SCOTTISH CONSORTIUM
for development and education in
DENTAL PRIMARY CARE

UK National Cohort Study Evaluating Dental Vocational Training

Stakeholder Consultation Report: September 2003

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EXECUTIVE SUMMARY

Introduction

The Scottish Consortium for Development and Education in Dental Primary Care is to conduct a comprehensive, comparative outcomes evaluation of Dental Vocational Training (DVT) in areas of the UK with and without a mandatory system of assessment.

A key challenge is to ensure that the evaluation considers the information needs of all DVT stakeholders. To facilitate identification of these needs the evaluation project team carried out a pre-evaluation stakeholder consultation. This report presents a comprehensive synopsis of the background to and results of the stakeholder consultation.

Results

Stakeholders were asked to indicate their views of the importance of each proposed outcome measure on a scale of 1 (not important) to 5 (very important). The importance of the outcome was determined by median importance score, and the level of agreement amongst stakeholder views by the average absolute deviation from the median (AAD). It was found that:

- Twenty-two of the 23 proposed outcome measures were considered to be 'very' important and one outcome was considered 'moderately' important
- There was less difference than expected between professional groups regarding the perceived importance of the proposed outcomes. However, the perceived importance of five outcomes – VDP Skills, Adviser Job Satisfaction, VDP CPD Uptake, the Financial Implications for Trainers and Patient Perception of Assessment – did differ significantly between professional groups

Stakeholders were asked if the evaluation was asking the right questions:

- Most stakeholders (66) considered that the evaluation was asking the correct questions. Seven stakeholders considered the evaluation to be asking the wrong questions. Four gave no opinion

The remaining two questions asked stakeholders for their views regarding potential alternative and additional outcomes:

- Forty stakeholders responded, most suggested more than one alternative or additional outcome
- Many of the suggested alternative/additional outcomes emphasised the importance of various aspects of the existing proposed outcome measures
- Several additional outcomes were suggested and will be incorporated into the evaluation
- Two additional groups of stakeholders were identified: non-clinical practice staff and professionals complementary to dentistry

Conclusion

The overall picture to emerge from the consultation is that the evaluation must consider a wide-range of outcomes to meet the information needs of all DVT stakeholders.

BACKGROUND AND INTRODUCTION

Dental Vocational Training (DVT) is a national one-year postgraduate training programme which has steadily evolved since the establishment of the first voluntary DVT schemes in 1977 (CVT, 2002). The overall aim of DVT is,

> "*to enhance clinical and administrative competence and promote high standards through relevant postgraduate training to meet the needs of unsupervised general dental practice"*[1] (Dental Vocational Training Authority 2003)

Since October 1993 it has been mandatory for all newly qualified dentists wishing to obtain an NHS list number within the General Dental Service (GDS) to undertake DVT.[2] During their DVT year newly qualified dentists practice as salaried Vocational Dental Practitioners (VDPs) in approved vocational training practices with approved trainers. VDPs have regular tutorials with their trainers, maintain and complete their Professional Development Portfolio (known as the Training Record Book in Scotland and the Vocational Training Portfolio in Wales) and are required to attend 30 study days. Thus, newly qualified dentists undergo the transition from dental student to independent general dental practitioner in a supervised, supportive educational environment.

There is a widespread acceptance that DVT has been successful in achieving its aims. A study by Baldwin et al (1998) found that 80 percent of dental graduates believed DVT had been successful in preparing them for general dental practice. More recently Bartlett et al (2001) revealed that VDPs and their trainers thought that, in general, DVT had enhanced the confidence and skills of newly qualified dentists. Also recognised is the contribution of DVT towards raising and maintaining standards in the GDS. In their recent review of vocational training in dentistry the Committee on Vocational Training for England and Wales (CVT) reported that:

[1] In Scotland the wording of the overall aim of DVT differs but the ethos is the same. (NHS Education for Scotland 2003)

[2] The only alternative to DVT for dentists wishing to obtain an NHS list number is to demonstrate equivalence of DVT to the Dental Vocational Authority (DVTA) for England and Wales, the Northern Ireland DVTA and in Scotland the SDVTA. Dentists qualifying in the European Economic Area (excluding qualification in the UK) are exempt from the requirement to undertake DVT or show equivalence. EEA nationals must be fully registered with the GDC and must satisfactorily demonstrate their knowledge of English before becoming fully registered dentists. (Dental Vocational Training Authority 2000)

> *"All those involved in the enquiry agreed that VT had served to raise standards in GDS practices. VT was seen by everyone to provide a kite-mark which patients should be able to use when determining their choice of dentist" (CVT, 2002, pg. 11)*

and

> *"…VT was necessary for the safety of patients and for the high level of dental treatment offered to them. … VT was regarded as the first line of clinical governance in postgraduate dentistry" (CVT, 2002, pg. 11)*

Despite the considerable success of DVT concern has been raised regarding the lack of formal assessment to show that the VDP had 'satisfactorily' completed the DVT year. The CVT review, whilst recognising the value of DVT, recommended the research, development and introduction of a framework for assessment in DVT that is robust enough to withstand legal challenge (CVT, 2002. recommendation 4). Similarly, the Scottish Executive in a report examining poor performance amongst doctors and dentists in training suggested alteration to the dental vocational training regulations to include "*…the need to complete dental vocational training satisfactorily"* and the "*implementation of a robust system of assessment for the training year"* (Scottish Executive, 2001. pg. 30).

Politically and professionally the move towards the introduction of some form of mandatory assessment in DVT is gaining momentum. In the West Midlands the introduction of the Key Skills initiative was considered by the majority of participating advisers, trainers and VDPs to be a step towards assessment. Key Skills have been identified in six areas: medical emergencies, infection control, record keeping, radiography, legislation and staff and personal training. Supported by their trainers at the weekly tutorial meetings, and by their scheme advisers through the study day programme, VDPs participating in the Key Skills initiative prepare a portfolio of evidence demonstrating their understanding of the six Key Skills. In their evaluation of this initiative Firmstone et al (2003. pg. 83) demonstrated the "*effectiveness of the Key Skills programme in increasing levels of confidence and experience during VT*" and reported that Key Skills were "*appropriate to the development of safe, reflective practice*". Key Skills portfolios are now an integral aspect of DVT in other areas of the UK, including the Northern Deanery.

In Scotland a competency-based system of assessment for DVT, incorporating formative and summative assessment, has been developed by NHS Education for Scotland's Scottish Dental

Assessment Programme.[3] In the Scottish model competencies have been identified in four domains: clinical, communication, professionalism and managerial. Evidence regarding VDP competence is gathered using four methods of assessment; longitudinal evaluation of performance, patient assessment questionnaire, test of knowledge and management of medical emergencies, and at the end of the year VDPs must show satisfactory completion of DVT. (Prescott et al 2001, 2002, NHS Education for Scotland 2002). On August 1st 2003 Scotland became the first UK country to introduce formal assessment as a mandatory part of the DVT year.

The move towards mandatory assessment and satisfactory completion represents a major change for DVT, and, not surprisingly, has recently been the subject of considerable debate. With the developments in Scotland comes a unique opportunity to inform the debate by conducting a comprehensive, comparative outcomes evaluation of DVT in areas of the UK with and without a mandatory system of assessment. This opportunity has been taken and the outcomes evaluation is to be carried out by the Scottish Consortium for Development and Education in Dental Primary Care with the help and participation of the DVT teams in the North Western Deanery, the Northern Deanery, Northern Ireland, Scotland and Wales.[4]

At their broadest level the outcomes to be considered in the evaluation can be defined as the consequences or effects of DVT for dental professionals, patients and the delivery of NHS dental care. One of the key challenges for the evaluation is to ensure that the information needs of all DVT stakeholders are met. Thus the evaluation of outcomes must not only consider the extent to which DVT, with and without assessment, has achieved its aims and objectives, but must also take into account the concerns and issues of all those with a stake in the impact of DVT. Concerns being matters which are important to at least one DVT stakeholder and issues being areas of concern that present differing points of view.

The intention of the 'Stakeholder Consultation' described in this report was to facilitate the identification of DVT stakeholder concerns and issues. Once identified these will be used to ascertain the information needs of the various stakeholder groups. This will help ensure the

[3] Formative assessment involves feedback on an individual's strengths and weaknesses to help identify training needs and improve future performance whereas summative assessment involves judgements regarding an individual's performance to verify that course learning requirements have been achieved.

[4] The North Western Deanery DVT team joined the evaluation after the stakeholder consultation had been carried out, and are not represented in this consultation.

evaluation results are relevant and useful for stakeholders wishing to assess the quality and effectiveness of DVT.

THE STAKEHOLDER CONSULTATION

AIMS

The Stakeholder Consultation had two key aims. The first was to ensure the proposed objectives and outcome measures for the '*UK National Cohort Study Evaluating Dental Vocational Training'* met the information needs of all stakeholder groups. The second was to give all stakeholders the opportunity to comment on the importance of the identified outcomes, and to suggest additional outcome measures for evaluation.

PARTICIPANTS

One hundred and twenty stakeholders were invited to take part and were chosen to reflect the diversity of professional backgrounds involved in DVT. Details of the professional groupings and numbers of the stakeholder sample are presented in *table 1*.

METHODS

The stakeholder consultation was carried out in three distinct stages. During the initial stage the overall aims and objectives of the evaluation were discussed with key DVT representatives in each participating country.

In stage two a 'mini' stakeholder consultation was carried out in which an outline of the evaluation and the draft versions of the 'Stakeholder Consultation Document' and 'Stakeholder Questionnaire' were sent to the Postgraduate Dental Directors, Regional Advisors or regional Education Tutor in each participating deanery for comment. Several suggestions for addition outcomes were received and these were incorporated into the 'Stakeholder Consultation Document' and 'Stakeholder Questionnaire', as were suggestions for changes to the format and wording of the questionnaire.

In the third stage the revised 'Stakeholder Consultation Document' and 'Stakeholder Questionnaire' were sent or distributed at evaluation consultation meetings to all identified stakeholders. Evaluation consultation meetings were held with two schemes of Scotland's VDPs and with members of the Chief Scientist Office in Scotland's (CSO) Consumer Involvement Group. The 'Stakeholder Consultation Document' was designed to give

participating stakeholders details of the background to the evaluation, the evaluation objectives and the proposed outcome measures. The 'Stakeholder Questionnaire' was designed to elicit stakeholders' views regarding the importance of the proposed outcome measures and to give stakeholders the opportunity to comment on and suggest alternative and/or additional outcome measures.

RESULTS

Of the 120 stakeholders approached 77 (64%) responded. Response rates, broken down by professional groupings, are presented in *table 1*.

Table 1 Response Rates by Professional Groups

Professional Grouping	Sent N	Returned N	Response Rate %
Chief Dental Officer	4	4	100
Postgraduate Dental Dean/Director	4	3	75
Postgraduate Regional Dental Director/Adviser[1]	9	8	89
Adviser	21	14	67
Vocational Trainer	31	23	74
Vocational Dental Practitioner	46	21	46
Consumer (through the Chief Scientist Office in Scotland's Consumer Involvement Group)	5	3	60
Total	120	76[2]	63[2]

1 – This grouping includes professionals who are responsible for overseeing more than one Dental Vocational Training scheme including: Northern England – Regional Vocational Training Adviser; Northern Ireland – Advisers on General Dental Practice, a representative from the Committee on Vocational Training; Scotland – Directors of Postgraduate Dental Education; Wales – Regional Adviser in General Dental Practice, Education Tutor

2 – One anonymous questionnaire was returned and is not included in the returned professional groupings

Importance and Ranking of Outcomes

Question 1 asked stakeholders to indicate their views regarding the importance of each proposed outcome on a Likert scale of 1 (not important) to 5 (very important). For each outcome the stakeholders' view of its importance was indicated by the median. Outcomes with medians of 4 or 5 were defined as 'very' important, those with a median of 3 were defined as 'moderately' important, and outcomes with a median of 1 or 2 were defined as 'not' important. The level of agreement amongst stakeholder views was indicated by the average absolute deviation from the median (AAD), and the degree of consensus was categorised according to the thirds of the AAD where an AAD > 0.644 indicated a low degree of consensus, an AAD 0.568 – 0.644 indicated a moderate degree of consensus, and an AAD <

0.568 indicated a high degree of consensus. (*see appendix*) Outcomes were ranked, firstly, according to the descending order of the median score, and then according to the ascending order of the AAD.

Of the 23 proposed outcomes, four received a median score of 5, one a median score of 4.5, 17 a median score of 4 and one a median score of 3. Where several outcomes received the same median score, ranking was carried out according to the level of agreement amongst stakeholder views. (*table 2)*

Table 2 **Ranked Importance of Outcome**

Rank	Outcome	Median	AAD	D of C	Min	Max
1	VDP: Skills	5	0.280	high	3	5
2	Delivery: Quality of Care	5	0.288	high	3	5
3	Patient: Satisfaction with Dental Care Received	5	0.382	high	2	5
4	Trainer: Attitudes to Trainer Role	5	0.400	high	2	5
5	Adviser: Attitudes to Adviser Role	4.5	0.581	moderate	2	5
6	VDP: Satisfaction with Training	4	0.419	high	3	5
7	Trainer: Job Satisfaction	4	0.521	high	2	5
8	Delivery: Prescribing Patterns	4	0.533	high	1	5
9	Adviser: Job Satisfaction	4	0.568	moderate	2	5
10	Trainer: Confidence	4	0.581	moderate	2	5
11	VDP: Job Satisfaction	4	0.608	moderate	2	5
12	Delivery: VDP Recruitment	4	0.611	moderate	2	5
13	VDP: Postgraduate Training	4	0.613	moderate	1	5
14	VDP: Confidence	4	0.627	moderate	3	5
15	VDP: Health	4	0.640	moderate	2	5
16	Delivery: Costs and Benefits	4	0.644	moderate	1	5
17	Delivery: Trainer Retention	4	0.648	low	1	5
18	VDP: CPD Uptake	4	0.653	low	1	5
18	Trainer: Financial Implications	4	0.653	low	2	5
20	VDP: Future Career Choice	4	0.693	low	2	5
21	Patient: Perception of Assessment	4	0.747	low	1	5
22	Trainer: Health	4	0.770	low	1	5
23	Delivery: Patient Numbers	3	0.733	low	1	5

AAD – Average Absolute Deviation from the Median :
D of C – Degree of Consensus
Min – Minimum Importance Score : Max – Maximum Importance Score

Professional Group Differences

Given the diversity of the participating professional groups it was anticipated that the perceived importance of each outcome might vary by group. To investigate this possibility the

responses from VDPs, those from trainers, and those from the professional groups who have responsibility for at least one Dental Vocational Training scheme[5] were compared. (*see appendix*)

The results indicated no significant difference between professional groups for 18 outcomes, and accordingly no further analysis of possible group differences was carried out. For the remaining five outcomes – VDP Skills, Adviser Job Satisfaction, VDP CPD Uptake, the Financial Implications for Trainers and Patient Perception of Assessment – there was a significant difference between professional groups. To determine which groups differed significantly from the others, the groups were paired as follows:

- 'Managers' and Trainers
- 'Managers' and VDPs
- Trainers and VDPs

and multiple paired comparisons were carried out for each outcome. (*see appendix*) The results are summarised below.

<u>VDP: Skills</u>

When considering VDP skills the results indicate that trainers tended to view the importance of this outcome significantly more highly than either 'managers' or VDPs. There was no significant difference between 'managers' and VDPs.

<u>Adviser: Job Satisfaction</u>

There was no significant difference between either 'managers' and trainers or between trainers and VDPs when considering the importance of this outcome. However, the difference between 'managers' and VDPs was significant with 'managers' tending to view this outcome more highly than VDPs.

<u>Trainer: Financial Implications</u>

For this outcome the results indicate that trainers tend to score the importance of this outcome significantly more highly than VDPs. However, there was no significant difference between 'managers' and trainers or between 'managers' and VDPs.

[5] This group includes Advisers, Postgraduate Regional Dental Directors/Advisers (as described in table 1), Postgraduate Dental Deans/Directors and Chief Dental Officers. Collectively these stakeholders are grouped under the heading 'Managers' for the purpose of between group differences

VDP: CPD Uptake and Patient: Perception of Assessment

When considering these two outcomes the initial comparison of the responses from VDPs, trainers and 'managers' suggests there is a significant difference between the views of these three professional groups. However, the subsequent paired comparisons were unable to determine which groups differed.

Suggested Alternative/Additional Outcomes

Question 2 asked stakeholders if the correct questions were being asked in the evaluation. Sixty-six stakeholders (86%) answered 'yes', seven (9%) answered 'no' and four (5%) did not respond. The remaining two questions were intended to elicit stakeholders' views regarding potential alternative and additional outcomes. The first asked those stakeholders who considered the evaluation not to be asking the correct questions to give their views regarding the questions that should be asked. Twenty-two stakeholders responded to this question, six who had answered 'no' to the previous question and 16 who had answered 'yes'. The final question asked stakeholders '*is there anything else which you think would be useful for us to find out in our study?*' Thirty stakeholders responded and suggested additional outcome measures. In total 40 stakeholders (8 VDPs, 13 trainers, 19 'managers') responded to at least one of these two questions, with the majority suggesting more than one additional outcome. Because there was considerable thematic overlap between the responses given by those who answered 'yes' to *question 2* and the responses of those who answered 'no' it was not practicable to separate the two.

Many of the suggested alternative/additional outcomes emphasised the importance of various aspects of the existing proposed outcome measures and, where possible, stakeholder suggestions were categorised accordingly. The views of all stakeholders, regardless of professional grouping, are of equal importance and consequently the views reported whilst typifying the suggestions made do not differentiate between VDPs, trainers and 'managers'.

VDP Outcomes

Several stakeholders suggested specific outcomes to be considered under the outcome measure VDP Skills:

- *Main thrust of the evaluation should be to assess the VDP's thinking process in terms of treatment planning and delivery of treatment*

- *More questions on the competency of the VDP e.g. treatment planning ability, appropriate referrals, management ability and problem solving ability*
- *Consider the involvement of the VDP in administrative aspects of practice*
- *Consider knowledge of GDP managerial domain*

Suggestions regards specific aspects of VDP satisfaction with their training were also made:

- *It would be interesting to know how satisfied VDPs are with current training programs. Is the practice tutorial useful? What is the value of the day release course? Is there an opportunity to individually tailor courses to the individual?*
- *Satisfaction with 'assessment' should be a separate outcome from satisfaction with training*
- *May be beneficial to review opinions of VDPs on the vastly increased workload involved in the new assessment system. Is this aimed at becoming the 6th year of dental school?*

and more generally:

- *Do VDPs view training as a positive fun experience?*

Trainer Outcomes

Suggested trainer outcomes focused on the financial and time implications for trainers:

- *Ask trainers if the package is financially viable. Can even more quality be delivered for a small increase in salary?*
- *Ask trainers and advisers how much time they are prepared to devote even if financed?*
- *Ask about changes to trainer workload and the time commitment of trainers to assessment*

Adviser Outcomes

Several stakeholders suggested greater emphasis on adviser outcomes:

- *Possibly more information about advisers e.g. financial implications, health and career development*
- *Consider financial implications for advisers*

- *Consider the impact of LEP* (Longitudinal Evaluation of Performance) *on advisers. What would help/hinder?*

Patient Outcomes

There was a high level of agreement amongst stakeholders that patient satisfaction with the dental care received should be considered a 'very' important outcome (Outcome Rank 3), as emphasised by the following suggestions for specific areas of patient satisfaction that should be evaluated:

- *patient satisfaction with* (the VDP's) *caring attitude … patient satisfaction with the efficiency of treatment provided in terms of time and visits … patient satisfaction that appropriate treatment was carried out … patient satisfaction with quality …* (the evaluation) *should be more patient centred*

Although patient perception of the assessment process was considered less important (Outcome Rank 21) than patient satisfaction, comments from several stakeholders suggested that:

- *There is a danger that the patient misinterprets the assessment of the VDP and may consider the VDP to be unqualified*

This viewpoint was reinforced by consumers at the evaluation consumer group meeting who indicated that, if they were to be treated by a dentist who was being assessed, they would likely view the dentist as not 'fully' qualified.

Delivery of NHS Dental Care

Suggested outcomes in this category reinforced the importance of evaluating the effect of introducing mandatory assessment upon VDP recruitment:

- *One of the most important outcomes is VDP recruitment as mandatory assessment has the potential to have an adverse effect on this. Interesting to find out from final year students if this would affect their choice of location for their VT year*
- *Ask VDPs if satisfactory completion would deter? Would this type of assessment deter?*
- *VDP recruitment is extremely important*

One of the proposed evaluation outcomes was trainer retention (Outcome Rank 17). In addition it was suggested the evaluation also consider the potential impact of assessment upon trainer recruitment:

- *Is there a way of sampling impact on trainer recruitment? We are finding reduced numbers of trainer applicants in the current climate of uncertainty in the NHS*

and more generally:

- *It would be useful to determine why trainers offer themselves for training. What is the motivation? Also why other GDPs don't?*

The evaluation is intended to be a comprehensive comparative evaluation of DVT in areas of the UK with and without a formal system of assessment. A wide range of outcome measures were identified to achieve this goal, but it was not possible to categorise the following additional outcomes as aspects of the existing proposed outcome measures. Thus, if the evaluation is to meet the information needs of all stakeholders, additional outcome measures must be considered.

Practice Staff Outcomes

Several stakeholders suggested the evaluation should consider the impact of DVT and assessment on other members of the dental team:

- *May be helpful/useful to ascertain the reaction of the other staff in the practice (nurses, receptionists etc) to the arrival of the trainee*
- *Consider attitudes of practice staff towards assessment / impact of assessment upon practice staff*

Deanery Outcomes

It was also noted that the proposed outcomes did not explicitly consider the views of the Dental Deaneries and it was suggested the evaluation also consider:

- *The views of the professionals managing the system from the Deanery point of view*

VDP/Trainer Relationship

A number of stakeholders expressed concern that assessment in DVT may possibly be detrimental to the relationship between the VDP and trainer:

- *The greatest risk of the assessment system is that the relationship between the trainee and trainer could be destroyed if assessment repeatedly revealed that the trainee was under-performing in the eyes of the trainer*
- *Interesting to see if the assessment process has had a positive or negative effect on the trainee/trainer relationship*

Finally, the responses reflected the debate surrounding assessment in DVT with some stakeholders showing little support for assessment:

- *Too much bias on assessment … profession needs to show firmness of purpose to control level of regulated assessment…*

whilst others believe:

- *…assessment is a good thing if backed by proper training for trainers in assessment and teaching methods…*

DISCUSSION

The stakeholder consultation explored the concerns, issues and information needs of DVT stakeholders. When considering the relative importance of the various proposed outcome measures three of the five highest ranking outcomes directly reflect the overall aim of DVT; VDP skills, quality of care and patient satisfaction with care. Interestingly, stakeholders who commented on VDP skills suggested the emphasis in this area should be administrative and treatment planning skills, not hands-on technical skills. The remaining two highest ranked outcomes, trainer and adviser attitudes to their respective roles, whilst not directly reflecting the overall aim of DVT are crucial to its success.

Although, the proposed outcome measures were ranked, care must be taken when interpreting their relative importance. Four outcomes received a median importance score of 5, one a median score of 4.5 and 17 a median importance score of 4 therefore, all can be defined as ‘very’ important. Ranking was determined mostly according to the level of agreement

amongst stakeholder views, and not by the generally perceived importance of the outcome. One outcome, patient numbers, was considered 'moderately' important receiving a median score of 3 and can clearly be considered less important than the others. This may be because patient numbers are unlikely to correlate with or predict treatment quality. A reason for including this outcome was as an objective measure of productivity. However, it could be argued that patient numbers are also not necessarily a measure of productivity, and consideration will be given to an alternative measure.

There was less difference than expected between professional groupings regarding the perceived importance of the proposed outcomes. Although all groups perceived VDP skills as very important (median = 5), trainers tended to view the importance of this outcome more highly than either 'managers' or VDPs. This may be because trainers perceive that VDP skills directly reflect the quality of their own training skills, or it may be because of concern for their patients or the reputation of their practice. At this point we can only speculate and the reasons for, and implications of, this difference will be considered during the evaluation. Likewise, we can only speculate on the reasons for the differences between professional groupings when considering adviser job satisfaction, the financial implications for trainers, VDP CPD uptake and patient perception of assessment and, again, these will be considered during the evaluation.

Many of the suggested additional outcomes emphasised the importance of various aspects of the proposed outcome measures, and will be used to inform the content of the evaluation questionnaire, focus group and interview schedules. Several additional measures, clearly demonstrating the value of the consultation in identifying stakeholder concerns and issues, were identified, and will be incorporated into the evaluation. Also identified were two important additional stakeholder groups, professionals complementary to dentistry (PCDs) and non-clinical practice staff. Because the evaluation intends to address and respond to the concerns and issues of all stakeholders, steps will be taken to identify PCD and practice staff information needs during the evaluation.

It was found that questionnaire consultation was an unsatisfactory method of eliciting the views of consumers. This may be because the consumers consulted had very little knowledge of the structure of NHS dentistry and no prior knowledge whatsoever of DVT. However, consumers of NHS dental care are extremely important stakeholders and their views must be

considered. In particular, consumer input into the formulation of the standards and criteria for the patient satisfaction evaluation instruments will be invaluable. A further consultation meeting has been arranged with the full membership of the CSO consumer involvement group and steps are underway to identify and consult with similar groups in the other participating areas.

The overall picture given by DVT stakeholders is that their concerns and issues cover a wide-range of outcomes. Consequently, if the evaluation is to meet the information needs of all it must consider not only customary outcomes such as, VDP confidence and satisfaction, but also less commonly measured outcomes for example, adviser, trainer and patient satisfaction. To accomplish this the evaluation will use an across-method triangulation research strategy, employing both quantitative and qualitative methodological approaches (Thurmond, 2001).[6] Methodological triangulation will help enhance our understanding of the value of DVT, with and without assessment, by enabling a stakeholder orientated, flexible, responsive evaluation, the results of which will be meaningful to all those with a stake in DVT.

[6] Quantitative data will be mostly collected by questionnaire. Qualitative data will be gathered using questionnaire, focus group and semi-structured interview methods

STATISTICAL APPENDIX

Importance of Outcomes

Data presented on page six of the report illustrates that median scores were used to describe stakeholder responses to the importance of each outcome. The responses were measured on a Likert scale of 1 (not important) to 5 (very important). Likert scales give an ordinal response measure, thus we cannot assume that an increase in importance score of 2 to 3 is the same as an increase in importance score of 3 to 4. For ordinal data the most appropriate measure of central tendency is the median importance score.

Level of Agreement between Stakeholder Views

The median importance score gives a measure of central tendency, but gives no indication of the level of agreement between participants' views regarding the importance of the outcome. The average absolute deviation from the median (AAD) is a measure of the variation in outcome importance scores, and was calculated to assess the level of agreement between participants' views.

In order to categorise the degree of consensus for each outcome the AADs were ranked and the 33.3 and 66.7 percentile scores calculated. A high degree of consensus was indicated by an AAD value less than the 33.3 percentile score (0.568), a low degree of consensus by an AAD value greater than the 66.7 percentile score (0.644) and a moderate degree of consensus by an AAD value between the 33.3 and 66.7 percentile score (0.568 – 0.644).

Professional Group Differences

The Kruskal-Wallis test was used to investigate the possibility that the perceived importance of each outcome might differ between VDPs, trainers and 'managers'. Kruskal-Wallis is a nonparametric test used to compare scores from three or more independent groups. The test statistic used in reporting the Kruskal-Wallis test is the chi-square. For each outcome the test statistic and significance of the Kruskal-Wallis test are presented in *table 1a*.

Table 1a **Professional Group Differences**

Rank	Outcome	Median	Comparison of Perceived Importance of Outcome Scores Between 'Managers' / Trainers / VDPs[a,b] (n=29) / (n=23) / (n=21) χ^2 (df = 2)	P
1	**VDP: Skills**	**5**	**8.236***	**0.016***
2	Delivery: Quality of Care	5	0.711	0.701
3	Patient: Satisfaction with Dental Care Received	5	0.32	0.984
4	Trainer: Attitudes to Trainer Role	5	0.909	0.635
5	Adviser: Attitudes to Adviser Role	4.5	4.706	0.095
6	VDP: Satisfaction with Training	4	1.717	0.424
7	Trainer: Job Satisfaction	4	3.929	0.14
8	Delivery: Prescribing Patterns	4	4.410	0.11
9	**Adviser: Job Satisfaction**	**4**	**6.652***	**0.036***
10	Trainer: Confidence	4	2.159	0.34
11	VDP: Job Satisfaction	4	2.861	0.239
12	Delivery: VDP Recruitment	4	1.989	0.37
13	VDP: Postgraduate Training	4	4.914	0.86
14	VDP: Confidence	4	0.51	0.775
15	VDP: Health	4	0.637	0.727
16	Delivery: Costs and Benefits	4	1.905	0.386
17	Delivery: Trainer Retention	4	1.555	0.46
18	**VDP: CPD Uptake**	**4**	**6.159***	**0.046***
18	**Trainer: Financial Implications**	**4**	**8.92***	**0.012***
20	VDP: Future Career Choice	4	4.544	0.103
21	**Patient: Perception of Assessment**	**4**	**6.919***	**0.031***
22	Trainer: Health	4	2.622	0.27
23	Delivery: Patient Numbers	3	4.514	0.105

a – Kruskal-Wallis Test
b – consumers were excluded because of small group numbers, anonymous stakeholder also excluded
*χ^2 - Chi-Square Test Statistic :df – Degrees of Freedom : P – Probability : * - Significant P < 0.05*

When there was a significant difference between professional groups multiple paired comparisons (report page 7), using the Mann-Whitney U test, were carried out to determine which groups differed significantly from the others. Mann-Whitney U is a nonparametric test used to compare scores from two independent groups.

Although it was anticipated that the perceived importance of outcome scores might vary by professional group, the outcomes where differences would be found, and the group comparisons of interest were not determined *a priori*, but were determined by the results of the Kruskal-Wallis tests. Therefore, unplanned multiple comparisons were carried out increasing the likelihood of erroneously finding a statistically significant difference between paired groups. To account for this possibility the required value of the probability for a significant result, at the 5 percent level of significance, was corrected according to Sidak's multiplicative inequality. Uncorrected, $P < 0.05$ signifies a statistically significant difference at the 5 percent level of significance. The Sidak corrected P value for a significant result at the 5 percent level of significance is equivalent to $P < 0.0169$ for a single comparison. [7] Because statistical significance was determined using Sidak's multiplicative inequality, Mann-Whitney U test statistics and P values are not reported with the results presented in *table 2a*.

Table 2a Paired Comparison of Professional Group Differences

	Comparison[b] of Importance of Outcome Scores Between					
	Managers/Trainers		**Managers/VDPs**		**Trainers/VDPs**	
Outcome	**Score Difference***		**Score Difference***		**Score Difference***	
VDP: Skills	S	T > M	NS	none	S	T > V
Adviser: Job Satisfaction	NS	none	S	M > V	NS	none
VDP: CPD Uptake	NS	none	NS	none	NS	none
Trainer: Financial Implications	NS	none	NS	none	S	T .> V
Patient: Perception of Assessment	NS	none	NS	none	NS	none

*b - Mann-Whitney U Test : * - Sidak Correction : NS – Not Significant (P ≥ 0.0169) : S – Significant (P < 0.0169)*
M – Manager Importance Score : T – Trainer Importance Score : V – VDP Importance Score

As discussed in the report (page 8) the Mann-Whitney U tests could not determine which groups differed significantly from the others for two outcomes; VDP CPD Uptake and Patient Perception of Assessment. However, it is worth noting that there is no universally agreed-upon correction method for carrying out multiple unplanned comparisons, and had a less conservative method been used the results may have differed.

[7] With the Sidak correction no group differences were significant at the 1 percent level of significance and consequently the corrected 1 percent P value is not reported.

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