2011-2021)	137.2 (59.2)	204.3		115.2	(-0.03, -0.01) ^a	<.001	↓
Children in temporary accommodation	12 (2010-2021)	45.8 (36.3)	58.4		69.6	(-0.02, 0.01) ^a	0.314	-
WORKFORCE								
Whole-time equivalent rates for social workers in fieldwork services for children	12 (2010-2021)	244.3 (76.1)	233.7		258.2	(0.00, 0.01) ^a	<.001	↑

Table 4. A description of the trend seen in each of our 25 indicators of interest, including the years that data was available for.

¹Data was modelled by means of: (a) Negative binomial generalised linear mixed models, (b) Binomial generalised linear mixed models, (c) linear mixed models (weighted by population size). The most appropriate model was selected for each indicator based on the type of data to be modelled and the goodness-of-fit of the model. The model used for each indicator is shown next to the confidence interval for the model coefficient in this table. For indicators marked (a) and (b) the coefficient cannot be interpreted as the annual change in the value of the indicator as it is on a different scale to the raw data, however negative values do reflect a decrease in the indicator over time while positive values reflect an increase.

² Data only published every two years.

The results of our trend analysis highlight ongoing changes across many outcomes for children, young people, families and the workforce. These changes include:

- **Youth Justice:** There has been a reduction in the number of children involved in youth justice processes over the period studied, with fewer children referred to the Children's Reporter on offence grounds and fewer children and young people aged 12 to 20 having a criminal case brought against them.
- **'Looked After' Children:** There has been a reduction in the number of children starting to be 'looked after', and a smaller proportion of children and young people are 'looked after at home' than in previous years. There are also fewer children experiencing high levels of placement instability (defined as three or more placements in a year) than in previous years. Educational outcomes for 'looked after' children have also been broadly improving – in terms of attendance, qualifications and positive destinations beyond school.
- **Education and Employment:** In terms of educational outcomes across Scotland's population of young people as a whole, there have been statistically significant increases in the percentage of unauthorised absences of both primary and secondary pupils, however the percentage of young people aged 16-19 who are not in education, training or employment has decreased.
- **Health:** There have been many changes that would largely be seen as positive within the included health indicators, such as a reduction in the teenage pregnancy rate, an increase in the percentage of children registered with an NHS dentist, and a decrease in the percentage of young children (27-30 months) with a developmental concern identified by their health visitor. Health visitors have also reached an increasing percentage of children for their 27-30 month-old visits over the period analysed. That said, there are causes for concern in terms of children's health too, with a statistically significant increase in the number of Primary 1 children who are classed as overweight or obese.
- **Workforce:** In terms of the workforce, there was evidence of an upwards trend in the one workforce indicator that was viable for inclusion in the study – namely the whole-time equivalent rate of social workers in fieldwork services for children per 100,000.

It should be noted that, for almost all indicators, the most recent year of available data was recorded during the COVID-19 pandemic. Further exploration in our research found that the pandemic and its associated public health restrictions had a substantial impact on many outcomes for children, young people and families. As such, it would be of great interest to revisit this trend analysis when data for future years becomes available in order to determine the longevity of this impact.

Assessing the impact of structural integration on outcomes

After the initial exploration of trends, our analysis was extended to explore whether there was a significant association between the level of structural integration of children's services and any changes in our 25 indicators.

Indicators with data available both prior to and after integration

For each indicator with data available both prior to and after integration, Table 5 shows the p -values derived from a model comparison of two multilevel models, which we have referred to as Model A1 and Model A2. These models are described briefly in the flowchart of Figure 4, however full details of each model (including a graphical representation) can be found in the accompanying Technical Report.

The comparison of these two models provides us with a p -value that can be used to determine whether the relationship between the three categories of local authority areas changed significantly in the post-integration period. The significance of an association was determined using a threshold of $p = 0.05$, as is the standard convention in statistics, with values lower than this threshold suggesting a significant association between the level of structural integration of children's services and changes in the indicator post-integration³. Due to the number of indicators being assessed, p -values were adjusted for multiple comparisons using the Benjamini-Hochberg method. Further details on this process can be found in the accompanying Technical Report.

Due to the different approach to integration within the Highland local authority area ([An alternative approach to integration: Highland](#)) all indicators were analysed twice – once with data from the Highland local authority area included and once with this data excluded. This was done to ensure that the substantial differences in the approach to integration within this area were not having an undue effect on the results of our statistical models. As such, there are two columns of p -values in Table 5 detailing the results for each indicator both with and without the inclusion of data from the Highland local authority area.

Table 5 shows that the p -value was only lower than this threshold of 0.05 for three indicators: the conversion rate of pre-birth, initial and transfer-in case conferences to child protection registrations; the percentage of children who have experienced three or more placements within a given year; and the percentage of Primary 1 children who are overweight or obese. These p -values are marked in bold in Table 5. As can be seen in the table, the exclusion of data from the Highland local authority did not alter the findings for any indicator. That is, the exclusion of this data did not alter whether or not the p -value provided evidence for a significant association.

Table 5 also illustrates the additional contextual factors that were found to be associated with changes in each indicator. Further details of our findings regarding these contextual factors can be found within [Assessing the impact of other contextual factors](#).

³ More specifically, a p -value < 0.05 indicates that there is a less than 5% chance of seeing the observed data if there was in fact no real effect of integration (that is, if the null hypothesis was true).

KEY FINDING

For 17 of the 20 indicators with data available prior to integration, there is no evidence of an association between the level of structural integration of children's services and changes in performance of local authority areas on the indicator after integration.

For the three indicators that were found to have an association between the level of integration and changes in the indicator after integration, the changes were found to be small in scale and do not paint a clear picture of the potential impact of integration. Detailed results for each of these indicators can be found within '[Interpretation of statistically significant results](#)'.

Indicator	Measure	<i>p</i> -value for the association between the level of integration and changes in the indicator post-integration		Contextual factors found to be associated with the indicator*
		(All local authority areas)	(Highland excluded)	
CHILD PROTECTION				
Child protection registrations (including pre-birth)	Rate per 10,000	.939	.956	COVID-19 [↓] , Deprivation [↑] , Population Density [↓]
Child protection de-registrations	Rate per 10,000	.454	.516	Deprivation [↑]
Pre-birth, initial and transfer-in case conferences to registration conversion rate (0-15 years)	%	.010	.005	COVID-19 [↓] , Population Density [↓]
Hearings arranged for children for non-offence grounds	Rate per 10,000	.257	.333	COVID-19 [↓] , Deprivation [↑] , Population Density [↓]
YOUTH JUSTICE				
Children referred to Children's Reporter on offence grounds	Rate per 10,000	.279	.361	COVID-19 [↓]
LOOKED AFTER CHILDREN				
Children starting to become looked after	Rate per 10,000	.461	.476	COVID-19 [↓] , Deprivation [↑]
Children starting to be looked after at home as proportion of all children becoming looked after	%	.852	.972	COVID-19 [↓]
Children ceasing to be looked after (0-15 years)	Rate per 10,000	.257	.333	Deprivation [↑]
Children aged 0-15 leaving care to return home	%	.257	.361	Deprivation [↑] , Population Density [↓]
Children with 3+ placements in last 12 months	%	.010	.005	COVID-19 [↓]

Looked after school leavers with 1+ qualifications as SCQF level 4	%	.883	.572	Deprivation [↓]
Looked after school leavers with a positive follow-up destination	%	.852	.787	Deprivation [↓] , Population Density [↑]
EDUCATION AND EMPLOYABILITY				
Unauthorised absence rates of primary school pupils	% of half-days	.461	.517	COVID-19 [↓] , Deprivation [↑]
Unauthorised absence rates of secondary school pupils	% of half-days	.131	.118	Deprivation [↑]
HEALTH				
Teenage pregnancy rate (<18)	Rate per 10,000	.317	.361	Deprivation [↑] , Population Density [↑]
Primary 1 children overweight or obese	%	.015	.005	-
Children (0-17 years) registered with an NHS dentist	%	.126	.118	COVID-19 [↓]
HOUSING				
Children associated with applications assessed as homeless or threatened with homelessness	Rate per 10,000	.126	.118	COVID-19 [↓]
Children in temporary accommodation	Rate per 10,000	.852	.956	Deprivation [↓] , Population Density [↑]
WORKFORCE				
Whole-time equivalent rates for social workers in fieldwork services for children	Rate per 100,000	.979	.880	Deprivation [↑]

Table 5. Association of the level of structural integration (plus other contextual factors) with each indicator, for indicators with data available both pre- and post-integration.

Lower values seen in the indicator during COVID-19, [↑] An increase in the contextual variable was associated with an increase in the value of the indicator,

[↓] An increase in the contextual variable was associated with a decrease in the value of the indicator.

Indicators with data only available after integration

For five of the 25 indicators included within our study, data was only available after the integration of services into Health and Social Care Partnerships (HSCPs). As such, our approach to the analysis of these indicators had to be modified. As with the previous indicators for which both pre- and post-integration data was available, the approach required the comparison of two multilevel models – this time denoted by the names Model B1 and Model B2. A brief description of each model is given in the flowchart of [Figure 4](#), while further detail on each model is provided in the accompanying Technical Report.

Table 6 shows the p -values derived from a model comparison of Model B1 vs Model B2 for each of these indicators. This comparison determines whether there were significant differences between the three categories of local authority areas in the post-integration period in terms of their performance on the given indicator. As was the case in Table 5, p -values were adjusted for multiple comparisons using the Benjamini-Hochberg method, further details on which can be found in the accompanying Technical Report.

The conventional threshold of $p = 0.05$ was again used to assess significance, with values lower than this threshold suggesting a significant association between the levels of structural integration and differences in the indicator post-integration. As can be seen in Table 6, no p -values were found to be lower than this threshold.

KEY FINDING

Across all five indicators where only post-integration data was available, there is no evidence of an association between the level of structural integration of children's services within a local authority area and the performance of these services after integration.

Table 6 also includes information on the contextual factors that were found to be associated with changes in each indicator. Further details of our findings regarding these contextual factors can be found within [Assessing the impact of other contextual factors](#).

Indicator	Measure	p-value for the association between the level of integration and performance on the indicator		Contextual factors found to be associated with the indicator*
		(all local authority areas)	(Highland excluded)	
YOUTH JUSTICE				
Children and young people aged 12 to 20 proceeded against	Rate per 10,000	.063	.050	COVID-19 [↓] , Deprivation [↑]
LOOKED AFTER CHILDREN				
School attendance for looked after children	%	.301	.778	-
EDUCATION AND EMPLOYABILITY				
16-19 year olds not in education, training or employment	%	.257	.361	COVID-19 [↑] , Deprivation [↑] , Population Density [↑]
HEALTH				
27-30 month old children reviewed by health visitors	%	.900	.972	COVID-19 [↓] , Population Density [↑]
27-30 month old children with a developmental concern	%	.588	.626	COVID-19 [↑] , Deprivation [↑]

Table 6. Association of the level of structural integration (and other contextual factors) with each indicator, for indicators with data only available post-integration.

[↓]Lower values seen in the indicator during COVID-19, [↑]Higher values seen in the indicator during COVID-19, [↑]An increase in the contextual variable was associated with an increase in the value of the indicator.

Interpretation of statistically significant results

The level of structural integration of children's services was only found to be associated with changes in three of our 25 indicators of interest:

- the conversion rate of pre-birth, initial and transfer-in case conferences to child protection registrations;
- the percentage of 'looked after' children (aged 0-17) who had experienced three or more placements in last 12 months; and
- the percentage of Primary 1 children who are overweight or obese.

To explore these findings further, the changes taking place in each of these three indicators were assessed through investigation of Model A2 (a description of which is provided in [Figure 4](#)).

Conversion rate from child protection conferences to registration

Figure 5 illustrates the estimated trends from Model A2 for each category of local authority areas for the indicator representing the conversion rate of case conferences (pre-birth, initial and transfer-in) to child protection registrations. The dashed lines in Figure 5 represent the raw data for each local authority area, with areas in the Full, Partial and No structural integration categories shown in orange, green and purple respectively. The thicker solid lines represent the estimated trend for each category of local authority areas in both the pre-integration and post-integration periods separately. Pre- and post-integration trends have been plotted to and from 2016 as this was the year in which most local authority areas (22 of 32) formed their HSCPs. Trends were calculated, however, using each local authority area's specific year of integration (Table 10 in [Appendix 1](#)).

Figure 5 illustrates that the local authority areas within our No structural integration category collectively had a higher conversion rate of case conferences to child protection registrations both prior to and after integration than those areas in the Partial and Full structural integration categories. The most notable change after integration is an increase in the conversion rate of pre-birth, initial and transfer-in case conferences to child protection registrations for the Partial structural integration category.

Conversion rate: Child protection registrations as a percentage of case conferences held

Model A2 - Group effect can differ pre- vs post-integration

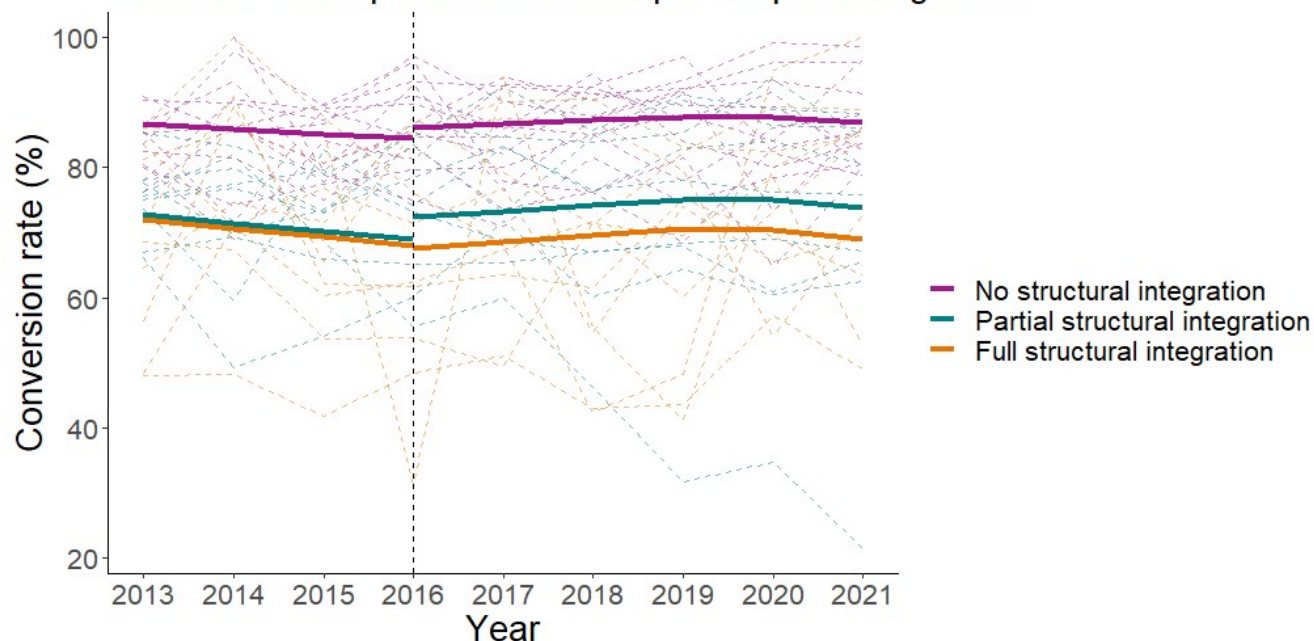


Figure 5. The conversion rate of pre-birth, initial and transfer-in case conferences to child protection registrations (for 0-15 year olds). The raw data for this indicator (depicted by dashed lines) is shown alongside the trends estimated from Model A2 (depicted by solid lines) for local authority areas within each of the three categories of integration.

To further assess the changes that had taken place after integration, the 'average' percentage value was calculated for local authority areas with Full, Partial and No structural integration for the pre- and post-integration periods separately. This information is presented in Table 7. The word 'average' here refers to the estimated marginal mean, which can be thought of as the mean value for each group of local authority areas when all other variables (for example, deprivation and population density) are held constant. Further details on estimated marginal means can be found in the accompanying Technical Report.

	'Average' conversion rate of case conferences to child protection registrations		
	Before Integration	After Integration	Change
Local authorities with Full structural integration	65.8%	67.7%	+1.9%
Local authorities with Partial structural integration	66.7%	72.5%	+5.8%
Local authorities with No structural integration	83.0%	86.3%	+3.3%

Table 7. The 'average' value for the child protection conversation rate indicator before and after Health and Social Care Partnership integration, for local authority areas with Full, Partial and No structural integration in

the periods. The values shown are the estimated marginal means, details of which are provided in the accompanying Technical Report. Due to rounding, the 'Change' column may not sum exactly to the difference between the before and after integration columns.

The 'average' values seen in Table 7 show an increase in the conversion rate across all three categories of integration, with the increase being largest in scale for the Partial structural integration category. A higher conversion rate is generally considered to reflect accurate identification of the need for care and protection, with, therefore, a lower rate for the number of children and families who might be unnecessarily drawn into further statutory processes when child protection support is not what they require. (Pinnock, 2011). As the increases in conversion rate do not get consistently larger as the levels of structural integration increase, it cannot be inferred that higher levels of structural integration are associated with larger increases in the conversion rate of case conferences to child protection registrations. Conversely, as the increases are not consistently smaller as the levels of structural integration increase, it cannot be inferred that higher levels of structural integration are associated with smaller increases in the conversion rate. As such, the results seen do not lead to an easy interpretation in terms of the potential impact of structural integration on this indicator.

Placement stability for 'looked after' children

Figure 6 illustrates the estimated trends from Model A2 for each category of local authority areas for the indicator representing placement stability for 'looked after' children. In order to more easily examine the trends, the y-axis of Figure 6 has been cropped at twenty percent. As such, a small number of data points are not visible for one local authority area that showed particularly high values for this indicator.

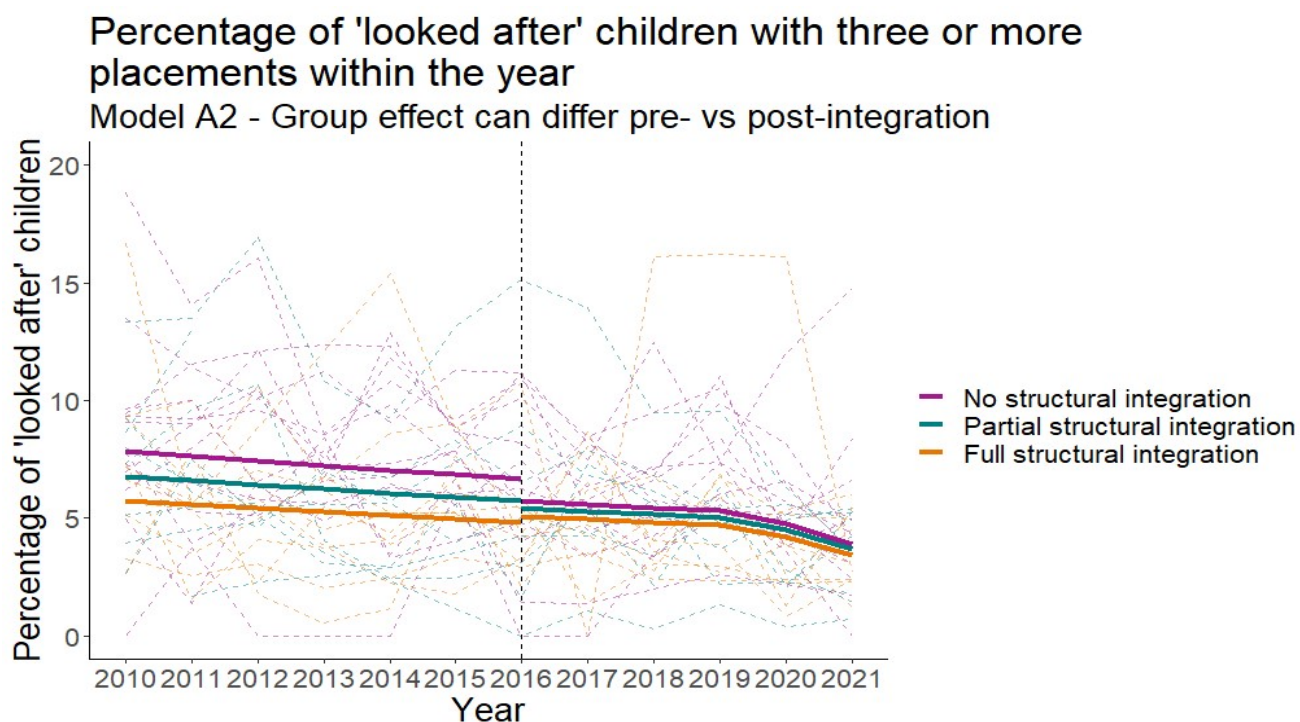


Figure 6. A plot of the raw data (depicted by dashed lines) for the placement stability indicator, shown alongside the trends estimated from Model A2 (depicted by solid lines) for local authority areas within each of the three categories of integration.

The plotted model estimates suggest that, while local authority areas that went on to become fully structurally integrated had a lower percentage of young people with three or more placements in the period prior to integration, the differences between the three categories of local authority areas became slightly smaller after integration.

The 'average' (that is, estimated marginal mean) value was calculated for each category of local authority areas in the periods both prior to and after their integration. Table 8 displays these 'averages' and illustrates a very small increase (0.2 percentage points) in the percentage of children experiencing high levels of placement instability in areas with Full structural integration, alongside small decreases (0.4 and 1.0 percentage points) in areas with Partial and No structural integration respectively. Therefore, while the differences between the three categories were found to be significantly different after integration, the changes themselves were not large in scale.

'Average' percentage of 'looked after' children experiencing 3 or more placements within the year			
	Before Integration	After Integration	Change
Local authorities with Full structural integration	5.3%	5.5%	+0.2%
Local authorities with Partial structural integration	6.2%	5.9%	-0.4%
Local authorities with No structural integration	7.2%	6.2%	-1.0%

Table 8. The 'average' value for the placement stability indicator in the periods before and after Health and Social Care Partnership integration, for local authority areas with Full, Partial and No structural integration. The values shown are the estimated marginal means, details of which are provided in the accompanying Technical Report. Due to rounding, the 'Change' column may not sum exactly to the difference between the before and after integration columns.

Percentage of Primary 1 children who are overweight or obese

Figure 7 illustrates the estimated trends from Model A2 for each category of local authority areas for the indicator representing the percentage of Primary 1 children who are overweight or obese. The figure illustrates that the differences between the three categories lessened after Health and Social Care partnership integration, with a small decrease in the percentage of children who are overweight or obese in areas with Full structural integration and No structural integration, and a small increase in areas with Partial structural integration.

The 'averages' (that is, estimated marginal means) for each category of local authority areas were again calculated for the periods prior to and after integration separately. These 'averages' are presented in Table 9, where the small scale of these changes can be clearly seen. The 'averages' for the Full and No structural integration categories decreased by 0.6 and 0.2 percentage points respectively, while the Partial integration category had an estimated increase of 0.7 percentage points. As such, these changes are

small and do not show a consistent pattern in terms of the effect of increasing levels of structural integration.

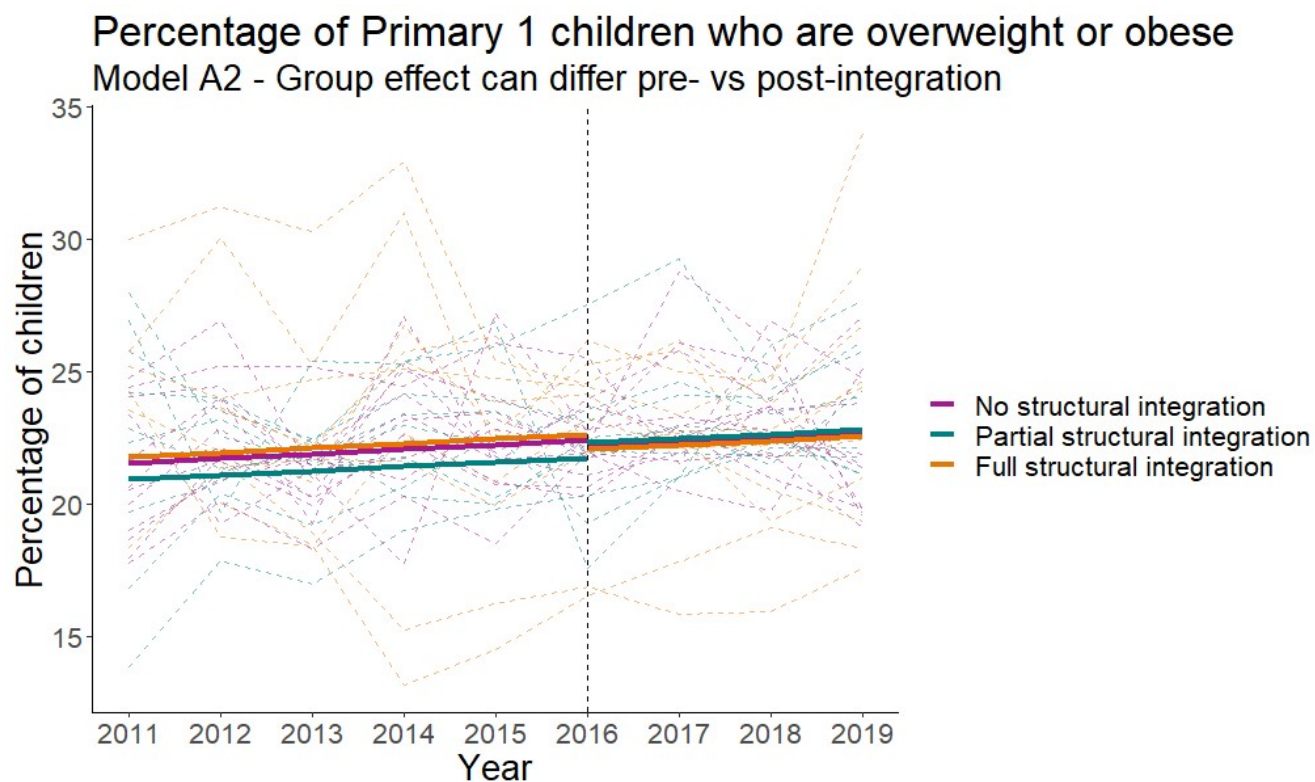


Figure 7. The percentage of Primary 1 children who are overweight or obese. The raw data for this indicator (depicted by dashed lines) is shown alongside the trends estimated from Model A2 (depicted by solid lines) for local authority areas within each of the three categories of integration.

'Average' percentage of Primary 1 children who are overweight or obese			
	Before Integration	After Integration	Change
Local authorities with Full structural integration	23.5%	22.9%	-0.6%
Local authorities with Partial structural integration	22.5%	23.2%	+0.7%
Local authorities with No structural integration	23.2%	23.0%	-0.2%

Table 9. The 'average' value for the percentage of children who are overweight or obese before and after Health and Social Care Partnership integration, for local authority areas with Full, Partial and No structural integration in the periods. The values shown are the estimated marginal means, details of which are provided in the accompanying Technical Report. Due to rounding, the 'Change' column may not sum exactly to the difference between the before and after integration columns.

KEY FINDING

After integration, the level of structural integration was only associated with changes in three of the 25 indicators studied. While the changes in these indicators were statistically significant, the changes themselves were very small in scale for two of the three indicators (placement stability of 'looked after children' and the percentage of Primary 1 children who are overweight or obese) and did not paint a clear picture regarding the potential impacts of integration for two of the three indicators (the conversion rate of case conferences to child protection registrations and the percentage of Primary 1 children who are overweight or obese). As such, our conclusion is that there is no consistent evidence of an association between the structural integration of children's services and outcomes for children, young people and families.

Assessing the impact of other contextual factors

Information on several 'contextual factors' was included within our statistical models ([Adjusting for contextual factors](#)). These were factors that we understood or expected may have an impact on many of the indicators of interest. These specific contextual factors included the level of deprivation and the population density of a local authority area; whether a local authority area had a coterminous health board (that is, the local authority and health board had the same boundary); and whether a particular measurement for the indicator was recorded during the COVID-19 pandemic. Adjusting for these contextual factors was important to increase confidence that any effects that were found could be directly attributable to integration as opposed to other wider changes taking place.

The final columns in Tables 5 and 6 present the contextual factors that were found to be significantly associated with changes in each of the indicators, while Figure 8 summarises the number of indicators that each of the contextual factors was found to be associated with. The significance of an association was determined based on the conventional threshold of $p = 0.05$, using Model A2 for indicators with data available prior to and after integration and Model B2 for indicators with data only available after integration. For both types of indicators, the significance of contextual factors was assessed with data from all local authority areas included (that is, including data from Highland HSCP). Throughout the modelling process, all explanatory variables were retained in the model regardless of their associated p -value.

Number of indicators where change was associated with:

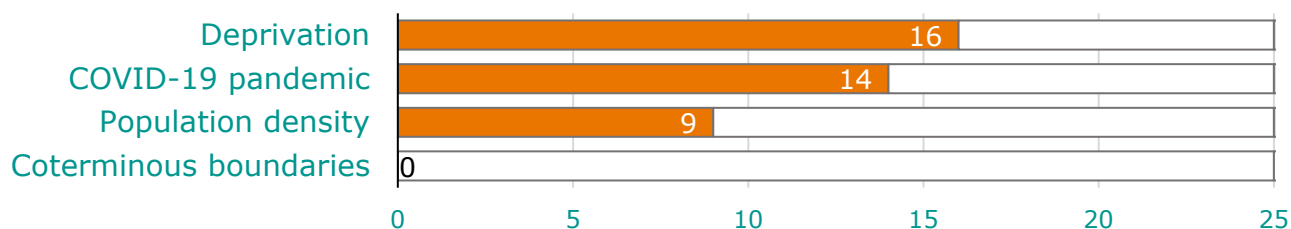


Figure 8. The numbers of indicators that were associated with each contextual factor included in our analysis.

KEY FINDING

Deprivation was found to be significantly associated with change in 16 of the 25 indicators in our study. The effects of the COVID-19 pandemic and public health restrictions were also associated with change in 14 indicators, and population density was associated with change in 9 of the indicators. Whether or not a local authority shared a boundary with a health board was not associated with change in any of the indicators.

An upwards arrow beside a contextual factor in Tables 5 and 6 denotes that an increase in that factor was related with an increase in the value of the indicator. (For example, higher levels of population density were associated with an increase in the teenage pregnancy rate.) Conversely, a downwards arrow denotes that an increase in the contextual factor was associated with a decrease in the value of the indicator. (For example, higher levels of deprivation were related to a smaller proportion of 'looked after' school leavers with positive follow-up destinations.)

For the COVID-19 pandemic contextual factor, an upwards arrow denotes that values for the indicator were generally after the onset of the pandemic, while a downwards arrow denotes the opposite.

Perhaps unsurprisingly, our analysis showed that the onset of the COVID-19 pandemic had a significant association with changes in many outcomes for children needing support. These changes included a reduction in child protection activity (registrations and Children's Hearings) and a reduction in the number of children who started to become 'looked after'. There were also fewer children and young people being referred to the Children's Reporter on offence grounds throughout the pandemic and a decrease in the number of 12-20 year olds involved in youth justice proceedings. The analysis also showed that Health Visitors identified developmental concerns for an increased proportion of 27-30 month old children after the onset of the pandemic. It was additionally found that there was a decrease in the percentage of children and young people registered with an NHS dentist at this time, the proportion of young people (16-

19) who were not in education, training or employment increased, and the number of children associated with applications assessed as homeless or threatened with homelessness fell.

It was found that both population density and the level of deprivation of local authority areas were related to outcomes across many of the indicators we examined. The analysis showed that more deprived areas had, amongst other findings, higher levels of child protection activity; higher absence rates for school pupils; a higher proportion of young people who were not in education, training or employment; and a higher percentage of 27-30 month olds with developmental concerns recorded. Increases in population density were found to be associated with changes in many outcomes, including higher rates of children in temporary accommodation and an increase in the percentage of children that were reached by health visitors for their 27-30 month old review.

While deprivation and population density are somewhat correlated (our Technical Report has more on this) they appeared to have opposing effects on many of the indicators in our analysis. For example, there were a higher number of child protection registrations in more deprived areas, however more densely populated areas had lower values on average for this indicator than less densely populated areas after accounting for deprivation and all other factors in the model. While further exploration of this would be of interest, this is beyond the scope of this research study.

There was not found to be a relationship between children's outcomes and whether local authorities shared a boundary with a health board in any instances.

No contextual factors were found to be associated with changes in the 'percentage attendance of looked after school children' indicator, however this could potentially be attributed to a smaller sample size as only four years of data were available for this indicator.

Discussion

Our statistical analysis of structural integration and the available data on outcomes for children, young people, families and the workforce, is the third strand of work within the Children's Services Reform Research study. The findings of this strand are a further contribution to our understanding of the overarching research question 'What is needed to ensure that children, young people and families receive the support they need when they need it?'.

The specific focus of this strand has been to address the research question:

Is the level of structural integration of children's health and social care services associated with changes in outcomes for children, young people, families, and the workforce?

To help us answer this question, we:

1. identified and collated information on a breadth of outcome indicators; and
2. developed a typology to describe the level of structural integration of children's services within local authority areas.

Statistical techniques were then applied to determine whether there is evidence of a relationship between the structural arrangements that are in place for children's services and the outcomes that are experienced by children, young people and families.

Our discussion presents the key pieces of learning from this research and highlights where these contribute to a greater understanding of the overarching research study's question. Additionally, we discuss the limitations of the approach taken within this strand of the research and how these limitations impact upon the conclusions that we can draw. The findings from this strand of the research build upon learning from the Rapid Evidence Review (Porter et al., 2023) and Case Studies of Transformational Change Programmes (McTier et al., 2023) that have been conducted as part of the Children's Services Reform Research study and provide another piece of the story. Findings from all four strands of the work will be synthesised into a final report that will seek to provide a better understanding of what is needed to ensure that children, young people and families receive the support they need when they need it.

There is no consistent evidence of an association between structural integration and outcomes

For twenty-two of the twenty-five indicators studied, our analysis found no statistically significant association between the level of structural integration of children's services in Scotland and changes in the indicator after HSCP integration.

Only three indicators (namely the conversion rate of case conferences to child protection registrations, placement stability in the last year for children and young people in care, and the percentage of Primary 1 children who are overweight or obese) were found to have statistically significant associations with the level of structural integration.

However, the changes that had occurred in these three indicators after integration were found to be very small in scale for two of the three indicators, and did not paint a clear

picture regarding the potential impacts of increasing levels of structural integration on the indicator for two of the three indicators. ([Interpretation of statistically significant results](#)).

As such, our conclusion from this analysis is that there is no consistent evidence of a change in children's outcomes as a result of the structural integration of children's services into HSCPs.

While not connected to the structural integration of services, outcomes are changing for children, young people and families

Although we did not find evidence of a link between structural integration and outcomes, our trend analysis showed that changes *are* taking place in the outcomes of children, young people and families. Our analysis showed statistically significant changes for the majority (22 of 25) of the indicators in the analysis model over the time period studied (2010-2021 where data was available). While there can be complexity in determining what is a positive direction of travel for many of these indicators, what is clear is that there are changes taking place and many factors that are influencing this. This study has sought to determine which (if any) of the changes in children's outcomes can be attributed to the structural integration of children's services within Health and Social Care Partnerships (HSCPs), however our findings suggest that further exploration of the factors influencing these changes is needed.

Context matters: deprivation, population density and the COVID-19 pandemic have all had an impact on the lives and health and social care needs of children and families

Within our statistical models, we also included information about other factors that we believed would or could be having an impact on children's outcomes. These were specifically identified as deprivation, population density, the effects of the COVID-19 pandemic and associated public health restrictions, and whether the local authority had a coterminous health board (that is, whether the local authority and health board had the same boundary).

The inclusion of this information allowed the statistical model to adjust for these contextual factors and separate out the effect of each contextual factor from the effect of the level of structural integration of children's services. This was important to increase confidence that any effects that were found could be directly attributable to integration as opposed to other contextual changes taking place.

Another benefit of this approach is that it provides us with insight into how other factors (such as deprivation) interact with children's outcomes. Our analysis found that:

- **Deprivation and Population Density:** We found that changes within 16 of the 25 indicators were significantly associated with the level of deprivation within a local authority area, and changes within 9 of the indicators were associated with the population density of the authority area. Seven of the indicators were associated with both level of deprivation and population density. In consensus with the existing evidence (Bywaters et al., 2020), poverty was found to be

detrimental to children's health, wellbeing and safety. The effects of population density were more nuanced however, with densely populated areas often seeing more positive outcomes than less populated areas after accounting for the effects of deprivation.

- **COVID-19 pandemic:** The impact of the COVID-19 pandemic and the public health restrictions was also discernible, with statistically significant changes that were associated with the pandemic in 14 of the 25 indicators involved. In line with findings from previous research (McTier and Soraghan, 2022; Soraghan et al, 2023), these changes included a reduction in statutory activities associated with child protection (registrations and Children's Hearings) and a reduction in the number of children who started to become 'looked after'. The analysis also found that there were fewer children and young people becoming involved in youth justice processes after the onset of the pandemic in March 2020. Health visitors identified developmental concerns for a higher proportion of 27-30 month old children at this time, and the proportion of young people (16-19) who were not in education, training or employment increased.
- **Coterminous health board and local authority:** There was not found to be a relationship between children's outcomes and whether local authorities shared a boundary with their health board in any instances.

The links between these contextual factors and our range of indicators suggests that there are other factors that may be more impactful to children's outcomes than the structural arrangements that are in place for children's services. As such, it is critical that we understand and account for the context within which any reforms are taking place, and that efforts to improve outcomes for children, young people and families are not focused solely on structural reforms.

The quality of children's data in Scotland needs to improve

The breadth and quality of children's data available within Scotland impacted on the analysis we were able to take within this research. While we were able to identify a collection of 25 outcome indicators across a variety of domains that were deemed relevant and to be of a sufficient quality for inclusion in our analysis, we also identified areas where there continue to be gaps in what is collected and therefore what is known about children's outcomes, the experiences of children and their families, and the wellbeing of the children's services workforce too.

Although there has been a strong policy focus (Getting it Right for Every Child 2008, The Promise 2020) on early intervention and support of families to prevent escalation of risk of neglect and harm in Scotland, there are few consistently collected measures of early contact with services offering support. Social work indicators show involvement with child protection and care processes, but data is not collected nationally on initial referrals of children to social work services, or subsequent identification of need for care and support that falls short of child protection thresholds. In contrast, data on referrals and 'children in need' is routinely collected in England (Department for Education, 2023).

Police Scotland now records Concern Reports, Inter-agency Referral Discussions, and Joint Investigative Interviews, but historical data for the period covered in our analysis is not available.

Data submitted to the Scottish Government on children with experience of care through the Looked After Children Survey (Scottish Government, 2022b) does not include reasons for circumstances such as a why a child came into care or a change in where they live. Better data on why events occur would make this dataset much more informative.

The availability, capacity and experience of the workforce involved in delivering health and social care services to children is critically important, but we were only able to include one indicator from the Scottish Social Services Council (SSSC) relating to rates of children and families' social workers against population in each local authority area. The lack of appropriate and available workforce data restricted our ability to look at the effects of structural integration on workforce-related indicators, which was an important element of our research question. The recruitment and retention of social workers is often cited (Miller and Barrie, 2022; Harrison, 2022) as a limiting factor which impacts on service provision, but comparative data at local authority level is not routinely collected and published. Data quality issues prevented inclusion of an indicator using the SSSC stability index applied to children and families' social workers, but this approach may have some promise. Further development of workforce data, including timely and consistent measures of vacancies, retention and turnover rates, would greatly enhance understanding of workforce issues and allow analysis of regional variation. A lack of timely data and consistent definition makes it difficult to respond strategically to workforce recruitment and retention challenges. Better comparative caseload data would also improve understanding of workforce pressures.

In relation to other parts of the workforce delivering health and social care services to children, we evaluated two indicators showing rates of CAMHS and Health Visitors against population, but these were not included in our analysis because this data is only available at health board level. The data from these indicators could not be disaggregated for the local authority areas within each health board, making the assessment of any impact of structural integration within local authority areas problematic.

The lack of high-quality data on the children's workforce is not a problem unique to Scotland. The Case Studies of Transformational Change Programmes (McTier et al., 2023) conducted as part of this wider research study found that a lack of workforce data and planning was a recurring theme across many of the areas studied, leading to challenges in responding to issues of recruitment and retention.

A substantial amount of valuable data is collected and published by Public Health Scotland at health board level. Where health board areas cover multiple local authority areas, it could be very useful and informative to disaggregate appropriate data to the local authority level. This may well be challenging, but Public Health Scotland demonstrated that this was feasible for a potential indicator (referrals accepted by

Children and Adolescent Mental Health Services) using the home address of people referred to the service to identify which local authority area they were from.

While quantitative data does have its limitations and cannot tell us about the nuance of individual children's lives and experiences, it is invaluable in providing insights into the overall picture and an overview of what is/is not working for the children and young people of Scotland. On the basis of this research, we believe there is still work to be done to improve upon the data that is gathered about the needs and experiences of children and young people within Scotland and how this information is used. Audit Scotland have made a similar observation about social care data generally, pointing out that a lack of key data limits informed decision making, and good data and analysis is essential for implementing social care reform (Audit Scotland, 2022). We acknowledge recent and ongoing efforts to improve the quality, scope and use of data in Scotland, including the development and implementation of the children's Core Wellbeing Indicator Set (Scottish Government, 2022a), development of the National Minimum Dataset for Child Protection Committees (CELCIS, 2022), the review of children's social work statistics (Scottish Government (2021b), and the development led by The Promise Scotland (The Promise Scotland, 2023) of a map of data that matters to children and families in Scotland, based on learning from consultation carried out during the Independent Care Review. The rapid development and deployment of the Vulnerable Children and Adult Protection dataset in response to the COVID-19 pandemic in 2020 showed what can be achieved when attention and resources are focussed. In order to inform decision-making and effectively evaluate improvement in outcomes and experiences for children, young people and families, it is crucial that we are collecting and understanding high quality information that is truly reflective of children's experiences and what matters to them.

There are geographical patterns in the approach to structural integration in Scotland

Under the categorisation used for this study, the level of structural integration of children's services was not randomly distributed geographically across Scotland. As is seen in the map of local authority areas in Scotland (Figure 1), there was somewhat of an east/west divide in terms of the local authority areas that have not structurally integrated children's services and those that have. All but one of the local authority areas with Full structural integration were formerly part of the Strathclyde Regional Council area which was restructured in 1996. It is beyond the remit of this research to explore the reasons behind this apparent geographic disparity, but this could be a topic of interest for further research.

Greater clarity is needed on the delegation arrangements for children's health and children's social care services

Our categorisation of local authority areas by level of structural integration was simply based on the description of children's health services and children's social care services as delegated or not delegated. Determining what the structural delegation arrangements were particularly in relation to delegation of children's health services was not

straightforward. Most Integration Schemes follow a similar format but the recording of the extension of delegation of generic health services to include under 18s, and the recording of delegation of health services specifically for children was not always consistent and clear.

Integration Schemes for the three HSCP areas in the NHS Grampian health board area also listed services that were 'operationally devolved' rather than delegated to the Integration Joint Boards.

A further complication emerged where NHS health board boundary areas span more than one local authority area. Services can be delegated to one Integration Joint Board to manage on behalf of the other areas. This is referred to as a 'hosted' service. Examples here include the Child and Adolescent Mental Health Service (CAMHS) which was hosted by the North Ayrshire HSCP area on behalf of the East and South Ayrshire HSCP areas in the NHS Ayrshire and Arran health board area, and Community Children's Services and paediatrics which were hosted by the North Lanarkshire HSCP area on behalf of South Lanarkshire in the NHS Lanarkshire health board area. Hosted services are referred to in the Integration Schemes for the HSCP areas covered by the NHS Lothian health board area, but detail on which services are hosted and which HSCP area hosts them is not provided.

While it could be argued that structural arrangements may be of little concern to people needing the support of services, the lack of clarity identified here suggests that it may be difficult for all those involved in the management and delivery of services to be able to communicate how structural reform is working in practice in local areas. Clarification about definitions of delegation arrangements, and a process for collating and maintaining information about changes to Integration Schemes nationally, should be a priority if there is to be effective communication and an accurate understanding of how structural reform to increase integration and improve outcomes is being approached in practice. Furthermore, the public should be able to have a clear understanding of how services are being designed to function and who is accountable.

Limitations of the research

Limitations of our statistical approach

Our analysis found that there is no consistent evidence to suggest that the level of structural integration of children's services within Health and Social Care Partnerships (HSCPs) has had an impact on outcomes for children and young people and their families in the period studied. As is often the case with statistical analysis, however, while we have not found evidence of an association between the structural integration of children's services and children's outcomes, we also cannot categorically determine that structural integration has had no effect on outcomes for children, young people and their families.

Given the complexity of the changes seen in these outcomes over time, and the multitude of elements that may be contributing to these changes, determination of cause

and effect can be challenging. As such, there are several factors that should be considered when interpreting the results.

Complexity of integration

Modelling the data required a categorisation of local authority areas into a small number of groups or 'levels'. In the absence of more nuanced information, this categorisation was based on the extent to which children's services have been structurally integrated into HSCPs. The binary classification of children's health services in particular as either delegated or not delegated simplifies the complexity and variation we understand exists within local areas. The definition that we adopted for this research requires areas we describe as having children's health services delegated to have at least delegated a universal service specifically for children (such as health visiting). Some local authority areas have extended delegation of services prescribed by regulation for adults to include under 18s, but this would not meet that criteria. Some areas delegate other services specifically for children beyond health visiting and school nursing, such as the Child and Adolescent Mental Health Service (CAMHS) and paediatric services. The range and variation of children's health services that are delegated should be taken into account in any definition of delegation used in future research.

As has been discussed in both the Rapid Evidence Review (Porter et al., 2023) and Case Studies of Transformational Change Programmes (McTier et al., 2023) conducted for this research study, integration is a complex concept and there are a multitude of components (such as shared culture and goals, aligned policies and co-location) that can influence how effective or otherwise the integration process is. While any two local authority areas within our Full structural integration category may have the same structural approach to integration, they may vary substantially in terms of how services are operating and therefore how children, young people and families in need of support from services experience these services. Conversely, multi-agency and multi-disciplinary working could already be well-established in areas which are not structurally integrated. Structural integration can only lead to a change in outcome measures if it results in a change to *how* services are delivered to children and young people and families. The necessarily simplistic categorisation of integration adopted within this study does not therefore fully account for the nature and quality of practice nor does it reflect how this is experienced by children, young people and their families. The timescales for this research precluded a more in-depth and nuanced exploration or classification of the various components of integration within each local authority area, although this would be an interesting area for future research. As such, it is important to emphasise that our findings only relate to the link between outcomes and the *structural* integration of services and cannot be extended to the concept of integration more generally.

Sample size

Scotland's 32 local authority areas were taken to be the units of interest for our study. For statistical purposes, this would generally be considered a relatively small sample size. Additionally, these 32 local authority areas were split into three categories – those with Full structural integration, those with Partial structural integration, and those with

No structural integration of children's services - with estimates for each category being calculated based on the ten, nine and 13 local authority areas within them respectively. This relatively small sample size means that statistical models will have less capability to detect changes that are taking place than in studies where the sample size is larger (Austin & Leckie, 2018). Less substantial changes therefore may not be detected within our study where they would be in a study with a larger sample size. The small sample size also means that the results will be more sensitive to minor changes (such as the movement of a local authority area from one category to another).

Follow-up period

The vast majority of (30 of 31) HSCPs were created in either 2015 or 2016. As such, there were around five years of follow-up data available after Health and Social Care Partnership integration had begun. As discussed in both the Rapid Evidence Review (Porter et al., 2023) and Case Studies of Transformational Change Programmes (McTier et al., 2023) conducted as part of the wider Children's Services Reform Research study, it is widely acknowledged that integration is not an immediate event but rather an ongoing complex process, and one which can take many years to fully embed. As such, this relatively short follow-up period means there may be impacts of the integration of children's services that have yet to be seen. It would be of great interest to revisit this research in future years when a lengthier period of follow-up data is available.

Limitations of the available data

While it was possible to analyse a wide range of indicators about the outcomes for children, young people, families and the workforce in this study, there were also desirable indicators that we were unable to include, either due to unavailability of data or a lack of good quality data. These gaps in the data are discussed in greater detail in our discussion ([The quality of children's data in Scotland needs to improve](#)) and have limited the range of outcomes that we were able to assess within this research.

To address the lack of available information on the experience of the workforce, Strand 4 of our Children's Services Reform Research study will involve engagement with the children's workforce, through a survey, interviews and focus groups.

Areas for future research

The work undertaken for this strand of the research has highlighted several areas that would benefit from additional research.

The approaches to structural integration varied across different geographical regions of the country, with a tendency towards higher levels of structural integration in the west of Scotland and a tendency towards lower levels of structural integration in the east. It would be of interest to explore the reasons behind these differences in more detail, potentially as part of a more in-depth exploration of the approach taken to integration across the country's 32 local authority areas. Building on existing work by O'Brien et al. (2009), this could include an assessment within each area of the various components of integration identified within our Rapid Evidence Review (Porter et al., 2023), including

whether services are co-located, and whether they have aligned policies and/or shared finances and personnel. It should be cautioned, however, that assessment of the links between multiple components of integration and children's outcomes would face methodological challenges due to the small sample size within Scotland (that is, due to only having data from 32 local authorities).

Having identified a lack of clarity about the definitions and recording of how and which children's health services are delegated and the variation of this across different local authority areas, gathering more detailed information on delegation arrangements to build a better understanding and picture of these arrangements would be of value. This could allow for further categorisation of local authority areas in any future research and modelling, which could in turn offer more insight.

Our research has also highlighted that there are ongoing changes taking place in terms of outcomes for children, young people and families within Scotland, and that there are many factors that are driving this. While we have accounted for a small number of contextual factors within our statistical modelling (including deprivation and the impact of the COVID-19 pandemic), the indicators included within our research covered a broad range of domains, and there may be additional factors influencing specific outcomes that have not been included here. A more detailed exploration of the prevailing trends across these individual outcomes could provide greater insight into the policies and societal changes that are influencing the experiences and outcomes of children, young people and families within Scotland.

The Rapid Evidence Review (Porter et al., 2023) and Case Studies of Transformational Change Programmes (McTier et al., 2023) conducted as part of the wider Children's Services Reform Research study have both highlighted that integration is a complex and prolonged process. As such, the five-year follow up period available for our research here may not be sufficient for determination of any longer-term impacts of structural integration. We would therefore make a strong case for this analysis to be revisited again in future.

Contributions of the research

This research has involved the collation of a wide breadth of indicators on children's outcomes from a variety of sources. In addition to highlighting the data that is currently available, we have also sought to highlight where gaps remain in the children's data landscape, and where there are data quality issues that need to be addressed. With an ever-growing focus on the importance of data, it is hoped that this knowledge will prove useful to government and other stakeholders as they seek to improve the way in which they collect, use, and publish data.

This research has brought to light information about a complex and varied understanding of delegation arrangements and how these are described which has led to a lack of consistency and clarity. This is particularly the case regarding the recording of information about how and whether health services specific to the needs of children are delegated under Integration Schemes. It is important that there is agreement locally and nationally about definitions of delegation arrangements if these are to be fully understood locally and communicated effectively, and if arrangements across Scotland are to be understood, monitored and evaluated nationally.

An additional contribution of this research lies in the methodology itself. As we have demonstrated, there are complex and ongoing changes that can occur within children's outcomes, with a multitude of factors that may contribute to these changes. The methods presented within this study build on previous work in this area (O'Brien et al., 2009) and provide a novel approach to capturing this complexity in children's outcomes while exploring the factors that influence these outcomes. The statistical approach implemented for this research is ideally suited to the evaluation of data collected from different regions over time, particularly when looking to assess the impact of a policy intervention or other significant development or event (such as a pandemic or recession) while simultaneously taking additional contextual factors into account. We have aimed to share our methodology in a way that makes the approach replicable, and we hope that these methods can be utilised by other researchers in future.

Through our trend analysis we have provided, in one place, an overview of the changes that have been taking place across a variety of children's outcomes over time. We have highlighted where positive changes can be seen, where challenges remain, and also the complexity in interpreting what constitutes a positive change for certain indicators. An overview of the trends in children's outcomes has not been presented in Scotland on this scale before, and we hope that it leads to an enhanced understanding of where Scotland is and the work that remains to be done for all of our children and young people.

The analyses conducted in this study have also offered insight into several factors that can impact upon children's outcomes, with deprivation, population density and the COVID-19 pandemic found to have a considerable effect across many areas of children's lives. While perhaps unsurprising, these findings provide further weight to the existing body of evidence around the prevailing effects of deprivation on children's outcomes -

emphasising the need for consideration of the contextual factors within which integration is occurring.

The key aim of this work was to investigate the link between the level of structural integration of children's services and outcomes for children, young people and families. While our analysis has shown that there is no consistent evidence of a relationship between structural integration and a change in children's outcomes, we have discussed the challenges in determining a link between integration and outcomes solely through the use of administrative data. The 'levels' of integration used in our analysis were based exclusively on the structural integration of children's services through delegation, and our findings therefore cannot be applied to the concept of integration more broadly.

This research and findings from the previous two strands of the Children's Services Reform Research study (Porter et al., 2023; McTier et al., 2023) together build a picture which suggests that improving outcomes for children, young people and their families requires more than a change in organisational structures. The evidence presented across the first three strands of the Children's Services Reform Research study contributes to an understanding that integration is a complex and nuanced process, with many factors that can facilitate or impede achievement of the aims behind integration. The findings presented in this report will contribute to Scotland's developing understanding of health and social care integration and the impact of this on outcomes for children and families.

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Appendix 1. Local Authority characteristics

Characteristics used in analysis model						Other contextual information		
Local authority area	NHS Health Board	Health and Social Care Partnership start date	Level of structural integration of children's services	SIMD 2020 ⁵	Population density (persons per square km)	Urban/rural classification	Child Population (% under 15)	Information System used by Local Authority
East Ayrshire	Ayrshire & Arran	Apr 2015	Full	31.3%	96.7	Mainly Rural	17.0%	Liquidlogic
North Ayrshire		Apr 2015	Full	39.8%	151.7	Urban/Substantial Rural areas	16.3%	CareFirst/Eclipse ⁶
South Ayrshire		Apr 2015	Full	18.3%	92	Mainly Rural	15.3%	CareFirst
Scottish Borders	Borders	Apr 2015	None	6.3%	24.5	Mainly Rural	16.1%	Mosaic
Dumfries & Galloway	Dumfries & Galloway	Apr 2016	Partial	9.5%	23.2	Mainly Rural	15.4%	Mosaic
Fife	Fife	Apr 2016	Partial	19.6%	282.8	Urban/Substantial Rural areas	17.0%	SWIFT/Liquidlogic
Clackmannanshire	Forth Valley	Apr 2016	None	25%	324.2	Mainly Rural	17.2%	CFIS (in-house)
Falkirk		Apr 2016	None	16.4%	541.1	Urban/Substantial Rural areas	17.2%	SWIS/Liquidlogic
Stirling		Apr 2016	None	12.4%	42.7	Urban/Substantial Rural areas	16.0%	SWIFT
East Dunbartonshire		Apr 2015	Full	3.8%	622.3	Urban/Substantial Rural areas	17.9%	CareFirst
East Renfrewshire		Jun 2015	Full	5.7%	555.1	Urban/Substantial Rural areas	20.4%	CareFirst
Glasgow City	Greater Glasgow & Clyde	Feb 2016	Full	45.4%	3629.3	Larger Cities	15.7%	CareFirst/Eclipse
Inverclyde¹		Apr 2016	Full	44.7%	479.4	Urban/Substantial Rural areas	15.9%	SWIFT/Eclipse
Renfrewshire		Apr 2016	Partial	24.9%	689.4	Urban/Substantial Rural areas	16.6%	Eclipse
West Dunbartonshire		Jul 2015	Full	39.7%	552.1	Urban/Substantial Rural areas	17.4%	CareFirst

Aberdeen City		Feb 2016	None	10.2%	1222.7	Larger Cities	15.8%	CareFirst
Aberdeenshire	Grampian	Apr 2016	None	2.6%	41.6	Mainly Rural	18.5%	CareFirst/Eclipse
Moray		Apr 2016	None	3.2%	43.1	Mainly Rural	16.5%	CareFirst
Argyll & Bute	Highland	Apr 2016	Full	10.4%	12.5	Islands Remote	14.4%	CareFirst/Eclipse
Highland²		Apr 2012	Partial	9.6%	9.3	Mainly Rural	16.0%	CareFirst
North Lanarkshire³	Lanarkshire	Apr 2016	Partial	34.2%	726.4	Urban/Substantial Rural areas	18.0%	SWIS
South Lanarkshire		Apr 2016	Partial	20.4%	182.1	Urban/Substantial Rural areas	17.3%	SWIS/Liquidlogic
City of Edinburgh		Apr 2016	None	11.9%	1994.2	Larger Cities	15.0%	SWIFT
East Lothian	Lothian	Jul 2016	Partial	6.1%	161.4	Mainly Rural	18.1%	Mosaic
Midlothian		Aug 2015	Partial	8.7%	267.5	Urban/Substantial Rural areas	19.3%	Mosaic
West Lothian		Apr 2016	None	14.6%	434.6	Urban/Substantial Rural areas	18.9%	SWIFT/Mosaic
Orkney Islands⁴	Orkney	Apr 2016	Full	-	22.8	Islands Remote	15.8%	PARIS
Shetland Islands	Shetland	Jun 2015	None	-	15.6	Islands Remote	17.9%	SWIFT
Angus		Apr 2016	None	7.7%	53.2	Mainly Rural	16.1%	Eclipse
Dundee City	Tayside	Apr 2016	None	37.2%	2462	Larger Cities	16.0%	Mosaic
Perth & Kinross		Apr 2016	None	5.9%	29.1	Mainly Rural	15.7%	SWIFT
Na h-Eileanan Siar	Western Isles	Apr 2016	Partial	-	8.7	Islands Remote	15.2%	CareFirst/Eclipse

Table 10. Characteristics of Scotland's 32 local authority areas.

¹Inverclyde- integrated services in 2010. But Health and Social Care Partnership formally formed 2016 as per requirement by legislation.

²Highland - Lead agency Partnership Agreement established in 2012.

³North Lanarkshire initially delegated children's social care services but North Lanarkshire Council resumed responsibility for these in 2019.

⁴Orkney - have been delivering integrated services since 2011.

⁵SIMD20 is the percentage of data zones within the local authority within the 20% most deprived in Scotland. 2020 Scottish Index of Multiple Deprivation.

⁶Where two systems are shown (for example, CareFirst/Eclipse), the local authority is in the process of transitioning from the first system to the second

Appendix 2. Exploration of indicators at Health Board level

There are 14 health boards which deliver primary, community-based and acute hospital services to their local populations. Six health boards share a boundary with a local authority, and eight cover more than one local authority area. As outlined in Table 3, three indicators we identified as important to children's welfare had to be excluded from our analysis as the data for these were only available at health board level. These indicators were:

1. Child and Adolescent Mental Health Services (CAMHS) patients starting treatment within 18 weeks (%)
2. Whole-time equivalent rates for CAMHS clinical staff (per 100,000 of population aged 0-18)
3. Whole-time equivalent rates for Health Visitors (per 100,000 of population aged 0-18)

While these indicators could not be included in the modelling process, they were explored visually in order to determine whether there were any obvious differences in trends across different health boards. It was of particular interest to explore whether there was any link between the level of structural integration in the local authority areas within each health board and the trends seen after integration.

In each of the following plots, the health boards are ordered from top left to bottom right based on the level of integration of the local authority areas within them – with those with fully structurally integrated children's services appearing first. The dashed vertical line indicates 2016, the year when the majority of Scotland's Health and Social Care Partnerships were formed. The grey line is the line of best fit, illustrating the direction of the trend for the full period available.

Figure 9 suggests that the number of CAMHS patients starting treatment within 18 weeks has largely been decreasing across most health boards. While there are a few health boards showing an upwards trend, these are spread throughout the figure and there does not appear to be any clear changes in trend when moving from health boards covering local authority areas with Full structural integration in the top left to health boards covering local authority areas with No structural integration in the bottom right.

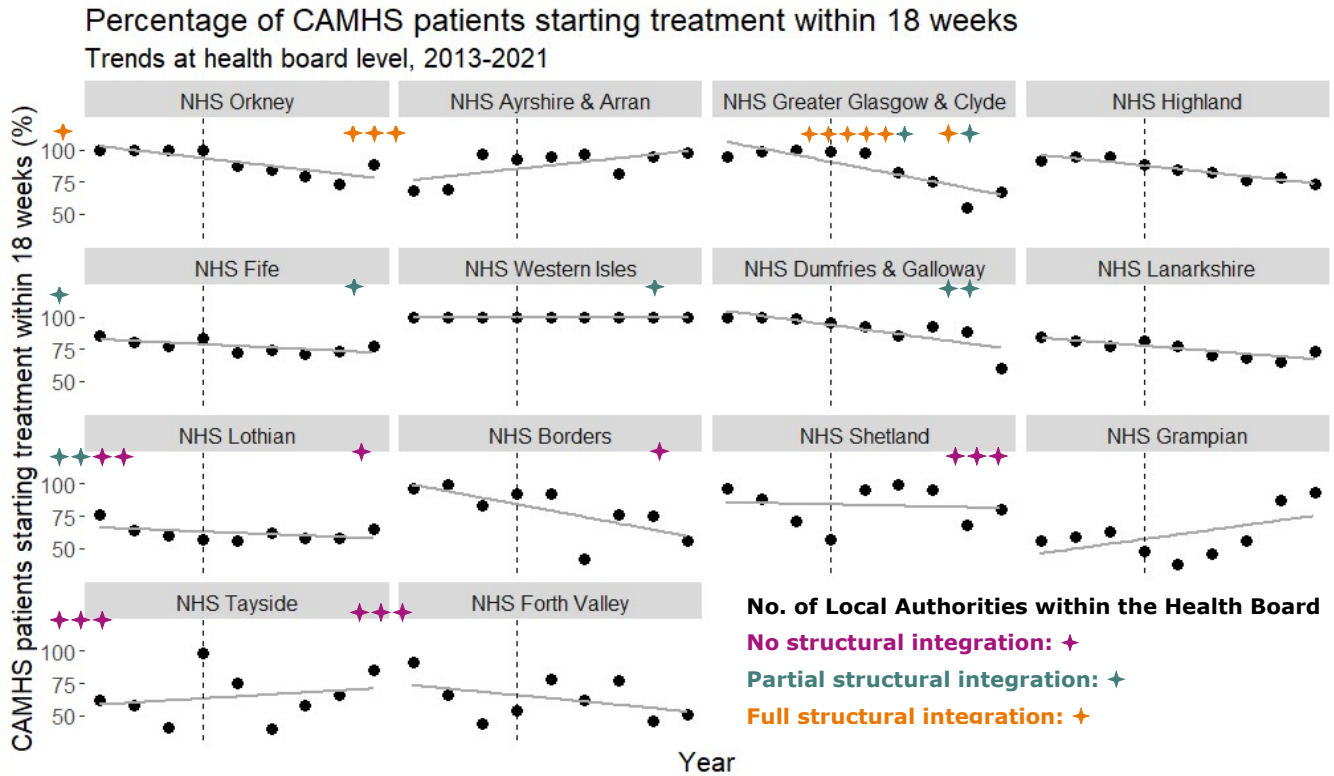


Figure 9. Health board trends for the percentage of CAMHS patients starting treatment within 18 weeks, 2013-2021.

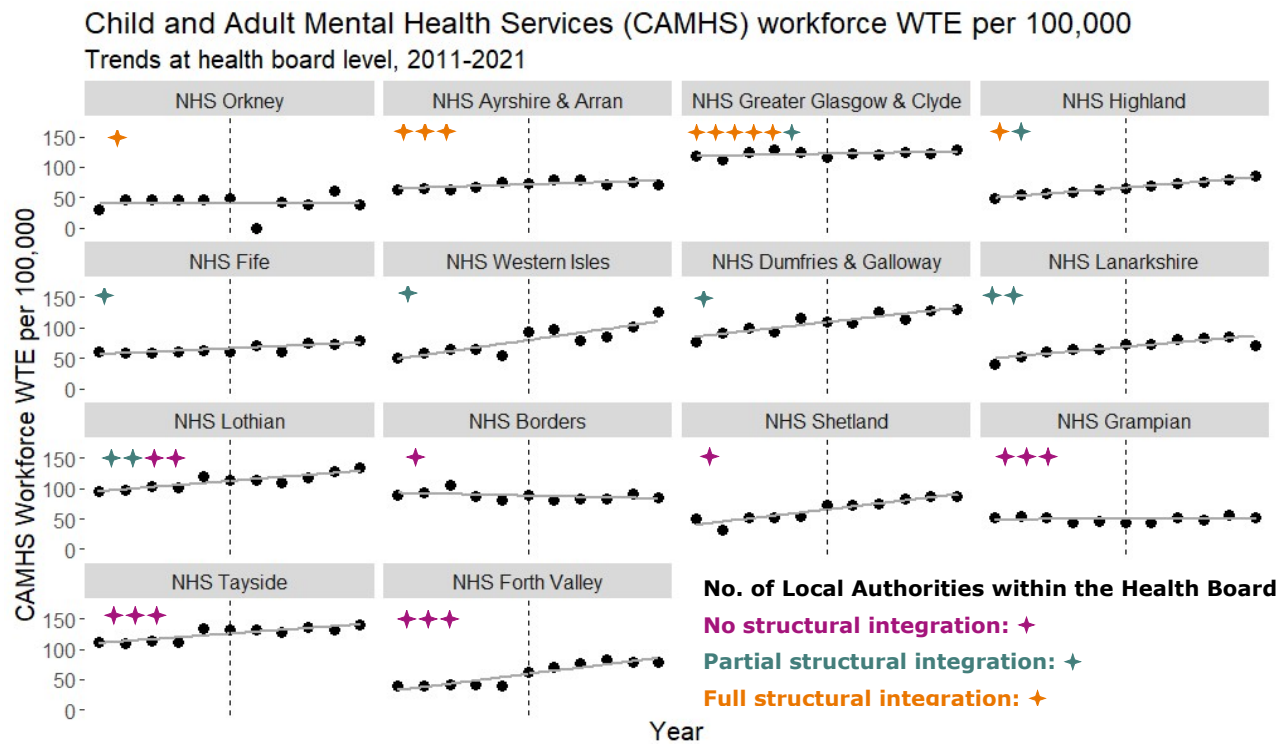


Figure 10. Health board trends for the CAMHS workforce per 100,000 aged 0-18, 2011-2021.

Looking at the CAMHS workforce in Figure 10, there appears to be a general upwards trend in the whole time equivalent (WTE) of the workforce between 2011 and 2021 within most health boards. This figure represents the number of staff employed within CAMHS after adjustment for part-time working patterns. Again, there is no clear change in trend when moving from health boards covering local authority areas with Full structural integration of children's services to those with No structural integration of these services. The same can be said when examining the data for the Health Visiting workforce in Figure 11, which displays similar patterns.

As such, while we have been unable to include these indicators within our statistical modelling, a visual inspection suggests that there is little evidence of substantial changes within these indicators that are associated with the level of structural integration of children's services.

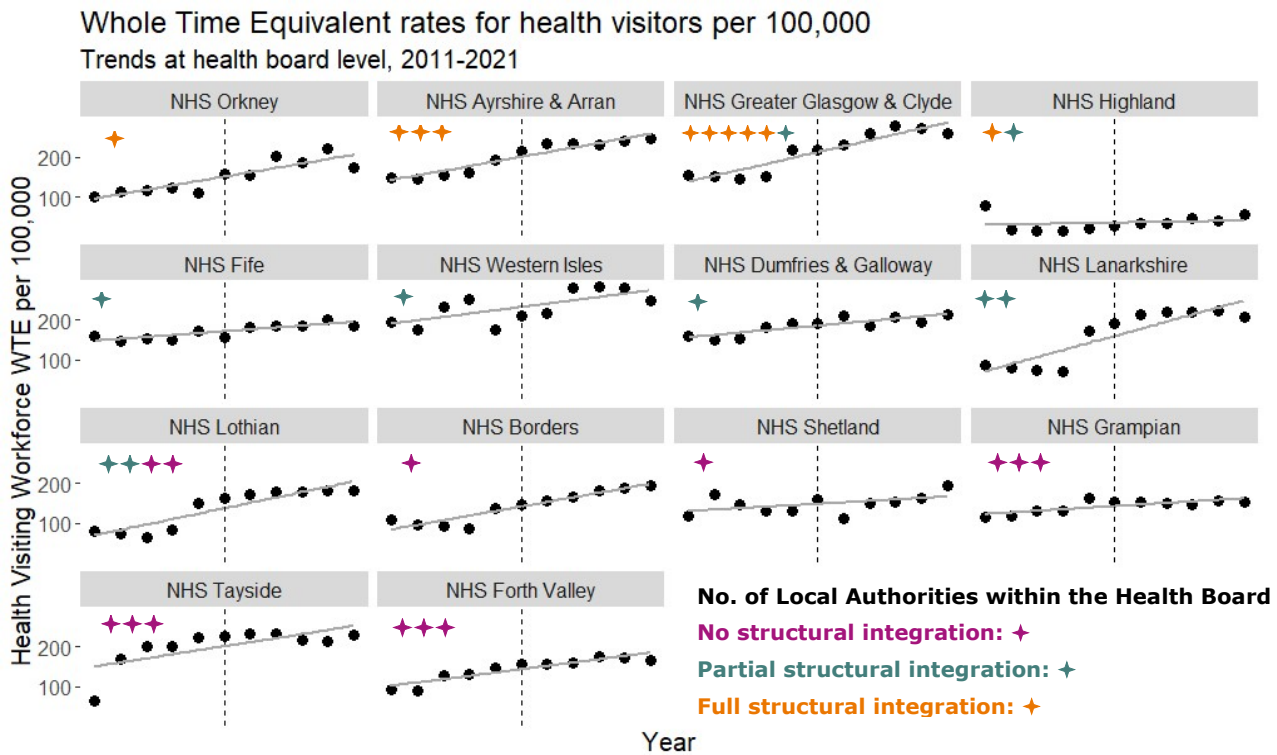


Figure 11. Health board trends for the Health Visiting workforce per 100,000 aged 0-18, 2011-2021.



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