Evaluation of the NHS General Dental Services Contract Reform Programme in Wales

Jones, Lorelei; Overs, Ellie; Woods, Chris; Mostaghim, Manna; Jones, Aled Wyn

Published: 01/01/2024

Publisher's PDF, also known as Version of record

Academi Tegwch Iechyd, Iechyd Ataliol a Llesiant
Academy for Health Equity, Prevention and Wellbeing

EVALUATION OF THE NHS GENERAL DENTAL SERVICES CONTRACT REFORM PROGRAMME IN WALES

FINAL REPORT

JANUARY 2024

PRIFYSGOL BANGOR UNIVERSITY

Evaluation of the NHS General Dental Services Contract Reform Programme in Wales

Final Report
January 2024

Dr Lorelei Jones, Ellie Overs, Chris Woods, Manna Mostaghim, Aled Wyn Jones
Contact: **lorelei.jones@bangor.ac.uk**

This is an independent report commissioned and funded by Welsh Government (C234/2018/19). The views expressed are not necessarily those of Welsh Government.

Acknowledgements

We are grateful to the national policy team, Health Board teams, and clinical teams who generously gave of their time. National policy teams gave us full access to programme meetings and documents and always made us feel welcome.

Executive summary

This is the final report from a mixed methods process evaluation of the NHS General Dental Services (GDS) contract reform programme in Wales. It provides an explanatory account of the restart and implementation of the contract reform programme, following the COVID pandemic, in April 2022.

Background

Publicly funded healthcare is a complex system. In Wales, publicly funded dental care involves different levels of governance: National politicians and civil servants who lead the development of policy; local Health Boards that hold the budget; and local dental practices that are contracted by Health Boards to provide General Dental Services to NHS patients. National policy makers are limited in what changes they can introduce to dental contracts without making changes to primary legislation. Health Boards are constrained by shrinking budgets, and fewer dentists than there were five years ago. The local clinical workforce is exhausted following the COVID pandemic and continue to experience illness and anxiety about the transmission and effects of coronaviruses. They also face a backlog in patients requiring treatment. The analysis contained within this report considers the implementation of the contract reform programme in this very challenging context.

The contract reform programme

The contract reform programme was introduced by Welsh Government in 2017 as part of broader system reform in NHS Dental Services in Wales. Initially, the programme reduced activity targets assigned to contracts with dental practices by 10% (Phase1) or 20% (Phase 2) to facilitate:

- A preventative, needs-based approach to care planning
- Evidence-based interventions
- Personalised advice to patients for self-care
- Increased use of skill-mix within the practice team

Prior to the pandemic approximately 40% of practices had elected to join the programme. When the programme restarted in April 2022, following the pandemic, dental practices were offered a contract variation comprising a set

of key performance indicators or ‘targets’ (referred to as ‘metrics’ by Welsh Government). Under the contract variation the income a practice received from the Health Board was contingent on meeting the following:

- A target for the number of new patients to be seen each week
- A target for existing patients
- A target for the application of fluoride varnish
- A target for extended recall intervals (up to 2 years where clinically appropriate, in line with NICE guidance)

Evaluation

The evaluation of the contract reform programme, undertaken by an academic team led by Bangor University, was undertaken in three stages:

Stage 1: Prepandemic (2019-2020)

Stage 1 followed an iterative realist research cycle incorporating visual ethnography. Methods included document analysis, observation, and interviews with key stakeholders:

- National policy team (n=3)
- Local Health Boards (n=6)
- Dental care professionals (n=32)
- Patients (n=10)

The final report from this stage of the research was published in April 2021.

Stage 2: Values, perspectives and experiences of NHS dental patients

Stage 2 focused on the values, perspectives and experiences of NHS patients and used an innovative design incorporating vignettes alongside in-depth interviews with 50 NHS patients. The findings were published in April 2022.

Stage 3: Contract reform restart (2022-2023)

The final stage of the evaluation involved a mixed methods process evaluation of the restart and implementation of the contract reform programme, following the COVID pandemic, from April 2022 to April 2023. The data comprised observations of national programme meetings, national and local staff engagement events; document analysis; a focus group with Health Board

contract managers, and interviews with stakeholders at different levels:

- National policy makers (n=5),
- All 7 Local Health Boards
- Dental care professionals (n=40)

Key learning

What follows is summary of policy learning that can be used by stakeholders in future policy development. The detailed empirical findings and analysis that underpins this summary can be found in the report.

Stage 1: Pre-pandemic (2019 to 2020)

Analysis from stage 1 of the evaluation (pre-pandemic) developed a model of professional engagement with the contract reform process. Key variables of engagement are alignment with professional values and interests, trust, communication, leadership, and using data for improvement.

Alignment with professional values

Alignment with professional values, such as prevention, quality, and innovation, leads to professional engagement with the programme and improved job satisfaction.

Trust

Trust between the Health Board and practice principals is used to manage risk. Where there are high levels of trust this promotes goodwill, programme engagement, job satisfaction and innovation in clinical teams.

Opportunities for dialogue, between Health Board managers and practice staff, lead to mutual understanding. Mutual understanding strengthens the relationship between the Health Board and dental practices. Strong relationships between the Health Board and dental practices underpin collaboration and the capacity of the service to realise improved health outcomes.

Communication

The emergence of new channels of communication facilitates professional and pastoral support for GDPs, addresses the historical isolation of GDPs, improves understanding of reform objectives and requirements, and promotes acceptance and support of contract reform.

Clear communication of future policy direction is important to instill confidence in longevity of change.

Leadership

If Health Boards 'sell' the programme in a way that is professionally and personally meaningful to GDPs then this leads to professional engagement.

If practice principals promote the programme to the practice team then this secures effective teamwork towards reform objectives.

Using data for improvement

If data is shared with patients during a clinical consultation then this provides an opportunity for patient education and encourages and empowers self-care and oral health improvement.

If clinical leaders share comparative data with practices then this contributes to collective sense making, cements shared norms and objectives and channels activity toward reform objectives.

Stage 2: Values, views, and perspectives of NHS patients

Patients value regular visits to the dentist. Regular visits are seen as part of a collaborative practice of oral health maintenance - it is 'how' patients look after their teeth and prevent problems. Patients are concerned that disease could develop between visits if the recall interval is extended. Even where there is good oral health, patients feel that '18 months is a long time' - circumstances and behaviours that influence oral health could change in this time. Some patients believe they will lose access to an NHS dentist if they do not attend every six months. It is therefore important that public communication of government policy not only explains the reasoning behind extended recall intervals but is sensitive to patient concerns and values.

Good relationships between dentists and patients are key. Good relationships foster trust and acceptance of new ways of working. Opportunities for dialogue between the dentist and patient enable changes to be discussed in a way that considers individual patient preferences, circumstances, and concerns.

Patients value advice on prevention and self care if this is delivered in a non-judgmental way.

There is little knowledge of dental roles other than the dentist. When patients talk about going to ‘the dentist’ they often mean ‘the place’ rather than a particular individual or role.

We found broad acceptance of the idea of personal responsibility for good oral health. At the same time, patients felt there needed to be exemptions for certain groups, such as those with learning disabilities or older people, and understanding for people who may be struggling, perhaps temporarily, to take care of themselves or their children, and would benefit from extra support.

On the topic of conditional access, patients often said that resources should not be wasted but also that delaying treatment when a patient failed to comply with behaviour change may lead to more costly interventions further down the line.

Stage 3. Contract reform restart (2022 to 2023)

When used with financial penalties, performance indicators (also known as ‘targets’ or ‘metrics’) based on volume (number of patients) incur costs that need to be weighed against their potential contribution to accountability for public spending. These costs include transaction costs, and significant costs in terms of staff wellbeing, trust, and service innovation.

If dentists are already following NICE guidance, then a target for extended recall intervals does not supply a mechanism to increase capacity.

‘New patients’ to a practice often have high treatment need. ‘Historic patients’ may also have high treatment need following the pandemic. This increase in treatment need has further increased pressure on capacity. In these circumstances, volume targets, used with a financial penalty, create extremely high levels of stress and anxiety in the clinical workforce.

If volume targets are used with a financial penalty, and without accurate data

for individual dentists to assess their progress during the year, then this creates an incentive for the increased throughput of low-risk patients.

There is widespread support from clinical teams for a range of innovative models of care provided by Community Dental Services – such as the Designed to Smile Programme for primary school children, dental vans, and access sessions staffed as part of training programmes. These models are seen as well suited to vulnerable populations who have high treatment needs and often face challenges attending appointments. These innovative models of care were considered to be more effective in improving access and population health than targets for volume metrics for General Dental Services in those circumstances where there is no mechanism for increasing capacity.

If Health Boards establish and maintain good relationships with local practices, then practice staff feel reassured and supported which maintains engagement with the programme.

Good pre-existing relationships and facilitative leadership enables a collaborative approach to programme governance to be sustained.

Data never 'speaks for itself' - it must be interpreted. If data is used for summative accountability, then interpretation can create conflict between stakeholders.

While data collection is important for accountability it is most useful when used for formative rather than summative accountability; when used to open a dialogue, rather than as proof of a problem; and when used alongside other forms of information.

Contents

Figures and tables

Figures

Tables

1. Introduction

General Dental Services, sometimes referred to as 'high street' dentistry, are provided by dentists who are contracted by local Health Boards to provide care to NHS patients. Unlike General Medical Services, which is provided free at the point of use, patients pay a charge for dental treatment, with exemptions for certain categories, such as children and those on low income. System reform in NHS General Dental Services in Wales aims to embed needs-led and value-based healthcare principles in dental care delivery (Written Statement 11 July 2018). The key policy objectives are to:

- Improve the oral health of the population
- Address persistent inequalities in health and access to dental services
- Sustain, develop, and value clinical teams
- Make efficient use of available resources by increasing the use of skill mix

The GDS contract reform programme commenced in September 2017. After a pause during the COVID-19 pandemic it restarted in April 2022. The contract reform programme recognised that the balance of incentives under the 2006 contract did not always support wider policy objectives. The aim was to shift from a system that is based on activity to one that is based on patient needs and value for money.

In 2019 an independent evaluation team, led by Bangor University, was commissioned to undertake a realist evaluation of the contract component of system reform. The focus of the first stage of research (pre-pandemic 2019-2020) was on 'what works, for whom, in what circumstances' (Pawson & Tilley 1997). The aim was to understand underlying mechanisms and explain how and why the programme works (or not). The report from the first stage of the research was submitted in April 2021.

The second stage of the evaluation focused on the values, perspectives and experiences of NHS patients and used an innovative design incorporating vignettes alongside in-depth interviews with 50 NHS patients. The findings were published in April 2022.

This report presents findings from final stage of the research, following the pandemic and the restart of the contract reform programme in April 2022. The aim of the research was to capture learning in the following areas:

- Programme development and implementation in practice
- Innovation and improvement

To capture learning in these areas the methodological approach was broadened to a mixed method process evaluation. Data was collected from stakeholders at different levels in the system:

- National policy team
- Local Health Board teams
- Dental practice teams

2. Policy background

System reform in NHS General Dental Services (GDS) in Wales aims to embed needs-led and value-based healthcare principles in dental care delivery. It follows the programme for health and social care of the Welsh Government set out in the following documents:

- Prudent Healthcare
- A Healthier Wales: a long-term plan for health and social care
- The Wellbeing of Future Generations Act (Wales) 2015
- The Health and Social Care (Quality and Engagement) (Wales) Act 2020

This programme was endorsed by the new minister, Eluned Morgan, in July 2021 (Welsh Government 2021). The strategic plan for dental services is set out in 'A Healthier Wales: The Oral Health and Dental Services Response' (Welsh Government 2018). The key policy objectives are to:

- Improve the oral health of the population
- Address persistent inequalities in health and access to dental services
- Sustain, develop, and value clinical teams
- Make efficient use of available resources by increasing the use of skill mix

The GDS Reform programme commenced in September 2017. It was developed with clinical and public health expertise from Public Health Wales and drawing on epidemiological and Health Services Research. After a pause during the COVID-19 pandemic it restarted in April 2022, with engagement with key stakeholders especially Health Boards and local dental practices. The programme is based on action-learning whereby learning from initial implementation is used to inform ongoing development of the policy.

System reform 2019 – 2020

Under the 2006 GDS contract dentists are paid according to Units of Dental Activity (UDAs). The contract holder agrees to provide a set number of UDAs for the annual contract value. If a dental practice fails to achieve 95% of their UDA target they face 'clawback' i.e. returning money to the Health Board.

The number of UDAs that are allocated for dental treatment depends on the complexity of the treatment:

Band 1 (1 UDA): Exam & radiographs, scale and polish, fluoride varnish

Band 2 (3 UDAs): Fillings, extractions, root treatments

Band 3 (12 UDAs): Crowns and veneers, bridges, full and partial dentures

Unlike general medical services, patients pay towards the cost of their care through patient charges. The patient charges go toward the income of the Health Board. There are three levels of charges reflecting complexity:

£14.70 - This includes examination, diagnosis and preventative care. If necessary, it will include X rays, scale and polish and planning for further treatment. It is also the charge for urgent and out of hours care.

£47.00 - This includes all necessary treatment covered by the £14.70 charge plus additional treatment such as fillings, root canal treatment or extractions.

£203.00 - This charge includes all necessary treatment covered by the £14.70 and £47.00 charges plus crowns, dentures and bridges.

Certain groups, such as children, and those receiving benefits, are exempt from patient charges. The charge is paid only once, even if the patient needs more than one appointment.

Prior to the pandemic, the contract reform programme reduced activity targets assigned to contracts with dental practices by 10% (Phase 1) or 20% (Phase 2) to facilitate:

- A preventative, needs based approach to care planning
- Evidence-based interventions
- Personalised advice to patients and support for self-care
- Increased use of skill-mix within the practice team

A key requirement of participating practices was the completion of an Assessment of Clinical Oral Risks and Need (ACORN). The aim of the tool was twofold – to facilitate patient education and support self-care, and to collect data for monitoring and assurance.

According to guidance published by Public Health Wales (2021) the intention was for ACORN to be used by dental practices to:

1. Understand what matters to patients;

2. Effectively communicate level of risk and need to patients (or their carers) and work with patients in making them understand changes they can make to prevent dental diseases and maintain oral health;

3. Agree on the oral health outcomes patients want to achieve;

4. Utilise the principles of Shared Decision Making in formulating a preventive dental care and treatment plan'

5. Monitor changes in the 'risk and need' of patients who receive ongoing care from the service

Pandemic response and recovery

In response to the pandemic, UDA targets and monitoring were suspended. During the red alert phase routine dental care and aerosol generating procedures were stopped. As with other parts of the NHS, the focus of policy, clinical and health board teams shifted to organising and supporting safe emergency care, intensive care, and vaccination.

The ACORN tool was extended to all practices to facilitate data collection and analysis of general dental services during the pandemic.

The recovery phase for dental services had some notable contextual challenges, particularly relating to the policy objective of improving access. In addition to long-standing difficulties in recruiting dental staff, the need for ongoing safety measures meant that fewer patients could be seen in clinics. There was also need to prioritize patients with urgent care needs and those who had treatment delayed due to the pandemic. The government allocated £3m to Health Boards in 2021-2022 to support the recovery of dental services. The government has also allocated £2m in recurrent funding from 2022-23 to help Health Boards to improve access over the medium term (Welsh Government 2021).

A dynamic policy landscape

As a consequence of the ongoing presence and variations of COVID-19 there remained a degree of uncertainty in plans and context for dental services in Wales (CDO Letter 6 July 2021). The final letter of the Chief Dental Officer[1],

Colette Bridgman, highlighted the importance of all partners within the system - policy teams, Health Board commissioning teams, and dental practice teams – remaining 'flexible, agile and open-minded' (CDO Letter 2021). Colette Bridgman also acknowledged the need to support clinical and health board staff experiencing work pressure and exhaustion.

There were also key changes in system leadership, including a new minister for Health and Social Services, Eluned Morgan, and the retirement of the Chief Dental Officer, Colette Bridgman. The existing programme for system reform was endorsed by the new minister (Written Statement July 2021). Continuity in clinical leadership was provided by the two Deputy Chief Dental Officers until the new Chief Dental Officer, Andrew Dickenson, was appointed in March 2022.

The second phase of the evaluation was designed to capture and inform this dynamic policy landscape.

Contract reform restart April 2022

System reform restarted in April 2022, building on the learning and tools of contract reform. The following measures were introduced on the basis that they would be tested and refined. The measures were intended to provide a more clinically meaningful measure of quality and activity relative to need:

.

1. Access

For every £170,000 of annual contract value, 5 new patients are expected to be offered access every week.
Care provided to historic patient base (For an annual contract value of £170,000 this would equate to a minimum of 1280 patients per year)

2. Prevention

Application of fluoride varnish with the expectation that 80% of adults and children will have this intervention

3. Appropriate recall intervals

No more than 20% of patients rated as 'low risk and no clinical need' seen within 12 months of previous appointment

Practices could opt for the contract variation or stay on the previous UDA contract where they would be expected to meet 95% of their pre-pandemic UDA target (to reflect ongoing requirements for infection prevention and control).

Below is a worked example of the contract variation for a practice with a contract value (ACV) of £170K and UDA target of 6,800 at £25 per UDA. For example, if the practice meets the new patient target they receive 25% of their contract value (£42,500). If the target is missed they receive a pro rata amount.

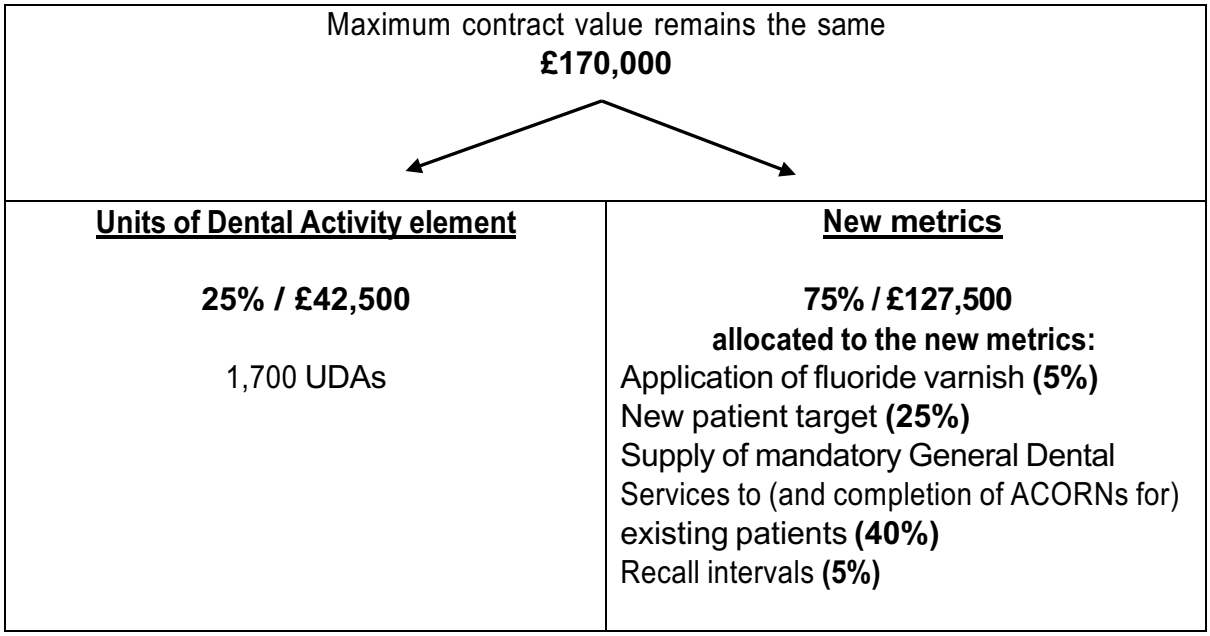


Figure 1. Worked example of contract variation 2022/2

Operational capacity

The public value that is created by a government policy or programme is contingent on the authorising environment (policy, legislative and political context) and operational capacity (Moore 1995). The main influence on capacity in NHS dentistry is the dental workforce and in Wales there have been long-standing concerns, across stakeholder groups, about recruitment and retention. Members of the Senedd, for example, report that one of the main concerns of their constituents is not being able to get an appointment with an NHS dentist, either for themselves or for their children (Senedd plenary 21 June 2023). The Community Health Councils, independent bodies that reflect the views and represent the interests of people living in Wales, have also said:

> *'Alongside getting to see a GP – before and during the pandemic, CHCs across Wales have heard most of all about their difficulties in seeing an NHS dentist or orthodontist'*. (Board of Health Councils 2023)

Improving access, and equity of access, is a priority for Welsh Government. However, the concept of 'access' to health services has many different definitions, dimensions and determinants. Policy makers often use 'use' of health services as a proxy for 'access' (realized access is easier to measure than potential access). Both 'use' and 'access' emerge from a complex interplay between the characteristics of the individual (knowledge, practices, preferences, free time, income etc) and characteristics of services (location, price, waiting times, opening hours etc).

One framework which is often used in research identifies 5 dimensions of accessibility (Levesque, Harris and Russel 2013):

1) Approachability;
2) Acceptability;
3) Availability and accommodation;
4) Affordability;
5) Appropriateness.

And five abilities of populations:

1) Ability to perceive
2) Ability to seek

3) Ability to reach
4) Ability to pay
5) Ability to engage

In this framework, the abilities of populations interact with the dimensions of accessibility to generate access.

The importance of understanding these different dimensions of access is highlighted by the Board of Community Health Councils in Wales:

> *For some people not knowing what is available 'on the NHS', how much it will cost them for NHS treatment, or what financial help they can get means they are put off from seeking treatment, leading to bigger problems later on.*
> (Board of Community Health Council 2023).

Community Health Councils also point out that in rural areas the distance needed to travel to get to a dentist can make things even more difficult and costly. Being able to easily access dental surgeries can also be difficult for disabled people. People who work and have caring responsibilities may also find it difficult to attend appointments for care and treatment during the usual '9-5' hours of operation (Board of Community Health Council 2023).

Building a picture of the current demand for, and supply of, General Dental Services is not straight forward. On the demand side, some Health Boards have developed a centralised list of patients who are waiting to see to an NHS dentist. Cardiff and Vale Health Board, for example, told the Senedd Health and Social Care Committee that there are 15,000 patients waiting to see a dentist and the average waiting time is 26 months (Welsh Parliament 2023). While a centralised waiting list can help Health Boards to improve patient access, it is not a perfect indicator of demand for the purposes of workforce planning. There are likely to be many more patients who, unable to get an appointment with an NHS dentist, have decided to pay to see a private dentist. Others may be unaware that the Health Board operate a central waiting list or have simply gone without treatment.

The choice of methodology is also important. A study in Scotland demonstrated that if a cross-sectional analysis is chosen, then this suggests that 50% of the population visit a dentist each year (Tilley and Chalkley 2005). However, a longitudinal analysis shows a different picture - approximately

80% of the population visit the dentist over a six-year period. The study found the population was comprised of a relatively large group of patients (30%) who use general dental services at least once a year and a substantial group (19% of the adult population) who use general dental services only once in six years. The groups who use services at intermediate frequencies were less numerous.

On the supply side, some dentists only provide private treatment while others provide a mix of private and NHS treatment. Data is not collected centrally on NHS provision in terms of 'whole time equivalent', therefore, when comparing the number of dentists per head of population across different countries it is difficult to tease out NHS provision and to compare like with like. Nonetheless, analysis conducted by the Audit Commission for England concluded that Wales has fewer dentists per head of populations than England, Scotland and Northern Ireland, and other European counties (Table 1).

Tables 2 and 3, below, build a picture of fewer dentists providing General Dental Services for NHS patients now than 5 years ago (approximately 9% decrease). Table 4 shows fewer unique patients seen within a 24 month period (approximately 23% decrease). However, the cause of this decrease cannot be inferred. It may reflect the fact that there are fewer NHS dentists. It may also reflect an increase in nonclinical work, such as administration, or an increase in time spent on patient education and prevention. It may also reflect higher treatment need (a dentist can see 10 patients needing one filling each or one patient needing 10 fillings), or a combination of these factors.

Table 1. International comparisons of dentists per 10,000 population (source: National Audit Office 2020).

Practising NHS dentists per 10,000 population	
Wales	4.8
England	4.4
Northern Ireland	6.0
Scotland	6.2
Practising dentists per 10,000 population	
UK	5.3
France	6.5
Italy	8.3
Germany	8.5

Table 2. NHS dental performers by dentist type for Wales. The table focuses on NHS dental treatment performed by 'high street dentists'; private work by dentists or hospital/community dentists are not included. (*Source: NHS Dental workforce by local health board, age group, gender, contract type and dentist type. StatsWales.)*

	General Dental Service (GDS)				Personal Dental Service (PDS)				Trust-led Dental Services (TDS) contracts				Mixed				
	Performer only	Providing performer	Unknown	Total	Performer only	Providing performer	Unknown	Total	Performer only	Providing performer	Unknown	Total	Performer only	Providing performer	Unknown	Total	Total
2021-22	888	223	3	1114	55	19	.	74	38	10	.	48	135	49	.	184	1420
2020-21	879	243	7	1129	44	15	1	60	38	10	.	48	108	44	.	152	1389
2019-20	952	252	1	1205	57	15	.	72	62	9	.	71	84	40	.	124	1472
2018-19	950	261	3	1214	48	17	.	65	84	6	1	91	102	34	.	136	1506
2017-18	1077	135	.	1212	61	11	.	72	82	1	.	83	104	8	.	112	1479

Table 3. Dentists with NHS activity in Wales: Number who left and joined each year.

	Leavers	Joiners
2021-22		163
2020-21	132	123
2019-20	206	130
2018-19	164	169
2017-18	142	144

Table 4. Number and percentage of patients treated by NHS dental services. "Patients treated" refers to the number of unique patients treated over the last 24 months; each patient is counted once, even if they received multiple treatments over the specified time period.

Source: NHS patients treated for adults and children by local health board. StatsWales.

24 mths ending	*N patients treated*	*%*	*N of adults treated*	*%*	*N children treated*	*%*
31/12/2022	*1,268,313*	*40.8*	*936,254*	*37.6*	*332,059*	*53.9*
31/12/2021	*1,113,535*	*35.9*	*838,689*	*33.7*	*274,846*	*44.6*
31/12/2020	*1,579,641*	*49.8*	*1,194,032*	*47*	*385,609*	*61.2*
31/12/2019	*1,726,965*	*54.8*	*1,295,846*	*51.4*	*431,119*	*68.4*
31/12/2018	*1,722,650*	*54.9*	*1,298,864*	*51.8*	*423,786*	*67.3*

As an employer, the NHS competes with the private sector where 'pull' factors include a focus on quality rather than quantity, less administrative burden, greater business security and more potential to invest in practice staff, practice innovation, and personal and professional development (Evans et al 2020).

Wales also has a geographical imbalance of dental practices so that 97.4% of people in urban areas live within 2.5 km of dentist compared to 7.7% in remote areas (Jo et al 2020). Recruitment and retention of dentists is a particular problem for remote and rural areas (Evans et al 2023). A scoping review concluded that urban areas are more attractive for younger dentists because they are seen as offering a better quality of life and proximity to teaching hospitals for those wanting to undertake further training (Evans et all 2023).

The changing picture in Scotland suggests that policy interventions can improve recruitment to rural and remote areas (Evans et al 2023). One initiative in Scotland is a recruitment and retention allowance to attract more dentists to work in remote areas. Research suggests, however, that simple economic models are not enough - effective solutions to rural recruitment and retention are those that take a holistic and person-centered approach (Cosgrove 2020). Key dimensions include:

- Promoting the local community and sense of place
- Enabling digital access
- Addressing psychosocial and personal needs such as feeling valued and respected, employment opportunities for partners, and schools for children

Research suggests that turnover is reduced if people develop strong social bonds within the first 12 months (Cosgrove 2020).

3. Literature review

This chapter summarises the existing empirical and theoretical research on payment mechanisms, public contract theory, and policy and programme implementation that is relevant to understanding and explaining the implementation of contract reform in General Dental Services in Wales.

Background

Since the establishment of the NHS in 1948, General Dental Practitioners (GDPs) have worked as independent contractors, receiving fees and allowances from general taxation for dental services. They own their premises, employ their own staff and pay their expenses from their income. The majority of practices with an NHS contract will provide NHS care alongside private care, spending, on average, 75% of their time on NHS care (Harris and Holt, 2013). Most GDPs work in partnerships, about a third are 'single-handed'. There are also several large commercial chains that provide care under a corporate model.

GDPs therefore occupy a unique position straddling both public and private spheres and have developed both professional and commercial identities. Empirical research has found that local practice owners balance different concerns, including providing high quality care according to professional standards and a responsibility to keep the practice going for the sake of patients and staff (Harris et al 2015, Goodwin et al 2018). Understanding these multiple identities and concerns is key to understanding the effects of different payment mechanisms and approaches to contracting. The clinical workforce is also heterogenous in the sense of different preferences in terms of working patterns and work-life balance.

Economic theory on payment mechanisms

Contract reform changes the payment mechanisms for dentists. While retaining an element of fee for service, the contract variation introduced key metrics, or performance indicators. Different payment mechanisms create different

incentives and have different effects in healthcare systems. These effects have been demonstrated repeatedly in empirical studies in healthcare contexts and are therefore largely predictable.

Fee for service

Under fee for service dentists are paid according to each unit of activity. The more units of activity the higher the income. Fee for service therefore incentivises activity. However, while this may be a useful payment system in contexts where the product is simple and easy to define, such as picking apples, it is of limited value when applied to dentistry where the work is complex and highly dependent on the specific needs of each patient, and where it is important for the dentist to act in the best interests of the patient (Kronick et al 2015). The effects of fee for service include a focus on those activities that are easy to measure at the expense of other activity that is important but more difficult to measure. In dentistry this might be a focus on treatment at the expense of prevention (Birch 2015). At the system level the cumulative effect of fee for service is an increase in activity and, therefore, costs, but without a mechanism to measure or incentivise a corresponding improvement in quality and outcomes.

Fee for service is associated with supplier induced demand. This is where overall demand increases as a combined effect of an incentive to increase activity, the discretion of healthcare professionals (e.g in judging the threshold for treatment or frequency of visits), and the information gap between professionals and patients. In the NHS supplier induced demand may have a negative impact on patients if they pay a charge for treatment they do not need, or if there is a time cost without benefit. At the system level it is usually perceived by governments as a problem because of the potentially negative impact on allocative efficiency, although it is possible for supplier induced demand to lead to an overall increase in health gain (Grytten 2016).

Performance indicators

Key performance indicators, sometimes referred to as ‘metrics’, are used to measure quality and outcomes. They are sometimes combined with fee for service to address the problem of increasing activity without necessarily

improving quality or outcomes. Financial penalties for failing to meet performance indicators is unpopular with healthcare providers. For this reason, they are usually used with a financial 'reward' rather than a penalty (Voinea-Griffin et al 2010). There is no evidence that performance indicators improve quality or outcomes. This is because of the difficulty of identifying appropriate indicators and a lack of provider acceptance (Grytten 2016).

According to a recent literature review (Grytten 2016), the following conditions need to be present for performance indicators to be successful in dentistry:

- The objectives have to be clear
- The performance indicators need to be valid
- The analysis and the interpretation of the performance data need to be unambiguous
- There needs to be high provider acceptance

For performance indicators to be meaningful they must have sufficient sensitivity (can identify all poorly performing units) and specificity (all units that are identified as poorly performing are actually poorly performing). They must also be markers of outcomes or processes that are under the influence of clinicians (McKenzie and Shilling, 1998). As Freeman (2002) observes 'If clinicians are unable to affect the result, the indicator is redundant'.

In dentistry a key obstacle to using performance indicators is a lack of valid indicators of severity of dental disease. Unlike medicine, where there are established clinical markers of disease control (such as HbA1c in diabetes management), clinical indicators with a sufficiently high sensitivity and specificity do not exist for the management of caries and periodontitis (Grytten 2016).

All indicator systems have unintended consequences and perverse effects, including the manipulation of records and changes to clinical practice (Goddard et al 2000b, McKee and Hunter 1995, Roberts 1994, Smith, 1990; Smith, 1995). The unintended consequences of performance indicators in healthcare systems are summarised in Table 5.

Table 5. Unintended consequences of performance indicators (after Smith 1995)

Tunnel vision	Focus only on what is measured
Sub-optimisation	Focus on narrow local objectives, rather than those of the organisation
Myopia	Focus on short-term targets
Measure-fixation	Focus on how to enhance the measure rather than on the associated objective
Misrepresentation	Deliberate manipulation of behaviour
Gaming	Deliberate manipulation of behaviour to secure strategic advantage
Ossification	Organisational paralysis due to rigid performance evaluation

Indicator systems inevitably lead to high levels of conflict between stakeholders and disputes over their precision, meaning and use (Freeman 2002). It is therefore important for the goals to be clearly defined, and all stakeholders should be involved in their development. In healthcare systems this means including clinical, managerial, purchaser, and patient perspectives (Goddard et al 2000; Smith and Frowen 1997; Nyhan and Marlowe 1995; Popovich 1998; Smith 1995).

Indicator systems need corresponding IT systems to capture information and to analyse and disseminate data. Ideally these processes should be automated (Freeman 2002). IT systems are, however, only 'the first step' - data quality requires assurance processes. Importantly, data never 'speaks for itself', it must be interpreted. As Freeman (2002) notes 'there are no technical solutions to problems of interpretation':

> *Reported indicators are exactly that; indicators to focus attention on issues of interest. They are neither proof of a problem or its solution*.

Performance indicators can be used either for summative or formative accountability. Summative indicators are used for external verification and as the basis of reward or sanction. Formative indicators are used internally, for development and quality improvement, as a starting point for conversations, alongside other sources of information about the individual context. The use of indicators for internal quality improvement purposes will only be effective if the focus is on learning and non-judgmental feedback. To develop cooperation, indicators designed for internal quality improvement should not be released externally (Freeman 2002).

The weight of the empirical evidence suggests that the use of performance indicators for summative assessment should be avoided in healthcare systems:

> *The weight of evidence considered in this review suggests that the use of performance indicators in a summative way as a basis for praise or sanction is almost inevitably corrosive and corrupting of the indicators themselves. Such accounting systems place trust in systems rather than individuals, further undermining the conditions of trust required for quality improvement. A range of technical problems arises due to the precision of data required to make summative comparisons and further negative unintended consequences follow from the pressures on clinicians and managers to `get good results'. Of far greater potential benefit is the formative use of indicators as clues to performance, discussed and interpreted by clinicians and managers in the light of local contexts and with the aim of continuously improving the quality of clinical care. Such approaches foster trust and communication between clinicians and managers, with the result that they are better able to work through problems with care delivery and improve quality* (Freeman 2002).

Capitation

Capitation systems pay dentists to provide all care required to a defined population, calculated as a fixed sum per patient. The strength of a capitation system is the potential to contain costs, compared to fee for service. The weakness is a potential for under treatment – dentists may undertreat patients to save costs. There is also a risk of patient selection - dentists select healthier patients. These risks can be addressed through 'weighting' of the per capita fee. For example, treatment need is related to socio-economic deprivation, so payments could be weighted to reflect these characteristics in the population. Weighting on the basis of demographic profile is preferable to weighting based on characteristics that are recorded by the dentist, such as disease severity, because of the risk of 'upcoding'.

Mixed payment systems

Mixed payment systems aim to balance the incentives of different forms of payment. For example, capitation is sometimes combined with an element of fee for service to balance the risks of under and over treatment. The

optimal balance of capitation and fee for service will depend on the characteristics of the population being served. Where there is high need, such as in an elderly population, the fee for service component can be increased to guard against patient selection and undertreatment (Grytten 2016). There is limited empirical evidence on the effects of changing to a mixed payment system in dentistry. However, a recent experimental study confirmed that patient benefit was greater under a mixed system than either capitation or fee for service (Li et al 2022).

Professionals and intrinsic motivation

A large amount of research has shown that professionals are not just motivated by monetary reward but also have intrinsic motivation to provide high quality and effective care, grounded in professional ethics and value systems. Dentists are also motivated by elements of their work that they find inherently interesting and challenging (Grytten 2016). Research has shown that when professionals are intrinsically motivated, adding a financial motivation can undermine, or 'crowd out' intrinsic motivation. Crowding out can lead to less production rather than more. The effects of crowding out appear to be greater when the tasks are cognitively demanding or challenging, such as in medicine and dentistry. Where tasks are repetitive and boring then monetary rewards work as intended to increase production.

Maintaining intrinsic motivation is not just important for productivity but for high quality and effective patient care (Kolstad 2013). The risk of crowding out intrinsic motivation is highest with fee for service and performance indicators. Over specification and measurement can undermine professional autonomy and be perceived as unnecessarily controlling (Grytten 2016).

Public Service Contract Theory

Understanding the use and effects of contracts in NHS dentistry must look beyond the relative merits of different tools (fee for service, capitation etc) to consider the influence of broader social and institutional contexts on behaviour. There are several theories, drawn from economics, sociology, and political science, that relate to the use of contracts in public services. Potentially relevant theories relating to the provision of NHS dentistry have been summarised below:

Transaction Costs

Empirical research suggests that when contracts are used in publicly funded welfare services the costs related to administration outweigh improvements in efficiency. These costs include the costs of negotiating, specifying, drafting, monitoring, and enforcing compliance. The implications are that, in practice, forms of hierarchical organisation may be more efficient than markets (Ferlie 1992). In relation to NHS dentistry this suggests that direct provision and salaried practitioners, as in the case of the Community Dental Service, is more efficient than contracting.

Principal-agent theory

The principal-agent problem arises when the two parties in a contract (the principal and the agent) have divergent interests and there is an asymmetry of information (the agent has more information than the principal). The challenge is in ensuring that the agent acts in the interests of the principal. The theory assumes that agents will act in their own interests and will exploit opportunities to maximise personal gain (Williamson 1975). Empirical research suggests that in clinical communities (such as dentistry) social networks and professional norms may work to limit opportunistic behaviour (Godwin et al 2018). Professional networks have a particularly powerful influence on behaviour and shape how dentists respond to financial incentives (Brocklehurst et al 2018, Harris et al 2015, Tickle et al 2012). As dental practices are also embedded in local communities social networks and community ties may also work to limit opportunism (Brocklehurst et a 2018).

Institutional embeddedness

The behaviour of parties to a contract are influenced not just by micro-level social networks, but by broader relations, for example to professional bodies and government, history and experience, and sets of principles, norms, rules and decision-making procedures. In addition to a professional concern for high quality patient care, NHS dentists may feel an allegiance to an ethos of public service and a commitment to values such as accountability, integrity, impartiality, and an idea of a public interest distinct from private concerns (Brocklehurst et a 2018).

Relational Contracts

Theories of relational contracting recognise that in situations where it is impossible to have complete information there are benefits to a degree of flexibility and ongoing negotiation between parties. They also recognise that economic action is embedded in social relationships, and that the performance of a contract is significantly influenced by the history of relations between the parties and norms of trust and reciprocity (Petsoulas et al 2012, Granovetter 1985).

The policy and programme implementation literature

Relevant insights and learning can also be drawn from the broader literature on policy and programme implementation. For example, previous research highlights the importance of understanding how the behaviour of front-line staff, and the responses of those affected by the policy, shape implementation and effects (Hill and Hupe 2002). In the context of public sector welfare services, where resources are constrained, demand is high, and there may be multiple, competing policy objectives, front-line staff inevitably develop coping mechanisms for the dilemmas created by their working conditions. These coping strategies have a significant influence on policy and programme implementation and effects. In an early example, a study of education policy implementation showed how the coping strategies adopted by teachers to manage the demands of their job distorted the implementation of special education reforms (Lipsky 1980). The policy was intended to provide uniform treatment of children with special needs, but with no explicitly mandated system of prioritising children, and faced with an increase in workload, staff biased the scheduling of assessments in favour of children whose behaviour was disruptive, who were not likely to cost the system money, or who matched the specialty interests of individual members ofstaff. The study showed how the pattern of responses developed by local staff to the multiple demands placed upon in effect became the policy.

The academic literature on policy and programme implementation also highlights the importance of aligning policies and programmes with professional values. For example, an evidence review of quality improvement initiatives in healthcare, commissioned by the THIS Institute, concluded that quality improvement programmes are more likely to be adopted and

embedded when these align with professional values for improving patient care (Ali et al 2020). Trust is also essential for fostering innovation and creativity in professional communities. ‘Top down’ forms of control and performance management cause frontline professionals to disengage from quality improvement programmes (Currie and Spyridonidis 2019).

4. Summary of findings from Stage 1: Pre-pandemic (2019 to 2020)

The findings from the first stage of the evaluation (2019-2020) were published in April 2021. This stage of the evaluation followed an iterative realist research cycle. This involved a four- stage process of theory development and testing using cyclic stakeholder engagement. The stakeholder data collection was supplemented by the use of visual ethnographic techniques. The four phases were as follows:

1. Establishing an initial programme theory: scoping of the policy literature and purposeful stakeholder sampling comprising national policy team (n=3) and Health Board managers (n=6) to understand the intended programme direction and implementation process and develop a framework for subsequent testing.

2. Initial programme theory development and testing: Investigation of broader stakeholder perspectives based on the emergent theory areas from phase one. Interviews were held with practice principals (n=18), associate dentists (n=8), dental care professionals (n=2), corporate dental practice (n=4) and patients (n=10). Data was gathered using semi-structured interview and visual 'centre-staging' methods.

3. Theory refinement: Further engagement with key stakeholders including practice principals (n=13), associate dentists (n=4), and Health Board managers (n=2) to test and refine the developing theoretical model using a process of combined semi- structured interview and accompanying visual method.

4. Development of the final programme theory: review and immersion in the research data across the research team to identify context-mechanism-outcome statements that explain approaches and conditions necessary for GDS reform success.

CMO configurations

The evaluation resulted in context-mechanism-outcome (CMO) configurations that provide an explanatory account of the specific elements required for successful implementation of the contract reform programme. These CMO configurations are derived from observations of positive engagement with the GDS reform programme from stakeholder data and predict a path for successful system transformation.

Alignment with professional values

Alignment with professional values, such as prevention, quality, and innovation, leads to professional engagement with the programme and improved job satisfaction.

Trust

In the context of reciprocal trust between Health Boards and dental practices, trust was used to underwrite the risks associated with change (service delivery risk for Health Board managers, business risk for practice owners).

When practice principals felt trusted by Health Board managers this created goodwill which promoted engagement with the GDS reform programme and increased job satisfaction.

Trust between Health Board mangers and practice principals fostered creativity and stimulated innovation by removing the fear of being financially penalised.

Opportunities for dialogue in the relationship between Health Board managers and practice principals enabled the development of mutual understanding – of the requirements of the Health Board for accountability of public monies and some form of standardisation to manage a large number of contracts; and of the particular local circumstances and challenges faced by the dental practice. Mutual understanding strengthens the relationship between the Health Board and dental practices which, in turn, underpins collaboration and the contribution of both parties to the capacity of the service to realise improved

health outcomes.

Communication

The introduction of substantial system change, in an environment of established professional communication, drove emergent, informal, channels of communication between Health Boards and dental practices (vertical) and within clinical peer networks (horizontal), allowing clinicians access to professional and pastoral support that challenged established professional (and cultural) boundaries. This reduced the isolation of practice owners and facilitated an understanding of reform principals and implementation requirements, leading to net acceptance and support of system change.

Leadership

When Health Board managers promoted the aspirations of the programme to practice principals in a way that was professionally and personally meaningful, for example, by highlighting professional growth, optimal use of skills, interrupting ineffective treatment patterns, and maintaining professional security, then practice principals engaged with the reform programme and, in turn, encouraged the associate workforce, as drivers of clinical activity, to support implementation.

When practice principals promoted engagement with the reform programme to the practice team in a way that was professionally and personally meaningful this secured effective teamwork, optimal use of the workforce (right person, right task), and stability (recruitment/retention), to realise reform objectives.

Using Data for Improvement

When data on oral health was shared in face-to face dialogue with patients this provided a space for the patient to reflect on oral health status and an opportunity for patient education, this encouraged and empowered patients to make changes to improve their oral health.

When a comparative analysis of performance data in relation to oral health

across practices was shared with practice teams, this contributed to collective sense-making, strengthened shared norms and objectives, and channeled activity to reform objectives.

Patient views and values

The first stage of the evaluation also involved in-depth interviews with ten NHS patients. Continuity, access, calming and caring environment, and family-based care all emerged as important to patients.

Continuity

Continuity of care was a priority for patients. Many of those interviewed had been with the same dentist for over a decade. In these instances, patients reported extremely high levels of satisfaction with their dental care. This was attributed to the interpersonal relationship formed between the treating clinician and the patient, to the extent that patients would describe their dentist as a friend first and clinician second. Patients recognised that they had limited capacity to judge a practitioner on their clinical skills (apart from relieving and avoiding pain), so relied on personality and relationships. Patients prioritised remaining with the same clinician over all other factors, including proximity, cost, and availability. The benefits of continuity were seen as the development of trust within a relationship, knowledge of the patient as a person, and continuity in information

Patients were typically less aware of other members of the dental team. When informed about the aims of skill-mix, patients were generally accepting.

Access

Patients assumed that some level of access should be available in their local area. However, most patients interviewed experienced difficulty accessing dental services whether directly, or indirectly through partners and children.

Calming and caring environment

The importance of a calming environment reflects the emotions that may be evoked by dentistry, such as vulnerability and fear. These emotions stem from the feeling of being exposed when having treatments in the mouth, and the ever-present threat of pain.

Features of the material environment can help patients feel at ease. Examples include soft background music, magazines and other 'home comforts'. This also extended, in some cases, to the use of the Welsh language for face-to-face and written communications.

Patients valued the feeling of being 'cared for'. This was enacted by staff who were polite and friendly, and in their 'bedside manner'. Comfort was also important to patients and was linked to familiarity of the staff, building and routine.

Responsive and family-based care

Patients with complex health needs found using NHS dental services challenging. A key issue was the limited contact time available with a practitioner. Patients with complex needs felt they required more time to discuss broader, relevant, health conditions than was available in a typical appointment. For this reason, these patients suggested that the care they received could be more tailored, proactive and considerate of more general health.

The idea of family-based care reflects the recognition that all members of a family require oral health care. This was particularly important for people who lived with members of their families. Family-based care also recognises that some important risk factors for poor oral health are grounded in family practices, as well as the potential for children to pass on knowledge about oral health and shape the health behaviours of other members of the family.

Providing information to children and supporting healthy habits was seen as a priority for preventative strategies. Childhood was seen as a time when people were at particular risk with regards to oral health, related to the duration of time that teeth could be exposed to sugar (e.g. from soft drinks

and crisps). It was also seen as a formative time when people were open to learning and embedding routines and habits that promoted oral health. Children were also seen as a source of information and behaviour change for other family members.

5. Summary of findings from Stage 2: Values, perspectives, and experiences of NHS dental patients

This section of the report summarises the findings from stage 2 of the evaluation which focused on the values, perspectives and experiences of NHS patients. The findings were published in an interim report in April 2022.

Research questions

What do patients value about dental care?

What do patients value about system reform in General Dental Services?

Methods

Little is known about the views and experiences of patients of specific policy initiatives in General Dental Services. The inclusion of patient views in previous evaluations of similar reforms in other nations have been limited to an attempt to measure changes in service quality. For example, the evaluation of NHS contract pilots in England (The Stationery Office 2014), used a single patient satisfaction metric to assess service quality. The evaluation found that patient satisfaction was universally high - 95.8% of patients of the contact pilots were satisfied, compared to a national mean of 92.2% for NHS dental practices. A baseline rate was not collected, making it difficult to interpret the finding. It has also been argued that universally high patient satisfaction rates suggest that this metric lacks responsiveness when used for this purpose (Brocklehurst et al 2020).

Change in service quality was also the focus of the evaluation of capitation pilots in Northern Ireland (Brocklehurst et al 2020). This evaluation used (1) a patient survey, co- designed with patients, and (2) focus groups with 14 patients recruited by practices participating in the capitation pilot. The evaluation concluded that 'patients did not appear to notice very much change' (Brocklehurst et al 2020, p vi). The focus groups revealed a strong degree of trust in the dentist and willingness to accept their advice.

To address the limitations of previous approaches, and generate insights on stakeholder views and values to support implementation and policy development, we developed a novel approach using vignettes. Vignettes are short stories about people and situations used to study perceptions, beliefs and attitudes. Vignettes are used for different purposes in social research, and as part of different research designs, including quantitative approaches (e.g. surveys), qualitative approaches (e.g. as part of a focus group or in-depth interview), and in mixed method approaches (Barter & Renold 2000). Vignettes can be used as a complementary technique alongside other methods to enhance data collection or to generate data on a topic not accessed by other methods. Within a qualitative approach they are often used to access cultural norms and highlight ethical frameworks and moral codes (Barter & Renold 2000). They are used with open questions that leave room for participants to define the situation in their own terms.

We used them as part of a qualitative research design to enhance an in-depth interview with the aim of exploring the views of NHS patients on dental reform. We used the vignette as a technique to initiate and open-up a broad discussion on a range of topics based on the principles of dental reform in Wales. Topics explored included:

- Extended recall intervals
- Prevention and self-care
- Skill-mix
- Conditional access

In this context, vignettes can have several benefits. They offer a concrete example which can be easier for people to talk about than an abstract principle. This is helpful in our study of dental reform where NHS dental patients may not yet have had direct experience of all the scenarios. This reduces the need to recruit a very large sample to ensure enough patients with experience on which to draw, and the difficulty of finding patients with direct experience of a topic. Vignettes represent a 'snap shot' of social reality containing selected information on which research participants are asked to comment (Hughes 1998). The limited information provided in the scenario often elicits an 'it depends' answer from research participants, encouraging participants to offer and define important contingent factors and contextual features (Barter & Renold 2000).

Vignettes can also offer a way to the potential issue of social desirability bias. This is the tendency for people, when answering questions from strangers, especially in a way that is being recorded, to present their actions in line with their view of public morality, to avoid judgement or offence (Douglas 1971). The vignette offers the

opportunity for the researcher to ask the participant to comment on the actions or beliefs of the fictional characters in the story, reducing the pressure to provide a socially desirable answer.

Patients were recruited for this study using a national recruitment contractor (Future Focus Research Ltd., Cardiff, UK). Semi-structured interviews were conducted by telephone with 50 patients during August and September 2021. Participants were current NHS dental patients, stratified according to region and age (table 6). Recruitment stopped where no new themes or insights were identified.

Table 6. Interview study with NHS dental patients: distribution of sample

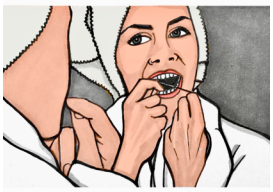
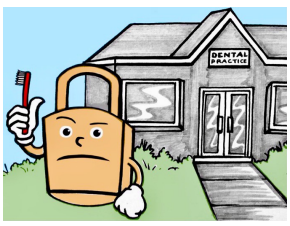
Region	No
South East Wales	10
Valleys	10
Mid-Wales	10
North East Wales	10
North West Wales	10
Age	
19-29	8
30-39	10
40-49	11
50-59	10
60-69	9
70-79	2

The semi-structured interviews were digitally recorded and transcribed and analysed to develop our understanding of dental reform.

Analysis was an interpretive and iterative process, involving familiarisation and coding of data, and team discussion, informed by our reading of the existing empirical and theoretical literature. The aim was to (i) develop a descriptive and explanatory account of patient views, experiences and perspectives; the implementation of contract reform following the pandemic; and innovation and improvement in NHS dental services (ii) distil insights and learning to inform the strategic decisions of policy makers and managers.

The research was approved by the Bangor University Healthcare and Medical Sciences Academic Ethics Committee.

Summary of findings

Topic	
Extended recall intervals 	Patients value regular visits with the dentist. Regular visits are seen as part of a collaborative practice of oral health maintenance. There are concerns that disease could develop between visits if the recall interval is extended. Even where there is good oral health, patients feel that '18 months is a long time' - circumstances and behaviour that influence oral health could change in this time. Some patients believe they will lose access to an NHS dentist if they do not attend every six months. There is greater openness to a change in recall interval if the reasons are explained. Patients are more likely to accept a change to routine where there is a good relationship with the dentist.
Prevention 	Patients value advice on maintaining good oral health Dental staff need good communication skills so that patients do not feel judged.
Skill mix 	Many patients are familiar with skill-mix and onward referral from other services such as general practice. There is little knowledge of dental roles other than the dentist. Patients did not want to see skill-mix developed at the expense of access to local services.
Conditional access 	Patients believe it is important not to waste NHS resources but think that delaying treatment may lead to more costly interventions. Patients believe that there are things they can and should do to maintain their oral health. They also want NHS services to show understanding and support for individuals who face challenges looking after their health.

Key learning

- It is important that public communication not only explains the reasoning behind extended recall intervals but is sensitive to patient concerns and values.

- Good relationships between dentists and patients are key. Good relationships foster trust and acceptance of new ways of working. Opportunities for dialogue between the dentist and patient enable changes to be discussed in a way that considers individual patient preferences, circumstances, and concerns.

- There is scope to make more use of skill-mix, for example, by offering patients an appointment with another member of the team between appointments with the dentist. This could be an opportunity for advice on prevention, and for patients to discuss any concerns. Appointments could be made available using a range of different platforms to be inclusive and to appeal to different demographics (telephone, video call, in person).

- We found a near-universal acceptance of the idea of personal responsibility for good oral health. At the same time, patients felt there needed to be exemptions for certain groups, such as those with learning disabilities or older people, and understanding for people who may be struggling, perhaps temporarily, to take care of themselves or their children, and would benefit from extra support.

6. Research Design and Methods

Aims

This report presents findings from final stage of the research, following the pandemic and the restart of the contract reform programme in April 2022. The aim of the research was to capture learning in the following areas:

- Programme development and implementation in practice
- Innovation and improvement

Programme development and implementation in practice

From April 2022 new measures of quality and activity were introduced for testing and refinement. Work also continued on the development and implementation of care pathways. The aim of data collection and analysis was to understand the views and experiences of stakeholders at different levels (national teams, health board teams and practice teams), of the new measures of quality and activity, and the development and implementation of new care pathways. The aim of the evaluation was to capture learning to inform ongoing refinement.

Innovation and improvement

Improving access for patients is a priority for general dental services in Wales. The context, however, is challenging, due to the pandemic and long-standing difficulties in recruiting staff to practice teams. The aim was to describe and share 'promising practice' and innovation in improving access from different Health Boards and practices. What ideas and strategies have been used? What has worked in different locations?

Learning from the evaluation has highlighted the importance of data for quality improvement. The ACORN has worked to support dialogue between clinicians and patients on prevention and self-care; it has also supported dialogue between system partners and shifted the focus from activity to quality. The second phase of the evaluation aimed to continue to explore

how ACORN data is understood, interpreted, and used at different levels (national teams, health board teams, practice teams) and the barriers and facilitators for its use in quality assurance and improvement. Our analysis will compliment quantitative data analysis with process data that explains and contextualises the impact of the data and how it influences quality improvement.

Approach to evaluation

To capture learning in these areas, taking account of system complexity and politics, and responding to a dynamic and emergent policy landscape, we used a mixed methods process evaluation.

Using an analytical framework enables process evaluations to move beyond descriptions of 'what happened' to explore 'what explains what happened' (Gilson and Raphaely 2008). We used the public value implementation triangle (Moore 1995) as a conceptual framework to guide data collection and analysis. The public value implementation triangle recognises that public managers, at different levels of government, are in their positions to act for society. Public sector managers face the challenge of making existing operations efficient and effective, adapting to changing circumstances, and deciding, designing, and delivering new ways of creating public value. In doing this they face key constraints from the authorising environment (political and public stakeholders and legislative frameworks) and operational capacity.

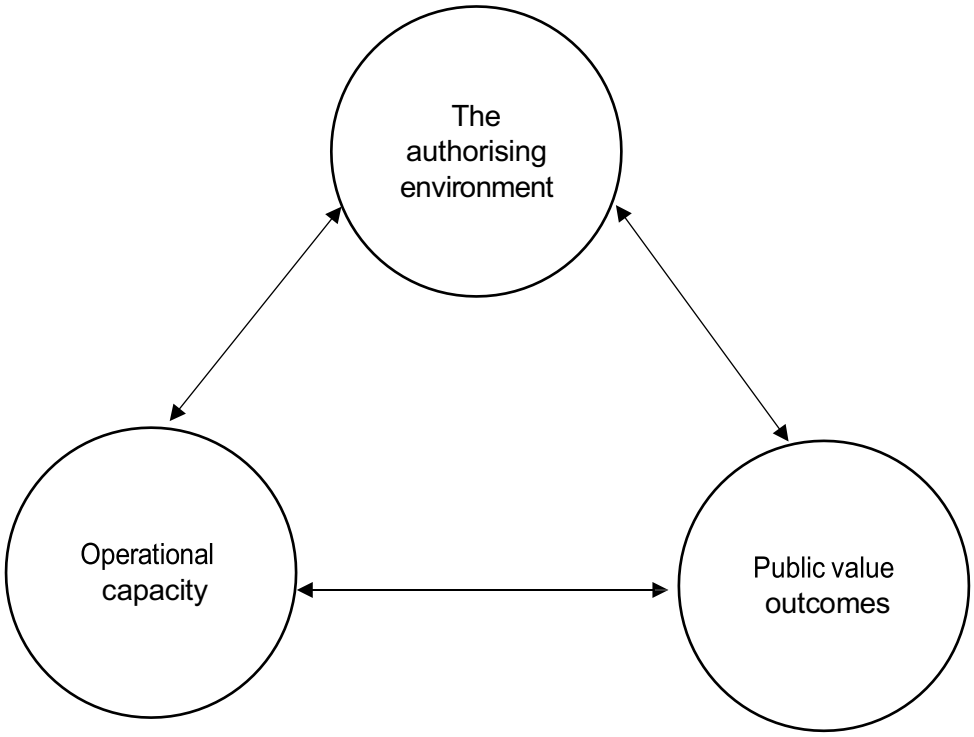


Figure 2. The public value implementation triangle. Developed from Moore 1995.

The public value implementation triangle distils the key analytical components of public- sector policies and programmes:

1. They create something that is valued by stakeholders. As the inevitable product of politics this is not an absolute standard but necessarily historically and geographically emergent.

2. The authorising context for management strategy requires that this is seen to be legitimate and politically sustainable, i.e., able to attract sufficient ongoing support and resources from political and other stakeholders.

3. Management strategies must be operationally and administratively feasible.

The benefit of using the public value implementation triangle as an evaluation framework for public sector policies and programmes is that, by acknowledging the features of publicly- funded welfare services, it avoids 'thin' analyses that describe well known 'barriers and facilitators' of

implementation. Instead, it supports an in-depth explanation of programme effects and how they are produced. These insights can be used to inform the strategic decisions of policy makers and managers.

Capturing what is valued by different stakeholders, at different levels in the system, also makes the findings of the evaluation relevant to a wide range of stakeholders. Collecting data on the experience of different stakeholders can also help to capture both intended, and unintended, consequences. Importantly, understanding what different stakeholders value can help avoid policy failure.

National policy team 'check in' meetings

A key strength of the evaluation is the use of regular formative feedback and 'check in' meetings between the evaluation team and the national policy team. These meetings enable timely reporting of interim findings and analysis in accessible formats for a policy and practice audience. It also ensures the evaluation team is up to date with policy developments and priorities. Given the ongoing pandemic and a dynamic policy landscape it was important that the evaluation continued to be responsive to changing circumstances. The plans for research activities were therefore agreed in discussion with the national policy team.

Methods

To take account of the political features and the complexity of the system we collected data from a range of different stakeholders using a mix of methods including literature reviews, observation, document analysis, a focus group, case studies, and interviews.

Literature reviews

We used a scoping review, and the expertise of the team on healthcare governance, to map potentially relevant literature. This included literature on payment mechanisms in clinical communities, public sector contract theory, and policy and programme implementation. We also conducted a literature review on patient views on NHS dentistry to inform our analysis of patient

values, perspectives and experiences of system reform in General Dental Services in Wales.

Observation

Between April 2022 and April 2023 LJ attended monthly meetings of the Programme Coordinating Group, regular meetings of the Stakeholder Engagement Group, and engagement events.

Document analysis

We collated national policy documents and reports, letters, and guidance. We also watched debates in the Senedd on the topic of NHS dentistry and read newspaper reports. We used these documents to trace the developing programme theory of the contract reform programme and the broader policy and political landscape as it changed over time.

Interviews, focus group, and case studies

Data collection corresponded to different levels of the system:

- National policy team (n=5),
- All 7 local Health Boards
- Dental care professionals (n=40)

The aim of qualitative research is to understand the range and nature of perspectives and experiences (rather than measure relative prevalence) and to distil insights and learning for policy and practice. The sample size is based on the aims and scope of the research and the characteristics of the population (Malterud et al 2016).

National policy team

Interviews with members of the policy team (n=5) were held in Spring 2022 and in the summer of 2023.

Local Health Boards

We spoke to contract managers in all 7 Health Boards using **semi-structured interviews**. Interviews were conducted between August and September 2022.

A **focus group** with Health Board contract managers was held in November 2022 to discuss emerging findings and probe key themes in greater depth.

The semi-structured interviews were digitally recorded and transcribed and analysed to develop our understanding of dental reform.

Local dental practices

We interviewed 40 dental care professionals (practice owners, therapists, and associates), across all 7 Health Boards, between October and December 2022 (table 7).

We had a multi-pronged strategy to recruit dentists from across Wales:

1. Our approach to recruitment was primarily through a mailing list for all local practices held by Welsh Government. An invitation to participate in the evaluation was sent out to all practices by the central policy team. Further invitations were included in the regular contract reform newsletters that were sent out to all participating practices. The invitation included a link to a google doc where practices could leave their contact details if they were interested in having more information about the evaluation.

2. To ensure a spread across Health Boards we also asked Health Boards to send out the invitation to their practices.

3. We used positive deviance sampling (to capture high performers and innovation) via social media.

4. For those Health Boards where recruitment was low, we also put together a sampling frame using practices whose email addresses were publicly available.

5. We asked Health Boards to email practices who had handed back their contracts

Table 7. Practice interviews: Number of participants by Health Board

Health Board	Practice Owner	Practice Manager	Associate	DCP	Salaried	Total
Aneurin Bevan	6		1			7
Betsi Cadwaladr	2	2	5	1	1	9
Cardiff and Vale	1	1	3			5
Cwm Taf Morgannwg	3					3
Hywel Dda	1		1			2
Powys			3	1		4
Swansea Bay	4	2				6
Cardiff and Vale	1			1		2
Totals	17	4	13	3	1	40

We also conducted in depth case studies (n =3) using repeat interviews and site visits to explore particular topics in greater depth, namely contract hand backs (n=2) and innovative practice (n=1).

The research activities for stage 3 of the evaluation are summarised in table 8 below

Table 8. Evaluation Stage 3: Contract reform restart 2022-2023 - research activities

Theme	Research questions	Methods
Development and implementation in practice	What do stakeholders value about the contract reform programme? How satisfied are stakeholders with different aspects of the process? What reasons are there for engagement/lack of engagement? What are the barriers and facilitators to implementation? What are the benefits/disbenefits in practice? What recommendations can be made for further refinements?	Observation of national programme meetings Observation of engagement events Analysis of national policy documents, reports, letters and guidance Stakeholder interviews at different levels of the system (national policy, local Health Boards, local dental practices) Focus group with Health Board contract managers Case studies
Innovation and improvement	What challenges do dental practices face in improving access? What innovations and 'promising practice' can be identified?	Stakeholder interviews at different levels of the system (national policy, Health Boards, local dental teams) Interviews with NHSBSA team

7. Programme development and implementation in practice

This section presents findings on implementation of the contract reform programme from April 2022, from different stakeholder perspectives – the national policy team, Health Boards, and dental practices.

National policy team

This section considers the perspectives of the national policy team. The national policy team includes the Chief Dental Officer, supported by civil servants and senior staff from Public Health Wales, an all-Wales NHS Trust providing clinical and public health data, analysis, and expertise. For the purpose of analysis, the national policy team is distinct from national politicians (the minister and members of the Senedd who are elected representatives of the people in Wales). Due to the small number of individuals involved and to maintain anonymity, direct quotes will be attributed to 'national policy team' rather than an individual role.

From the perspective of the national policy team, the healthcare system in Wales is a complex system (Braithwaite 2018) with different layers of governance – the national policy team, who develop policy to deliver Welsh Government objectives, and the local Health Boards, who hold the budget and contract with the independent sector to provide dental services to NHS practices:

> *Dentistry, like a lot of medicine, it's not simple, it's a complex system, so you've got dental teams who are not NHS staff, so they have an NHS contract which they can decide to hand back in or not. You've got then the budget which resides in Health Boards, so not with Welsh Government, the budget resides in Health Boards, and that's subject to different tensions within the health board. And then you've got to drive forward Welsh Government policy objectives, so you've got a lot of actors in play, and then obviously you've got patients as well.* (National policy team)

This complexity was a key reason for a staged approach to contract reform based on 'action learning' and 'co-design'. This involved incremental changes, and a process of 'testing and learning'. Learning would then be fed into further policy development, in collaboration with the profession. At the same time, the national policy team were conscious that local dental practices, as small independent sector businesses, could tolerate only limited amount of uncertainty.

The policy team were also constrained, in terms of what changes they could introduce as part of the contract reform programme, by the legislative basis of the 2006 contract (which had established the system based on Units of Dental Activity). This meant that any changes had to be within the existing legislative framework. It was hoped that learning from the contract reform programme would inform future changes to primary legislation.

Policy makes were cognisant of the need to balance different interests. These included:

a *political* imperative to address the concerns of constituents, and to demonstrate measurable progress on 'improving access' (politicians)

an *administrative* imperative to account for public spend (policy team and Health Boards)

a *professional* imperative to provide high quality care, and to be recognised and valued for providing high quality care; and to maintain job satisfaction, staff wellbeing, and a viable and profitable business (dental practices)

The introduction of key performance indicators (what the national policy team referred to as 'metrics') for patient access in April 2022 reflects the first two of these imperatives. Political pressure to 'improve access' to NHS dentistry was an important influence on policy development. According to the policy team, it is often the largest single topic for letters to members of the Senedd:

> *And that's the one that gets to the media and gets political attention, access. If you've got a queue outside a dental surgery that's a political issue (national policy team)*

The programme theory is that capacity can be created by increasing the recall interval of healthy patients in line with the 2004 NICE guideline. This is based on the following assumptions about current clinical practice (1) Dentists see a large number of healthy patients (2) Dentists see healthy patients every six months for a check-up. For example, in a written statement issued in July 2022 the Minister proposed that:

"The capacity released will be available to provide appointments for new patients."

''Practices will need to balance the need for urgent dental provision with the need to see new patients, however we have calculated some 112,000 people could gain access to an NHS dentist this year as a direct result of contract reform.''
(Written Statement: Dental Contract Reform 2022-23, 27 July 2022)

During interviews, the national policy team referred to research evidence and expert analysis that had informed the development of policy, such as a report from the policy research institute, the Health Foundation, on change management in the NHS (Health Foundation 2015). This report was based on an analysis of how NHS organisations had improved and on a review of empirical evidence. It identified seven 'ingredients' of successful change, that are essential at every level of the health system:

1. Committed and respected leadership that engages staff
2. A culture hospitable to, and supportive of, change
3. Management practices that ensure execution and implementation
4. Capabilities and skills to identify and solve problems
5. Data and analytics that measure and communicate impact
6. Resources and support for change
7. An enabling environment which supports and drives change

Local Health Boards

The general direction of the contract reform programme had broad support from local Health Boards. The emphasis on preventative dental care and improving access to NHS dental services for patients within the Health Board population was especially valued.

Health Board managers faced challenges of high demand, uncertainty about the future direction and details of the contract reform programme, and inaccurate data. They were managing these difficulties through building and maintaining relationships and communication with dental practices. However, they felt limited in the support they could offer dental practices.

Demand

Health Board managers reported that the restart of contract reform in April 2022 coincided with an extraordinary increase in demand for NHS dental services from patients. The increased demand in services was attributed to the suspension of General Dental Services during the COVID-19 pandemic across 2020-2022. The suspension of normal NHS dental services in Wales resulted in the needs of dental patients in Wales "*exploding*". Health Boards felt ill-equipped to provide support to NHS dental practices to mitigate the stresses of the new demands in a post-pandemic landscape, at the same time as implementing the contract reform programme.

Health Board managers reported that the COVID-19 pandemic resulted in an overall decline in the oral health of the population. This was attributed to dentists being unable to provide general checkups that could have mitigated more complex oral health issues, and delays in treatment for urgent dental issues. The delays in dental treatment, because of the pandemic, also resulted in more complex dental treatments being required for patients across Wales. The socio-economic impact of the pandemic, and the impact of the cost of living crisis on healthy eating, has also contributed to an overall decline in the oral health of the population. As one Health Board interviewee reported,

> *I am not sure that COVID has helped the reform program because we're trying to implement a preventative model, but we now have got quite a backlog of patients with high needs. So, we're trying to deliver preventative model while we're still trying to deliver and care to patients with high needs*

The current situation of NHS dental services in Wales is qualitatively and

quantitatively different from a pre-pandemic context. The increased demand, reported by all Health Board managers, has reduced the capacity of the service to provide a preventative and innovative model of dentistry. As one contract manager said: '*this year has made it hard for us to get people on board and to get people really bought into what we're trying to achieve*'.

Health Board managers felt that historic patients had become deprioritized under contract reform. Under the contract variation, introduced in April 2022, a dental practice is required to meet the needs of 'historic patients', whilst also seeing a required number of 'new patients'. Dentists who failed to meet the required number of new patients faced a financial penalty. Dentists were struggling to meet the required number because new patients often did not attend appointments, so dentists could not submit a claim (it is only when a claim is submitted that a patient 'counts' toward the required number of new patients). New patients also often had high need that required complex treatment. In the case of high treatment need, a claim for that patient could not be submitted until all the treatment had been completed. Dentists' books were already full due to the COVID backlog, which meant that it could be many months before all the treatment for a new patient could be scheduled. This meant there could be a long delay before all the treatment could be provided for a new patient and the claim submitted. Dentists were worried that they would not be able to submit enough claims by the end of the year to meet the required number and would, therefore, face financial penalties.

Morale

According to Health Board managers, morale in dental practices is 'universally low'. This is said to be because of the lack of certainty around the implementation of contract reform, very high demand, and staff shortages.

Staff sickness, due to COVID, has remained high. To maintain public safety, dental staff have often been required to be quarantined to prevent the transmission of COVID-19. This placed an acute strain on dental practices that were also forced to contend with an increased demand of services post-pandemic.

Staff shortages were also attributed to the inability to recruit and retain dental staff within NHS dental services in Wales. Health Board managers reported that it was difficult to recruit dental staff, across all different roles (e.g. associates, hygienists and dental nurses). We repeatedly heard from Health Board managers that the uncertainty surrounding contract reform, and a lack of competitive wages, were insufficient to retain required levels of staffing for NHS dental services. Health

Boards felt unable to provide meaningful solutions due to constraints on their discretion within the contract reform programme, and the financial constraints of the NHS.

Health Board managers told us that dental practices were uncertain about the requirements and outcomes of the contract reform programme. In contrast, the UDA system was seen as more straightforward. One Health Board manager told us that ' *we are seeing practices thinking about changing back to UDAs rather than contract reform'.*

Health Boards felt they were given very little time to prepare for the contract variation; and there remained uncertainty surrounding the development of the metrics and the application of financial sanctions.

> *I don't think we were given the right level of support from Welsh Government in order to make it operationally feasible. We weren't given enough headroom, enough space or time in order to make sure that we had the resources to support the practices.*

Health Boards did not feel that they were adequately consulted in developing the current variation of contract reform. For example, an interviewee from one Health Board said that Health Boards were on the '*backfoot straight away*' with the restart of contract reform in early 2022. Meanwhile they also had to contend with the confusion of dental practices that wanted immediate clarity on how to navigate the stipulations of contract reform. Dental practices often voiced concerns to Health Board managers about how metrics were to be applied and managers felt ill equipped to advise dental practitioners.

> *Those of us who were actually having to interpret that contract to support the practices, we didn't have a long enough run in. So as soon as that letter went out, you get the rush of the phone calls the emails that "I want a meeting. I don't like this. What's going on? What's my target?"*

Previous consultations on contract reform did not seem to be integrated within the latest iteration, resulting in feelings of disenfranchisement amongst Health Boards and dental practices. As one participant at the Health Board focus group noted:

> *The contract reform model prior to COVID was very different to what we're working in now. There's very few similarities and I think practices feel that, certainly those that were doing contract reform prior to COVID, where has that learning gone?*

Financial sustainability

Health Boards contract NHS services from local businesses. Therefore, the supply of NHS dentistry relies on the financial sustainability of these businesses. Health Boards understood 2022/23 to be a year of testing and learning new processes to align dental practices with contract reform. However, there remained financial consequences for practices who did not meet the metrics. Health Boards reported that this made the day-to-day work very difficult and tense:

> *I think that also seems to be causing a lot of stress. It's something that comes up frequently in our mid-year reviews, people are concerned about how they were supposed to pay their associates, and what they've done so far, and how they're going to be impacted when clawback happens.*

Dental practitioners were said to be focused on the punitive measures of contract reform. This, according to the Health Boards, ran counter to the original objectives of contract reform.

> *It is the metrics and the contractors' interpretation of those metrics which is driving behaviour, and that behaviour isn't necessarily what the behaviour of the original inception of contract reform was, which was this broader team approach and so on. Instead, it is back to numbers, because that's the threat of clawback.*

According to Health Board managers, the contract reform programme was no longer seen as a positive choice by dental practices, rather it was seen only as preferable to the UDA system.

Data

ACORN is a form that dental practices are required to submit on the oral health status and treatment plan for each individual patient. The universal roll out of ACORN was viewed as positive with the potential to embed a more relevant form of oversight. For example, one Health Board representative stated that the uptake of ACORN facilitated cluster development that allowed dentists and dental practitioners to work more coherently with other medical professionals (i.e. GPs and community pharmacists). Another Health Board representative said that ACORN had motivated dentists and dental practitioners to form Quality Improvement (QI) projects around the collection of data.

ACORN is providing more information to Health Boards and provides a new tool to

determine when to treat patients. For example, one Health Board representative stated that Health Boards can now examine data being submitted to ACORN to verify the claims by dental practices. Another Health Board reported that ACORN was helping dental practices determine when to initiate recall appointments for historical patients. However, in the context of the pandemic the collection of data using ACORN was an administrative burden at a time of high staff turnover or absence.

The contract reform programme requires staff in dental practices to learn new processes of data entry. ACORN data is collected alongside other clinical data on a form called FP17WS which is submitted to the NHS Business Services Authority (NHSBSA) for collation and analysis. An interface called e-Den allows data to be displayed on each contract, and aggregated for Health Boards to provide all-Wales level data.

According to Health Boards, ACORN has increased the administrative burden for practices. One manager told us that a practice reported needing 85 'clicks' to complete a new patient registration. Health Boards told us that data is often 'lost' or inaccurate, for example, if the 'new patient' box is missed then it won't count as a new patient. This coupled with the need to see a high volume of new patients has placed additional pressure on practices.

Health Boards reported software "glitches" and "issues", compounded by practices using different software and different versions of software**.** This has caused problems for Health Boards accessing the data in e-DEN. One respondent said this was a particular issue with the data from corporate dental practices. A particular problem related to data inaccuracies and delays in relation to the patient profiles for practices. For example, if the practice is reporting patients with high need ('red') but the data is showing the profile as low need ('green'). Data inaccuracies made conversations between Health Boards and practices about metrics and financial sanctions 'very tense'.

Health Boards reported that some practices who have signed up to contract reform are still operating under a 'UDA mentality' and treating the ACORN as a 'tick box' exercise. On a positive note, practices who signed up to contract reform prior to the pandemic were now familiar with the form.

Relationships

To manage the tensions with practices Health Boards were focusing on building relationships. Mutual understanding, trust and communication between Health

Boards and practices is seen as key to stability in the system. This is being accomplished through opening and maintaining channels of communication, including site visits, engagement events, and inviting feedback from the Local Dental Committee. Health Boards told us that it was important that practice teams felt they were being listened to.

> *To us quite strongly is that we're losing the respect from the profession. We're losing the relationships that we've built over many, many years with these practices as providers, associates, the rest of the team in terms of us being able and Welsh Government issuing timely communication.*

However, more 'relational accountability' is not easy to reconcile with contract management at scale. A particular challenge and difficulty for Health Boards is managing discretion in relation to exceptional practice circumstances, and accountability for consistent and fair contract management across the region. Moreover, if Health Boards are unable to retain funding from underperforming contracts then they are constrained in their ability to redeploy funds to support their strategy.

Health Boards value the monthly meetings with Welsh Government. Informal networks and communication between Health Board colleagues is also a source of support and ideas.

Contracts handed back

In the 2022/2023 financial year, 31 NHS contracts were handed back by dental practices. According to Health Boards, this is a significant increase from previous years when the number was much smaller, between 0 and 2 per Health Board. According to Health Boards, contracts were handed back because of uncertainty, financial concerns, administrative burden, and the belief that the new metrics were unrealistic and unachievable.

Local dental practices

The following is a summary of the views and experiences of dental practices within contract reform since the restart in April 2022. The aim of analysis was to identify how programme effects were produced in different contexts. Data segments have been included to illustrate.

Support for a focus on prevention and quality

There was wide-spread support for the vision and intent of contract reform, especially the focus on prevention and quality. However, some participants felt that the focus on prevention had been displaced over time by a focus on access.

> *I think the ethic behind the reform is right. Fluoride, lots of prevention, making sure that the patient is on top of their own oral hygiene and diet before you start undertaking treatments, I think that's a massive shift.* (Practice Owner)

Health and wellbeing of clinical staff

The most striking finding from our research with local dental professionals was the very high level of stress and anxiety, which was palpable during fieldwork. Practice owners felt the targets they had been given were unrealistic and unachievable and were worried about financial sanctions and the risk this posed to their business. Many were clearly burnt out through stress and working overtime:

> *At the moment I feel like I'm working really, really hard, and yet there's a risk that come April they could say, we're going to take half of my earnings back, and that's…I couldn't do that.'* (Practice Owner)

> *Not a very nice working environment, if I'm being honest, because constantly we are feeling the pressure to deliver. The pressure that comes down on the business and the number of patients we need to see ultimately does impact the delivery of that patient care.* (Practice Manager)

When asked to sum up their level of job satisfaction, one dentist said:

> *NHS: zero out of ten. Private: nine out of ten.*

Participants also reported low morale and emotional distress among their colleagues:

Our receptionists are then on the receiving end of a lot of abuse when they're trying to defend something that they don't really agree with themselves. It's terrible for morale. The receptionists are burnt out. (Practice Owner)

Both clinical staff and patients were still recovering from the physical and emotional effects of the pandemic. Clinical staff worked daily with the fear of becoming seriously unwell, dying, or sustaining long-term disability. Many practices we spoke to still had significant staff absences due to illnesses.

Lockdown was not a good time for dentists, as you can imagine. There was a lot of stress on us to keep people coming in, while maintaining huge levels of PPE wearing and not being able to see what you were doing half the time, let alone anything else. (Practice owner)

In the following extract a practice owner is telling us that their associate has left the NHS for private practice due to stress and the impact this had in their mental health

He decided he could not deal with the pressures of the NHS anymore, with the uncertainty, with the change, for his mental health. He left the practice, he's left the NHS, he went back to a previous practice he'd worked at and is working there as a private dentist.

Volume metrics and financial penalties

Practice owners told us that their biggest concern was that they would not meet the targets for the volume metrics for historical and new patients that had been set for them (they often referred to these as 'access targets') and that they faced significant clawback.

A criticism of the historic patient metric was that it was unrealistic or incorrectly calculated. For example, practices were given a target for seeing historic patients that was greater than the patient population for that practice.

Having reviewed the metrics that we need to achieve, on reflection we don't currently have the required number of patients registered with the dental practice to achieve that metric. So "impossible" is the correct word to use. It's not feasible in any way because we don't currently have the number. (Practice Manager)

The fact that the target is not possible, our historic number target. That's probably the biggest issue because they're expecting us to see a certain number

of historic patients, but we physically don't have that many historic patients on our books. (Practice Owner)

I don't think they're workable. The target they've given us for historic patients is not… Well, it's not possible. So, we've looked at our historic number over the last four years and it's actually less than the target. So, even if every single patient attended who's been in the last four years, we still wouldn't get that target done. (Practice Owner)

I feel like it's unachievable to hit the targets they set us. I'm sure you've heard it from everyone, but the current way things are, I feel like they plucked the number out of thin air. (Practice Owner)

The target for new patients was felt to be unrealistic and unachievable because dentists who were already basing their recall intervals on NICE guidance had no mechanism for freeing up additional capacity:

It's at the bottom of all my records for as long as I've been qualified. I've always written the caries risk, oral cancer risk, and then the NICE recall underneath. So it was almost assumed that we weren't doing that. (Practice Owner)

The following is from a practice owner who handed back their contract because they could not meet the volume metrics:

That was another frustration of mine, because our practice has been pretty good at putting people on the appropriate recall anyway, so I felt like there was this assumption that patients were just coming in every six months and so by putting people on the appropriate recall there would be this automatic space for all these new patients, but we already had everyone on varying recalls anyway so we had no room in our diary really. (Practice Owner)

Another practice owner who went on to hand back their contract was also angry at the assumption that they did not use the correct recall intervals. In the following extract they interpret this assumption as positioning individual dentists as culpable for access problems in NHS dentistry:

> *I'm a staunch Labour supporter, I believe in the NHS, my partner is a nurse in the hospital. And I have sat there, and I have watched the health minister, basically, say that we are lazy, workshy people, who just see our patients every six months for checkups, and do no treatment. And by seeing our patients every year, we can free up all this capacity to take on all these patients who desperately need care and need access to dentistry…It was just soul destroying after the year I've just gone through, to hear [the minister] say that.*

Moreover, the volume metrics were said to incentivise clinically *inappropriate* recall intervals, because a dentist was paid the same amount whether they saw the patient every 3 months or whether they saw them every 12 months, but seeing a patient every 12 months made it easier to meet the targets for volume metrics and avoid the financial penalty.

> *We have this sort of ethical battle in our minds. It's putting us in a really awkward situation because we'll be paid the same for a red acorn. Where really we should probably be putting them on a three, six month recall, but we're not going to get paid any extra for seeing them more regularly. So it's almost encouraging you to put them on the wrong recall, because we're not going to be getting any extra for seeing the patient every three months as 12 months because that acorn can only be submitted once every year.* (Practice Owner)

Dentists told us that the new patient target did not take into account the amount of treatment that new patients often require, the time it takes to complete the treatment plan, and the strain a very high volume of treatment puts on the clinical team. This made it impossible to meet the target, but it was also viewed as an 'unfair' model for remuneration:

> *The diary's just filling up with these new patients. They're new patients because they haven't been to a dental practice in four years. That's why they're new patients. So they come through the door with teeth that need a number of fillings, a number of deep clean appointments, an oral hygiene session. You could book four appointments for one new patient. That's about two hours of appointment time. We only work a seven hour day. So a third of my day for one of my practitioners is taken up with a new patient. You multiply that by five and times it by 15 is the number a week, your diary's full for two months.'* (Practice Manager)

It just doesn't work, it just doesn't work, the metrics are basically designed, the new patient and the historic patient metric, you only tick that box once when you see that patient. It takes into absolutely no account of how much work you've put into them. (Practice Owner)

Local dental staff echoed the concerns of Health Boards that the target for new patients had had a negative impact on historic patients. When dentists were already basing their recall intervals on NICE guidance, they felt that seeing new patients at the cost of historic patients was unfair to historic patients:

Our main concern in our practice is the new patient quota, the new patient measure. Because we are effectively turning away historic patients at this point, but advertising for new patients. Trying to explain that to the public, trying to explain that to our historic patients is very difficult. (Practice Owner)

Practices also reported that 'new patients' were often historic patients of neighbouring practices who were unable to secure an appointment with their 'home' practice, and those of local practices that had handed back their NHS contract, rather than patients who had not previously had access to a dentist. For example, the following is from a practice owner who had handed back their NHS contract. They had retained about a quarter of their patients with the rest being taken on by other practices as 'new patients':

We've probably, at the moment, only retained about a quarter. Obviously because all of the local practices are on [contract] reform, they're all being forced to take on new patients, so a lot of our patients have gone to them. But whether they'll come back when they realise that they've been taken on immediately because of the new contract and then they might not be seen for a year, two years…

This was seen as unfair by clinical staff, but it was also seen as unfair by historic patients who could see their neighbours able to secure an appointment at 'their' practice, as a 'new patient' while they could not get an appointment. The frustration of patients was then taken out on dental staff, with reception staff often bearing the brunt.

How the volume metrics change clinical practice

According to local dental staff, the volume metrics in the contract reform programme create an incentive to avoid patients with high needs. This is because a patient who has high needs requiring extensive treatment is paid the same as a patient requiring little or no treatment. Moreover, the claim form for a patient with low needs could be submitted as soon as the patient is seen and treated, making it easier for dentists to meet the volume metric and avoid financial penalties. In contrast, the claim form for a patient with high needs could not be submitted until all the treatment was completed. In the context of full appointment books, it could be many months before all the treatment was completed.

The dentists we spoke to felt very high levels of stress and anxiety, under pressure to meet the metrics and encouraged to practice in a way that they felt was unethical.

> *The way that the contract works it almost encourages you…you don't want to have high need patients, when surely they are the ones who actually need to be seen. You're going to benefit financially ultimately if you're seeing low risk patients because you won't get any difference in money coming through for a red acorn as a green. So why would you want these high need patients coming through the door? They need the treatment and they need to be seen, but you almost feel like you're losing by registering them, which surely is completely wrong.* (Practice Owner)

> *It's almost encouraging bad dentistry in a way.* (Practice Owner)

Associates also told us that under contract reform the incentive was to see patients with low needs:

> *The system is incentivising supervised neglect because I get a patient in, I don't want to do ten fillings on them because I get paid the same for that patient, the same as for the patient I just have to do a check-up on.* (Associate)

In the following extract an associate dentist is comparing the incentives introduced by the volume metrics as the same as those that existed under the previous activity-based system:

> *The same problem existed with the UDA system which is that nobody wants to take on new high needs patients, unless their efforts are going to be rewarded.* (Associate)

Dentists we spoke to told us that the incentives introduced by the volume metrics in the contract reform programme conflicted with professional values because they

did not support preventative care or clinically effective treatment plans. Private practice, in contrast, was attractive because it offered dentists the opportunity to provide high quality care while being fairly remunerated:

> *I had a new patient a few months ago and they needed 13 fillings and three extractions. And he was motivated. I gave him his oral hygiene instructions, diet, he was really motivated, he was great. He came to all of his appointments, he was really keen to get everything nice and stable, which was great. And he's the patient that really needs to be treated. The time I spent with him, I lost money. It wasn't worth my while. Which is crazy because that's exactly the sort of patient that needs seeing and you just feel like this system is encouraging dentists to avoid those patients at all costs, which is sad.* (Practice Owner)

> *The NHS contract at the moment is a game. So you get a patient in and you can see what needs doing and then you have this mental battle of right, well, if I do that then that's this much time, that's costing me this much money and I'll have a lab bill on that. I think that's why most dentists are going private. They just want to be able to do what's right for the patient and be paid for what they're doing. (Associate)*

In an effort to avoid financial penalties, some practices had changed their clinical practice to focus on 'check ups' in low need patients:

> *The main difference in how we operate is that emphasis is on check-ups now. Obviously during the pandemic, it was urgent care only for such a long time. Contract reform, as of the beginning of April this year, there's been a huge emphasis on getting check-ups in the door. And a huge focus on booking those check-ups well in advance to make sure that we are getting as close to our historic and new patient targets as possible.* (Practice Owner)

> *So I will get for a red acorn the same amount of money as a green, but for a red, well, they'll need a lot of treatment, and I'll have to be seeing them, say, every three months. Whereas for a green I'll get the same amount and then I won't need to see them potentially for 12 months if that's the recall I'm going to put them on. So obviously it's to my benefit to have all these green acorns going through, and really it's the reds that need seeing.'* (Practice Owner)

> *The only way I'm going to get close to [the target] is actually going through our historic patients and almost picking the ones I don't think are going to need extensive care. I hate that, I absolutely hate that.* (Practice owner)

Others had simply accepted that they could not meet the targets no matter how

hard they worked. These practices felt that they had no other option than to hand back their NHS contracts because they felt that clawback was inevitable and that their business would not survive:

> *Yeah, they're not going to be met. The whole idea was, obviously to try and encourage new patients in the practice, and their needs are so high that, obviously, it's taking longer to get through these treatments, which means we have to push existing patients aside. There's no way that we at our practice are going to meet any of these targets this year, and we just think it's not fair that we have to sustain clawback, and the fact is, if I do have to give clawback at the end of this year, I don't think I would continue with the NHS dentistry any longer.* (Practice Owner)

> *We've got patients with high needs. They're going to be returning more than once a year. They just generally are, and we're not going to get any recognition for that, and we're getting financially penalised for that. I mean, honestly, I'm getting myself quite angry here just thinking about, I really am. It just makes so little sense that that is what we're working towards.'* (Practice Manager)

Workload following the COVID pandemic

The needs of historic patients have increased since services were reduced during lockdown, as well as because of changes in diet and lifestyle due to the social and economic effects of the pandemic. In addition to deterioration of oral health, there has also been an increase in anxiety among patients, which increased the time needed for patient care. For example, on the day we spoke to one dentist, two patients had fainted in the clinic.

> *Patients that we haven't seen since 2019 are still coming through now. So, I'm still seeing these patients that have not had dental care for four years, that on their records are low risk, stable patients. I'm still taking teeth out, on these patients, that if I'd had caught that cavity a year ago, would have just been a filling, you know. A lot changed over COVID, as well, it wasn't just the lack of having a regular dental checkup, people's work habits changed, their social life changed, a lot changed for them. And it's major changes like that, in people's lifestyles, that caused this, kind of like, up-tick of dental diseases, and, you know, we are seeing that. (Practice Owner)*

> *I think a lot of our existing patients were already high risk. COVID got in the way of treatment for a period, and so, they're all presenting with lots of problems.*(Associate)

There has definitely been an increase in work needed on patients, over the pandemic, you can see quite chronically how people's diet and lifestyle changed over that period. We're seeing an awful lot of teenage kids needing an awful lot of fillings at the moment as well as the adults. So, to suddenly be overloaded with new patients on top of that, some of them haven't seen a dentist for ten years or so. It was just the wrong time to push, absolutely the wrong time to push. (Practice Owner)

New patients also tended to have higher needs which put a strain on clinical staff and, according to dentists, was not fairly remunerated:

We are a high needs practice, so when we were on UDAs the target was more achievable because a lot of the patients were in need of their dentures in the band three, so we were making up good numbers of UDAs. Whilst now, we're still a high needs practice, we've got lots of patients revisiting, so we're not getting recognised now for patients that have been seen since April that have come back because they've got pain or they've got another filling or they've got some sort of issue, we don't get any recognition for that.(Practice Manager)

If you came to me as my patient, you needed one filling, I would get eighty pounds for it. What they've said, if you came in and needed twenty-five extractions and five fillings, you would still get eighty pounds for it. (Associate)

Recruitment difficulties

Pressure has been exacerbated by recruitment challenges in Wales. According to local practitioners, the recruitment issue has always existed but is no longer exclusive to rural areas. Recruitment difficulties were attributed to the uncertainty about the future of contract reform. NHS dentistry was said to have a negative reputation and to be unappealing to new dentists. According to one Practice Owner, dentists in the reform programme are discouraged from doing complex treatment, particularly lab work and root canals.

The response from patients

Where there were good relationships between dentists and patients, patients were accepting of extended recall periods. However, some practices reported that the older generation of historic patients valued regular visits with the dentist because they saw this as the right thing to do to stay healthy.

Most practice owners reported that government policy on recall intervals had gone unnoticed because the practice was already following the NICE guidelines on recall.

I think the Health Board seem to be labouring under this misconception that we've been getting every patient back every six months. We haven't, we've been doing the NICE guidelines for recall for years now. So the patients are not that concerned about the recall periods. (Practice Owner)

Patients' main concern was that they were still able to make timely appointments for treatment when needed. Dentists were doing their upmost to accommodate this, but in areas where treatment need was high, it would have a knock-on effect in terms of new patient access targets. As a result there was a perception of unfairness.

Some clinical staff reported an increase in anger and aggressive behaviour from patients. They recommended Welsh Government provide information directly to patients on changes to the system.

When someone from the Welsh Government comes out and says on the news that they've freed up so many appointments because we're only doing 12 month recalls now, which I was doing anyway, I mean, it's not like this is some kind of novelty, these were the NICE guidelines for many years. That's bogus and you don't get then to hear a dentist or someone from our profession explaining how it doesn't actually work like that. And it feels like a lot of people get upset with dentists, they just get angry at the wrong person, you know…So I'd just like more honesty about what can be delivered on the NHS and what cannot be delivered on the NHS. (Associate)

Skill mix

Practice Owners were supportive of the principle of skill mix, however there were some operational hurdles, such as recruiting therapists.

If we had access to a therapist, that would definitely help, but we've tried recruiting for a therapist for a long time now. We did previously have one, they left, and we've just found it impossible to replace. (Practice Owner)

Practice owners reported that workforce supply affected their decisions regarding dental team constituency and said there were historical difficulties recruiting DCPs. The limited scope of practice of therapists was also identified as a regulatory barrier to the effective use of skill mix. For example, using a therapist for treatment was inefficient if patients were then referred back to the dentist. There is also a disincentive for Associates to use skill mix when it means a reduction in their own salary.

ACORN

Most practices who have joined the reform since the restart in April 2022 felt that completing ACORN was an administrative burden.

> *We spend more time doing admin and ticking these ACORN boxes than we do actually treating.* (Practice Owner)

> *Yeah, it's fine for the academics to get the data, but it's so time consuming, it takes up so much clinical time. So, if we got a patient booked in, say, for half an hour for a recall, ten minutes of that would be the consultation and the payment, the extra 20 minutes is just doing admin and notes.* (Practice Owner)

> *The difficulty of the new contracts is the paperwork and it's mind-numbing, I didn't do my jobs to fill in thirty forms every day, it's just so repetitive that I would rather not do it, you actually start going insane. I would say it's like lying on your back with a drip landing on your head every ten seconds, you don't think, I'd rather stack shelves in Tesco than do that.* (Practice Owner)

Dental practices who had signed up to the contract reform programme prior to the pandemic had become familiar with the process. However, even for these practices it took up a considerable amount of clinical time.

Some clinical staff reported maximising its potential as an educational tool, making it worth the time it took to be completed.

> *Yeah, it's good. It's a really good aide memoire as well. And I use it with the patients to help them take a bit of responsibility…the parents take a bit of responsibility when you start talking to them about their diet and brushing and you're ticking the boxes with them present in front of them, and it helps…with some patients helps sort of them take some ownership for the patient…for the children's care as well.* (DCP)

> *Yeah, so a flash motivational tool because you can say, if it was in the green, you know, you wouldn't need to come as often, et cetera, et cetera, that sort of…it can be motivating as well as for me helping me remember, you know, things and help structure my appointments and planning as well.'* (DCP)

Relationship with the Health Board

Practices valued the support structures and feedback mechanisms that are in place,

though this was largely determined by their relationship with their Health Board. Others felt frustrated and unheard.

> *I just feel like as general practitioners we're just not being listened to, we feed back to our Local Dental Committees who apparently feed back to Welsh Government and the BDA say they're not being listened to. I'm in lots of WhatsApp groups where people talk about it all the time, and you just feel like everyone knows it's a system that doesn't work, and yet they're not changing it. So yeah, I'd say support's been rubbish.* (Practice Owner)

Practices valued information and support from Health Boards and praised those that had maintained open channels of communication, such as an easily accessible local dental adviser, zoom calls, and site visits.

> *I'll say the Health Board is really, really good, actually….they've let the DCP's and practice managers be part of the Local Dental Committee. So we have the LDC meetings… so we hear what other practices, you know, what's going on in other practices, sharing good practice. We're looking at what problems they've got and Health Board put out a few zooms lately as well on the contract reform, just to see how people are getting on, get their views. So they are really, really supportive in that aspect.* (Practice Owner)

Practices also valued data collection when it was used to start a conversation (rather than proof of a problem), when used alongside other sources of local knowledge, and when combined with individual case analysis to explore circumstances.

The actions of the Health Board were key to the acceptability of the process. They also contributed to clinicians feeling that their concerns and circumstances were recognised and understood. This sense of 'feeling seen, feeling heard', as one dentist put it, was of fundamental importance to morale.

Most practices were aware of opportunities to contribute their views on implementation and ongoing development of metrics. These included engagement evenings and Chief Dental Officer attendance at Local Dental Committee meetings.

> *So the Welsh CDO did attend one of our LDC meetings and he seemed very interested.*(Practice Owner)

The views of dental staff on the future of NHS dentistry

There was widespread support for the *Designed to Smile* programme where children in primary schools are taught to brush their teeth, and brush their teeth at

school, as part of the school day. Outreach services such as dental vans and access clinics staffed by dentists in training were also recommended. Community Dental Services was seen as offering the potential for innovative models of care that were better suited to patients with high needs and populations who might struggle to attend appointments with a high street dentist:

There's a reason why these patients don't go to the dentist, they don't like the dentist, they can't afford the dentist, even the NHS costs, they're scared, they don't turn up for their appointments (Practice owner)

It will not work with the current system. You need a salaried system, that can deal with the high failure rate, with the high needs. You just need a separate system to deal with that, you can't cram it into the existing box, and expect dentists to carry all the financial risk, and all the financial cost for that. We subsidise NHS dentistry enough as it is. An NHS practice is not financially viable on its own, without the subsidy from our private income, and I've seen that over the last two years, in very very plain, black and white, it doesn't work. (Practice owner)

I'd rather be salaried, just turn up, do the job, not have to worry about lab bills, using the hygienist. Just do what patients need basically and not have to worry about any of that. That's the worst part of the job I think is just worrying about targets, worrying about how much money you're going to end up with at the end of the month. (Associate)

I teach on a Wednesday morning in a outreach clinic, which is part of the dental school, so with fourth, fifth year dental students. They take on members of the public who can't get a dentist. They treat them and then they're discharged. (Practice owner)

In reference to tackling the recruitment problem, participants were asked if they could think of ways to incentivise a career within NHS dentistry. Dentists stressed that the solution wasn't as straightforward as providing financial incentives, but that, for many, work/life balance is key to a morale.

Another suggestion to incentivise moving to Wales was to offer a relocation reward scheme. One Associate recalled their time living in Australia and told us that 'they paid you where you lived', as a dentist. People working in more remote areas would receive incentives like a double salary, car, petrol and food.

Another idea was a sponsorship scheme for young aspiring dentists:

'They need to sponsor local kids because the other thing that's happening in

Wales is, all the young kids, anyone in your year doing dentistry, they're saying, no because the fees are too high. What the Health Boards need to be doing is, sponsoring those kids like they did in the army, go to University and then come back and work for a couple of years in the Health Board. That's how I would sort the problem out.' (Associate)

Contract handback

Many dentists we spoke to told us that handing back their NHS contract is inevitable as the volume metrics had created a situation that's untenable.

We're maxed out as a dental practice. I'm managing the diary like you'd not believe. If I've got a cancellation I'm filling it. The space is being filled instantly. We're operating at maximum capacity and we're still about 60 per cent target. So when I have a team meeting with the guys I'm actually seeing we're still short on target, but I know, I'm seeing everyone every day doing what they can do at their best. It's not through lack of effort, this. (Practice Manager)

The key attractions of private practice were autonomy to provide high quality care, fair remuneration, and the peace of mind that came with financial security.

And I almost feel forced to do it. I would love to just turn up to work, decide what I think is best for the patient and just be able to do that and know that I am being paid for doing that. That's ultimately all I want is just to do what's best for the patient and be paid for my time. It's just so complicated to do that on the NHS now. It's not worth it.(Associate).

We need to have a fair fee for a fair job. At the moment, it's demoralising and unacceptable. (Practice Owner)

We spoke with two practice owners who had handed back their NHS contract. The main reasons were financial viability of the practice, staff mental health, and professional ethics. Specifically, a desire to practice clinically effective dentistry which they saw as based on developing relationships with patients to support behaviour change and embed good oral hygiene. In both cases the decision to hand back the contract was very difficult, because of a public sector identity and commitment. However, in both cases they reported improved morale across the team.

Contract handback case study 1

The first case was of a practice owner with 13 members of staff including 5 associates. The practice owner described the practice as committed to NHS dentistry. Approximately 75% of the patients were NHS patients (approximately 10,000):

> *We were never highflying dentists. We were doing everything on the NHS. There weren't many practices who were doing root fillings on the NHS, I know that*.

In the following extract the practice owner is explaining that the contract variation was not feasible for them. The multiple demands - to meet the target for new patients, to provide care to their existing patients, and additional workload from new monitoring arrangement for each of the five associates, was described as 'too much'. They also felt that it was 'unfair' on existing patients:

> *the new contract was very…it was concentrating on getting a lot of new patients in, and we'd had to have taken on 80 new patients a month and we were already struggling with getting our existing patients in, because of the backlog. Also, I've got five associates and there were going to be five parameters on the new contract, that were going to have to be monitored for all of them. And it was just very daunting as to how I was going to do all of that and give our patients the sort of level of care that they needed. It just seemed to be heading towards getting people off the streets and treating them rather than looking after our loyal ones. So, we made a decision that we were just going to come out of the NHS altogether because the UDA contract wasn't working for us any more*

The practice owner told us that the demands were putting a lot of pressure on staff:

> *I had staff with mental health problems because we were just under so much pressure to hit our UDA target all the time. And then, we were already taking on extra patients from outside because we had to, from the LHB we had to at that point. And a lot of them were high need so they'd come in, they'd need ten fillings and you're going to get paid 80 pounds for four hours work*.

The practice did not want to come out of the NHS. The practice owner had worked in the NHS for 30 years and had thought that they would leave:

> *We just sat down as a practice, all of the associates and myself and said which way are we going to go? And there was no good way to go*

The practice had received abuse from local patients for their decision. Patients assumed the practice was 'money grabbing'. The decision, however, was more about providing quality care, professional autonomy, and quality of life:

We had a lot of backlash on Facebook, on the local page, saying that we were just money grabbing. Invariably people have no clue how we're paid. So, they just think, oh it's just more money. And it was nothing to do with the money at all. If anything, we're probably slightly worse off financially at the moment. But just for quality of life for us dentists, not having to be dictated to about everything that we have to do on patients, it was just getting horrific doing ACORNs because we're spending more time doing paperwork. I can understand where the ACORNs are coming from, what you're aiming to achieve, but as a good dentist you should always be looking at why patients do what they do anyway, without having to fill in 15 minute forms.

The quality of life of the staff had improved after the practice left the NHS:

We're definitely better off emotionally

Contract handback case study 2

The second case study is of a practice owner with an associate and a hygienist serving mostly NHS patients (approximately 4900). The practice had been established for about 10 years. The first time we spoke to the practice owner, in November 2022, they had been part of the contract reform programme for 6 months and were struggling to meet the targets for the volume metrics, describing themselves as 'at breaking point'. When we spoke to them again, in August 2023, it was four months after they had handed back their NHS contract.

The practice was initially enthusiastic about joining the contract reform programme and to start with, the programme fostered positive changes to clinical practice providing high quality care to patients, a focus on prevention, and collecting data on clinical risk and need. For example, the practice followed the care pathways for caries and periodontitis, set up a nurse-run fluoride clinic, and completed the ACORN form for each patient. The practice also paid for two dental nurses to attend the 'Making prevention work in practice' course to upskill all the nurses in the practice with knowledge and skills for prevention. However, this approach to clinical practice meant they very quickly fell behind in the volume metrics. By six months they were facing a clawback of £100,000:

> *I think I went into it a little bit naïve really, thinking okay, great, they've said this is an exercise to gather data, so I've basically been working really hard to get the patients that we have seen dentally fit. I've been working within the new care pathways as much as I can. I've been working towards the shared decision-making goals, the principles of care goals. And as a result of that, yes we've got a load of patients that are very, very happy and they're dentally fit and they're sorted and we've done a lot of work on them, but in terms of hitting the metrics we're supposed to hit, absolutely nowhere near*.

In April 2022, when the new metrics were brought in, the practice already had full appointment books because of a backlog of patients who had not been seen for 2 years due to the COVID pandemic. Declining levels of oral health in the population due to the pandemic meant that when these patients were seen they needed treatment, which needed to be scheduled, meaning that appointment books were then full again in the weeks and months that followed. The requirement to take on new patients, many of whom also needed treatment, meant that very quickly the booking system became saturated.

> *For every patient I saw to do that, I was booking further and further ahead. So their next appointment, I couldn't see them for two months. By the time I'd finished their treatment. And I've closed their course of treatment, that could have been three, four, five months, that that course of treatment was being open. And they still only count as one metric, one historic patient or one new patient*.

The practice, and other local practices which were experiencing the same problem, explained the issue to the Local Health Board:

> *We expressed all these issues, the dental committee, we were in talks with the local Health Board, from the three weeks' notice that they gave us, of the new contract. We were probably in two or three meetings a week with them, in the evenings, telling them these issues, telling them how unrealistic it is, expressing exactly how, you take on this amount of new patients, they need this amount of work, that carries forward into the next three weeks. Then you take on another load of new patients, they generate this much work, that carries forward. You hit your saturation point very, very quickly with patients who need a lot of work coming through and they just said, well this is what we've been told by Welsh Government and this is what you've got to do.*

In this case, the Health Board provided limited support:

> *As understanding as they are trying to be, there is still an element of, I would call it bullying [saying] "what else are you trying to do to hit these targets?" It's like, "well what else do you want me to do to try and hit these targets? I'm doing extra hours, I'm employing extra staff, I'm trying to provide comprehensive care for patients, I'm trying to work within the pathways that you set for us and we told you it wasn't achievable and we're not achieving it, which we told you we wouldn't. Now what are you going to do?" and it's just, "well you need to work more then", basically, is their answer*.

The practice owner also suspected that the Health Board was being disingenuous in their communication with local practices. In the following extract the practice owner is talking about their discussions with other practices they know through the Local Dental Committee.

> *We're all having exactly the same issues really, with being behind with the data, whether that's a small practice or a big practice or across the board, we're all having the same issues. Something that was interesting that came up in the last dental committee was, we feel that the Health Board are slightly misleading with how they approach us, about the data from other practices. There are a few members of the local dental committee who said, "well I've spoken to the Health Board and they say, they haven't really had any complaints about the metrics, that other practices seem to be really happy and they're quite high achieving. There are some practices that have got this percentage". And we're talking to each other in the Local Dental Committee and going, "we don't know anybody who is happy with it and we don't know anybody who is getting anywhere close to hitting the metrics".*

In the following extract the practice owner is explaining that the new metrics do not support using skill mix:

It costs a lot of money to pay a therapist and again, if these patients are needing more than one visit or more than one treatment, it's actually not even really cost-effective for you to pay a therapist to do that work. They want us to have this skill mix and to have these extra members of staff to do it but they're not funding us for it and it's not necessarily ticking any of the metrics. So, how is that benefiting me? That just means I've got extra expense, it's not counting towards my metrics at the end of the year. The metrics don't tally up with the way they want the care pathways to work.

In the following extract the practice owner is explaining how the volume metrics do not support the care pathways ('principles of care'):

I could recall them in three months, I could reassess their oral hygiene, see how motivated they were, see how committed they were. I could then work on their fillings, I could do root canal treatment, I could further their course of treatment, build more rapport with the patient, give them preventive advice. Three months after that, I could do another course of treatment, perhaps supply them with a denture. So, I could still stabilise the patients, but we could do that ethically, and in a way that's still good for the patients, they're registered at the practice, if they have emergencies, you're still working towards securing their dental health. And with this system, they only counted for one metric, and only when I'd finished their course of treatment.

The practice owner was also struggling to understand how to pay their associate. In the end their associate agreed to be paid a salary. At the same time the reception staff were spending a lot of time responding to patient dissatisfaction. The practice was also experiencing high levels of staff sicknesses due to COVID

I upskilled the nurses to try and work with this contract but when the new contract came in we still had a load of workforce go down with COVID, so one after one, we had nurses off, which basically means there was no spare staff because when they get COVID, they're pretty much testing positive for ten days, whether they were having symptoms or not. Some of them had mild symptoms, some of them had severe symptoms. So, we went through, basically four or five months at the beginning of the contract, where I just had staff off all the time.

In the following extract the practice owner is describing how the access targets, combined with high patient need, resulted in an unsustainable workload:

We really worked hard, and I don't think I have done such an actual volume of dentistry on patients, in my 28 years in the job. I was doing clearances, dentures, extractions, you know, everything. And because it was mainly treatment and emergencies that were coming through, your whole day was, pretty much, treatment.

The practice owner was visibly burnt out, exhausted and angry. They told us that it was not financially viable for them to run the practice with the size of the clawback they were facing. They felt they were forced into a position where the only thing they could do was to practice dentistry in a way that was unethical.

In the next six months, moving forward now, to even try and get closer to the new patient and the historic patient metrics, I'm essentially going to have to now completely change the approach to the patients we see. Essentially, it means I'm going to have to cherry-pick almost, the patients I recall for check-ups, which ethically and morally I'm really, really not happy to do, but at the moment, I'm looking at a claw-back of over a hundred thousand pounds for the practice, which is financially appalling, soul destroying. I'm very upset about it. I'm quite angry about it as well, actually, because I feel the patients that we have seen, we've given an excellent standard of care to. I've worked really, really hard to work within the pathways that I think the contract is wanting to work us towards and it's just not working. They can either want us to follow these care pathways and to give the patients the best care that we can, or they're going to want us to see a large volume of patients, they can't have both.

The practice felt they had no choice but to hand back their contract. It was a difficult decision because of their commitment to the NHS:

Whether I owe them money or not, I will have to hand back my contract in April, it's just not sustainable to deliver the level of care we want to for our patients. I've been working, in the NHS, in dentistry for twenty-seven years now, I'm from a very low-class background and that galls me and its upsetting.

We returned to this practice in August 2023, four months after they handed back their contract, to talk to them about their experience. They were still visibly angry and upset about their experience. But they reported that the culture of the practice had improved, staff morale had improved, and the patients were happy.

[The patients] are still high needs, I'm still booked up solidly until October, now, still with treatment, and this is not, you know, high-flying, specialist, aesthetic makeovers, this is still just routine treatment, private routine treatment, that would have been NHS routine treatment. I'm still booking that far ahead, on half the patient numbers that I was seeing before, without the extra pressure of the 111 appointments, and the really, really, high need patients. So, that when you think, half the patient numbers, still booking that far ahead, how on earth was it supposed to work the other way around? But my staff are happier, my patients are happier

Joining the programme for the first time in April 2022, the practices' understanding of the programme was that the first year would be a 'learning year', focused on collecting data to test the new metrics, and learning new processes and clinical practices. The problem came when hard financial penalties were attached to the new metrics, this created overwhelming levels of stress and anxiety and threatened the financial viability of the practice.

8. Innovation and improvement

National level innovations

Collaborative approach to programme governance

One of the key innovations at the national level was a collaborative model of programme governance (figure 3) which brought together key stakeholders to plan and manage the programme in a collaborative process. Collaborative approaches are often used to address the limitations of alternative approaches, namely top-down managerialism and stakeholder pluralism. One of the strengths of collaborative governance is the potential to include the perspectives and experiences of diverse stakeholders to generate creative, durable solutions to long-standing problems. It can also create a sense of 'ownership' and reduce the risk of downstream implementation failure. We used the Ansel and Gash model of collaborative governance as a framework to evaluate this element of the contract reform programme (figure 4). The Ansel and Gash model is derived from 137 case studies, across different policy sectors, including health, education, social welfare, international relations, and natural resource management. It sets out the core components of collaboration and the critical variables that influence whether this mode of governance will produce successful collaboration (box).

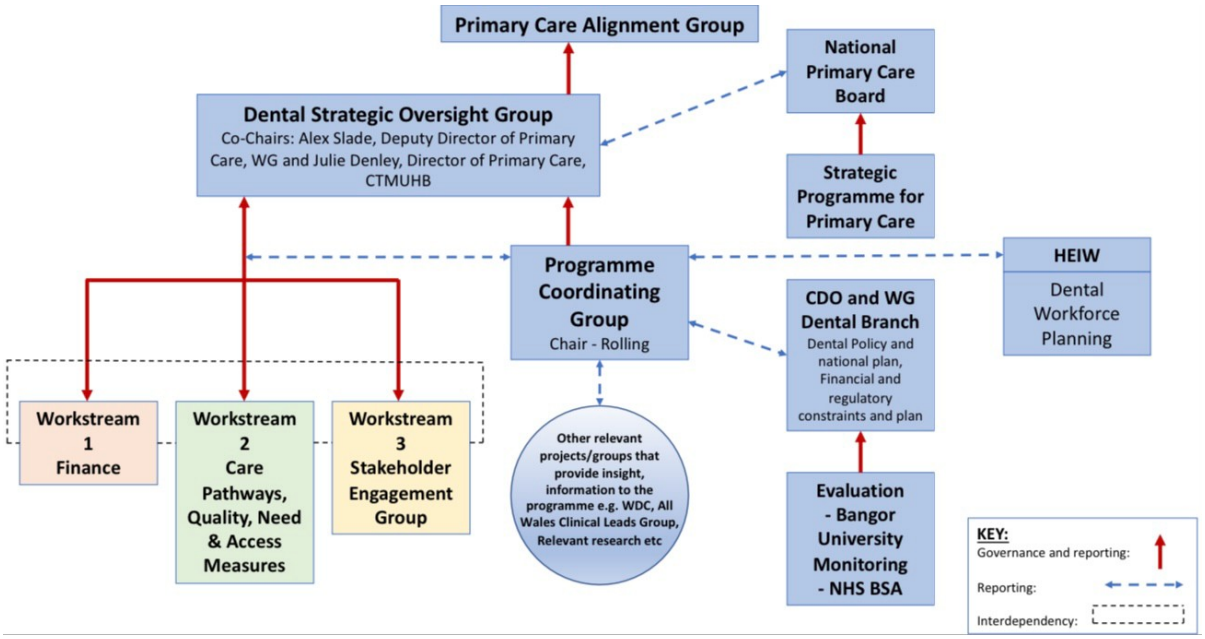


Figure 3. Governance of the contract reform programme

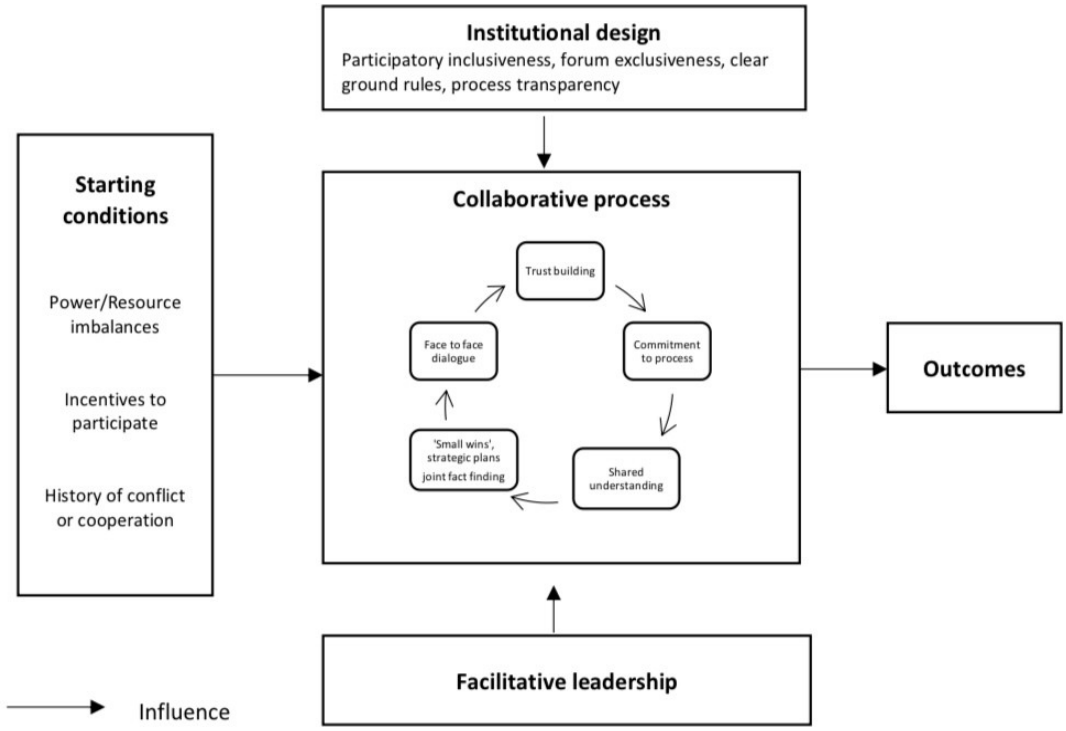


Figure 4. The Ansell and Gash (2008) model of collaborative governance

Box. The Ansell and Gash model of collaborative governance

STARTING CONDITIONS

The starting conditions influence the amount of trust in the system and whether this is a resource (high trust) or a liability (low trust) for collaboration.

Power and resource imbalances

Differences in the power and resources available to stakeholders leaves the system prone to disproportionate influence or manipulation by the stronger actors. In these circumstances, counter measures are required to represent less powerful interests. A key strategy is the use of facilitative leadership to include and empower less powerful actors.

Incentives to participate

Participation in collaborative governance is time-consuming and therefore depends, in part, on whether stakeholders believe the process will be meaningful. Stakeholders will decline to participate if they believe that their contribution is merely advisory or symbolic. An important incentive to participate in collaborative governance is recognition that stakeholders are interdependent. Even with a history of conflict and low trust, the acceptance of interdependence can lead stakeholders to participate and commit to meaningful collaboration.

History of cooperation and conflict

A history of cooperation between organisations and stakeholders furnishes collaborative governance with trust. In contrast, where there has been a history of conflict there is likely to be low levels of trust. Here again facilitative leadership plays an important role in repairing relationships and building trust. This is often one of the most time-consuming aspects of collaborative governance.

INSTITUTIONAL DESIGN

Institutional design refers to the protocols and ground rules for collaboration, which are critical to the perceived legitimacy of the process. The most important design issue is inclusion - membership should be broadly inclusive of all stakeholders who are affected by decisions. Exclusion of stakeholders is one of the key reasons for failure. Other important design features are clear ground rules, process transparency, and clearly defined roles, which are all important for procedural legitimacy and building trust.

FACILIATIVE LEADERSHIP

The role of leaders in collaborative governance is to promote and safeguard the process. Leaders are critical to bringing stakeholders together and guiding them through the process, especially difficult stages. Collaborative governance may involve multiple leaders, both formal and informal. Leadership qualities depend on the individual context. In situations where there is relatively equal power relationships and strong incentives to participate, but low trust and high conflict, it is important for the leader to be viewed as an 'honest broker' who is 'above the fray'. In these situations, someone from an external organisation may be employed as a neutral chair. Where there in unequal power between stakeholders, and uneven incentives to participate, an 'organic leader' may be more productive, that is, someone from one of the constituent organisations, who commands

trust and respect. They will need to include and represent less powerful interests and persuade stakeholders to come to the table.
THE PROCESS OF COLLABORATIVE GOVERNANCE In figure 1 the process of collaborative governance is represented as a cycle to capture the way that successful collaboration can feed into a virtuous cycle of building trust, shared understanding and commitment to the process that leads to more successful collaboration.
Face to face dialogue Face to face communication is helpful for exploring mutual gains and breaking down stereotypes about stakeholders.
Commitment to the process Real commitment to the process of collaboration is a critical variable in explaining success or failure. For collaborative governance to work, stakeholders need to believe that good faith bargaining for mutual gains is a good way to achieve policy objectives. There also needs to be mutual appreciation. In other words, stakeholders need to trust that others understand and respect their perspectives and interests.
Small wins Intermediate outcomes, such as strategic plans and join fact finding, help to build experience of successful cooperation. Where there is a history of conflict and low trust 'early wins' are crucial to developing a virtuous cycle of successful cooperation, trust, increased commitment, and further cooperation.

On the whole, the national policy team was successful in sustaining a collaborative approach to programme governance over a five-year period. During programme coordination meetings we observed positive group dynamics and commitment to the collaborative process. Although, there was at times a disconnection between the stated goal of collaborative dialogue, and a broader political narrative that positioned local clinicians as individually culpable for problems with access.

The relative success in sustaining a programme of collaborative governance was due to good pre-existing relationships and facilitative leadership. National-level clinical leadership played an important role in engaging key stakeholder groups. Prior to the pandemic the workstreams met in-person, this helped to build trust which continued to act as a resource when meetings moved online during the pandemic.

We also identified efforts at joint fact finding and 'learning together' which can

facilitate a virtual cycle of collaboration. For example, there was a shared understanding between stakeholders that a key challenge was communicating policy changes to the public. A meeting involving all stakeholder groups was convened to learn more about the effectiveness of different approaches to public health messaging, including emerging forms of social media.
In addition to these strengths, we also identified the following challenges:

Participatory inclusiveness
It was evident from observation of national programme meetings that a priority for the national policy team was ensuring all relevant stakeholders were included and involved in the governance processes. This included national-level professional and trade union stakeholders and Local Dental Committees. The national policy team was particularly keen to include 'grassroots' dentists in the membership of working groups, especially early career dentists, and those who may not see themselves as represented by the national professional association and trade union. They were also keen to include other members of the dental team, such as therapists and nurses. However, this was an ongoing challenge.

Alongside including clinicians in the membership of working groups, the national policy team held a series of engagement event to hear from the clinical workforce (table 9). As part of fieldwork, we attended the engagement events. The events were well attended, with an appropriate number of attendees to enable discussion during the breakout groups. Nonetheless, the national policy team remained concerned that the engagement events were not attracting a wide enough range of local clinicians. During the engagement events discussion was led by skilled facilitators, including, at times, external facilitators. However, there was limited analysis of the perspectives and experiences of the clinicians who participated. The reports from the events summarized the feedback on the event, rather than the discussion in the breakout rooms and the nature of concerns raised by clinicians which may have helped to understand the problem.

Alternative venues
Another contextual challenge was the lack of 'venue exclusiveness'. Professional and trade union stakeholders were included in the membership of the working groups and we observed them contributing to discussion and sharing resources, such as academic papers. However, they also used alternative means to pursue their interests, such as social and news media, adopting the more adversarial stance associated with stakeholder pluralism. Although professional and trade union stakeholders appeared versatile in moving between different venues, the potential for 'venue shopping' (Ansell and Gash 2008) remained a source of tension between stakeholders that limited trust building.

Real-world timescales

One of the key challenges to meaningful collaborative planning and policy development were timescales for decisions and the feasibility of producing the necessary documentation in time to involve stakeholders before decisions needed to be made.

Different interpretations of data

In healthcare systems, data is key to planning and quality improvement. Systems that rely on key performance indicators, such as the contract reform programme, require the development of IT systems to capture information and to analyse and disseminate data. However, our study highlights the fact that data does not speak for itself, it must be interpreted, and interpretations of data can lead to conflict between stakeholders.

During one meeting policy makers presented data on activity, this showed that activity levels were lower than pre-pandemic levels, and this was presented as a matter of concern. However, a professional stakeholder argued that a move away from an activity-based system to a value-based system implied a decrease in activity. In this context a decrease in activity is not only predictable, but also desirable, if it meant that more time was being spent on prevention, or if there was an improvement in quality.

In another example, early data from the claims that dental practices were submitting to the new IT system showed a largely 'green' patient profile (patients were classified as 'low need'). This data was then used by the national policy team to challenge professional stakeholders on their account of increasing numbers of patients with high needs. However, the data was consistent with alternative interpretations. For example, it was consistent with the profession's account that they were seeing more patients with high needs, if it took longer to submit claims for patient with high needs, compared to patients with low needs, because they had more treatments that needed to be scheduled. During interviews dentists told us it could be months before the course of treatment was finished and the claim could be submitted. It was also consistent with the clinical 'coping strategies' that we found in out qualitative analysis, which prioritized low need patients in order to meet the target for the volume metrics and avoid financial penalties. Both of these scenarios could explain why, initially, the data showed a 'green' patient profile.

Our observations found that using a particular interpretation of the data to challenge the profession had the effect of shutting down dialogue which may have helped to develop an understanding of the problem.

Table 9. Engagement activities timeline 2022/23

Date	Engagement Activity
02 March 2022	Work stream 3: stakeholder engagement meeting
09 March 2022	Engagement event: Open to all stakeholders. Restart of the GDS Reform programme
03 May 2022	Work stream 3: stakeholder engagement meeting
08 June 2022	Work stream 3: stakeholder engagement meeting
11, 13 & 14 July 2022	Engagement event Aimed at DCPs, performers/associates and contract owners. Same event held on 3 dates to allow for maximum attendance. Opportunity for attendees to provide honest feedback on their experiences so far (since start of contract variation on 1 April 2022)
18 August 2022	Work stream 3: stakeholder engagement meeting
26, 27 & 28 September	Engagement event Open to all stakeholders Same event held on 3 dates to allow for maximum attendance Opportunity for attendees to provide honest feedback on their experiences so far (since start of contract variation on 1 April 2022)
September 2022	• Monthly Welsh Government meeting with Health Boards
13 October 2022	• Workstream 3 stakeholder engagement meetings
October 2022	Monthly Welsh Government meeting with Health Boards
27 October & 12 December 2022	Modelling workshops
22 November 2022	Workstream 4: profession engagement meeting
November 2022	Monthly Welsh Government meeting with Health Boards
5 December 2022	Workstream 3: stakeholder engagement meeting
December 2022	Monthly Welsh Government meeting with Health Boards
9 January 2023	Workstream 3: stakeholder engagement meeting
10 January 2023	Workstream 4: profession angagement meeting
24 and 25 January 2023	Engagement event Open to all stakeholders Same event held on 2 days to allow for maximum attendance Provided an update and feedback that is informing the programme
January 2023	Monthly Welsh Government meeting with Health Boards
7 February 2023	Workstream 4: Profession engagement meeting
8 February 2023	Workstream 3: stakeholder engagement meeting
February 2023	Monthly Welsh Government meeting with Health Boards
14 March 2023	Workstream 4: profession engagement meeting
March 2023	Monthly Welsh Government meeting with Health Boards

Welsh Enhanced Recruitment Offer (WERO)

Another national-level innovation was the development of a workforce plan to improve the recruitment and retention of the dental workforce (HEIW 2023). One initiative from the workforce plan is the Dental Foundation Training Welsh Enhanced recruitment offer (DFT WERO). This programme promotes the benefits of living in the beautiful Welsh countryside and access to outdoor pursuits together with:

- £5000+ rural living grant to help with living costs
- Weekly study day programme
- MFDS Part 1 exam fees paid by HEIW
- £600 study budget available to be used towards MFDS exam preparation or similar
- Free access to high quality training materials and facilities
- Quality Improvement (QI) training provided, and support to run and publish your own QI projects
- Enhanced pastoral and wellbeing support

Local level innovations

North Wales Dental Academy

A partnership between Betsi Cadwaladr University Health Board Health Education & Improvement Wales, All Wales Faculty of Dental Care Professionals, Bangor University and Welsh Government, the North Wales Dental Academy is a programme that aims to improve recruitment and retention of dental staff in North Wales by supporting undergraduate and postgraduate training and career development for all dental professionals at the same time as providing patients with access to dental care.

Other innovations from Local Health Boards included:

- Direct referral to help practices meet new patient metric and improve access
- Tailoring contracts to local circumstances
- 'Buddy system' to enable a practice to get support from another practice with more knowledge and experience
- Engaging practices in Health Board strategy development
- Developing primary care-wide clusters
- Developing a sedation contract to reduce referrals to secondary care

On the whole, innovation at the practice level was limited due to 'firefighting' high demand and learning a new system. In the following case study we illustate how creativity and innovation was 'crowded out' by the targets for volume metrics and a fear of clawback.

Local innovation case study

The business was a mixed NHS and private dental practice that had fully embraced all components of the GDS reform, after signing up as a 'pilot practice' in October 2018. There was a single-handed practice owner and 18 members of staff.

When we first visited the practice, in 2019, the team was enthusiastic about the contract reform programme. The practice owner had a strong appetite for innovation. They already used skill mix, had a clinical approach based on prevention, and improving access was a key goal.

> *Because the fact that we have two therapists, again that frees up a lot of the dentist's time, because the dentist can do the examination, and then they are going to see the therapist for fillings, and then the dentist can focus on seeing more patients and do whatever they can, do root canal treatment, crowns, dentures. It just frees up time, it really, really helps, and it works.* (Practice manager)

There was a clear culture of innovation, and during interviews with the practice owner and practice manager they often talked about innovations:

> *My personality is very proactive and innovative. So, I like to implement anything new as soon as it's there. That change is not always accepted by all the staff, but I think we've got the staff modelled now, so they're used to us changing things* (Practice owner)

Prior to joining the contract reform programme, they had installed a large wall-mounted flat screen TV monitor which could be used for educational purposes during a patient's exam. The practice owner had imported from the US engaging educational videos on gum disease, caries, and different treatments to show patients:

> *So, talking about the telly now, I've got software and it's got little videos on it, that you can show the patients, of different procedures, and it explains it very, very simply… If a patient comes in and he's been treated for gum disease, then I'll ask, do you want me to go over it with you, do you want me to show you the video?"*

They explained to us that an added benefit was that the educational films they screened used relatively simple language that patients found comforting and easy to understand. This language became familiar to the clinicians, meaning they were able to more effectively communicate with patients:

> *You know, the big thing is, when you start off as a dentist, or as a newly trained clinician, , you don't quite know the industry in layman's terms, and you don't know how to calm your patients down. And if you watch these videos, then after a while you don't even have to watch the video anymore, you can explain to the patient as well.*

When the practice joined the contract reform programme they used the wall mounted flat screen TV to complete the ACORN with the patient.

The practice owner told us that they had always favoured a preventative model for oral health and were highly supportive of the prevention elements of GDS reform.

> *The most successful dental practices are built around hygiene, and about the hygiene model. And that's how it really happened. So, for me, hygiene is very, very important*

The predominant reason for engaging with the reform programme was a desire for change and to be able to practise preventative oral health care so they could contribute to improving population oral health.

When we revisited them, in April 2023, we were keen to understand if things had changed since the pandemic and the restart of the contract reform programme. The practice manager and the practice owner told us that the worry and uncertainty around the metrics and the constant fear of clawback had made it a very difficult year:

> *I have been with the practice 20 years and this is the most challenging year I ever experienced* (Practice manager)

The practice was still an innovative practice, for example, they described a family model of care where they saw all members of the family at the same time. They still made extensive use of skill mix, for example, patients would have education sessions with a nurse, and consultations with the hygienist, but the practice owner and practice manager told us that the introduction of the volume metrics did not support this model of care:

> *It doesn't cover the wages. And with everything going up, which I know everbody's feeling the same thing, you have to provide some private care to subsidise it. People think, 'oh you're just making money'. No, it's to keep the business running and to pay staff and to pay for your care. That's why you've got to do so much private to make this work. Without private income you cannot make it work.* (Practice manager)

In the following extract the practice manager is talking about the upcoming team meeting. It illustrates how 'meeting the targets' had come to dominate the agenda, crowding out innovation:

> *I've got this staff meeting ready for next week. I've got a whole agenda regarding "right, this is what's going to happen in reception, this is how we're going to book the patients, these are the numbers we're hitting." As a practice manager I want to hit these numbers, and that's all I'm going to be doing basically is look at these figures every week, every month to make sure we hit our numbers on a weekly basis.*

The following extract illustrates the significant impact of the targets for volume metrics, and fear of clawback, on wellbeing and morale:

> *Over this past year I've had breaking point. And even when I spoke to [Health Board manager] she says, "are you ok?" I said "no, I'm not ok". I said, "in all my years, my career, this is the third contract change, I've done fee per item, to UDAs and now this, this has been the most challenging." When we did the pilot I was so "yes! This is something I really, really want to do, it's all about preventative care, education, definitively all the things I love doing." But this side of things, it's the first time in my career that I've felt deflated and points when I'm like "I don't want to go to work"* (Practice manager)

9. Conclusion

When the contract reform programme was introduced in 2017 there was widespread support from clinical teams for the focus on prevention. However, the introduction of volume metrics in the 22/23 contract variation shifted the focus and activities of stakeholders (clinical teams and Health Boards) to meeting and monitoring these targets. In practice, the volume metrics did not support the use of skill mix and did not align with care pathways.

We found very high levels of stress and anxiety in clinical teams. Staff are exhausted following the COVID pandemic and continue to experience illness and anxiety about the transmission and effects of coronaviruses. They also face a backlog in patients requiring treatment, and an increase in demand from declining levels of oral health in the population. Staff worry about meeting the targets for volume metrics and fear financial penalties that threaten the financial viability of their businesses.

Our findings resonate with a whole population survey of dental practices (response rate 99.75%) undertaken as part of NHS quality assurance processes (appended). By comparing our findings to the free text comments collected from all practices in Wales (bar one), we are confident we can 'scale up' our analysis to the population of GDS practitioners in Wales.

Our findings also support the findings from research undertaken by Senedd researchers for the Senedd inquiry into dentistry which found 'an exhausted and depleted clinical workforce' (Welsh Parliament 2023). Our analysis complements this research, adding value by exploring in greater depth the nature of concerns to understand the mechanisms of the programme in local contexts.

When volume metrics are used with financial penalties, and in the absence of accurate data for individuals to assess their progress during the year, they create an incentive in the system for the increased throughput of low-risk patients. Similar findings have been reported in many previous empirical studies of the use of performance indicators in healthcare systems (Freeman 2002). A recent editorial in BMJ Quality and Safety concluded that gaming and other dysfunctions are endemic when there are hard incentives and demand exceeds capacity (Edwards and Black 2023). Both these conditions are met in the contract reform programme. Dysfunctions produce unintended effects and undermine the usefulness of data collected for the purposes of monitoring quality. Edwards and Black warn against attempting to correct for dysfunctions by adding more specifications and measurements:

> *This and similar behaviours can lead to an arms race of increasingly complex rules designed to eliminate gaming, followed by even more ingenious methods to meet the target (Edwards and Black 2023)*

According to Edwards and Black, the mistake made by other health systems, such as NHS England, has been to rely on data, rather than listen to the insights of people who work with the metrics in practice. This leads to a focus on 'getting the numbers' rather than 'understanding the problem'.

There is widespread support from clinical teams for a range of innovative models of care provided by Community Dental Services – such as the Designed to Smile Programme for primary school children, dental vans, and access sessions staffed as part of training programmes. These models are seen as well suited to vulnerable populations who have high treatment needs and often face challenges attending appointments. These innovative models of care were considered to be more effective in improving access and population health than targets for volume metrics for General Dental Services in those circumstances where there is no mechanism for increasing capacity.

Good pre-existing relationships between stakeholders and national-level clinical leadership enabled an innovative model of collaborative programme governance to be sustained over a five-year period. Welsh Government have invested in improving data and IT systems. Data plays an important role in healthcare planning; however, our research highlights the fact that data must be interpreted, it doesn't 'speak for itself'. Different interpretations of data can be a source of conflict between stakeholders.

Good relationships between practices and the Health Board were key to ongoing engagement with the programme. To-down performance management, when used with clinical communities, can lead to disengagement (Currie and Spyridonidis 2019). This is because clinical autonomy, providing high quality care, and being valued for providing high quality care, are all important to professional identities. Professional belief systems and practices remain an important form of governance in high performing healthcare systems (Martin et al 2015). Top-down performance management in clinical communities can also erode trust, which is essential for motivation, creativity, and innovation (Millar et al 2013).

For similar reasons, coercive approaches, and narrow economic models, are ineffective in improving recruitment of healthcare professionals to remote and rural areas. Research shows that a more effective approach is one focused on 'pull factors' and based on a holistic model that includes job satisfaction, opportunities for career development, social bonds, community, and sense of place (Cosgrave 2021).

Data collection is important for accountability, but it most useful when used for formative rather than summative accountability; when used to open a dialogue, rather than as proof of a problem; and when used alongside other forms of information about the individual context. Forms of 'relational accountability' will be an important future direction for healthcare systems. It is important that healthcare systems foster trust - between government and professionals, and between healthcare teams and patients. Trust is essential for creativity and innovation and for nurturing the service ethic that continues to play an important role in ensuring and enhancing equity and effectiveness.

Notes

1 The CDO Letter to all dental teams communicates Welsh dental policy

References

Ali, G. C., Altenhofer, M., Gloinson, E. R., & Marjanovic, S. 2020. What influences improvement processes in healthcare? RAND Europe.

Ansell, C., & Gash, A. 2008. Collaborative governance in theory and practice. Journal of Public Administration Research and Theory, 18(4), 543-571.

BBC News, Full extent of NHS dentistry shortage revealed by far-reaching BBC research, 8 August
2022

Birch, S. 2015. Paying for prevention in clinical practice: aligning provider remuneration with system objectives. In *BMC Oral Health* Vol. 15, No. 1, pp. 1-7.

Braithwaite, J. 2018. Changing how we think about healthcare improvement. BMJ 361.

Barter, C., Renold, E., 2000. I wanna tell you a story: Exploring the application of vignettes in qualitative researchwith children and young people. International Journal of Social Research Methodology 3, 307–323. https://doi.org/10.1080/136455700501785 94

Brocklehurst, P., Tickle, M., Birch, S., McDonald, R., Walsh, T., Goodwin, T.L., Hill, H., Howarth, E., Donaldson, M., O'Carolan, D., Fitzpatrick, S., McCrory, G., Slee, C., 2020. Impact of changing provider remuneration on NHS general dental practitioner services in Northern Ireland: a mixed-methods study. Health Services and Delivery Research 8, 1–138. https://doi.org/10.3310/hsdr08060

Board of Community Health Councils. 2023. Inquiry into dentistry in Wales. Evidence from the Board of Community Health Councils and the 7 CHCs in Wales.

Cosgrave C. Implementing Strategies for Strengthening Australia's Rural Allied

Health Workforce. The Internet Journal of Allied Health Sciences and Practice. 2021 Oct 01;19(4), Article 8.

Currie, G., & Spyridonidis, D. 2019. Sharing leadership for diffusion of innovation in professionalized settings. Human Relations, 72(7), 1209-1233.

Department of Health and Social Care. NHS Dental Contract Pilots – Learning after First Two Years of Piloting. London: The Stationery Office; 2014. URL: www.gov.uk/government/uploads/ system/uploads/attachment_data/file/282760/Dental_contract_pilots_evidence _and_learn ing_ report.pdf. (Accessed 7 April 2022)

Douglas, J. 1971. American Social Order. New York: Free Press

Edwards, N., & Black, S. 2023. Targets: unintended and unanticipated effects. BMJ Quality & Safety.

Enthoven, A. 1985. Reflections on the management of the National Health Service. Occasional Paper 5. London: Nuffield Provincial Hospitals Trust.

Evans, D., Burns, L., Mills, I., Bryce, M., & Hanks, S. 2023. Recruitment and retention in dentistry in the UK: a scoping review to explore the challenges across the UK, with a particular interest in rural and coastal areas. British Dental Journal, 1-7.

Ferlie, E. 1992. The creation and evolution of quasi markets in the public sector - a problem for strategic management. Strategic Management Journal, 13,79e97.

Freeman, T. 2002. Using performance indicators to improve health care quality in the public sector: a review of the literature. Health Services Management Research, 15(2), 126-137.

Gilson L, Raphaely N. The terrain of health policy analysis in low and middle income countries: a review of published literature 1994-2007. Health Policy Plan. 2008;23(5):294- 307.

Grytten, J. 2017. Payment systems and incentives in dentistry. Community dentistry and oral epidemiology, 45(1), 1-11.

Goodwin, T. L., Brocklehurst, P., Hall, B., McDonald, R., Tickle, M., & Williams, L. (2018). How, and why, does capitation affect general dental practitioners' behaviour? A rapid realist review. British Journal of Healthcare Management, *24*(10), 505-513.

Goddard, M., Mannion, R., & Smith, P. C. 1998. The NHS performance framework: taking account of economic behaviour. University of York.

Granovetter, M. 1985. Economic action and social structure: The problem of embeddedness. American journal of sociology, 91(3), 481-510.

Harris, R., Mosedale, S., Garner, J., Perkins, E., 2014. What factors influence the use of contracts in the context of NHS dental practice? A systematic review of theory and logic model. Social Science and Medicine 108, 54–59.

Harris, R., & Holt, R. 2013. Interacting institutional logics in general dental practice. Social Science & Medicine, 94, 63-70.

Health Foundation. 2015. Constructive Comfort: accelerating change in the NHS. London: Health Foundation.

Hill, M., & Hupe, P. 2002. Implementing public policy: Governance in theory and in practice. London, Sage.

Hughes, R., 1998. Considering the vignette technique and its application to a study of drug injecting and HIV risk and safer behaviour. Sociology of Health and Illness. https://doi.org/10.1111/1467-9566.00107

Jones, L., Woods, C., Overs, E., Williams, L., Williams, S., Burton, C. Evaluation of General Dental Services Reform in Wales, Interim report. April 2022.

Kronick, R., Casalino, L. P., & Bindman, A. B. 2015. Apple pickers or federal judges: strong versus weak incentives in physician payment. Health Services Research, *50*(Suppl 2), 2049.

Levesque, J. F., Harris, M. F., & Russell, G. 2013. Patient-centred access to health care: conceptualising access at the interface of health systems and populations. International Journal for Equity in Health, *12*, 1-9.

Li, X., Zhang, Y., Zhang, X. *et al.* 2022. Effects of fee-for-service, diagnosis-related-group, and mixed payment systems on physicians' medical service behavior: experimental
evidence. BMC Health Service Research 22, 870.
https://doi.org/10.1186/s12913-022- 08218-5

Malterud, K., Siersma, V. D., & Guassora, A. D. 2016. Sample size in qualitative interview studies: guided by information power. Qualitative Health Research, 26(13), 1753-1760.

McKee, M., & Hunter, D. 1995. Mortality league tables: do they inform or mislead?. *BMJ Quality & Safety*, *4*(1), 5-12.

National Institute for Clinical Excellence. 2004. Dental checks: Intervals between oral health reviews. Clinical Guidance (CG19).

Martin, G. P., Armstrong, N., Aveling, E. L., Herbert, G., & Dixon-Woods, M. (2015). Professionalism redundant, reshaped, or reinvigorated? Realizing the "third logic" in contemporary health care. Journal of Health and Social Behavior, 56(3), 378-397H

Mc Kenzie, F. C., & Shilling, M. D. (1998). Avoiding performance measurement traps: ensuring effective incentive design and implementation. Compensation & Benefits Review, 30(4), 57-65.

Moore, M. H., & Moore, M. H. 1995. Creating public value: Strategic management in government. Harvard university press.

Petsoulas C, Allen P, Hughes D, Vincent-Jones P, Roberts J .2011. The use of standard contracts in the English National Health Service: a case study analysis. Social Science & Medicine 73 (2): 185-92. 10.1016/j.socscimed.2011.05.021.

Pawson, R., & Tilley, N. 1997. Realistic Evaluation. Sage.

Public Health Wales, 2021. General Dental Service (GDS) Reform Programme Assessment of Clinical Oral Risks and Needs (ACORN) Toolkit. Version 1.3.

https://primarycareone.nhs.wales/files/acorn-and-expectations/acorn-guidance-version-1- 3-06-12-2021-pdf/. Accessed 19 January 2024.

Roberts, A. 1994. Integrating strategy with performance measures. *Management Development Review*, *7*(6), 13-15.

Smith, P. 1990. The use of performance indicators in the public sector. Journal of the Royal Statistical Society Series A: Statistics in Society, 153(1), 53-72.

Smith, P. 1995. On the unintended consequences of publishing performance data in the public sector. International journal of public administration, 18(2-3), 277-310.

Tickle M, McDonald R, Franklin J, Aggarwal VR, Milsom K, Reeves D. 2011. Paying for the wrong kind of performance? Financial incentives and behaviour changes in National Health Service dentistry 1992-2009. Community Dent Oral Epidemiol, 39(5), 465–73.

Voinea-Griffin, A., Rindal, B. D., Fellows, J. L., Barasch, A., Gilbert, G. H., Safford, M. M., & DPBRN Collaborative Group. 2010. Pay-for-performance in dentistry: what we know. The Journal for Healthcare Quality (JHQ), 32(1), 51-58.

Welsh Government. 2018. Written Statement - A Healthier Wales: The Oral Health and Dental Services Response. 11 July 2018

Welsh Government. 2018. A Healthier Wales. The oral health and dental services response.

Welsh Government. 2021. Written Statement: NHS Dentistry – recovery and system reform. 1 July 2021.

Welsh Government. 2021. Written Statement: NHS Dentistry – additional funding for access to NHS dental services. 17 November 2021.

Welsh Government. 2021. CDO Letter to all primary care teams. 6 July 2021. https://awfdcp.ac.uk/content/files/2021-07-06-CDO-DCDO-Letter-to-all-primary-care- dental-teams-in-Wales.doc.pdf

Welsh Parliament.2023. Health and Social Care Committee. Dentistry.

Williamson, O. E. 1975. Markets and hierarchies: Analysis and anti-trust implications. New York: Free Press.

Appendix. Whole population survey of GDS/PDS contract holders. Response rate 99.75% (407/408).

Areas of concern /opinions of contractors GDS/PDS proivders in each Health Board: Quotes from the Quality Assurance Self Assessment (QAS) 2022

Aneurin Bevan University Health Board

- Practices feel unsupported in the main by Welsh Government (but not in general by the HB); just not listened to centrally.
- The workload is still very much in recovery mode and contract variation volume metrics are unachievable.
- Extremely high levels of missed appointments and no method of charging for these.
- The contract variation method is not working but this is not being acknowledged by Welsh Government.
- Dentists are not being asked to carry out the work that they feel is currently necessary.
- Grave concerns re: clawback on top of increase in practice expenses without a realistic pay rise this year.
- Business instability.
- Unfairness and unworkability of late timings of information this year regarding the demands of the metrics.
- Mental health and well-being of staff is at an all-time low.
- On-going staff sickness absences with Covid-19 infections still rife and impacting on practice activity.
- Verbal abuse from patients, frustrated by wait for appointment then by new system of treatment delivery.
- Problem of recruitment and retention of all levels of practice staff – mainly associate dentists plus nurses.

Swansea Bay University Health Board

- Staff are still struggling with adapting to the new ways of working and understanding how to implement this clinically to deliver the contract in line with provisional treatment. They are concerned over sanctions from the LHB if targets are not met.
- The new contract reform changes have made the contract impossible to perform. The HB is refusing to acknowledge and make any adjustments for this. Morale in the team is at an all-time low with us seriously considering our future in the NHS if changes are not made quickly.

- We felt practices needed more guidance/ information and much more time understanding Contract Variation to help us achieve the new metrics, there is still confusion and uncertainty surrounding the metrics.
- Regular updates on referral waiting times please.
- Feel that extra support is needed. Covid-19 has and still is impacting dentistry.
- Communication is confused.
- Staff are still struggling with adapting to the new ways of working, and
- understanding how to implement this clinically to deliver the contract in line with provisional treatment. They are concerned over sanctions from the LHB if targets are not met.
- Recruitment strategies to encourage people to work in dentistry.
- Lots of cancellation of appointment from patients
- Cancellations high due to Covid-19 positive tests amongst patients.
- More guidance / support regarding Contract reform. Ways of working.
- Recruitment strategies to encourage people to work in dentistry.
- More recognition and remuneration for DCPs to encourage them to gain additional skills and utilise them once gained.
- Protected learning time to complete enhanced skill courses.
- Recruitment strategies to encourage people to work in dentistry.
- Initiative to help the nursing staff feel part of the NHS, pay scale, pension
- Funding to be available for intra oral cameras.
- Staff are having to deal with aggressive and rude patients on a daily basis.
- Changes in contract reform metrics to take into account we are a high needs practice and therefore we cannot see the volume of patients WG expects for the size of our ACV.
- Cannot perform an impossible historic patient metric as we don't have the number of patients that we are required to see and that the HB will force claw back on us as a result of not performing this impossible metric.
- Patient access to dental care on a routine and urgent basis.
- High number of dental nurses leaving the profession
- Unable to employ hygienist/therapist
- NHS contract not working; too many targets
- Patients are becoming more and more demanding; we are dealing with increasingly rude and aggressive patients. Not everyone, but far more than in previous years
- Staff morale, staff retention
- Patient understanding of the changes in NHS dentistry leading to frustration and aggression to our reception staff.
- Dentists not wishing to work under the NHS, so we have had dental associates leave to go into private practice and despite numerous attempts at recruitment we have been unable to replace the associates that have left.

- Unable to start QI projects due to no response from HEIW
- Challenging and staff morale is low due to the workload
- The threat of clawback, staff feel that they are working harder than ever. Staff are feeling burnt out and unappreciated.
- Abuse from patients to staff
- Our annual NHS contract increase doesn't come close to covering these increases.
- Staff morale, trying to meet the demands of Contract reform and patients' expectations.

Betsi Cadwaladr University Health Board

- Still within the Covid-19 recovery and current contract targets are unachievable
- Contract reform is not working
- Too much bureaucracy
- The inability to recruit any types of staff
- Concerns over recruitment over dental nurses and lack of nursing courses
- Concerns over the lack of NHS labs
- Additional core CPD courses, via HEIW/maxcourse. Too few and fully booked
- Have appreciated assistance from the LHB.
- In regards to QI and HEIW. It would help if the National Audits process would be more straightforward, emailing too many people. Too busy within practice to chase up when not responded to.
- Nurses to be rewarded money for doing audits
- National dental nurses pay scale needs to be considered

Cwm Taf Morgannwg University Health Board

- Staff are still struggling with adapting to the new ways of working, and understanding how to implement this clinically to deliver the contract in line with provisional treatment. They are concerned over sanctions from the LHB if targets are not met.
- The provision of PPE during the pandemic and grants for ventilation systems was helpful.
- Providing Flu vaccinations at the practice resulted in more staff uptake.
- Supported by providing new patient urgent hub patients and new patient waiting list to help with the NHS metrics for 22/23
- At times in the last 2 years the practice can feel very isolated. All help seems to have a punitive undertone when coming from Health Boards
- Areas of Covid-19 Guidance have been left for self-interpretation with many grey areas and no continuity amongst practices. This is confusing for practices and patients and will give obvious discrepancies in patient footfall between practices and mixed messages to patients. Opening up guidance has not been clear

enough in my opinion.

- We are all very stressed at the moment with concerns about the future of our NHS contract - and what impact this will have on our ability to continue to continue to provide high quality care for our patients. We do not feel our concerns have been properly addressed.
- We have invested heavily in providing resources to our patients - a huge amount of time and money has been spent to encourage disease prevention. We've embraced skill-mix and made changes to support
- Contract reform. The Welsh Government and Health Boards need to do more to support us with this. Re-assessing our metrics would be a start.
- Lack of access to Hep B vaccinations is a huge concern especially when hiring new staff. Phone calls are very rarely answered and if messages left on answer phone, never returned.
- New metric system unworkable, associates do not want to work the new system, choosing to take jobs with UDAs/working in England with enhanced UDA
- Understaffing major issue, associates, therapist, hygienist and DCPs
- We do feel under immense pressure with the targets that have been set.
- I would like to see principal dentists helped with the ever-increasing administrative burden they are given.
- I would like to see proper investment in practices rather than just continually papering over the cracks
- More recognition and remuneration for DCPs to encourage them to gain additional skills and utilise them once gained.
- Protected learning time to complete enhanced skill courses.
- Recruitment strategies to encourage people to work in dentistry.
- Initiative to help the nursing staff feel part of the NHS, pay scale, pension
- More funding towards dental material costs especially on new patients that require a lot of treatment
- Fair consideration with targets first year of a new contract under these conditions
- New graduates to have to complete a number of years in NHS before moving to fully private, pensions trap is forcing older Dentist to retire early.
- More government funding and providing more places for the training of dental nurses, hygienists and dental therapists.
- More public health messaging about what people can expect from the dentist which will save time 'discussing' in surgery and with receptionists.
- A better NHS contract that will entice and encourage newly qualified dentists to stay within the NHS system. Also, for reducing current dentist burnout so they do not leave the NHS.
- Levelling up for practices in high need areas or reduction in targets for the same contract value.

- A proper means of reporting/recording wasted appointments (FTAs and last-minute cancellations).
- The metrics for patient numbers are already unachievable. Wasted appointments are more of a problem than ever - especially with all the extra new patients. We shouldn't be penalised when they don't turn up.
- Financial incentives for skill mix, taking on new patients
- Clarity regarding overperformance/underperformance in seeing new/existing patients
- Support for zero tolerance for violent and aggressive patients. This would include verbal abuse
- Staff morale. With the ever-changing environment and restraints, it has been a difficult time for the profession along with many others. We aim to maintain a passionate engaged workforce which is difficult when they have additional pressures to deal with, especially as dentistry is often portrayed negatively in the media. This has damaging effects on patients and staff.
- Attitude and entitlement of patients, we are getting a lot more grief and verbal abuse from patients
- Hitting our current targets on new Contract reform, whilst still dealing with the effects of Covid-19 in 2022/23 year
- Attracting dentists to work in NHS dentistry
- No response from HEIW in relation to QI
- The associates still not having access to Eden.
- We should not have clawback but a different method of checking quality (like the DROs of past) of work carried out!!
- Burnout of existing staff is another concern, especially dentists.
- Prevention based practice and completing ACORN leads to longer appointment times, in turn reducing the number of patients we can see in clinical time and adding hours to the end of clinical sessions in order to maintain an acceptable quality of record keeping along with completing and submitting ACORNs.
- Routine patients with large treatment plans, which can take a number of visits to complete and seeing hundreds of new patients, (especially those with high caries rate) will make achieving the goals set for this year very difficult if not impossible and will inevitably lead to staff burn out.
- Retaining qualified nurses and associates. A very uncertain future.
- Concerns re: other financial outgoings e.g., gas bills and material prices.

Hywel Dda University Health Board

- Box ticking NHS forms to prevent aggressive clawback
- Risk of financial penalties
- Too much unnecessary administration. Overzealous regulation of GDS.

- The continuing impact of the pandemic on staff morale
- Recurrent absences due to Covid-19 infections and more recently influenza, have meant normal staffing levels have not been achievable, with resultant extra pressure on those "holding the fort". The return to pre-Covid-19 levels of care provision is still not possible
- Stress and pressure on the team due to high demand.
- Both dentist recruitment and nurse recruitment of a high enough calibre
- Recruitment of dentists is a big concern at present and retention of existing staff
- GDS reform contract – Welsh Government not listening and ploughing on
- Staff shortage
- 2023 New contract targets - unachievable
- Workforce retention and Contract reform with ever increasing costs.
- An initiative to reduce administration and bureaucracy in general dental practice is required
- More dental nurses' courses
- Much better dental public health integrated into school and education from the earliest possible age. (Designed2Smile and the toothbrush bus)
- Update the banding structure to reward the preservation of restorative
- dental treatment. i.e., expand the banding structure to accommodate/reward all treatments available.
- Accelerated Cluster development
- Fast tracking of GDC registration for overseas dentists seeking entry into the UK.

Cardiff and Vale University Health Board

- Historical patient targets on the Contract reform are the biggest issue for as we have high needs patients and high percentages of our patients should really be coming in on a 3 monthly basis but because of the way the contract counts historical patients (only counting them once in a 12- month period)
- Staffing is still an issue; we have been able to recruit trainee nurses, but not qualified nurses and we have had issues keeping hygienists at the
- practice because of the high periodontal needs of our patients. We are still facing issues with recruitment of Dentists especially to deliver NHS
- care, so some sort of initiatives to help place qualifying dentists into practices would be very helpful.
- We have good relationships with the health board and local practices and the health board know the pressures we are under as a practice and the issues we are coming up against.
- We feel as an NHS practice that the way the new contract reform was introduced last April was poorly timed with short notice and a huge Covid-

19 backlog to catch up.

- The contract was not piloted properly, and the new patient targets are unachievable and detrimental to our loyal existing patients.
- The threat of financial penalty for not hitting these untried targets is wholly unfair and puts the whole NHS dental system at risk of collapse and practices withdrawing from the NHS as the contract is too financially risky and uncertain.
- Unable to achieve contract targets and clawbacks
- The amount of plastic waste we as a profession are generating.
- Upcoming GDS reform/contract variation - need more information as the current one is not ideal.
- Added long term costs because of Covid-19
- Lack of a sufficient pool of qualified nurses.
- Our principal focus and concern remain maintaining staff numbers, maintaining staff & patient safety throughout this pandemic and maximising patient access to our services
- Pressure to meet targets over the winter months as more patients and staff are ill and will affect the performance of the practice.
- Finding the balance between meeting the targets set by Welsh Government and treating the right number of patients in a safe way.
- General study time allowed within a new contract
- Contractual requirement to ACD involvement to improve services for our communities
- Living wage for trainee dental nurses in conjunction with LHB.
- We are extremely concerned about our current inability to recruit associate dentists impacting on our ability to care for our cohort of patients.
- Difficulty with targets due to very frequent patient DNAs and the restrictions on imposing any form of penalties on those DNAs
- Dental Nurses getting the same NHS benefits as those working in the hospital
- Poor and late communication with regards to Contract reform, proposed changes and clawback shows lack of respect for the dental providers in Wales. We are being used as a live experiment for a contract that has been untested.

Powys Teaching Health Board

- The ability to recruit and retain staff
- The GDS contract and the difficulties around Contract reform
- Angry and verbal abuse from patients