DENTAL CLINIC EFFICIENCY

AND EFFECTIVENESS MANUAL

April 2007

Chapter 8, IHS Oral Health Program Guide
Dental Clinic Efficiency and Effectiveness

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A.   Introduction, Background, and Purpose

1. <u>Introduction</u>

A key public health principle is to provide the most good for the most people with the resources that are available. It follows that the efficient and effective use of available resources is crucial in dental programs serving American Indians/Alaska Native (AI/AN) communities, because most programs are insufficiently funded to provide adequate access for all persons who seek dental care.

Definitions:

Efficiency: The degree to which (health) outputs are achieved in terms of productivity and resources allocated (source: United States Department of Justice)

Effectiveness: The extent to which an intervention achieves health improvements (source: Harvard School of Public Health)

Characteristics of an Efficient and Effective Dental Program:

- Provides access to services for all persons who seek and need care.

- Provides dental care that is appropriate, of high quality, cost-effective, and acceptable to patients.

- Achieves smooth patient flow throughout the work day.

- Promotes continuity of patient care, even when there is turnover of professional staff.

- Meets consistently all regulatory requirements and standards of practice.

2. <u>Background</u>

Much of the information in this "Dental Clinic Efficiency and Effectiveness" manual was originally presented in an Indian Health Service (IHS) training course manual entitled, "Dental Clinic Efficiency and Effectiveness Management Tools." The latter was developed by the Clinical Efficiency Workgroup of the IHS Dental Services Delivery Committee that was in existence at that time. This manual was completed in July of 1995, but it was distributed only to IHS and Tribal dentists who took the "Dental Clinic Efficiency and Effectiveness" continuing education course offered by the IHS dental program. With this current revision of the IHS <u>Oral Health Program Guide</u> (OHPG), a decision was made to include a "Dental Clinic Efficiency and Effectiveness" chapter available within the OHPG to make this information available to all dental staff and administrators.

Because evidence-based data on best practices to promote clinical efficiency and effectiveness in dental programs serving American Indians and Alaska Natives (AI/AN) are almost non-existent, this document has its basis in recommendations from recognized experts in the field. This includes the observations of numerous senior IHS clinicians with extensive experience working in IHS/Tribal/Urban Indian (I/T/U) dental programs, as well as dental administrators and consultants working within the IHS dental program. Some of these clinicians and consultants have performed literally hundreds of dental program reviews in I/T/U programs, and the guidelines presented have been tested and modified over time. The list of recommendations has evolved somewhat since the 1995 manual was completed, both through the addition of new topics and the elimination of some seldom-used criteria, but the basic information remains unchanged.

3. **Purpose**

The primary purpose of this document is to provide ways for local I/T/U dental programs to evaluate their own programs using various data indicators and scheduling/patient flow recommendations. This information can then be used to make improvements in clinical efficiency and effectiveness in their own programs. Although the provision of dental program reviews by consultants from IHS Area Offices and Dental Support Centers is not as widespread as it was several years ago, this manual is also suitable for use by consultants to review and provide recommendations to I/T/U dental programs under their purview.

B.   Patient Flow and Control of the Appointment Schedule

1. Appointment Scheduling

Recommendation: Appoint patients no more than three weeks ahead in the appointment schedule.

Rationale: Many programs have found that when appointments are made more than three weeks ahead of the designated appointment time, the broken appointment rate tends to be higher than if the schedule is restricted to a three-week maximum. Also, if the appointment schedule is filled too far ahead, there might be insufficient lead time to allow for the scheduling of meetings and other unforeseen events. Then when important events arise that must be attended by dental staff, patients must be rescheduled. Not only is this inconvenient for patients and staff, but it also results in the schedule being filled even further ahead, which compounds the problem.

Implementation: Ideally every patient who requests an appointment would receive one, as long as the book is filled no more than three weeks ahead. Few programs are able to do this, because of a high demand for dental care and limited resources. If a program has been giving appointments on demand (providing an appointment for every patient who asks for one), and if the schedule is filled only four or five weeks ahead, then it might be possible to bring the schedule back to the three-week maximum by implementing the patient flow suggestions that are described in this manual. If the patient load increases, or if the schedule is already filled far beyond the three-week level, then another appointment system should be considered.

If a program is overwhelmed with patients, which is the case at many I/T/U programs, a formal call-in system, such as a weekly call-in, is typically implemented. An alternative that is used less frequently is a formal waiting list system.

A more recent scheduling method that some clinics have adopted is the "walk-in clinic" concept. This scheduling technique is usually found in clinics that are entirely overwhelmed with patients, and often these clinics have high broken appointment (BA) rates. This system automatically takes care of the three-week limit that is recommended for scheduling, because patients are seen the day they walk in for treatment. It also has a dramatic effect on lowering the BA rate, because of the same-day appointments. Many variations of the walk-in clinic method exist, and many clinics schedule regular patients for part of the day or certain days of the week and have a walk-in clinic for the remainder of the hours or days available. A similar technique is the "same day call-in system." All of the above appointment techniques are described in more detail in *Appendix I, "Controlling an Overloaded Appointment Schedule."*

Approval should be obtained from Service Unit Director or Health Program Director and from the Tribal Health Committee or Tribal Council before making any significant changes in appointment policies. Having the endorsement of the health program

administrators and the tribe is important so they can provide support for the new appointment policies in the event of complaints by patients. If feasible, patient surveys or focus groups can be conducted to determine what type of appointment system the patient population prefers. At a minimum, patients should be informed that a change in policy is coming.

2. Series of Appointments for Patients

Recommendation: In general schedule only one appointment at a time per patient, rather than setting up a series of appointments for the patient. One possible exception might be the scheduling of a series for denture patients who currently do not have an old denture to wear, with the time interval between appointments approximating the time it will take for the case to come back from the lab for each step of the treatment plan.

Rationale: Programs that provide a series of appointments for patients usually do so because they are scheduled well beyond the recommended three-week maximum. Often this is a response to patient complaints that the time interval between appointments is too long. However, providing a series of appointments only fills up the appointment schedule further ahead, which makes the problem worse. Also, when a patient misses an appointment in the series there is a question as to whether the program should wait to see if the patient will appear for the next one in the series or cancel all remaining appointments in the series. The experience of many programs has been that if one appointment in a series is missed, there is a good chance that the next one in the series will be missed too.

Implementation: Set a general policy of scheduling only one appointment at a time. If in a special case a series of appointments is deemed necessary (e.g., patient leaving the area for an extended time or an upcoming important event such as the patient's wedding), the patient should be informed that if any appointment in the series is missed, then the other appointments will immediately be canceled.

3. Time Allotted for Procedures

Recommendation: Schedule a range of times for various procedures, rather than scheduling the same amount of time for each patient. The amount of time scheduled should be commensurate with the amount of time usually needed for the type and number of procedures planned for that visit.

Rationale: Some programs schedule the same amount of time, usually one hour, for virtually all patients. This is inherently inefficient, because many procedures take less than an hour and some take longer.

Implementation: Determine how much time each type of procedure typically takes and schedule accordingly. Many programs have found it best to schedule more than one column of patients for each dentist, with one column of patients scheduled for more time-consuming procedures and one or more columns scheduled for simpler procedures, such

as exams, fluoride treatments, and application of sealants. If expanded functions dental assistants are used in the program and enough operatories are available, then two or three patients can be scheduled during the same period of time for routine restorative procedures.

4. Selective Double-Booking of Patients

Recommendation: Double-book patients who have a history of broken appointments, unless a ready supply of emergency patients is available throughout the work day.

Rationale: Most programs have found that patients who have missed appointments in the past are likely to break them in the future. Providing an additional patient during the same time slot will ensure that the staff stay busy if the first patient breaks another appointment. In busy clinics that have emergency patients available at most times, the emergency patients can fulfill the need for replacement patients.

Implementation: Determine which patients have a history of broken appointments and routinely double-book those patients, unless emergency patients are typically available throughout the day. If dental charts are not available when appointments are made, it is more difficult to determine which patients have a history of broken appointments. However, dental receptionists and assistants who have been with the program for a number of years can usually identify patients who have missed several appointments in the past.

5. Mix of Services for Double-Booked Patients

Recommendation: If Patient A obtains an appointment through the normal mechanism but has a history of BAs, resulting in double-booking with Patient B, then Patient B should be one who requires treatment that is not dentist-intensive, such as an exam, fluoride treatment, toothbrush prophylaxis, or application of sealants.

Rationale: Dentist-intensive procedures are procedures that require significant blocks of time for the dentist with little opportunity to leave the dental chair, such as long surgical procedures, complex restorative procedures, endodontics, and prosthetic procedures. Dentist-intensive procedures are not a good choice for double-booked patients, because both patients might appear for their appointments. Procedures that do not take a large amount of dentist time are preferred.

Implementation: Train staff to schedule procedures that are not dentist-intensive for double-booked patients. Exams provide the most flexibility. If the original patient does indeed break his or her appointment, then both an exam and some treatment can be provided for the backup patient. If both patients appear for their appointments, then the backup patient's appointment can be limited to an exam only.

6. Quadrant Dentistry

Recommendation: In general perform quadrant dentistry whenever possible. This includes treating multiple quadrants when treatment needs are minimal.

Rationale: The IHS has always recommended quadrant dentistry as an efficient way to perform restorative treatment, as opposed to restoring one tooth at a time. Operatory setup and cleanup time, greeting and dismissing the patient, and waiting for anesthesia take about the same amount of time whether one tooth or a quadrant is restored.

Implementation: Plan restorative procedures by quadrant whenever possible and schedule an appropriate amount of time for quadrant dentistry.

7. Short-Notice Call List

Recommendation: Maintain a list of patients who can appear on short notice to fill gaps in the appointment schedule.

Rationale: Having a list of patients who can respond on short-notice enables programs to fill canceled appointments (when there is adequate notice prior to the scheduled appointment time) and in some cases broken appointments (if the original appointment was long enough to allow for a less time-consuming procedure to be provided for the short-notice patient). This helps to eliminate "down time" in the dental clinic.

Implementation: Develop a short-notice call list consisting of patients who were not able to obtain a regular appointment. The list might include people who could not get an appointment through a call-in appointment system or people who are on a waiting list but would like to come as soon as possible. It is a good idea to discard the list periodically, such as weekly or monthly, so that it remains current. Patients should be informed that this is a temporary list and there is no assurance that they will be called through this mechanism. They should also be encouraged to continue to seek a regular appointment using the clinic's standard appointment system. To enhance the effectiveness of the short-notice list, some programs also write a time on the appointment slip that is 10 minutes earlier than the actual appointment time. This provides them with an extra 10 minutes to determine that a patient has failed an appointment and fill the time slot with a short-notice patient.

8. Considerations for Dental Emergency Patients

The treatment of dental emergency patients, or "Walk-Ins" (WIs), is a significant part of most IHS, Tribal, and Urban Indian (I/T/U) dental programs. Following are four recommendations that many programs have found helpful with regard to emergency care:

- Ask emergency patients to call back for their follow-up exam and treatment, rather than providing an appointment at the conclusion of the emergency visit. See "Scheduling of Follow-up Appointments for Emergency Patients" below.

- After emergency patients call back for a follow-up appointment, an exam and basic preventive and restorative treatment should be provided prior to more complex treatment such as root canal treatment (RCT), crowns, bridges, and removable prosthetics (Levels of Care guidelines). See "Type of Follow-up Appointment for Emergency Patients" below.

- If the emergency patient has a tooth that requires RCT, the dentist should explain the sequence of treatment necessary to save the tooth so the patient can decide if he or she is willing to go through the required steps. See "Early Determination of Feasibility of Root Canal Treatment" below.

- In general perform the necessary emergency treatment at that emergency visit whenever possible, rather than providing only pain medication and asking the patient to return on another day. Exceptions to this would be patients with advanced infections requiring antibiotics, where providing definitive treatment would be inadvisable on the first visit.

9. Need for Designated Emergency Time for Walk-In Patients

Recommendation: The decision as to whether or not a program should have a special time set aside to treat WIs should be based on an analysis of available data, rather than arbitrarily. The alternative to a designated WI time is to work emergency patients into the schedule between other patients.

Rationale: It is important to treat WI patients efficiently, both to meet the needs of the emergency patients and to minimize disruption of appointments for scheduled patients. If the program has only a few WI patients per day on average, then having a designated emergency time will result in "down time" that could have been used to treat scheduled patients. If the program has enough WI patients to warrant a designated WI time, then it is important to allow the proper amount of time, based on the average emergency load. Too little designated time results in disruption of the appointment schedule, while too much designated emergency time cuts into the amount of time available for scheduled appointments.

Implementation: The first step is to determine the average number of WI patients per day, the usual range in the number of WIs per day, and the average number of broken appointments (BAs) per day in the clinic. There are two ways to approach the question of whether to designate a special emergency time in the schedule:

Option #1: Divide the average number of WI patients per day and the usual range in number of WIs per day by the number of dentists available to see emergency patients (e.g., 5 WI patients per day, with a range of 0 to 8, and a staff of 2 dentists = 2.5

emergencies per day per dentist, with a range of 0 to 4 emergencies per day per dentist). If the average number of WIs per day per dentist is three or less, then a special emergency time is probably not necessary. Other variables might also influence the decision to assign or not assign a special emergency time in the schedule, such as if the usual range is very wide (which can result in days when the dentists are overwhelmed with WIs), if the BA rate is very low (which allows little time to squeeze in the emergency patients), or if the BA rate is very high (which provides plenty of time to see emergency patients).

Option #2: An alternative method is to compare the BA rate with the WI rate to determine whether a dedicated emergency time is necessary. If the average number of BAs per day exceeds the average number of WI patients per day, especially if the discrepancy is large, then adequate time should exist during the day to see WI patients without setting aside a special emergency time or emergency team. If the average number of BAs per day is less than the average number of WIs per day, then a dedicated emergency time is probably necessary. If the discrepancy is large, then more time should be set aside to treat emergency patients than if the discrepancy is small.

If a special emergency time is necessary, it is important to ensure that the amount of provider time dedicated to the treatment of dental emergencies is not excessive. If the providers are not kept busy during the entire emergency time, then consideration should be given to shortening the WI time in the schedule or decreasing the number of providers assigned to treat emergency patients.

10. Scheduling of Follow-up Appointments for Emergency Patients

Recommendation: In general, emergency (WI) patients should be asked to call back for a routine appointment following dental emergency treatment, rather than providing patients with a follow-up appointment as they leave the clinic following their emergency visit. An exception would be patients with severe infections who need a follow-up appointment to monitor progress on the emergency condition.

Rationale: Although the following is anecdotal information only, many I/T/U dental programs have reported that a large proportion of emergency patients (on the order of two out of three) who are given a follow-up appointment as they leave the emergency visit will fail that appointment. The reason is that many emergency patients are episodic users who typically appear at the dental clinic only if they are in pain or have some other dental problem. If offered a follow-up appointment at the conclusion of the emergency visit, episodic users will almost invariably accept the appointment, but many of them will fail to appear at the appointed time.

Implementation: Emergency patients should be asked to contact the clinic for a follow-up appointment in the same way that other patients seek an appointment. If a call-in system or waiting list system is used, patients should be instructed to call in at the designated time or asked to sign up for the waiting list. If the program has a walk-in clinic for routine dentistry, the emergency patient can be asked to return during a future

walk in time. If the program gives appointments on demand, a diplomatic way to instruct the emergency patients to call back is to ask them to phone the clinic in a day or two to let the dental staff know how they are doing following the emergency treatment, and they will be given a follow-up appointment when they call. Many programs have found that patients who follow through and contact the clinic to make an appointment are more likely to keep the appointment.

11. Type of Follow-up Appointment for Emergency Patients

Recommendation: In most cases the first follow-up appointment for an emergency patient should be for a complete exam, in order to determine the patient's overall oral health status and treatment needs. This follows the Levels of Care guidelines that have long been recommended for I/T/U dental practices.

Rationale: Although there is some controversy about this, most senior clinicians in I/T/U programs prefer to complete the dental exam before continuing with treatment that was started during the emergency visit. For example, if a molar is opened for root canal treatment during an emergency visit, the next visit would normally be for a complete dental exam, not continuation of the root canal treatment. The reason is that often an exam reveals other carious lesions that need to be treated before they progress to the stage where they might also need root canal therapy. As mentioned in the previous recommendation, an exception to the "exam first" guideline would be an emergency patient who has a severe infection that needs immediate follow-up treatment. In that case the patient would already have a follow-up appointment from the emergency visit.

Implementation: When an emergency patient contacts the clinic for a follow-up appointment as they were instructed to do, schedule an exam appointment for the patient. If time allows, basic treatment can also be provided at that appointment, following the Levels of Care guidelines.

12. Early Determination of Feasibility of Root Canal Treatment

Recommendation: If an emergency patient requires endodontic treatment to save a tooth, the dentist should have a frank discussion with the patient prior to initiation of treatment to allow the patient to determine whether root canal treatment (RCT) is feasible for him or her.

Rationale: Root canal treatments are often initiated without adequate discussion with the patient as to what will be involved to save the tooth. For example, after the dentist accesses a molar for RCT, it is not unusual for the patient to fail to call back for an exam or miss an appointment for basic treatment and subsequently fall out of the system. Then he or she typically returns for emergency treatment after the tooth becomes symptomatic again. If at that second emergency visit the necessary treatment sequence is explained more thoroughly, the patient will sometimes state that if he had known so much was involved he would have chosen to have the tooth extracted at the first visit.

Implementation: The dentist should explain the sequence of treatment necessary to save the tooth so the patient can decide if he or she is willing to go through the required steps. This sequence is based on Levels of Care, and the patient should be informed that basic treatment will be provided prior to completion of the RCT, and then a final restoration will be needed to protect the tooth receiving RCT. If the sequence is accepted by the patient, the tooth is opened for RCT during the emergency visit. If the patient is unable or unwilling to commit to the treatment sequence, an alternative is extraction at that emergency visit so the patient will not have to endure any more pain needlessly. If the patient is not interested in receiving an exam and basic treatment first, another alternative is to seek root canal treatment privately, at the patient's expense. If the patient is "on the fence" when deciding how to proceed, then it is best to err on the conservative side and open the tooth for RCT. If this patient fails to seek follow-up appointments and presents again with a toothache in the same tooth, then the options should be presented again. Usually at this visit the patient will find it easier to make a decision, and that decision is often to choose extraction. No one likes to see patients lose teeth, but in the case of episodic users it is often the choice that patients find most feasible for themselves. **Note:** These discussions should be documented in the progress notes for risk management reasons. Some programs use an endodontic information sheet or consent form that discusses the pros and cons of endodontic treatment and the necessary sequence of treatment, with documentation in the progress notes that an information sheet was provided or a consent form was signed.

13. <u>Addressing the Broken Appointment Problem</u>

Broken appointments (BAs) are an almost universal problem in I/T/U dental programs. Following are some basic recommendations that many programs have found useful in dealing with BAs. The recommendations are divided into two categories: Preventing Broken Appointments and Compensating for Broken Appointments once they occur.

Preventing Broken Appointments
- Schedule patients no more than three weeks ahead in the appointment book or computerized appointment system.

- Routinely ask emergency patients who need a follow-up exam appointment to call back for that appointment, rather than scheduling it at the conclusion of the emergency visit. Many emergency patients are episodic users who will accept a follow-up appointment but then fail to keep it. An exception would be patients with severe infections that need to be scheduled for follow-up to prevent serious consequences.

- Have a BA policy in the form of a BA agreement or "contract" that is signed by the patient or parent/guardian, and give a copy of this agreement to the patient (Dental Appointment Agreements are discussed below in more detail).

- Use patient reminders such as phone calls, letters, or email messages to remind patients of their appointments.

Compensating for Broken Appointments
- Maintain a short-notice call list and use it to fill gaps in the appointment schedule.

- Double-book patients who have a history of BAs. It works best if the extra patient is for a simple procedure such as an exam, in order to provide flexibility in case both patients appear for their appointments.

- Use emergency patients to fill BAs whenever possible.

- Consider asking patients who have a history of BAs to come in 10 minutes before their scheduled appointment time. Then if the patient has not appeared by the actual appointment time, the staff can start looking for a short-notice patient.

- Follow the Levels of Care guidelines so that basic preventive and restorative services are provided first in the treatment plan, prior to the provision of more complex treatment such as root canal treatment (RCT), crowns, bridges, and removable prosthetics. See explanation in "Following Levels of Care Guidelines" below.

The rationale and implementation of some of these recommendations have already been addressed earlier in this manual. Details on the remaining recommendations are provided below.

14. Dental Appointment Agreement (BA Contract)

Recommendation: Have a Dental Appointment Agreement or BA contract that is signed by the patient or parent/guardian, and give the patient a copy of the agreement.

Rationale: The use of BA policies has been in place in most I/T/U dental programs for many years. More recently several programs have gone beyond simply having a BA policy and have developed a Dental Appointment Agreement or BA contract that is signed and dated by the patient or parent/guardian. Proponents of the contract format have reported that it has helped to reduce the BA rate. Some patients have even stated upon arrival in the clinic that they were going to skip their appointment, but then they remembered the form they signed and thought they had better keep the appointment.

Implementation: The first step is to seek approval from the Health Director, Tribal Health Committee, and any other pertinent Tribal entities before adopting a Dental Appointment Agreement. As with other changes in appointment policies, having the endorsement of the health program administrators and the tribe is important so they can provide support for the new appointment policies in the event of complaints by patients. The written contract begins by stating the BA policy, e.g., if two appointments are missed within a six-month period, then the patient is eligible only for emergency care for the

next six months. At the bottom of the form there is a place for the patient or parent/guardian to sign and date the form to confirm that he or she understands the BA policy and agrees to the terms of the agreement. Then a copy of the form is provided to the patient or parent/guardian so he/she can refer back to it in the future. Ideally this would be a copy of the signed form, but if a copy machine is not readily available in the dental clinic then a copy of the blank form will suffice. The original of the form is placed in the dental chart. *Appendix II* is a sample *"Dental Appointment Agreement."*

Some clinics have also reported that the contract format seems to help reduce the BA rate even if the policy is not rigorously enforced. Other programs enforce the policy strictly, some to the point of requiring patients to come in for a talk with a designated "BA Manager" after missing a single appointment. If the policy is enforced, it is important to enforce it equitably and without favoritism. Having the Health Director and Tribal Council behind the policy is important in cases where certain patients who are denied an appointment immediately complain to the council (every clinic has them).

15. Appointment Reminders

Recommendation: Consider using patient reminders, such as phone calls, letters, or email messages, to remind patients of their appointments.

Rationale: Although some programs have found that reminders make no difference in the BA rate, other programs have found that they have substantially reduced BAs. Many I/T/U programs currently do remind patients of their appointments. This is usually done via a phone call a day or two prior to the appointment. In cases where the patient does not have a phone, letters are typically mailed a week ahead of the appointment. Reminders might not be practical in clinics that have no receptionist, especially if patient care would suffer when the person making the calls is needed in the clinic. Also, there is a school of thought that suggests that reminders not be used at all, because patients become too dependent on them. The theory is that if for some reason reminder calls cannot be made for a period of time, the BA rate might actually increase. For these reasons, the use of appointment reminders is optional, depending on the program's preferences and the perceived results following the use of reminders.

Implementation: The dental receptionist or other designated staff member is assigned to make the phone calls and/or mail the reminder letters. The widespread use of answering machines and cell phones in recent years has complicated the use of phone reminders. If a message is left on an answering machine, there is no assurance that the patient checks messages or that another family member has not erased the message before the patient hears it. Also, if the clinic is given a land phone line number but the patient uses a cell phone for most calls, then he or she might never receive the call. It is a good idea to ask patients for their cell phone numbers if that is the phone they usually use.

16. Adjusting Time on Appointment Slip

Recommendation: Consider listing a time on the appointment slip that is 10 minutes earlier than the actual appointment time, at least for patients who have a history of BAs or who are chronically late. An alternative is to ask patients to appear 10 minutes in advance of their appointment time for updating of paperwork.

Rationale: While not in widespread use, some programs routinely list a time on the appointment slip that is 10 minutes earlier than the time designated in the appointment book or computerized schedule. Other programs do the same thing, but only for patients who have a history of BAs or who are chronically late. In both cases, if the patient has not appeared by the actual appointment time, the staff can be reasonably certain a BA has occurred and can start looking for a short-notice patient to fill the empty slot in the schedule.

Still other programs might choose not to follow this practice because doing so sets somewhat of a double standard. That is, if the program is asking the patient to arrive at a certain time, the program has an obligation to see the patient at that time as well. For programs that have this concern the alternative of asking the patient to appear 10 minutes in advance of the appointment to update paperwork might be more acceptable. This is likely to be most effective if the appointment slip includes a written request to arrive 10 minutes prior to the listed time, as opposed to expecting patients to remember an oral instruction.

Implementation: As has already been mentioned, among programs that use these techniques some use them for all patients, while others use them only for patients who have a history of BAs or who are chronically late for their appointments. The actual act of adjusting the appointment time or including a statement on the slip to come in 10 minutes prior to the listed time is self-explanatory. If asking patients to come in early is a standard practice in the clinic, and if the clinic uses a BA contract (see #14, above), then the contract should state the clinic's policy.

17. Following Levels of Care Guidelines

Recommendation: Follow the Levels of Care guidelines when scheduling patients so that basic preventive and restorative services are provided first in the treatment plan, prior to more complex treatment such as root canal treatment (RCT), crowns, bridges, and removable prosthetics.

Rationale: There are many reasons to apply Levels of Care principles, and one of them relates to BAs. Many patients who miss appointments, especially episodic users, will do so early in the treatment plan. Because exams and basic services are by nature less time-consuming than complex services, having a BA for a short appointment impacts the schedule less than a BA for a long appointment.

Implementation: Write treatment plans with Levels of Care guidelines in mind and follow the sequence of treatment written in the plan.

18. Tracking Broken Appointment Rate

Recommendation: Programs should track their BA rate over time to determine whether the rate is increasing, decreasing, or staying the same.

Rationale: Knowing the BA rate is helpful for making decisions on scheduling, improving access to dental care, and other program management issues. As changes are made in the dental program, such as making scheduling changes, the effect of these changes on the BA rate can be determined. Also, if the BA rate changes over time, it might be necessary to adjust the dental emergency time, as previously described.

Implementation: Select a method for determining the BA rate and assign a staff member to collect the necessary data and monitor the BA rate over time. It is helpful to have this information presented at dental staff meetings on a periodic basis, such as monthly or quarterly. For those familiar with Quality Improvement data analysis techniques (see chapter 7, pages F-9 through F-11 of the OHPG), the use of a run chart or control chart is a simple visual technique to present the data.

19. Determining Broken Appointment Rate

Following are three methods for determining the BA rate:
1) **Tracking the BA rate on a daily basis**
   Some clinics have assigned the receptionist or a dental assistant to track the number of patients scheduled and the number of BAs at the end of each work day (see *Appendix III* for a sample Microsoft Word tally sheet, *"Broken Appointment Rate and Walk-In Rate Worksheet (MS Word)."* Although not needed to calculate the BA rate, the number of WI or emergency patients is also included to enable the program to calculate the average number of WIs per day and the BA/WI ratio.

   As an alternative, the data can be entered into an Excel spreadsheet with embedded formulas for calculating the BA rate, WI rate, and BA/WI ratio (*Web link #1*). To gain access to the Excel spreadsheet, click on *"Broken Appointment Rate and Walk-In Rate Worksheet (Excel)"* in the table of contents. Some programs prefer a paper worksheet and some prefer the electronic method, just as some programs prefer a paper appointment book and others choose an electronic appointment system.

   The BA rate is calculated by dividing the number of BAs by the number of patients scheduled that day (excluding WI patients) and multiplying by 100. This provides a BA rate as a percentage of number of patients scheduled. Example: 3 BAs in a day divided by 14 patients scheduled equals .214, or a BA rate of 21.4 percent.

Tracking the BA rate daily typically takes only a few minutes per day of the receptionist's time and is the most accurate way to calculate the BA rate, because it includes every clinic day and does not depend on the quality of data entered into the RPMS Dental Data System. Using this method, the BA rate can also be calculated for any time period needed if the BA worksheets are saved in a file or if the electronic spreadsheets are saved in a folder.

Note: Some programs also track "Canceled but Unfilled" appointments and add these to the BAs when calculating the BA rate. Most programs define a "canceled appointment" as one where sufficient notice is given by the patient to enable the staff to find a replacement patient prior to the appointment time. If a canceled appointment is not filled with another patient, then the effect on patient flow is the same as for a broken appointment.

2) **Using a sample of days from the appointment schedule**
   This method involves using either a random sample of 20 or 30 days or selection of a typical month or two from the appointment schedule, whether it is an actual appointment book or day sheets from a computerized appointment schedule. The number of scheduled appointments and the number of BAs are determined from the sample, and then a percentage is calculated as in the preceding example. The accuracy of this method depends on whether the sample chosen is representative of the total number of days that patients are treated. As in the preceding method, some programs might choose to include canceled but unfilled appointments with the BAs. Either *Appendix III* **(MS Word)** or *Web Link #1 (Excel)* version of the *"Broken Appointment Rate and Walk-In Rate Worksheet"* can be used to calculate the BA rate from the appointment schedule sample.

3) **Using the Annual Basic Measures Report from the RPMS Dental Data System**
   The clinical efficiency data indicators contain a formula for calculating the BA rate using data from the Compiled Statistical Reports (RCST) in the RPMS Dental Data System. The Annual Basic Measures component of the Compiled Statistical Reports provides the data needed to calculate the BA rate. The formula is as follows:

   BAs / (Dental Visits Past 12 Months + BAs − Emergency Visits) X 100

   Example: From Annual Basic Measures Report, Broken Appointments = 1426, Dental Visits Past 12 Months = 8164, and Emergency Visits = 2319, which when plugged into the formula results in the following calculation:

   1426 / (8164 + 1426 - 2319) X 100 = 1426 / 7271 X 100 = 19.6 %

This method relies on the accuracy of the procedure codes that have been entered into the RPMS Dental Data System. If the data entries are complete and accurate, results obtained with this method should compare favorably with the other methods. If data are missing or entered inaccurately, then this method will be less reliable. The advantages of this method are ease of calculation and the ability to compare current BA rates with those of previous years.

20. Clinic Opening Time vs. Time First Patient is Seen

Recommendation: In general the first patient should be seated and seen within 15 minutes of clinic opening time.

Rationale: The most efficient I/T/U dental programs typically see the first patient either at the clinic opening time or within 15 minutes thereafter. However, in some other programs a significant amount of time passes between the clinic opening time and the time when the first patient is actually seen. In extreme cases the discrepancy is an hour or more, such as when providers work 10-hour days and the auxiliary staff are on eight-hour days. Excessive amounts of set-up time before the first patient is seen generally results in wasted time, and there is a tendency for some providers to routinely appear late for work because patients will not be seen immediately after the clinic opens.

Implementation: Schedule and see the first patient either at or shortly after the designated clinic opening time. Ideally, one staff member should have flexible hours to allow him or her to start work before regular clinic opening time, so that x-ray film processors can be started, dental units turned on, etc. This will enable the providers to start seeing patients exactly at the designated time when the clinic opens or very soon thereafter. The staff member who comes in early usually is allowed to leave work before the close of the clinic day to avoid an overtime situation.

21. Time Last Patient Completed vs. Clinic Closing Time

Recommendation: Schedule patients late enough in the day so the last patient is typically completed no more than 30 minutes prior to the designated clinic closing time.

Rationale: Clean-up time is needed at the end of the day to process instruments and clean the operatories, but the amount of time should not be excessive. While the auxiliaries are performing clean-up duties, it is assumed that the providers will be using this time to complete all unfinished dental charts for the day. **Note:** Ideally progress notes are completed immediately following each patient's treatment, but they should always be completed by the end of the day.

Implementation: Receptionists and assistants who schedule patients can fine-tune their scheduling practices over time so that the last patient of the day is typically completed within 30 minutes of, but not beyond, the clinic closing time.

22. Alternative Work Schedules

Recommendation: If a program changes from standard eight-hour work days to an alternative work schedule, such as nine-hour days or 10-hour days, productivity and access to dental care should be maintained at least at levels present prior to the change.

Rationale: Many programs have adopted alternative work schedules, which typically involve working four 10-hour days each week with one day off, working nine-hour days with a day off every two weeks, or some variation of these methods. Alternative work schedules are sometimes initiated because a program has an adequate number of dental staff members but is short of dental operatories. In that case, expanding the number of hours a clinic is open in effect increases the number of operatory hours available per week. In other cases, extended hours are used if the staff have extremely long distances to travel from their homes to the clinic, which results in fewer commutes per week. In most cases, however, alternative work schedules are adopted as a perk for employees to give them three-day weekends either every week or every other week. In some programs that have perpetual staff vacancies, alternative work schedules are perceived as the only way the program can attract candidates to fill the vacancies. Whatever the reason for the adoption of alternative work schedules, it is important that former levels of productivity and access to care are maintained.

Implementation: Prior to initiating alternative work schedules, programs should determine baseline levels for access to dental care, broken appointment rate, and standard productivity measures. Then after adoption of the alternative schedules programs should monitor these indicators to ensure that access to care and productivity are maintained at least at prior levels. Maintaining productivity is a concern in many programs that use alternative work schedules, because of the fatigue factor inherent in performing technical procedures for many hours, problems with broken appointments early and late in the day, coordination with medical records and pharmacy if they are on different hours, and other factors. Prior to adopting alternative schedules, special consideration should be given to ensuring that providers and assistants are available to work with each other throughout the work day. This might seem obvious, but in programs that offer free choice among several work schedules, it is not unusual to have most of the providers working 10-hour days and most of the dental assistants working eight-hour days. This sometimes results in two hours per day that are entirely non-productive, because no assistants or few assistants are available early or late in the day. These issues should be discussed prior to initiating alternative schedules, and staff should be made aware that choices in schedules might be restricted to ensure that patient care is not adversely affected. As with any major change in program policy, alternative schedules must be approved by the health program director.

23. Non-Clinical Activities for Providers

Recommendation: The non-clinical activities of providers should be kept at the minimum level possible and should correspond to the provider's billet/job description and level of responsibility.

Rationale: The amount of provider time that must be spent in non-clinical activities will depend on the size and complexity of the program, the provider's position in the program, and other factors, such as whether or not the clinic is accredited (resulting in required attendance at various committee meetings). The amount of time spent in non-clinical activities should be kept to the minimum possible in order to maintain clinical efficiency and access to dental care.

Implementation: Schedule an amount of administration time for providers that is the minimum necessary for non-clinical activities and commensurate with the level of responsibility of the provider. For example, a dental chief in a complex program will need more time for non-clinical activities than a staff dentist in the same program. Administration time needed for the dental director of a small to medium-sized program should fall somewhere between these two extremes.

24. Scheduling Multiple Patients per Time Block per Dentist and Using Multiple Operatories

Recommendation: Each dentist should routinely schedule more than one patient at the same time, either by using two or more columns in the appointment book/computerized schedule or by scheduling at least two patients per time block in one column.

Rationale: Assuming that each dentist has at least two dental operatories and two dental assistants available, it should be possible to schedule multiple patients per unit of time. If expanded functions restorative is performed in the clinic, one dentist can treat as many as three patients simultaneously using three chairs and three expanded functions assistants. If expanded functions are not utilized, then one column can be reserved for restorative treatment and one or more columns set aside for exams and simple treatment procedures.

Implementation: It is important to schedule a mix of patients that is conducive to good patient flow. Dentist-intensive procedures, which require that the dentist remain at one chair for an extended period of time, should be offset with procedures that do not require a large amount of dentist time. This would include exams, preventive treatments that could be performed by a dental auxiliary (e.g., toothbrush prophylaxis and topical fluoride treatments), and other procedures that take a minimum amount of dentist time.

25. Standardization of Operatories and Tray Setups

Recommendation: Operatories and tray setups should be standardized so that providers and auxiliaries who move from one operatory to another can easily find necessary supplies and materials.

Rationale: Time is wasted if staff members cannot readily find necessary instruments, supplies, and materials.

Implementation: The dental manager and staff should examine all operatories and make necessary changes to make sure the drawers are standardized to the extent possible. Two possible exceptions to this rule include operatories used exclusively by a dental hygienist and operatories that are used exclusively for specialty treatment (usually pertains only to large clinics).

26. Unit Dose Concept

Recommendation: The unit dose technique should be used for tray setups, both for efficiency and for infection control.

Rationale: When trays contain all items normally required to treat the patient, including disposable items that are added to the instrument pack such as cotton rolls, floss, cotton applicators with topical anesthetic, and gauze squares, the staff are able to function more efficiently. There are also likely to be fewer breaks in infection control if the countertops are kept free of cotton roll dispensers, anesthetic dispensers, cotton applicator jars, and floss dispensers. The unit dose technique makes it possible to eliminate these and similar items from the operatory counters, because the items are added to the trays prior to initiation of treatment.

Implementation: Place all unnecessary items that traditionally were stored on the countertops under cover to prevent contamination and add these items to the tray setups prior to starting a patient's treatment.

27. Use of Expanded Functions Dental Assistants (EFDAs)

Recommendation: If the use of EFDAs is feasible, based on applicable dental practice laws and regulations, dental assistant qualifications, the number of dental assistants available, and the number of operatories available, then expanded functions should be used.

Rationale: The provision of expanded functions restorative and periodontal treatment by dental assistants trained to provide these services can significantly improve clinical efficiency and access to care in a dental program.

Implementation: If the program already has trained EFDAs but they are not being utilized, the reason for non-utilization should be identified. Some common reasons for lack of EFDA utilization when trained assistants are available include having dentists in the program who lack experience with expanded functions or question its efficacy, lack of desire among the EFDAs to perform the duties (even though their pay grade might be based on EFDA designation), or regulatory issues (such as if tribal programs decide to follow state dental practice act requirements). With the exception of regulatory issues, these reasons should not be beyond the ability of the program to change.

In clinics with adequate numbers of operatories and trained EF restorative staff, an "EF Clinic" is encouraged, in which dentists prepare the teeth and the restorations are placed

by EFDAs for a series of scheduled restorative patients. An efficient EF Clinic functions best with at least three operatories and three EFDAs committed to expanded functions. In clinics with an inadequate number of dental operatories or dental auxiliaries for a true EF Clinic, there are cases where some EF can still be performed. For example, if the dentist has another patient waiting and has an EFDA available, then the EFDA can place the restoration while the dentist sees the other patient.

If the program desires to begin the use of expanded functions but does not currently have trained EFDAs, assistants can be selected for basic EFDA training, which includes follow-up clinical work. This can be followed by advanced EFDA training at a later time. Another alternative is to try to find a dental assistant who has already received EFDA training from the IHS, but assistants with this training who are looking for work are difficult to find.

Note: The definition of "expanded functions dental assistants" as used here refers to IHS-trained EFDAs. Basic EF Restorative enables assistants to place permanent restorations in teeth that have been prepared by a dentist. Many states have EF designations for dental assistants, but the duties that these state-defined EFDAs are authorized to perform are typically much more limited than duties performed by IHS EFDAs.

28. Delegation of Duties to Auxiliaries

Recommendation: Auxiliaries should be delegated duties that are in line with their level of training. However, auxiliaries should not be assigned duties above their level of training, e.g., assistants who have not had EFDA training should not be expected to perform EFDA duties. Conversely, assistants should not be expected to perform basic housekeeping duties if housekeeping staff are available, especially if these extra duties diminish patient care.

Rationale: Optimum use of auxiliaries relieves dentists of duties that hygienists, assistants, and other staff can perform, which leaves the dentists free to perform duties that only they can perform. Likewise, hygienists and EFDAs can be utilized more efficiently if they perform predominantly hygiene and expanded functions duties, as opposed to basic dental assisting duties.

Implementation: Delegate duties along the guidelines stated above.

29. Cross-Training for Receptionists

Recommendation: Small programs that are short of dental assistants but have a receptionist should consider cross-training the dental receptionist to perform at least some basic chairside dental assisting duties.

Rationale: Small programs, which typically have one dentist and two dental assistants, are at a distinct disadvantage when one assistant is out of the office. This is a critical

problem in those few programs that have only one assistant. Working with only one chairside assistant adversely affects clinical efficiency, and if the schedule is booked for a staffing pattern of two assistants, the clinic is likely to run behind schedule when one assistant calls in sick or cannot be at work for some other reason. For programs that have only one dental assistant, the loss of that assistant for a day is a major problem, because the dentist has to work alone. If the dental receptionist has been cross-trained to take radiographs, perform basic chairside duties, clean operatories, and process instruments, moving the receptionist into the clinic when needed can help the program to function more efficiently. The receptionist will get behind in his or her duties, but in a small program it is probably more important to have the services of an assistant rather than a receptionist for that day. In large programs with multiple dentists, moving the receptionist out of the front office is probably not feasible in most cases, because of the complexity of the program and heavier patient load.

Implementation: In small programs provide on-the-job training in basic assisting duties for the receptionist.

30. <u>Range of Recall Intervals</u>

Recommendation: Recall systems should be based on individual disease rates, not arbitrary time intervals, and the range of recall intervals in the program should be sufficiently wide to accommodate patients with high rates of dental disease to very low rates of disease.

Rationale: The IHS dental program has long recommended having a recall system, at least for high-risk patients. Even though they might have a large backlog of patients, some programs employ a relatively small range of time intervals for the recalls, such as three months for patients at high-risk for caries or periodontal disease to six months for all other patients. This follows the narrow range of recall intervals used in many private practices, but for which there is no solid scientific basis.

The IHS has typically used a much wider range of recalls, from three months for high-risk patients to one year or longer for low-risk patients. In programs where it is difficult for patients to obtain access to routine dental care, having a sufficiently wide range of recall intervals will enable the program to treat more patients with the limited resources available.

Implementation: In programs where appointments cannot be given on demand without filling the schedule more than three weeks ahead (which includes the vast majority of I/T/U programs), patients should be identified who have low enough disease rates that they can be recalled at one-year or longer intervals. Patients with high disease rates should still be recalled at three-month or six-month intervals, but moving low-disease patients into longer intervals will open up appointment slots for other patients.

In response to patients who have low rates of disease but who still want to come in for a six-month checkup and prophylaxis, they can be informed that they are taking such good

care of their mouths that they only have to come in every year (or longer) and that this opens up space for people who are not now able to receive routine dental care in the clinic. Furthermore, they can be informed that if they have any problems during the interim, they can come in as emergency patients.

31. **Patient Flow Questionnaire**

Appendix IV, "Patient Flow Questionnaire," is a worksheet or questionnaire relating to scheduling and patient flow issues. It can be used either by program managers for self-review or by dental consultants as a pre-site visit questionnaire to facilitate a dental program review. When the recommendations in this "Patient Flow and Control of the Appointment Schedule" section are compared with current practices as stated in the questionnaire, the program manager or reviewer should be able to identify and provide solutions to scheduling and patient flow problems.

C.   Data Indicators for Dental Clinic Efficiency and Effectiveness

1. Introduction

Several data indicators are available to I/T/U programs for analyzing clinical efficiency and effectiveness. Most of these indicators are based on the Resource and Patient Management System-Dental Data System (RPMS-DDS) software that is available at most, but not all, I/T/U programs. For programs that use RPMS, it is possible to calculate numerous workload and access to care measures that when taken together provide an excellent overview of the efficiency and effectiveness of local programs.

A special data report has been developed within the RPMS-DDS to provide the specific data that are needed to calculate these workload indicators. This is the Basic Measures Report (BMR), which is a component of the Compiled Statistical Reports module (RCST). The RCST provides permanent retrospective reports for observing local program trends over time. While the RCST reports separate data for Indian patients and non-Indian patients, they do not separate workload totals by care provider or by reporting facility. Therefore, in service areas with multiple facilities, it is not possible to separate data for separate facilities or individual providers. Other reports, such as the Service Minute/Level of Care report (RSVC), provide separate data by dentist and by facility and can be used to make rough allocations of BMR data within the service area.

Note: As a compiled statistical report, the BMR has its data compiled automatically by RPMS Taskman on the 10th day following the end of each quarter. Therefore, if a program has fallen behind on data entry, some data might not be entered until after that quarter's statistics have been compiled. That means, for example, that the number of broken appointments on the BMR might be lower than the number found on the Visits by Facility and Dentist Report (RDEN) for the same period of time, because the RDEN statistics are not compiled until the user runs the RDEN report. **Subnote:** In some programs the RPMS site manager has made the decision to "turn off" the automatic compilation of RCST reports by Taskman. In that case, the dental program staff at that site should manually compile the RCST report on a quarterly basis, and the concern mentioned in the above note will not be an issue.

Other data indicators do not depend on the availability of RPMS-DDS data. This includes number of dentists, total number of dental staff, and number of dental operatories available in the program. Another important data element is patient population, which can be determined either with the RCST report or by non-RPMS means, such as tribal enrollment numbers.

These data indicators have been incorporated into two versions of a worksheet for applying the various indicators to specific dental programs, either via self-assessment or as part of a formal dental program review. *Appendix V* is the MS Word version of the *"Efficiency and Effectiveness Data Indicators Worksheet." Web link #2* is an Excel spreadsheet version of the worksheet that contains embedded formulas for automatic

calculation of the indicator values. To gain access to the Excel spreadsheet, click on *"Efficiency and Effectiveness Data Indicators Worksheet (Excel)"* in the table of contents.

2. Dental Clinic Efficiency Indicators

Program Resources and Staffing Patterns:

Many of the clinical efficiency indicators require knowing the extent of resources that are available in a local program to provide services during the period being evaluated, as follows:

- Annual patient population count

- Number of dentists in full-time equivalents (FTEs)

- Number of total dental positions in FTEs, including dentists, dental hygienists, assistants, receptionists, billing clerks, lab technicians, etc.

- Number of dental operatories available, including the overall total and the number of operatories available for dentists only

Once these resources have been identified, calculations can be made for several indicators, as follows:

1) **Patient Population to Dentist Ratio**
   and
   Patient Population to Dental FTE Ratio

   Data Elements: Facility Users Past 36 Months / # of Dentists
                   and
                   Facility Users Past 36 Months / # of Dental FTEs

   These are rough but widely-accepted measures used by many federal, state, and local public health agencies to compare the health resources available in underserved areas. In order to provide adequate access to dental care for the population being served, an adequate number of dental providers and auxiliary staff must be available.

   Recommendation: The IHS recommends a ratio of 1,200 patients per FTE dentist and 500 patients per FTE dental position.

   Even though most I/T/U programs currently exceed the desired ratios, some by a substantial amount, these recommendations serve as guidelines for programs that are making plans to expand current dental clinics or build new facilities.

2) Number of Dental Operatories Available per Dentist

Data Elements: # of Clinic Operatories / # of Dentists

Recommendation: At least two dental operatories should be available per dentist, excluding operatories used primarily by a dental hygienist.

If the ratio of dental operatories to dentists is less than 2:1, the clinic is likely to experience bottlenecks in patient flow, because the dentists must routinely wait for an empty operatory before treating the next patient. A ratio of 2.5 to 3.0 operatories per dentist will enable the program to function at peak efficiency. If expanded functions (EF) restorative services are routinely provided in the clinic, 3.0 chairs should be available per dentist for the EF part of the program.

3) Number of Dental Assistants Available per Dentist

Data Elements: # of Dental Assistants / # of Dentists

Recommendation: At least two dental assistants should be available per dentist, with a ratio of three assistants being more appropriate for expanded functions restorative programs.

If there are less than 2.0 assistants available per dentist, the clinic is likely to experience difficulty in maintaining smooth patient flow. Having an insufficient number of dental assistants means that multiple operatories cannot be used efficiently, because the dentist will invariably find himself or herself working alone at times when it would be more efficient to have a chairside assistant. As with the number of dental operatories, clinics utilizing EF will typically need 3.0 EF assistants per dentist for the EF portion of the program.

Note: Combining the ratios from this recommendation and the preceding one results in an overall recommendation to provide at least two operatories and two assistants per dentist, exclusive of dental hygiene operatories. This also translates to a ratio of one assistant per operatory.

Workload Indicators Using RPMS Dental Data System:

The RPMS-DDS reports described earlier, especially the Basic Measures Report, can be used in conjunction with facility data, staffing data, and patient population to calculate several workload indicators, which are listed below.

Programs are encouraged to apply these workload indicators to their own local data and to track the indicators over time to identify changes in productivity within the program. However, for programs that have not tracked their own data in the past and programs that do track their own data but want to know how their productivity compares with that of

other programs, rough productivity guidelines are available in this document. These guidelines are known as Reference Values.

Relative Value Units and Reference Values

Some of the workload measures are expressed in Relative Value Units (RVUs), which are a productivity measure that recently replaced a previous measure known as Service Minutes (SM). SMs were used by the IHS for more than 30 years, and nationwide IHS program and tribal program averages were calculated for each of these workload indicators. These nationwide averages were known as "Reference Values" and provided clinicians and program managers with a way to determine whether productivity at a program was high, low, or average compared to other programs.

The last time these nationwide averages were calculated for the IHS dental program dates back to fiscal year 1994. Obviously, the Reference Values have been in need of updating for many years. More recently, the conversion from SMs to RVUs dictates that the Reference Values now be expressed in the new RVU productivity units. Since 1994 the downsizing of IHS Headquarters and Area Offices and other factors have made the collection and calculation of national averages difficult, if not impossible. Because of the difficulty in obtaining nationwide averages, a decision was made to use Reference Values from a representative IHS Area for which these data were available. This Area consists of IHS, Tribal, and Urban Indian dental programs. Note: The one exception to using the representative Area for Reference Values is for the Annual Access to Dental Care indicator, which is based on the actual nationwide average for I/T/U programs.

Reference Values from the representative Area are not available for all of the workload indicators in this document, but they are available for the following measures:

- Total Visits per Dentist
- Total Visits per Operatory
- RVUs per Patient Visit
- RVUs per Dental FTE
- RVUs per Dentist
- RVUs per Operatory
- RVUs per Patient

Reference Values are not included in the written descriptions of the workload indicators below, but they are included in the Data Indicator Worksheets that are included in this manual. The Excel spreadsheet that was used for calculating these Reference Values is included as *Web link #3*, which can be obtained by clicking on *"Reference Value Calculations for Data Indicators (Excel)"* in the table of contents.

Note #1: When Reference Values were last calculated from 1994 productivity data, separate levels were listed for IHS-managed programs and Tribal programs. At that time average productivity levels for IHS-managed programs were higher than for Tribal programs for many of the indicators, primarily because IHS programs were typically larger and more likely to utilize expanded functions dental assistants in their programs. However, in the representative IHS Area that is being used for the current Reference Values the relationship between productivity in IHS and Tribal programs has reversed, with the Tribal programs being more productive than the IHS programs. In this Area the Tribal programs tend to be larger than those in most other Areas, and due to the availability of expanded functions training programs within the Area, expanded functions are utilized by many of the Tribal programs in that Area. In an attempt to consolidate and simplify the Reference Values, only the overall averages for I/T/U programs are provided on the worksheets.

Note #2: Because of the widespread use of expanded functions in both IHS and Tribal programs in the representative Area, the Reference Value levels for many of the workload indicators might be difficult to achieve in programs that do not utilize expanded functions. In those programs, perhaps the best way to evaluate efficiency and productivity would be to monitor the workload indicators over time to determine an acceptable range of productivity levels. Ideally, all IHS Areas would collect these data and use them to develop Area-wide productivity expectations. This would be especially useful in Areas where most programs do not utilize expanded functions, which makes the Reference Values in this manual less applicable. As a starting point for developing efficiency/productivity expectations in Areas that do not typically utilize expanded functions, a "ballpark" estimate might be to use approximately 75 percent of the current Reference Values as initial benchmarks for workload indicators that are the most dependent on expanded functions, such as RVUs per dentist.

Note #3: For senior IHS and Tribal staff who are familiar with productivity measures in terms of SM but who are not yet accustomed to using RVUs, there is a way to make a rough estimate of RVU values in terms of the old SMs. In many programs, especially those that focus on basic services rather than specialty services, RVU production is approximately 10 percent of SM production.

For ease of use, the terms used to describe the workload indicator data elements are expressed in the exact wording found in the Basic Measures Report.

1) **Visits per Dentist**

Data Elements: Dental Visits Past 12 Months / # of Dentists

This indicator measures the average number of patient visits per dentist for the period being evaluated. Because most programs track the number of dental visits, this measure is also likely to be available even in programs that do not have

access to RPMS data. In that case it becomes an important measure, because it might be the only workload indicator that the program can easily obtain.

2) Visits per Operatory

Data Elements: Dental Visits Past 12 Months / # of Operatories

This indicator provides a general measure of how efficiently resources are being utilized to provide access to care. The number of dental operatories serves as a stable common denominator across all programs. Indicator values reflect the effects of local appointment policies, broken appointment management, and other patient flow and efficiency issues.

3) Relative Value Units per Patient Visit

Data Elements: Relative Value Units / Dental Visits Past 12 Months

This indicator measures how much dental treatment was provided per visit, on average.

4) Relative Value Units per Dental FTE

Data Elements: Relative Value Units / # of Dental FTEs

This indicator measures productivity per dental employee, without regard to the employees' positions. Programs that utilize expanded functions tend to have higher RVU/FTE values, so this measure is most useful when comparing like programs with regard to EF usage.

5) Relative Value Units per Dentist

Data Elements: Relative Value Units / # of Dentists

This indicator measures dental team productivity without regard to the number and type of auxiliary staff available. If programs with dental hygienists are compared with programs without hygienists, it is most meaningful if the RVUs provided by hygienists are excluded from the calculation. This is not as easy to do as it might seem, because the RPMS-DDS software reports all dental hygiene services under a dentist's name, with the hygienist listed as an auxiliary provider.

6) Relative Value Units per Operatory

Data Elements: Relative Value Units / # of Dental Operatories

This indicator provides a common denominator for comparing productivity across all programs.

3. <u>Dental Program Effectiveness and Access to Dental Care Indicators</u>

An important aspect of dental program effectiveness is the level of access to dental care, or the ability of patients to obtain needed dental treatment when they request it. In general the goal is to provide at least the same level of dental access to AI/AN communities as is available to most communities in the United States. These goals are based upon the assumption that most individuals will be better able to maintain good oral health if they are able to see a dentist regularly, e.g., at least once per year.

Any calculation of dental access requires as accurate an estimate of the user population as possible. The RPMS-DDS Basic Measures Report provides data on "Facility Users Past 36 Months," which traditionally has been a widely-accepted measure of user population. This measure represents an unduplicated count of patients who had at least one appointment in any portion of the medical facility during the past three years. If programs prefer to use other measures of patient population, they have the option to use them.

Access to Care Indicators Using RPMS Dental Data System:

1) **Proportion of Population Served Annually (Annual Access to Dental Care)**

    Data Elements: Dental Users Past 12 Mo. / Facility Users Past 36 Mo. X 100

    This indicator measures population penetration or utilization rate, which is the proportion of the community or population base that has gained access to dental services during the preceding year. Annual access to dental care has been a Government Performance and Results Act of 1993 (GPRA) objective for the IHS dental program for many years. Typically only Indian user counts are included in both the numerator and denominator of this indicator in order to measure access for AI/AN people.

2) **Proportion of Patients Treatment Planned**

    Data Elements: Patients Treatment Planned / Dental Users Past 12 Mo. X 100

    This indicator measures the proportion of patients who receive a treatment plan annually, based on a count of routine exam codes (0150 + 0120).

3) **Proportion of Patients Completed**

    Data Elements: Pts. Planned Tx. Completed / Pts. Tx. Planned X 100

    This indicator measures the proportion of patients who have received an exam/treatment plan who actually had at least their basic (Levels I to III)

treatment completed (code 9990). This measure is reliable only if programs routinely use the 9990 code when a patient is completed.

4) Relative Value Units per Patient

Data Elements: Relative Value Units / Dental Users Past 12 Months

This indicator measures how much dental treatment was provided per patient, on average. In programs where comprehensive care is the rule, the number of RVUs per patient will obviously be higher than in programs where treatment is limited primarily to emergency care and basic care.

D.   Relationship Between Dental Clinic Efficiency
and Resource Requirements Methodology

Even though dental clinic efficiency can be enhanced with good scheduling techniques and other effective management practices, there are limits to what can be accomplished if the clinic is too small or if the program is short-staffed. In clinics that are overwhelmed with patients, the only realistic and lasting solution is to combine efficient clinical practices with adequate resources in the form of facility size and dental staff. Below is the Resource Requirements Methodology chart that has been developed by the IHS to provide programs with an estimate of resource needs based on the program's service population.

If a program's current service population calls for a clinic size and number of dental staff that are well beyond what is currently available, then in addition to improving clinic efficiency programs should pursue all available options for expanding the clinic and staff to levels that better match the population.

Dental Staff and Facility Recommendations Based on Service Population

Population Range	Dentists	Auxiliaries	Total Staff	Operatories
0 - 700	0	0	0	0
701 - 906	1	2	3	3
907 - 1284	1	3	4	4
1285 - 1789	1.5	5	6.5	5
1790 - 2421	2	7	9	6
2422 - 2673	2	8	10	7
2674 - 2926	2	9	11	8
2927 - 3431	3	10	13	9
3432 - 4042	3	12	15	10
4043 - 4547	4	13	17	11
4548 - 5052	4	15	19	12
5053 - 5557	4	17	21	13
5558 - 6063	5	18	23	14
6064 - 6315	5	19	24	15
6316 - 6821	6	20	26	16
6822 - 7073	6	21	27	17
7074 - 7578	7	22	29	18
7579 - 7831	7	23	30	19
7832 - 8336	8	24	32	20
8337 - 9094	8	27	35	21
9095 - 9600	9	28	37	22
9601 - 10,105	9	30	39	23
10,106 - 10,610	9	32	41	24
10,611 and over	Revert to the beginning of the chart to identify additional resources required to meet need in excess of 10,610 population			

It is recommended that no dental clinic contain more than 24 operatories. Larger clinics tend to be inefficient, and they can present access problems for dispersed populations.

Note: Auxiliaries include dental assistants, dental hygienists, receptionists, and clerks.

Appendix I
Controlling an Overloaded Appointment Schedule

Goal: **To schedule patients no more than three weeks in advance of their appointments.**

Tip #1:   **Ask emergency patients to call back for a regular exam appointment rather than scheduling the appointment at the end of the emergency visit.** Virtually all emergency patients will accept a routine appointment if it is offered, but in most programs a large proportion of these emergency patients are episodic users who will not appear for the appointment. Asking them to call back will help you to screen out those patients who are not really interested in routine care. This will save you several slots in the appointment schedule as well as lower the broken appointment rate.

Tip #2:   **Instead of using six months as the "standard recall interval" for patients with low to moderate disease rates, extend the interval to one year or longer.** You should still recall patients at high risk for periodontal disease or caries on a more frequent basis, e.g., every three months to six months, but patients at low to moderate risk for dental disease can be recalled less frequently. Historically, the standard recall interval in most IHS/Tribal/Urban Indian dental programs nationwide has been one year. The dental literature does not support the need for six-month recalls for patients with relatively low disease rates. From a public health standpoint, if you have patients who must wait a long time for an appointment, you will do more good for your population if you will use a 12-month recall for most patients and save the three-month, four-month, and six-month recalls for those patients with high disease rates. Extending the standard recall interval also will save you slots in the appointment schedule.

Tip #3:   **Schedule only a patient's next appointment, rather than the full treatment series.** Programs sometimes trap themselves by giving a patient a whole series of appointments at once, in order to decrease the patient's waiting time between appointments. If you are booked ahead no more than three weeks, scheduling a series of appointments is generally not necessary, especially for routine restorative dentistry. If you are booked beyond three weeks, giving patients multiple appointments will only fill up the schedule further ahead.

Tip #4:   **If your appointment schedule is still booked too far ahead after adopting Tips #1, #2, #3, consider using a call-in system or waiting list system.** Both systems can work, but most programs prefer the call-in method rather than a waiting list, assuming that most patients have access to telephones. Whichever system you use, make sure that the system has

been approved by your Program Director and Tribal Health Board or
Tribal Council to provide you with support for the policy.

Recommendations that Apply to Both Call-In and Waiting List Systems

1) **To start either system, you need to "bite the bullet" and stop appointing new patients until your schedule is down to the three-week maximum.** Patients needing exam appointments should be told that you are starting a new appointment system and cannot make any new appointments at this time. Then give them an estimate as to when you expect to start making appointments again.

2) **With either system, once a patient receives a dental exam he or she should be given subsequent appointments until at least basic treatment has been completed.** In other words, the patient does not need to go through the call-in or waiting list mechanism again for follow-up preventive treatment, restorative appointments, simple endodontic treatment, etc. It will be the decision of your program as to whether you will also complete the patient's specialty treatment (such as molar root canal treatments, crown and bridge, partial and full dentures, etc.) as part of this appointment sequence or whether you will defer these types of procedures to a specialty treatment waiting list.

3) **The number of new exam patients that you can appoint each week from the weekly call-in system or from the waiting list will be approximately the number of patients whose treatment you have finished during the previous week.** For example, assume that it is the first week of August. Your appointment book is full for the first two weeks of August, and the third week of August is partially filled with patients needing subsequent appointments. There should be some slots available during the third week approximately equal to the number of patients that you finished during the last week of July. Note: If your staff members go to a meeting and the clinic is closed for a week, then you would not add any new patients until your appointment book once again reaches the three-week level.

4) **The total number of patients scheduled for the slots available will include patients from the recall system and patients from the call-in system or waiting list system.** This will be addressed later, under "Recall Appointments."

Specifics for Call-in System

1) **A designated time is selected during which new patients (including emergency patients who need to call back for complete exams) can make appointments by telephone.** This is usually done once per week at a time that is convenient for the dental staff and for patients. For example, you might want to have people call in at 8:00 AM every Tuesday in order to avoid the problem of Monday holidays and the large number of emergency patients typically seen on Mondays.

2) **Do not begin taking calls until <u>exactly</u> the designated call-in time.** If you start taking calls at 7:45 or 7:55 when your designated time is 8:00, it is going to be difficult to explain to people who call in at 8:00 why all the slots are already full.

3) **When the number of slots available for call-in patients has been filled, tell subsequent callers that the book is full and that they can try again next week.** It is also a good idea to ask these callers if they would like their names to be placed on a short-notice call list in case someone cancels an appointment during the week. Even though the chances of patients getting in this way might be slim, it does give them some hope.

Specifics for Waiting List System

1) **When patients (including emergency patients needing a complete exam) ask for an appointment, their names are placed on a waiting list.** The list should include columns for the date the name is entered, the date the letter is mailed telling the patient that his/her name has come up on the waiting list, and the date that the patient responds to the letter. The list can either be in written form or maintained as a computer spreadsheet or word processing document.

2) **The patient is asked to address an envelope (to ensure that the correct current address is listed on the envelope)**. If the patient calls in, the receptionist can fill in the name and address from information gained over the phone. The envelope is then filed until the patient's name comes up on the waiting list.

3) **When the patient's name is reached on the list, a notification letter is generated and mailed to the patient. The letter should <u>not</u> include an appointment time**. It should merely state, "Your name has come up on the waiting list. Please call the dental clinic by August 12, 2007 (for example) to set up an appointment time." If the patient is late in responding because he or she was out of town for several days, you might want to go ahead and provide an appointment when he/she calls. Late responses usually are not so common as to be a problem.

4) **It will take some experience with the system to determine how many letters to send out to get enough responders to fill the slots available in the appointment schedule**. Not everyone who is sent a letter will respond. You might start by mailing twice as many letters as you have slots available, and then adjusting the number from there.

Recall Appointments

Recall patients will be competing for available appointments with the call-in or waiting list patients. One way to handle this is to schedule the high-risk patients when they respond to the recall notice, because of their high priority. Fortunately, some of these

high-risk patients will need only a prevention appointment with an assistant or hygienist, which takes pressure off the dentist's schedule. If a call-in system is in place, low-risk to moderate-risk patients can be sent a letter reminding them that it is time for them to seek an appointment via the call-in system. If a waiting list system is being used, low-risk to moderate-risk patients can be instructed to sign up for the waiting list in a certain number of months, depending on the length of the list. The idea is to time the patient's name coming up on the list with the desired recall time. The program might choose to send a letter at the appropriate time to remind patients to sign up for the list.

Alternative Scheduling Methods

Some programs are so overwhelmed with patients seeking appointments that nothing seems to work satisfactorily, resulting in high levels of frustration for both patients and dental staff. Some of these programs have explored new methods for appointing patients, including the Walk-In Clinic concept and the Same Day Call-In appointment system.

Walk-In Clinics

The Walk-In Clinic concept typically involves setting aside either a certain amount of time each day or certain days each week to treat walk-in patients. This is similar to the walk-in time that many programs set aside for emergency care, but it goes beyond that to provide basic restorative and preventive care on a walk-in basis. Most programs using this method are large programs with several dentists on staff, but some smaller programs have also found the technique useful for at least some of the treatment time available.

Programs that provide walk-in appointments for routine care vary in the operating details, especially in how the patient is supposed to contact the clinic. Following are two examples of ways that a Walk-In Clinic can be managed:

1) Some programs require patients to appear in person when the clinic first opens in the morning, so they can request a walk-in appointment. Then they are given an appointment time to return later that day. When all available slots are full, additional patients who arrive are asked to return for the next scheduled Walk-In Clinic.

2) Other programs require patients to appear in person either first thing in the morning or first thing in the afternoon to sign up for Walk-In Clinic, but a specific appointment time is not given to each patient. Instead walk-in patients are asked to remain in the facility until it is their turn, much like the manner in which emergency time is handled in many programs. When the maximum number of walk-in patients that can be treated during the time available have signed up, subsequent patients are asked to return for the next scheduled Walk-In Clinic.

In some programs the Walk-In Clinic is the only method available to patients for obtaining routine care. In other programs the Walk-In Clinic is only one way to receive basic dental care, with other options available for some of the appointment slots, such as a call-in system. In almost all programs specialty care is scheduled via regular appointments, because of the time-consuming nature of these procedures.

Advantages of Walk-In Clinics:
- Broken appointments for the Walk-In Clinic are few in number or almost non-existent.
- Persistent patients are rewarded with good access to dental care. In some cases motivated patients are able to receive all of their basic care within a few days.
- The number of complaints from people who could not obtain a routine care appointment in the past might be reduced, because they can get in for treatment the next day if they appear early enough in the morning.

Disadvantages of Walk-In Clinics:
- Busy patients who have demanding jobs or other commitments might find it virtually impossible to stand in line in the morning and perhaps be required to remain in the clinic for many hours.
- Patients are required to access the Walk-In Clinic for each subsequent appointment to complete basic care, instead of accessing the system only once as in more traditional appointment systems.
- Because of the large number of walk-in patients who might appear every day (especially in large programs), adequate numbers of receptionists and/or assistants are required to handle the rush of patients.
- On some days there might not be enough patients to fill all of the available walk-in appointment slots (especially in smaller programs). This requires that a short-notice call list be available to fill in the gaps.

Same Day Call-In System

In the Same Day Call-In System patients are asked to call the clinic first thing in the morning, at which time each patient is given an appointment time for later that day (or in some programs for the following day). When all available slots are full, other patients who call are asked to call again the next day. Aside from calling rather than walking in to access the clinic, this type of system functions like a typical Walk-In Clinic.

Advantages of Same Day Call-In System:
- The broken appointment rate is typically very low.
- Motivated patients who are persistent have good access to dental care.
- Complaints from patients might also be reduced, depending on how busy the clinic phone lines are and how difficult it is to get through by phone.

Disadvantages of Same Day Call-In System:
- For patients the main disadvantage is finding the time to spend on the phone while trying to reach the clinic over phone lines that might be jammed with calls.
- The call-in process must be repeated for each subsequent basic care appointment.
- An adequate number of receptionists or assistants must be available to take phone calls every morning.
- The staff members who take calls might be faced with upset patients who finally got through by phone only to find that all appointment slots have been taken.
- Staff members must deal with the problem of what to do with patients who walk into the clinic and demand an appointment instead of calling. A determination must be made as to whether walk-in patients can also receive an appointment and, if so, whether phone calls or walk-ins will have priority for appointment slots.

Summary of Alternative Scheduling Methods

In general walk-in and same day call-in systems seem to function best in programs where the alternative system is not the only way for patients to obtain an appointment for routine dental care. People with demanding jobs and other commitments tend to be more satisfied with traditional appointment systems in which they have to access the clinic once per year for an exam but then receive follow-up appointments for basic care without having to "jump through hoops" for each subsequent appointment. People who have the time to wait might prefer just showing up on the day they desire treatment. The ideal blend for very busy programs might be to provide some appointment slots for standard basic care appointments and others for walk-in or same day call-in patients. This can be accomplished either by scheduling separate days for each type of appointment or designating different times of day for each type, such as having a Walk-In Clinic in the morning and regular scheduled appointments in the afternoon.

Dealing with Complaints about a New Appointment System

Keeping the time interval between appointments at a reasonable length is important to most patients. If patients complain when you initiate a call-in or waiting list system, inform them that once they get into the system, the new method will decrease the length of time between appointments. In the long run, they will probably finish their treatment sooner than if the schedule continued to be booked a month or several months ahead. In the case of walk-in or same day call-in systems, patients can be informed that if they are willing to appear in the clinic or call the clinic early in the morning , they will have a good chance of being seen that same day.

Appendix II
Dental Appointment Agreement

It is important for patients to keep their dental appointments, because broken appointments result in lost time that could have been used to treat other patients.

Rescheduling Appointments
The dental staff understand that sometimes situations arise that require rescheduling of your appointment. If you need to reschedule, please call the dental clinic as soon as you know that you will not be able to keep the appointment, preferably at least 24 hours before the appointment time.

Broken Appointments
If you miss a scheduled appointment or cancel it at the last minute, a broken appointment will be recorded in your dental chart. If you are more than 10 minutes late for an appointment, a broken appointment will also be recorded, and you may have to be rescheduled if there is not enough time to complete your procedure. It is not fair to keep other patients waiting because someone showed up late.

If you have 2 broken appointments during the past 6 months, you will not be able to make a regular appointment for a period of 6 months from the date of the second broken appointment. You are still eligible for emergency dental care during that time.

I understand the Dental Appointment Agreement and agree to follow the terms of the broken appointment policy.

_____   _____

Patient Name (please print)   Date

_____

Patient or Parent/Guardian Signature

Appendix III
Broken Appointment Rate and Walk-In Rate Worksheet (MS Word)

Day #	Date	# Pts. Scheduled	# BAs	# WIs
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____
11	_____	_____	_____	_____
12	_____	_____	_____	_____
13	_____	_____	_____	_____
14	_____	_____	_____	_____
15	_____	_____	_____	_____
16	_____	_____	_____	_____
17	_____	_____	_____	_____
18	_____	_____	_____	_____
19	_____	_____	_____	_____
20	_____	_____	_____	_____
Totals		_____	_____	_____

Calculations for Broken Appointment Rate and Walk-In Rate

BA Rate = Total # BAs / Total # Pts. Scheduled X 100 =   /   X 100 =   _____ %

Avg. # Walk-Ins per Day = Total # Walk-Ins / Total # of Days =   /   =   _____ / Day

Range in # of Walk-Ins per Day = Least # per Day to Greatest # per Day =   _____   to   _____

Ratio of BAs to Walk-Ins = Total # BAs / Total # Walk-Ins =   /   =   _____ : 1

Appendix IV
Patient Flow Questionnaire

Facility: _____   Date: _____

Appointment Scheduling (Routine Dental Care)

1. How many weeks ahead is the appointment book filled with patients?

2. When an eligible patient asks for an appointment for a dental checkup, is your program able to schedule the patient immediately (**appointments on demand**)?

3. If your program is not able to provide appointments on demand, are patients asked to call back at a certain time, at which time a limited number of appointments are given out to the first people who call (**call-in system**)?

    If so, describe the mechanism:

    Approximately how many appointments are given out at each call-in time?

4. If your program is not able to provide appointments on demand, are patients asked to place their names on a waiting list and told they will receive an appointment at a later date (**waiting list system**)?

    If so, describe the mechanism for giving an appointment to people on the list:

5. Does your program have a **walk-in clinic or same day call-in system for routine dental care**, in which patients who need non-emergency treatment are asked to walk in or call in early in the morning to obtain an appointment for later that same day or the next day?

    If so, describe the mechanism:

6. Are there exceptions to your appointment policy that gives priority to certain patients (such as **prenatal patients**, **diabetics**, or **children**)?

7. Once a patient gets into your appointment system, does the patient receive follow-up appointments for all routine treatment without needing to go through a call-in system or waiting list system for each new appointment?

8. Other than denture patients, is more than one appointment ever scheduled for a patient at one time for routine treatment, instead of giving the patient one appointment at a time?

   If so, why is a series given?

   If a series is given and the patient misses one appointment in the series, what happens to the remaining appointment(s)?

9. Is virtually every patient given the same amount of time in the appointment book (such as one hour), or is there a range of times, depending on the procedure(s) to be performed?

   What is the range in times given for appointments?

10. Is a short-notice call list in place to fill canceled appointments?

    If so, how often is the list actually used to fill openings in the schedule?

11. Are treatment plans completed in as few appointments as is feasible, e.g., is quadrant dentistry provided most of the time?

12. Are **Levels of Care** principles followed in individual treatment plans (emergency care, preventive care, and routine restorative completed before specialty care)?

Emergency Patient Flow

13. Is a special emergency time set aside to treat emergency patients, or are all emergency patients worked in between other patients?

    If there is a special emergency time, what are the emergency hours?

    If there is a special emergency time, how many dentist-hours are set aside each day to provide emergency dental care?

14. Instead of having a walk-in emergency clinic, are emergency patients asked to call the clinic and given a scheduled emergency appointment during the same or the next day?

15. For patients receiving emergency treatment, are those patients who need a follow-up exam and other treatment given the follow-up appointment as they leave the clinic after the emergency visit?

16. If emergency patients are not given a follow-up appointment as they leave from the emergency visit, how do they obtain an appointment?

17. If a molar tooth is opened for root canal treatment during an emergency visit, when the patient obtains a follow-up appointment is the next appointment typically for an exam or for root canal treatment?

Broken Appointments (BAs)

18. If your program has a high broken appointment rate, do you routinely overbook patients to compensate for missed appointments?

    If so, how many extra patients per day are scheduled?

19. Does your program routinely double-book patients who have a history of broken appointments?

If so, is the additional patient scheduled for an exam or other simple procedure to provide flexibility, in case both patients keep their appointments?

20. Are patient reminders used, such as phone calls, cards, or letters?

If so, describe the mechanism:

What is the staff's impression of their effectiveness?

21. Is a broken appointment policy in effect?

If so, is the policy in the form of an agreement or "contract" that is signed and dated by the patient?

Is the patient provided a copy of the BA agreement?

If a BA policy is in place, is it rigidly enforced?

Use of Provider Time and Operatories

22. Morning Time Management

What time does the clinic open in the morning?

What time is the first patient scheduled in the appointment book?

What time is the first patient actually seen on average?

Are all staff, including the dentists, typically at work at the clinic opening time?

23. Lunch

What is the starting time and ending time of the scheduled lunch break for the dental staff?

24. Afternoon Time Management

What time is the first afternoon patient scheduled to be seen?

What time does the clinic close in the afternoon?

What time is the last patient of the day scheduled to be seen?

What time is the last patient for the day typically completed?

25. Do all members of the dental staff work the same hours, or are there alternative work schedules?

If alternative schedules are in place, list the types of schedules available at the clinic and which staff are on which schedule.

26. Does the dentist(s) have a specified time set aside for administrative activities?

If so, how much time and when?

27. How many dental providers (dentists and dental hygienists) work at your clinic?

>   Dentists=   RDHs=   Total=

28. How many chairside dental assistants does your program have?

>   DA / Dentist ratio=

29. How many front office staff (receptionists, dental billing clerks, etc.) does your dental program have?

30. Operatory Utilization

>   How many operatories are available in the clinic?

>   How many operatories are used by a dentist?

>   How many operatories are used by a dental hygienist?

>   Operatory / Dentist ratio (exclusive of RDH operatories) =

>   Are there operatories that stay empty a significant amount of time?

>>   If so, why are the operatories not used?

31. Standardization and Unit Dose

>   Are operatories standardized (drawers in one operatory set up the same as drawers in the other operatories, except for specialty chairs, hygiene chairs)?

Are tray setups standardized?

Is the unit-dose technique used for setting up trays?

32. If the number of staff members is small, especially if there is only one dental assistant, is the receptionist cross-trained to perform dental assisting duties?

Recall System

33. Is a recall system in place, at least for the highest-risk patients?

Which patients are included in the recall system (ex. all patients, prophy patients only, perio patients only, or patients at high risk for caries)?

34. Is the recall interval individualized for each patient's needs?

35. What is the range of recall intervals used at the clinic for various patients (shortest recall interval and longest recall interval)?

At what interval are most patients recalled?

Expanded Functions (EF)

36. Have any of the dental assistants received training in EF restorative (place restorations) or EF perio (perform prophies)?

If so, which assistants have received which training?

If your program has EF-trained assistants, to what extent are they performing EF duties?

If your program has EF-trained assistants and they are not performing EF duties routinely, what is the reason for EF not being utilized?

Recordkeeping and Data Analysis

37. Are all entries in the dental record completed and all charts securely filed by the end of each workday?

38. Who writes the procedure codes in the Dental Progress Notes?

39. How soon after a patient visit are procedure codes for that visit entered into the Dental Progress Notes?

40. Who enters the procedure codes into the RPMS Dental Data System?

41. What is the length of the time interval between treatment of the patient and entry of the data into RPMS?

42. Are RPMS workload reports printed periodically and used to aid in the management of the dental program?

If so, which reports are used?

RDEN (First Visits and Revisits)?

RSVC (Services, Relative Value Units, & Levels of Care)?

RCST (Compiled Statistical Reports, incl. 3-Year User count)?

SCOM (Tracking of specific procedure codes, age groups)?

Does your program desire assistance in gaining access to and printing any of the reports listed above?

43. Current Dental Staff

   Please list the names of the current members of your dental staff and their positions in the
   space below (note: for part-time employees, please list which days they work).

   <u>Name</u>   <u>Position</u>

Appendix V
Efficiency and Effectiveness Data Indicators Worksheet (MS Word)

Facility: _____ Date: _____

Instructions: Use data from the RPMS-DDS Basic Measures Report
for the previous 12 months or most recent fiscal year.

__Reference Values__

1. **Population to Care Provider Ratio**

   Facility Users Past 36 Months / # of Dentists = _____   *1,200:1*

   Facility Users Past 36 Months / # of FTEs = _____   *500:1*

2. **Operatories per Dentist**

   # of Clinic Operatories / # of Dentists = _____   *2:1 or more*

3. **Dental Assistants per Dentist**

   # of DAs / # of Dentists = _____   *2:1 or more*

4. **Visits per Dentist**

   Dental Visits Past 12 Months / # of Dentists = _____   *1,926*

5. **Visits per Operatory**

   Dental Visits Past 12 Months / # Operatories = _____   *658*

6. **Relative Value Units per Patient Visit**

   Relative Value Units / Dental Visits Past 12 Months = _____   *5.3*

7. **Relative Value Units per Dental FTE**

   Relative Value Units / # of FTEs = _____   *2,697*

8.   **Relative Value Units per Dentist**

     Relative Value Units / # of Dentists = _____   *10,146*

9.   **Relative Value Units per Operatory**

     Relative Value Units / # of Operatories = _____   *3,467*

10.   **Broken Appointments per Scheduled Visit (% BA Rate)**

     Broken Appts / (Dental Visits Past 12 Months + Broken Appts – Emergency Visits)

     X 100 = _____   *Not Available*

11.   **Proportion of Population Served Annually (Annual Access to Dental Care)**

     Dental Users Past 12 Months / Facility Users Past 36 Months X 100

      = _____   *Goal = 60%*
Actual IHS-wide Access (2006) = 23%

12.   **Proportion of Patients Treatment Planned**

     Pts Treatment Planned / Dental Users Past 12 Months X 100 = _____   *Not Available*

13.   **Proportion of Patients Completed**

     Pts Planned Tx Completed / Pts Treatment Planned X 100 = _____   *Not Available*

14.   **Relative Value Units per Patient**

     Relative Value Units / Dental Users Past 12 Months = _____   *10.9*