

Measuring success in dental practice using patient feedback

- a feasibility study

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Abstract

Patient feedback was elicited from seven volunteer practices using Interactive Voice Response (IVR) methodology. A concise question set was designed to cover aspects of care, which the literature suggested were most important to patients. Three questions which allowed patients to self assess important aspects of their oral health were included. The remaining seven questions covered practice cleanliness, competence, communication and patient perceptions of value for money. Only three grades of response were permitted: 'ideal', 'acceptable' and 'unacceptable'. Patients were invited to participate by letter. These letters were distributed by the participating practices. Survey results were presented to practices primarily using a bar chart showing only their percentage of 'ideal' responses to each question compared to the whole group average. Practice representatives were asked to give their feedback on the value of the instrument by telephone.

The use of IVR failed to demonstrate any benefits when compared to traditional paper based surveys. A majority of dentists participating in the trial were favourably disposed to using the instrument however.

With the proximity of dentist revalidation by the General Dental Council and practice licensing by the Care Quality Commission the development of instruments like this may be timely.

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Background

Denplan Ltd runs payment solutions for dentists and their patients. The company's core product is a capitation- based funding system called Denplan Care. The Company has diversified to also offer insurance- based products and loans to patients for extensive dental work. To support these activities the company runs a compulsory quality programme in which all dental members must participate. Members can also apply for Denplan Excel Accreditation. This is a voluntary quality assurance programme supported by the Patient's Association. More than 700 dentists are currently accredited by the programme (2010).

Denplan Excel accreditation has five key requirements:

- To use the Denplan Excel Oral Health Score.
- To share information with patients, backed up with plain English information literature
- To participate every three years in a postal patient feedback survey
- To adopt a high standard of record keeping
- To participate in a facilitated practice assessment every 18 months
(Denplan Excel Training Manual 2008 version)

Denplan Excel needs to be a dynamic standard moving forward as professional services to patients evolve. This project is designed to

investigate the possibility of enhancing the value of the patient feedback element of the standard.

This will be done by focusing the scope of the survey to those issues which seem to be most important to patients and, therefore, those issues most important to practice success. This will include a limited opportunity for patients to assess their oral wellbeing, in addition to their general perceptions on care outcomes.

This development could also be timely as The General Dental Council (GDC) (2008) has suggested that the use of patient feedback instruments should be encouraged as an important part of professional Revalidation. The mission of the General Dental Council is; 'Protecting patients, regulating the dental team'. (www.gdc-uk.org) This is what the Council states in relation to introducing the concept of Revalidation:

'Patients need to have confidence that the professionals providing their dental care have not only shown that they meet our standards when they join our registers, but can show that they continue to meet the standards expected of them over the course of their working lives. They will do this by revalidating their registration on a regular basis.' (www.gdc-uk.org)

Finally, from 2011 all dental practices in England will be required by law to register with the Care Quality Commission (CQC). The CQC is the independent regulator of health and social care in England. It is intended that registration will be dependent upon a declaration that the CQC standards for

patient care and practice governance are being met. These standards are to be published in 2010. They are expected to bear a close relationship to the standards defined in 'Standards for Better Health' (Department of Health 2004). The standards will focus on outcomes experienced by patients in particular, rather than a list of policies required in each practice. The possession of supporting evidence, especially relating to patient experiences and outcomes, will be expected of each practice. The first of the CQC's three principles is:

'The views and experiences of people using the services will inform CQC decisions.' (www.cqc.org.uk)

It can be expected that evidence of a regular commitment to collecting, analysing and acting upon patient feedback will be essential for a practice to thrive.

Objective

The objective of this work is to design and test the feasibility of using a concise patient survey for measuring success in dental practices using interactive voice response (IVR) methodology.

The aim is to design a simple audit tool for dental practices, not a sophisticated research instrument. It is intended that it will be easy for patients to use, and easy for practices to interpret the patient feedback which they receive and that this feedback will be valuable in informing practice development.

Chapter 1 Literature review

'Measure what is measurable and make measurable what is not'

Galileo (astronomer 1564-1642)

1.1 Defining success

The Concise Oxford Dictionary defines success as:

'Favourable outcome, accomplishment of what was aimed at.' (Concise Oxford Dictionary Sixth edition 1976)

To succeed is defined as;

'Accomplishing one's purpose'.

Turner, in his 1994 book 'Born to Succeed', defines success in a similar vein:

'The continuous accomplishment of planned objectives which are worthwhile'
(Turner, 1994)

He believes that the journey towards the planned objectives is the vital element of success. As Wendell Holmes, the 19th century physician turned writer, said;

'The great thing is not so much where we are, but in what direction are we moving.' (Wendell Holmes 1841-1935)

Success may therefore be viewed as a journey in the 'right' direction towards one's purpose or one's worthwhile objectives in dental practice. So what is the purpose of a dental practice?

Levin, an American dentist, in his paper 'The purpose of a business' (2003) posed the question: 'What is the purpose of a dental practice?'. He defines a dental practice as being:

'A business focused on providing high quality oral care for patients.' (Levin, 2003)

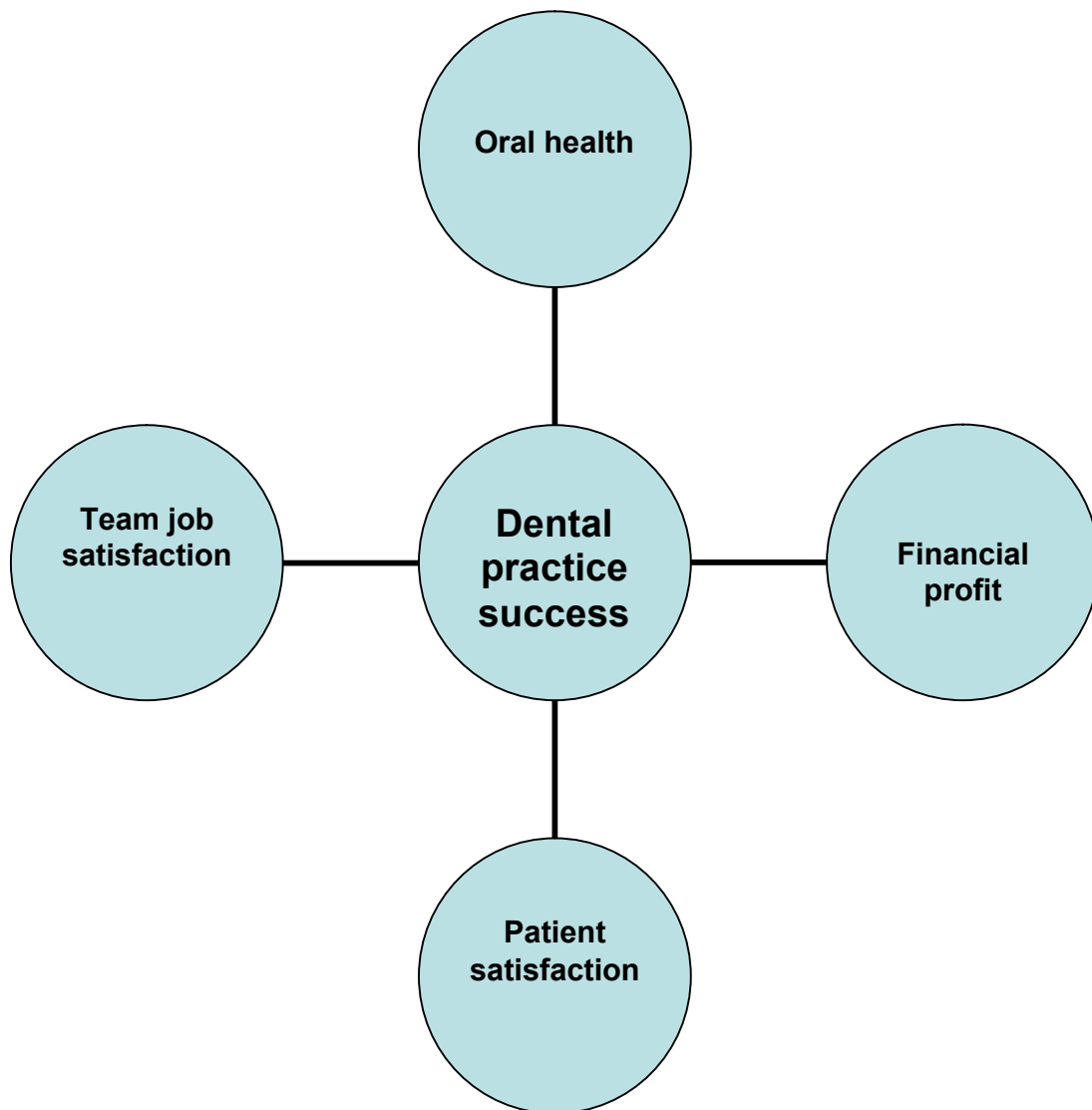
He identifies three key objectives:

- 1) To provide an income to the dentist
- 2) To satisfy the employees
- 3) To service customers or patients

These three objectives would apply to any business. If your business was hairdressing then your 'focus' might be 'to provide high quality hair care' for your clients. It might be considered therefore that, with any business, there is this fourth dedicated objective, or primary purpose. In the case of a dental practice this is, in Levin's words, 'high quality oral health care'. The purpose of high quality oral health care is to support patients towards optimal oral health. Therefore, four dimensions of success in dental practice should be considered in any measurement of success as illustrated in figure 1

Summary- Success is achieved by moving towards your worthwhile purpose. The purpose of a dental practice is to achieve happy patients, healthy patients, a happy team and healthy finances. If a concise patient survey is to measure success it should address these dimensions.

Figure 1-0- Successful dental practice



1.2 Can aspects of oral health be measured in a concise patient survey?

The World Health Organisation (1948) defined health as:

A complete state of physical, mental and social well-being and not merely the absence of illness'. (WHO, 1948)

This 60 year old definition would appear to indicate that patient perception must play a part in assessing health.

The primary purpose of dental practice is to support patients in achieving optimal oral health outcomes. Oral health has been defined by the World Health Organisation as:

A standard of health of the oral and related tissues, which enables an individual to eat, speak and socialise without active disease, discomfort or embarrassment and which contributes to general well-being (WHO 1982)

The patient is surely best placed to assess their own ability to eat, speak, socialise and their own comfort, confidence and well-being?

Locker, in his paper 'Measuring Oral Health: A Conceptual Framework' (1987), was critical of the predominantly clinical focus in assessing oral health. He made a strong case to move towards measurements of impairment, disability and handicap caused by oral disease. Ultimately the

patient will be the best judge of these impacts. This paper seemed to 'set the scene' for Slade and Spencer's work in 1994. (Slade and Spencer 1994)

The Oral Health Impact Profile, with 49 questions across seven dimensions, was designed by Slade and Spencer (Slade and Spencer 1994). It is essentially a questionnaire designed to be used to measure patient perceptions of impact of oral health issues on their lives. They compiled the original questionnaire from interviews with 64 patients from Adelaide, South Australia. The 64 subjects were deliberately selected to have experienced a range of oral diseases with consequent social impact. Initially this group of patients made a total of 535 statements, using their own words, about the consequences of oral disorders.

The original 535 statements were collated into these seven dimensions drawn from a Locker model (Locker 1987)

Dimension	Questions concerning
Functional limitation;	trouble pronouncing words, worsened taste
Physical pain;	aching in mouth, discomfort eating food
Psychological discomfort;	feeling self-conscious or tense
Physical disability;	Interrupted meals or poor diet
Psychological disability;	difficulty relaxing, embarrassment
Social disability;	Irritability, difficulty in doing usual jobs
Handicap;	life less satisfying, inability to function

Locker had based these dimensions on the World Health Organisations classification of impairments, disabilities and handicaps. This index is therefore solely concerned with patient perceptions. However, Slade and Spencer themselves state (Slade and Spencer 1994):

'The 49 questions constitute a lengthy questionnaire, and the average time for administration by an interviewer is 17 minutes'

A shorter 14 question version was developed by Slade (1997), (Appendix 1) Oral health is only one of four dimensions of practice success that this project seeks to measure, so even 14 questions would be too many to meet the objectives of this work. This is because the objective is to develop a 'concise patient survey'.

Meeting professional standards could be held to be an important element of success. Practitioners falling significantly short of professional standards run the risk of disciplinary sanctions being made against them, and even erasure from the Dentists Register by the General Dental Council. Not exactly a mark of success! The Concise Oxford Dictionary defines standards as follows;

'A measure to which others conform or by which the accuracy or quality of others is judged'. (Concise Oxford Dictionary Sixth edition 1976)

The close relationship between quality and success is discussed in section 1.5. An outline of The General Dental Council's own Standards for Dental Professionals is given in section 1.5, as they are mostly standards orientated

towards patient satisfaction. The General Dental Council is only one of several bodies setting standards for dental professionals.

'Standards for Better Health' was published by the Department of health (2004). The aim of this publication was:

'to set broad, overarching standards defining the Government's high level expectations of the health service.'

It does this by defining 24 core standards in 7 domains. Domain 2 (Clinical and Cost Effectiveness) defines expected oral health outcomes.

Patients achieve health care benefits that meet their individual needs through health care decisions and services based on what assessed research evidence has shown provides effective clinical outcomes. (DOH ,2004)

This standard implies the need for patient feedback in order to audit that it has been met.

In 2006 the Faculty of General Dental Practice (UK) of The Royal College of Surgeons of England published 'Standards in Dentistry', (FDGP 2006). By reference to other publications on standards, and web sites, this manual covers a wide range of expected structure, process and outcome expectations. Seventeen different clinical topics have defined standards published in great detail. Outcomes as a result of care and treatment are graded as follows:

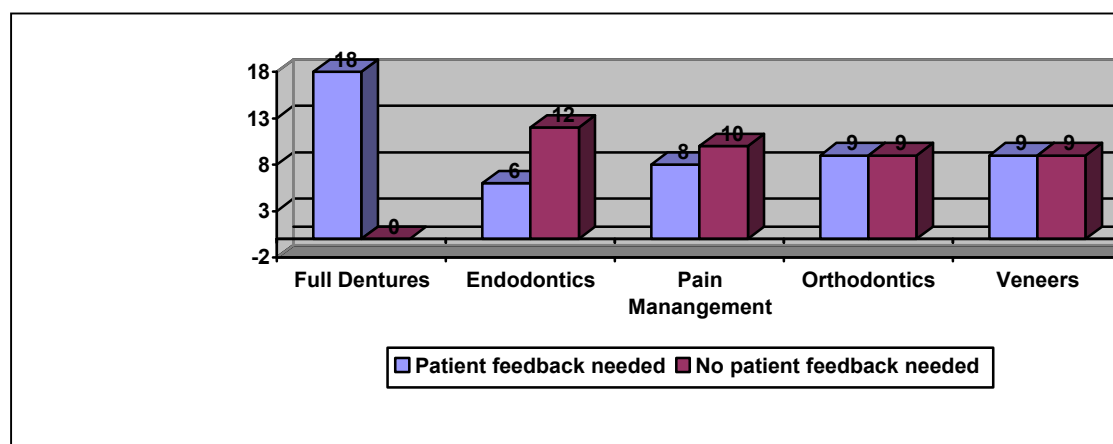
- Grade A – Ideal. *A standard of excellence has been achieved*

- Grade B – Acceptable. *The minimum acceptable standard, below which there is potential for damage to the patient.*
- Grade C – Unacceptable. *The patient concerned has either been damaged or there is potential for them to be damaged* (FDGP 2006)

Grade A could clearly be viewed as success and grade C as failure. Perhaps grade B could be viewed as partial success?

The detailed text describing how this A, B, C grading can be applied to the 17 clinical topics subdivides each topic into six areas. This means that 306 possible clinical outcomes are defined. There are therefore 18 outcomes described for each of the 17 topics. Table 1.1 has been compiled by the author and shows the proportion of described standards for five of the clinical topics requiring some patient feedback in the assessment.

Table 1.1 - Inclusion of patient feedback in ‘Standards in Dentistry’.



Patient perceptions, as a means of assessment, are therefore an important part of the protocols. In this sample, well over 50% of the described standards require some patient feedback during assessment. Patient feedback was generally required about comfort, function or appearance.

Burke and Wilson in their paper; 'Measuring Oral Health: an historical view and details of a contemporary oral health index' (Burke and Wilson 1995) described three patient perception questions, about, comfort, function and appearance as central to their index. This was the Oral Health Index (OHX). The index also describes scoring protocols for the assessment of caries, wear, periodontal disease, occlusion and soft tissue health. This also includes an assessment of the integrity of existing restorations.

Burke et al in their paper; 'Evaluation of an oral health scoring system by dentists in general practice' (Burke et al 2003) described a modification of the OHX (the Denplan Excel Oral Health Score or OHS) which maintained the three questions and allocated 24% of the total score to patient perceptions. The remaining 76% of the score was allocated to the clinical examination of periodontal health, wear of teeth and restorations, the occlusion, caries status, and soft tissue health using very similar protocols to the OHX. This weighting of the score generally met with approval from the 239 dentists (77% response rate) who responded to a questionnaire at the end of the pilot period for Denplan Excel Accreditation. The protocol for this index suggests that dentists

ask the following three questions in order to assess comfort, function and appearance:

- Is your mouth free from pain?
- Can you comfortably chew an unrestricted diet?
- Are you happy with the appearance of your teeth? (Burke et al, 2003)

The use of this index is a central aspect of the Denplan Excel Accreditation. By June 2009, 651 dentists were accredited. Since its introduction ten years ago the OHS has been used as part of several million patient examinations.

Ireland et al in their paper: 'A clinical minimum data set for primary dental care.' (Ireland et al 2001) also concluded that the following should be three of ten factors recommended in their minimum data set:

- 1) Presence of oral pain
- 2) Patient satisfaction with appearance
- 3) Patient satisfaction with function

These factors can only be assessed by patient feedback. The full data set included similar clinical criteria to those in the OHS and OHX.

Summary- Supporting patients to optimal oral health outcomes is the primary purpose of a dental practice, and therefore by definition an important aspect of practice success. Increasingly, patient self perceptions of well-being are forming part of oral health outcome assessment. Clinical examination is needed for a full oral health assessment. The literature suggests that patient feedback should be elicited on a minimum of three outcomes;

- 1) Freedom from oral pain**
- 2) An ability to eat an unrestricted diet**
- 3) Confidence in dental appearance**

These aspects of oral health could be incorporated into a concise patient survey

1.3 The importance of financial success in dental practice: can any measurement of finance be incorporated into a concise patient survey?

The fact that any business needs to be profitable in order to survive, re-invest and prosper is so self evident as to not need any supporting literature. Clearly, it is still an essential dimension of dental practice success.

General Dental Practices in England are usually privately-owned small businesses providing oral health care services to the public. They are funded by direct or indirect (capitation providers and insurance providers) private contract with patients, through Primary Care Trusts to provide NHS dental services, or most commonly by a mixture of these.

Finance and funding of healthcare organisations has always been a politically sensitive issue. Achieving financial success is as important as it is with any other form of business. Without adequate funding patient care and team development may be compromised. There is endless debate, not only about who should fund dental practices, and the level of funding needed, but also about the method of delivering the funding. Could a measuring system of practice success ignore finance? It is the easiest outcome to audit.

In fact, the annual accounts of every practice will clearly audit profits. It is a very simple matter to monitor cash flow and performance against budget on a monthly basis. There is no excuse for any practice to be unaware of their financial performance.

A point of view could be taken in which favourable financial outcomes were taken as the only important measurement of success for privately owned businesses such as dental practices. Certainly, short term financial success could be achieved with no regard for favourable patient and employee outcomes. This would not be either a good moral strategy, or a good long term business plan. Financial success should naturally follow patient satisfaction so long as prices (or funding) are set at the correct level.

In 'The Patient – Centred Dental Practice' Newsome (2001) states:

'Despite being the ultimate business goal, profit isn't necessarily the best measure of how well a commercial enterprise is doing. Answering the question often asked by dentists, namely. 'How successful is my practice?' may not be as easy as it seems' (Newsome 2001)

He then suggests that profit is closely related to:

- 1) Customer retention
- 2) Customer satisfaction
- 3) Perceived service quality
- 4) Employee retention
- 5) Employee satisfaction

6) Internal service quality

He calls this set the 'Service Profit Chain'. All of these factors can be measured and relate to job satisfaction and patient satisfaction. Newsome suggests that these are better indicators of long term success. Profit focus alone means constantly looking backwards, having a short term focus and potentially poor customer focus as a result. (Newsome, 2001)

Of the 43 'excellent' companies chosen by Peters and Waterman in their book 'In Search of Excellence' (Peters and Waterman, 1982) on the basis of such measures as profit and financial growth only 14 were doing well five years later and only five continued to prosper ten years later. In fact, Peters, once confronted with the long term results of the 'Excellent' organisations, claimed that the essential message of 'In Search of Excellence' was:

- People (who work in or with the organisation)
- Customers
- Action

He suggested that the book had turned these 'soft' factors into 'hard' ones when previously the only 'hard' factor was 'numbers' (or finance). This book sold 3 million copies in its first four years and is considered to be one of the most read business books in history. Eight themes common to 'excellent' organisations were identified in the book and these included:

- Close to the customer - learning from the people served by the business
- Productivity through people – treating rank and file employees as a source of quality

This endorses Peter's later claims about the book. Perhaps these companies only measured the hard financial numbers and failed to adequately measure the 'people' issues, such as those recommended by Newsome above? (Newsome, 2001). They perhaps failed to respond early enough to the 'people issues' as they declined?

'Standards for Better Health' (Department of Health 2004) prescribed a core standard for financial management of all health care organisations in Domain 3 (Governance). Core standard C7 part (d) states that all healthcare organisations should:

'ensure that financial management achieves economy, effectiveness, efficiency, probity, and accountability in the use of resources.' (DOH, 2004)

Barnes (1985), in his paper 'Open Wide: an examination of how patients select and evaluate their dentist', found costs to be of relatively low importance in selecting a dentist (Barnes 1985). He concluded:

'In this context prices are simply interpreted as being fair by the patient who has perceived the quality of care to be high. The implication is that those

patients who think the fees are too high are also dissatisfied with the quality of care.'

Croucher highlighted the anxiety that patients have over the potential for exploitation (Croucher 1991). He discovered dissatisfaction with the way bills were presented with too little warning or explanation.

In their paper 'The role of dental practice characteristics in patient satisfaction' Kress and Silversin (1987) found that the following were the lowest rated items by patients in their survey;

- 'Knowing in advance what the fee will be' and
- 'Believing that the fees are appropriate'

Summary- Profit is essential for success. Short term focus on profit may work against long term success. Patient satisfaction should lead to profit, if prices (or funding) are set at the correct level. Perhaps patient (or third party provider of funds) perception of value for money is the most important measurement of sustained financial success. Patient perceptions of value for money can be included in a concise patient survey.

1.4 The importance of team job satisfaction to practice success: Does a concise patient survey indirectly measure job satisfaction?

In 'The Patient – Centred Dental Practice' (Newsome 2001), Newsome suggested the following important interconnected indicators of success:

- ❖ Customer retention
- ❖ Customer satisfaction
- ❖ Perceived service quality
- ❖ Employee retention
- ❖ Employee satisfaction
- ❖ Internal service quality

The last three of these are clearly related to job satisfaction. Newsome emphasises this by stating:

'The people who work in an organisation are its lifeblood: its heart and soul. This is true for any business, but particularly so for service organisations.'

Two of the chief characteristics of services are that people are part of the product and for most of the time customers are present in the system.'

Frances and Roland Bee, in their book 'Customer Care', (Bee and Bee 1995) stated:

‘ The quality of customer care offered to internal customers is just as vital as that offered to external customers, and that in successful organisations everyone operates as though all their colleagues are cherished and important customers’.

The concept of ‘internal customers’ can probably be traced back to Deming’s publication ‘Out of Crisis’ (Deming 1982) in which he gives 14 points for successful management of people in order to produce quality products and services. Deming was an American statistician, who is considered to be the father of the modern quality movement. He states as his 9th point:

‘Break down barriers between departments. People in research, design, sales and production must work as a team to foresee problems that may be encountered with the product or service.’ (Deming, 1982)

When he elaborates on these rules later in his book he refers to the different departments as being ‘customers’ of each other. Further to this he encourages the concept of continuous self improvement and education for the whole workforce and real leadership towards a common purpose in place of supervision.

Lund, an Australian dentist, in his book ‘Building the Happiness Centred Business’ (1994), makes team happiness the central business objective, from which he believes success will flow. He makes this fundamental point:

‘Unless people are happy within themselves, it is hard for them to be consistently pleasant to those whom they serve.’

Richer (1995) in his book ‘The Richer Way’ writes:

‘My experience demonstrates that treating your staff better will make your business perform better. It is no good saying you cannot afford to treat your staff better: you cannot afford not to.’

Richer can rightly claim to know something about ‘success’. His shops, Richer Sounds (which sell Hi fi and TV equipment) were declared the busiest in the world (as measured in sales per square foot) by the Guinness Book of Records for four years running.

‘Standards for Better Health’ in 2004 defined in Domain 3 outcomes expected in the governance of healthcare teams.

Managerial and clinical leadership and accountability, as well as the organisations culture, systems and working practices, ensures that probity, quality assurance, quality improvement and patient safety are central components of all the activities of health care organisations. (DOH, 2004)

Goleman, in his book ‘Emotional Intelligence’ (Goleman 1996), suggests that people who can manage their own emotions, motivate themselves, show empathy with others and build successful relationships tend to enjoy more

successful (and healthier) lives both professionally and personally. Goleman, in this publication, popularised the concept of 'Emotional Intelligence' (EQ).

Goleman suggests that the essential qualities of the highly emotionally intelligent individual, as summarised above, are a more important indicator of potential success than high Cognitive Intelligence (IQ). Furthermore, he suggests that more educational emphasis should be placed on teaching these skills, which he believes can be learned, in our schools. He states:

'What factors are at play when people of high IQ flounder and those of modest IQ do well? I would argue that the difference quite often lies in the abilities called here emotional intelligence, which include self control, zeal, persistence and the ability to motivate oneself.' (Goleman, 1996)

There is much debate about the origins of the concept of Emotional Intelligence and many authors have attempted to concisely define it. Some have been critical of Goleman for developing the concept of emotional intelligence too broadly. If a concept is too broadly described it can become very difficult to define precisely and therefore difficult to measure.

Mayer and co workers recently developed a definition of emotional intelligence (Mayer et al 2008) as follows:

‘Emotional Intelligence is the ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions to promote personal growth.’

Pau, Croucher and colleagues, in their paper ‘Emotional intelligence and stress coping in undergraduates – a qualitative study’ (Pau and Croucher et al 2004) found that dental students with low Emotional Intelligence scores engage in smoking, drinking and high risk behaviour in response to stress. Those with higher scores tended to use reflection, appraisal, social, interpersonal, organisational and time management skills to cope. Presumably this would render the more highly emotionally intelligent students better able to relate positively to patients.

Wagner, Moseley and colleagues in their paper ‘Physicians’ Emotional Intelligence and Patient Satisfaction’ (Wagner et al 2002) found only a limited link between the physician’s emotional intelligence score and patient satisfaction. Nevertheless, a link was still observed.

Becker, Ackley and colleagues in their paper ‘The value of emotional intelligence in dentistry’ (Becker et al 2003) examined the contribution of emotional intelligence to a dentist’s success in implementing a relationship-based model of dental care (as taught by The Pankey Institute for Advanced Dental Education Florida). They concluded that:

'Emotional Intelligence in general appears to be a key component in successful implementation of the Pankey model.'

The core of the Pankey philosophy states:

'It is essential for the dentist to establish a deep, mutually rewarding relationship with the people whom she or he treats.' (www.pankey.org)

So, if they had established that dentists who are committed to this philosophy tended to have high measured levels of EQ, it would not have been surprising. What they actually did was to survey 144 dentists who had spent at least six weeks of training at the Institute. They compared the degree to which they had implemented the Pankey philosophy using a 92 item self report instrument with each individual's self assessed EQ score. Those with the higher EQ scores were more likely to have implemented the model, particularly in the areas of diagnostic skills, relationship building and business practices which benefit both the patient and dentist. The areas of emotional intelligence which had the strongest correlation to implementing the philosophy were:

- Emotional Self Awareness
- Reality Testing – the victory of judgement over raw emotion
- Assertiveness
- Self Actualisation – the ability to engage in ones passions and talents

Summary- The positive link between a dental practice staffed by an emotionally intelligent team enjoying their work and patient satisfaction with the care received in that practice seems clear. If patients perceive an unhappy dental team, their happiness is an unlikely outcome. Any measurement of patient satisfaction through a concise patient survey is probably indirectly measuring the job satisfaction of the team.

1.5 The importance of patient satisfaction to practice success: which aspects of a dental service are most important to patients?

Richer (1995) wrote;

'Most businesses make the mistake of measuring their performance in terms of figures when they ought to be measuring it in terms of people. The primary measure of a business's success should be customer satisfaction not profits. Profits are simply an indicator that you are getting customer service right. Anyone can play around with prices to push sales and turnover up. You can mess around with margins and hammer costs to make profits look good. But these are short term ticks. Unless the customer is happy the business will not last.' (Richer 1995)

1.5.1 The relationship of 'quality' and patient satisfaction

In 'The Patient – Centred Dental Practice, it will be recalled from the previous two sections, Newsome suggested the following important interconnected indicators of success (Newsome 2001):

- ❖ Customer retention
- ❖ Customer satisfaction
- ❖ Perceived service quality

- ❖ Employee retention
- ❖ Employee satisfaction
- ❖ Internal service quality

The first three of these are clearly related to patient satisfaction.

The Profit Impact of Marketing Strategy (PIMS) project was started by Schoeffler at General Electric in the 1960s. Harvard's Management Science Institute continued the work in the early 1970s. It has been administered by the American Strategic Planning Institute since 1975. General Electric originally wanted to know why some of their units were more profitable than others. So, they collected data on dozens of variables in each unit such as data on pricing, quality, advertising and innovation. The research was eventually extended beyond GE to many other businesses. 'Product quality' and 'service quality' were found to be two of the most highly correlated variables to profitability. The data-base now contains information about strategy and performance from more than 3000 businesses. It demonstrates that a focus on quality buys businesses the following key advantages.

- 1) Stronger customer loyalty
- 2) More repeat purchases
- 3) Less vulnerability to price
- 4) Ability to command high relative price
- 5) Lower marketing costs (www.pimsonline.com/)

So product 'quality' and service 'quality' seem to be keys to success, but what is 'quality'? There are countless definitions, three commonly quoted are:

'Quality is fitness for use' (Juran and Gryna, 1988)

'The totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs' (Peach, 2003)

'Quality denotes an excellence in goods and services, especially to the degree they conform to requirements and satisfy customers' (American Society for Quality).

These definitions seem to draw a close relationship between the concepts of quality, customer satisfaction and success (as defined in section 1.1). Patient feedback is clearly required to assess any of these.

Avedis Donabedian was Professor of Public Health at the University of Michigan. He published extensively on health care quality. His Seven Pillars of Quality (Donabedian 1990) were as follows:

- 1) Efficacy – is the care capable of improving health
- 2) Effectiveness – to what degree are health improvements realised
- 3) Efficiency – getting the greatest health improvement for the lowest cost
- 4) Optimality – the most advantages balancing of costs and benefits
- 5) Acceptability – conformity to patient preferences
- 6) Legitimacy – conformity to social preferences
- 7) Equity – fairness in the distribution of care

Equity appears to be a perfectly valid 'pillar' for public health provision. Many would argue that 'Inequity' is a feature of private health care provision?

The references to cost in this model, in the provision of public health, are also understandable. In the context of a privately funded dental practice patient perception of value for money could be held to represent this 'pillar'?

Therefore patient feedback could assess performance relating to 'pillars' 3) and 4) and patient feedback must be central to assessing Donabedian's pillars 2), 5) and 6).

1.5.2 General issues on customer satisfaction

Parasuraman et al (1985) concluded that customers perceive service quality by comparing their expectations of performance to actual experience in five dimensions:

- ❖ Reliability: Ability to perform the promised service dependably and accurately
- ❖ Tangibles: Appearance of physical facilities, equipment, and the appearance of personnel
- ❖ Responsiveness: A willingness to help customers and provide a prompt service
- ❖ Empathy: Providing care and individual attention

- ❖ Assurance: Knowledge and courtesy of the practice team and their ability to inspire trust and confidence

Sewell (1990) in his book 'Customers for Life' suggests customer retention is achieved in summary by:

- Asking them what they want and delivering
- Under – promising and over delivering
- Showing all people respect
- Measuring everything
- Inviting complaints and dealing with them effectively

Berry (2001), in his chapter in the Harvard Business Review on Customer Relationship Management, cites his five Pillars for excellent customer focus as:

- 1) Solve your customers' problems – consider what people really need and how you can meet that particular need better than competitors can
- 2) Treat customers with respect – actually train and manage the team to be courteous, energetic and helpful.
- 3) Connect with your customers emotions – recognise that everything about the customers' experience sends a message that goes to the heart, not just the brain.
- 4) Set the fairest (not the lowest) prices – focus on having fair prices instead of playing mind games with special offers, fine print and bogus sales.

- 5) Save your customers' time – understand that peoples' most precious commodity in the modern world is time, and do everything to be efficient with customers.

Pawar's paper 'Five tips for generating Patient Satisfaction and Compliance'

(Pawar 2005) suggests a similar list for medical patients;

- 1) Establish a sense of trust
- 2) Uncover patients actual needs
- 3) Think dialogue not monologue
- 4) Don't force the close- fully involve the patient in the action plan
- 5) Always follow up

Lund (1994), suggests eight performance standards all around courtesy and respect for the customers (internal and external). Those standards are as follows:

- I. Speak very politely
- II. Always talk about a person as if they were in the room
- III. Discuss problems in private
- IV. Apologise and make restitution if someone is upset by your actions
- V. Greet and farewell everyone by name, with eye contact, and a touch
- VI. Blame a system not a person
- VII. Tell the truth
- VIII. Use empowering conversation

These general references about customer satisfaction seem to emphasise the importance of good communication particularly, an aspect which is now specifically explored in relationship to dental practice.

1.5.3 The importance of good communication in dental practice

Kay and Tinsley (2004) in their book 'Communication and the Dental Team' stress throughout the value of relationship building with patients in practice success. They make the point clearly that patients choose dental practices primarily on the way they are treated as people. They continue by suggesting that health outcomes for patients are likely to be more positive when effort is made to build good relationships with patients and not where effort is focused on technical excellence alone. They state:

'It is not possible to truly 'help' and 'care' for patients in a way that will cause them to trust and have a high regard for you without good interpersonal skills. It is by your communication with your patients that they judge you.' (Kay and Tinsley, 2004)

Freeman and Humphris (2006) agree with the opinions of Kay and Tinsley, stating:

'Communication is key to successful dentist-patient interaction and can contribute to a thriving dental practice.'

The Foreword to the book by Freeman and Humphris (2006) by Wilson (2006) has the following opening paragraph:

‘Effective communicating is fundamental to success in clinical practice. Indeed, many tensions between patients and members of the dental team, in particular complaints, stem from failures in communications.’ (Freeman and Humphris 2006)

This publication also stresses the importance of good communication between team members in practice success and stress prevention.

Burke and Freeman in their book, ‘Preparing for Dental Practice,’ (Burke and Freeman 2004) aim to prepare senior dental undergraduates and vocational dental practitioners for the full responsibilities of General Dental Practice with a holistic approach to patient care and treatment. They devote one of the six chapters of this book to the importance of the dentist- patient relationship in practice building. In particular, they stress the importance of good communication with patients to build, what they refer to as the ‘treatment alliance’. They describe an optimal ‘treatment alliance’ as existing when dentists and patients work and communicate together towards the common goal of oral health. They state:

‘It seems that those patients who are made to feel welcomed are listened to and are encouraged to participate in their treatment decisions, are those who

express greater satisfaction and remain loyal to the general practice.' (Burke and Freeman, 2004)

1.5.4 The relationship of oral health to patient satisfaction

Zimmerman (1988) found a direct relationship between patient satisfaction with their dental visits, their compliance with oral health advice and actual improvement in dental health.

Golletz et al (1995) found that those with a poor self assessment of their dental health rated their satisfaction with dental care lower than those with higher self- rated dental health. Eight hundred and ninety five mothers of school age children with low income in Seattle (Washington State USA) were interviewed using the Dental Satisfaction Questionnaire (DSQ) developed by Davis and Ware (1981). Golletz et al (1995) stated:

'Each DSQ scale was highly significantly related to both of these variables and the relationship was basically linear. Higher self reported dental status was strongly related to satisfaction with care.'

They go on to speculate that this association may arise because oral health care providers react more positively towards healthier patients and more negatively towards less healthy patients. So, there is evidence of a direct relationship between the measurement of patient satisfaction and their oral health in these last two studies. (Zimmerman 1988, Golletz et al 1995)

1.5.5 Evidence for those issues most important to dental patients

Holt and McHugh (1997) asked patients to score the importance of 18 factors influencing their loyalty to the dentist and practice. A total of 1003 responses were received from a total of 13 general dental practices in England and Wales. The top five ranking factors were as follows:

- 1) Dentist care and attention
- 2) Pain control by dentist
- 3) Dentist putting you at ease
- 4) Safety conscious
- 5) Explanation of treatments

Convenience and comfort factors such as such as 'Opening hours', 'Waiting time at dentist' and 'Practice décor' were ranked as the least important factors of the 18. In this study 'unhappy with dentist' was cited as being the main reason for changing dentists. Communication, competence and safety were therefore key issues.

Abrahams et al (1986) asked a group of 117 patients to complete a questionnaire on their perceptions of the quality of their previous dental care. They then received a dental examination at which their existing dental restorations were assessed against 14 criteria of professionally-assessed

quality. No relationship was found to exist between these two different perceptions of quality. They concluded:

‘Simply practicing dentistry with a high degree of technical expertise will not necessarily convince the patient that he has received high quality dental care. Other less technical aspects of dental treatment are recognised as being barometers of quality of dental treatment. Practitioners should not lose sight of the human and psychological aspects of care, and keep in mind that they are integral components of quality in dental treatment.’ (Abrahams et al 1986)

Janda, Wang and colleagues (1996) in their paper ‘Matching dental offerings with expectations’ concluded that dentists should not rely on convenience issues such as ease of parking and location, but should emphasise:

- 1) Quality of service
- 2) Professional competence
- 3) Personality and attitude of dentist

Perri 6 et al (1996) for Demos (the independent think tank) published their views in ‘Open Wide’. They assessed the future for dentistry ahead to the year 2010. This work included a survey of a representative sample of 2000 people across Great Britain. The group were asked to give three or four factors which would give them confidence in a dentist when visiting afresh after some time. The top three factors mentioned were:

- 1) Cleanliness -mentioned by 36%
- 2) Hygiene factors (rubber gloves etc)- mentioned by 32%

3) Friendly service – mentioned by 32%

The Office of Fair Trading (OFT, 2003), in their report on the private dentistry market in the UK, carried out interviews with 2000 members of the public. Participants were asked about the most important features that they sought in a dentist or practice. The top three factors mentioned were

- 1) Competence- mentioned by 65%
- 2) Quality of work- mentioned by 60%
- 3) Cleanliness- mentioned by 55%

Lahti et al (1992), working in Finland, carried out a fairly complex study to discover dentist and patient opinions about the ideal dentist and patient. Seventy five statements about the ideal dentist were tested. From a total of 1200 surveyed 845 responded (70%). In summarising their results the researchers stated:

'Behavioural components of the dentists' professional competence such as communication and supportiveness, were considered the most important.'

They also concluded that the importance of 'cost' was lower than expected. So, once more, the communication skills of the dentist have been shown to be an important factor.

Burke and Croucher (1996) allowed 30 dentists to propose eight important criteria of 'good practice' and 30 patients to also propose eight. The three issues ranked highest by the 334 patients ultimately surveyed were:

- 1) Explanation of procedures
- 2) Sterilisation and hygiene
- 3) Dentists' skills

These three criteria of good practice were all originally proposed by patients. The criteria proposed by dentists were generally ranked as less important by patients. Dentists considered that 'Up-to-date equipment', 'Pleasant décor and surroundings', 'cost', 'good administration' and 'practice image' might all be important. However, the patients ranked these all in the bottom seven of the 16 factors. Infection control, communication and competence seemed again to be much more important than convenience and comfort issues.

In their paper: 'Dentist and the patients who love them: professional and patient views of dentistry.' Gerbert et al (1994) surveyed a total of 4061 patients of 286 different dentists who volunteered for the study. The dentists were also surveyed. This study again examined the dentist and patient view of the ideal dentist. On average, the patients had been in care with their dentist for 7.7 years. When rating their own dentist, patients placed 'Professional competence' and 'Implementing all infection control protocols' as the top two issues in importance from a list of 15 qualities. Dentists also rated these two as most important to them. 'Explaining dental procedures' was very highly rated by patients (the 4th most important issues) but not by dentists. Their ranking for this was 8th, placing 'Having a pleasant office environment' above

this issue of communication. Yet again communication, competence and infection control were placed as more important than comfort issues by patients.

Karydis et al (2001) assessed the expectations and perceptions of 200 consecutive patients attending the Dental Clinic of the School of Dentistry, University of Athens, Greece. They, once more, found that the patients' top priority was adherence to the rules of antisepsis and sterilisation.

Klingenberg et al (2008) surveyed 1317 patients being cared for by 18 dentists. They found that the highest statistical correlation to overall satisfaction was with positive responses around whether the patients perceived that they were listened to, and whether they perceived good results from their dental treatment.

Finch et al (1988) in 'Barriers to the Receipt of Dental Care' carried out a qualitative study. They focused their interest on small groups of people in four different areas of England, interviewing 109 members of the public. They selected those who were mainly irregular or non-attendees at dental practices. They concluded that the most common barriers to the receipt of dental care were:

- Anxiety
- Cost
- Low perception of need
- The image of dentists

Some of the quotes from interviewees are reproduced below to further illustrate these findings:

'They (dentists) see you as a mouth'

'I just don't like going. It's an in built fear.'

'It is fear of the unknown'

'The dentist will tell me off'

'You are totally at his mercy, you don't know what is coming next'

'There shouldn't be this cloak and dagger stuff... You need to know how much it is going to cost'

'Dentists get paid by what they actually do – so they've been known to create things that don't really need doing so that they can get the money'

On reviewing these barriers to dental care it could be concluded that good relationship building and communication with patients should overcome them.

Hill et al (2003) investigated patient perceptions of NHS dental services through semi structured face to face interviews. Twenty eight patients were selected to give a spread of opinion across a range of ages, sex and occupation. These interviews lasted between 45 and 60 minutes. A similar list of barriers to dental care to those identified by Finch et al (1988) emerged, namely:

- Patient satisfaction
- Cost
- Access
- Fear and Anxiety

These patients commented on the qualities of a good dentist which were summarised as:

- Friendly
- Has a personal touch
- Good chair side manner
- Explains what s/he is doing
- Explains what the cost of treatment is prior to starting
- Is caring, gentle and reassuring
- Good technical skills
- Inspires confidence (Hill et al, 2001)

These 12 studies conducted over the last 25 years suggest strongly to the author of this thesis that the issues of competence, communication and cleanliness are paramount to patient satisfaction and, therefore, practice success.

1.5.6 Professional standards relating to patient satisfaction

The General Dental Council published its requirements in the booklet 'Standards for Dental Professionals' (GDC 2005). It summarises professional responsibilities as follows:

- 1) Putting patients' interests first and acting to protect them.*
- 2) Respecting patients' dignity and choices.*
- 3) Protecting the confidentiality of patients' information.*

4) *Co-operating with other members of the dental team and other healthcare colleagues in the interests of patients.*

5) *Maintaining your professional knowledge and competence.*

6) *Being trustworthy.* (GDC, 2005)

'Standards for Better Health' (Department of Health 2004) defined in Domains 1, 3, 4 and 5 the outcomes expected in patient centred healthcare:

Domain 1 Safety

Patient safety is enhanced by the use of health care processes, working practice and systemic activities that prevent or reduce the risk of harm to patients.

Domain 4 Patient Focus

Health care is provided in partnership with patients, their carers and relatives, respecting their diverse needs, preferences and choices, and in partnership with other organisations (especially social care organisations) whose services impact on patient well-being.

Domain 5 Accessible and Responsive Care

Patients receive services as promptly as possible, have choice in access to services and treatments, and do not experience unnecessary delay at any stage of service delivery or of the care pathway

Domain 6 Care Environment and Amenities

Care is provided in environments that promote patient and staff well – being and respect for patients; needs and preferences in that they are designed for the effective and safe delivery of treatment, care or a specific function, provide as much privacy as possible, are well maintained and are cleaned to optimise health outcomes for patients.

So, finally, even Government-imposed standards focus principally on safety and communication, although convenience factors are also included. (DOH, 2004)

Summary- The concepts of success and quality seem almost synonymous as they have been defined in this thesis. Patient satisfaction is a key factor in achieving and maintaining quality and success. Patient satisfaction is measured by eliciting feedback.

Evidence strongly suggests that the following issues are the most important in achieving patient satisfaction with a dental practice:

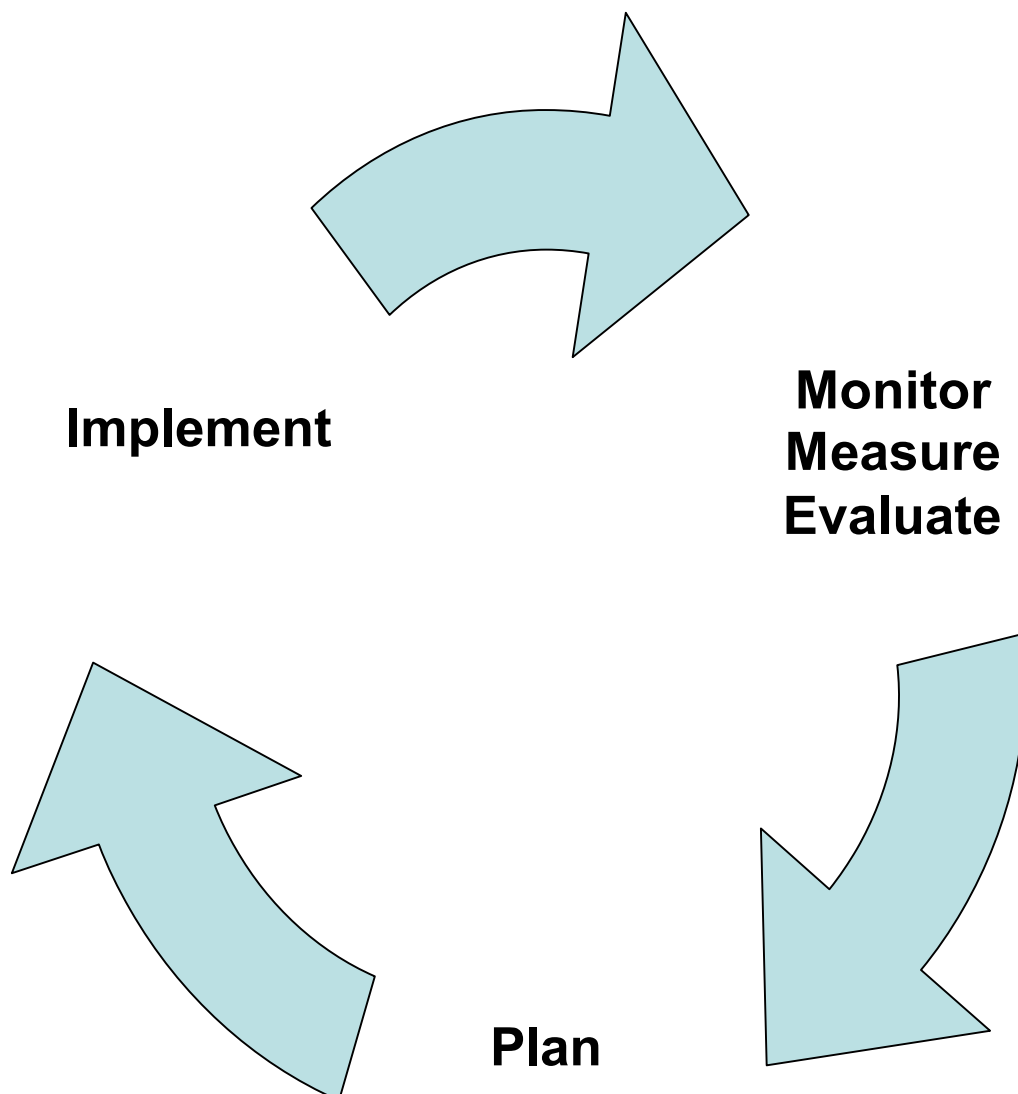
- 1) Cleanliness**
- 2) Competence**
- 3) Communication**

These issues should therefore have priority for inclusion in a concise patient survey.

1.6 The importance of measurement

Business consultants generally advise the use of the 'Management Cycle' as a model for the efficient governance of organisations. Ontario Medical Association (OMA) Practice Advisory Services based in Toronto, an organisation advising physicians on practice management, are no exception. They use the cycle in its simplest form, as shown in table 1.3.

Figure 2 The management cycle



Harrington (1991), past president of the International Academy for Quality and Chairman of the Harrington Institute, said:

'If you cannot measure it, you cannot control it. If you cannot control it you cannot manage it. If you cannot manage it, you cannot improve it.' (Harrington 1991)

The 'Investors in People' standard was developed in 1990 by a partnership of leading businesses and national organisations. The standard is designed to:

'Help organisations to improve performance and realise objectives through the management and development of their people.'

(www.investorsinpeople.co.uk)

The standard is based on the three key principles implied in the management cycle namely:

- Plan- develop strategies to improve the performance of the organisation
- Do – take action to improve the performance of the organisation
- Review – evaluate the impact of these actions on performance.

(www.investorsinpeople.co.uk/)

Over 30,000 organisations (including many dental practices), employing about 27% of the UK workforce, are recognised as having achieved this standard.

Investors in People claim many practical benefits for organisations including:

- Enhanced quality

- Customer satisfaction
- Improved motivation through employees' greater involvement.
- Improved earnings productivity and profitability

(www.investorsinpeople.co.uk)

Through using the management cycle, including evaluation and measurement, there appears to be evidence that practices could improve outcomes in all of the four dimensions of success described above.

Participation in clinical audit is a clinical governance requirement for all health care organisations in England. It falls under Domain 2 in 'Standards for Better Health'.

Domain 2 Clinical and Cost Effectiveness

Patients achieve health care benefits that meet their individual needs through health care decisions and services based on what assessed research evidence has shown provides effective clinical outcomes.

Core standard C5 part d) states:

'Clinicians participate in regular clinical audit and reviews of clinical services'.

Clinical Audit is defined in 'Clinical Audit and Peer Review in the GDS'

(Department of health 2001)

"The systematic, critical analysis of the quality of dental care, including the procedures and processes used for diagnosis, intervention and treatment, the use of resources and the resulting outcome and quality of life as assessed by both professionals and patients."

Summary- The literature seems unanimous in suggesting that measurement is an essential component in the successful management of organisations. Measurement (Clinical Audit) is compulsory for all health care organisations in England. Measuring patient perceptions of the care which they receive is a vital aspect of measuring practice success.

1.7 Some methods for measuring success

Donabedian (1966) famously described a three part model for measurement of the quality of healthcare:

- 1) **Structure** – Have the team got the right credentials, are their facilities optimal?
- 2) **Process** – Do they follow the ‘correct’ procedures when caring for patients?
- 3) **Outcome** - Do they get good results in terms of both professional and patient judgements?

Donabedian asserted that these three parts were interdependent and therefore that good structure should promote good process which, in turn, should produce good outcomes. He noted a distinction between ‘technical’ outcomes judged by professional means and good ‘interpersonal’ outcomes as judged by the patients. He realised that the very nature of ‘health’ means that, in practice, the ‘technical’ and ‘interpersonal’ aspects are practically inseparable. The close link between the defined concepts of success and quality has been explored in section 1.5. If one is attempting to measure ‘success’, outcome must surely be the Donabedian aspect to be focused on?

It seems clear that measuring patient satisfaction with their care at a dental practice should be central to any measurement of outcomes. Clearly this will apply to the 'interpersonal' aspect. Modern measurements of oral health (Donabedian's technical element) include a significant element of patient feedback as discussed in section 1.2. They too, therefore, can be measured by patient feedback, at least in part. In this respect, all four dimensions of success can be measured separately and by different methods.

Financial Success can be measured quite easily by continuous cash flow analysis and by the production of practice accounts, usually on an annual basis. Dental practices have financial advisors and accountants. There is no shortage of potential measurements or advice in this dimension.

Oral Health and oral health impact can be measured by indices such as the OHX, (Burke and Wilson 1995) the OHS (Burke and Busby et al 2003) and OHIP (Slade and Spencer 1994). The OHIP is based purely on patient feedback. The first two require patient examination *and* feedback.

Job Satisfaction can be measured by internal satisfaction surveys. Richer (1995), sets out one such survey which he calls an 'attitude survey'. He suggests that it is vital to convince staff that when these are carried out that they are strictly anonymous. Staff retention is another method recommended by Richer but he admits that this is '*the crudest yardstick*'. Absenteeism from work is another measurement recommended by Richer. He quotes the

national average to be about 4-5%. He also suggests measuring customer satisfaction as a way of assessing staff motivation and states:

'I would bet that if you have a branch or department generating a high level of customer complaints, its labour turnover, absenteeism and shrinkage rates would all be high, its profitability low and the staff will be unhappy. These factors are inescapably related.' (Richer, 1995)

It therefore appears that a number of experts agree that positive customer perceptions of any organisation seem to be the best indicator of long term success in all four of the dimensions.

It has been established that oral health impacts can be measured by a patient feedback instrument. Patient satisfaction is usually measured in this way. Job satisfaction of the dental team is so closely connected with patient satisfaction, that it is effectively being measured by patient feedback. There is no shortage of methods for measuring financial performance. In the context of this work, however, patient perception of 'value for money' will be used as the key performance indicator as discussed in section 1.3

Summary-There is some evidence to support the idea of measuring success through patient perceptions.

1.8 Patient satisfaction instruments in dental practice- a problem with high scores?

Newsome (2001) states in 'The Patient Centred Dental Practice:

'Published studies of dental patient satisfaction nearly always reveal very high levels of satisfaction.'

And further:

'The modal response i.e. the value that occurs most frequently, is typically the most positive response allowed by the questionnaire.'

This clearly can be of limited value. He speculates that these findings could be either:

- a) Because patients are very happy with their dental practices
- b) They do not feel confident about their ability to evaluate
- c) They don't like to criticise

The current Denplan Excel Patient Survey is discussed further in section 1.9. It provides a good illustration of Newsome's summary.

Gerbert et al (1994) found very high levels of patient satisfaction they stated:

'Patients were overwhelmingly satisfied with their current dentist: 87% indicated that they were very satisfied and 98% said that they planned to stay with their dentist.'

A recent example of this problem was reported by Howard-Williams (2009).

He reported running two audit cycles for practitioners on the following topics:

- Infection control and decontamination
- Clinical record keeping
- Quality of radiographs
- Patient satisfaction
- Recall intervals based on NICE guidelines
- Contractual obligations in NHS

Howard-Williams reports:

‘All the audits showed improvement (in the second cycle) with the exception of the patient satisfaction survey where the first audit cycle showed an average patient satisfaction rating of 99% which cannot be improved on.’

No copy of the ‘instrument’ which was used was published, but it is stated that it has been redesigned to try and make it more challenging and informative.

This does indeed seem to be the challenge with patient feedback instruments.

How can they be designed to reflect the differences which must exist in perceived performance between different issues in the same practice and between practices?

Summary- High scores seem to be a feature of dental satisfaction surveys. Perhaps the questions and the patient grading scale need to be demanding in order to differentiate perceived performance?

1.9 Is there a case for using a concise instrument?

In his book 'Blink', Gladwell (2005) makes a strong case for avoiding collecting huge amounts of data in assessing situations. He cites several examples of how 'thin slicing', or restricting the volume of relevant data, can improve management. He claims that, far from improving decision making, large quantities of, even apparently relevant, data can cause confusion. He states:

'You need to know very little to find the underlying signature of a complex phenomenon.'

He discusses the work of Reilly, the chairman of the Cook County Hospital's Department of Medicine (Chicago), and Goldman (Columbia University) a cardiologist. Goldman et al (1977) developed an algorithm for assessing patients with chest pain based on only 4 factors:

- 1) The ECG
- 2) Is the pain felt by the patient unstable angina?
- 3) Is there fluid in the patient's lungs?
- 4) Is the patient's systolic blood pressure below 100?

Reilly tested this 'thin sliced' method at Cook County and found that doctors were 70% more likely to accurately predict which patients were having a myocardial infarction than when they used their own diagnostic methods. Their own methods often included 12 to 15 factors.

Reichheld (2006) makes a case for the single question customer satisfaction survey. The question he suggests is:

'How likely are you to recommend us?'

The customers are asked to rank their answer on a scale of 1-10 where 10 is most likely. Customers responding with 9 or 10 are considered to be 'promoters' of the business. Those scoring 7 or 8 are considered to be 'passives', whilst those scoring beneath 7 are ranked as 'detractors'.

Reichheld then suggested subtracting the percentage of detractors from the percentage of promoters to give the 'Net Promoter Score'. In his experience, most organisations scored between 10 and 20 although he experienced companies which score 80-90. Detractors can be followed up with the question 'Why don't you recommend us?' The simplicity of this approach is to be applauded. When considering dental practices, however, the phenomenon of being fully subscribed and unable to take new patients is relatively common. If current patients were aware of this a reluctance to recommend could be the result, despite them having a high regard for the practice. Further, only the detractors would be giving developmental feedback. It is possible that satisfied patients could still have important aspects of their care that they would like to see improved.

The OHIP index, which assesses oral health life impacts, has 49 questions (Slade and Spencer 1994) and 14 in the shortened version (Slade 1997). The

Davis and Ware Dental Satisfaction Questionnaire developed in 1981 is composed of 19 items! The current Denplan Excel patient questionnaire has over 80 questions across 28 items. There is a case for testing a more concise instrument.

Summary- There is some evidence that the feedback elicited could be based on a limited number of key issues. This could avoid 'information overload' which might lead to inefficient decision making. It could be speculated that shorter questionnaires may increase patient participation.

1.10 Design of patient feedback questionnaires

Newsome and Wright (1999) suggested that nearly all reviews of patient satisfaction focus on five issues:

- 1) Technical competence
- 2) Interpersonal factors
- 3) Convenience
- 4) Cost
- 5) Facilities

It has been established (in **1.5**) that the first two issues appear to be the most important to patients. Facilities are important in relation to their perceived cleanliness.

There is a large volume of advice and opinion available on questionnaire design, from commercial, political and academic sources. A 'Google' search revealed more than 1,000,000 references! The American company Great Brook, who specialise in collecting feedback for organisations, give the following advice:

- Avoid leading questions
- Avoid loaded questions
- Do not put questions out of sequence
- Make sure multiple choice answers are mutually exclusive
- Make questions specific
- Avoid jargon
- Avoid vague non directed questions
- Avoid very intrusive questions
- Avoid multiple issues in questions
- Avoid long questions
- Avoid questions on future intentions

The Picker Institute is a charity with the following objectives:

- to promote public health for the benefit of the community, in particular by improving standards of treatment and care for patients of health care services
- to advance education in health care, in particular by the provision of training for health care professionals in communication skills
- to advance education in health care, in particular by developing research tools and undertaking research into patients' perspectives of health care services, and to publish the useful results of the same for the public benefit.

They believe that patient feedback tools can be very valuable in assessing the success of health care organisations. The Picker Institute, in their study by Chisholm and Askham (2006), were critical of the instruments which they reviewed. They reviewed ten questionnaires being used by regulatory bodies in the UK, the USA and Canada. They suggested that ambiguous questions were common and that 'patient engagement' was usually overlooked or badly covered. They identified five key domains which should be covered in patient questionnaires in order to assess those issues most important to patients:

- Interpersonal skills
- Communication of information
- Patient engagement and enablement
- Overall satisfaction
- Technical competence

By 'patient engagement' they mean, for example, does the doctor:

- a) Help patients to understand their illness?
- b) Involve the patient in decisions?

- c) Give appropriate health advice and help them understand concepts of risk?

On patients giving feedback on 'technical competence' they make the following observation:

'It could be argued that even if patients are not good judges of some aspects of technical competence, the fact that they think a doctor is not competent is something the latter needs to know.'

They believe that although patient perception of lack of competence is not truly objective it could be indicative. Overall, this Institute therefore emphasises the importance of patient feedback on communication and competence issues.(Chisholm and Askham, 2006).

Summary – Questions in a patient survey should be specific, direct, short and about a single issue. They should not be 'loaded' or 'leading'. Further evidence of the importance of eliciting patient views on the competence of dental teams and their communication skills emerged.

1.11 Mode/ Media for satisfaction surveys

Customer and patient satisfaction surveys can be conducted using different modes and media. For example the current Denplan Excel patient satisfaction questionnaire (see section 1.12 for more details) is paper based and usually posted to a random sample of Denplan patients registered with a particular dentist by the independent body Electoral Reform Services (ERS). Patients

return the completed questionnaires to ERS for analysis. In a similar manner, the NHS Business Services Authority surveys a random sample of patients (who have received NHS dental care) by post and analyses the responses sent to them. This NHS survey is a short questionnaire focusing on probity, although the last of ten questions is about general satisfaction. In England and Wales between April 2007 and December 2009, nearly one million of these surveys were issued with a response rate of 50% (www.nhsbsa.nhs.uk).

The author is aware of dental practices who survey their patient base using bespoke paper based surveys. These are usually distributed to patients attending the practice in person, or sometimes posted to a sample of patients. They are returned to the practice for analysis. Using the internet for patient surveys is another option described by Dillman et al (2009) either as a single mode or in mixed mode in tandem with a paper based medium.

Part of the objective of this study was to test the feasibility of using 'interactive voice response methodology' (IVR). Dillman et al (2009) describes this method as making use of a pre recorded script which the invited customer then listens to, once connected via the telephone, and provides their response using the telephone key pad. Dillman et al comment that IVR can be very useful and cost effective. This mode has been quite widely used in commerce and government administration. Dillman et al point out that all categories of grading available to customers must be mentioned in the script to avoid

polarisation of the responses to the extremes of the scale. They also warn that this method can be tedious for respondents (Dillman et al 2009).

The author could not find any previous reported use of IVR in dentistry. It has, however, been used successfully in medicine to obtain preoperative self assessments of patients prior to surgery (Mingay et al 1995).

Summary- No literature could be found on the use of IVR in dental practice although it has been used in medicine and more widely in government and commerce. There is a case for testing a new mode for patient surveys in dentistry.

1.12 The current Denplan Excel patient questionnaire

Denplan Excel Accreditation has been in existence since 2000. By mid 2009 there were more than 650 Denplan Excel Accredited dentists. The Denplan Excel Training Manual describes it as 'A Quality and Clinical Governance assurance programme'.

Part of the accreditation process requires practices to participate in a patient survey. This is conducted independently by Electoral Reform Services (ERS),

who collect and analyse data on behalf of practices. Dentists are given their own scores and a national benchmark score. This is derived from the entire data-base of answers for all participating practices from the previous year. The patients of each practice are surveyed every 3 years. Questionnaires are posted to a random selection of the patients of each practice. The number of patients contacted depends on the number of accredited dentists working in the practice as shown in table 1.2:

TABLE 1.2 - Denplan Excel questionnaires per dentist in practice

Dentists	1	2	3	4	5	6	7+
Patients	400	400	500	500	600	600	700

This survey is currently the largest conducted in the UK private dental sector, with just under 17,000 patients returning a useable survey in 2006.

There are 84 questions to answer, divided into 28 sections. It could therefore be considered to be comprehensive survey. The expressed objectives of this survey published in the Denplan Excel Training Manual are:

- ❖ To encourage patients to become more involved and thereby improve loyalty to their practice.
- ❖ To provide valuable feedback allowing practices to plan specific improvements and to examine the services they provide with a new insight
- ❖ To provide a benchmark against which to measure improvements for the practice

- ❖ To provide the opportunity to share good practice by comparison against a national reference sample (or benchmark) of Denplan Excel practices
- ❖ As a stimulus for patient centred audit, of which the survey itself is a good example.

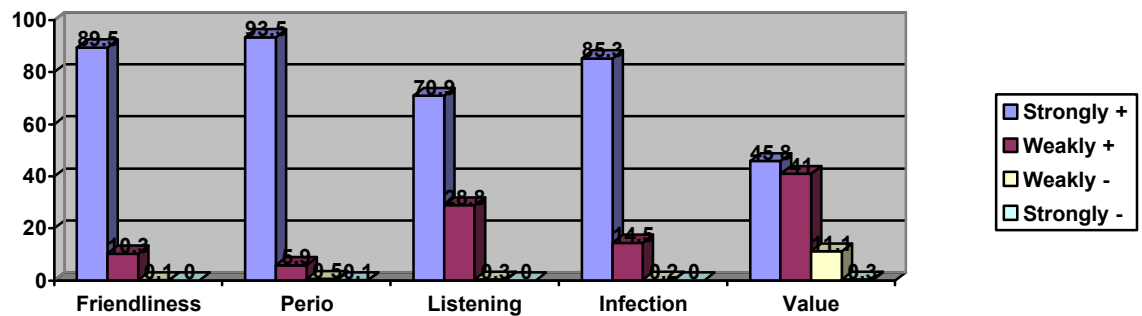
The results are produced for each practice in chart form and in a fully tabulated form containing much more detail. A response rate of almost 30% for patients surveyed was achieved in 2008.

Taking the feedback from 2006 which was used to produce the national reference sample for 2007, a total of just under 17,000 patients returned completed questionnaires. The patients of 126 practices were surveyed (203 dentists in total). Typically, just over 130 patients per practice replied.

The observations made by Newsome about dental patient surveys generally hold true for this survey, because the modal response throughout is usually the most positive response allowed. This survey allows four grades of answer for most questions: one strongly positive, one weakly positive, one weakly negative and one strongly negative. Only a small proportion of negative answers are returned.

Table 1.3 shows the percentage of answers returned for each of the four grades for 5 key issues: This is based on around 16,900 replies.

Table 1.3- Denplan Excel survey result (2006 all dentists) on 5 key issues.



Value = 'How do you rate the value for money you receive for your dental care?'

Excellent Good Fair Poor

Infection = 'How confident do you feel about measures taken to protect you from infection?'

Very confident Quite Confident Not very Confident Not at all confident

Listening = 'During your last visit did your dentist take time to listen to what you said?'

Strongly agree Agree Disagree Strongly Disagree

Perio = 'Are you aware that your mouth is regularly monitored for gum disease?'

Always Usually Occasionally Never

Friendliness = 'How would you describe the manner of the dentist?'

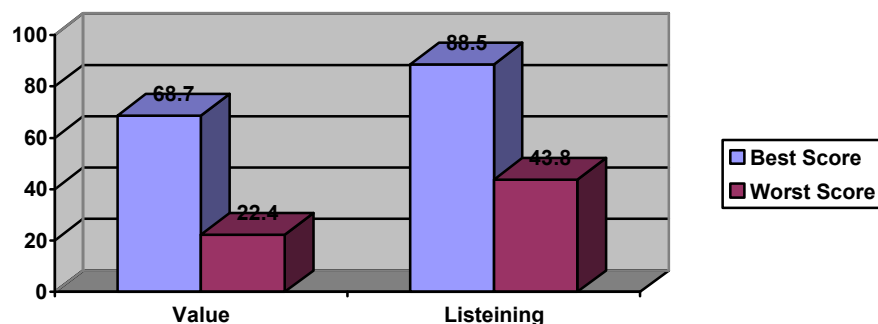
Very Friendly Quite Friendly Quite Unfriendly Very Unfriendly

This is only a sample from more than 80 questions. The trend is followed throughout. The patients are very positive about their dental experiences. Nevertheless, it is still possible to see that perceived performance does vary

significantly on different issues. In the samples above, for example, 93.5% of all patients gave the highest grade for confidence in periodontal health monitoring, whereas for value for money only 45.8% gave the highest grade.

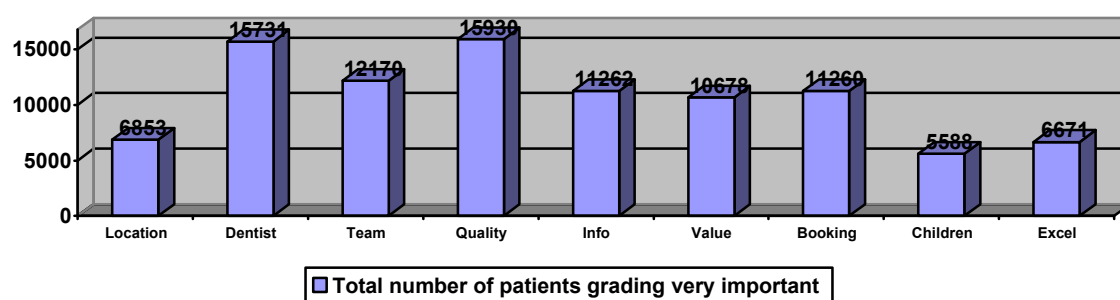
There is also a measurable difference between the perceived performance of different practices. Table 1.4 gives the most positive grades for the 'listening' and 'value for money' questions quoted above, for the best scoring, and worst scoring practices surveyed in 2006.

Table 1.4- Denplan Excel survey (2006), the most favourable and the least favourable feedback on two issues. (Highest grading)



The survey asks patients about some factors which might be important to them in staying with the practice. The results presented in table 1.5 for 2006 are based on 16,900 replies.

Table 1.5- Denplan Excel survey (2006 all dentists) reasons for choosing a practice



Location = 'How important to you is the convenience of location in choosing a dental practice?'

Dentist = 'How important to you is the dentist in choosing a dental practice?'

Team = 'How important to you is the dental team in choosing a dental practice?'

Quality = 'How important to you is the quality of care in choosing a dental practice?'

Info = 'How important to you is the information given about your dental care in choosing a dental practice?'

Value = 'How important to you is the value for money in choosing a dental practice?'

Booking = 'How important to you is the ease of making appointments in choosing a dental practice?'

Children ** = 'How important is their interaction with children in choosing a dental practice?'

Excel = 'How important to you is the fact that it is a Denplan Excel practice in choosing a dental practice?'

** Overall 54.5% of patients across all ages thought that interaction with children was very important. However 61% of females against 42% of men felt it was very important. In the age group 35-44 (male and female combined) 62% of all patients thought this was very important.

1.13 Summary of how the findings of this literature-review might influence the design of a patient questionnaire aiming to measure practice success.

- Dental practice success could be considered to have been achieved when a practice demonstrates that it is achieving high levels of patient satisfaction and oral health, while employing a dental team which is achieving job satisfaction, in a financially profitable organisation.
- Patient questionnaires are an accepted method for measuring patient satisfaction and patient perceptions of their own oral health.
- A narrow focus on favourable financial outcomes only may prejudice long term success. There is a strong body of opinion, and some evidence, to support the idea that a focus on customer (patient) satisfaction is the best route to long term financial success. Measuring patient satisfaction could therefore be a good indication of future financial performance.
- A team with high emotional intelligence, which is enjoying job satisfaction, will be best placed to satisfy patients. These factors are so

closely linked that by measuring patient satisfaction, team satisfaction may also be effectively measured.

- This all suggests a pivotal role for patient satisfaction surveys in measuring practice success
- However, because dental patient satisfaction surveys tend to deliver strongly positive results, with the modal score usually being the most favourable score allowed, there is a case for testing the feasibility of a simple three grade scale, and focusing results on the proportion of highest grades received, to help differentiate perceived performance on different issues, and between different practices.
- There is a case for testing a concise survey focusing on those issues which are most central to oral health and patient satisfaction, and therefore practice success. This could save patients and practices valuable time. It could make practice management more efficient.
- The issues which are most important to patients are those around communication, competence and cleanliness. The literature review suggests that patient feedback on comfort, function and appearance as a minimum data set on patient perceptions of their own oral health. Any concise questionnaire claiming to be measuring practice success should be designed to cover these aspects.

- No report of IVR methodology being used in dental practice previously was found. There are possible advantages in using IVR, so there is a case for testing this mode in dental practice.

Chapter 2 Materials and methods

2.1 Design and development of the patient survey instrument

2.1.1 General development

Interactive Voice Response methodology was to be tested rather than using traditional paper-based media for eliciting patient feedback. It was felt, at the start of the project, that it would be worthwhile to explore the interactive telephone medium as it does not seem to have been previously reported as being used in dental surveys.

An experienced dental teacher with responsibilities for e Learning was consulted early in the development as the idea of a web based survey was considered. Ultimately this idea was rejected, because it was felt that this could exclude significant numbers of patients. The telephone- based system was decided upon, as this would require no IT skills for its operation.

A meeting was arranged with the IT department at Denplan to explore whether this technology could be available 'in house'. Investigation proved that this was not the case. Electoral Reform Services (ERS), the contractors for Denplan postal survey, were contacted. They responded that they were able to provide these services. Electoral Reform Services report that they help

over 1000 organisations each year globally with ballots, elections and surveys. (www.erbs.co.uk)

No demographic data were to be collected from patients. This would have prolonged and complicated their telephone call. It was considered that, by using IVR without asking for demographic data, confidence in the confidentiality of the process might be enhanced. It was postulated that this could have resulted in higher response rates.

A concise patient survey instrument (with a small number of questions) was to be explored for three reasons:

- 1) To focus the measurements on those issues which the literature review suggested were most important to patients and, therefore, to practice success.
- 2) To minimise the time which practices required to analyse the data.
- 3) To minimise the time commitment required from patients to submit their feedback. It was hoped that this might encourage a high response rate.

The literature review suggested that the following patient perceptions may be most important to practice success:

- 1) Comfort and freedom from pain in the mouth
- 2) Functionality of the oral structures in relation to eating in particular
- 3) Appearance of the teeth
- 4) Cleanliness and hygiene of the practice and its team
- 5) Communication of the practice team

6) Competence of the practice team

As discussed in section 1.3 of the literature review, it was decided to include a question on perceived 'value for money'. At this first stage of development a question was also included to assess patient perceptions of how happy the dental team seemed to be in carrying out their duties. This was an attempt to include a measure of perceived job satisfaction, an issue which was discussed as vital to success in section 1.4 of the literature review.

To keep broadly in line with the guidance quoted in the literature review (section 1.10) the ten perception statements reproduced in table 2.1 were derived as the first stage of development. These were designed to cover all of the key success issues outlined above. Competence was covered by the fourth question on perceived standard of care. This question was later changed to a direct question about perceived competence after the work of Chisholm and Askham (2006) had been fully considered (see section 1.10). Communication of the team was covered in questions six (perceived friendliness) and seven (perceived understanding of needs) at this stage. The last question on trust of the dental team was derived from the belief that this was a really fundamental test of practice communication.

It is usually recommended that customer feedback surveys should have a minimum of four grades:

- ❖ strongly positive
- ❖ weekly positive

- ❖ weekly negative
- ❖ strongly negative

(e.g. Dillman et al 2009)

However, in view of the observations, in the literature review which suggested that the modal result, in most dental satisfaction questionnaires, is the most positive answer offered, it was decided to use only three grades in this project. It does seem pointless to offer four grades when patients are so inclined to use the highest grade! At the first stage of development patients were to be offered positive statements about their oral health and the service they received and asked to grade the statements as either:

- ❖ True
- ❖ Partly True
- ❖ Not True

Table 2.1 – Questionnaire Version 1

Please read the following statements about your dental health and the service you receive from your dental practice. You are asked to decide whether each statement is: A) True, B) Partly True or C) Untrue

Please note when questions ask about the dental team this means all the staff you come into contact with (dentists, hygienists, nurses, receptionists etc.). You are being asked to state your feelings and beliefs which are very important to your practice team.

My teeth and mouth are free from pain

True	Partly True	Not True
------	-------------	----------

The condition of my teeth and mouth (including any false teeth) does not stop me from eating anything

True	Partly True	Not True
------	-------------	----------

I am happy with the appearance of my teeth (including any false teeth)

True	Partly True	Not True
------	-------------	----------

I receive an excellent standard of care at my dental practice

True	Partly True	Not True
------	-------------	----------

My dental practice is thoroughly clean and hygienic

True	Partly True	Not True
------	-------------	----------

The team at my dental practice are very friendly

True	Partly True	Not True
------	-------------	----------

My dental practice team really understand my needs

True	Partly True	Not True
------	-------------	----------

My dental practice team are happy in their work

True	Partly True	Not True
------	-------------	----------

Dental care at my practice is excellent value for money

True	Partly True	Not True
------	-------------	----------

I totally trust the team at my dental practice

True	Partly True	Not True
------	-------------	----------

2.1.2 – The pilot study

This questionnaire (in table 2.1) was tested with one volunteer practice in a paper format at an early stage in the project. Approximately 110 hard copies were supplied. They were completed by sequential adult patients attending the practice for care and were submitted in a 'ballot box'. The results were sent to the practice by e-mail. Feedback from the practice management team (four dentists and two joint practice managers) was elicited using the protocol in table 2.2 via e mail and telephone.

Table 2.2 – Practice feedback protocol

Was the questionnaire easy for patients to use?

In your opinion, are the 10 questions about the most important factors in assessing practice success with patient feedback?

If not, what factors are missing from the survey?

Did the results demonstrate significant variation in patient perceived performance of your practice between the different issues?

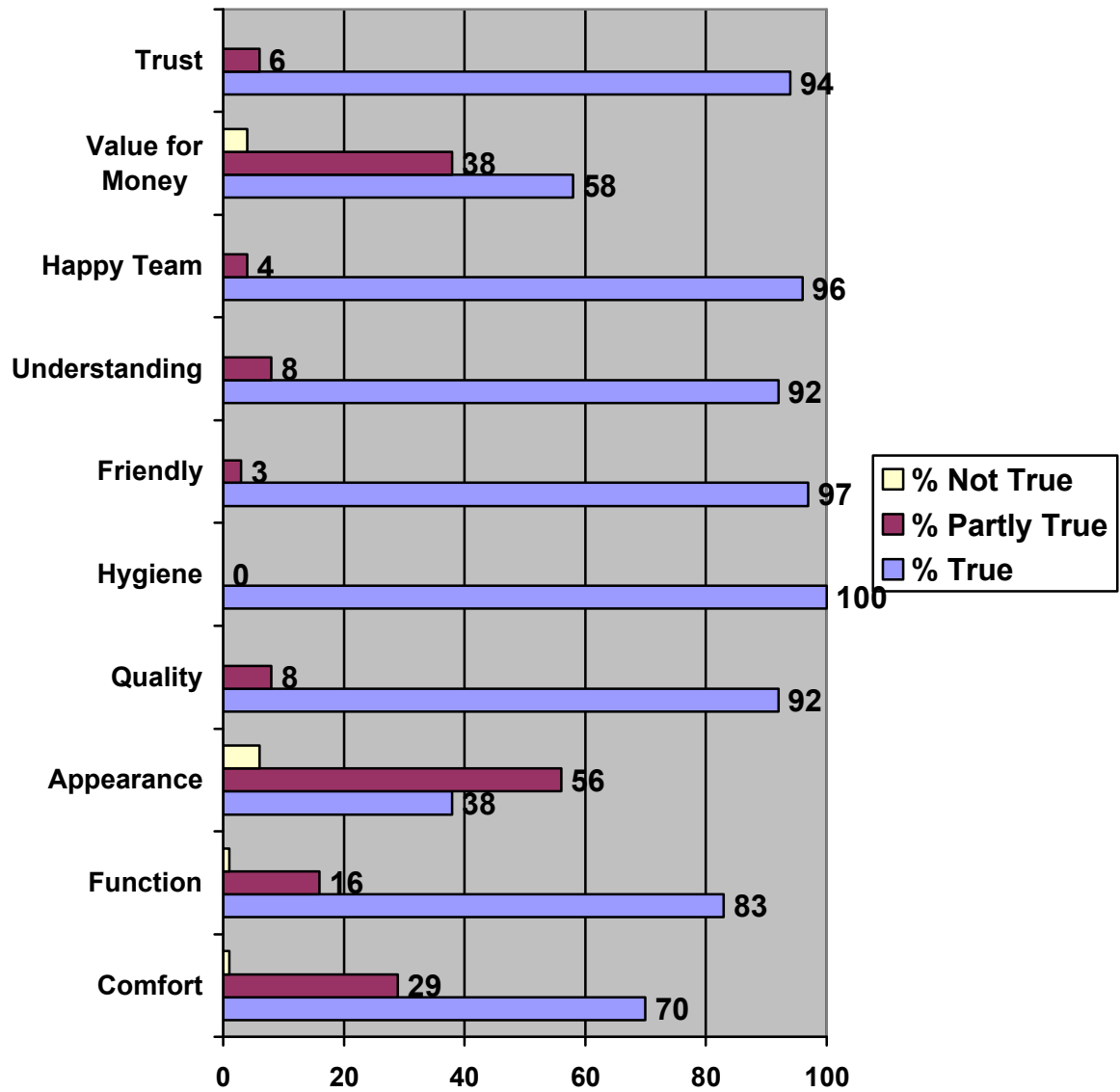
Could this survey help to focus practice development on the most important areas of clinical care and customer care?

A total of 108 useable replies were collected from the patients of this practice.

Table 2.3 presents the results.

Table 2.3 – Pilot study results bar chart all grades

Hard Copy Trial



As seems customary for dental patient satisfaction surveys (Newsome 2001), the most common response was the most positive offered on all but one issue. Only 12 'not true' responses were recorded out of a total of 1080 responses (10 questions from each patient: 108 patients in total).

Nevertheless, clear differences were demonstrated in perceived performance between the 10 key issues, if full success is taken as being achieved only when patients believe the statement to be true rather than partly true (or not true). For this practice the performance is ranked in table 2.4.

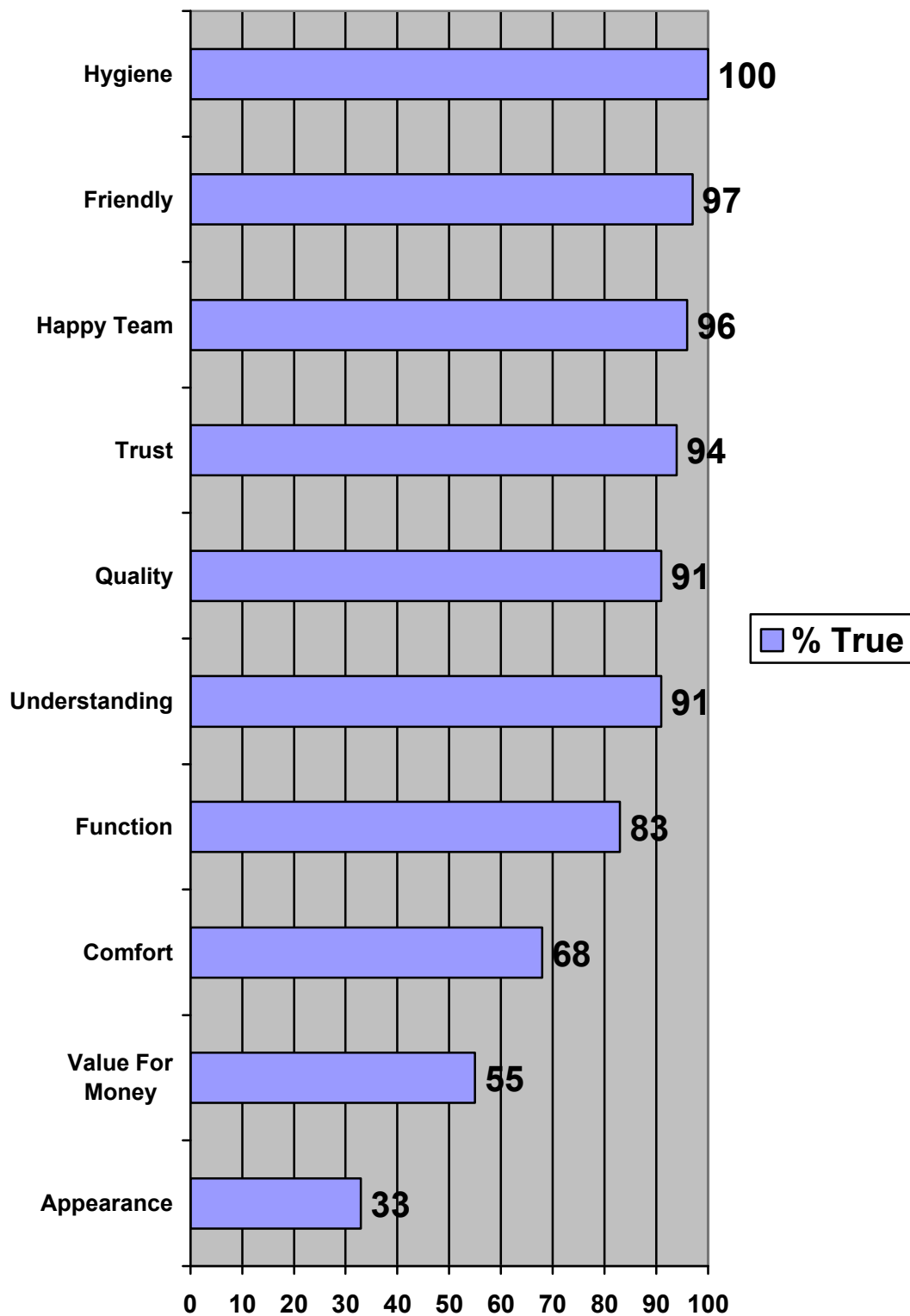
Table 2.4 Pilot results table 'true' grades ranking

Hygiene	100
Friendly	97
Happy Team	96
Trust	94
Quality	91
Understanding	91
Function	83
Comfort	68
Value for Money	55
Appearance	33

On this basis the practice is perceived as performing three times better on 'hygiene' compared with 'patient satisfaction with appearance.' This is illustrated in Table 2.5

The pilot survey appears to demonstrate clear differences in perceived performance between the different issues, notwithstanding the fact that very few patients gave the lowest grade to any issue. It appears that from experience with the standard Denplan Excel Patient Survey, this trial and from the literature review, that these surveys must be interpreted with the proviso that high scores are the norm. Relative perceived performance must be assessed therefore by looking largely at the percentage of highest score answers.

Table 2.5 Pilot practice 'True' grade bar chart



This practice was telephoned after they had time to interpret the results. Their feedback using the protocol from table 2.2 is shown in table 2.6

Table 2.6 Practice feedback from pilot practice

Was the questionnaire easy for patients to use?

They felt that it was very easy for the patients to use. One or two patients had been unclear how to 'mark' the paper.

In your opinion, are the 10 questions about the most important factors in assessing practice success with patient feedback?

They felt that this was definitely the case.

If not, what factors are missing from the survey?

There were a couple of specific issues that they ideally would have liked feedback on which were not included. They were unsure that the 'hygiene' question was specific enough in getting patients to assess infection control measures. They would have liked patient 'comments'.

Did the results demonstrate significant variation in patient perceived performance of your practice between the different issues?

They did not feel that this was achieved. They felt that the survey was too simple. They felt that patient comments would have been useful

Could this survey help to focus practice development on the most important areas of clinical care and customer care? They therefore felt that this was not achieved.

2.1.3 Discussion on pilot study

Given the apparently clear differences indicated in perceived performance, the answers to the last two questions were surprising. Not so much the comment 'too simple' because simplicity was the aim. As Einstein said:

'Make things as simple as possible but not one bit simpler'

This could be an indication that the imperative to be simple in the project design may lead to the survey being perceived as too simple for purpose. As simplicity was a key aim it was decided to continue the project in this form, and pay particular attention to feedback from the main study group in this area.

The surprising finding was that this practice did not feel that the results demonstrated significant differences in patient perceived performance between the different issues.

At this stage the conclusion was that the practice was probably not aware of the high scoring nature of nearly all dental patient feedback surveys. This may have led them to conclude that, with only 1% 'not true' grades, their performance was reasonably consistent across all issues.

2.1.4 Conclusion from pilot study

- It was decided that, in order to ‘calibrate’ participants in the main study, it would be stressed, in the explanations at the start of the trial, and one month before practice feedback was taken, that their focus should be on the difference in the percentage of ‘top’ scores. They were not expected to get many ‘lowest’ scores.
- It was decided to present results in the main trial in bar chart form, focusing just on the top grade.

2.1.5 Ethical approval and further development of the instrument

Ethical Approval was sought for this study from the Southampton and South West Hampshire Research Ethics Committee. At the first meeting in June 2008 the committee made recommendations for changes to be made to the original patient information letter and suggested that expert opinion be sought on changes to the original survey questions and grading. These recommendations were implemented. Electoral Reform Services were consulted on the wording of the questionnaire. This consultation, and further exploration of the literature, resulted in the changes to the original questionnaire (shown in table 2.1) to the questions shown in the final version shown in table 2.7. It will be seen that the original questions on perceived

'friendliness' and 'happiness' of the dental team were changed to questions about perceived 'attitude' and 'ability to explain'.

The grading of patient responses was changed to:

- ❖ Ideal
- ❖ Acceptable
- ❖ Unacceptable

These are the three grades suggested by the FGDP (UK) in Standards in Dentistry (2006) for assessing clinical outcomes. This publication has become widely accepted. It therefore appears reasonable to also explore the application of this approach to patient perceptions. It was thought that the 'ideal' grade may prove a more demanding grade than the top grades which have been used in the past. This could lead to a more meaningful spread of results between the different issues within a practice and between different practices.

When the study was re submitted for ethical approval the Chair of the committee decided in November 2008 that the project constituted the 'measurement of service provision' and so full approval was not required.

Table 2.7 – The revised questionnaire

Please listen to the following statements about your dental health and the service you receive from your dental practice. You are asked to decide whether you would judge each issue as: 1) Ideal, 2) Acceptable or 3) Unacceptable. Please use telephone keys 1) Ideal 2) Acceptable and 3) Unacceptable to indicate your answer.

Please note when questions ask about the dental team this means all the staff you come into contact with (dentists, hygienists, nurses, receptionists etc.). You are being asked to state your feelings and beliefs about these issues.

The general level of comfort and freedom from pain in my mouth is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

Generally, as far as my teeth and mouth are concerned, my ability to eat just about anything I like is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

Generally the appearance of my teeth (including any false teeth) is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

The competence of my dental team is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

The standard of cleanliness and hygiene at my dental practice is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

The attitude of the dental team towards me is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

The ability of my dental team to understand my needs is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

The ability of the dental team to explain things to me is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

The value for money given by my dental practice is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

The level of trust I feel in my dental team is

Ideal	Acceptable	Unacceptable
-------	------------	--------------

2.2 Recruitment of dentists

Patients of Denplan Excel Accredited dentists participate in a postal customer satisfaction survey organised by the Electoral Reform Services (ERS) every three years. There were in excess of 600 Denplan Excel Accredited dentists in January 2009. The patients of more than 200 dentists were therefore scheduled for a survey throughout 2009 in ten groups of just over 20 dentists. A list of dentists due to be surveyed in February 2009 was requested. Twenty dentists on this list were telephoned and they agreed to participate in this feasibility study. Seven different practices were represented. An explanation of the trial was given to these practices verbally by telephone. The explanatory letter reproduced in appendix 2 was then sent to each individual dentist by post.

2.3 Recruitment of patients

Each participating dentist was provided with 200 patient invitation letters (reproduced in appendix 3). These letters were to be handed, by the participating dentist, to the next consecutive 200 adult patients (over 18 years of age) making a visit to the practice for a routine or emergency appointment. The dentists were expected to verbally explain the project to each patient.

Each letter had two code numbers. Code 1 identified each dentist. Code 2 was unique to each letter. This was done to prevent multiple submissions

from an individual patient. Personal details were deliberately not requested from patients. Therefore no demographic data were recorded.

2.4 Operation of telephone survey

Electoral Reform Services recorded the interactive telephone survey.

Volunteers from the University of Birmingham and Denplan Ltd then tried out this first version. This was done to test the ease of use for patients. A few revisions were made following their suggestions. The patients were asked to call a free phone number. Once through to the automated system the patients were asked, by the recorded voice, to grade the ten statements on their perceptions of their oral health care as either 'Ideal', 'Acceptable' or 'Unacceptable'. They did this by using the numbers 1, 2 and 3 on their key pad. They were asked to confirm their answer, and they were given an opportunity to change their answer also.

It was initially intended that the phone lines would remain open for three weeks. The practices were contacted either by telephone or e-mail on a weekly basis to check progress on letter distribution but letter distribution was not as quick as had been anticipated. The lines were therefore left open from Monday 2nd February 2009 until Monday 16th March 2009, a total of six weeks. The first week in February 2009 had seen a significant snow fall across much of Britain. Many of the practices in this first week of the study were disrupted by patient and staff travel difficulties.

2.5 Data management and distribution

The data were digitally recorded from the telephone system at ERS. A report on the total number of patients responding across all seven practices was requested by e-mail on a weekly basis. The survey questions were specifically designed to elicit feedback about the whole team at the practices. It was therefore decided to produce results on a practice basis, and not on an individual dentist basis. The letter codes would have allowed for the data for each individual dentist to have been produced.

Taking note of the literature which indicated that dental satisfaction surveys appear to produce very high satisfaction ratings (Newsome 2001), and the findings of the pilot study reported in section 2.1, it was decided to focus the primary results feedback bar chart on only the 'Ideal' scores achieved. Each individual practice score was to be presented in a bar chart with the 'all practice' average on each question presented for comparison. Further, a score which was called the Patient Feedback Index was produced for each practice. This score expressed the percentage of 'ideal' scores achieved across all 10 questions for each practice.

In addition, it was decided to supply each practice with full tables listing all responses for each question expressed as the actual number of responses and as a percentage. The tables were also designed to reproduce the actual number of responses for each question under each answer for the whole group. This was also expressed as a percentage.

In the tables, any question for any practice eliciting a response which was at least 10% above the average was highlighted in green. Where the practice responses were 10% lower they were highlighted in red.

It was originally intended that the results for each practice would be posted on the Denplan Web portal with access by a dedicated code for each practice. However, as there were technical and time constraints preventing this, it was decided to produce paper-based reports and post two copies to each participating dentist. This was done two weeks after the survey closed on Friday April 3rd 2009. The results were introduced with the covering letter reproduced in appendix 4. The practices were kept informed about 'cut off' dates and 'result posting' dates by e-mail.

2.6 Practice feedback

Each practice was given five weeks to digest their results, and to formulate views about the value of this instrument. About half way through this period each practice was e mailed a copy of the questions to be asked in the telephone survey of their opinions (table 2.8). They were asked to appoint one of the dentists as spokesperson for the practice views. They were informed that the telephone interview would have two parts.

Initially each spokesperson was asked to score each of the statements reproduced in table 2.13 out of 10 where 10 is total agreement and 0 is total disagreement. The second part of the interview allowed each spokesperson to elaborate on their score verbally. The score and a summary of their comments were recorded. The written summary was read back to each spokesperson and it was corrected, where necessary, until it was felt that the summary represented their view.

Table 2.8- Practice feedback on the use of the instrument

Please score each of the following statements out of 10 where 10 means you totally agree with the statement and 0 that you totally disagree.

The patient telephone survey was;

- 1) Easy for patients to use
- 2) Easy for our practice to use
- 3) Based on issues which are most important to patients
- 4) Able to demonstrate to us any differences in our patients' perceptions between the 10 issues covered by the questions.
- 5) Able to demonstrate where our patients' perceptions differed significantly from the group average (of all practices in the study)
- 6) Useful because it will help us to focus our practice development on those issues on which our patients' perceptions seem less positive
- 7) A meaningful measurement of success
- 8) Any other comments? _____

2.7 Statistical analysis of patient survey results

The patient survey results were sent to a health statistician for a summary of the associations between each of the ten questions and the seven practices.

Chapter 3 – Results

3.1 Response rates

In total, 4000 letters were printed (200 per participating dentist). It was anticipated that all of these letters would be distributed within the six week period that the telephone lines were open. This did not prove to be the case.

Attempts were made by e mail and telephone calls to the practices to assess the total number of letters actually distributed by each practice. Table 3.1 indicates the number of dentists participating in the study in each practice, an approximation of the number of letters distributed (where this was ascertained), the total number of responses recorded and finally, where possible, the suggested response rate.

Table 3.1 – Response rates telephone feasibility study

Practice	Number of Dentists	Letters Distributed	Responses	Response Rate
A	2	200	68	34%
B	5	Not known	207	NA
C	4	450	31	7%
D	2	Not known	21	NA
E	4	Not known	37	NA
F	2	250	149	60%
G	1	150	18	12%

There was therefore a considerable difference between the practices in their notional 'response rates'. It would appear that a response rate of between 20% and 25% of those patients who received a letter from their practice called ERS and gave their responses. The response rate for the Denplan Excel

postal survey in 2008 was 29%. Table 3.2 shows the best and worst response rates in this postal survey. This suggests a similar variation in response rates to the telephone feasibility study.

Table 3.2 - Response rates for Denplan Excel postal survey 2008

Overall:	29%
Highest response rate for an individual dentist:	67%
Highest response rate for an individual dentist with a mailing sample of 100+:	60%
Lowest response rate for an individual dentist:	0%
Lowest response rate for an individual dentist with a mailing sample of 100+:	5%

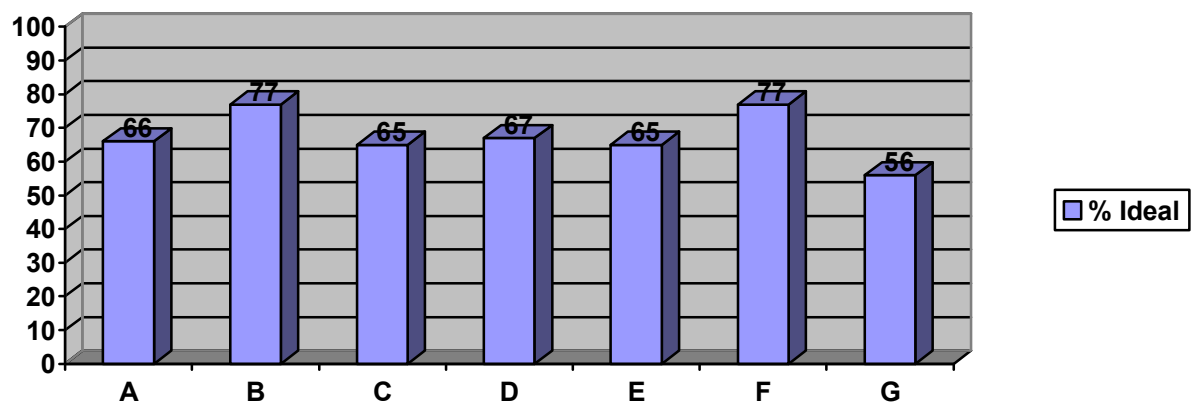
3.2 Full results tables for all seven practices

The seven volunteer practices were each been assigned a letter code (A-G) to maintain their anonymity. For each survey question a full table of responses across all seven practices follows. Any practice result which is more than 10% better than the group average is highlighted in green in the tables. Any practice result which is more than 10% worse than the group average is highlighted in red. Beneath each table a bar chart shows the percentage ideal responses received for the question for each practice. These results are shown below in tables 3.3-3.12.

Tables 3.3

1. How would you describe the general level of comfort and freedom from pain in your mouth?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	387	45	160	20	14	24	114	10
	73%	66%	77%	65%	67%	65%	77%	56%
Acceptable	139	22	46	11	7	12	33	8
	26%	32%	22%	35%	33%	32%	22%	44%
Unacceptable	4	1	1	0	0	1	1	0
	1%	1%	0%	0%	0%	3%	1%	0%
Total	530	68	207	31	21	37	148	18
Not stated	1	0	0	0	0	0	1	0

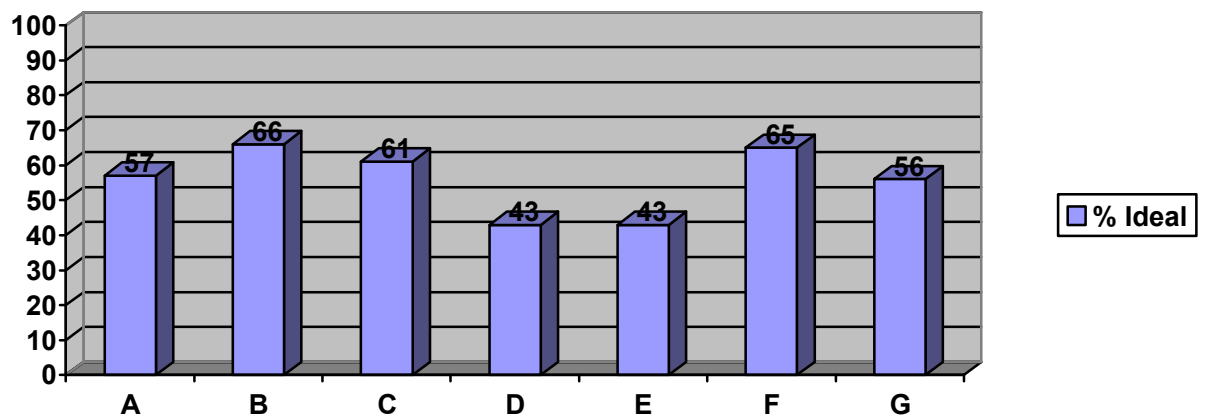


Percentage of patients scoring 'ideal' for each practice on comfort

Table 3.4

2. Generally, and as far as your teeth and mouth are concerned, how would you describe your ability to eat just about anything you like?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	327	39	137	19	9	16	97	10
	62%	57%	66%	61%	43%	43%	65%	56%
Acceptable	194	27	67	11	12	20	49	8
	37%	40%	32%	35%	57%	54%	33%	44%
Unacceptable	9	2	2	1	0	1	3	0
	2%	3%	1%	3%	0%	3%	2%	0%
Total	530	68	206	31	21	37	149	18
Not stated	1	0	1	0	0	0	0	0

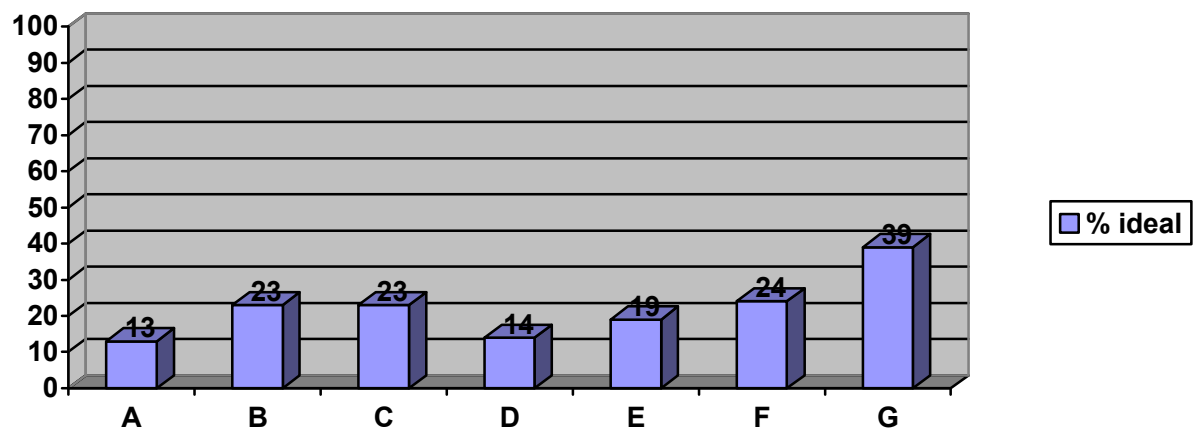


Percentage of patients scoring 'ideal' for each practice on function

Table 3.5

3. Generally, how would you describe the appearance of your teeth (including any false teeth)?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	117	9	48	7	3	7	36	7
	22%	13%	23%	23%	14%	19%	24%	39%
Acceptable	399	56	153	24	18	28	110	10
	75%	82%	74%	77%	86%	76%	74%	56%
Unacceptable	13	3	4	0	0	2	3	1
	2%	4%	2%	0%	0%	5%	2%	6%
Total	529	68	205	31	21	37	149	18
Not stated	2	0	2	0	0	0	0	0

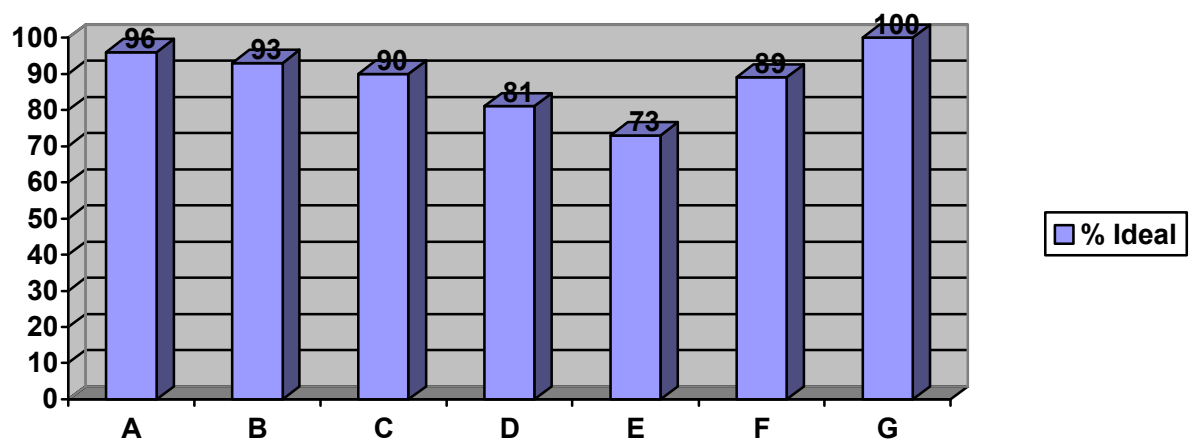


Percentage of patients scoring 'ideal' for each practice on dental appearance

Table 3.6

4. How would you rate the competence of your dental team?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	481	65	193	28	17	27	133	18
	91%	96%	93%	90%	81%	73%	89%	100%
Acceptable	47	3	12	2	4	10	16	0
	9%	4%	6%	6%	19%	27%	11%	0%
Unacceptable	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%
Total	528	68	205	30	21	37	149	18
Not stated	3	0	2	1	0	0	0	0

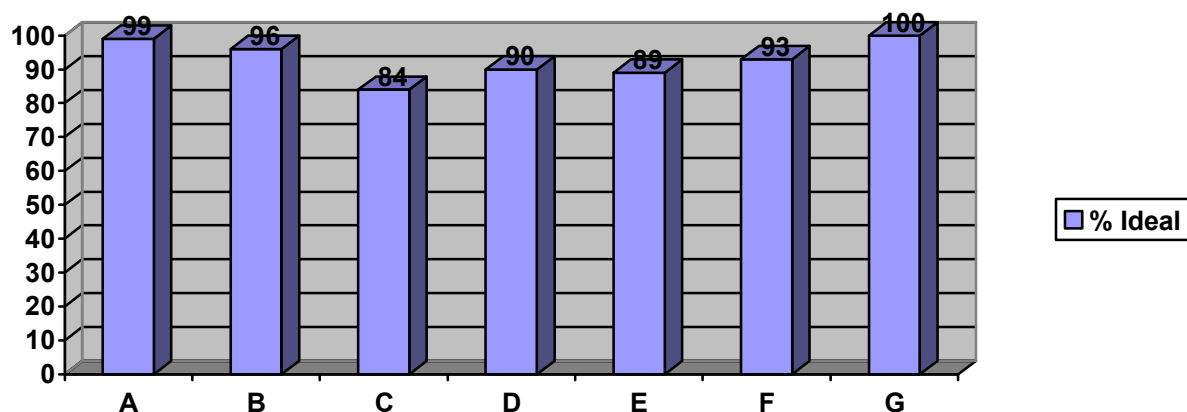


Percentage of patients scoring 'ideal' for each practice on competence

Table 3.7

5. How would you rate the standard of cleanliness and hygiene at your dental practice?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	501	67	199	26	19	33	139	18
	94%	99%	96%	84%	90%	89%	93%	100%
Acceptable	25	1	5	4	2	3	10	0
	5%	1%	2%	13%	10%	8%	7%	0%
Unacceptable	1	0	0	0	0	1	0	0
	0%	0%	0%	0%	0%	3%	0%	0%
Total	527	68	204	30	21	37	149	18
Not stated	4	0	3	1	0	0	0	0

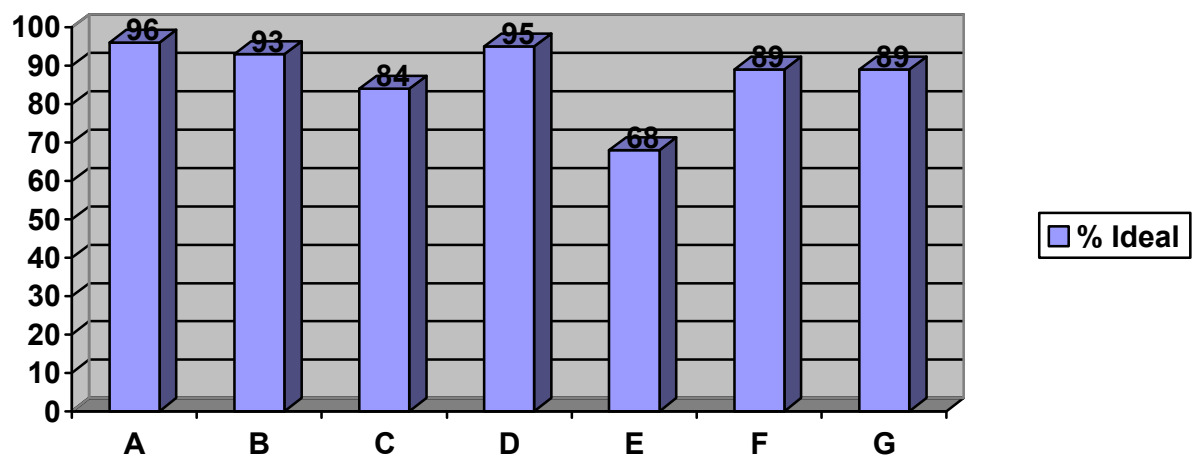


Percentage of patients scoring 'ideal' for each practice on cleanliness

Table 3.8

6. How would you describe the attitude of the dental team towards you?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	476	65	192	26	20	25	132	16
	90%	96%	93%	84%	95%	68%	89%	89%
Acceptable	49	3	11	4	1	12	16	2
	9%	4%	5%	13%	5%	32%	11%	11%
Unacceptable	2	0	1	0	0	0	1	0
	0%	0%	0%	0%	0%	0%	1%	0%
Total	527	68	204	30	21	37	149	18
Not stated	4	0	3	1	0	0	0	0

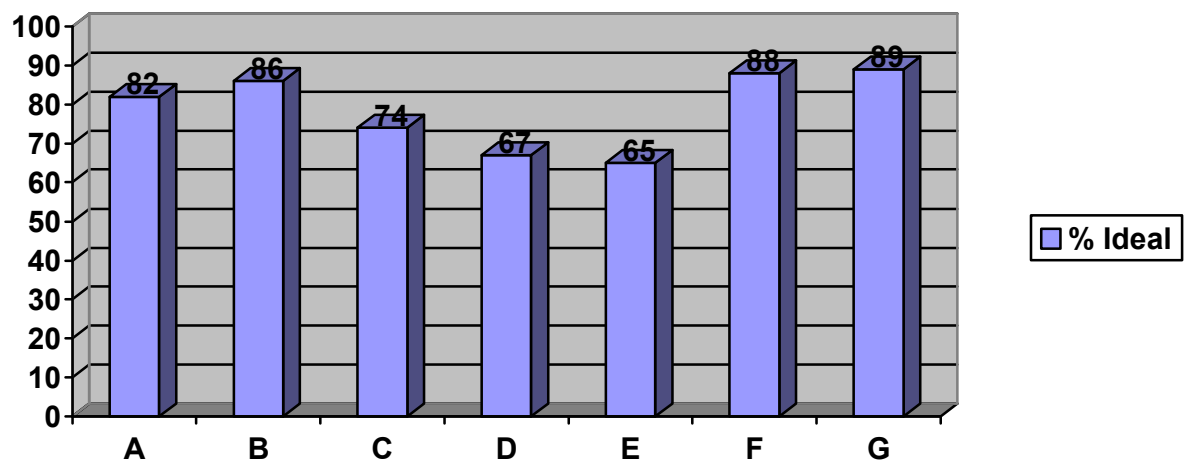


Percentage of patients scoring 'ideal' for each practice on attitude

Table 3.9

7. How would you rate the ability of your dental team to understand your needs?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	443	56	179	23	14	24	131	16
	83%	82%	86%	74%	67%	65%	88%	89%
Acceptable	83	12	25	7	7	13	17	2
	16%	18%	12%	23%	33%	35%	11%	11%
Unacceptable	1	0	0	0	0	0	1	0
	0%	0%	0%	0%	0%	0%	1%	0%
Total	527	68	204	30	21	37	149	18
Not stated	4	0	3	1	0	0	0	0

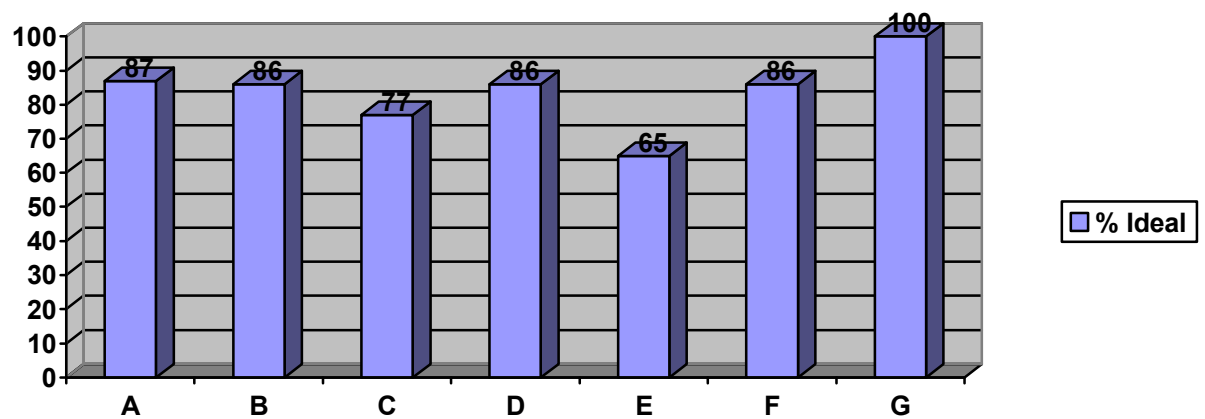


Percentage of patients scoring 'ideal' for each practice on understanding

Table 3.10

8. How would you rate the ability of the dental team to explain things to you?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
	531	68	207	31	21	37	149	18
Ideal	448	59	177	24	18	24	128	18
	84%	87%	86%	77%	86%	65%	86%	100%
Acceptable	78	9	27	6	3	13	20	0
	15%	13%	13%	19%	14%	35%	13%	0%
Unacceptable	0	0	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%	0%	0%
Total	526	68	204	30	21	37	148	18
Not stated	5	0	3	1	0	0	1	0

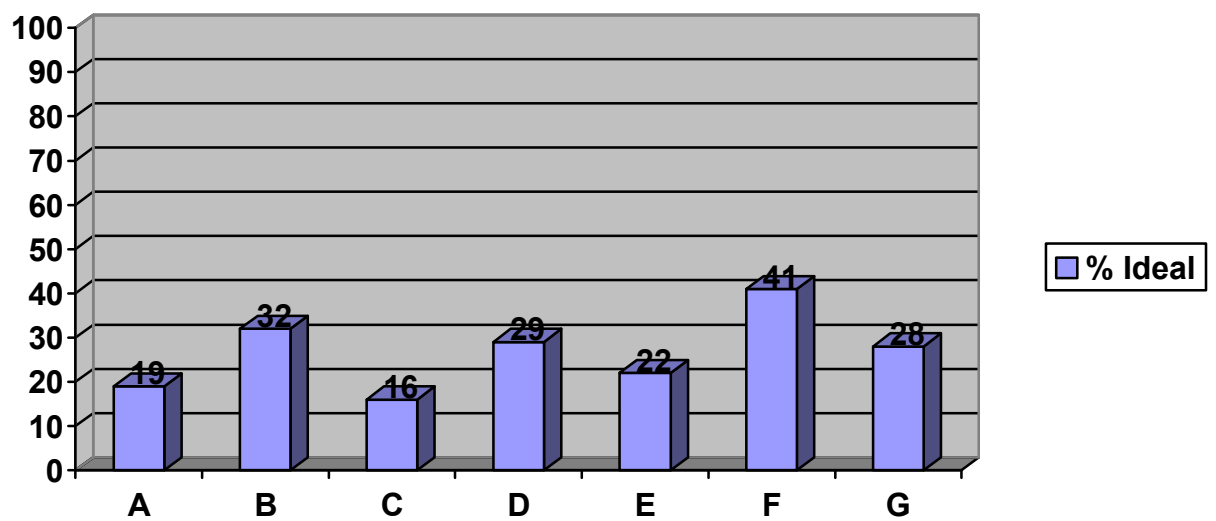


Percentage of patients scoring 'ideal' for each practice on explaining

Table 3.11

9. How would you describe the value for money given by your dental practice?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
	531	68	207	31	21	37	149	18
Ideal	165	13	67	5	6	8	61	5
	31%	19%	32%	16%	29%	22%	41%	28%
Acceptable	338	51	131	23	14	26	83	10
	64%	75%	63%	74%	67%	70%	56%	56%
Unacceptable	23	4	6	2	1	3	4	3
	4%	6%	3%	6%	5%	8%	3%	17%
Total	526	68	204	30	21	37	148	18
Not stated								

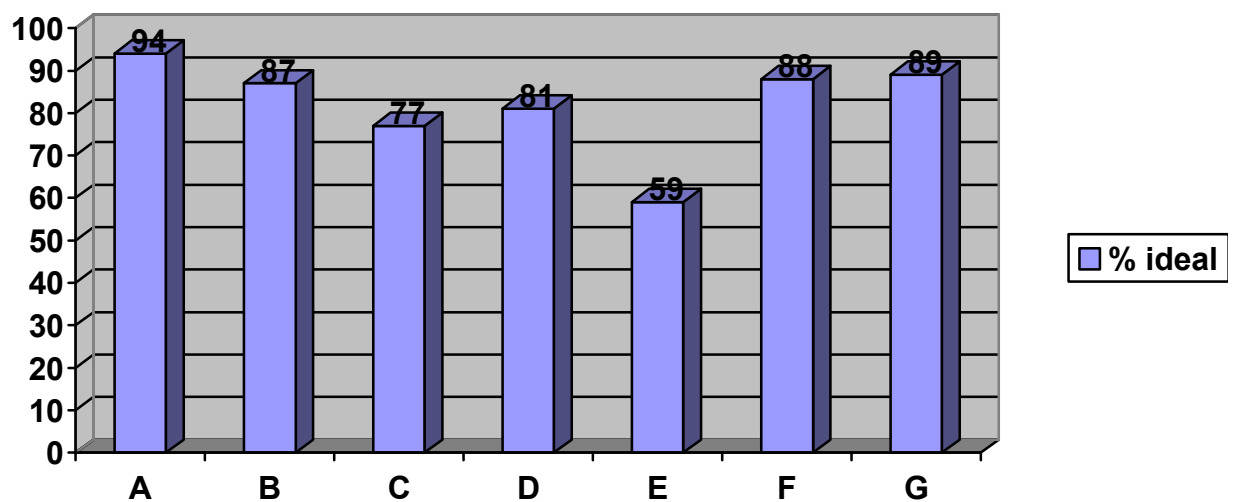


Percentage of patients scoring 'ideal' for each practice on value for money

Table 3.12

10. How would you rate the level of trust that you feel in your dental team?

	<i>All Practices</i>	<i>Practice A</i>	<i>Practice B</i>	<i>Practice C</i>	<i>Practice D</i>	<i>Practice E</i>	<i>Practice F</i>	<i>Practice G</i>
Base	531	68	207	31	21	37	149	18
Ideal	455	64	181	24	17	22	131	16
	86%	94%	87%	77%	81%	59%	88%	89%
Acceptable	68	4	22	6	4	14	16	2
	13%	6%	11%	19%	19%	38%	11%	11%
Unacceptable	3	0	1	0	0	1	1	0
	1%	0%	0%	0%	0%	3%	1%	0%
Total	526	68	204	30	21	37	148	18
Not stated	5	0	3	1	0	0	1	0



Percentage of patients scoring 'ideal' for each practice on trust

3.3 Individual practice bar charts and PPIs.

In this section the bar chart results are reproduced as they were presented to each practice. The bar charts show the percentage of 'ideal' responses for each question in green for that practice, with the group average in gold for comparison.

Above each chart the Patient Feedback Index is displayed in contrast to the whole group average which was 72%. The Patient Feedback Index is the percentage of 'ideal' responses received across all 10 questions.

Each practice, in addition to these charts, also received their full numerical results in tables similar to those in section 3.1. They also received the whole group results numerically. To maintain confidentiality they did not receive the individual results of the other participating practices. These results are shown below in tables 3.13-3.19

Table 3.13- Practice A 'Ideal' scores bar chart for all questions compared with group average

PRACTICE A BAR CHART

All practices 72%
Practice A 71%

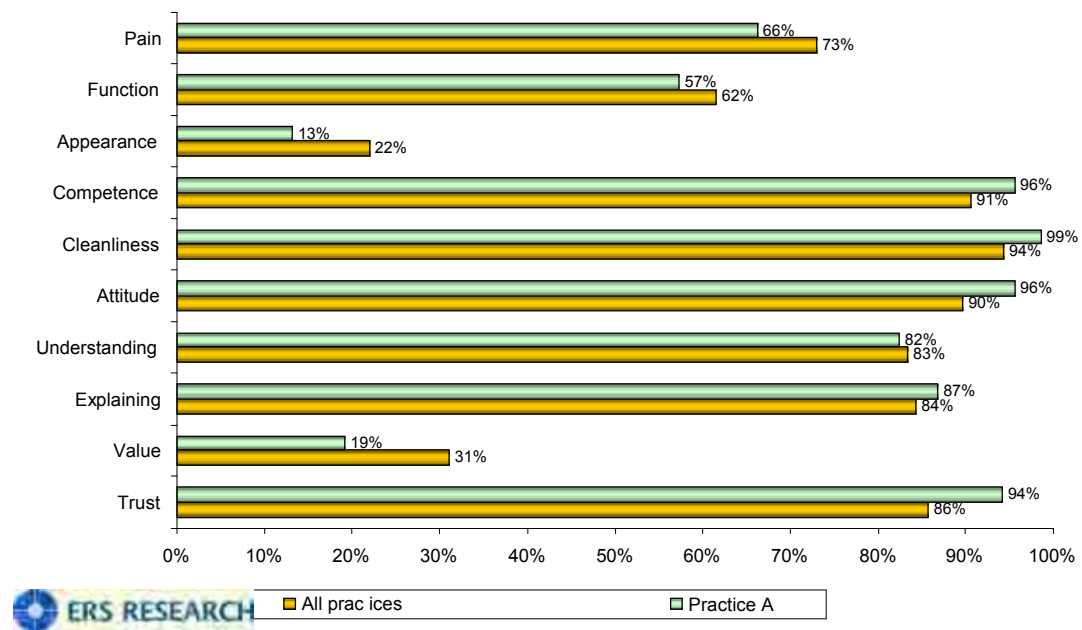


Table 3.14 - Practice B 'Ideal' scores bar chart for all questions compared with group average

PRACTICE B BAR CHART

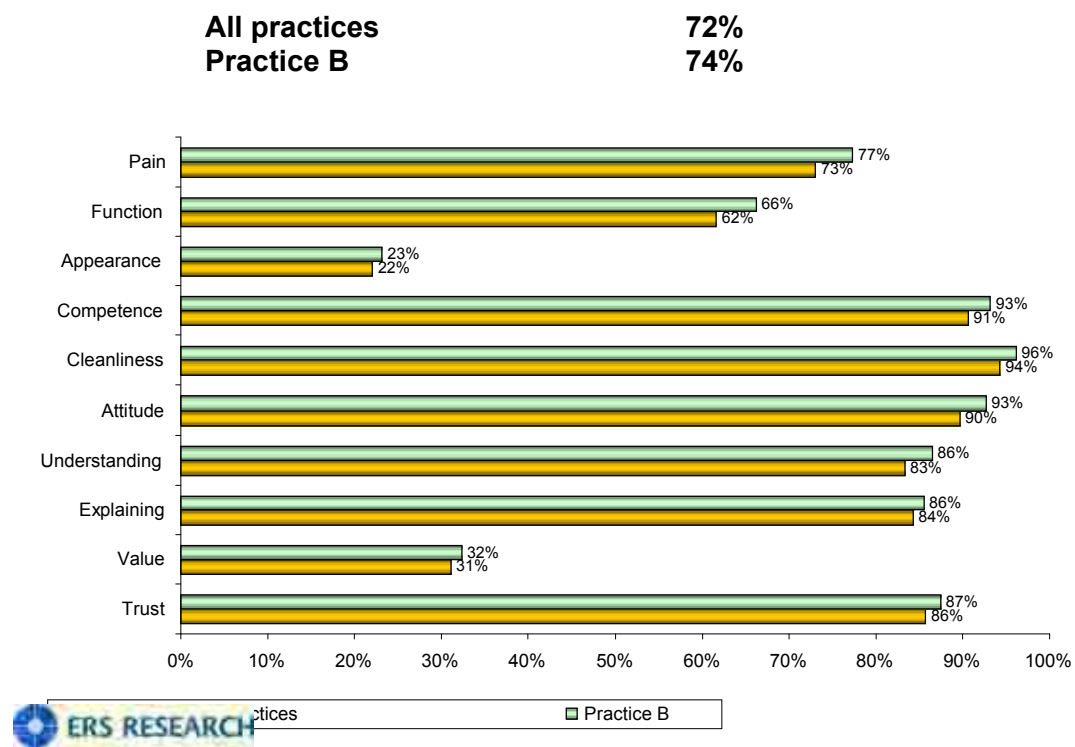


Table 3.15- Practice C 'Ideal' scores bar chart for all questions compared with group average

PRACTICE C BAR CHART

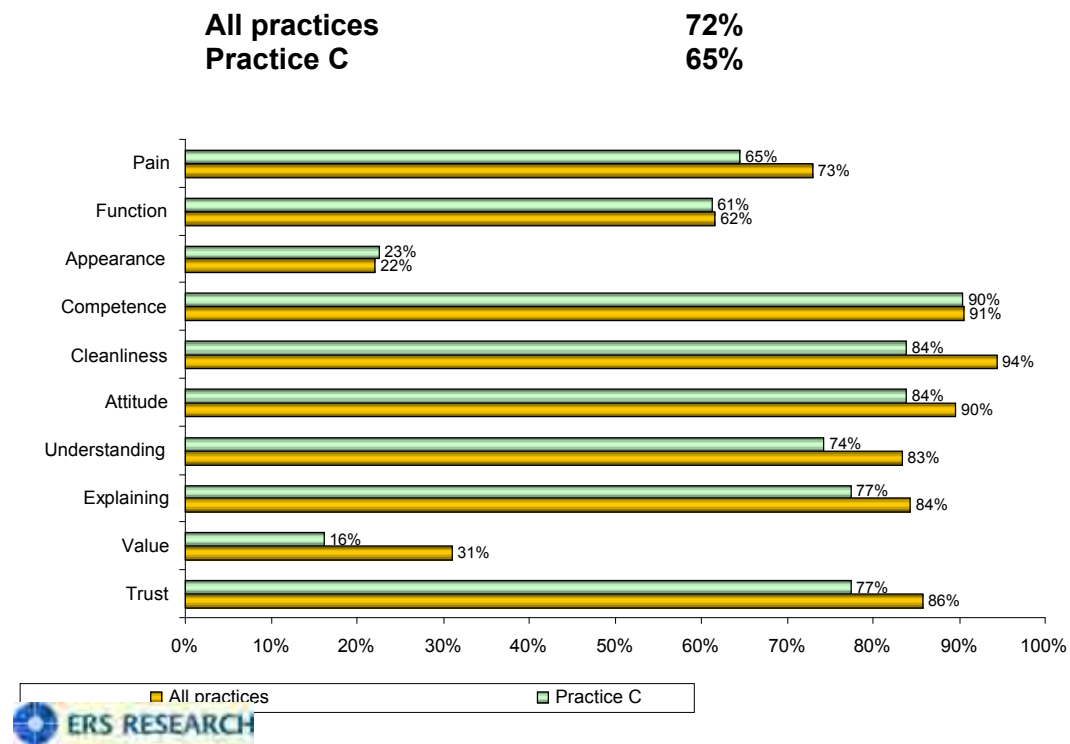


Table 3.16- Practice D 'Ideal' scores bar chart for all questions compared with group average

PRACTICE D BAR CHART

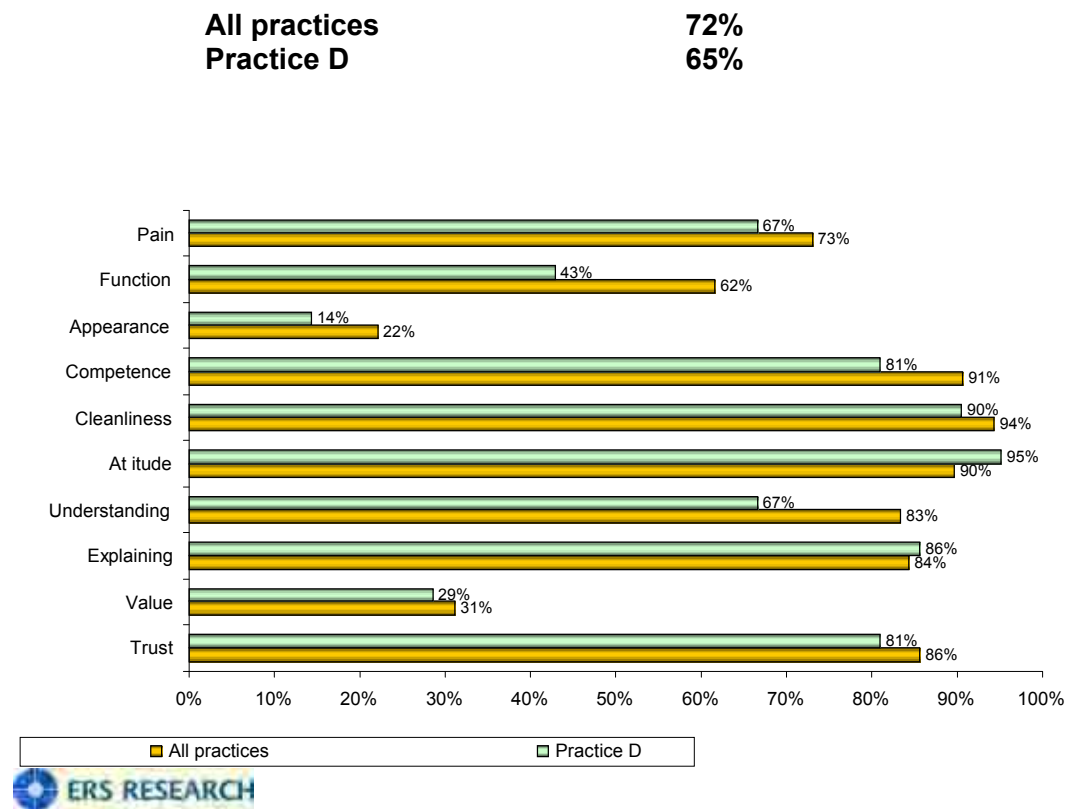


Table 3.17- Practice E 'Ideal' scores bar chart for all questions compared with group average

PRACTICE E BAR CHART

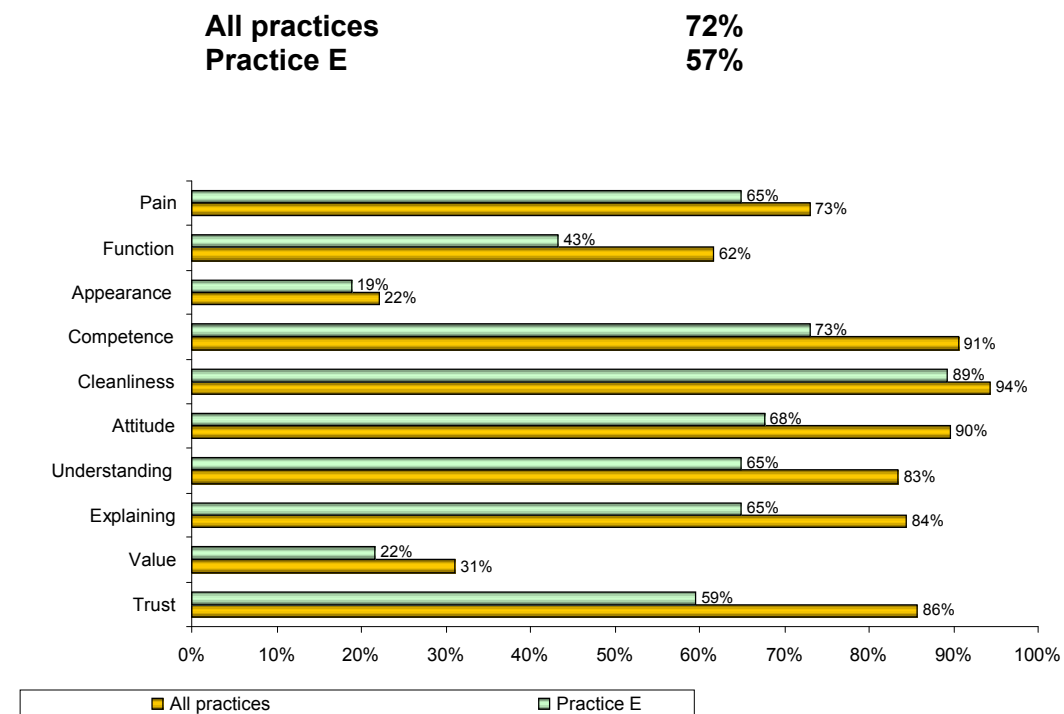


Table 3.18- Practice F 'Ideal' scores bar chart for all questions compared with group average

PRACTICE F BAR CHART

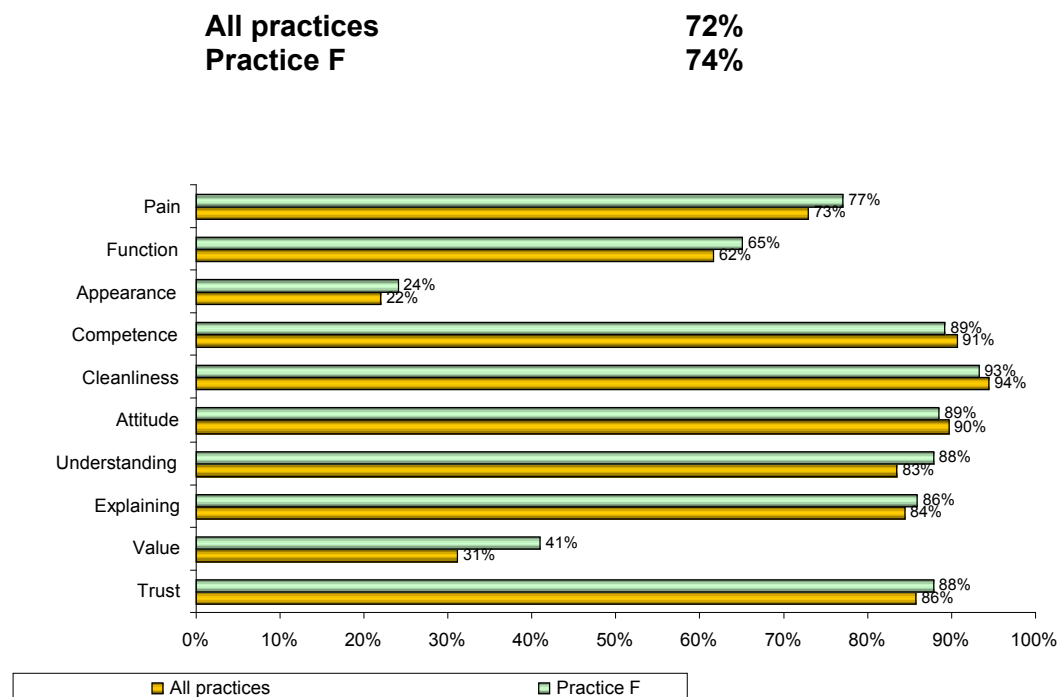
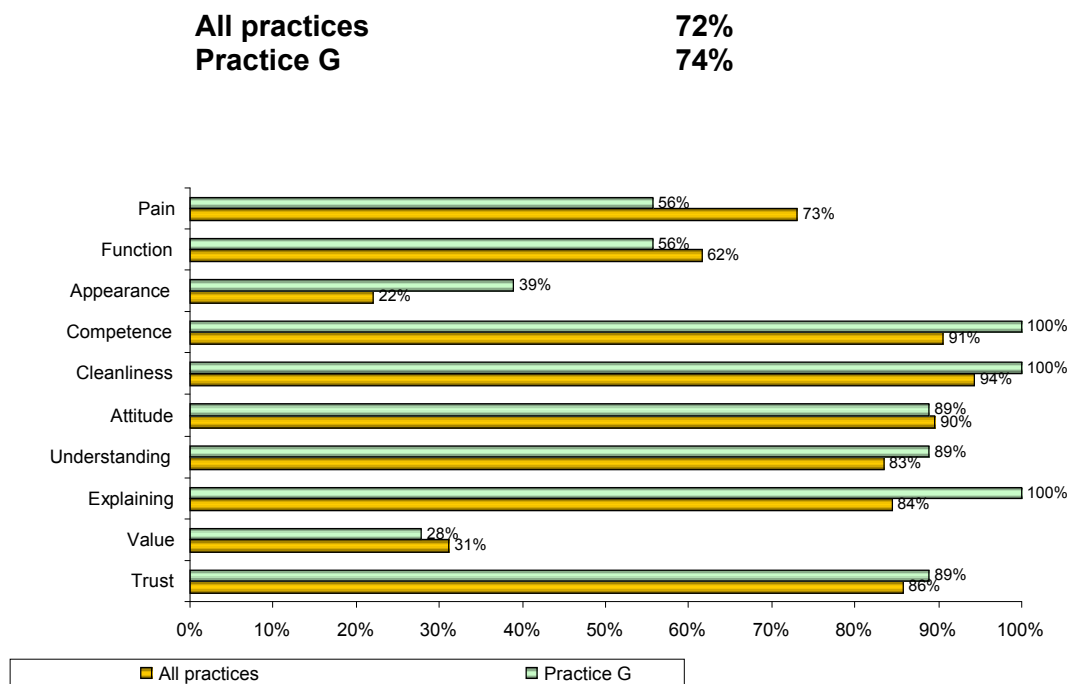


Table 3.19- Practice G 'Ideal' scores bar chart for all questions compared with group average

PRACTICE G BAR CHART

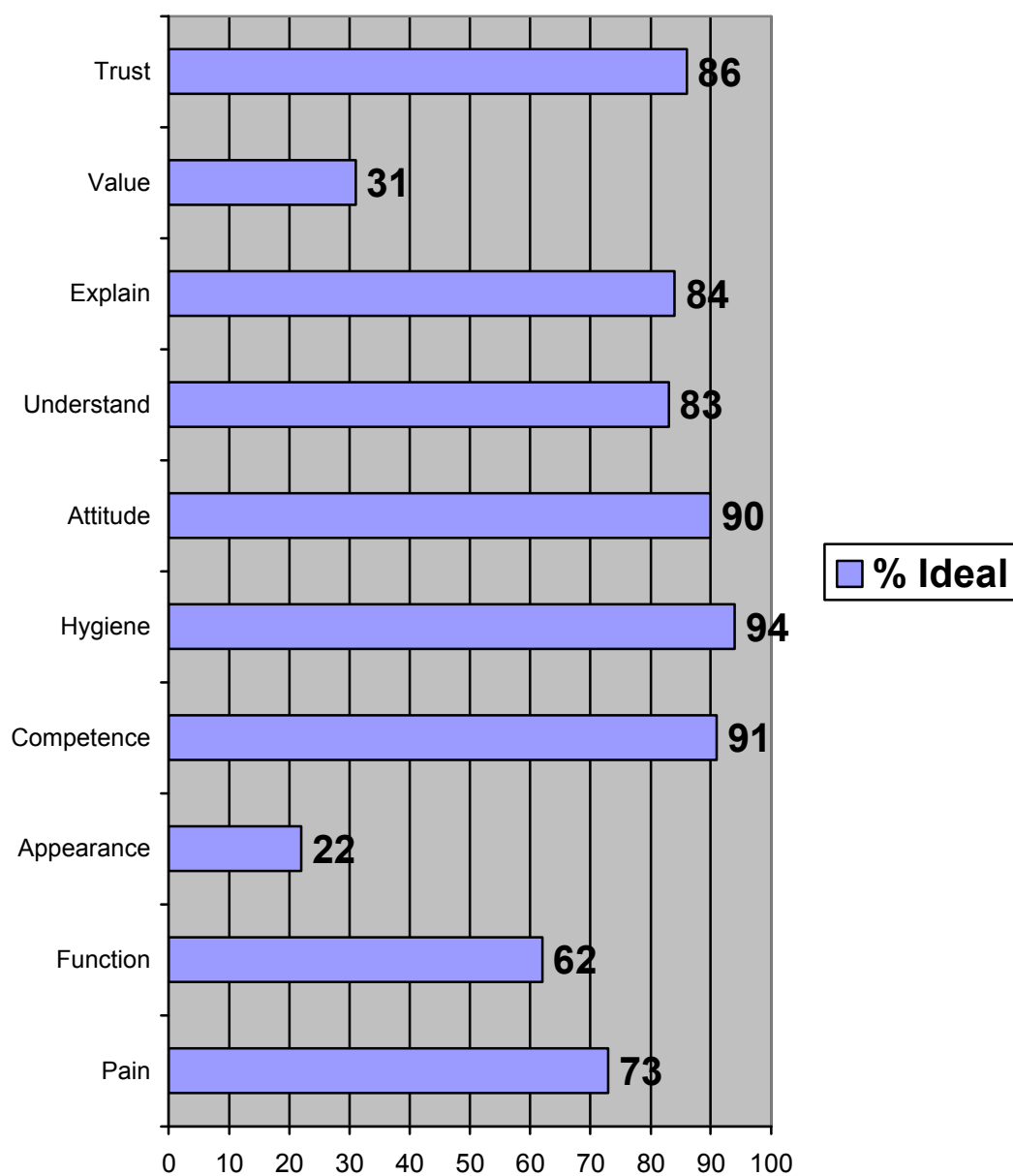


3.4 Summary bar chart –all practices ‘ideal scores’

Table 3.20 shows the percentage ideal scores given for each of the ten questions from all patients who responded from all seven practices.

Table 3.20 All practices ‘Ideal’ scores bar char

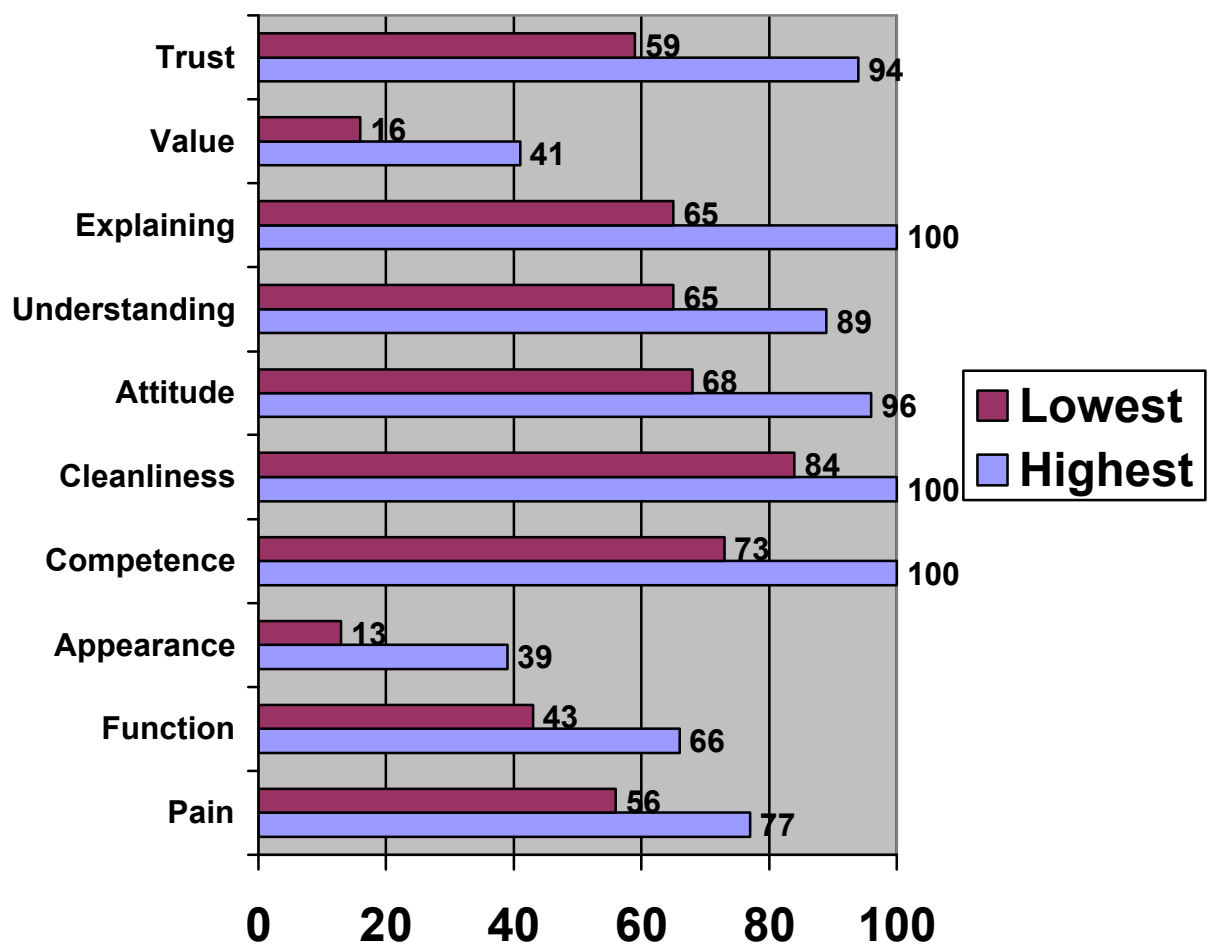
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T 3.5 Highest and lowest practice scores for each question

Table 3.21 shows the highest and lowest percentage of 'ideal' scores achieved for each question across all seven practices.

Table 3.21 Highest and lowest 'ideal' scores all questions

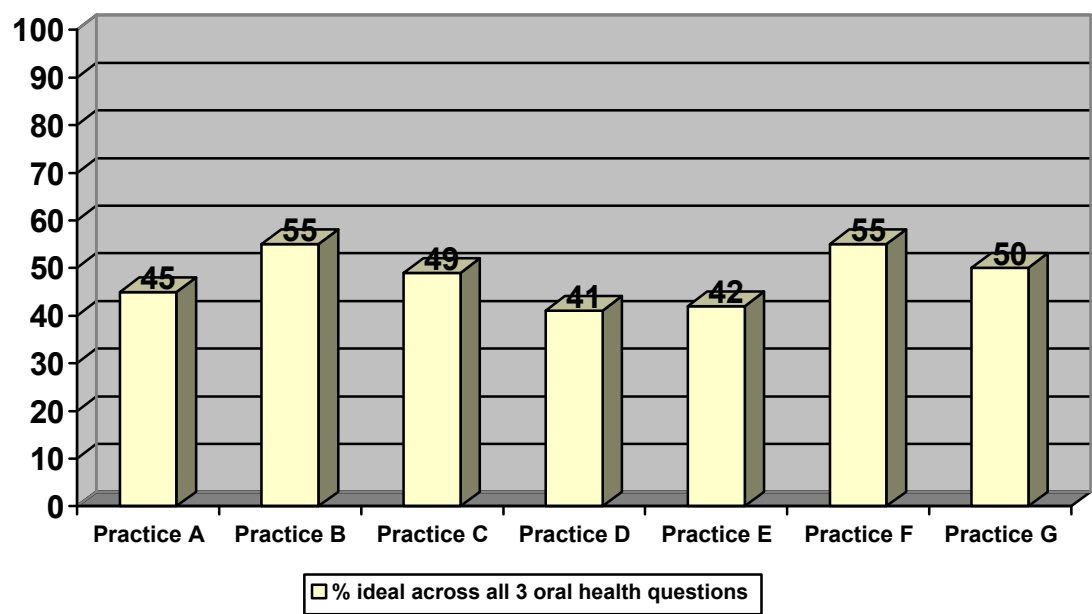


Three practices achieved the joint highest number of 'ideal' grades at 74% (called the Patient Perception Index or PPI). The lowest PPI was 58% attained by one practice.

3.6 Patient oral health perception- practices compared

Table 3.22 shows the ‘ideal’ responses for each practice for the three oral health perception questions. The percentage ‘ideal’ score for the ‘comfort’, ‘function’ and ‘appearance’ question have been averaged.

Table 3.22 – Oral health perception ‘ideal’ scores combined



3.7 Practice feedback

The practice spokesperson provided scores out of 10, where 10 indicated that they totally agreed with the statement. The spokesperson was also asked to comment on their practice's view of the instrument. The scores given are reproduced in table 3.23. Comments are summarised in table 3.24. Practice C was contacted several times both by e mail and telephone in an effort to book an opportunity for them to give their feedback without success. In fact, practice C ceased the distribution of letters after four weeks because they felt that many of their patients were not happy to participate.

Table 3.23- Practice feedback scores by practice code

The survey was:	A	B	D	E	F	G	Total percentage agreement across 6 practices for each question
easy for patients to use	5	8	7	5	8	6	65
easy for the practice to use	6	8	6	10	10	10	83
based on issues which are most important to patients	10	5	9	8	8	10	83
able to demonstrate any differences in our patients' perceptions between the 10 issues	7	8	9	8	10	0	70
able to demonstrate where our patients' perceptions differed significantly from the group average	9	5	9	10	5	10	80
Useful because it will help us focus our practice development on those issues on which our patients seem less positive	10	2	7	5	4	10	63
A meaningful measurement of success.	10	2	7	7	7	8	68
Total percentage agreement score for each practice across all 7 questions	81%	54%	77%	75%	74%	77%	

Table 3.24 Practice comments by practice code

Practice A. The practice owner felt that the survey was a good focus for planning discussions with the practice manager. Indeed they had already done this. They felt that patients did struggle, as the phone survey was tedious and repetitive. They wondered if an internet version would be preferable. In a busy practice they found it difficult to always remember to distribute the letters. They reported that the results were very valuable as it enabled them to focus on areas with poorer scores and amend their approach. For example they were writing a newsletter to address their below average result on 'value for money.'

Practice B. They felt that the survey was too vague. They did not like it because it lacked the detail of the postal survey. They felt that it was of little value to the practice.

Practice D. They were generally impressed with the survey and though that the questions were 'very good'. They were surprised that patients seemed to report less satisfaction with their oral health in the survey than when questioned face to face at the practice.

Practice E. Eighty percent of their patients were NHS. They therefore thought that this was a tough survey for them, as they presumed that most other practices in the study were mostly private (and therefore had a better chance to impress their patients). The practice was concerned because they distributed a large number of letters but got a poor response. However they thought that the survey was a fantastic idea. In fact they have already copied the questions and conducted their own hard copy paper version of the survey. Their results, achieved this way, were very similar to the telephone version. They quickly achieved about 100 replies by this method and were concerned that patients cannot be bothered to call?

Practice F. The practice owner reported that patients definitely preferred this survey to the paper based postal survey. He was very happy with the results particularly on the 'softer issues'. He wondered if there was a risk of favorable patient selection when the practice chose who to issue letters to. He did express an interest in seeing dentist specific results if differences were evident. He attributed the very high response rate to the standard request of each patient- 'I would really like you to do me a favour and call this number as it will be very useful to us'

Practice G. The practice owner thought that the survey was very good. As a volunteer for the General Dental Council's Revalidation pilot scheme he thought it was particularly valuable in that context. He could not explain their low response rate because he had assumed this would be very easy for patients to use.

3.8 Statistical Analysis of Patient Survey Results

The author is grateful to Siobhan Creanor, Lecturer in Health Statistics at the University of Plymouth for the analysis which follows:

'To test for statistical association between each of the 10 questions and the Practice variable, the responses to each Question were categorised as either "Ideal" or "Not Ideal" (i.e. Acceptable and Unacceptable combined), given the very small number of Unacceptable responses throughout. Even after combining Acceptable and Unacceptable responses, there were often few responses and so an exact version of the Chi-Squared test was used (obtained via the statistical package StatXact 8, Cytel Studio, Cytel Inc, 2007).

In addition, for Question 9 only, the association was assessed based on the three original categories, Ideal, Acceptable and Unacceptable, as for this question there was a greater spread of responses across all three categories. The results are shown in table 3.25.

3.25 Statistical analysis summary table – all questions

Question	Exact p-value	Interpretation (based on 5% significance level)
1	0.1093	Insufficient evidence to support a significant association between Question 1 and Practice.
2	0.0592	Insufficient evidence to support a significant association between Question 2 and Practice at the 5% significance level.
3	0.2695	Insufficient evidence to support a significant association between Question 3 and Practice.
4	0.0012	Evidence to support a significant association between Question 4 and Practice.
5	0.0297	Evidence to support a significant association between Question 5 and Practice
6	0.0003	Evidence to support a significant association between Question 6 and Practice
7	0.0030	Evidence to support a significant association between Question 7 and Practice
8	0.0117	Evidence to support a significant association between Question 8 and Practice
9	0.0158	Evidence to support a significant association between Question 9 and Practice
9 (3 response cats)	0.0109	Evidence to support a significant association between Question 9 (3 response categories) and Practice
10	0.0001	Evidence to support a significant association between Question 10 and Practice

For those questions significantly associated with Practice, follow-up multiple comparisons to compare the proportions of Ideal responses were compared between the 7 practices. There are 22 possible ‘pair-wise’ comparisons for each question – again these comparisons were not corrected for multiple comparisons, given the very exploratory nature of this feasibility study.

The confidence intervals below were calculated using an exact method for differences in proportions, again using StatXact 8, given the small sample sizes.

There are a few things to note re these pairwise comparisons. Firstly the 95% confidence intervals for the differences in %Ideal are very wide – this is due to the low sample sizes. Secondly, there are some comparisons, which given the above ‘significant’ differences, you would probably have expected also to be significant, in particular a number of comparisons involving Practice G. There are a number of these which are not statistically significant, despite Practice G having e.g. 100% ideal, because of the low number of respondents for this practice and hence not given in table 3.26.’

Table 3.26 Statistical analysis questions 4-10 practice to practice comparisons

Question	Statistically Significant differences between			95% Confidence Interval for Difference in %Ideal
4	Practice G	-	Practice E	(7.3, 43.4)%
	Practice A	-	Practice E	(9.0, 39.2)%
	Practice B	-	Practice E	(8.8, 37.7)%
	Practice C	-	Practice E	(1.4, 38.2)%
	Practice F	-	Practice E	(3.2, 33.1)%
	Practice A	-	Practice D	(1.2, 36.4)%
	Practice B	-	Practice D	(0.2, 35.0)%
5	Practice A	-	Practice C	(2.1, 28.7)%
	Practice B	-	Practice C	(1.2, 27.5)%
	Practice A	-	Practice E	(0.8, 23.8)%
	Practice B	-	Practice E	(0.9, 22.6)%
6	Practice A	-	Practice E	(13.5, 45.1)%
	Practice D	-	Practice E	(6.1, 45.5)%
	Practice B	-	Practice E	(13.1, 43.1)%
	Practice G	-	Practice E	(12.4, 49.2)%
	Practice F	-	Practice E	(6.9, 38.0)%
7	Practice F	-	Practice E	(8.4, 40.1)%
	Practice B	-	Practice E	(8.6, 39.7)%
	Practice A	-	Practice E	(0, 36.0)%
	Practice F	-	Practice D	(3.9, 43.4)%
	Practice B	-	Practice D	(4.0, 42.9)%
8	Practice G	-	Practice E	(15.2, 52.2)%
	Practice A	-	Practice E	(3.7, 39.8)%
	Practice B	-	Practice E	(7.5, 38.8)%
	Practice F	-	Practice E	(6.8, 38.7)%
	Practice G	-	Practice C	(0.2, 38.0)%
9	Practice F	-	Practice c	(6.2, 37.7)%
	Practice F	-	Practice C	(8.9, 33.6)%
	Practice B	-	Practice C	(1.2, 24.4)%
10	Practice A	-	Practice E	(18.3, 51.8)%
	Practice G	-	Practice E	(3.2, 49.3)%
	Practice F	-	Practice E	(13.6, 46.0)%
	Practice B	-	Practice E	(14.1, 46.0)%
	Practice A	-	Practice C	(0.6, 32.7)%

Chapter 4 Discussion

4.1 Survey design

This instrument has combined a short seven question service appraisal questionnaire with a very short three question oral health impact survey. Question 9, on perceived value for money, ensures that one piece of financial data is included. As discussed in section 1.4, it could be considered that by measuring patient satisfaction, the job satisfaction of the team is indirectly being assessed. The author contends therefore that all four dimensions of practice success as defined in section 1.1, are included directly or indirectly in this instrument.

It is not suggested that this instrument alone should replace all other measurements. It should complement them to give the practice a full picture of current performance. Denplan Excel Accredited practitioners, for example, are required to record the Denplan Excel Oral Health Score for each patient on a regular basis. This score adds measurements of clinical examination findings to the three oral health impact questions included in this survey. They are also required to participate in a practice visit conducted by a trained peer. This visit includes an appraisal of practice structure and process. It includes a clinical audit element which changes periodically. Practice financial advisors will normally ensure that regular audit occurs in this vital area.

The rationale behind this survey was to focus on the fundamental oral health impact issues and on those aspects of service which seemed most important to patients in general. The intention was to supply practices with headline

information about their patients' perceptions in these vital areas. There is still a place, in the author's opinion, for more detailed questionnaires on a broader range of issues and there is a place for eliciting verbatim comments from patients about their experiences.

No attempt was made to weight the importance of each of the ten questions in this focused instrument. They were all held to be equally important to practice success. Weighting of the importance of responses would be necessary if a 'wide-ranging' questionnaire was used to measure success.

No personal information was requested from patients. Therefore, no demographic data were recorded. Given that the results suggested no benefit (in improved response rates) using this technique, it could be considered that losing the opportunity to compile demographic data was not justified. Essentially this experiment with telephone technology suggested several drawbacks and no clear advantages over paper based methods.

The telephone medium was selected to test the feasibility of such a system, particularly in respect of ease of use for patients. It was selected ahead of an internet based instrument to avoid disenfranchising patients without IT skills. It was hoped that its simplicity would encourage good response rates. It was interesting to consider the pilot of the study, and the voluntary survey conducted by practice E, after they received their results. These were both paper based with a 'ballot box' situated at the practice. Both practices reported how easy it was to secure 100 submissions from their patients. It

would be interesting to assess whether feedback was more positive when collected this way, as there is no 'independent' collector of the information. Practice E reported that their results were 'similar' to the telephone version. The results of the pilot study are not directly comparable because the scoring system and the questions were changed before the full study was conducted. The 'ballot box in practice' method would require practices to submit results centrally if national averages were to be compiled for comparison.

It appears that the policy of only offering three grading options was justified. It does seem pointless to offer four when patients seem to use the highest grade so commonly and the lowest grade so rarely.

4.2 Recruitment of dentists

The dentists selected to take part in this feasibility study were all Denplan Excel accredited. They were all, therefore, part of a voluntary quality assurance program. The conduct of patient satisfaction surveys for them by a third party was a familiar experience, as it is a routine element of this accreditation process. It is accepted that this group was not a typical cross-section of General Dental Practitioners.

Several workers have commented on bias which might affect any research project conducted using volunteer practitioners. Gilbert et al, writing about a practice- based research network (PBRN) based in Birmingham Alabama, (Gilbert et al 2008) had the following to say about this issue:

‘At some PBRN presentations audience members suggested that dentists who participate in PBRN research might be substantively different from dentists at large. Information from medical PBRNs, suggests that if a practitioner performance is the focus of the research findings may not be representative.’

As this study claims to be measuring ‘performance’ it would seem that any volunteer group might therefore introduce a bias.

It had been expected that the practices selected for this study would have been funded largely by private contracts with patients. In the case of five of the practices this was probably true. However two large practices included in the study reported that they received a large proportion of their funding from the NHS.

It was not part of the study to ascertain the percentage of practice funding derived from the NHS at each practice. However it was interesting that these two practices volunteered information about their NHS commitment. In the case of practice C, they suggested that, as they retained a big commitment to the NHS, these patients were ‘irritated’ when asked to take part in the survey. Practice C did, in fact, cease letter distribution early because of this patient ‘irritation’. They distributed about half of their letters. The patient invitation letter did not mention Denplan Ltd (only the University of Birmingham). Had

this been the case it could have been speculated that NHS patients may have felt in some way excluded.

Practice E volunteered that 80% of their patients were treated under NHS contract. In their interview they used this in mitigation for their low response rate (only 37 responses were recorded after 800 letters were issued to the practice), and what they perceived as poor results relative to the whole group (they did return the lowest PPI at 57%).

This feasibility study was conducted to explore possible changes to the current Denplan Excel program. It has therefore been conducted using Denplan Excel 'customers'. There is no requirement in Denplan Excel Accreditation for practices to have a minimum number of patients registered in a Denplan payment scheme. In this regard most practices operate in a 'mixed economy'. Practices were instructed to distribute their letters to adult patients, irrespective of their contractual status. So, NHS patients, fee per item private patients and patients in payment schemes like Denplan Care could have all been included. The observations made by two of the practices about the reluctance of NHS patients to respond to surveys would be worthy of further investigation.

Patient feedback studies have been carried out in NHS practice environments and produced acceptable response rates. Indeed, higher response rates have been achieved than in this study (e.g. Hill 2004- see 4.4). The author is not aware that this type of telephone-based methodology has been used

previously in any setting by dental practices. The apparent reluctance of NHS patients to participate in this study could be related to the methodology. It could be connected to practice behaviour towards NHS patients. Perhaps the practice teams felt that relative time constraints with NHS patients prevented them from promoting participation? In other words is it a practice attitude in play here rather than a patient attitude?

4.3 Recruitment of patients

Each dentist was supplied with 200 coded letters to distribute to the next 200 adults attending for care. Therefore, 4000 letters were issued to the 20 dentists in total. From the information about the number of letters remaining undistributed after the six week study period it seems that about half of the letters were given to patients ($n = 2000$). If it was assumed that all of the dentists worked a 4 day week throughout the study period a total of 480 days were worked. This suggests that each dentist distributed an average of less than 5 letters on each day throughout the study period. As many more adults than this are likely to have attended for care during this period it can be safely assumed that not all adults who attended actually received a letter. In fact at least one of the participating practices reported that they forgot to distribute the letters to each adult patient, as their primary focus was the patient care. Not an unreasonable 'excuse' perhaps?

This raises the concern that there may have been some 'selection' of patients who did receive letters. It is possible that letter distribution might have been

avoided to 'challenging' patients. This could result in a more positive survey outcome for a practice than might be the case if all adult patients attending during the study period had been invited to participate. One of the learning points from this feasibility study is that practices need more briefing on techniques for achieving good response rates (see 4.4 and 5.5). Dillman et al (2009), in their guidelines for the design and conduct of customer feedback surveys, state in their guideline 10.2:

'Develop procedures for ensuring that onsite sampling is carefully executed and will not be affected by personal preference' (Dillman et al, 2009)

Dillman et al (2009) discuss how corrupting 'selection' can be, particularly if financial rewards are linked to favourable survey results. 'Performance' in the Denplan Excel Patient Survey is not linked to any award, or reward. Members are required to show that they act on the feedback. The primary purpose is to inform practice development. Using these methods the practice takes responsibility for the quality of the data they ultimately receive, which in turn is for their developmental benefit alone.

As stated in section 4.2, practices were asked to invite feedback from all adult patients irrespective of their contractual arrangements with them. This is potentially a significant advantage of this method of patient recruitment for survey participation. With the current Denplan Excel postal survey patient recruitment is usually done by posting to a random sample of patients registered in a Denplan payment plan. This excludes fee per item private

patients and NHS patients. An offer is made for Electoral Reform Services to take data-bases from practices of non Denplan registered patients, but most do not take up this offer.

The clear disadvantages of this method are the reliance on busy dental teams to remember to distribute the letters in sufficient numbers and the potential for favorable patient selection.

4.4 Response rates

It was originally assumed that calculating response rates would have been straightforward, as all of the letters would have been distributed. This did not prove to be the case. It was therefore necessary to contact the practices in an attempt to estimate the total number of letters distributed. The figure quoted in the section 3.1 of an overall response rate of between 20 and 25% is therefore an estimate. The response rate for the Denplan Excel postal survey was 29% in 2008. This does suggest that the response rate using the telephone method has been lower. This was a disappointing finding, as it had been thought that this methodology may make submitting feedback easier for patients. Completing long questionnaires by hand and then posting them can be time consuming. This methodology gave patients the opportunity to submit their feedback in a matter of two or three minutes using the telephone key pad. The methods used in this feasibility study, overall, do not appear to have improved response rates as expected.

There was a variation in response rates across the practices from approximately 7% for practice C to approximately 60% in the case of practice F. This was a similar range of response rates to that observed in the existing Denplan Excel postal survey. The dentist largely responsible for the high response rate from practice F reported that he personally distributed letters to his patients. He then requested that they call the number to give feedback as this was important to him. Practice D reported that letter distribution was handled by reception staff with no participation from the treatment room staff. There were a total of 21 responses from this practice. Practice D did not distribute all of their letters but they were not able to give an estimate of how many letters remained. If 50% of their letters were distributed then this was a response rate of approximately 10%. It would appear that full engagement from the dentist is important in encouraging patient participation.

It was interesting to hear the views of the Ethics Committee on encouraging patient participation. They requested that phrases designed to encourage participation were removed from the original patient information letter. They described the phrase: 'We hope that you will participate' as 'coercive'.

No follow up to encourage participation was used in this feasibility study. No 'incentive' (such as a small gift or a place in a prize draw) was used. Both of these techniques are common in commercial customer feedback surveys and are reported to significantly improve response rates. 'Follow up' is used in dental surveys. Hill, using a postal survey (Hill 2004), achieved a 20%

response rate from a similar sample size of dental patients ($n = 2082$). A follow up by post enhanced the response rate to a total of 37%.

It would be possible within the methodology of this feasibility study to use follow up techniques. It would require practices to list those patients who had been given a letter and the unique code on that letter. The agency would then report on which responses had been received by code. Patients who had been given a letter with a code not on the 'response list' could then be contacted and encouraged to participate. Using this follow up technique would however not promote the confidence in confidentiality which this study was attempting to instil. It would also add a further administration burden to the practice which would be again be counter to the objectives of this project.

In the author's opinion, as long as patients are not harassed into giving feedback, (which could then corrupt their feelings about the process), we should strive for high response rates. There are clearly questions about how representative the sample is when low response rates are achieved.

It could be considered that there is the potential for a higher response rate to be achieved if this survey instrument is used in paper form. Practices could be asked to distribute a single sheet of paper with the survey on one side and the patient explanatory letter on the reverse. A pre-paid envelop addressed to ERS could be supplied. This methodology would allow the personal engagement of the dentist to promote the survey and the distribution to all categories of patient. Perhaps this method would leave the reliability of the

results as the responsibility of the dentist, who would ultimately be making use of them?

Some of the practice feedback about patient experience, and the response rates achieved, both seemed to indicate that the telephone methodology, used in this feasibility study, has not proved its worth.

4.5 Overview of patient feedback

Across all seven practices (20 dentists), responses were recorded from 531 patients. Despite using the demanding 'ideal' grading as the most positive response, 72% of responses recorded this grade across all ten questions for all seven practices. In total only 56 'unacceptable' responses were received (from a total of 5310 responses in total- 531 patients answering 10 questions each). Overall, this suggests very high levels of satisfaction with the oral health care provided in these seven practices.

It has been suggested by Newsome (Newsome 2001) that there are two alternative explanations for the high patient satisfaction scores in dental surveys:

- 1) Patients are anxious about giving less positive feedback in case this affects their relationship with the practice adversely
- 2) Patients do not feel competent to express views on some issues

The use of a personal telephone with no recording of names or addresses in this survey was designed, in part, to make participants more confident about their confidentiality. Nevertheless, the letters were coded, and some patients therefore may have believed, despite reassurances in their letter, that feedback was attributable.

Questions 4 (on competence) and 5 (on hygiene) could be the types of question which patients feel under-qualified to answer accurately. The introductory letter and the recorded introduction to the telephone questions both attempted to stress that we were seeking their opinion on these issues because they are valued.

Table 3.20 in section 3.4 clearly demonstrates the varying perceptions of this group of patients across the ten issues researched. This is realised by focusing mostly on the percentage of 'ideal' responses achieved. The most positive perception that these 531 patients recorded was for question 5, as 94% of patients rated the standard of cleanliness and hygiene in the practices as 'ideal'.

The second most positive response was that 91% of patients rated the competence of their dental team as 'ideal'. It is interesting that these may be the two questions on which patients may be most reluctant to appraise.

The least positive perception was recorded for the patients' own view of their dental appearance. Perhaps, not surprisingly, only 22% rated their own dental

appearance as 'ideal'. Most patients thought that this aspect was 'acceptable' (75%). Two percent graded this 'unacceptable'. Alkhatib and co workers (Alkhatib et al 2004) interviewed a representative sample of the population of the United Kingdom (n = 3384 adults in total). Half of this group graded their own tooth colour as 'normal', 31% graded their own teeth as having 'mild discolouration', 13% self assessed as having 'moderate discolouration' and 6% self reported 'severe discolouration.' Tooth colour is only one aesthetic criterion. A Dutch study (Burgersdijk et al 1991), involving the examination and interview of a representative sample of 2784 dentate patients aged from 15-74, found, across all ages, that around one third of the patients expressed a desire for aesthetic treatment to anterior or premolar teeth. These studies suggest that the 531 patients responding in this feasibility study seem relatively satisfied with their dental appearance. They do not, however, represent a typical cross section of the British public for reasons discussed earlier.

'Value for Money' was graded as 'ideal' by only 31%, with 4% grading this 'unacceptable'. This survey was conducted at a time that the British economy was in a deep recession. Following the discussion in sections 4.3 and 4.4 it is probable that the majority of the patients responding were paying private fees either through a payment plan, or directly to the practice. Sixty four percent of patients graded this issue as 'acceptable', with circa 1% not recording a response. At this time in the economic cycle this result is reasonably predictable. However, there is clearly scope for practices to improve on these results however.

Question 6 shows that 90% of the patients felt that the attitude of the dental team was 'ideal'. The author would imagine that this group result would be hard to improve.

However, creditable as the results are for questions 7 (understanding needs) and 8 (explaining things), there is a challenge here to strive for even better communication skills. About 30 (5-6%) fewer patients perceived that these issues were ideal compared to the 'attitude' result.

Seventy one patients (14%) failed to rate their level of trust in the dental team (question 10) as 'Ideal'. Striving for an 'ideal' score into the nineties on this issue would seem to be a useful goal for any practice. There is a concern on this issue about the three patients who recorded an 'unacceptable' response, and perhaps the five patients who failed to state their view. Trust is a vital perception for patients to have of their dental team. The patients in this survey scored three issues higher than 'trust' namely, 'competence', 'cleanliness' and 'attitude'.

Taking the three questions on patient self perception of oral health together (Questions 1,2 and 3), 52% of responses were recorded as 'ideal'. Only 1.7% of responses were unacceptable. These patients appear to be more reluctant to appraise their oral health as 'ideal' than they are to appraise the general service they receive as ideal. This surprised one of the participating practices (see section 4.8). All of the dentists participating in this survey are required,

as part of their Denplan Excel standard, to record each patient's Denplan Excel Oral Health Score at a clinical examination on a regular basis. This score requires the dentist to ask these three questions of each patient. Patient responses, in this clinical situation are recorded as follows for each of these questions:

- Score 8 if a patient reports no problem
- Score 4 if a patient reports a minor problem
- Score 0 if a patient reports a significant problem

Patients are therefore not asked to differentiate between 'ideal', 'acceptable' and 'unacceptable' in this clinical situation. A patient response of 'no problem' in the clinical setting might equate to either 'ideal' or 'acceptable' in the survey setting? It does appear, however, that for the 'value for money' question and the oral health self perception questions, the patients are more prepared to appraise the issues as less than 'ideal'.

4.6 Practice comparisons

The Patient Feedback Indices (PFI= the percentage of 'ideal' responses received across all ten questions) for each of the practices ranged from 57% to 74%. This suggests a notable difference in patient perception between the highest scoring practices and the lowest scoring practice. As discussed in section 4.4, the estimated response rate for the lowest scoring practice was

notably lower than two of the three highest scoring practices. Practice E would have needed 63 more 'ideal' responses from the 37 patients who did respond to give them a PFI equal to the highest scoring practices. This would be equivalent to almost two more ideal responses from each patient completing the survey. The author believes that this represents a notable difference.

It is important to remember, when comparing patient perceptions of different practices, that we are not comparing the same group of patients' perceptions in all of the practices (in the manner that 'secret shoppers' in the commercial world may compare services by visiting several different outlets). Each practice is being appraised by its own group of patients. They may have been 'calibrated' only by experiencing one practice. Nevertheless, honest perception is reality for those patients. Perceptions may not always be truly 'fair'. Differing perceptions could be related to differing demographics between the practices. Patients almost certainly have differing expectations. Ultimately the relevant 'performance' for a practice is the extent to which they meet the expectations of **their** patients. The author would therefore suggest that these comparative results for practices are valuable.

Table 3.21 clearly shows differences in patient perceptions between the highest and lowest scoring practice for each of the 10 questions. The impact of response rates on the results for each practice is however clearly an issue, as discussed in 4.4. Nevertheless, to take question 10 (trust), as an important example, the practice with the lowest score (practice E) would have required

12 more of the 37 patients who responded to score this issue as 'ideal' in order to equal practice A's achievement of 94% on this question.

The author suggests that differences in patient perceived performance between the different participating practices is probably being measured by this instrument. The statistical analysis reproduced in 3.8 gives some support to this, in the context of this study being a small scale feasibility study. The opportunity to test this function of the instrument would be greater if higher response rates and more practices are included (as planned) in the future.

There would be merit in testing the reliability and reproducibility of this instrument. The Denplan Excel Oral Health Score (OHS) was subjected to reproducibility testing by Delargy et al (2007). The favourable results may have enhanced the standing of this measurement as an instrument of audit. (Delargy et al, 2007). Essentially the 'Test-retest' technique described by Bowling (2009) was used for the OHS. The author would initially favour using a similar method for this concise patient survey. Several other techniques described by Bowling could additionally be used (Bowling 2009).

4.7 An individual practice example

Practice A is taken here as an example of how a practice might find their results useful. Indeed, practice A did find their results useful (table 3.24).

Taking the three issues identified in the literature review as most important to patients, namely competence, cleanliness and communication, practice A

could be satisfied with their result. They achieved 96% 'ideal' responses on 'competence', 99% on 'cleanliness' and 96% on 'attitude'. All of these results being above the group average. They achieved the highest score in the group on 'trust', although they are only aware that they scored 8% above the group average. However they returned lower than average scores across the three oral health questions, as discussed in 4.6. Their patients returned 13% 'ideal' responses to the dental appearance question. This was the lowest score of all of the seven practices. They would not know this because only group averages were disclosed to each practice. However, they should be alerted to this area because their result is well below the group average. In fact, their spokesperson reported that they had indeed noted this result and set up a management strategy for this issue.

Their result for practice A on 'value for money' was the lowest in the group although they were not aware of this. They were however alerted to this issue by the red highlighting of their result in the 'tables'. This indicates a result of 10% or more below the group average. Once they had been alerted to this, they planned a strategy for managing this issue (see table 3.24).

As discussed in the literature review, the principal purpose of measurement is to inform practice development. In the case of practice A there were clear issues on which their patients perceived near 'ideal' performance and others where their less favorable results indicated a need for development. The author believes that this instrument is capable of highlighting some practice development needs effectively.

4.8 Practice feedback on the process

It did not prove possible, despite several attempts by telephone and e mail, to illicit feedback from practice C. They discontinued letter distribution at the end of week four because they reported that their NHS patients were 'irritated' when asked to participate. As stated in 4.2, this observation would be worthy of further investigation as a similar problem was reported by practice E. It may be a reasonable assumption to suggest that practice C, by their actions, are not favorably disposed towards this instrument.

Practice B achieved a very creditable response rate. Although they did not report the actual number of letters distributed, they must have achieved a response rate above 30%, because they reported that quite a number of letters were discarded at the end of the study. Across their five dentists they received 207 replies. Thirty nine percent of the patient base in this survey was practice B patients. They achieved the equal highest PFI of 74%. Not only did they contribute 39% of the average for the whole group on each question, they also still managed to 'perform' above the average on every issue. In the opinion of the author, this instrument is measuring high levels of perceived performance on these key practice success issues.

The only features of this instrument to currently impress practice B were its ease of use for both patients and the practice, and that it did measure differences in their patient perceptions between the different issues. On all

other features surveyed they were not impressed. They did not agree that the most important issues to patients were being covered by the survey (the only practice to feel this way). They did not feel that it demonstrated differences between their patients' perceptions and those of the other practices in the survey. (As they contributed a disproportionate volume of responses towards the group average this point can be appreciated.) They found it useless in terms of informing future development. (Again this can be appreciated as their performance across all issues was very favorable). Finally, they did not feel that this instrument was a meaningful measurement of success. They felt that the survey was 'vague' and lacked the detail of the Denplan Excel postal survey which they had experienced.

As indicated in parenthesis in the preceding paragraphs, some of this feedback is easy to understand. One of the principal ideas behind this instrument was to distil the questions down to only the key issues. Their feedback on detail was simply one of the projects objectives. Being 'vague' was certainly the opposite of the intentions behind this instrument, and so this was a disappointing observation.

It may be considered that Practice B did not feel that this sample of their patients was endorsing their practice success. The author feels that this is a pity, because it appears that is exactly what their patients were doing. This could have been highly motivating for them. Only practice B, of the six practices giving their feedback, seemed to be largely negative about the potential value of this instrument.

Allowing practices to add some 'bespoke' questions to the survey, while keeping the data from the ten core questions separate, could address the issues raised in the feedback from practice B. Providing an opportunity for receiving verbatim comments in the feedback from patients could also help. A summary of the feedback from the other five practices now follows.

4.8.1 Was it easy for patients to use?

The main problem here seemed to be motivating the patients to call the free phone number. The practices generally agreed that, once they had done this, the patients found this method reasonably quick and simple. However (as practice A reported and Dillman et al {2009} suggest) the process could be a little tedious and repetitive. To some extent this was because patients were given the opportunity to confirm their response or change it. In practice F, as discussed previously, the dentist personally asked the patients 'to do the practice a favour by calling the number'. This approach delivered the highest response rate. It was suggested by practice A that an internet based version may be preferable. This was considered during the study design and should be revisited.

4.8.2 Was it easy for the practice to use?

There was quite strong agreement that this was the case. This was a very deliberate policy of the study design. ERS produced a clear, full page, bar chart for each practice, in the author's opinion. The full questions were notated in the 'tables' section which was also clear, with the tables for each question being reproduced three to each page.

4.8.3 Was the instrument based on issues which are most important to patients?

Only practice B felt that this had not been achieved. The remaining five practices scored this issue at an average of 9/10 and therefore seemed to strongly agree that this was the case.

4.8.4 Were differences in perception between the different issues clear?

With the exception of practice G there was clear agreement that practices could see clear differences between their patients' perceptions of the different issues covered by the survey.

4.8.5 Were differences with group average results clear?

The practices generally felt that this was achieved, the only exceptions being practice B and practice F. Since these two practices contributed together 67% of the patient base for this study this finding is not surprising. Because they effectively contributed 'disproportionately' to the averages their results were close to the group average. Differences were therefore minor.

4.8.6 Did the result help to inform practice development?

Understandably, practices B and F did not feel that the survey helped to identify development needs, as they varied little from the average. Practices A and G felt very strongly that development needs were identified by the process. As discussed in section 4.7 it can be clearly understood why practice A felt this way. Practice G also, despite achieving the equal highest PFI, did have one issue on which their patients' delivered 17% fewer 'ideal' responses than the group average. Practice E did not seem to believe that their result was informing development on the six issues on which they were more than 10% below the group average. They did not seem to doubt that this was a true reflection of their current status. They explained this as being caused by an 80% commitment to the NHS. Once more, in this small study, it is interesting to reflect on the way two practices perceived the impact of their NHS commitment on their results.

4.8.7 Was the survey a meaningful measurement of success?

With the exception of practice B, this group of practices seemed reasonably convinced that this instrument was a meaningful measurement of success.

4.8.8 Further comments from the practices

Practice D were 'impressed' with the survey and thought that the questions were 'very good'. Their spokesperson was a little concerned that patients were reporting poorer oral health in the survey compared with at the clinical

consultation. The author has attempted an explanation for this impression in section 4.5.

Practice E, despite being aware that their results were 10% below average on six of the ten issues, described the survey as 'a fantastic idea'. They were even moved to run a hard copy version in their practice in a successful attempt to achieve a higher response rate than they experienced in the study.

The owner of Practice F was certain that his patients preferred this method of survey to the more traditional postal method. He was the only participant to express an interest in seeing the data supplied in a dentist specific form. He also expressed a concern about the possibility of favorable patient selection using this methodology.

The owner of Practice G made a particular reference to how valuable this instrument might be in dentist Revalidation. He was a volunteer in the Revalidation pilot scheme. Currently the GDC are experimenting with instruments for this purpose. He reported being surprised at his low response rate because he considered that this method would be easy for patients rather than traditional methods. It is possible that this practice, and others, failed to encourage participation because they assumed that their patients would find the process simple and easy .

4.9. Future use of the instrument

Using an instrument, such as described in this study, could make a positive contribution to practice success. It should not be carried out (in the author's opinion) simply to comply with the requirements of an accreditation scheme. If all ten aspects are receiving 'ideal' scores above average then the instrument may be confirming success in these key areas. If some scores fall below average then this should ideally inform the need for practice development in those areas.

As discussed in 1.1, dentists will soon be required to hold portfolios of evidence that they are achieving required standards in the following areas

- Professionalism
- Clinical skills
- Communication skills
- Leadership and management

The author believes that this instrument is capable of delivering patient feedback in all of these key areas. Table 4.1 suggests which area(s) each question is predominantly supplying patient feedback on. The author would suggest that this instrument could give valuable evidence for a Revalidation portfolio. As the Care Quality Commission begins its licensing programme,

with the declared objective of evaluating from the patient perspective, again this instrument should be of value.

Table 4 1 Revalidation skills and the questionnaire

Question No & Title	Revalidation area (s) most relevant to perception
1) Comfort	Clinical and communication skills
2) Function	Clinical and communication skills
3) Appearance	Clinical and communication skills
4) Competence	Clinical and communication skills
5) Cleanliness	Professionalism and Leadership
6) Attitude	Leadership and Communication skills
7) Understanding	Communication skills
8) Explaining	Communication skills
9) Value	Leadership skills and communication skills
10 Trust	Professionalism

A comprehensive literature review on the benefits of clinical audit in medical practice (Johnston et al 2000) suggested that audit could improve professional communication, enthusiasm, job satisfaction and patient care. Therefore this review suggests that audit projects, such as described in this thesis, can improve practice success in line with the definitions clarified in section 1:1. This review did also emphasise, in its conclusions, the need for the proper organisation of audit for participating practitioners.

Recently the value of organised audit for dentists has been emphasised in the literature (Cannell 2009). A quote from one of the dentists interviewed in this study illustrates what is probably a common feeling:

I think it's great when somebody is prepared to organise these audits... From our point of view, it means we're doing what we are supposed to be doing and we quite enjoy it... and it's not too much effort. There is enough to do running the business, seeing the patients.'

In summary, the future use of this instrument is, hopefully, to do what it was designed to do, namely facilitate the measurement of practice success using patient feedback.

Chapter 5 Conclusions

5.1 The feasibility of using Interactive Voice

Response methodology

This mode for conducting a dental patient survey failed to demonstrate any advantages over paper based systems. Indeed, response rates were probably lower than traditional paper based systems and some patients did not find the system particularly convenient. Further to this, the method made the collection of valuable demographic data impractical.

- ❖ **The instrument should be used in a paper based or 'on-line' format. Demographic data should be collected.**

5.2 The feasibility of the concise patient survey for measuring success in dental practices

A strong case is made in the literature review and in the materials and methods section for the idea that this survey is designed to measure patient perceptions on issues of fundamental importance to practice success. Five of the six practices giving feedback seemed to agree that this instrument was a meaningful measurement of success. Five of the practices also strongly agreed that the instrument was based on issues which are most important to patients.

- ❖ **The concise instrument which has been developed could be considered to be measuring practice success using patient feedback.**

5.3 Was it easy for patients to use?

The IVR mode did not seem to be particularly popular with patients. The disappointing response rates and feedback from the practices support this view. It can only be speculated from the feedback of practice E, who tried out a paper based version, and the pilot study, that more concise surveys could be easy for patients to use in paper format.

- ❖ **Using the IVR mode complicated the process for patients rather than simplifying it as intended.**

5.4 Was it easy for practices to interpret the feedback?

The feedback from the practice representatives suggests that this was the case. Generally the practices seemed to feel that it was easy for them to use, and that it did demonstrate differing patient perceptions between the different issues covered, and between the different practices. The statistical analysis of practice comparisons also gave some support to the fact that differences in perception were probably being measured between the different practices on most issues.

- ❖ **This concise instrument did make it easy for practices to interpret their feedback**

5.5 Did the results inform practice development?

Practice opinion in this small feasibility study was polarised on this issue with two practices feeling that this was very strongly the case and three practices considering that this did not happen. The possible reasons for this are explored in 4.8.6.

- ❖ **This concise instrument is capable of informing practice development**

A case has been made for the feasibility of using this concise patient feedback survey for indicating practice success levels in the fundamental aspects of care covered. The project has indicated ways in which the instrument can be improved before it is used on a wider scale. It is unlikely that any 'instrument' for measuring performance in any professional arena will find universal appeal with the user group. The majority of dentists who tested this instrument were favourably disposed towards it.

5.6 How could the instrument be improved?

- Response rates could be improved by instructing participating dentists to personally hand out the invitational letters to patients and verbally request their participation.
- An internet version of the survey might yield a higher response rate than the telephone based version except for those patients without any IT skills. Demographic data can easily be recorded using this method.
- A paper-based version may prove to be the simplest and most effective method. A paper based version could be distributed by dentists with a postage-paid envelope for return to ERS. A single sheet of paper could have the survey printed on one side and the patient letter on the reverse. It appeared that the telephone methodology used in this study failed to improve response rates, and possibly lowered the response rate when compared to the existing Denplan Excel postal survey. Paper submissions also allow for the straightforward collection of demographic data.
- The reliability of this instrument should be tested
- Allowing patients to submit verbatim comments would probably add value to the instrument for practices.

Chapter 6- Ideas for further research

6.1 Use by a large number of practices

The survey instrument was tested by 20 dentists in seven different practices in this feasibility study. Five out of the seven practices reported a broadly favourable view about the value of this instrument. The next phase of development will require a larger number of practices to be involved and to monitor their opinions.

Many more practices will have the opportunity to use this instrument as part of their Denplan Excel accreditation during 2010 and beyond. Denplan Ltd have decided to adopt this instrument to replace the current survey. Practices will be supplied with single sheet paper copies of the survey with an introductory letter to patients on the reverse side. Patients will be given the opportunity of submitting their responses by posting the survey form to ERS or going 'on-line' via the Company's web site. There will also be an opportunity for patients to submit 'verbatim' comments. In addition, Reichheld's net promoter score will be part of this new survey (see section 1.7.3). It will therefore be possible to continue to compare data from this more substantive use of the instrument with the data from this feasibility study. It is probable that in excess of 800 (taking into account the current growth rate of Denplan Excel Accreditation) dentists will therefore use this survey as part of their Denplan Excel Accreditation over the next three years.

It will be interesting to compare the revised methodology with the telephone based trial. Particular note will be made on the use of the 'on line' option for patients. Recently, a study has been published (Ni Riordain and McCreary

2009) suggesting that more than two thirds of patients with an average age of 44.2 years, attending the clinics of Cork University Dental School, used the internet on a daily basis in their lives. More than one third of these patients either had researched their presenting condition on line for themselves, or asked a member of their family or a friend to do so for them. So, perhaps the on-line option for the submission of feedback will have a growing appeal? The version for use from September 2010 is reproduced in appendix 5.

6.2 Trial with predominantly NHS funded practices

Particularly in the light of comments made during the feasibility study by two practices with large NHS commitments, it would be interesting to trial this instrument with more predominantly NHS practices. It would be interesting to compare patient perceptions of NHS care with patient perceptions of private care. It would be valuable to test the opinion given by two of the practices that NHS patients are more reluctant to participate in surveys such as this.

6.3 Investigation on improving the response rate with engagement instructions to dentists

This feasibility study seemed to demonstrate the value of the dentist personally requesting patient participation and stressing the value of this to

the practice, and patient services in the future. It would seem reasonable to stress the value of this dentist engagement in instructions to future users, and to investigate whether this improves the response rates generally. This will be done as this instrument is adopted as part of Denplan Excel accreditation in 2010.

6.4 Investigate any relationship between practice leaving rates and PFI

There are many reasons why patients may cease care with a particular practice. Death and moving from the area generally served by the practice are among these factors. Dissatisfaction with some aspect(s) of the care received is, of course, another. With NHS patients and private patients paying the practice directly, patient leaving rates are difficult to monitor. The leaving rates of patients in private capitation contracts (such as those registered in Denplan Care) are relatively easy to monitor. Denplan does seek to establish the reason why the contract has ceased. It would be valuable to investigate whether there is a relationship between the Patient Feedback Index (described in this study) and patient contract cancellations for reasons other than death and leaving the area.

6.5 Compare job satisfaction survey results with patient satisfaction results

In section 1.1 'job satisfaction' was identified as a dimension of success. The literature review suggested that there is a linear and positive relationship between patient satisfaction and the job satisfaction of the dental team. It would be interesting to conduct quantitative job satisfaction surveys (using the same survey instrument for each practice) across a number of practices using this patient satisfaction instrument and investigate the relationship of the PFI to a job satisfaction score.

6.6 Compare oral health outcomes to general satisfaction

With the larger data-base of practices using this instrument in the future it would be interesting to separate the data relating to oral health (the first three questions) from the remaining data. It would then be possible to investigate the possible link between patient satisfaction with general care and perceived oral health. This possible link was discussed in section 1.5.4.

6.7 Compare practice profits with PF1

There would be many challenges to overcome in order to conduct this type of study. There is likely to be general reluctance to divulge practice finances.

Even if disclosure was achieved the diverse ways of presenting financial performance across different practices would make this data difficult to compare. Nevertheless, if these difficulties could be surmounted there would be a great value in investigating the relationship between patient perceived outcomes and profit. This study could probably be most easily conducted to compare different practices within the same incorporated group. The possible link is discussed in section 1.5.1.

6.8. Investigate the views of patients on satisfaction survey instruments

Assumptions have been made about patients preferring shorter surveys. Opinions have been expressed about possible patient reluctance to give feedback on issues such as competence. Patient views on these and other issues around satisfaction surveys could be investigated.

6.9 The reliability of the instrument should be tested

Initially this could be done using the 'Test-retest' method described by Bowling (2009). It would be a fairly simple matter, once the new survey is in operation from September 2010, to ask a sample of practices to conduct a second phase of surveys about one month after their first phase. The second phase would be carried out before the results of the first phase are declared. Any significant practice developments occurring in the intervening month would need to be noted. Statistical analysis of the two results could then indicate reliability.

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Appendix 1–The fourteen questions of the OHIP -14 version (Slade 1997)

- 1) Have you had any trouble pronouncing any words because of problems with your teeth mouth and dentures?
- 2) Have you felt that your sense of taste has worsened because of problems with your teeth, mouthy or dentures?
- 3) Have you had painful aching in your mouth?
- 4) Have you found it uncomfortable to eat any foods because of problems with your teeth, mouth or denture?
- 5) Have you been self-conscious because of your teeth mouth or dentures?
- 6) Have you felt tense because of problems with your teeth, mouth or dentures?
- 7) Has your diet been unsatisfactory because of problems with your teeth, mouth or dentures?
- 8) Have you had to interrupt meals because of problems with your teeth, mouth or dentures?
- 9) Have you found it difficult to relax because of problems with your teeth, mouth or dentures?
- 10) Have you been embarrassed because of trouble with your teeth, mouth or dentures?
- 11) Have you been a bit irritable with other people because of problems with your teeth, mouth or dentures?
- 12) Have you had difficulty doing your usual jobs because of problems with your teeth, mouth or dentures?
- 13) Have you felt that life in general was less satisfying because of problems with your teeth mouth or dentures?
- 14) Have you been totally unable to function because of problems with your teeth, mouth or dentures?

Appendix 2 – Letter of explanation to participating dentists

Measuring Practice Success Using Patient Feedback

- a feasibility study

Dear

I am delighted that you have volunteered to participate in this study.

Measuring business success could be reduced to simply measuring the financial profit made. It has been shown however that short term focus on profit often damages long term financial success. Businesses which thrive in the long term seem to have a focus on customer (patient) satisfaction. In the business of dentistry key issues of patient satisfaction will relate to both the way they are 'served' as customers and their perceived oral health outcomes.

So it can be argued that an accurate measurement of patient satisfaction is a very useful way of measuring success. Indeed, even when it comes to oral health outcomes for patients, recent years have seen a movement towards the concept of 'wellness' rather than simply measuring the prevalence of disease. 'Wellness' can only be measured by patient feedback!

It has been suggested, with some evidence base, that large quantities of data can cause confusion and poor decision making. There is therefore an argument for restricting patient feedback to those factors which are central to practice success. It should then be possible to compare patient perception of your performance between these key factors. (and of course with other practices using the same 'instrument'). This could then help to direct your practice development to issues with the lowest patient satisfaction.

The ten questions asked in this survey have been arrived at by reviewing the literature on patient views about what they most expect from dental practices.

The Faculty of General Dental Practice (UK) has suggested that clinical outcomes are measured by just three grades for ease of calibration and interpretation.

Grade A – Ideal outcome
Grade B – Acceptable outcome
Grade C – Unacceptable outcome

There seems to be some logic in applying this principle to patient feedback. This is particularly so, as it has been shown that feedback from dental satisfaction surveys is usually very positive. The most common answer is nearly always the most positive allowed. Asking patients to just use these three grades could see more use of the 'middle' grading of 'acceptable'. 'Ideal' is presumably a very positive answer indeed.

Using automatic telephone responses with direct input into digital data bases and on line access to results reduces paper usage and eliminates postage costs, although there will be telephone charges. It is possible that the totally confidential nature of the process may allow very honest feedback. Electoral Reform Services (ERS) will be running these surveys for us, just as they currently run the traditional postal survey for Denplan.

So, thanks again for volunteering for the trial of this 'instrument'. You will be asked to assess at the end of the trial the extent to which this survey has achieved the theoretical benefits outlined above via a telephone qualitative and quantitative survey.

You will receive 200 letters to hand out to your next 200 adult (over 18) patients by post no later than 30/01/09. All adult patients can be included (not only Denplan patients). Please hand these to your patients from Monday 02/02/09. The lines open on this day. We plan to close the lines on Sunday 22/02/09. We plan to make your results available on the Denplan Web Portal from 09/03/09. Your letters are printed with codes to ensure that your data remains confidential.

Do call me on 07860 391962 if you have any questions.

Kindest Regards

M ke Busby
Dental Advisor Denplan

. Appendix 3 – Patient invite letter

**College of Medical and
Dental Sciences**

School of Dentistry
St Chad's Queensway
Birmingham
B4 6NN

Dear Patient

Modern health care strives to put patients where they should be, right at the centre of things. Your dental practice values honest feedback about the care and services you receive. They understand that this is an invaluable way to an even better understanding of your needs. It helps evolve services to suit you.

I am conducting a research project into patients' opinion of the dental care that they receive, as part of my post-graduate studies at Birmingham University. This will involve you in answering a short telephone questionnaire which will take just a few minutes. I hope that you will feel able to take part.

I have arranged a free phone number with Electoral Reform Services which we would like you to call. Once you are connected you will be asked to enter the codes below, which simply identify your dentist. Your feedback cannot be linked to you. You will hear ten statements read to you by a recorded voice. You will be asked to judge each issue as either 'ideal', 'acceptable' or 'unacceptable'. I am aware that most people find it tiresome to complete long questionnaires. This one is designed to ask you just ten questions, which cover the issues that research has suggested are most important to patients.

When questions ask about the dental team this means all the staff you come into contact with (dentists, hygienists, nurses, receptionists etc.). You are being asked to make your judgement based on your experiences. The first three questions enquire about your perceptions of your current dental health rather than the service you receive.

Please call the free phone number as soon as possible. Thank you very much for helping.

Yours sincerely

Dr Mike Busby

FREE PHONE NUMBER TO CALL:

_____  _____

SECURITY CODE 1:

SECURITY CODE 2:

_____  _____
_____  _____

Appendix 4 - Dentist letter introducing the results

Measuring Practice Success Using Patient Feedback

- A feasibility study

Dear Colleague

Thank you very much for the effort you have put into this study to date. We are pleased to enclose your practice results. There are several points to remember about the background to this study which find support in the literature:

- Long term practice success is directly related to favourable patient perceptions of the care provided.
- Measuring too many perceptions can cause confusion about what is really important and lead to inefficient decision making. The questions in the survey have therefore been based on issues which the literature suggests are most important to patients
- The three 'essential' oral health patient self perception questions have been included, as oral health must be central to success.
- World wide, dental satisfaction questionnaires have produced very favourable results indeed. A much 'tougher' scoring system has been used in an attempt to differentiate patient perceptions more usefully.
- However 'unfair' this may seem (or even be) at times, honest perception is reality for patients, and therefore essential for the business to understand.
- This survey is designed to measure practice success on the key issues using patient feedback. This includes a summary score called the Patient Perception Index (PPI), which is a percentage expression of the total number of 'ideal' responses a practice receives across all 10 questions. Your score appears above the bar chart.
- In the interests of true teamwork all of the questions in the survey relate to perceptions of the whole team, and not the individual dentist. Your results have been produced on a 'whole practice' basis therefore.

Your results are presented firstly as a bar chart showing your percentage of 'ideal' responses set against the average for all 7 practices. Full tables for each question then follow. Where your score is more than 10% higher than the group average it is highlighted in green. Where the score is 10% lower it is highlighted in red. I will contact you around the middle of May to take your feedback on the value of this measurement. We hope that this will give you and your team time to discuss the results. I have informed your Denplan Key Client Consultant that you now have these results.

Do call me on [REDACTED] if you have any questions. I can e mail the full literature review which underpinned this instrument if any of you want to read it.

Kindest Regards

Mike Busby
Dental Advisor Denplan
Hon Lecturer Primary Dental Care Birmingham University

Appendix 5 – The Denplan Excel Patient Survey for use from 01/09/10



Denplan Excel Patient Survey

Dear Patient

Your dentist places great importance on ensuring that the quality of care and service you receive is of the highest possible standard and as a mark of this commitment has been awarded Denplan Excel Accreditation.

Asking patients for their views on the care and treatment provided by the practice team is an important part of their accreditation programme as it helps the practice to monitor and develop the service they offer to you.

Your feedback is vital, so please take a few moments to complete this questionnaire and return it in the attached reply paid envelope.

Alternatively, you can complete the survey securely online by going to www.researchbyinternet.com/denplanexcel and entering the numbers printed below.

Security Code
Part One:

Security Code
Part Two:

Your completed questionnaire will be received and collated by an independent company, ERS Research.

Responses to the open ended questions will be scanned and forwarded to your dentist. For the rest of the survey, your dentist will only see summary results from which it will not be possible to identify the opinions of individuals.

On behalf of your dentist, thank you very much in advance for your time and assistance.

Yours sincerely



Roger Matthews MA BDS DGD(P)(UK) FDSRCS(Edin)
Chief Dental Officer, Denplan

MB17_F1

Please see over

YOUR FEEDBACK

(Please tick the appropriate box below)		Ideal	Acceptable	Unacceptable
Q1	How would you describe the general level of comfort and freedom from pain in your mouth?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q2	Generally, and as far as your teeth and mouth are concerned, how would you describe your ability to eat just about anything you like?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q3	Generally, how would you describe the appearance of your teeth (including any false teeth)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4	How would you rate the competence of your dental team?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q5	How would you rate the standard of cleanliness and hygiene at your dental practice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q6	How would you describe the attitude of the dental team towards you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q7	How would you rate the ability of your dental team to understand your needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q8	How would you rate the ability of the dental team to explain things to you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q9	How would you describe the value for money given by your dental practice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q10	How would you rate the level of trust that you feel in your dental team?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q11 How do you rate the service offered by the dental team?

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>	Unacceptable	<input type="checkbox"/>
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Q12 How likely is it that you would recommend your dental practice to a friend or colleague?

(Please give a score out of 10, where 0 = Not at all likely and 10 = Extremely likely.)

Score	<input type="text"/>
-------	----------------------

Q13 Please tell us one thing which could be improved about your dental practice. (Please write in below)

Q14 What do you like best about your dental practice? (Please write in below)

ABOUT YOU

Q15 Please indicate your regular dentist.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q16 What type of patient are you?				Q17 Are you:					
Denplan	<input type="checkbox"/>	Private fee-par-item	<input type="checkbox"/>	NHS	<input type="checkbox"/>	Male	<input type="checkbox"/>	Female	<input type="checkbox"/>

Q18 What is your age (or the age of the child you are responding on behalf of)?

5 or younger	<input type="checkbox"/>	6-11	<input type="checkbox"/>	12-18	<input type="checkbox"/>	19-34	<input type="checkbox"/>	35-54	<input type="checkbox"/>	55+	<input type="checkbox"/>
--------------	--------------------------	------	--------------------------	-------	--------------------------	-------	--------------------------	-------	--------------------------	-----	--------------------------



