THE DENTAL NATIONAL DECONTAMINATION SURVEY 2010

Standards of Decontamination in Primary Care Dentistry

Introduction

1. The first Dental National Decontamination Survey of the quality of local decontamination of instruments in primary care dental practices in England has been conducted successfully. The aim was to set a baseline for assessing compliance with the guidance issued by the Department of Health in November 2009 in Health Technical Memorandum (HTM) 01-05 *Decontamination in primary care dental practices*.

Executive Summary

2. The survey was conducted on a voluntary basis, by Primary Care Trusts (PCTs) and dental practices, with support from the Department of Health (DH) and the Health Protection Agency (HPA). It involved 75 Primary Care Trusts (PCTs) providing infection control specialists to conduct a questionnaire based exercise on decontamination systems in 487 local dental practice covering 508 sites. The survey outcomes were analysed using a model which is based directly on the HTM 01-05 guidance package. The survey shows that 71% of the dental practices visited were achieving the essential quality requirements (EQR) described in HTM 01-05. This the level at which, there is effective risk reduction from re-use of dental instruments. Nearly 20% more practices could reach this standard, with small improvements to their technical performance, protocols and by better maintenance of decontamination equipment. The survey showed the cleaning of instruments to be one area where performance was uneven. Effective cleaning of instruments is critical to the achievement of a sterilized instrument at the end of the decontamination process. About 12%of practices did not achieve a satisfactory standard of decontamination On the other hand, some 20 % of the total participants have achieved the higher best practice standard in HTM 01-05, for which the

Department has not yet set a timeframe for implementation. The survey and associated analytical techniques have been subject to independent peer review conducted by a team at Manchester University.

Background

3. The Department published Health Technical Memorandum 01-05: *Decontamination in primary care dental practices* (HTM 01-05) in November 2009. The guidance was *intended to progressively raise the quality of decontamination work in primary care dental services by covering the decontamination of reusable instruments within dental facilities.* To enable a baseline to be established for the quality of decontamination work in primary care dental practices, the DNDS was undertaken early in 2010. This aimed to assess compliance with the guidance at the time it was introduced' and to enable longitudinal assessment of the improving quality the guidance is promoting.

4. The principle aim of the survey is to determine the baseline level of compliance with the HTM 01-05 as observed shortly after the publication of the printed edition (November 2009). This is the first time such a survey has been undertaken. Previous guidance on decontamination was provided by the British Dental Association (BDA) in their A12 document which was produced in collaboration with the Department and published in 2003. The EQR in HTM 01-05 are very similar to the previous A12 requirements.

5. Participation of PCTs in the survey was voluntary. It is hoped that this baseline survey will be followed by further local surveys in two years time to assess the impact of HTM 01-05 and other initiatives such as the associated Infection Prevention Society local self-audit. The policy here is to encourage improvement so that, where necessary, dental practices can raise their standards by April 2011 when the Care Quality Commission will become responsible for the regulation of dental practices.

6. The value of the survey was enhanced by the use of hypotheses and questions many of which were discussed with relevant professional bodies including the BDA and Departmental advisory committees

such as the Advisory Committee on the Decontamination of Surgical Instruments (ACDST).

Methods

7. The survey was conducted through observations made within the practices by local PCT infection control experts and statements by dental practices on their decontamination procedures, the training of their staff and record keeping.

8. A multi-disciplinary team drawn from the Department and the HPA was aided by external consultants expert in designing, delivering and analysing the results of surveys. Use was made of Prince II project management principles and a governing board was appointed.

9. A computer file based questionnaire was used for the fieldwork. Answers to the questions were entered on a computer with the files transferred via a secure commercial website to a database structure at the HPA. The database was designed to collect, store and facilitate the analysis of the data. In order that the analysis fully and accurately reflected the content of the HTM the questionnaire responses were mapped into a model which broke down the guidance down to its individual detailed recommendations. As the guidance permits considerable choice of decontamination techniques and related equipment these options were simplified to “routes” each being a viable solution to achieve EQR and Best Practice.

Analytical methods.

10. As a result, the scoring system is intrinsically linked to the guidance by the analytical model and the associated mathematical techniques. These techniques are designed to look at the overall picture of the quality of local decontamination, rather than focus on an artificially narrow range of indicators.

11. The recommendations in the guidance were placed into some 34 categories, such as general hygiene and steam sterilisation. The questions in the survey were then linked to the categories. Within each category the results were integrated and normalised. The EQR score was set for almost all the categories of 70%, but a score of 75% was

set for the categories related to instrument cleaning and sterilization because of their particular importance.

12. Rather than using an average of the category scores, the categories have been ranked to reflect the progress a dental practice would make from a hypothetical non-compliant state to the attainment of EQR and then Best Practice. When reported progress drops below the preset value obtained from the ranking, the practice is deemed to have failed in this category. Scores in other categories are then analysed to give additional information on progress towards compliance.

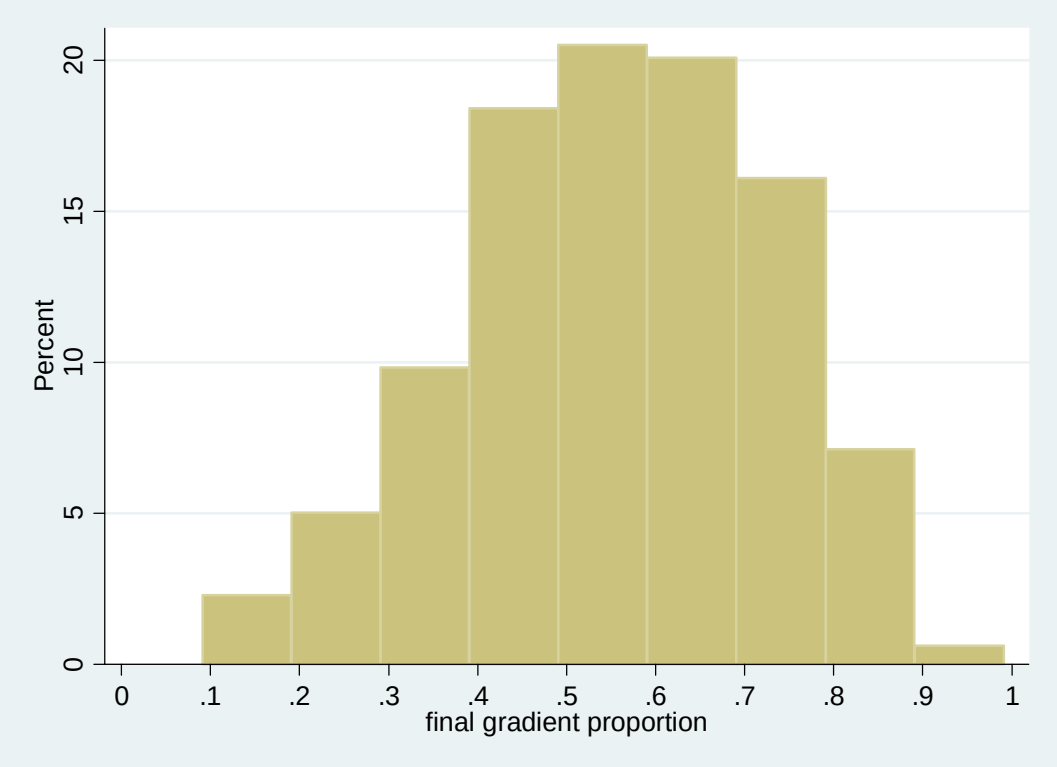
13. The rankings were determined from control data by a blinded expert panel. The panel consisted of Departmental and HPA officials supported by representatives of the BDA. Control data was constructed ranging from a low level of performance to best practice. This data was applied to the model and rankings thus effectively giving a blinded calibration, which could then be used with the survey data. The HTM allows a measure of choice for practices to achieve the necessary quality standards. These are dealt with within the model by the use of a routes concept. When the survey data are applied to the model, the highest scores are obtained for the route(s) actually used by the dental practices.

Proving, validation and security.

14. A number of techniques were used to protect against unintended error and fraudulent manipulation. These were reviewed by the HPA and were also considered by the external peer review team. No unacceptable or systematic error was observed.

15. Selection of dental practices by PCTs was carried out randomly, to ensure the sample was representative of practices in England. The method used was for the PCTs to select every fifth dental practice from the alphabetical lists they held. Data security was maintained in accord with HPA and DH policies. An approved web site was used for data collection and the Access database was encrypted when removed from the secure server.

16. The normal distribution curve shown in the graph below demonstrates that random sampling was applied by PCTs



17. The model was shown to be successful in evaluating the processes dental practices used for the decontamination of instruments.

18. Compliance with HTM 01-05 at the EQR level was achieved by 71% of those surveyed. Some 20% of the practices surveyed were already at best practice level. This requires decontamination to be carried out in a dedicated room, separate from where clinical care is provided through the use of a validated automated washer disinfector.

19. The survey also showed that, for 20% of the practices which were not compliant with EQR, only relatively modest improvements were needed to achieve the necessary improvements. These could be achieved in a relatively short period of time which suggests that 85-90% of dental practices have or could achieve EQR in the short-term.

20. Decontamination in about 12% of practices was found to be unsatisfactory. The data indicates a wide range of often unrelated defects in practice, equipment and approach. These practices have a significant amount of work to do to achieve EQR by April 2011 at the latest when dental practices will come within the remit of the Care

Quality Commission. Further analysis on the deficiencies in this area and the support these practices can be given will be undertaken shortly.

Statistical reliability

21. It was not possible to achieve a sufficiently large sample (100 PCTs and 830 practices) for the results of the survey to be fully representative, i.e. to allow a full analysis of differences between different types of practice by location. However, the final outcomes of the DNDS with 75 PCTs conducting work with 487 dental practices at 508 results gives the estimate of EQR compliance a statistical power of 87%. Accordingly, in statistical terms the results given above may be seen as reaching acceptable standards of certainty.

Comments

22. The relatively large proportion of local dental practices achieving EQR is encouraging. It suggests that, for the majority of practices, the work involved has not inhibited achievement of an acceptable standard of decontamination. The cleaning of instruments is an area which requires improvement. The HTM recommends the use of automated washer-disinfectors, which have been shown to improve the cleaning process.

Audit

23. Implementation of the HTM is supported by a Local Self Audit programme constructed in collaboration with the Infection Prevention Society. This allows practices to assess periodically their level of compliance with the EQR and best practice quality standards within the guidance. A new version of this audit package will shortly be provided to practices on a CD-ROM designed to run on a lap or desktop computer. The programme will support the audit process and provide a score to the practice as an indication of progress. This score is directly calibrated to the survey questionnaire and to the EQR to enable practices to compare their standards to those achieved by practices in the sample survey.

Graphs

24. Graphs providing further analysis of the data collected in the survey are included in the Appendix

Appendix

Dental National Decontamination Survey (DNDS). Analysis by category with summary data frequency distribution and validation report

The following graphs represent the data relating to each of the categories that were assessed within the survey. The quality of the data is not uniform for all the categories, however, there is a minimum 70% statistical power for each of the categories listed.

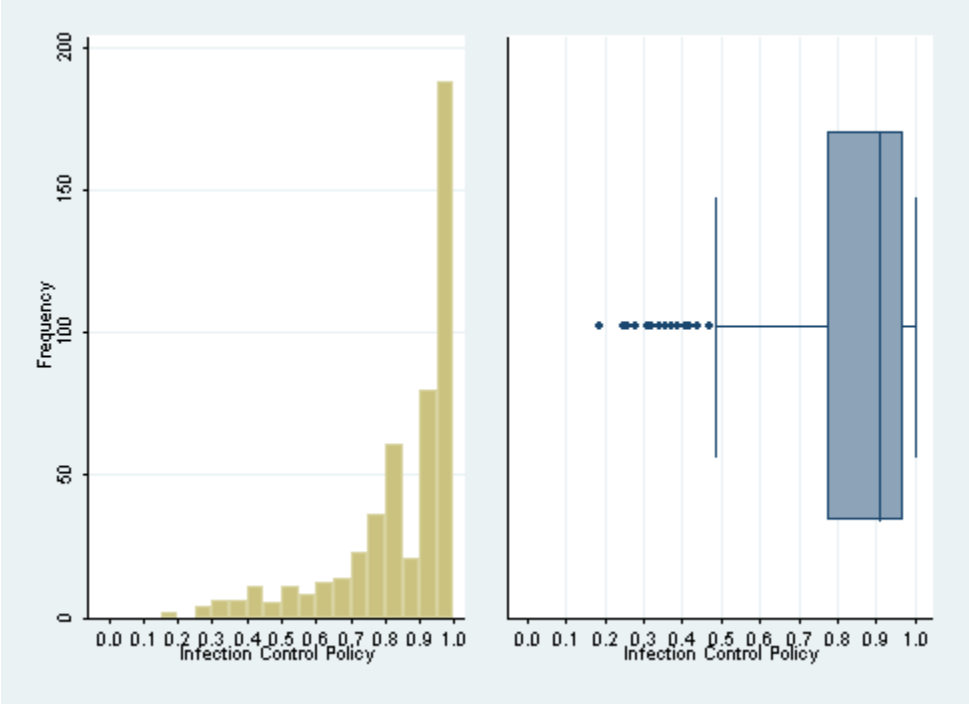


Figure 1: Infection Control Policy

Infection control policy
The survey shows good compliance within this category. Most practices achieving a satisfactory score, with 200 out of the 500 practices achieving a high score.

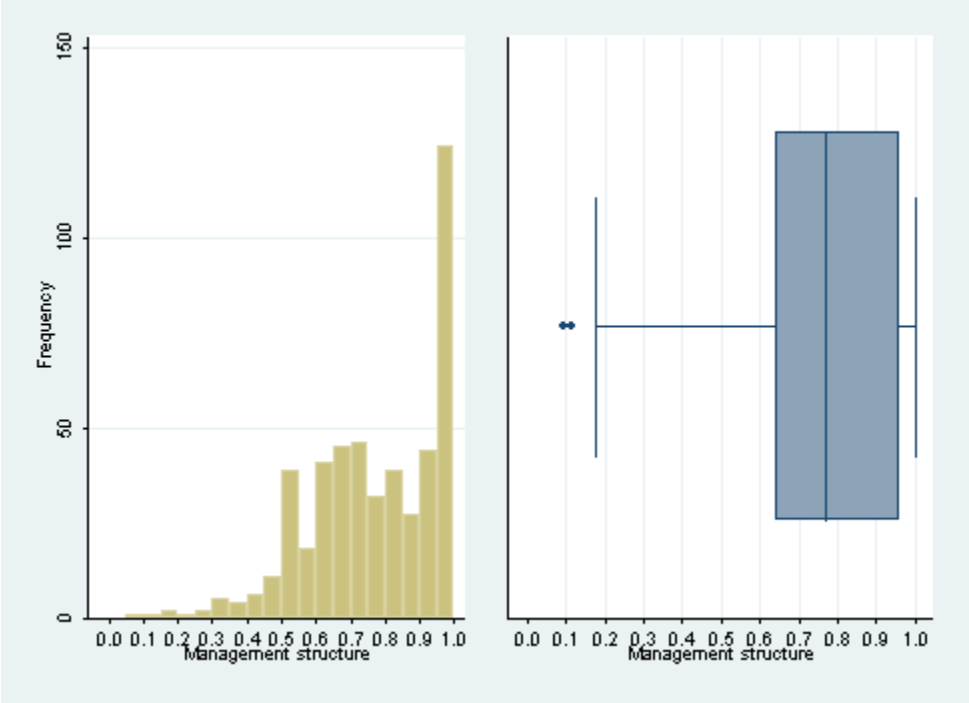


Figure 2: Management structure

Similarly, the survey shows good compliance with this category. Most practices achieving a satisfactory score, 25% achieving an excellent score.

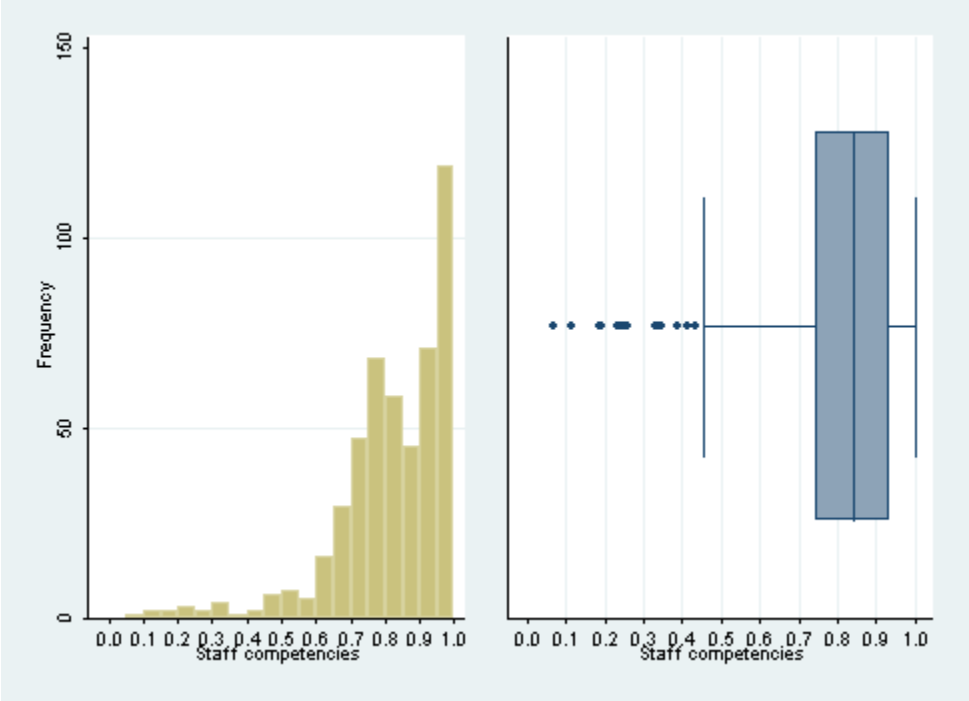


Figure 3: Staff competencies

The survey data shows the majority of practices surveyed achieved a good score, 25% achieved an excellent score.

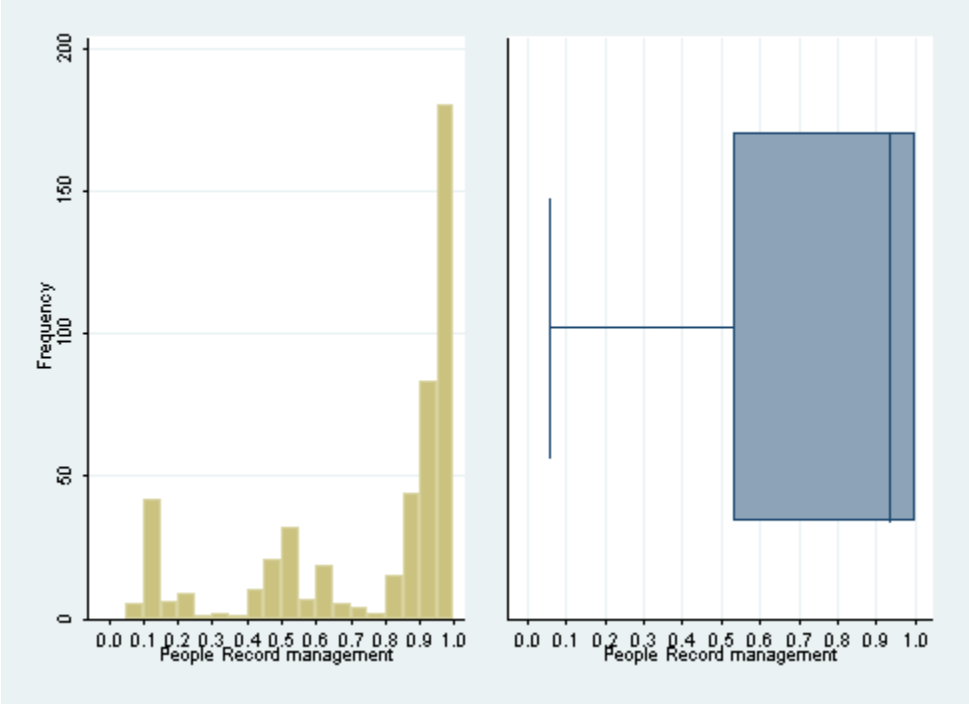


Figure 4: People Record management

The data shows greater variation for this category, more than 50% of practices surveyed are performing well in this category. However, 15% of practices had no record management system.

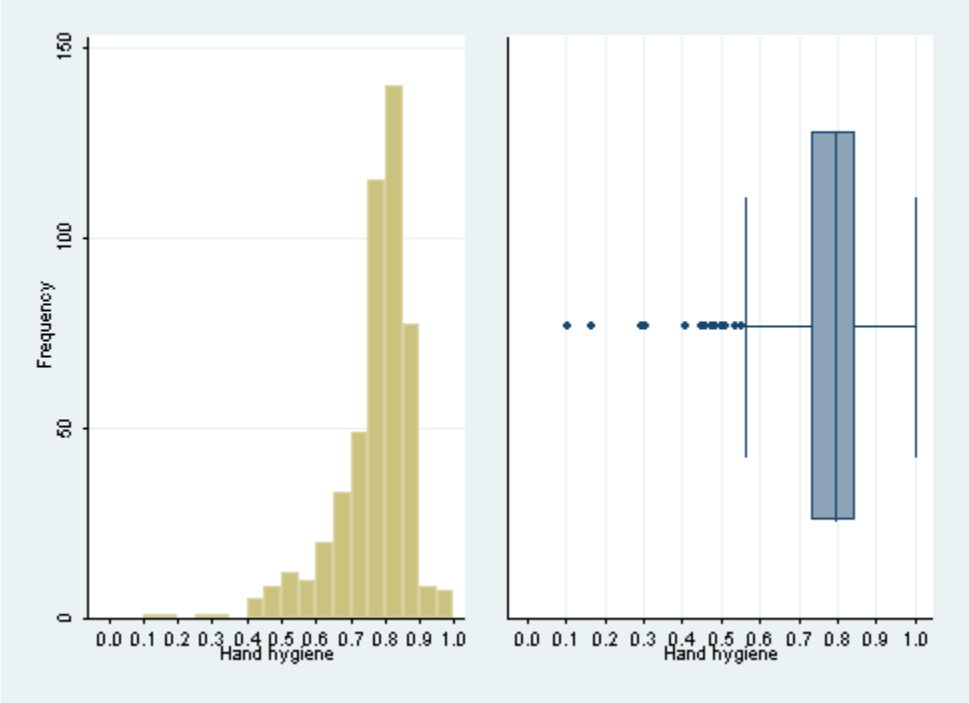


Figure 5: Hand hygiene

The data shows 70% of practices are doing well, with a very small minority showing poor results. These reflect the findings in the acute sector, showing most practices are achieving good standards, however, none achieving excellent standards.

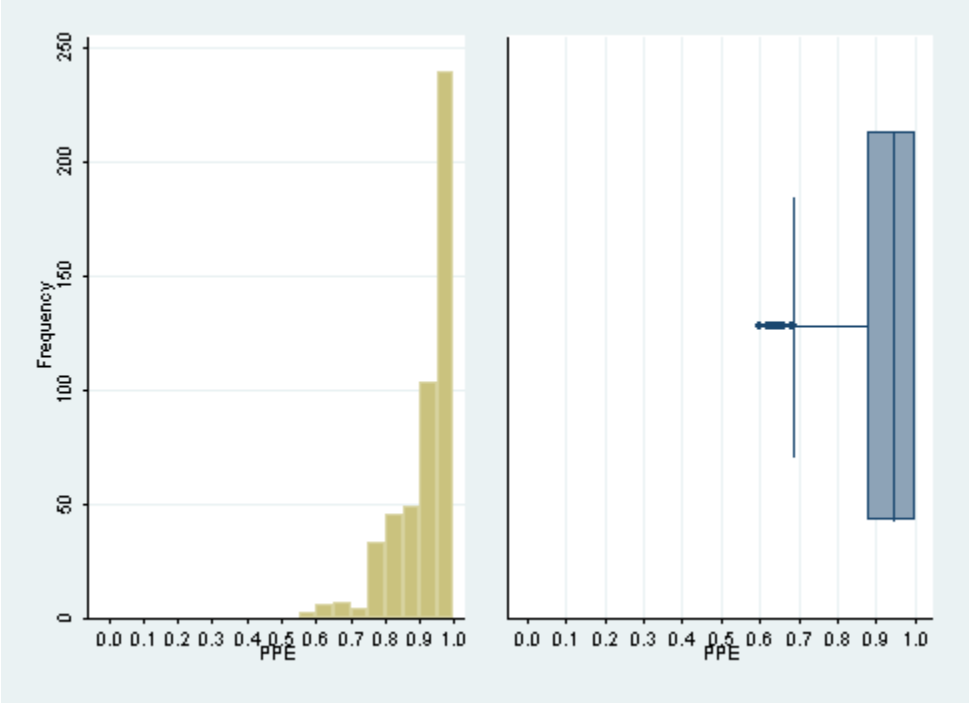


Figure 6: Personal protective equipment (PPE) presence and use

This category shows good compliance with very good results across all practices.

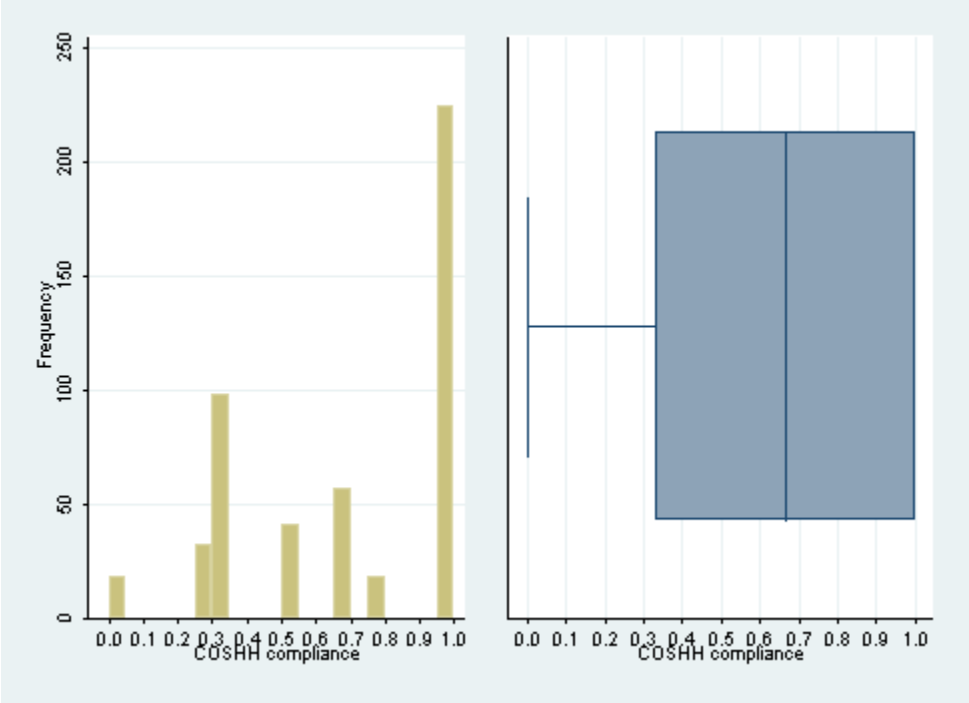


Figure 7: Control of Substances Hazardous to Health Regualtions (COSHH) compliance

The data shows a wide variation in performance. The data shows approx 50% showing good compliance and 50% showing poor. Gaps in the histogram reflect the small number of questions relating to this category in the survey.

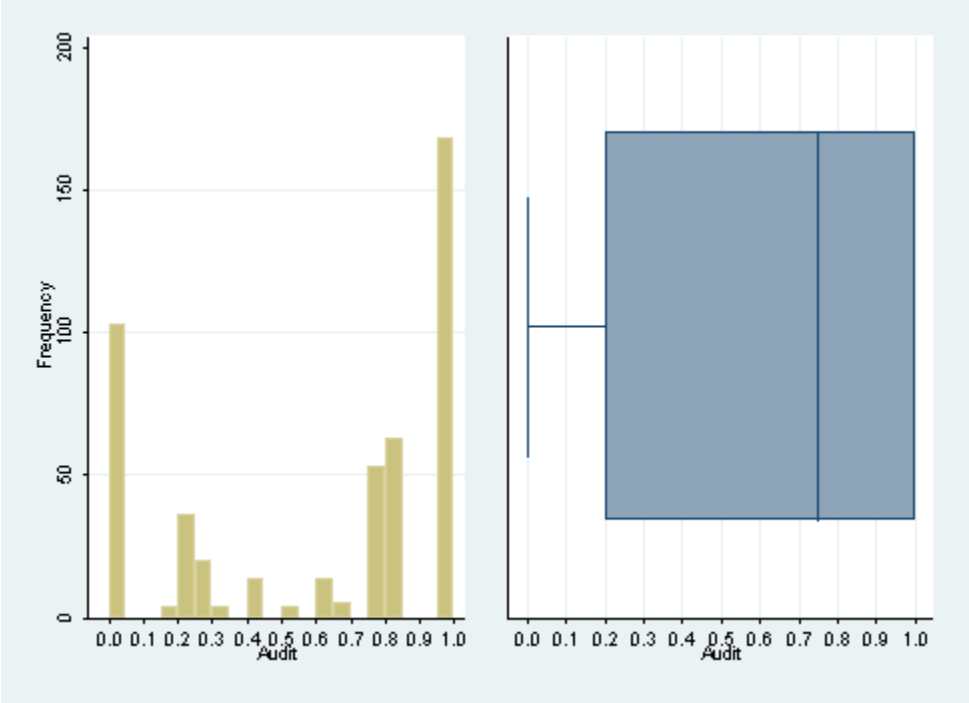


Figure 8: Audit practice.

The data shows a wide distribution, with a broad spectrum of results, 100 of the practices surveyed were not carrying out an audit at the time of the survey.

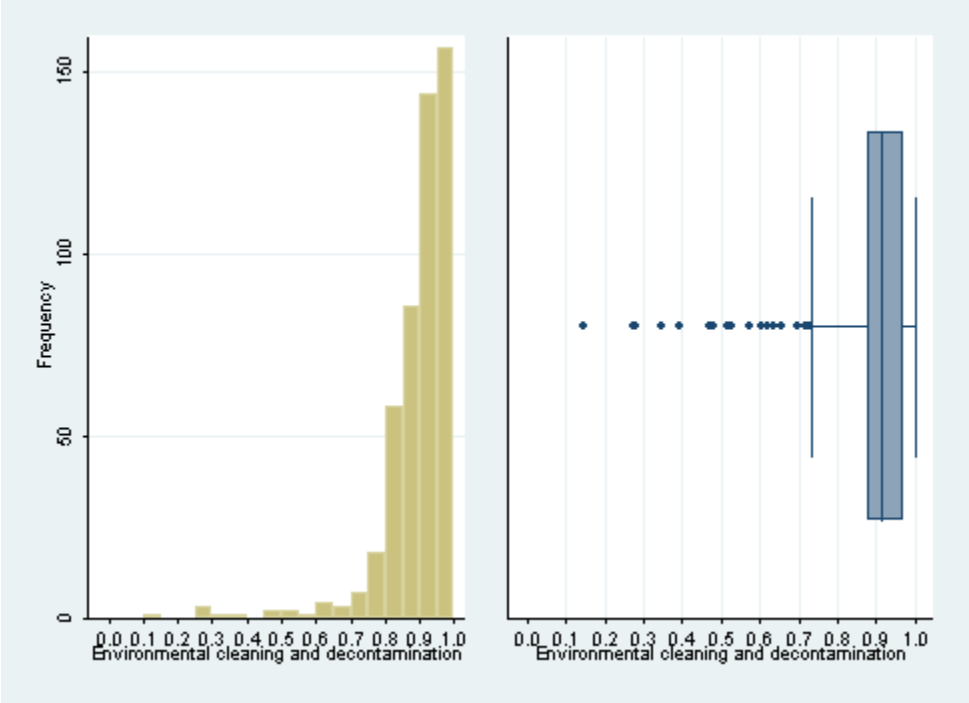


Figure 9: Environmental cleaning and decontamination

The survey data shows practices have good and consistent quality standards in this area, although there are a very small minority who show poor compliance.

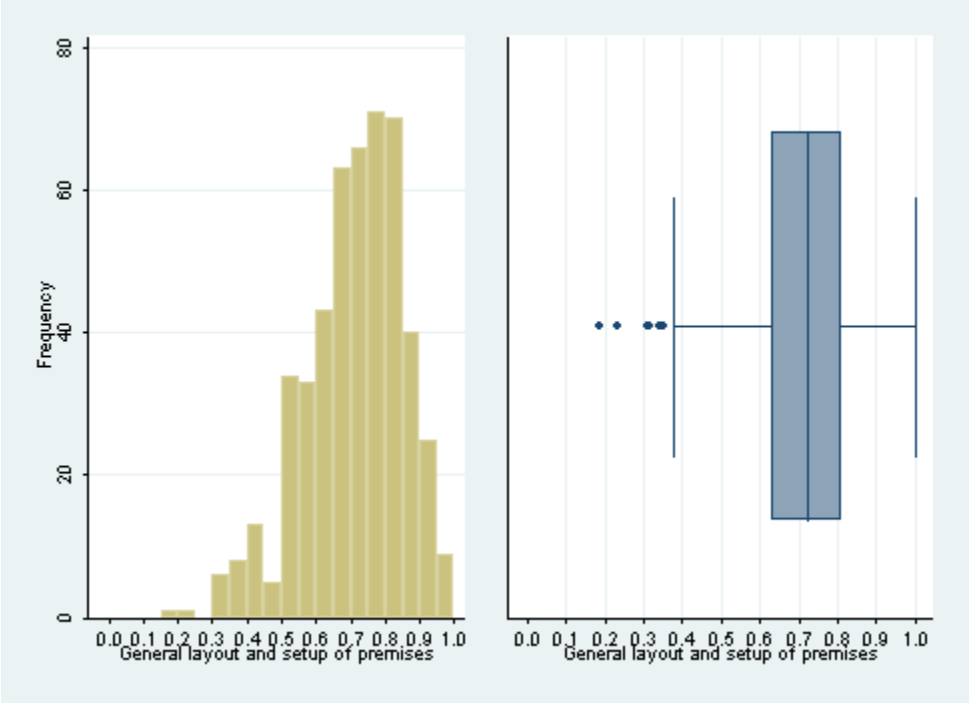


Figure 10: General layout and setup of premises

Best practice attainment will be limited by constraints imposed by the layout and structure of some dental practices which, while being easily accessible in the high street, may have limited scope for expansion and upgrading.

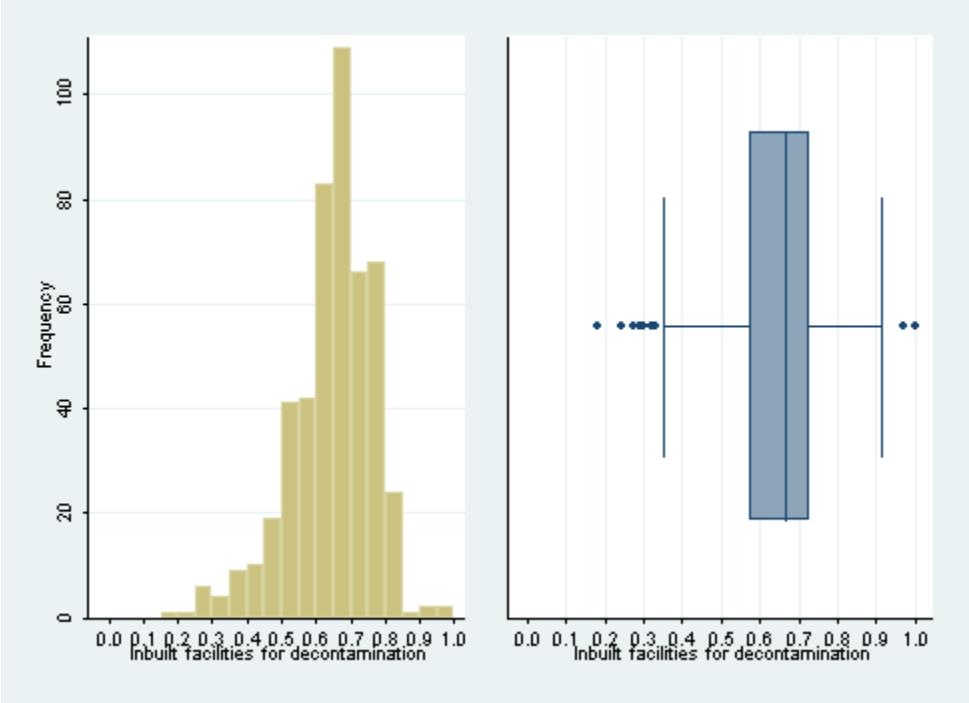


Figure 11: Inbuilt facilities for decontamination

The survey data shows that a third of practices are constrained by their layout and structure.

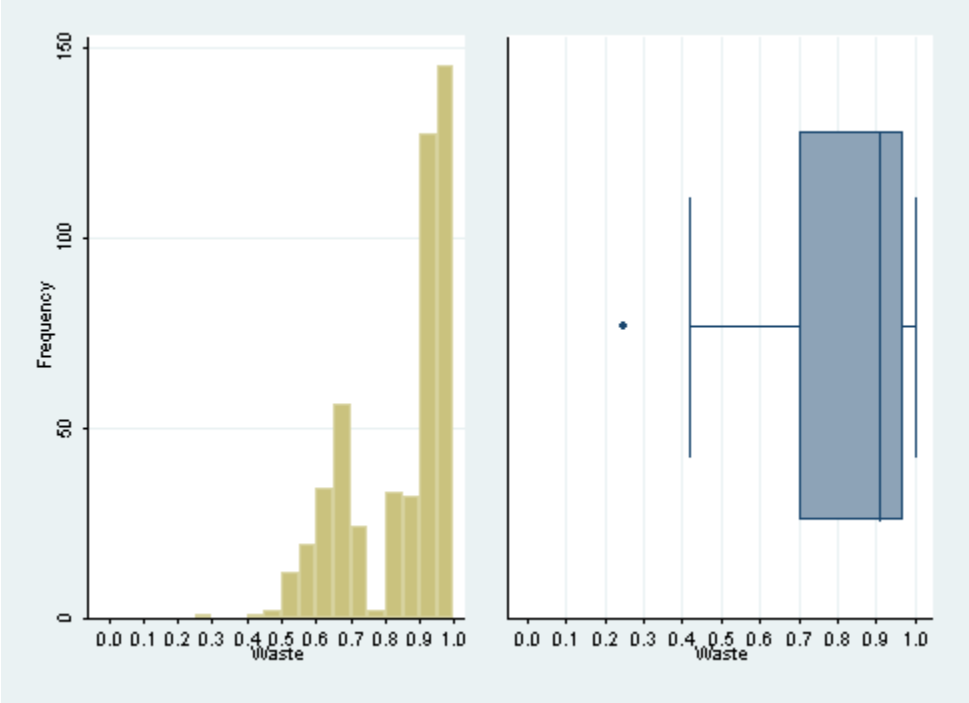


Figure 12: Waste Management

This is an area where most practices are compliant with the guidance and are very competent in waste management, mean values on 0.9 show very good compliance.

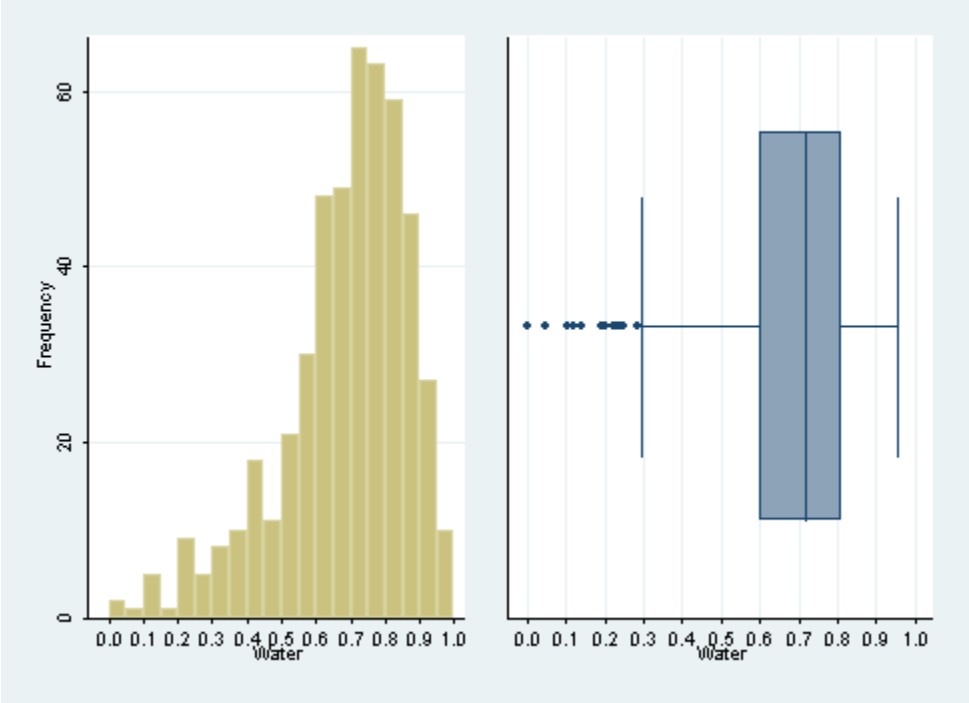


Figure 13: Water quality

These data do not distinguish between water for washing and water for use in an autoclave. The data show good overall compliance with a few practices falling short of essential quality requirements.

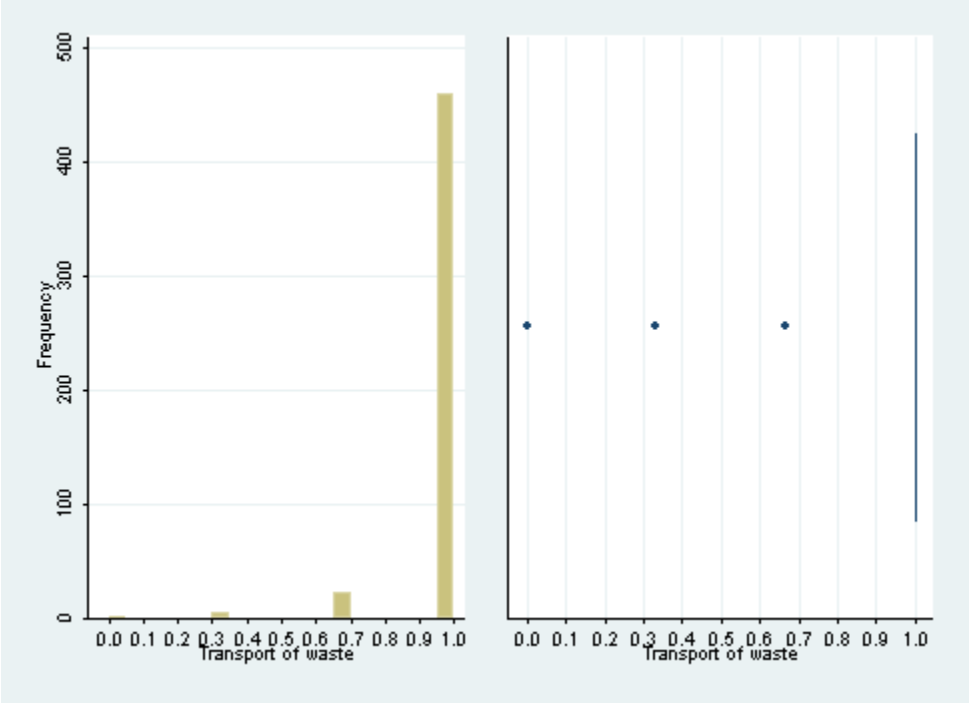


Figure 14: Transport of waste

The data shows very good compliance with transport of waste requirements.

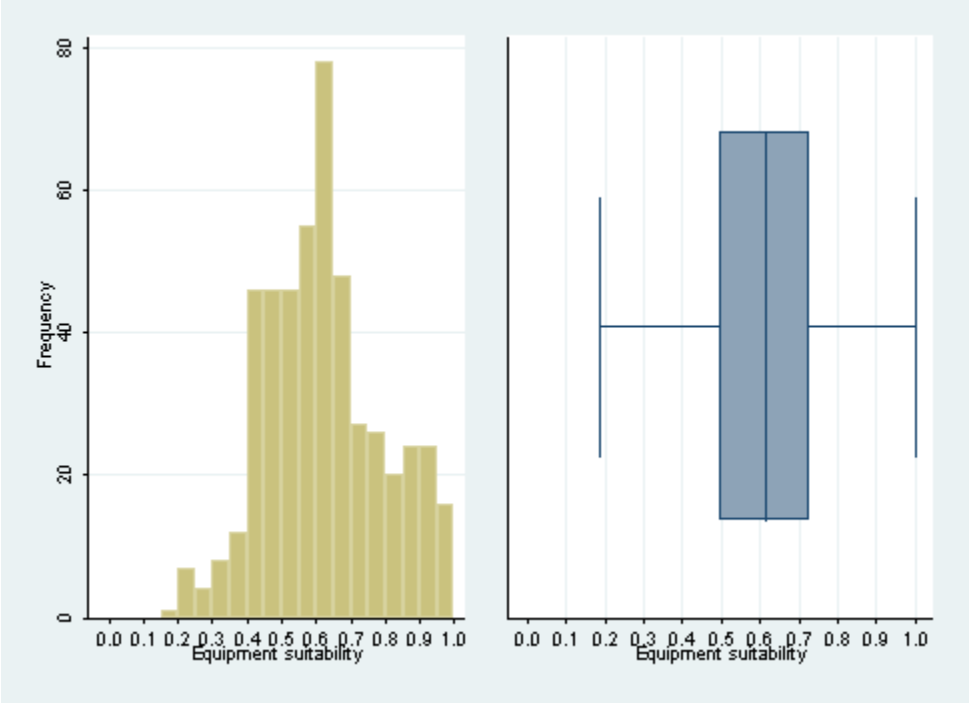


Figure 15: Equipment suitability

The data demonstrates that the majority of practices have the appropriate equipment for the decontamination route they are utilising. The mean gradient is 0.6, demonstrating that the majority have the required equipment for meeting essential quality requirements.

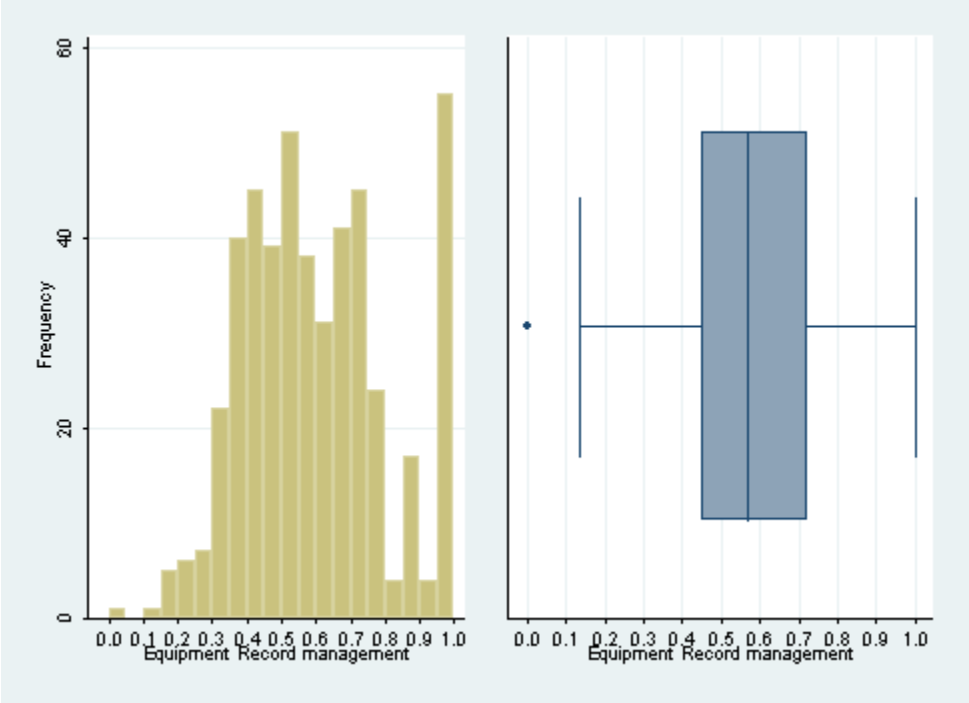


Figure 16: Equipment Record management

The data demonstrates a wide variation in performance with improvements necessary.

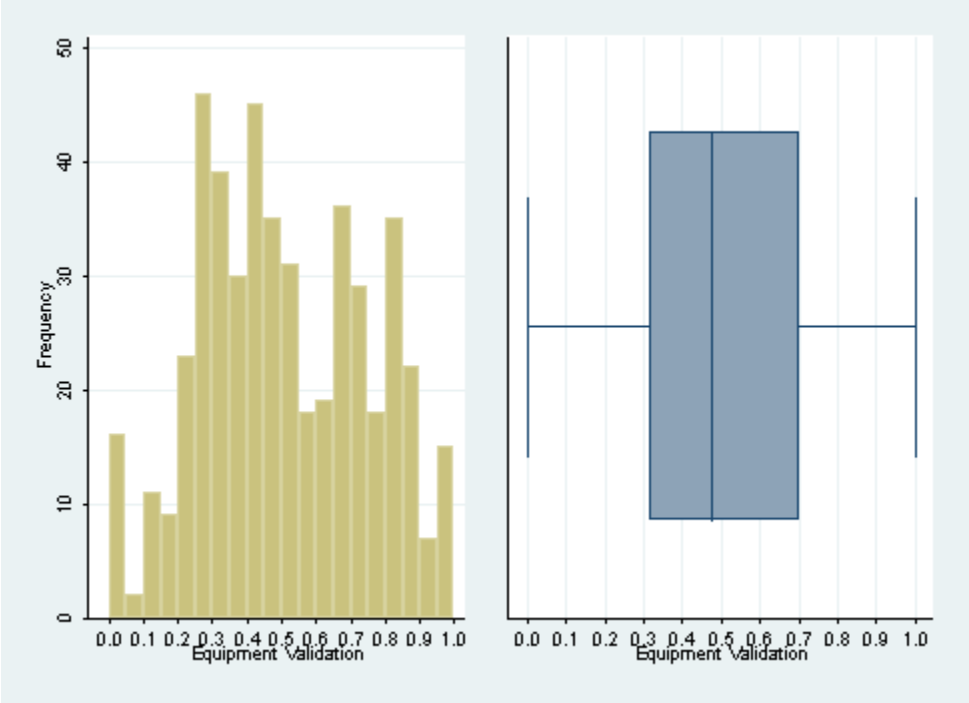


Figure 17: Equipment Validation through validation tests and checks by a service engineer / Authorised Engineer (Decontamination)

There is a broad distribution of results, the data demonstrates validation is being carried out but few practices are achieving the essential quality requirements.

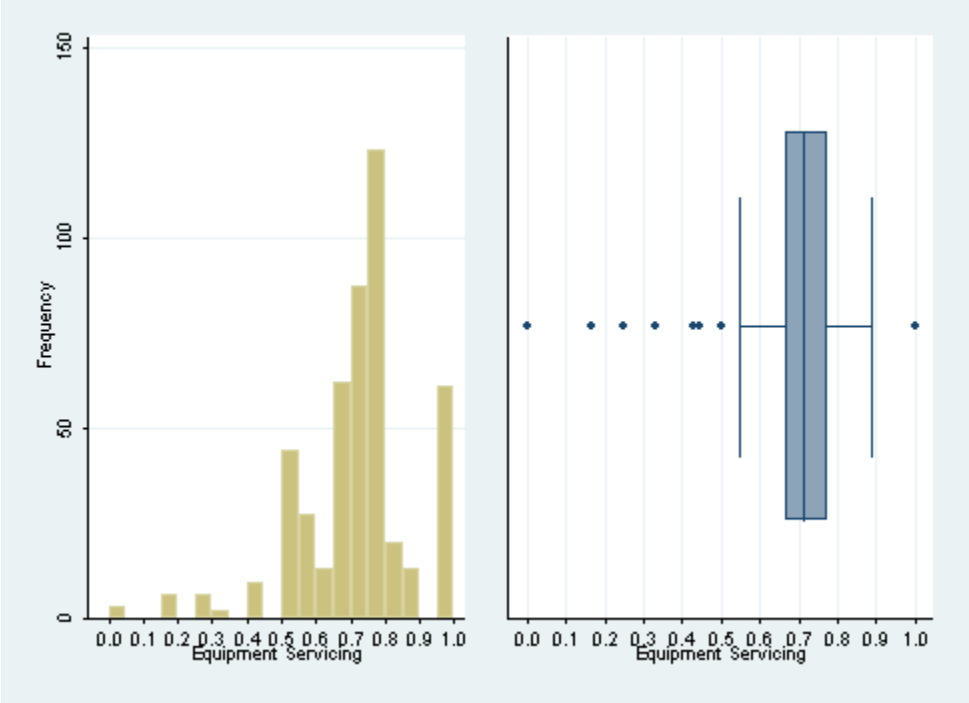


Figure 18: Equipment Servicing

The majority of practices are complying with requirements around servicing of equipment, the mean value is 0.7, but there is a small minority with equipment which is not being serviced in accordance with the manufacturer's specifications.

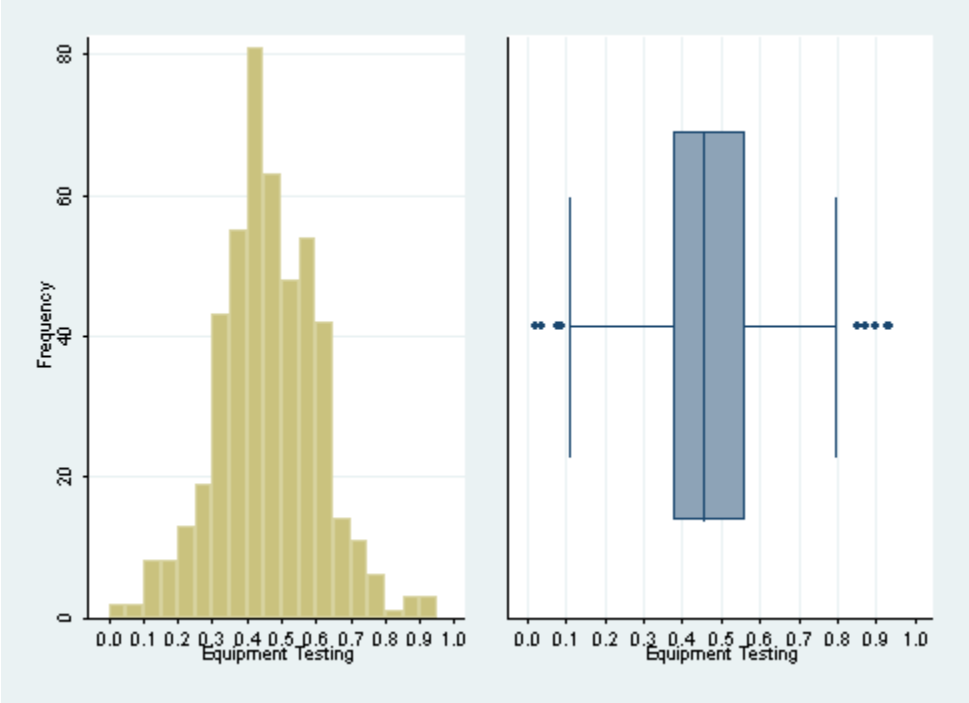


Figure 19: Equipment Testing

Most practices are failing to reach essential quality requirements in this area. Testing is an area of poor compliance which needs to be addressed

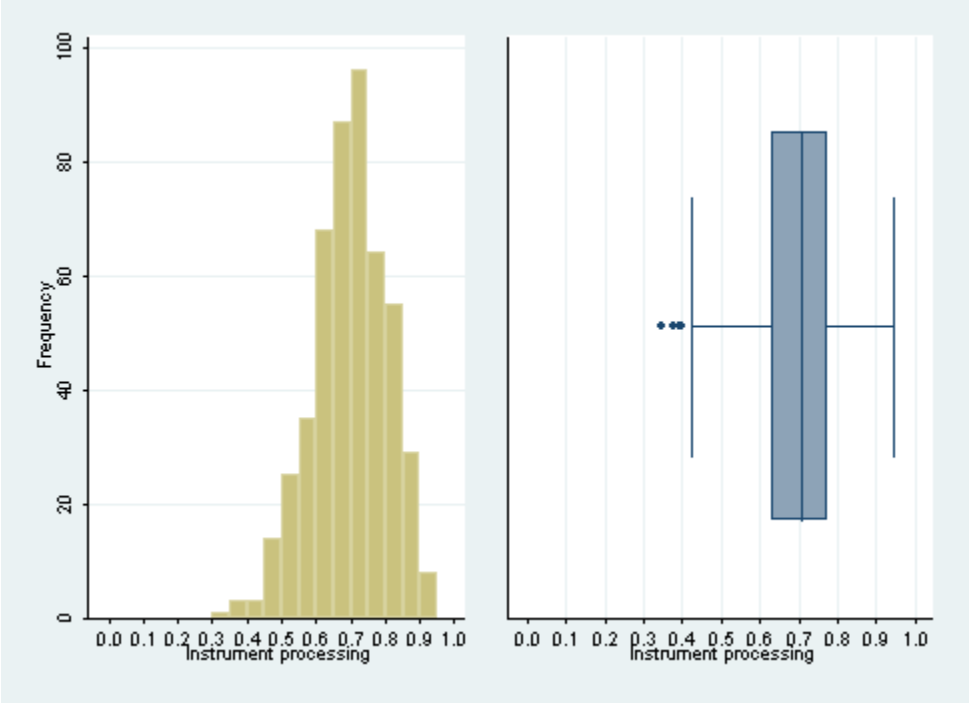


Figure 20: Instrument processing

Most practices are following satisfactory protocols for the decontamination of instruments and achieving above essential quality requirements. However, 10% of practices are below the required quality standards.

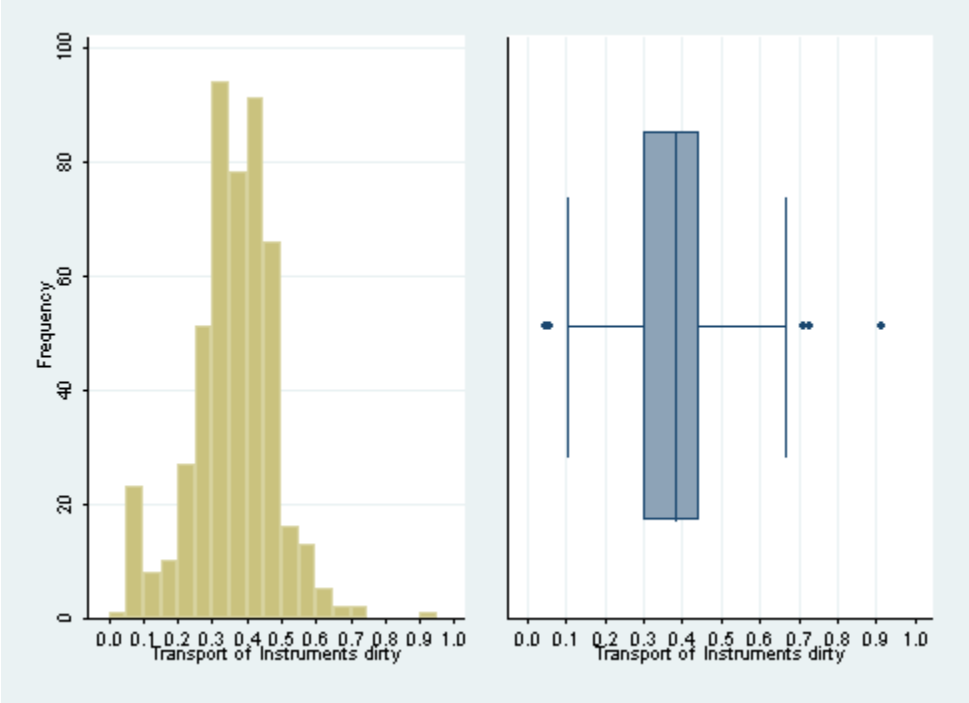


Figure 19: Transport of Instruments

The survey data demonstrate a lack of clear protocols on the transfer of instruments from the point of use to the decontamination area.

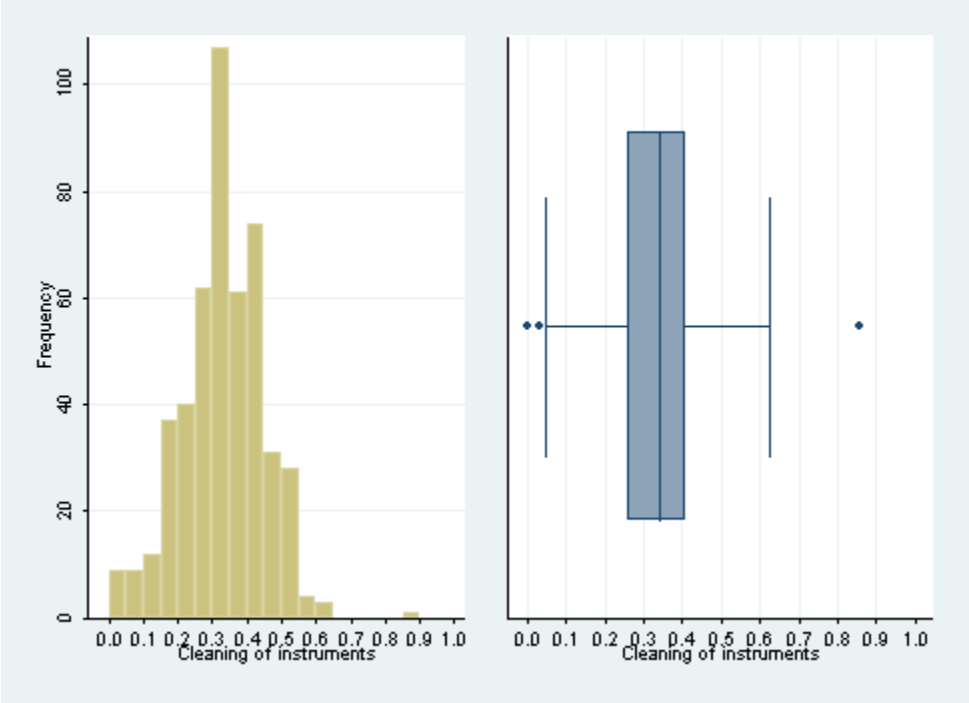


Figure 20: Cleaning of instruments

The data shows that this is an area where improvement is required. Most practices are not meeting essential quality requirements in full. The HTM recommends, as best practice, the use of automated washer-disinfectors to achieve a uniformly high standard of cleaning of dental instruments.

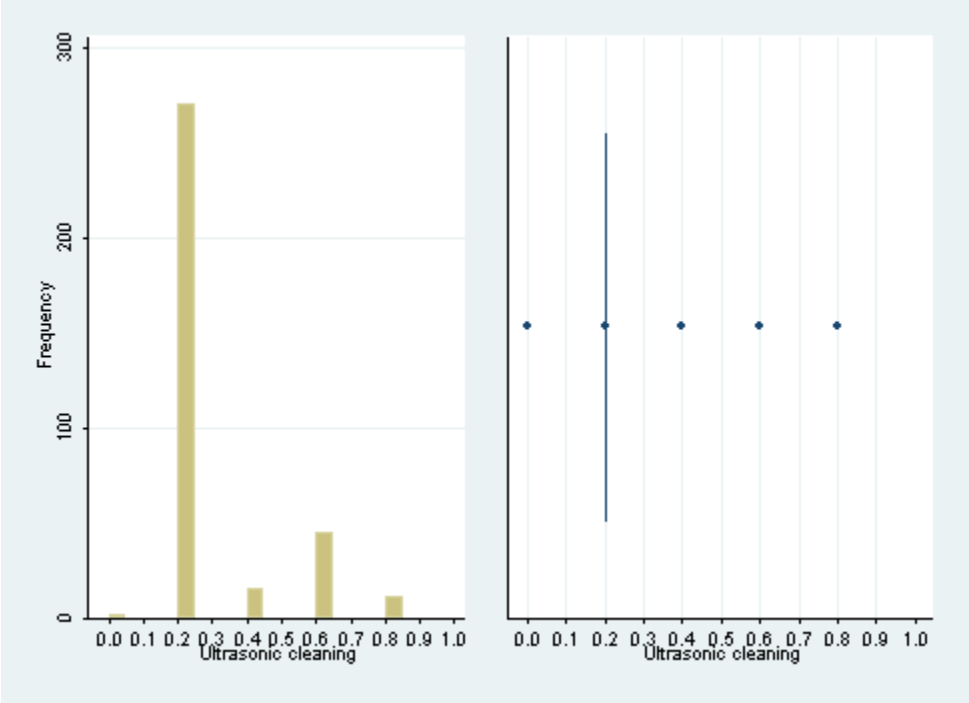


Figure 21: Ultrasonic cleaning

The data shows very poor performance with a mean of 0.2. Ultrasonic cleaning does not form part of any of the routes for compliance with the guidance. Practices have the option of using other cleaning methods.

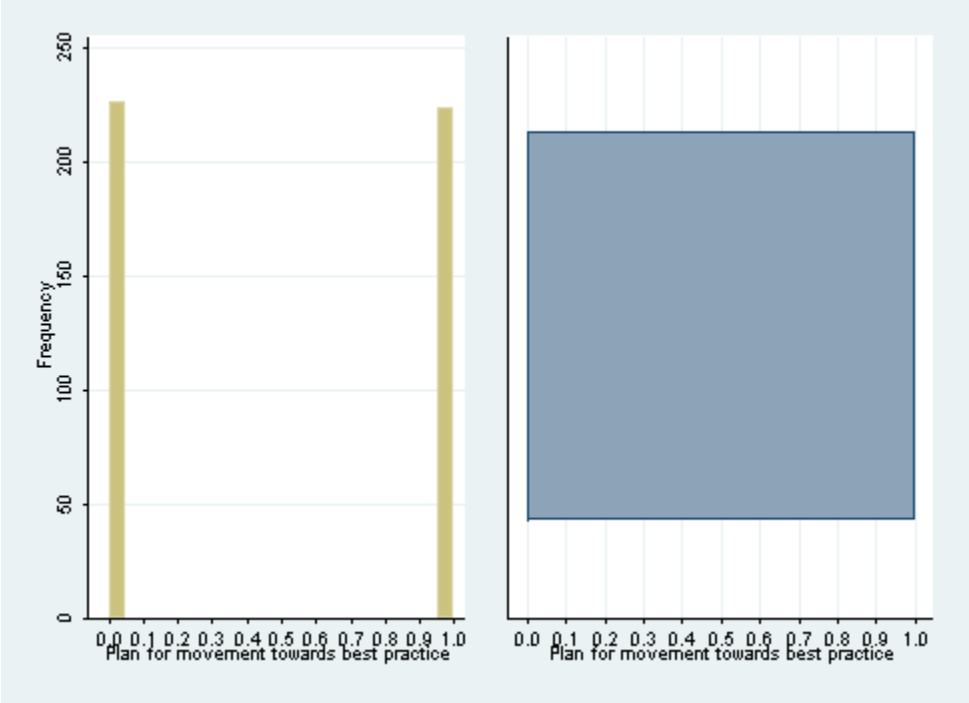


Figure 22: Plan for movement towards best practice

The graph demonstrates a wide variation , 30% of practices do not have a plan, but 20% of practices are already at best practice.

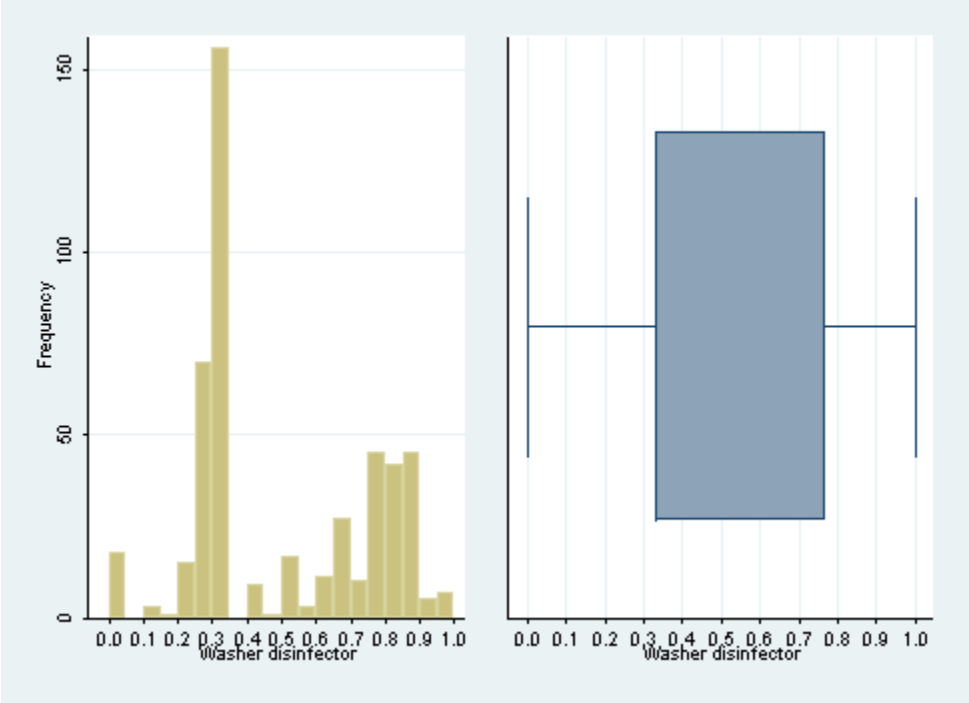


Figure 23: Washer disinfector

The data demonstrates that some practices have washer disinfectors that are not being used effectively. There is a wide distribution of data. This is a qualified gradient, which only includes practices that have a washer disinfector

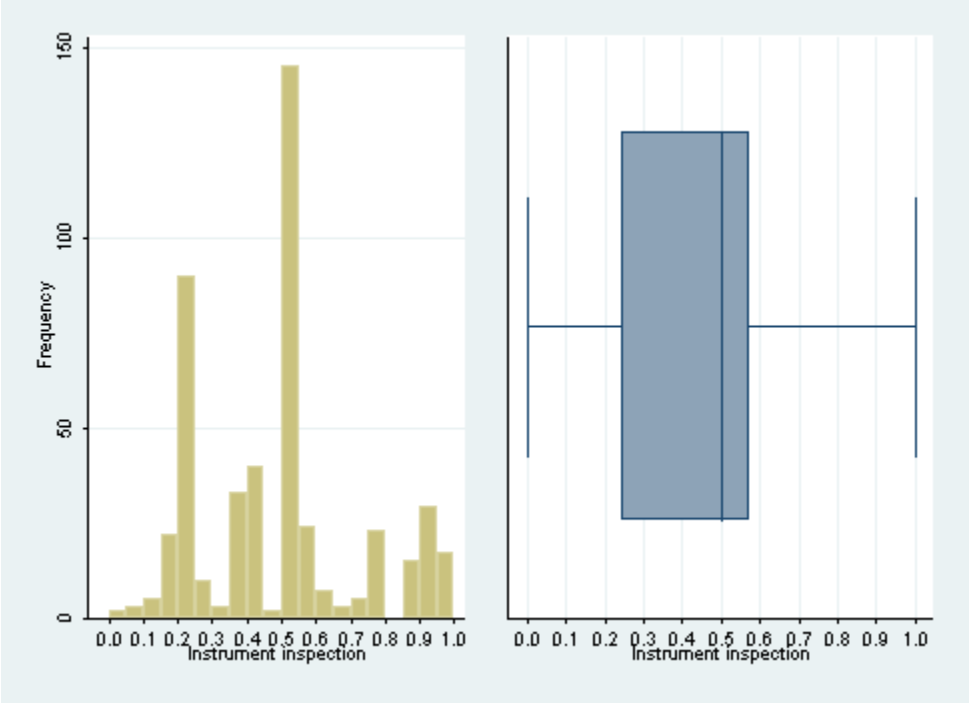


Figure 24: Instrument inspection

Data shows wide variability. The mean gradient demonstrates most practices are achieving essential quality requirements.
Further work is needed to correlate this data with instrument cleaning.

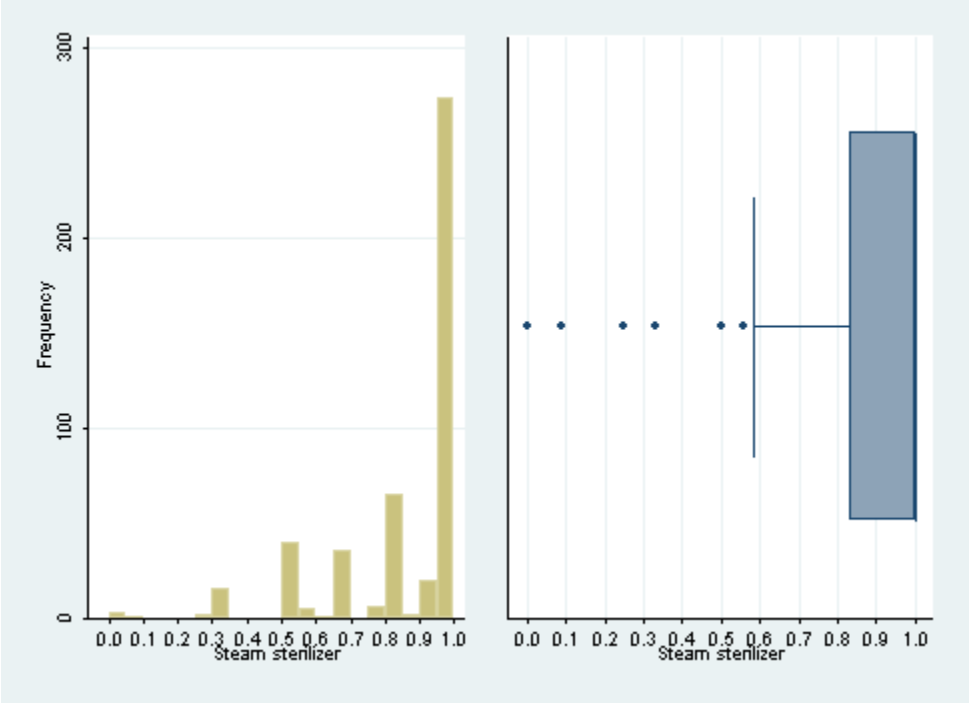


Figure 27: Steam sterilizer

The results excludes validation requirements, the data shows most sterilizers are well maintained but may not have certificates of validation.

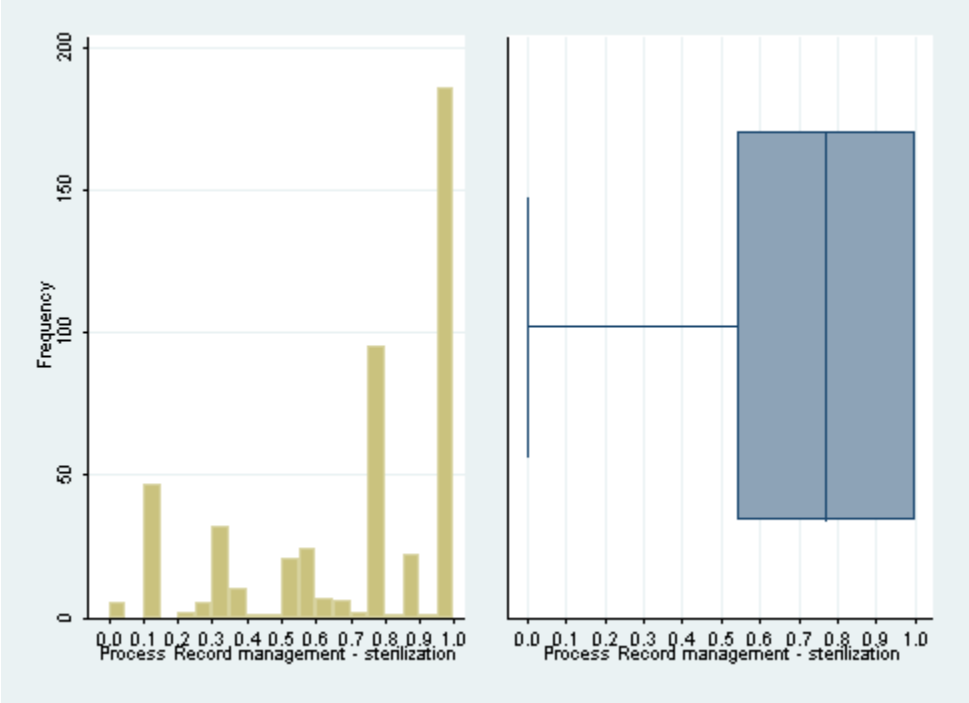


Figure 28: Process Record management – sterilization

The survey demonstrates a wide distribution of data

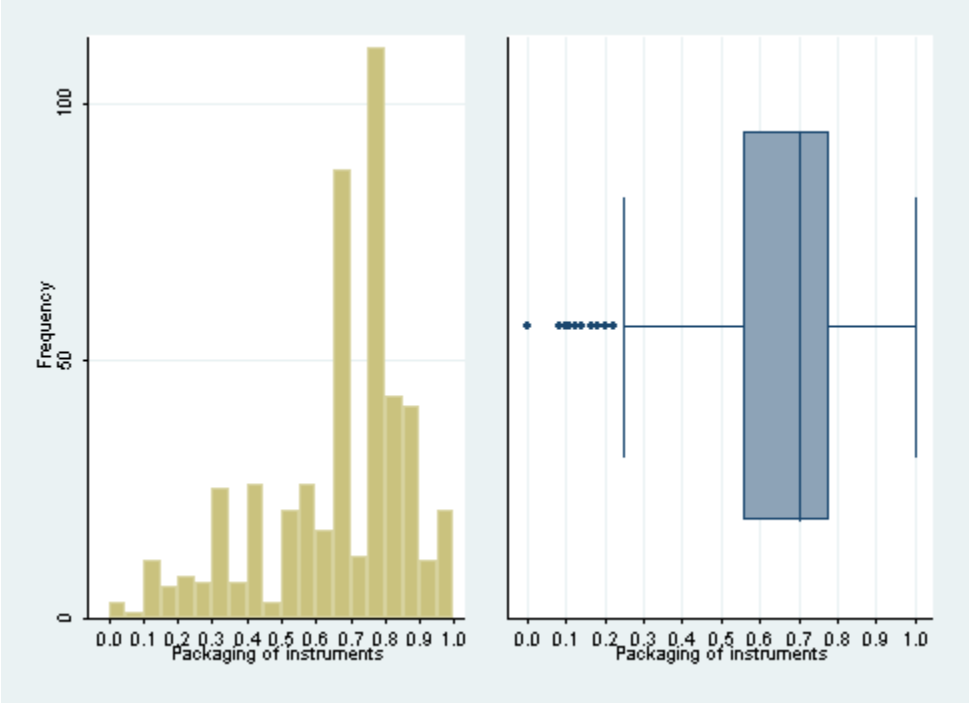


Figure 29: Packaging of instruments

Survey data shows most practices have an understanding of the types of packaging required for specific routes; however, compliance is generally poor. This data includes no packaging where the instruments are designated for immediate use. However, many dental instruments are used several times in a day and may not need re-packaging between decontamination cycles.

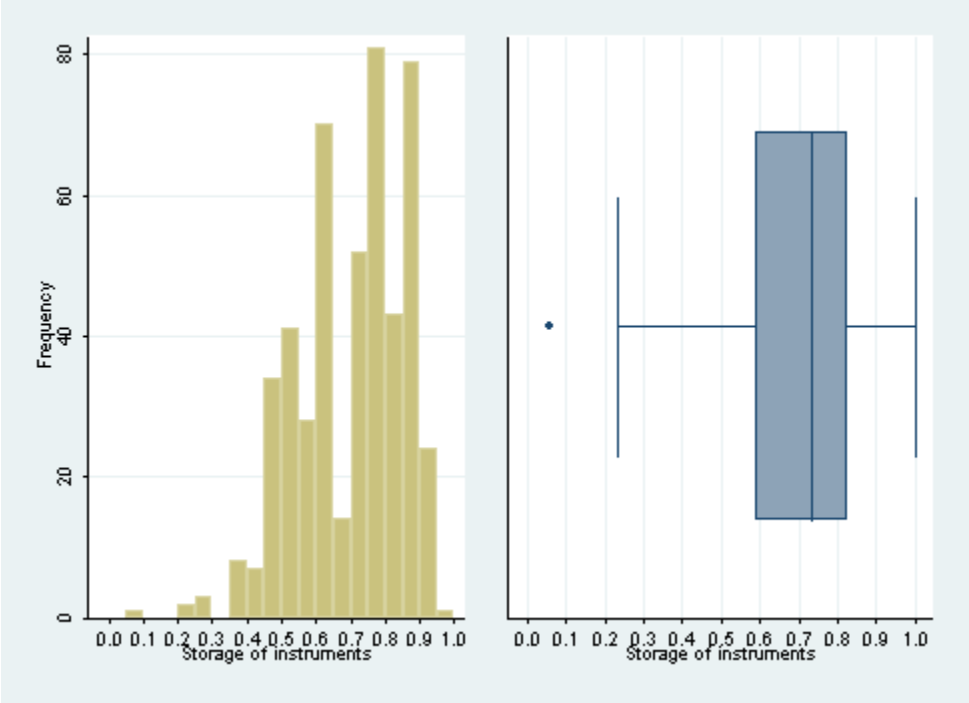


Figure 30: Storage of instruments

A substantial minority of practices are storing instruments correctly, for the route and packaging applied. A substantial minority are not applying the recommended storage requirements. More research is needed on the storage of instruments as the current evidence is not robust.

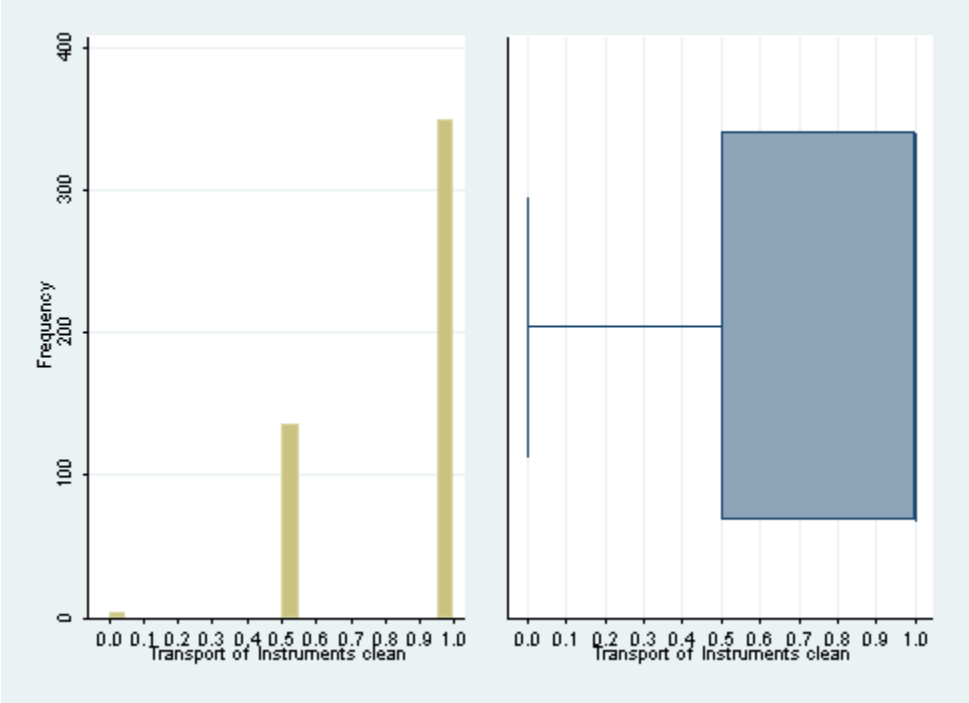


Figure 31: Transport of Instruments clean

This data relates to 3 questions. The majority of practices showed good compliance with this requirement.

DH INFORMATION READER BOX

Policy	Estates
HR / Workforce	**Commissioning**
Management	IM & T
Planning /	Finance
Clinical	Social Care / Partnership Working

Document Purpose	For Information
Gateway Reference	15200
Title	The Dental National Decontamination Survey
Author	DH Commissioning Primary Care
Publication Date	29 Nov 2010
Target Audience	MPs, professional and represntative bodies in dentistry ,dental press
Circulation List	
Description	Results of a survey of decontamination standards in primary care dental practices
Cross Ref	CD Rom audit tool for assessing compliance with HTM 01-05
Superseded Docs	none
Action Required	n/a
Timing	**n/a**
Contact Details	Jerry Read DEC 11th Floor NKBH ex34132 www.dh.gov.uk/en/Publicationsandstatisitcs/Publications/
For Recipient's Use	