UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

Victor Parsons; Shawn Jensen; Stephen Swartz; Dustin Brislan; Sonia Rodriguez; Christina Verduzco; Jackie Thomas; Jeremy Smith; Robert Gamez; Maryanne Chisholm; Desiree Licci; Joseph Hefner; Joshua Polson; and Charlotte Wells, on behalf of themselves and all others similarly situated; and Arizona Center for Disability Law, Plaintiffs, v. Charles Ryan, Director, Arizona Department of Corrections; and Richard Pratt, Interim Division Director, Division of Health Services, Arizona Department of Corrections, in their official capacities, Defendants.	No. CV 12-00601-PHX-NVW (MEA)

CONFIDENTIAL EXPERT REPORT OF:

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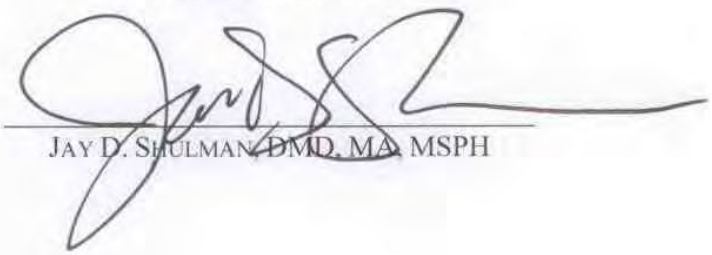
REGARDING
DENTAL CARE AT THE ARIZONA DEPARTMENT OF CORRECTIONS

NOVEMBER 8, 2013



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I. INTRODUCTION AND BACKGROUND

A. Qualifications

I have been retained by Plaintiffs' counsel as an expert in dental care in correctional institutions. I have been a dentist for over 41 years and have had careers in the military, dental education, and correctional dentistry consulting. I am certified by the American Board of Dental Public Health, one of nine specialties recognized by the American Dental Association. Dental Public Health "is that part of dentistry providing leadership and expertise in population-based dentistry, oral health surveillance, policy development, community-based disease prevention and health promotion, and the maintenance of the dental safety net." [ADA, Oral Health Topics] I also have extensive experience auditing educational, military, and correctional dental programs. My *curriculum vitae* is attached as Exhibit A.

During my 22-year military career, I had clinical, research, administrative, and command assignments in the United States, Okinawa, and Germany. Among my assignments, I served as the Army Surgeon General's Dental Public Health Consultant and wrote dental public health policy, procedures, and technical guidance. As Commander of the 86th Medical Detachment, I directed dental care delivery for the Army in north central Germany and operated six clinics with 20 dentists and 60 ancillary personnel. I was responsible for the dental health of 25,000 soldiers and family members. Among the studies I planned when I was in a research position were several on the Army's Dental Fitness Classification System, in which dentists assign patients to treatment priority groups based on the severity of dental needs.

I have served as a correctional dentistry consultant, court expert/representative, and expert witness several times since 2005. As a court expert in two major class action settlements involving prisoner dental care, I developed an audit process based on reviewing clinical records and performed system-wide audits of programs in California (roughly 170,000 inmates in 33 institutions) and Ohio (roughly 50,000 inmates in 30 institutions) over a multi-year period. Moreover, I have performed clinical dentistry and supervised dental and dental hygiene students at the Dallas County Juvenile Detention Center. My work in the military and correctional dentistry, as well as my training in Dental Public Health focusing on population-based care, have given me unique expertise to discuss not only specific incidences of dental care, but system-wide deficiencies in dental care and the effects those deficiencies are likely to have on inmate populations. A complete list of the cases for which I served as an expert is attached as Exhibit B.

I have written 55 peer-reviewed articles and three book chapters, served as a reviewer for several dental journals, and served on the editorial board of the *Journal of Public Health Dentistry*, the official journal of my specialty. Many of the papers I wrote during my academic career related to the epidemiology of dental caries (tooth decay) and oral lesions. Four publications relate to correctional dentistry, one of which involved surveying dental programs in state corrections departments. A complete list of my publications is included in my *curriculum vitae*.

I have been asked to render my opinion with respect to whether inmates in Arizona Department of Corrections ("ADC") facilities are subjected to a substantial risk of serious dental injury caused by ADC's systemic deficiencies. As explained further below, my opinions are

based on a review of dental records of the named prisoner plaintiffs and other inmates, as well as documents, reports, and depositions available at this time, as listed in Exhibit C, as well as the scientific literature. In addition, the opinions are based on my 41 years of professional experience in dentistry and are made to a reasonable degree of dental certainty.

B. Standard of Dental Care in Prison

Correctional dentistry focuses on the control of acute and chronic dental pain, stabilization of dental pathology, and maintenance or restoration of function. Dental treatment should include restorations (fillings) and not be limited to extractions. [Makrides *et al*. at 557] These standards of dental care are based on my research and understanding of the law, the care provided in the community, and the care provided in institutions. The standard of care used in the community at large is instructive because that standard is based on the type of care needed to protect patients from unnecessary pain and dental injury. [*Id.*]

1. Timeliness of Care

Inmates are entitled to timely treatment of their serious dental needs, as well as timely routine care, which is needed to prevent the occurrence of more serious dental injuries. Standards of dental care in the community and for correctional dentistry hold that inmates should not be forced to suffer pain or other dental injuries if those injuries could have been avoided by timely care. [Lake County Findings Letter at 15] Similarly, the U.S. Department of Justice ("DOJ") has held that the Civil Rights of Institutionalized Persons Act requires prisons to provide dental care consistent with generally accepted professional standards and to have sufficient treatment capacity that care is provided in a timely manner. [*See, e.g.*, Dallas County Agreed Order § III(A)(13) (mandating reforms in the dental care provided by the jail); Cook County Agreed Order § III(c)(58) (requiring the jail to "ensure that inmates receive adequate dental care, and follow up, in accordance with generally accepted correctional standards of care. Such care should be provided in a timely manner, taking into consideration the acuity of the problem and the inmate's anticipated length of stay.")]

2. Staffing

A prison system must be staffed with dental professionals qualified to provide inmates with needed dental care. Inadequate staffing causes delay and puts inmates at a substantial risk of serious injury. Among the minimum remedial measures identified by the DOJ to rectify deficiencies found in a jail and to protect the inmates' constitutional rights was to "[e]nsure dental hours accommodate the need for dental care." [Lake County Findings Letter at 29]

The recommended inmate to dentist ratio for prisons is at least 1,000:1, under the assumption that dental hygiene support will be provided in addition to that ratio. [Makrides *et al.* at 557] The ratio requires even more dentists per inmate if an inadequate number of dental hygienists and/or appropriately-trained staff are employed, or if dentists are tasked with performing duties that dental staff typically would perform. Thus, a staffing model for a dental program in a prison must include an appropriate mix of dentists, dental hygienists, and dental assistants.

Dentists. A dentist is an advanced level provider who possesses a baccalaureate degree as well as (at minimum) a professional degree generally requiring four years of post-college study. The practice of dentistry is the diagnosis, surgical or nonsurgical treatment, and performance of related adjunctive procedures for any disease, pain, deformity, deficiency, injury or physical condition of the human tooth or teeth, alveolar process, gums, lips, cheek, jaws, oral cavity and associated tissues. Among the procedures performed by a dentist are tooth extractions, restorations, endodontics (root canals), periodontal scaling, curettage and surgery, and fabrication of dentures. Dentists supervise dental hygienists and dental assistants. [AZ Code Dentistry][1]

Dental Hygienists. A dental hygienist has an associate or baccalaureate degree in dental hygiene. A dental hygienist's education emphasizes the basic sciences, which include microbiology, chemistry, pathology, anatomy and physiology. Dental hygienists may perform oral prophylaxis, scaling, closed subgingival curettage, and root planing, administer local anesthesia, examine the oral cavity and surrounding structures, perform a periodontal examination, record clinical findings, compile case histories, and expose and process radiographs. Moreover, a licensed dental hygienist may perform all functions authorized and deemed appropriate for dental assistants. [AZ Code Dental Hygiene]

Dental Assistants. A dental assistant is a minimally trained individual[2] with familiarity in dental physiology, dental charting, sterilization and infection control, dental x-ray techniques,[3] instrumentation, dental materials, and preventive dentistry.[4] [AZ Dental Assisting] For example, dental assistants employed by the State of Arizona should have, "Knowledge of: dental office and dental operative assistance procedures and techniques; the principles and methods of sterilizing instruments; oral hygiene and plaque control techniques; methods, processes, materials, instruments and equipment used in making dental appliances [and] Skill/Ability to: work with patients and assist a dentist in work; follow oral and written instructions; perform clerical work; communicate both orally and in writing." [AZ DA Position]

3. The National Commission for Correctional Health Care ("NCCHC")

Dr. Michael Adu-Tutu repeatedly stated in his deposition that ADC relies on NCCHC standards and accreditation to show that it complies with the standard of care. The NCCHC describes itself as an organization "dedicated to improving the quality of correctional health care services and helping correctional facilities provide effective and efficient care." [NCCHC 2008 at vi] NCCHC accredits correctional institutions based on their compliance with, among other standards, the NCCHC Oral Care Standard. The Oral Care Standard measures an institution's

[1] Full citations are available in Exhibit C: Materials Considered.

[2] For example, the Arizona School of Dental Assistants offers a 12 week (112 clock hour) diploma program to high school graduates. [*See* AZ Dental Assisting]

[3] A dental assistant may expose radiographs for dental diagnostic purposes under the general supervision of a dentist if the assistant has passed an examination. [AZ Code Dental Assistants]

[4] A dental assistant may polish the natural and restored surfaces of teeth under the general supervision of a dentist if the assistant has passed an examination. [*Id.*]

processes for providing care, requiring a full range of dental treatment (rather than just extractions) and a priority system to determine the need for more urgent care. [*See Id.* at 69-71 (Oral Care Standard (P-E-06)); NCCHC 2008 at 70 (Compliance Indictors)]

NCCHC accreditation, however, does not require that dentists audit the care actually performed at an institution in order to evaluate health outcomes. Additionally, some NCCHC standards, such as its requirement that care be "timely," do not specify auditable standards. Thus, relying on NCCHC standards or accreditation, as ADC does, fails to demonstrate that an institution meets the appropriate standard of care. To the contrary, the shortcomings of the NCCHC standards reinforce the systemic failures within ADC.

4. The California Department of Corrections and Rehabilitation ("CDCR")

California provides an example of a corrections system that employs a classification system with specific time frames for treating dental conditions. [*See* CDCR P&P at Ch. 5.4-3] This system, implemented in the process of improving a previously unconstitutional dental system, is an improvement over the policies and practices currently utilized by ADC. Under the CDCR system, the care required by the prisoner is categorized as Emergency, Urgent (Priority 1), Interceptive (Priority 2) or Routine (Priority 3).

a. ***Emergency conditions*** must be treated immediately and are acute oral or maxillofacial conditions, which are likely to remain acute, worsen, or become life-threatening without intervention.

b. ***Urgent conditions*** are designated as Priority 1A, 1B, or 1C.

i. Priority 1A conditions must be treated within 72 hours and involve sudden onset or severe dental pain that prevents prisoners from carrying out essential activities of daily living.

ii. Priority 1B conditions must be treated within 30 days and are sub-acute hard or soft tissue conditions that are likely to become acute without early intervention. Priority 1B conditions include a tooth that has extensive decay to the point of jeopardizing the pulp as well as a tooth that has lost a filling and is vulnerable to pulpal inflammation or destruction from normal chewing.

iii. Priority 1C conditions must be treated within 60 days and have unusual hard or soft tissue pathology such as acute ulcerative necrotizing gingivitis and severe localized or generalized periodontitis.

c. ***Interceptive conditions*** must be treated within 120 days and include (a) advanced decay or periodontal pathology, (b) edentulousness or lacking posterior teeth in occlusion, (c) moderate to advanced periodontitis, and (d) chronically symptomatic impacted teeth.

d. ***Routine conditions*** must be treated within 12 months and involve (a) an insufficient number of posterior teeth to masticate a regular diet, (b) decayed or fractured teeth that require restoration with definitive materials, (c) definitive root canal treatment where allowed by policy, and (d) non-vital, non-restorable teeth requiring extraction.

Under the CDCR system, prisoners should be scheduled so that all conditions in the priority categories are treated within the specified timeframes.[5] [CDCR Timeline Memo] Accordingly, the system minimizes the risk that prisoners will suffer continuing decay and periodontal disease that jeopardize their teeth and their overall health.

C. Description of Dental Conditions

1. Odontogenic Pain (Toothache)

Regardless of the size of an institution or the level of dental care provided, the requirement to treat toothaches is common to all correctional facilities. [Shulman and Sauter at 63] Managing patients' pain is a standard part of dental practice. Pain is managed by the appropriate use of analgesics as well as expediting the treatment of patients whose complaints of pain are clinically validated. Among the possible non-traumatic causes of tooth pain are (a) tooth fractures (often, a tooth that has been weakened splits in the course of normal chewing), (b) pulpitis, (c) caries (decay) extending through the enamel into dentin, (d) dental (periapical or periodontal) abscess, and (e) cellulitis (a diffuse inflammation of the connective tissue caused by a spreading bacterial infection just below the skin surface).

For most infections, the appropriate treatment is to establish drainage through the tooth (if the tooth is to be saved) or to extract the tooth as soon as possible. [*Id*. at 66] "Delayed treatment of the original focus of infection may turn a minor problem into a serious condition." [Makrides *et al*. at 559] NCCHC restorative dentistry guidance[6] concurs, noting that, "although restorative dental care is usually classified as routine, correctional systems need to place significant importance in providing such care to their inmates. *Delaying or deferring restorative care in a correctional setting simply leads to an increase in oral pain, infection, or tooth loss.* As a result, dental services become inundated with emergency dental sick-call requests and more procedures to replace lost teeth with removable prosthetics." [NCCHC 2008 at 170 (emphasis added)]

When there is no dental sick call because the dental clinic is closed or the facility has no dentist, it is critical that midlevel providers and physicians triage and manage those prisoners until a dentist can resolve the problem. Moreover, prisoners complaining of a toothache should be examined by a midlevel provider, physician, or dentist within 24 hours of the complaint being received by prison staff. [Shulman and Sauter at 67] "[I]n correctional settings, nurses must be

[5] CDCR time frames need to be adhered to as long as the time frame is consistent with the community standard of care for general dentistry. In other words, deviation from the time frame is permitted if complying with the time frames is not, for whatever reason, in the best interest of the inmate-patient. [CDCR Timeline Memo]

[6] Based on a white paper written by Dr. Adu-Tutu. [NCCHC 2008 at 174]

able to assess teeth and gum conditions to evaluate abscesses, trauma, and cavity pain.'' [Burrow *et al.*, 2006 at 445] Triage should be performed by registered nurses and not licensed practical/vocational nurses.[7]

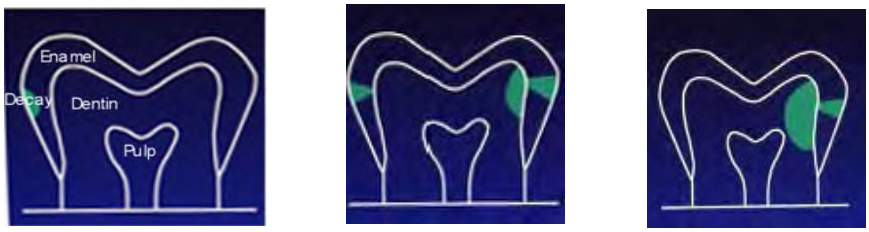
2. Dental Caries

Dental caries (tooth decay) is an infectious disease characterized by progressive destruction of tooth substance, beginning on the outer (enamel) surface or the exposed root surface. Left untreated, the decay can progress, causing pain and leading to tooth loss, localized infection (dental abscess), and occasionally, systemic infection.

Caries is typically diagnosed visually and/or radiographically. The visual appearance ranges from a "white spot" on the enamel (outer layer of the tooth) to a gaping hole in the tooth with black staining characteristic of end-stage caries. Figure 1 is a representation of how different stages of caries may appear on a radiograph.

Figure 1. Interproximal Decay as Seen on a Radiograph

A. Incipient **B. Moderate / Advanced** **C. Severe**



An incipient lesion (Figure 1A) may not be readily identified clinically because there is no "cavity" in the tooth and too little tooth has been affected to be seen on a radiograph. Once the lesion reaches the dentin (early Figure 1B)—a tissue less resistant to decay than enamel—the patient should be scheduled for treatment. Figure 1C shows an advanced lesion that is almost through the dentin to the pulp. When decay reaches the pulp, the tooth will require either endodontic (root canal) treatment or extraction.[8] Caries radiographically at or beyond the dentin

[7] "Nurses of varying educational levels practice in correctional facilities. Licensed practical/vocational nurses perform tasks such as transcribing orders, administering medications, health screening, phlebotomy, providing medical treatments in an ambulatory or infirmary setting, conducting rounds in segregation units, and assisting with patient tracking systems. Registered nurses conduct triage, perform nursing assessments, and provide direct care to patients." [LaMarre, 2006 at 419]

[8] Within ADC, endodontic treatment is rare so these teeth will almost always be slated for extraction. In my review of 300 records, I documented only nine completed root canal treatments: **Redacted**

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should receive prioritized treatment to prevent deterioration to the point that the only practical alternative is extraction.

A tooth classified as requiring routine (as opposed to urgent) treatment typically will not remain asymptomatic indefinitely. Caries, especially once the enamel is penetrated, generally progresses, and the more time that passes before the tooth is treated (*i.e.*, filled), the greater the likelihood that decay will progress. Progression of decay destroys tooth structure, possibly causes an abscess, and often requires extraction. Consequently, any classification system must have timelines to ensure that a tooth originally classified as routine does not develop a severe problem due to untimely treatment.

3. Pulpitis

Pulpitis is an inflammation of the living tissue within the tooth. Reversible pulpitis will resolve when the source of irritation is treated or removed. Typically, reversible pulpitis is attributed to minor tooth fractures, caries (decay), defective or missing fillings, and occlusal (bite) discrepancies and can be treated with analgesics and a dental procedure. The dental procedures may include removing decay and inserting a new or replacement filling, adjusting the bite, and applying desensitizing agents. [Shulman and Sauter at 63]

When the inflamed living tissue inside the tooth (the pulp) swells and circulation is compromised, pulpitis becomes irreversible. A tooth with irreversible pulpitis has a partially vital pulp with inflammation and degeneration that is not expected to improve. Once pulp death (necrosis) occurs, the tissue is vulnerable to attack by bacteria, leading to infection at the apex of the tooth. Eventually this infection spreads by resorbing bone and supporting structures. [*Id.* at 63-64]

4. Lost Fillings or Crowns

It is not uncommon for fillings to fracture and fall out in whole or in part due to wear or underlying decay. Any underlying decay should be removed expeditiously because it is generally within the dentin and close to the pulp. Decay near the pulp may lead to irreversible pulpitis and can jeopardize the prognosis of the tooth.

When a filing falls out or fractures, the filling must be replaced in a timely manner to protect the pulp of the tooth from the effects of dentinal sensitivity, which is pain brought on by such stimulating factors as heat, cold, sweet, sour, acid, or touch. [Endodontics at 1] The longer dentinal sensitivity persists the greater the likelihood that what initially may have been a reversible condition will develop into irreversible pulpitis requiring root canal or extraction. The structural integrity of the tooth also may be impaired making it vulnerable to fracturing during normal chewing. Consequently, even a tooth in which the pulp is not exposed may develop irreversible pulpitis if the filing is not timely replaced or repaired.

5. Fractured Teeth

Fractures of the teeth are often the result of trauma and can be difficult to diagnose. Non-vital teeth are more susceptible to fracture than vital teeth due to the loss of their blood supply

(pulp). Moreover, because they are "dead", there is no pain associated with the fracture. The broken tooth, however, may become an irritant to the soft tissues.

Fractured teeth are generally classified into three categories: (1) enamel only, (2) enamel into dentin, and (3) fractures involving the pulp. Fractures that extend only into the enamel are usually asymptomatic and do not require immediate dental treatment unless the tooth is an irritant to the lips, tongue, or cheeks. In contrast, fractures that extend into the dentin are usually symptomatic, causing tenderness, reaction to thermal changes, and pain. While not an emergency, they should be treated to relieve the symptoms. The greater the area of exposed dentin the more urgent the treatment need because the pulp can become necrotic, resulting in infection. Fractures that extend into vital pulp often cause severe pain and are considered an emergency. Bleeding from the pulp can be seen in some cases, usually as a small pinpoint of red in the dentin. These fractures should be treated as soon as possible.

6. Periodontal Infections

Periodontal (gum) infections also can cause a toothache. Acute periodontal infections include gingival abscess, periodontal abscess, necrotizing periodontal disease, herpetic gingivostomatitis, periocoronal abscess (pericoronitis), and combined periodontic-endodontic lesions. Resolution of these painful conditions requires physical removal of infectious material or necrotic tissue by a dentist. Antibiotics are not a substitute for this care but may be a component of the overall treatment. [Shulman and Sauter at 64]

II. METHODOLOGY

To assess the care provided in ADC institutions, I reviewed (1) the dental care records of named plaintiffs and other identified prisoners, (2) a sample of dental records from nine prisons, (3) grievances filed by those prisoners, (4) ADC policies and procedures pertaining to the provision of dental care, (5) dental staffing and wait time reports, and (6) additional Smallwood Prison Dental Services, Inc. ("SPDS") and ADC documents described in Exhibit C. I also toured various prisons, which gave me the opportunity to see the dental facilities and to review medical records as they are maintained by ADC. In all, this methodology provided a sufficient window into the overall quality of ADC's dental program, including the timeliness of addressing complaints of pain, identifying disease, arresting disease progress, and rehabilitating affected teeth. To the extent my methodology differs from other Plaintiffs' experts in this case, it is largely due to the uniqueness of dental care and the nature of the opinions I have reached. The record review that I performed is more than sufficient for me to accumulate gross data and to reach opinions to a reasonable degree of dental certainty.

A. Data Collection

In addition to reviewing the records of named plaintiffs and other identified prisoners, I performed record audits at each prison I visited. Those prisons were Florence, Safford, Phoenix, Tucson, Perryville, Lewis, Eyman, Douglas, and Yuma. The purpose of my prison visits was to collect sufficient data to allow me to opine about the quality of the ADC dental program. When I was a Court Expert in California and Ohio, I used data collected from similar extensive record reviews to inform my opinions. In my experience, this is an effective way to assess institutional

dentistry. While my primary focus was performing record audits, I also walked through dental clinics at each prison and, when possible, asked questions of a limited scope to dentists and other designees. Those walks and discussions helped form my opinions about the dental care provided by ADC.

B. Record Review

I reviewed 300 health records at nine prisons, focusing on Health Needs Requests ("HNRs") for dental issues from 2009 to the present, progress notes, and consent forms. [*See* Exhibit C] I reviewed only entries in the selected records from 2009[9] to present so that I could assess a fairly recent examination/treatment plan and evaluate the extent to which identified dental conditions were addressed. The 300 records included 608 appointments related to pain and 447 routine care appointments.

To select records, I used a system-wide report of all dental appointments scheduled between January 1, 2012 and approximately June 21, 2013. [ADC091994–3617] The report identified 22,715 appointments and listed inmate name, inmate identifier, location, and type of appointment. Based on my experience in performing correctional and military dental audits, I estimated that a review would take about 15 minutes per record and, as a result, approximately 30 records could be reviewed each day. Since timely addressing pain is an excellent measure of the responsiveness of a dental care system, I tried to select inmates who had one or more scheduled appointments for issues related to pain and swelling. By selecting such appointments, I could then evaluate how timely the inmates' complaints of pain and swelling were addressed as well as the urgent and routine care that occurred before and after those appointments.

I forwarded my list of records to plaintiffs' counsel and requested that they add records for any prisoners whose dental grievances defendants were in the process of producing, as well as dental records that had been mentioned in the January 2013 Oral Care MGAR. Once on-site at each facility, I also requested a copy of the current "Routine Care List" and selected several prisoners from that list to review as well.

In addition to the on-site record review, I reviewed the records of the named plaintiffs, to the extent they were produced, as well as the records of other prisoners who are identified in Exhibit C.

C. Data Analysis

While conducting my review, I summarized the HNRs and clinical entries. For each HNR, I recorded the date of submission (per the inmate), a summary of the inmate's stated problem, and the date and a summary of the treatment plan. For each health record, I recorded the date of treatment and a summary of the progress notes that included tooth number and procedure. I used this information to assess the scope and timeliness of routine care as well as care provided to inmates who submitted an HNR stating pain.

[9] I was primarily interested in the time period from 2010 to 2013 but recorded 2009 entries (for example, exams and treatment plans) that shed light on subsequent treatment.

To calculate an inmate's wait time after submitting an HNR, I subtracted the date that the inmate wrote on the HNR from the date the inmate was scheduled to see a provider.[10] If the inmate refused the appointment, I treated the refusal date as the appointment date. I used Microsoft Excel to calculate percentiles of wait times for urgent and routine care.

If additional summary information had been available, I would have reviewed it. For instance, I would expect that a large institution like ADC, responsible for care for numerous patients, would maintain lists of all HNRs submitted, lists of wait times that more accurately display the total time from the moment the inmate requests care to the time the inmate actually receives adequate care, staffing documents showing specific locations and times with staffing shortfalls, and urgent care wait lists. Further, I requested to review HNRs submitted over time, as well as logs for routine and urgent care—documents that would have provided information about patient care similar to that I constructed through record reviews. However, ADC either does not maintain such gross data or has not produced it. A failure to maintain simple gross data about the dental care provided to prisoners, including any shortcomings in that care, itself is troubling and illustrative of a lack of sufficient monitoring and control. Moreover, as described below, because ADC's policies and procedures artificially decrease reported wait times, even the data I did review was not entirely reliable for purposes of my analysis. Even so, I am able to make the opinions in this report with a reasonable degree of dental certainty based on the data that I have been able to accumulate from the methodology described above.

III. OPINIONS

The Eighth Amendment requires that prison officials provide a system of ready access to adequate dental care that addresses patients' serious dental needs, including pain, deterioration of teeth, and the inability to eat or engage in other normal activities. It is my opinion that the consistently inadequate care documented in the records I reviewed is attributable to systemic problems caused by ADC's failure to implement, monitor, or enforce effective dental policies and practices, ensuring lapses in care, unnecessary pain and tooth loss, and continued dental problems. Specifically, ADC's inadequate policies and practices with regard to staffing, triaging, treatment time frames (or lack thereof), tooth extraction, preparation for dental devices, and contractor monitoring individually, and in combination, create a system that fails to properly and timely identify and treat both urgent and routine dental issues experienced by inmates, as more specifically described below. Moreover, ADC's failure to adequately monitor the care being provided by its contractors (or even to keep records that would allow adequate monitoring) means that ADC cannot ensure that it is addressing prisoners' dental needs. These failures place all inmates at a substantial risk of serious dental injury, such as preventable pain, advanced tooth decay, and unnecessary loss of teeth.

This opinion is confirmed by my review of 300 dental records, the dental records of the named plaintiffs and other identified prisoners, documents produced in this litigation, witness testimony, and my own experience in evaluating correctional dental systems. The inadequacies

[10] Where this date differed from the date time-stamped on the HNR by more than one day, I used the time-stamped date. For the purpose of calculating percentiles for wait times, I excluded appointments not generated by an HNR (*e.g.*, serial extraction appointments and other appointments apparently generated by the Dental Department).

in dental care experienced by the inmates whose records I reviewed are typical of the risk of inadequate dental care for all inmates. It is therefore my opinion that all present and future inmates with dental problems are at risk for preventable pain and tooth morbidity and mortality.

A. Inadequate Dental Staffing

It is my opinion that ADC has inadequate treatment capacity because it does not employ enough dentists or dental hygienists. Lacking dental personnel is a systemic problem that makes it increasingly difficult for ADC to address all dental needs in a timely and adequate way. ADC's inadequate treatment capacity also results in inmates who are assigned to the Routine Care List typically having inordinately long waits to be scheduled, often resulting in unnecessary pain and deterioration of tooth structure and needless extractions. This is below the professional standard of care in the community and puts inmates at a substantial risk of dental injury, including preventable pain and loss of teeth and tooth structure.

1. Staffing Ratios

The recommended inmate to dentist ratio is 1,000:1 under the assumption that dental hygienists provide support independent of this ratio and that dentists are not required to perform work that dental hygienists typically would do. [Makrides *et al.* at 557] In a 1996 survey, ADC reported an inmate to dentist ratio of 763:1 and no dental hygienists at that time. [Makrides and Shulman at 299] Since that time, however, dental staffing in ADC has decreased markedly.

In a follow-up study in January 2007, ADC reported an inmate census of 34,864 and 33 dentist full-time equivalents ("FTE"), or a ratio of 1,056:1. Out of the 33 dentist FTEs, however, only 26.5 were filled (a vacancy rate of 19.7%), resulting in an adjusted inmate to dentist ratio of 1,315:1. [ADC NIC 2007] In July 2012, after Wexford Health Sources took over dental care, 19.3 FTEs—only 64% of the proposed dentist FTEs—were seeing patients, producing an inmate to dentist ratio of 1,720:1. [Wexford Vacancies 7/31] While staffing improved shortly thereafter, as of August 12, 2012, there were still only 24 FTE dentist and 32 dental assistant positions filled system-wide. Based on the October 2012 census of 33,206, the inmate to dentist ratio was 1,384:1. [Arizona Vacancies and FTE Fill Percentages Report]

Year	Inmate/Dentist Ratio
1996	763:1
Jan. 2007	1,315:1
July 2012	1,720:1
Aug. 2012	1,384:1
June 2013	1,671:1

According to the June 2013 Corizon staffing report, Corizon/SPDS authorizes positions for 10 dental directors,[11] 20 dentists, 1.8 dental hygienists, and 43 dental assistants. [Arizona

[11] Dental Directors have supervisory responsibilities but primarily provide clinical care.

Staffing Roll-up June 2013] In contrast, the Wexford contract only provided for 1 statewide dental director, 6 dental directors, 23.5 dentists, and 36 dental assistants. This information is summarized in the following table.

Provider	Directors	Dentists	Hygienists	Assistants
Corizon	10	20	1.8	43
Wexford	7	23.5	--	36

Corizon, therefore, has established 31.8 dental care provider positions (consisting of directors, dentists, and hygienists) compared to Wexford's 30.5 dental provider positions. Based on the inmate population of 35,342 in September 2013, and assuming that all positions are filled, Corizon's ratio of inmates to dental care provider is, best case, 1,111:1 compared to Wexford's ratio of 1,159:1. However, the same report shows that Corizon was operating with only 7.67 dental directors, 13.48 dentists, and 36.75 dental assistants, yielding a ratio of 1,671:1. [12] SPDS president Dr. William Smallwood testified in July 2013 that SPDS was recruiting for only two dentist positions. [Deposition Transcript of William Smallwood dated Aug. 20, 2013 ("Smallwood Dep.") at 227:7-20] If the dentist positions were filled with full-time dentists, the ratio of inmates to dental providers would be 1,417:1—nearly 50 percent fewer providers available to see inmates than in 1996.

Corizon's 1.8 dental hygienist FTEs yields a ratio of 19,634 inmates per dental hygienist. As a comparison, the CDCR has a ratio of 600 inmates per dentist and 2,000 inmates per hygienist.[13] [CDCR P&P] Even Corizon's ideal ratio of inmates to dental providers (1,111:1) is about 31% fewer dentists than the ADC ratio calculated in 1996 (763:1). [Makrides and Shulman, 2002 at 299][14] The following table summarizes staffing provided by Corizon and Wexford (if all positions are filled) compared to that required in California prisons.

[12] The September staffing report does not show meaningful improvement.

[13] The CDCR also required that, in addition to the staff dentists in the reported ratios, each prison have a Supervising Dentist who is expected to spend 45% of his/her time seeing patients. [*See* CDCR Supervising Dentist Position Statement] The CDCR inmate to dentist and inmate to dental hygienist ratios were the result of a stipulated injunction in *Carlos Perez, et al. v. James Tilton, et al.*, Amended Stipulation and Order (Case 3:05-cv-05241-JSW, Doc. 69 filed 8/21/2006). The case was dismissed in August 2012 (Case 3:05-cv-05241-JSW, Doc. 726 filed 08/16/12).

[14] Applying the 1,000:1 ratio suggested by Makrides et al. to the ADC population would require 35 dentist FTEs. Applying the CDCR inmate to hygienist ratio of 2,000:1 would require 17.5 hygienist FTEs.

Provider	Inmate:Dentist	Inmate:Dental Provider	Inmate:Hygienist
Corizon	1,178:1	1,111:1	19,634:1
Wexford	1,159:1	1,159:1	--
California	600:1	--	2,000:1

Moreover, because teeth cleaning, scaling and debridement are performed primarily by dentists at the expense of providing other treatment, Corizon/SPDS's ratio overstates the treatment capacity for procedures dentists alone may do (*i.e.*, fillings, dentures, and extractions).

2. Consequences

A system with an insufficient number of dentists to deal adequately with its workload is forced to delay care by increasing the amount of time in the waiting queue. In other words, insufficient staffing makes it impossible for ADC to provide timely access to basic dental care. Moreover, there is pressure to create shortcuts by reducing the care that must be provided by dentists or other licensed providers.

In December 2012, ADC's dental monitor, Dr. Karen L. Chu, drafted a list of recommendations for ADC dental care, based on her findings from reviewing grievances and visiting clinics. In her summary drafted for Director Pratt, she described one of the shortcuts reducing the burden on dentists, to the detriment of patients:

> PAIN HNRs: . . . If the dentist gives Rx for antibiotics to reduce the swelling/pain, the inmate is typically instructed to submit another HNR for treatment of the teeth causing pain. However, since the inmate will no longer be in pain, the HNR will be placed on the routine care list which may be a wait of over 90 days. This is much too long since the tooth of the tooth [sic] is urgent. This is one of the most popular complaints of inmates. Going forward, the dental clinic will take the initiative to appoint the inmate for treatment within 7-10 days after the pain visit. An urgent care list will also be maintained which does not currently exist. This will assist the clinic in keeping track of the urgent care patients so they don't get lost in the shuffle.

[AGA_Review_00090609 ¶ 1]

Dr. Chu also identified another consequence of inadequate dentist staffing.

> Treatment plans/exams: Many inmates go years without an updated treatment plan or exam. In the outside world, the general public should ideally be receiving dental exams (check-ups) every 6 months and cleanings every 6 months if their gums are normal and healthy ... more often if they have periodontal disease (gum disease). This will be more difficult to solve since the wait times are so long, extending 90 days. With the lack of dentists, this

> problem will continue but at least the dentist can take the initiative to do a quick exam while the inmate is present for treatment.

[*Id.* at ¶ 3]

Another issue Dr. Chu raised was inadequate treatment of periodontal (gum) disease. "Periodontal disease (gum disease) is very prevalent, however, it is rarely addressed in treatment plans is typically not treated. Typical treatment would be deep cleanings called 'scaling and root planing'". [AGA_Review_00094915] She is correct, however, that none of the records I reviewed documented a "deep scaling or a root planing procedure." It is likely that ADC cannot perform these treatments and keep dental wait times under control with its current level of staffing.

My record review found issues with care consistent with insufficient levels of staffing. For example, ADC requires that inmates with urgent care needs be seen within 72 hours. Given that these have been identified as the most critical dental needs, only the physical lack of a dentist should delay these visits. Relatedly, the lack of such dentists necessarily results in extended periods of pain for inmates whose appointments are delayed. The following examples from my record review are typical of the harms incurred by inmates under this system.[15]

Stephen Swartz (102486): Despite Mr. Swartz's submission of many HNRs over a period of months for pain associated with a maxillofacial injury and subsequent oral surgery, and despite requests by an ADC physician for approval of specialty consultations, the appointments did not occur. [*See, e.g.*, ADC002002, 2006, 2005, 1997, 1985, 1986, 1989, 1971, 1962] In addition Mr. Swartz submitted an HNR in January 2012 complaining of "extreme pain" from a cracked tooth. [ADC001915] The response—six days later—was stamped, "You are scheduled for pain evaluation." [*Id.*]

Redacted submitted an HNR on June 1, 2011 for a toothache that interfered with eating or drinking. Ibuprofen was called into the Nurse Line on June 6, 2011—five days after he submitted the HNR. [ADC133495] He was seen on June 23, 2011, 22 days after his HNR was submitted, and tooth #19 was extracted. [ADC133249]

Redacted submitted an HNR on July 16, 2010 for a toothache (ADC135426), was seen as a Dental Assistant Triage on July 21 and was given ibuprofen. [ADC135391] He was finally examined by a dentist after 12 days on July 28. [*Id.*]

Redacted submitted an HNR on November 12, 2012 stating that a filling had fallen out and was causing pain. He was told that he would be seen for a pain evaluation, but the pain evaluation was not scheduled. He submitted another HNR stating that he had a hole in his tooth [the lost filling] and that the tooth was sensitive to hot and cold. He was seen on January 14, 63 days after his initial HNR, and the filling was replaced.

[15] I address issues with routine care separately in Section III.C, *infra* because several ADC policies and procedures combine to affect wait times at ADC.

Redacted submitted an HNR on August 14, 2012 for pain (bad cavity—can't eat on left side). After submitting other HNRs in November, January, and March for pain on the left side, he was eventually seen on May 16, 2013, 275 days after his first pain HNR, and provided an analgesic. After three more HNRs complaining of pain, he was seen again on July 14 on a Pain Evaluation at which tooth #4 (which was identified as needing a filling at an October 2009 examination) was now found on x-ray to have periapical radiolucency.[16] The Pain Evaluation occurred 328 days after Douglas submitted an HNR in August 2012 and 44 months after the October 2009 exam indicated that tooth #4 (and 7 other teeth) should be restored. In my opinion, this untimely treatment not only was responsible for continual avoidable pain but jeopardized the prognosis of his untreated teeth.

Redacted submitted an HNR for toothache with swelling and was seen by Nursing on January 7, 2013. He was diagnosed with a dental infection and was given penicillin and ibuprofen. He submitted an HNR the next day complaining of a swollen neck in addition to the toothache, was diagnosed by the medical department with a dental abscess extending to the submandibular space, and was prescribed antibiotics three different times before being seen by a dentist on January 14. Prompt extraction of the tooth would likely have prevented the abscess from progressing to the submandibular space.

Redacted experienced consistently delayed responses to HNRs about a painful wisdom tooth. He submitted an HNR on June 26, 2012 (pain and infection in a wisdom tooth) and received no response. He submitted another HNR on July 9 (Emergency Pain/infected wisdom tooth) and was seen on July 11 at a Pain Evaluation, 15 days after his initial HNR, where it was decided that he should be referred to an oral surgeon for extraction. After three more HNRs and pain evaluation visits, months of continual pain, and extraction of an opposing tooth to relieve pressure, his wisdom tooth (#17) was extracted on January 23, 2013.

3. Summary

Staffing is the basic input for a functional dental system. Without adequate staffing, there simply is not enough capacity to see all inmates in a timely manner or to give all inmates needed care. Further, when understaffed prison dentists and staff are overworked, it is inevitable that inmates are placed at a substantial risk of serious dental injury. What is more, to compensate for the lack of staffing, institutions with low staffing often establish formal or informal practices as shortcuts. These practices, however, often exacerbate the problems of low staffing. Based on ADC's documents and the records I reviewed, including Dr. Chu's findings, ADC does this by permitting dental assistants to perform HNR triage and in-person triage of patients to compensate for the lack of dentists, who should be performing those tasks. Moreover, within ADC, dentists typically perform teeth cleanings or other tasks that hygienists are trained to perform, the end result being that dentists have less time to devote to providing dentist-level care to patients.

Seeing prisoners who complain of pain or have other dental issues in a timely manner requires an adequate number of dentists on staff. My record review documented a consistent pattern of delay in treating inmates consistent with inadequate staffing levels—ADC is either

[16] A periapical radiolucency is consistent with a periapical abscess that can be caused by the progression of decay to the pulp. This is likely the result of treatment delay.

unable to see the patients in a timely manner, or unable to keep track of all incoming requests and patients fall through the cracks. Either way, by failing to timely treat urgent care, inmates with both urgent and routine needs have treatment deferred to the point that disease progression made restoration problematic or infeasible. As a result, inmates suffer avoidable pain, tooth morbidity, and tooth mortality. While wait times have improved since March 2013 (as discussed further below), current staffing is still insufficient given the untimely care I documented.

B. Inadequate Process for Triaging Inmates Requiring Dental Treatment

It is my opinion that the Dental Department's policies for triaging inmates requiring dental treatment place inmates at an unreasonable risk of receiving untimely or inadequate dental care. In particular, the process (or lack thereof) for responding to HNRs places many inmates at risk of suffering preventable pain and tooth morbidity. ADC's existing triage guidelines are insufficient to properly categorize inmates in need of dental care because they fail to distinguish between types of so-called "routine care." As a result, the HNR triage process fails to appropriately address the progression of tooth decay and other chronic issues or ensure that inmates suffering tooth pain receive timely urgent dental treatment.

In addition, ADC has a policy or practice of allowing dental assistants, who are not licensed providers and do not hold dental degrees, too much discretion in determining when and if treatment will take place based on HNRs. Dental assistants also have too large a role in examining patients. The Dental Assistant Triage process is flawed in that it allows unqualified individuals to engage in clinical activities beyond their education and training. When dentists base clinical decisions on an examination performed by unqualified individuals, they fail to exercise independent clinical judgment and depart from accepted professional norms. These policies and practices are below the professional standard of care in the community and put inmates at a substantial risk of dental injury.

1. Existing HNR Process

Inmates submit HNRs to inform the Dental Department that they have dental problems or to communicate a request. HNR forms are obtained by inmates on their units and submitted to Medical. A nurse reviews all HNRs and sends those regarding dental issues to the Dental Department, where they are evaluated by a dental assistant.[17]

The Dental Services Technical Manual ("DSTM") instructs that the following conditions qualify as "urgent care": fractured dentition with pulp exposure, acute dental abscess, oral pathological condition that may severely compromise the general health of the inmate, or acute necrotizing ulcerative gingivitis.[18] [Dental Procedure 770.2 ¶ 3.1.2][19] All other requests for

[17] Dental assistants have not always triaged the HNRs. Previous ADC practice was for dental assistants to pull the records of inmates who submitted HNRs and dentists would review the records and x-rays before making triage decisions.

[18] There are some conditions that qualify as "emergency care"—such as maxillofacial fractures, postoperative uncontrolled bleeding, facial swelling that is life threatening, and intraoral lacerations that require suturing (Dental Procedure 770.2 ¶ 3.1.1)—but those are very rare and, in most cases, are handled outside of the HNR process.

treatment—such as fillings and cleanings—are "routine care."[20] Urgent care visits, often referred to as "pain evals" or "911 visits", are used primarily for extractions and dispensing pain medication.[21] Prisoners requesting what is deemed to be "urgent care" are brought in for an appointment within a few days. Dentists see those requesting "routine care" in the order that care is requested, time permitting after each day's urgent and recurring visits are seen.[22]

2. The existing ADC System lacks the ability to properly categorize dental problems

The DSTM provides no timelines for urgent care appointments. Nor are there any timelines for routine treatment. Consequently, an inmate with a decayed tooth placed in Priority 3 (routine care) may remain there indefinitely—perhaps until the decay progresses to the point that tooth structure is lost, making restoration difficult (*i.e.*, requiring a larger filling with a poor prognosis) or requiring extraction. Dental Procedure 770.2 provides that "[t]he scheduling of dental appointments for inmates will be based on the current relative priority of the inmate's dental condition within the dental classification system," but there is no requirement for follow-up analysis of the inmate's condition, so scheduling depends on the priority set based on the inmate's HNR.

Although the DSTM does not provide any time frames for when inmates classified as "urgent" or "routine" should be seen by a dentist, ADC required Wexford and Corizon to agree that inmates with urgent requests be seen within 72 hours and inmates with routine requests be seen within 90 days. [ADC014200] SPDS actively manages to these goals. Wait times have markedly improved since March 2013. [ADC153796] But this improvement is not sufficient to prevent the harms associated with the deficient triage procedure (Dental Procedure 787) and the failure to account for progression of dental disease. [Dental Procedure 770.2] For prisoners who do not have substantial dental problems, for example incipient decay (see Figure 1, *supra*), waiting 90 days for a cleaning or a filling is not a problem. However, when many teeth require treatment and decay has progressed (Figures 2 and 3, *supra*), delay may allow decay to progress to the point that one or more teeth are no longer restorable or will require a more complex

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[19] References to "Dental Procedure" numbers are to procedures in the DSTM (ADC010554-647).

[20] Certain requests are Priority 4 (exempt) conditions that are not addressed by ADC. These are fixed prosthetics (crowns and bridges); orthodontics; removal of asymptomatic third molars or impactions without pathology; treatment of discolorations, stains, and cosmetic defects; and ridge augmentations and vestibular extensions / implants. [Dental Procedure 770.2 ¶ 4.1]

[21] I found occasional instances where filings were placed on pain evaluations, but my review also indicates that staff instructs prisoners that filings are not permitted on pain evaluations. *See, e.g.,* **Redacted**, March 2013 HNR for a toothache (response: "We don't do fillings on an emergency basis"); **Redacted** October 2012 HNR for two painful teeth (response: "reinforced to patient that all dental work must be done before partials begin but fillings cannot be done on pain evals").

[22] The Dental Department schedules some prisoners without HNRs, such as those receiving serial extractions or undergoing work in preparation for dentures.

restoration with a less optimistic prognosis. Moreover, inmates with advanced dental disease (with or without pain) will undoubtedly suffer over a 90-day wait time because they do not qualify for urgent care by ADC's definition.

Dr. Chu testified that for an inmate diagnosed with a tooth that needs filling, it would require a "pretty lengthy time" for the tooth to decay to the point where it can no longer be treated with a filling. When asked to estimate that time, she stated that it would be "[m]ore than weeks" and "[e]veryone's different." [Deposition Transcript of Karen L. Chu, DMD dated May 15, 2013 ("Chu Dep.") at 96:12-97:2] Everyone is different with respect to the rate at which decay progresses, and every tooth is different with respect to how far decay has progressed before the inmate requested an appointment. The problem is that ADC's priority system is Procrustean in that it lacks timelines associated with the expected level of disease progression in a given tooth. Dentists also do not consistently document or prioritize levels of decay. I saw very few charts noting the current status of specific teeth needing restoration, making it impossible for providers themselves to judge progression of decay.[23]

In contrast to ADC's procedure, CDCR classifies treatment needs into those that should be treated within 72 hours (Priority 1A), 30 (Priority 1B), 60 (Priority 1C), 120 days (Priority 2), and one year (Priority 3) based on the examining dentist's assessment.[24] For example, an inmate who presents with several teeth with advanced decay might be placed in Priority 1B. Once the decay is removed and an interim restoration is placed, the tooth can be classified as Priority 2 or 3.

3. Dental assistant triage

The evaluation of dental HNRs at ADC is primarily the responsibility of a dental assistant, a practice that puts inmates at a serious risk of dental injury. According to Dental Procedure 787, dental assistants are responsible for evaluating the HNRs based on the Dental Classification System and assigning any inmate whose request is considered "emergency" or "urgent" for evaluation by the dental assistant that day or the next clinical day. [ADC010634-

[23] In a January 12, 2013 email to Director Pratt, Dr. Chu identified program changes necessary to "bring us up [to] today's industry standard"; one of which was, "Standardizing a method to keep track of treatment priority sequence for each patient." [AGA_Review_00094915 ¶ 3] Furthermore, as Dr. Chu pointed out, "Xrays have been inadequate in most dental clinics. For proper diagnosis, this will be improved upon immediately. This is one of the most significant solutions in improving quality of care and reducing negligence of the dentists." [AGA_Review_00090609 ¶ 2] Inadequate x-rays combine with inadequate examination frequency and tracking to magnify inmates' risk of serious dental harm.

[24] The Dental Program orients dentists to the system using a standardized calibration course. In the six years I spent as a Court Expert in the *Perez* case, I found the system effective in managing the progression of dental disease.

35] If the dental assistant decides that the HNR merits routine rather than urgent care, the inmate will be placed on the Routine Care List and will not be seen until the routine care appointment.[25]

As described above, Dental Procedure 770.2 defines Urgent Care and does not mention pain. Dr. Smallwood considers that pain is *per se* urgent care, and Dr. Chu also testified that all pain is urgent care. [Chu Dep. at 92:14-16] But from a practical standpoint, it is the dental assistant who decides whether a given HNR is assigned to Priority 2 (Urgent Care) or Priority 3 (Routine Care), and my record review clearly shows that not all complaints of pain are assigned to urgent care. Dr. Smallwood testified that dental assistants decide whether to consult with a dentist based on oral instructions provided by each supervising dentist; however, neither he nor ADC is familiar with those instructions. [Smallwood Dep. at 96:3-99:3] Similarly, Dr. Chu testified that there are no guidelines "on what's appropriate for a dental assistant to do without input from a dentist." [Chu Dep. at 86:10-12]

It is unreasonable to expect dental assistants (*i.e.*, high school graduates who need only have completed a 12 week (112 clock-hour) diploma program)[26] to understand the nuances of the dental symptomatology. In fact, nothing in the knowledge and skills required of a dental assistant would prepare her for doing a clinical examination as required by a Dental Assistant Triage such as I saw documented in the records I reviewed. While a standard orientation or on-the-job training might help to some extent, a dental assistant's education and training is simply insufficient to reasonably expect a clinically sound decision on a consistent basis. The problem is exacerbated by the fact that ADC does not have any formalized education or training programs for dental assistants.

The importance of the triaging decision cannot be understated. For every symptomatic tooth, there is a window of opportunity for treatment before the condition becomes irreversible and the tooth requires a root canal or extraction. Assigning a tooth to the Routine Care List may jeopardize its prognosis. The classification decision is a nuanced one and should be made by a dentist with the aid of the patient's chart and x-rays.

In addition to triaging HNRs, Dental Procedure 787 § 5.2 provides that if a patient is brought into a dental clinic based on an urgent need, the dental assistant "will review the inmate health history, perform an oral evaluation, and take dental radiographs, to assist in determining the severity of the dental condition." Moreover, the dental assistant makes notes in the Inmate Health Record. As a result, dental assistants with little or no specialized training are once again performing more than ministerial acts. Performing an oral evaluation (*i.e.*, an assessment or examination) and reviewing a patient's health history are activities well beyond the training of a high school graduate. Moreover, allowing a dental assistant to take radiographs without specific authorization of a dentist is below the standard of care and is in apparent conflict with the Arizona Administrative Code ("Radiation Agency") that states:

[25] In contrast, medical HNRs are reviewed by registered nurses (who are licensed). [Deposition Transcript of Troy L. Evans, RN dated Sept. 17, 2013 at 39:23-40: 6; s*ee also* LaMarre, 2008 at 419]

[26] See note 2 *supra*.

> Unless there is a medical or dental indication for the exposure and **the exposure is prescribed by a licensed practitioner**,[27] a person shall not deliberately expose an individual to the useful beam from: 1) [a]n ionizing radiation machine; or 2) [a] non-ionizing radiation source, having a radiation beam known to be harmful to human tissue.

R12-1-104(c) (emphasis and footnote added). Thus, ADC procedures give far too much discretion to a dental assistant who is not a licensed provider. The dental assistant effectively has the power to determine who will be seen promptly, eventually, or not at all. A dentist should perform the evaluation.[28]

Contrary to Dental Procedure 787, Dr. Smallwood contends that the decision to delegate a task to a dental assistant is left to the discretion of the dentist. [Smallwood Dep. at 126:19-127:14] Moreover, according to Dr. Smallwood, the Dental Assistant Assessment described in Dental Procedure 787 is a basic assessment based on examination of a prisoner's oral cavity. According to Dr. Smallwood, "[t]hey cannot identify cavities or the need for extractions—just the quadrant of the mouth that is the source of pain. They are making a general assessment—looking for something strictly out of the normal such as a severe abscess, and major infection." [*Id.* at 61:1-62:12] Dr. Chu recommended in December 2012 that even a basic assessment was inappropriate because "dental assistants are not qualified to diagnose conditions and most importantly have difficulty accurately describing symptoms." [AGA_Review_00090609 at ¶ 4] In January 2013, she recommended that triage be completed by nurses—"dental assistants are not qualified and can cause more harm than good." [AGA_Review_00094915]

In the 300 records I reviewed on my prison tours, however, there were 60 occurrences in which a Dental Assistant Triage was performed on 42 prisoners (14% of my sample). Furthermore, I documented 10 Dental Assistant Triage visits after Dr. Chu's recommendation that they be discontinued. The progress notes made by the dental assistants suggest that they are doing more than looking for abnormalities such as severe abscess or a major infection. In fact, they generally decide whether to take x-rays, most often without direction from a dentist, interpret the x-rays, and perform percussion tests. The dental assistants decide whether to discuss their findings telephonically with a dentist and, if the dentist deems it appropriate, arrange for inmates to have access to antibiotics and analgesics.[29] But the dentist on the other end of the telephone must rely on the dental assistant's clinical assessment and radiographic interpretation—this is an order of magnitude greater than Dr. Smallwood's limited ambit of

[27] A policy or standing order is insufficient to qualify as a prescription. Nor is an oral order by a dentist who has not first examined the patient.

[28] ADC has a procedure for mid-level providers to assess inmates who file HNRs stating dental pain or swelling. Specifically, ADC Toothache Protocol (ADC011107) provides a vehicle for timely assessment, palliation, and referral for inmates when the dental clinic is closed or a dentist is not present. ADC, however, has chosen to have inmates with dental pain examined by dental assistants.

[29] As Dr. Chu has recognized, "according to the Arizona Board of Dental Examiners, dental assistants are not permitted to dispense medications." [AGA_Review_00090609 at ¶4]

making a "general assessment"—looking for something "strictly out of the normal, [such as a] severe abscess, [or] major infection." [*See* Smallwood Dep. at 62:4-12] A dentist who relies on a clinical assessment performed by an unqualified individual has failed to exercise independent clinical judgment and has departed substantially from accepted professional norms.

To summarize, the Dental Assistant Triage process is flawed because an unqualified individual is permitted to examine patients, take x-rays *sua sponte*, and dispense medication. Moreover, an off-site dentist makes clinical decisions (such as whether or not to prescribe antibiotics) based on the dental assistant's examination and radiographic interpretation. While not serving the patients, a Dental Assistant Triage stops the clock so that ADC can show that, even with an insufficient number of dentists, urgent care patients are "seen" within 24 to 72 hours.

4. Consequences

Having a poorly defined priority system interpreted largely by untrained dental assistants leads to several predictable outcomes, and, as Dr. Chu wrote, "can cause more harm than good," including poor pain management and loss of salvageable teeth. [*See* AGA_Review_00094915] Dental Procedure 770.1 uses a pinched definition of Urgent Care that excludes pain, and dental assistants are left to interpret whatever guidance they have been given by their supervising dentist.[30] This combination of poor written policies and inappropriate discretion granted to dental assistants creates situations where HNRs stating dental pain are regularly mismanaged.

My review of inmate health records identified many HNRs for pain or a condition that will likely worsen without timely intervention but which were not classified as Urgent Care. Table 1 shows 31 HNRs stating pain (more than 10% of my sample) were submitted by inmates who were not assigned to urgent care between January 22, 2010 and June 13, 2013. Of the 24 patients for which there is documented treatment, 3 had teeth extracted, 9 had teeth restored, 6 received antibiotic therapy and analgesics, 1 was treated (for a soft tissue problem) at a routine appointment, and 6 remained untreated by the date of the audit. Three of the teeth that received antibiotic therapy were subsequently extracted. Although these inmates were in pain at the time of the initial HNR, the median wait time for treatment was 63 days and, including those patients not yet treated at the time of the audit, the median untreated time was 73 days.

Table 2 shows inmates who submitted HNRs for broken, cracked, or chipped teeth. Of the 24 HNRs, 18 had documented outcomes: 10 teeth were extracted, 5 were restored, 1 refused an extraction, and 2 were seen with no treatment. (Four were not appointed by the date of the audit, and 1 did not have a transcribed progress note.) Although these inmates stated conditions requiring prompt care in their HNRs, the median time for those who were scheduled was 67 days and the median for those who remained untreated by the date of the audit was 75 days. Timelier treatment would have reduced the amount of avoidable pain borne by the prisoners and likely would have avoided the necessity of extracting some teeth. As with dental pain, lost or broken fillings should be addressed expeditiously to forestall progression to the point that the tooth becomes non-restorable. The policy or practice of not promptly replacing lost or defective

[30] ADC has refused to describe this guidance in response to interrogatories.

fillings—even with a temporary restoration—is responsible for preventable pain, tooth morbidity, and mortality.

The 300 records I reviewed included 608 HNRs stating pain where there was a corresponding appointment. The 50th percentile (median) wait time from HNR submission to scheduled appointment was 6 days. Moreover, 25 percent waited 12 or more days and 10 percent waited 23 days or more.[31] As discussed previously, part of this delay likely results from insufficient staff to treat even those prisoners properly categorized as needing urgent care. However, most of the longer delays were caused by the dental assistants who mis-categorized an HNR describing pain as routine care.

I found several particularly egregious instances where ADC's poor triaging policies caused inappropriate treatment of pain and other urgent conditions.

Joshua Polson (187716): In response to an HNR describing tooth pain, Mr. Polson was advised to let the Dental Department know when the pain becomes more of an issue. [ADC006138] Mr. Polson also submitted a series of HNRs describing pain and difficulty in chewing asking for his partial denture treatment to be expedited. He was consistently told that his care was routine and waited months for an appointment. [*E.g.*, ADC006401, 6391, 6402, 6392]

Redacted submitted an HNR in June 2013 stating that a tooth that was filled a few months ago had broken and most of the tooth was exposed.[32] He was not seen by the date of the audit, which was 15 days after the HNR.

Redacted submitted an HNR to replace a filling that fell out and was assigned to the Routine Care List the next day. He submitted another HNR 26 days later, referring to the previous HNR and stating that the tooth was increasingly painful. The response stated that he was on the routine list and if he wanted the tooth extracted, he should submit another HNR. Forty-two days after the original HNR (having not been seen), he filed an HNR complaining of a toothache. A pain evaluation was performed; the tooth was deemed to have irreversible pulpitis and was extracted. In my opinion, the failure to examine the tooth timely, remove any decay present, and place a temporary or permanent filling was reckless, exposing him to preventable pain and worsening the prognosis of a tooth that might have been saved.

Redacted submitted an HNR complaining of a painful tooth and was not assigned to urgent care. He was not seen for routine care until 110 days later. The experience repeated the next year when he submitted an HNR regarding a painful cavity, was not assigned to urgent care, and was eventually seen 66 days later.

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[31] These delays occurred over the last 3-4 years, while care was administered by ADC, Corizon, and Wexford. The DSTM, as well as the requirement that urgent care patients be seen within 72 hours, has remained consistent during that time.

[32] This tooth was originally treated only after **Redacted** waited over two months to be seen on a complaint of pain. *See* page 15, *supra*.

Redacted submitted an HNR stating he had painful teeth. It took 10 days for the Dental Department to assign him to routine care. He was ultimately seen 60 days after filing the HNR. He was still in pain after that visit and submitted another HNR the next day that stated the pain interfered with eating. He was assigned to routine care and not scheduled until he filed another HNR a month later. The response was, "With the holidays and not having a full-time dentist the wait will be longer. Please be patient." He was seen by a dental assistant[33] a week later and by the dentist after another week. The dentist extracted the tooth at that appointment, which was 41 days after he filed the second HNR (complaining of pain continuing after his routine care visit) and 101 days after first complaining of painful teeth.

Redacted waited 64 days to have crowns re-cemented. For more than two months, the teeth were vulnerable to fracture and pulpal trauma from temperature. During that time, he filed three HNRs that were deemed by the dental assistant to be routine care. It is likely that this delay was the proximate cause of the tooth ultimately being deemed unsalvageable (and extracted).

Redacted submitted an HNR stating that he had a chipped tooth that hurts when he eats and drinks. The response was, "You are on the list for fillings. Sometimes if the tooth hurts already, it may be too late to save the tooth. If you are in severe pain, you can be seen as an emergency." In other words, the dental assistant is advising the patient to essentially diagnose himself and use certain words to request treatment, without any way of knowing the actual condition of the tooth.

5. Summary

The prisoners above are only a selection of the prisoners listed in Table 1—representing over 10% of my sample—who all suffered similar issues involving long-term pain and loss of teeth that likely could have been saved through prompt treatment. These are entirely predictable consequences of ADC's policies and procedures (and lack thereof) regarding triage, including both the categories themselves and who does the categorization. Moreover, even if ADC addressed other issues such as lack of staffing, its triage policies would continue to place prisoners at a risk of harm from pain and tooth loss.

C. Untimely Treatment for Routine Care

It is my opinion that ADC policy and practice combines to delay treating decay, lost fillings, and broken teeth. Such delays allow decay to progress and tooth structure to be lost during chewing, decreasing the likelihood of a successful clinical result. This occurs because the Dental Classification System used by ADC is Procrustean, failing to include a means for estimating the level of disease progression for each tooth and setting forth timelines for different levels of progression. ADC's focus on "routine care" wait times fails to provide appropriate and timely care to many inmates.

[33] The dental assistant took an x-ray of tooth #10 and diagnosed the tooth as having decay and a possible abscess. Compare this to Dr. Smallwood's testimony that dental assistants cannot identify cavities or the need for extractions—just the "quadrant" of the mouth that that is the source of pain. [Smallwood Dep. at 61:1-62:12]

1. Delay in Receiving Routine Care

There are several sources of delay in an inmate's receiving routine care. The most basic is simply the amount of time it takes to get an appointment. My record review of the 447 HNRs requesting routine care showed that, over the last three years, the median (50th percentile) wait time for a routine care appointment was 78 days; 42 percent of the wait times were over 90 days, 30 percent were over 116 days, and 10 percent were over 210 days.

ADC requires only two types of dental reports from Corizon (and consequently, from SPDS)—a wait time report and a dental utilization report. These reports are consistent with reports provided by Wexford. Historically, ADC's reported wait times for routine care appear to have ranged from 60 days to over 9 months. Long wait times themselves raise the risk that decay will progress, particularly because ADC neither records nor monitors the status of problematic teeth. As just one example, **Redacted** was examined in March 2011, and tooth #2 was indicated for possible extraction but was not designated as a priority on the Dental Chart. [ADC131080] He submitted an HNR to have a tooth filled and was placed on the Routine Care List. [ADC131239] When he was not seen for 208 days, he filed an HNR stating that the tooth needing a filling is causing pain and was scheduled for a Dental Assistant Triage. [ADC131219] The dental assistant took an x-ray and wrote that tooth #2 had extensive decay and was sensitive to percussion, hot, and cold. [ADC131085] The dentist ultimately diagnosed the tooth as having irreversible pulpitis, and it was extracted.[35] The delay of 208 days in routine treatment was likely responsible for the deterioration of the tooth from being an asymptomatic and "questionable extraction" to developing symptomatic irreversible pulpitis.

Based on reports provided from March to July 2013, Smallwood has been able to reduce wait times at most units down to its contractually-required 90 days, a point that was repeatedly made to me during my prison tours. Although the reduction in reported wait times is an improvement over the past, and setting a goal is itself better than the complete lack of timeframes in the DSTM, maintaining a reported wait time of 90 days does not adequately address inmates' needs for "routine" care. As described above, not all conditions can wait 90 days. Consequently, the failure of ADC policy to provide timelines consistent with disease progression places inmates at risk for preventable pain, tooth morbidity, and mortality. Moreover, even to the extent that a 90 day wait time is a reasonable goal, ADC's system is such that patients often wait far longer than the officially reported wait time.

My record reviews document a consistent pattern of delayed routine care due to a combination of insufficient staffing, inadequate triage policy, and failure to treat decay promptly. My experience studying dentistry in large institutions confirms my opinion that delays like those at ADC are likely the result of inadequate policies and practices by ADC, and are not merely isolated incidences of delayed treatment. This combination of deficiencies was responsible for inmates experiencing substantial avoidable pain, tooth morbidity, and preventable extractions. Some examples:

[34] I take "possible extraction" to mean that it may or may not have to be extracted.

[35] It took 21 days from the pain HNR to the extraction, which is itself unacceptable.

Redacted was seen in March 2012 wanting to have tooth #18 filled. The tooth was filled in October 2012, seven months later. At the March 2012 visit, he was told to submit an HNR for a filling appointment. His time on the wait list was interrupted by urgent issues with another tooth, and he only went back on the routine list for the filling on #18 in August. As a result, his wait time, for reporting purposes, would have been recorded as less than 60 days, even though it actually took seven months to treat the original issue.

Redacted was on the routine care waiting list as of November 2010 and submitted two follow-up HNRs in March and one in April 2011. The response to her April HNR was, "You are on the list from HNR dated 11/26/10. Wait time is 8-12 months." She had a routine care appointment after 157 days.

Charlotte Wells (247188) was examined in November 2009 at which time three teeth were indicated for restoration. [ADC0006383] The next day she submitted an HNR for routine care and was seen 354 days later[36] for restoration of tooth #13. [ADC0006855] She submitted an HNR on December 19, 2010 and was seen on a pain evaluation, and was told that the filling in #13 looked good and that sometimes recently filled teeth exhibit a transient cold sensitivity. [*Id.*] Then, inexplicably, it was suggested that tooth #13 and #18 be extracted. She refused, stating "I want [a] filling." [ADC135155] She then submitted an HNR for a filling and tooth #18 was filled after 105 days. She submitted an HNR stating that her new filling broke off, and she was in pain. She was told that tooth #14 had recurrent caries and possible irreversible pulpitis and that extraction was recommended. [ADC0006854] She refused, stating, "I don't want my tooth pull[ed]", submitted an HNR for routine care, and the filling in #14 was replaced after 102 more days. [ADC135137]

2. Removing Prisoners from the Routine Care List – The ADC Prisoners' Dilemma

While wait times for routine care appointments are often long, the widespread practice of removing inmates from the Routine Care List when they are seen for an urgent care appointment magnifies the delay while simultaneously deflating reported wait times.[37] This practice appears nowhere in the DSTM but is widely applied. One has only to read the dental assistants' responses to HNRs stating pain to see that this practice has been applied across ADC's system for the past several years.[38] Dental assistants make it clear to inmates that fillings will not be

[36] The first appointment she was offered was after 257 days; however, that appointment and a subsequent one were rescheduled for medical reasons.

[37] Because reported wait times for routine care are measured from the time of the HNR that generated the appointment, HNRs that are "re-filed" after an urgent evaluation are counted only as the time between the routine care visit and most recent HNR. Moreover, removing a prisoner higher up on the list shortens the wait time for all those lower down.

[38] Examples of statements from dental assistants include: **Redacted** HNR on 8/12/12 (Response: "You will be scheduled for pain and taken off the Routine Wait List."); **Redacted** **Redacted** 5/31/11 HNR (response: "You may only be on one schedule at a time. I [the dental assistant] will see you first for the tooth that is bothering you"); **Redacted** HNR 10/17/12 (inquiring about her status on the Routine Care List, the response was, "You were seen for an [pain] evaluation appt. 1/25/12 and 2/7/12. Your name was prioritized off Routine

placed at urgent care appointments and that extractions and prescribing antibiotics and analgesics are generally the only procedures that will be performed on inmates who submit HNRs for tooth pain.[39] If the inmate attends the pain appointment, but refuses an offered extraction, he must go back on the Routine Care List to get a filling. Dental assistants will sometimes refuse to schedule pain evaluations in response to HNRs stating pain, advising the prisoners to request a pain evaluation appointment only if "the tooth needs to be pulled."[40]

Dr. Smallwood also testified that the routine policy was to take inmates off the Routine Care List and ask them to resubmit the HNR, although the dentist may choose to leave them on the list if the clinic's wait time is under control. [Smallwood Dep. at 194:12-196:17] This is perverse—it means that the longer the wait, the more likely a prisoner will have to start over. Smallwood testified that the policy of taking prisoners off the Routine Care List is not a written one but a verbal policy from the SPDS corporate office. [Smallwood Dep. at 197:19-198:5] The practice, however, predates SPDS's work at ADC by several years.[41]

As a result of this practice, for prisoners with substantial urgent care needs, obtaining routine care is a Sisyphean task—prisoners wait months to be seen for restorations, only to fall back to the beginning when they need pain treated, pain which is often a direct result of waiting too long to restore teeth experiencing decay. Although this policy is nowhere in the DSTM and not always explicitly stated when it occurs, the size of my record review, and my resulting familiarity with how inmates are scheduled, made it possible to identify numerous instances in which inmates were removed from the waiting list apparently as a result of having an urgent care appointment or refusing to consent to the extraction of a tooth recommended by the dentist. Just the easily identified incidents affect nearly 10 percent of the prisoners in my sample. A sampling of these records demonstrates the dilemma in action.

Matthew Coleman (260481) submitted an HNR in October 2012 for cavities causing discomfort and was assigned to routine care. He had to have a crown re-cemented in

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Care and you were seen for toothaches. This HNR will put you on the Routine Care List."); **Redacted** 1/23/12 HNR (response: "If you want the tooth out, submit another HNR").

[39] *See, e.g.,* **Redacted** March 1, 2012 progress note ("Inmate refused after it was explained that if dentist took a PA [x-ray] of the tooth, he would no longer be on the Routine Care List."); **Redacted** (pain evaluation on 5/30/12 noted that tooth #27 had decay and he should submit an HNR to have a filling placed; when he later complained about the wait, he was told, "Fillings are routine care. Once you sign a refusal [for extracting the painful tooth] you are taken off the Routine Care List."); **Redacted** HNR 3/21/13 (response: "We don't do fillings on an emergency basis. We can call you to evaluate pain. Let us know."); **Redacted** HNR 5/30/10 (advised that fillings are not done at pain evaluation appointments).

[40] *See, e.g,* **Redacted** , 3/30/09 HNR; **Redacted** , 6/16/13 HNR.

[41] The practice does have certain institutional advantages for ADC. For example, it discourages inmates from filing new HNRs, particularly facetious ones, lowering the administrative burden in triaging, scheduling, and transporting inmates to appointments.

December—an urgent care appointment. The response to his HNR in January again requesting care for the cavities explained, "on the list for fillings per HNR 12/26/12." As of the date of the audit, another eight months later, he had not been seen for those cavities.

Redacted was on the Routine Care List when she submitted an HNR for pain in September 2012. She had a tooth extracted on a pain evaluation. Responses to subsequent HNRs confirm that she was taken off the Routine Care List after that visit, and returned to the list with her new HNR in October. She later withdrew an HNR submitted in January requesting that a painful tooth be pulled because she did not want to be taken off the Routine Care List.

Redacted was seen at intake on May 1, 2012, and 9 teeth were indicated for restoration and 4 for extraction. She immediately submitted an HNR for routine care. Six weeks later, one of the teeth marked for restoration was causing sufficient pain that it had to be extracted. At the time of the audit—433 days after her HNR for fillings—she had not received any further care.

Redacted first requested fillings for teeth that were starting to cause pain in April 2012 and was placed on the Routine Care List. After being told at a pain evaluation in May that he would have to wait for a routine care appointment if he did not want his tooth extracted, he was finally seen in October and one tooth was filled—187 days after his initial HNR. He submitted another HNR the next day stating that he needed another cavity filled and was placed on the Routine Care List. He did not have a routine care appointment before he was seen on a pain evaluation in January 2013, when tooth #25 was found to have an abscess. His intake exam in 2009 identified six teeth in need of restoration. Only the one filled in October 2012 had been restored as of the date of the audit.

Redacted was seen for a cleaning on July 15, 2013, 89 days after his most recent HNR request (thus just under the 90 day goal). However, in reality, he waited 177 days—the original request in January was cancelled as a result of a pain evaluation in April.

Table 3 includes other prisoners who were apparently removed from the Routine Care List after refusing an extraction or requesting a pain evaluation or urgent care appointment.

In addition to cases where patients were removed from the routine care list as a result of urgent care appointments, I found several cases where prisoners, knowing that an immediate pain appointment might depending on the vagaries of clinic policy or practice, delay their routine care several months, chose to forgo the pain evaluation. [42] These inmates run the risk that the painful tooth may deteriorate to the point where it is no longer salvageable. This is a cruel choice.

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[42] **Redacted** (progress note for 6/13/13 "toothache appointment states, "Pt. denies TA appt. He would like routine care. He is already on the list. Signed Refusal [form]."); **Redacted** (refused an 8/11/12 Urgent Care appointment stating that "he [illegible] needs a filling"); **Redacted** (refused extraction in June 2012 because she wanted to remain on the Routine Care List); **Redacted** (refused an Urgent Care appointment 9/18/12 stating, "need to submit for routine dental exam"); **Redacted** (refused a 1/3/13 Urgent Care Appointment stating his reason for refusal as "routine care"); **Redacted** (progress note for March 2012 urgent care appointment states, "Inmate

3. Summary

Twenty-nine records or nearly 10 percent of those I reviewed appeared to indicate that inmates who submitted HNRs for urgent care were removed from the Routine Care List. Several other records showed inmates who refused pain appointments or extractions based on the understanding that their routine care would be delayed. Those inmates' experiences demonstrate that this practice of removing an inmate from the Routine Care List because of an urgent care visit can delay routine care materially and expose an inmate to needless pain and tooth morbidity. Moreover, because ADC wait times are based on the HNR that generated the appointment, rather than the time the inmate waits from the initial HNR (that was cancelled), this has the effect of deflating (substantially in some cases) the reported waiting time. The fact that this practice, which is stated nowhere in ADC policies, has become institutionalized shows that ADC either condoned it or was simply ignorant of it due to inadequate monitoring.

D. Avoidable Extractions

It is my opinion that the result of ADC's practices is to encourage inmates to allow dentists to extract teeth that could be filled. Dentists should attempt to protect a patient's teeth whenever possible. It fundamentally violates basic standards of dental care to encourage patients in pain to accept a lesser alternative (tooth extraction) by telling them that it will take "months" to be scheduled for the clinically acceptable treatment (a filling). This occurs because of the scheduling and triaging policies of ADC as well as ADC's failure to exercise oversight and prevent such conduct. Moreover, the Refusal to Submit to Treatment and Informed Consent forms, when present, were often inadequate, misleading, and clinically insufficient. This encourages inmates to acquiesce to the extraction of teeth that could be restored. These policies and practices are below the professional standard of care in the community and put inmates at a substantial risk of dental injury, in particular the loss of teeth.

1. Extractions of Teeth that Could Be Restored

While extractions are a large portion of a correctional practice, extractions should be limited to teeth that cannot be restored (*i.e.*, filled). A policy that extracts salvageable teeth is unacceptable. [NCCHC at 70; APHA at 90 ¶ 8] Recommending extraction of a tooth that can be filled simply because it is more expedient is not consistent with the generally accepted standard of care. Similarly, advising a patient in pain that a salvageable tooth could be extracted expeditiously but could not be filled for several months due to wait time is below the standard of care. Where a dental system lacks the resources or oversight to treat salvageable teeth and incorrectly triages patients, inmates are at a systemic risk of receiving extractions when less invasive dental care could have been provided. The effect of the wait times for fillings is that a tooth is not treated until it has deteriorated to the point that there is little alternative to extraction. In other words, a painful tooth that does not "need" to be pulled may not be treated in sufficient time to keep it from deteriorating to the point that there is no practical alternative to extraction.

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refused after it was explained that if dentist took a PA [x-ray] of the tooth, he would no longer be on the Routine Care List).

ADC's informed consent practice (or lack thereof) also increases the likelihood of unnecessary extractions. It is not consistent with the generally accepted standard of care to perform extractions without informed consent. When an extraction is recommended, the generally accepted standard of care is that the patient should be fully informed of the reason, the consequences of not consenting to the procedure, and the existence of alternative treatments if any. This information and the patient's refusal should be documented in writing. [*See, e.g.*, NCCHC 2008 at 129 (NCCHC Standard P-I-05 Informed Consent and Right to Refuse)]

Dental Procedure 773.5 (Informed Consent and Right to Refuse) states that

> When an inmate gives the dentist permission to perform an invasive dental procedure, he/she will be informed of the possible risks/consequences of the procedure. If the procedure includes the removal of one or more teeth, then the inmate will be notified if he/she is eligible for replacement teeth.
>
> . . . .
>
> If the inmate refuses the examination, treatment or procedure, dental services for that appointment will be not be [sic] provided and a Refusal of Treatment Form will be completed. The risks of the inmate's action shall be explained to him/her.

But both these directives are incomplete and do not line up with the NCCHC standards because the dentist is not required to discuss alternative treatments and memorialize that discussion in the consent form. In fact, ADC's standardized "informed consent" form does not contain any sort of requirement that alternatives be discussed. A patient who signs a consent form for an extraction without having been informed that the tooth could be filled did not give his or her informed consent. Because the written directives are incomplete and leave room for such inadequate care, it is my opinion that the lack of oversight and control leads to the unnecessary extraction of teeth.

Regular ADC practices that are reflected in the records that I reviewed also increase the likelihood of unnecessary extractions. Dental assistants routinely respond to prisoners on the Routine Care List who submit HNRs for dental pain that "if you want the tooth out, submit another HNR."[43] The pressure to have the tooth extracted is magnified by the wait times for routine care. During my record review, I saw numerous instances of responses to HNRs from prisoners who were in pain and on the Routine Care List in which they were told that wait times for Routine Care were 3-5 months,[44] 5-7 months,[45] 6-8 months,[46] 12 months or more[47] or "we don't have a dentist at this time."[48] While the wait times for routine care have decreased, the 90-day goal is too low a bar when dealing with pain. Pain should be dealt with expeditiously, and it

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[43] *See* note 38, *supra*.

[44] **Redacted**, 7/31/12 HNR

[45] **Redacted**, 4/2/13 HNR

[46] **Redacted**, 10/16/12 HNR; **Redacted**, 10/19/12 HNR

[47] **Redacted**, 1/10/11 HNR

[48] **Redacted**, 1/15/13 HNR; **Redacted**, 2/19/13 HNR

is simply unconscionable that a prisoner is put in the position of choosing between urgent and routine care under the duress of pain.

During my review, I found several[49] instances where dental assistants advised prisoners who submitted HNRs for pain and wanted fillings that they were assigned to the Routine Care List but, if they were in substantial pain, they could submit an HNR for an urgent care appointment and the tooth would be extracted. The records in some of these examples where teeth were extracted strongly suggest that the teeth were originally salvageable when the pain was first reported.

Redacted submitted an HNR on March 22, 2013 stating "Whole filling fell out. Need to be seen." The response was, "If tooth hurts bad enough to pull submit a pain HNR." Thus, a dental assistant made a decision that a painful, potentially restorable tooth would not be scheduled for expedited treatment unless the inmate is willing to have it extracted. A follow-up HNR on April 12, 2013 resulted in an extraction 5 days later—26 days after she submitted the first HNR that stated pain. However, as discussed previously, when a filling falls out or fractures, it must be replaced in a timely manner to protect the pulp of the tooth from the effects of dentinal sensitivity. Moreover, the longer dentinal sensitivity persists the greater the likelihood that what initially may have been a reversible condition will develop into irreversible pulpitis requiring root canal or extraction. Timely replacing the filling with either a temporary or permanent filling might have prevented a reversible pulpitis (at which point the tooth would be salvageable) from becoming irreversible.

Redacted submitted an HNR on June 10, 2012 (pain on drinking hot and cold) and was seen on a pain evaluation. She was told at the pain evaluation (6/15/12) that tooth #19 had a defective filling and she should submit an HNR for a filling appointment. [ADC153462] She submitted an HNR on June 15 for a filling appointment stating that she was experiencing pain. She was informed that she was on the Routine Care List for a filling but, if the pain is so great that she wants the tooth extracted, she should submit an emergency HNR. She submitted an HNR on July 8 and was informed, "You are on the [Routine Care] list since 6/18/12." She submitted another HNR on July 10 (tooth pain—can't wait for a routine appointment) and was seen on pain evaluation on July 18. She was informed that tooth #19—the tooth she was waiting to have filled—would have to be extracted. [ADC153461] It was extracted on August 1. [*Id.*] The effect of this policy is not to treat a tooth until it has deteriorated to the point that there is little alternative to extraction. As in the example above, timely treatment might have prevented the development of an irreversible pulpitis.

2. Restoring Teeth Recommended for Extraction

In my review, I also documented occasions in which dentists recommended teeth be extracted that were later restored. However, these prisoners were unusually persistent. ADC's ultimate restoration of certain' prisoners teeth, therefore, does not illustrate a high quality of

[49] *Also, see supra,* **Redacted**, **Redacted**, and **Redacted** **Redacted**, as well as **Redacted**, who was told to choose between pain and an evaluation for extraction, and chose pain, waiting six months for one filling and another five months for the second.

care. Instead, it suggests that ADC has a practice of recommending extractions for teeth that could be saved.

Redacted refused extraction of #18 (ADC137181), and it was filled 2 months later (ADC137181).

Redacted refused extraction of #3, and a temporary filling was placed. He was seen on July 5, 2013 because the temporary filling was causing problems, and a permanent filling was planned for the next visit.

Charlotte Wells (247188) twice signed Refusal to Submit to Treatment Forms related to extractions. Her records indicate that in both cases, she filed an HNR for pain, saw a dentist a few days later, and was told she could either have the tooth pulled immediately or file an HNR to get a filling in several months. [*E.g.* ADC007064, 6853-55, 6938, 7109, 7007][50] She was rewarded for her tenacity by having fillings placed in #18 on May 9, 2011 and in #14 on November 17, 2011. [ADC0006854]

Maryanne Chisholm (200825) also refused to have a painful tooth (#14) extracted because she wanted it filled. [PLTF-PARSONS-004626] Her chart indicates the tooth had extensive decay that required extraction. [ADC000120] Ms. Chisholm submitted an HNR on August 16, 2012, that states "the dentist" told her that she could have her teeth extracted or wait 6 months for routine care. [PLTF-PARSONS-004627] On January 22, 2013, her persistence was rewarded when a permanent restoration was placed in #14. [ADC071374]

Redacted submitted an HNR on September 27, 2012 for a painful broken filling (ADC153477) and was seen on a pain evaluation on October 2. [ADC153466] At a follow-up on October 18, the dentist noted "recurrent decay, deep-seated." [*Id.*] Because the tooth was not painful, she wanted it filled, not extracted, and she signed a refusal form. [ADC153469] She was told that she would have to submit another HNR for the filling appointment. She should have been on the Routine Care List from a March 26, 2012 HNR, but it appears that the HNR was cancelled because she refused to have tooth #13 extracted. Note however that tooth #13 did not have to be extracted. In fact, it was eventually restored on April 11, 2013—749 days after her (apparently) cancelled routine care HNR and 169 days after her new HNR on October 24.

3. Summary

Several findings led me to believe the effect of ADC's policy and practice is to permit and encourage extraction of salvageable teeth. This bias in favor of extraction is supported by the practice of obtaining inadequate consent or refusal forms for tooth extraction. I also

[50] These forms, like the consent forms used for extractions, are often perfunctory, incomplete, and erroneous. Nowhere on the form does it mention that the alternative treatment (a filling) was possible. While Ms. Wells' initials appear on the block: "Patient information has been provided by nursing staff at the time of refusal and the inmate is making an informed refusal," there is no notation in her health record that nursing staff had any contact with her regarding her dental condition. [ADC007007]

discovered that inmates were apparently removed from the Routine Care List as the result of having an urgent care appointment or refusing to consent to extraction. This delayed routine care, which had the potential to make restoration more difficult or the tooth unsalvageable. Furthermore, I found a pattern of dental assistants responding to HNRs for dental pain from prisoners on the Routine Care List that "if you want the tooth out, submit another HNR." Finally, the pressure to have the tooth extracted is magnified by the wait times for routine care. I saw numerous instances of responses to HNRs from prisoners who were in pain and on the Routine Care List in which the prisoners were told in response that wait times for routine care were several months or that "we don't have a dentist at this time." Consequently, ADC's policy and practice puts prisoners at a substantial risk of losing teeth that could be saved.

E. Inadequate Treatment of Chewing Difficulty

It is my opinion that ADC's policy and practice regarding prisoners who are unable to adequately chew their food is flawed and places them at risk of preventable pain, poor nutrition, and inability to take necessary medications. ADC policy does not address timing or monitoring of patients waiting to receive dental devices, thus permitting inappropriate delays and problems in receiving a proper diet. These policies and practices are below the professional standard of care in the community and put inmates at a substantial risk of dental injury, in particular the loss of teeth and other harms that result from the inability to eat (including loss of weight) or take medications.

1. Denture Preparation

Unless an inmate is completely edentulous, there are usually some precursor procedures (mouth preparation) that are necessary before the denture fabrication process can begin. For complete dentures, all teeth must be extracted and the extraction sites healed. The extractions are typically done in segments, so depending on the number and location of the teeth to be extracted, it may require up to six appointments to prepare the mouth for complete dentures and fewer appointments for partial dentures since some teeth will remain. Afterwards, a dentist generally allows one month for the mouth to heal before the preliminary impressions are taken. For inmates needing partial dentures, the number of healthy or restorable teeth is critical. In fact, if critical teeth are not restorable due to delay, a partial denture would no longer be feasible and the only alternative would be complete dentures, resulting in substantial loss in chewing efficiency.

The complete denture fabrication process starts with preliminary impressions so that a custom tray can be made. The custom tray is used to take a final impression. The casts made from the final impressions are sent to a dental laboratory which produces bite rims, which are devices that allow the dentist to establish the proper distance between the jaws and position of the teeth. The bite rims are returned to the laboratory with the selected shape, size, and shade of the denture teeth. The laboratory returns the denture teeth set in wax, and they are tried in, adjusted, and returned to the laboratory for final processing. The finished dentures are then tried in and adjusted. This generally takes five to six appointments. The process for making partial dentures is more streamlined since fewer teeth are replaced and establishing the distance between the jaws can be done more readily. This usually takes only three or four appointments.

Very little of this is specified in the DSTM; it is left to the discretion of the dental clinic. No timelines are assigned in the DSTM or in ADC's contacts with Wexford and Corizon. Nor do the DSTM or the contracts reference the prescription of soft diets to patients awaiting dentures. Although some clinics maintain a list of patients currently undergoing serial extractions or denture fitting, dental clinics do not appear to have any monitoring in place tracking how long completely or partially edentulous patients have been waiting for dentures. Moreover, with no requirements in the DSTM or the contracts, ADC has no performance measures to monitor with regard to denture treatment. This lack of standards and monitoring, particularly when combined with the chronic understaffing and other issues described above, leaves patients in need of dentures at a substantial risk of long-term inability to properly chew food as well as long-term pain and discomfort.

2. Consequences

My review of prisoner records found substantial delays that would be the expected consequences of such a system. Delays are primarily in the mouth preparation phase. Prisoners who require many teeth to be extracted are often placed on the Serial Extraction List, and their appointments are scheduled by the clinic so they do not have to submit HNRs.[51] While not mentioned in the DSTM, this is reasonable since it bypasses the HNR process and allows the dentist to control the appointments. However, as noted above, the wait time for these appointments is not tracked or monitored, and it can be substantial. Moreover, only extractions are addressed through this manner; prisoners who need other necessary precursor procedures—i.e, restorations and scaling—must wait on the Routine Care List, often for substantial periods. So, even if the maximum wait time is less than 90 days for a routine care procedure, the wait time is for a discrete procedure like a filling or an extraction, and prisoners must often go through the list several times in order to prepare for dentures. During this time, these patients are missing a substantial number of teeth and can be expected to have difficulty eating and considerable discomfort.

During my record review, I found several prisoners who waited an inordinate amount of time to obtain their dentures.[52]

Joshua Polson (187716) submitted a series of HNRs describing pain and difficulty in chewing, asking for his partial denture treatment to be expedited. He was consistently told that

[51] This is not a universal practice since it is not a part of the DSTM and is not monitored by ADC.

[52] While the five inmates from my sample whose dentures were delayed were a small proportion of my overall sample, most inmates do not qualify for dentures because they are deemed to have sufficient ability to chew per Procedure 771.5. Accordingly, the true denominator is much smaller, and the proportion of inmates who have to wait a considerable and unreasonable time for their dentures would be much larger. For example, of the 300 records I reviewed on my prison visits, 44 prisoners submitted HNRs for dentures. Furthermore, it is possible that some of those prisoners would not ultimately qualify for dentures so the denominator would be even smaller. Assuming that those 44 prisoners are generally representative of the proportion needing dentures, the 5 records I identified would indicate problems with 11 percent of the ADC population needing dentures.

his care was routine and waited months for an appointment. [*E.g.,* ADC006401, 6391, 6402, 6392. He received his dentures in April 2011, 489 days after his initial HNR was submitted on December 23, 2009.[53]

Redacted submitted an HNR on August 12, 2011 requesting that his remaining teeth be extracted and was assigned to the Routine Care List. He was not scheduled for routine care for 188 days. His treatment plan was simple: extractions and complete dentures; yet the delays in obtaining appointments were so great that as of the time of my review almost 2 years later, he had not had his first denture appointment (for impressions).[54]

Redacted submitted an HNR for an extraction (in preparation for having dentures made) on June 1, 2011 and was placed on the Routine Care List. He remained untreated after 139 days and, on October 18, 2011, submitted an HNR for pain. He was seen 8 days later at which time two teeth were extracted. He submitted an HNR on May 21, 2012 for partial dentures but was not seen for a preliminary impression until another 270 days later on February 15, 2013.[55]

Redacted submitted an HNR on December 23, 2009 for partial dentures.[56] He submitted another HNR on May 26, 2010 and was seen 253 days later on February 3 (407 days after his original request). For a year, he submitted HNRs for dental work consistently and had extractions and fillings. He had so few teeth remaining that he was approved for a mechanical soft diet on May 16, 2012. He submitted an HNR on August 22, 2012 inquiring about his status on the Routine Care List and was told that he had been placed back on it. He was appointed for extractions 258 days later on May 8, 2013. By July 11, 2013 (the date of the audit)—more than 3½ years after his initial HNR for partials—he still had not started the process of denture impressions.

Redacted submitted an HNR in May 2012 for routine care, and the treatment plan included partial dentures. His treatment was delayed several times because there was no full-time dentist on staff for over three months. He received his partial dentures on July 23, 2013, which was 398 days after the treatment was originally ordered.

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[53] Making matters worse, Polson had continual difficulty obtaining his soft diet (while dental renewals were reasonably forthcoming, the diet provided by the kitchen is often not compliant). Because he takes some of his medications with food, this is additionally troublesome.

[54] Had he been assigned to the serial extraction list, rather than the Routine Care List, his extractions could have been done within 4 or 5 months and he would be ready for preliminary impressions.

[55] From the February 15, 2013 appointment onward, he was on the Prosthetics List and did not have to submit an HNR for his remaining denture appointments.

[56] According to February 10, 2010 and December 2, 2011 progress notes, he was a no-show for a prosthetics evaluation appointment. When prisoners fail to show for an appointment, it is not unusual that they were unaware of the appointment because they did not receive the pass. In any event, his December 23, 2009 HNR was cancelled.

3. Summary

The provision of dentures by ADC's Dental Department is often untimely because ADC has no policy addressing timing, no procedures to ensure that treatment is timely, and no monitoring of the status of patients awaiting dentures—even though many of these patients have difficulty eating. As I found in my record review, this places inmates at a risk of inordinate delays during the process of acquiring dentures, with attendant discomfort and difficulty in maintaining proper nutrition.

F. Inadequate Monitoring by ADC

It is my opinion that ADC has failed to monitor the provision of dental care to its prisoners when it was providing care directly as well as under its contracts with Wexford and Corizon. While the Wexford and Corizon contracts require that the contractors comply with the DTSM, ADC allocates insufficient resources to monitoring the dental program. ADC's monitoring of the clinical aspect of its program is insufficient to ensure that its vendor provides adequate dental care. ADC's dental monitor is currently a dentist who works one day a week and has no experience in correctional health. Consequently, she has insufficient time to develop an understanding of the DTSM or the actual practices employed by Corizon/SPDS. Dental monitoring using the Monitoring Green, Amber, Red report ("MGAR"), ADC's sole monitoring tool, is done inconsistently without the dental monitor's involvement. And ADC does not maintain, or require from its contractor, various documents that would improve the assessment and monitoring of dental care. Moreover, oral care is monitored too infrequently for it to be of substantial value. As a result of all of these factors, ADC is either unaware of or tolerates practices that result in inadequate and untimely care. Without effective monitoring, inmates are put at a substantial risk of serious injury. This is below the professional standard of care.

1. ADC Dental Monitor

ADC does not have a full-time Dental Director as it had in the past. Rather, it has a one–day-a-week dentist (Dr. Karen Chu). She described her job responsibilities as, "I am the dental monitor, so I would consider myself more like a consultant. So since I'm there one day a week, they may have, you know, different things I may need to address. Or if they have any questions, things like that, I would give my advice." [Chu Dep. at 8:3-9] However, one day per week is insufficient time to adequately monitor the performance of Corizon and SPDS. Table 4 summarizes Dr. Chu's activities based on her testimony at deposition. Her testimony was noteworthy not so much for what she monitored, but for what she failed to monitor, which is not surprising given the inadequate amount of time ADC allocates to dental monitoring.

Most glaringly, she testified that although she added some questions to the monthly monitoring report (what is now known as the MGAR), she does not herself receive the reports and does not know who receives the reports, where they are kept (*Id.* at 44:19-45:10), or the sources of the other oral health performance standards (*Id*. at 45:18-46:11). Nor does she receive a summary of the oral health questions (*Id*. at 50:10-51:5), or have any idea how monitors determine how the oral health measures should be scored (*Id*. at 47:24-46:21). Dr. Chu testified that ADC neither monitors timeliness of responding and triaging HNRs nor receives information from Dr. Smallwood. [*Id*. at 100:18-101:6] Nor is she sure whether Dr. Smallwood monitors the

timeliness of grievances or responds to dental grievances at all. [*Id*. at 106:9-14] She testified that inmate wait times were monitored with Dr. Smallwood's software but that information is not provided to anyone at ADC; nor has anyone at ADC asked Dr. Smallwood for the information. [*Id*. at 93:12-20] In addition to not knowing what wait times are in the dental clinics, she did not even know that Dr. Smallwood's contractual obligation is to get all routine care wait times under 90 days.[57]

Dr. Chu also claimed to be unaware of many of the nuts and bolts of ADC dental care under SPDS, such as whether dental assistants are allowed to classify HNRs as routine or urgent. [*Id*. at 93:1-20] Moreover, she testified (incorrectly per my review) that dental assistants do not take x-rays without a dentist's direction. [*Id*. at 97:19-21] According to Dr. Smallwood, the reason inmates at some clinics see dental assistants is because "Dentist[s] are always in charge at the facility … [, and the dentist will] decide whether he or she wants to see it or if he wants to delegate that to the dental assistant." [Smallwood Dep. at 126:11-127:10] Given that it was Dr. Chu's unambiguous opinion in December 2012 that dental assistants have no business triaging patients, the fact that such practices continue under SPDS indicates that ADC is not listening to its dental monitor—the only dentist in its organization.

While she did testify that she monitors for compliance with the DSTM, she does not monitor for issues related to the quality and timeliness of care such as dental staffing, provision for prescription drugs, resolution of prisoner HNRs, or special diets. [Chu Dep. at 42:3-19, 111:7-112:1] She explained that she doesn't have any kind of relationship with Corizon and not very much contact with the prison complexes "considering I'm only one day a week". [*Id*. at 9:12-15, 10:9-14] She also has very little contact with Dr. Smallwood, consisting of occasional emails and phone calls that rarely involve clinical issues.

Dr. Chu's part-time status has redounded to the detriment of the dental program. The documents I have been provided indicate no changes in the DSTM or other system-wide policy placing her recommendations into effect. In the past, the dental program was managed by a full-time executive—Dr. Adu-Tutu and Dr. Scalzo before him. [Deposition Transcript of Michael Adu-Tutu, DDS dated Oct. 1, 2012 ("Adu-Tutu Dep.") at 30:19-31:13, 32:14-16] From her emails it is clear that Dr. Chu identified several substantial problems with the inmate dental care and recommended policy changes and changes in the DSTM. Yet, after almost a year, the DSTM remains unchanged.

Defendant Ryan also appears to simply defer any monitoring responsibility to Dr. Smallwood. The leitmotif of Defendant Ryan's response to a series of interrogatories regarding the dental program for ADC's inmates was that the questions should be directed to Corizon's and/or Dr. Smallwood's employees. "Per contract, Corizon and its contractors are required to comply with the Dental Services Technical Manual." [Licci Rogs 2, 3, 4]

[57] Several months after Dr. Chu's May deposition, email produced by defendants indicated that Dr. Chu did receive, in April, along with others in the monitoring bureau, information on how to access monthly wait time reports and MGAR reports. That she was unaware of this and had not in fact reviewed the reports speaks volumes about her curiosity or concern regarding SPDS's performance.

2. ADC Monitoring Report for Dental Care

ADC employs monitors at each facility to collect data to measure contractor compliance. The sole monitoring instrument for health care contractor performance used by facility monitors is the MGAR. The performance measures in the MGAR are based on the NCCHC evaluation criteria and, for oral care, the DSTM. The Oral Care section of the MGAR includes 19 measures, none of which measure clinical aspects of the dental program. As the Perryville monitor, Mark Haldane, pointed out, "I [a non-clinician] have in fact filled out dental areas because a lot of it is – is not really directly related to care; it's more form and time frames and those sorts of things, which are readily obtainable through documentation." [Deposition Transcript of Mark T. Haldane, JD dated Sept. 19, 2013 ("Haldane Dep.") at 36:16-37:2] This focus on measures designed for non-clinicians necessarily produces a report that provides a limited view of clinical programs. For example, while it is useful to know if inmates are waiting over 90 days for routine dental care (measure 3), it totally ignores the clinical issue of whether inmates were correctly assigned to routine care in the first place or should have been assigned to urgent care. Similarly, measure 5, "Are treatment plans developed and documented in the medical record?", while interesting, fails to address the clinical appropriateness of the treatment plan. [ADC069956] (In fact, it is instructive to contrast these MGAR measures to Dr. Chu's 2012 findings based on grievance reviews and record audits.) And while Dr. Smallwood may have a peer review program in place, ADC does not have the capacity to perform its own clinical oversight because its dental monitor works only one day a week.

The monitors, aware that they are not monitoring clinical outcomes in dental care, believe that Dr. Chu is doing that. For example, Marlena Bedoya, the contract monitor for Tucson, stated that she does not know if Dental is in compliance with the Oral Measures. "You would have to talk with Dr. Chu." [Deposition Transcript of Marlena D. Bedoya, dated Sept. 10, 2013 at 170:1-14; *see also* Haldane Dep. at 37:3-11] But Dr. Chu, as noted above, denied any involvement in the MGAR or any active monitoring activity.

The last (and only) time the MGAR monitored oral care was January 2013. [Deposition Transcript of Terry L. Allred dated Sept. 18, 2013 at 181:15-25] Since then, ADC has chosen not to monitor the Oral Care section of the MGAR. In March 2013, ADC changed contractors from Wexford to Corizon. Yet as of September 2013, Oral Care has not been measured again. Moreover, even if oral care were measured in September, six month intervals for monitoring dental care is inadequate. The dental monitoring using the MGAR is, simply put, desultory.

3. Other ADC Reports

ADC does receive from SPDS a more granular report about program outputs and some measures are clinically-related but still not clinical. For example, while the Activity Period Report (ADC108137) provides more data (e.g., the number of cleanings and fillings), it is still just a workload report and provides no insight into the quality or appropriateness of the care provided. But even this report is of no use if it is not reviewed by someone with clinical insights, such as the Dental Monitor. According to her testimony, however, Dr. Chu has neither the time nor the interest to perform such a review.

4. Summary

ADC's lack of effective monitoring and oversight affects all areas of dental care in ADC facilities. Without effective monitoring, ADC has no way to confirm whether its contractor is providing adequate dental care or whether care continues to fall below the acceptable standard of care. In a large institution like ADC, monitoring and oversight are essential due to the numerous people required to work together to provide dental care. Without monitoring, inmates are put at a substantial risk of injury because there is no one to ensure that dental care is being implemented appropriately.

The ADC dental program monitoring is a Potemkin village—designed only to impress. The oral care measures that comprise the January 2013 MGAR are thin gruel since they ignore the most important aspect of the program: clinical treatment. Moreover, the MGAR produced data so condensed that it added little to my understanding of the dental program. Based on my experience evaluating and auditing dental programs in the military, educational facilities, and departments of corrections, a proper evaluation requires gross, granular clinical data. Thus, even if ADC went forward and formalized the MGAR, it would add little insight into dental care within ADC.

Not only does the MGAR ignore the clinical aspect of the dental program but ADC's one employee who could monitor the quality of care works only one day a week and, from her testimony at deposition, it shows. One has only to look at the recent history of ADC dental leadership to see it is in desuetude. Dr. Adu-Tutu was a full-time Dental Director as was his predecessor, but ADC hired a dentist one day a week to replace him. ADC has washed its hands of dental care and defaulted its monitoring responsibility to its contractor—to the point of ignoring or rejecting recommendations of its own consultant.

IV. CONCLUSION

My opinions are informed by reviewing 300 prisoner health records, covering treatment from 2009 to July/August 2013; the records of the named plaintiffs, and other records as identified in Exhibit C. Furthermore, I reviewed documents produced by ADC, Wexford, Corizon, and SPDS as well as deposition testimony. The problems I found are from all ADC prisons, and have continued despite changes in contractors. While staffing has improved (but is still inadequate), the program deficiencies that I have set forth remain and inmates continue to be subject to preventable pain, tooth morbidity, and tooth mortality.

The policies and procedures described above affected nearly all of the prisoners whose records I reviewed and certainly put all inmates at risk. While some were fortunate enough to have experienced only moderate delays and received the care they requested with no lasting harm, many were not. A significant portion of my sample experienced much worse consequences, including extended periods of pain and loss of apparently salvageable teeth.

It is my opinion that the consistently inadequate care documented in the records I reviewed is attributable to systemic problems caused by inadequate and poorly monitored policies and procedures in ADC's Dental Department. Specifically, ADC's policies and practices with regard to staffing, triaging, treatment time frames (or lack thereof), tooth

extraction, preparation for dental devices, and contractor monitoring combine to create a system that fails to adequately identify, or properly and timely treat, dental issues experienced by inmates.[58] ADC's policies on these issues are in many cases themselves below the standard of care. Moreover, regular practices often fall even further short, with ADC's lack of oversight and control over dental care ensuring that inmates are at risk of receiving inadequate care. These failures place all inmates at risk not only of preventable pain, but also of tooth decay and unnecessary loss of teeth. The dental injuries documented in the prisoner dental records I reviewed are consistent with this opinion. The inadequacies in dental care experienced by the named plaintiffs and other inmates whose records I reviewed are typical of the risk of inadequate dental care for all inmates. Consequently, all present and future inmates with dental problems are at risk for preventable pain, tooth morbidity, and tooth mortality.

[58] **Redacted** 's case provides just one example of how ADC's multiple deficiencies combine in causing inadequate care. First, upon recognizing advanced decay at intake, the dentist should have indicated tooth #2 for expedited care. Second, instead of triage by a dental assistant, the decision to assign his next HNR to routine versus urgent care should have been made by a dentist who could interpret the examination charting and x-rays and make a clinically appropriate decision. Third, the lack of intermediate categories of timeliness between urgent and routine prevented the tooth from being treated during what might have been a window of opportunity. Finally, ADC had insufficient dental staffing to see routine care appointments within six months of the HNR, significantly increasing the likelihood that teeth would decay too far to be saved.

Table 1. HNRs Stating Pain Not Assigned to Urgent Care (N=30)						
Name	**HNR Date**	**Issue**	**Date Assigned[59]**	**Date Seen**	**Encounter Result**	**Days after HNR**
Redacted	4/11/13	Pain	4/15/13		Not seen by date of audit (7/8/13)	88+ days
Redacted	1/9/12	Painful cavity	1/10/12	3/15/12	Restore #18,19,20	66 days
Redacted	7/7/10	Painful tooth	7/8/10	10/25/10	Restore #2	110 days
Redacted	5/14/13	Painful teeth	5/16/13		No appointment by date of audit (7/11/13)	58+ days
Redacted	12/24/12	Sensitivity/ pain in teeth	12/26/12	3/6/13	Restore #18	72 days
Redacted	5/28/13	Painful bump on gums	5/29/13	6/25/13	Seen for routine appointment	78 days
Redacted	7/13/12	Loose, rotten tooth	8/1/12	8/31/12	Tooth #2, & #5- Rx: antibiotic	49 days
Redacted	3/20/12	Needs extractions / painful teeth	4/2/12		Progress note not transcribed	
Redacted	1/26/11	Needs dental work – teeth hurt	2/1/11	2/16/11	Restore #3	21 days
Redacted	11/17/11	Tooth hurts when drinking hot and cold	11/17/11	2/15/12	Restore #9	90 days

[59] The Date Assigned reflects the date on the "treatment plan" section of the HNR that would have been returned to the inmate. HNRs listed in this table use various terminology ("on routine list", "on dental list", "scheduled") that does not specify that the inmate will be seen shortly or on a "pain eval" or similarly termed visit.

Table 1. HNRs Stating Pain Not Assigned to Urgent Care (N=30)						
Name	**HNR Date**	**Issue**	**Date Assigned[59]**	**Date Seen**	**Encounter Result**	**Days after HNR**
Redacted	5/28/13	Wants teeth fixed. One tooth causing headaches and problems	5/29/13		No treatment by record review date (7/24/13)	57 days
Redacted	6/15/12	Schedule for filling – experiencing pain	6/18/12	7/18/12	Pain eval. #19 Apical periodontitis. PVK / IBU. NV extract #19	8 days
Redacted	5/27/11	Broken tooth (pain)	5/31/11		Progress note not transcribed	
Redacted	4/10/13	Toothache	4/11/13		Progress note not transcribed	
Redacted	9/27/10	Broken tooth cutting into gums – needs to be pulled	9/28/10		Progress note not transcribed	
Redacted	3/19/12	Toothache – can't eat or sleep	3/26/12	5/8/12	Extract #4	50 days
Redacted	2/24/13	Broken tooth – extremely painful (can't eat)	2/26/13		No appointment by time of the audit (7/11/13)	137 days
Redacted	4/3/13	Has a cavity that is causing a toothache	4/4/13	4/18/13	Restore #17, #19	15 days
Redacted	3/4/13	Cavity (see 11/14/11 HNR) starting to hurt bad	3/5/13	3/6/13	Restore #21,#3	113 days
Redacted	6/24/12	Broken tooth – pain when he eats	6/26/12	8/30/12	Restore #8	67 days
Redacted	1/22/10	Cavities hurt real bad	1/25/10	2/25/10	Restore #2	34 days
Redacted	6/13/13	Need filling – tooth starting to hurt	6/18/13		No appointment by date of audit (8/4/13)	52 days

Table 1. HNRs Stating Pain Not Assigned to Urgent Care (N=30)						
Name	**HNR Date**	**Issue**	**Date Assigned[59]**	**Date Seen**	**Encounter Result**	**Days after HNR**
Redacted	6/6/12	Wisdom teeth causing problems	6/7/12	8/30/12	Pericoronitis #32. Rx: Penicillin & Ibuprofen	85 days
Redacted	4/24/13	Toothache	4/25/013		Not appointed for toothache by the date of the audit (7/11/13)	78+ days
Redacted	5/10/13	Toothache – pain on eating	5/13/13	6/5/13	Extract #18	26 days
Redacted	10/17/12	Needs cavities filled. Teeth hurt (emergency)	10/18/12		Progress note not transcribed	
Redacted	9/25/12	Broken tooth – in pain	9/26/12	10/3/12	Tooth # 19 – Rx: antibiotics and analgesics	8 days
Redacted	3/6/12	Status of HNR for a filling? Pain getting worse.	3/8/12	4/5/12	#30 irreversible pulpitis. Penicillin & Ibuprofen. May need extraction	30 days
Redacted	5/13/12	Filling fell out - pain	5/24/12	10/18/12	Refused appointment	191 days
Redacted	1/25/13	Needs fillings. Pain with hot, cold, and sweet	1/29/13	6/19/13	Restore #31	145 days
Redacted	7/15/12	Toothache (pain left side of mouth)	7/15/12		Progress note not transcribed	

Table 2. HNRs Stating Broken / Chipped Tooth Not Assigned to Urgent Care (N=20)						
Name	**HNR Date**	**Issue**	**Date Assigned**	**Date Seen**	**Encounter Result**	**Days After HNR**
Redacted	1/14/13	Chipped/ cracked tooth	1/15/13		No treatment by the time of the audit (7/11/13)	178+ days
Redacted	3/5/12	Filling fell out	3/13/12	5/4/12	Restore #14	60 days
Redacted	11/11/12	Broken tooth	11/13/12	4/9/13	Extract # 21	149 days
Redacted	5/14/12	Crumbling molar needs to be extracted (no pain)	5/15/12	9/26/12	Extract #15	135 days
Redacted	10/24/11	Status on List? Molar is breaking	10/25/11	1/4/12	Refused extraction. "I need tooth to eat on right side"	72 days
Redacted	2/27/11	Broken tooth / lost filling	3/3/11	3/24/11	Extract #29	25 days
Redacted	5/27/11	Broken tooth (pain)	5/31/11		Progress note not transcribed	
Redacted	9/27/10	Broken tooth cutting into gums – needs to be pulled	9/28/10	1/19/11	Extract #13 (non-restorable)	114 days
Redacted	2/24/13	Broken tooth – extremely painful (can't eat)	2/26/13		No appointment by time of the audit (7/11/13)	137+ days
Redacted	7/25/11	Chipped tooth	7/27/11	10/4/11	Pain Eval. Extract #29	71 days
Redacted	8/2/11	Cracked tooth (2nd HNR)	8/4/11	10/4/11	Pain Eval. Extract #29. NV HNR	63 days
Redacted	8/24/11	Wants broken tooth pulled	8/27/11	10/4/11	Extract #29	41 days
Redacted	4/18/13	Defective filling	4/22/13	6/7/13	Extract #4	50 days
Redacted	2/10/11	Needs temporary crown	2/16/11	5/12/11	Restore #21	91 days
Redacted	6/28/13	Broken tooth	7/1/13		No appointment by the time of the audit (7/11/13)	13+ days
Redacted	7/18/13	Chipped tooth – hurts when drinks or eats	7/23/13		No appointment by date of audit (7/24/13)	6+ days
Redacted	6/24/12	Broken tooth – pain when he eats	6/26/12	8/30/12	Restore #8	67 days
Redacted	4/1/11	Tooth broken into 3 pieces	4/7/11	10/31/11	Extract #19 (Non-restorable). Rx: Penicillin & Ibuprofen /	178 days

Table 2. HNRs Stating Broken / Chipped Tooth Not Assigned to Urgent Care (N=20)						
Name	**HNR Date**	**Issue**	**Date Assigned**	**Date Seen**	**Encounter Result**	**Days After HNR**
Redacted	10/1/12	Has broken tooth and several teeth need fillings	10/9/12	12/7/12	Pain eval. #2. Gross caries, irreversible pulpitis. Extract #2	67 days
Redacted	3/24/13	Sharp tooth causing pain	3/26/13	5/14/13	Restore #9	51 days
Redacted	9/25/12	Broken tooth – in pain	9/26/12	10/3/12	Pain Eval: #19 RX: antibiotics	8 days
Redacted	11/2/12	Filling fell out	11/5/12	3/9/13	Restore #9	127 days
Redacted	7/17/12	Need front chipped tooth repaired	7/17/12	1/29/13	Restore #8	196 days
Redacted	4/27/13	Previously filled tooth fell apart	4/29/13	6/28/13	#14,20. Broken tooth sensitive to touch. I/M opted to watch #14. Unable to restore #20 due to equipment problem	62 days

Table 3. Prisoner's dilemma (N=24)			
Inmate (Number)	Removed from Routine Care List		Consequence for Routine Care
	Refused app't or extraction	Urgent care/ pain evaluation	
Redacted	☐	☒	Waited 375 days for appointment
Redacted	☐	☒	Removed from list after waiting 45 days
Redacted	☐	☒	On list in 10/2012 but not seen by audit date
Redacted	☐	☒	Waited 249 days for appointment
Redacted	☐	☒	Waited 235 days for appointment
Redacted	☐	☒	Waited 200 days for cleaning
Redacted	☐	☒	On list in 9/2011 but not seen by audit date
Redacted	☐	☒	On list in 1/2013 but not seen by audit date
Redacted	☐	☒	No longer on list
Redacted	☐	☒	On list in 6/2012 but not seen by audit date
Redacted	☐	☒	Restored to list after new HNR
Redacted	☐	☒	Removed from list after waiting 6 months
Redacted	☒	☐	Waited 169 days for filing
Redacted	☐	☒	Restored to list after new HNR
Redacted	☐	☒	Waited 627 days for appointment
Redacted	☒	☐	Waited 129 days for filing
Redacted	☐	☒	On list in 9/2012 but not seen by audit date
Redacted	☐	☒	On list in 3/2012 but not seen by audit date
Redacted	☐	☒	Had no appointments for 623 days

Table 3. Prisoner's dilemma (N=24)			
Inmate (Number)	Removed from Routine Care List		Consequence for Routine Care
	Refused app't or extraction	Urgent care/ pain evaluation	
Redacted	☐	☒	On list in 10/2012 but not seen by audit date
Redacted	☐	☒	On list in 11/2012 but not seen by audit date
Redacted	☐	☒	Waited over a year for appointment
Redacted	☐	☒	Removed from list for over 30 days
Redacted	☐	☒	Removal resulted in an almost 2 year delay

Table 4. ADC Dental Monitor Functions and Activities		
Functions	**Yes**	**No**
Monitors Compliance with DSTM	Yes (42:3-5)	
Evaluates dental care provided to ADC inmates.		Acts more like a consultant (12:9-16) Partially (13:8-13)
Reviews dental grievances	Reviews grievance appeals (12:17-20; 104:10-19)	Does not log grievances she responds to or produce written reports (108:14-22)
Ensure dental care meets constitutional standards	Would advise ADC "if something came up" (13:19-14-9)	
ADC employees		No (12:4-5)
Advise contract monitors	Yes. Answers questions particularly about the DSTM (24:21-25:16)	
Contact with Corizon		No (30:8-10)
Contact with Dr. Smallwood	Occasional (28:12-13)	
Monitors staffing		No (33:1-34:25)
Recommend changes in DSTM	Yes (40:3-23)	
Reviewed Corizon contract		No (41:23-24)
Resolution of HNRs		No (42:11-13)
Monitor diets prescribed for dental reasons		No (42:17-19)
Routinely reviews institution monitoring reports (MGAR)		No. Not routinely sent to her and does not know where they are kept (44:22-45:10) Does not know who is notified when an oral care standard is marked red (69:7-23)
Provide guidance for institution monitors to evaluate oral care standards		No. Not exactly sure what they are told about oral care standards (47:14-25; 48:1-17)
Monitor institution corrective action plans with respect to oral care standards		No. Not sure who does it (49:13-25; 50:1-6)
Produce reports about dental care		No (52:10-12)

Table 4. ADC Dental Monitor Functions and Activities		
Functions	**Yes**	**No**
Access Smallwood software to track HNRs		No (70:13-19)
Follow-up on dental issues at complexes		No. (74:23-76:7)
Monitor purchase of dental equipment	Yes (75:8-21)	
Monitor whether treatment plans are performed on new inmates at next facility [after intake]	Yes – but only for facilities she visits (82:12-83:17)	Not aware of anyone who monitors timeliness of treatment plans (83:15-23)

EXHIBIT A

CURRICULUM VITAE - JAY D. SHULMAN

PERSONAL INFORMATION

Address: 9647 Hilldale Drive, Dallas, Texas 75231
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EDUCATION

1982 Master of Science in Public Health
University of North Carolina

1979 Master of Arts in Education and Human Development
George Washington University

1971 Doctor of Dental Medicine
University of Pennsylvania

1967 Bachelor of Arts (Biology)
New York University

POSITIONS HELD

Academic

2007 – Adjunct Professor, Department of Periodontics
Baylor College of Dentistry

2003 - 07 Professor (Tenure), Department of Public Health Sciences
Baylor College of Dentistry (retired October, 2007)

1993 - 03 Associate Professor, Department of Public Health Sciences
Baylor College of Dentistry

Military

1971 - 93 Active duty, U.S. Army. Retired July 1993 in grade of Colonel.

1990 - 93 Chief, Dental Studies Division & Interim Commander (1993),
US Army Health Care Studies and Clinical Investigation Activity

Directed Army Dental Corps' oral epidemiologic and health services research. Supervised a team of public health dentists, statisticians, and management analysts. Designed and conducted research in oral epidemiology, healthcare management and policy.

1987 - 90 Director, Dental Services Giessen (Germany) Military Community and Commander, 86th Medical Detachment. Public Health & Preventive Dentistry Consultant, US Army 7th Medical Command.

Directed dental care for Army in North Central Germany. Operated 6 clinics with 20 dentists and 60 ancillary personnel. Responsible for the dental health of 25,000 soldiers and family members and for providing dental services during wartime using portable equipment. Provided technical supervision of public health and preventive dentistry programs for the Army in Europe.

1984 - 87 Chief, Dental Studies Division US Army Health Care Studies & Clinical Investigation Activity. Public Health & Preventive Dentistry Consultant to Army Surgeon General.

Directed Army Corps' oral epidemiologic and health services research. Supervised a multi-disciplinary team of public health dentists, statisticians, and management analysts. Designed and conducted research in oral epidemiology, healthcare management and policy. Technical supervision of all Army public health and preventive dentistry programs worldwide.

1982 - 84 Assistant Director for Research, US Army Institute of Dental Research.

Responsible for Management of extramural research program, performing epidemiologic research, and teaching biostatistics and epidemiology to Walter Reed Army Medical Center dental residents.

1980 - 82 Full-time graduate student (Army Dental Public Health Training Fellowship) at the School for Public Health, University of North Carolina at Chapel Hill.

1976 - 80 Director, Dental Automation
US Army Tri-Service Medical Information Systems Agency
Walter Reed Army Medical Center, Washington, DC

Directed a team of computer scientists in the development of an automated management system for the Army dental clinics and upper management.

1975 - 76 Clinical Dentist, Pentagon Dental Clinic, Washington, DC

1974 - 75 Clinical Dentist, US Army Hospital Okinawa, Japan

1971 - 74 Clinical Dentist, US Army Dental, Clinic Fort McPherson, Georgia

BOARD CERTIFICATION AND STATE LICENSE

Dental Licensure.

Texas #17518 (retired)

Board Certification.

Certified by the American Board of Dental Public Health since 1984 (active).

RESEARCH - AREAS OF INTEREST

Oral epidemiology, health services research, health policy, military and correctional health.

RECENT FUNDED RESEARCH

2010 - 12 Instrument system and technique for minimally invasive periodontal surgery (MIS). National Institutes of Health SBIR Grant 2R44DE017829-02A1 ($368,270). Principal Investigator: Dr. Stephen Harrel. Role: Paid consultant.

CURRENT SOCIETY AND ORGANIZATION MEMBERSHIPS

1984 – American Board of Dental Public Health

1982 – American Association of Public Health Dentistry

2011 – Texas Oral Health Coalition

PROFESSIONAL ACTIVITIES

Invited Presentations.

Apr 2012 Public Health, Public Policy, And Legal Issues Associated with Health Care in Prisons: A Dental Perspective. Presented at the University of Texas Health Science Center, San Antonio.

Apr 2009 Public Health, Public Policy, And Legal Issues Associated with Health Care in Prisons: A Dental Perspective. Presented at the University of Iowa.

Mar 2008 Public Health and Public Policy Issues Related to Dental Care in Prisons. Presented at University of North Carolina School of Public Health, Chapel Hill, NC.

Jun 2007 Characteristics of Dental Care Systems of State Departments of Corrections. Presented to annual meeting of Federal Bureau of Prisons dentists, Norman OK.

Jun 2006 Public Health Aspects of Correctional Dentistry. Presented to annual meeting of Federal Bureau of Prisons dentists, Fort Worth, TX.

Oct 2006 Opportunities for Dental Research Using the National Health and Nutrition Examination Survey. Indiana University School of Dentistry.

Aug 2006 Dental Public Health and Legal Issues Associated with Correctional Dentistry. Federal Bureau of Prisons.

Dec 2005 Opportunities for Faculty Research Using Secondary Data. Frontiers in Dentistry Lecture. University of the Pacific School of Dentistry.

Feb 2005 Advanced Education in Dental Public Health. University of Missouri, Kansas City, School of Dentistry.

Consultant Activities

2012 – Expert Witness. *Parsons et al. v. Ryan et al*. 2:12-cv-00601-NVW (D. AZ).

2012 – Expert Witness. *Daryl Farmer v. Gwendolyn Miles, et al.* 10-cv-05055 (N.D. IL), Eastern Division. Deposed February 1, 2013.

2012 – Expert Witness. *John Smentek et al. v. Thomas Dart, Sheriff of Cook County et al*. 1:09-cv-00529 (N.D. IL).

2012 – Consultant. Quentin Hall et al. v. Margaret Mimms, Sheriff of Fresno County et al. 1:11-cv-02047-LJO-BAM (E.D. CA)

2009 - 11 Expert Witness. Inmates of the *Northumberland County Prison, et al. v. Ralph Reish, et al*. 08-CV-345 (M.D. PA).

2007 - 09 Expert Witness. *Flynn v. Doyle* 06-C-537-RTR (E.D.WI.) Deposed June 5, 2008.

2006 - 12 Rule 706 Expert (monitor) and Court Representative, *Perez v. Tilton* (*Perez v. Cate*) federal class action lawsuit settlement. C05-5241 JSW (N.D. CA).

Responsible to *Perez* Court for coordinating remedies between dental (*Perez v. Tilton / Cate*), medical (*Plata v. Schwarzenegger*), and mental health (*Coleman v. Schwarzenegger*). Monitored compliance with *Perez* stipulated injunction. Monitoring completed June 2012.

2005 - 10 Rule 706 Expert (monitor), *Fussell v. Wilkinson* federal class action lawsuit settlement. 1:03-cv-00704-SSB (S.D. OH).

Performed initial fact finding, provided dental input to stipulated injunction and monitored compliance. Monitoring completed October 2010.

1999 - 03 Editorial Board *Journal of Public Health Dentistry*

1996 - 05 Editorial Board, Mosby's Dental Drug Reference

1993 - 07 *Ad hoc* reviewer: *J Public Health Dent* (10);*J Amer Dent Assoc* (6); *J Dent Educ* (3); *Pediatr* (1); *Community Dent and Oral Epidemiol* (3); *Cleft Palate Craniofacial J* (3); *Pediatr Int* (3); *J Dent Res* (2); *Caries Res* (4); *Oral Dis* (2); *J Oral Rehab* (2)

Teaching

Predoctoral

1993 - 2007 Director, Principles of Biostatistics

1993 - 2007 Lecturer, Applied Preventive Dentistry

1993 - 2007 Clinical Supervisor, Preventive Dentistry

2006 - 2007 Clinical Supervisor and Care Provider, Dallas County Juvenile Detention Center Dental Clinic

1993 - 2005	Director, Epidemiology & Prevention
1995 - 2003	Director, Dental Public Health

Postdoctoral

2007 –	Research mentor, Department of Periodontics, Baylor College of Dentistry
1994 - 2007	Director, Dental Public Health Residency
1994 - 2007	Lecturer, Research Methods
2001 - 2006	Director, Applied Biostatistics

PUBLICATIONS

Peer-Reviewed (55)

1. Bansal R, Bolin KA, Abdellatif HM, Shulman JD. Knowledge, Attitude and use of fluorides among dentists in Texas. *J Contemp Dent Pract* 2012;13(3):371-375.
2. Shulman JD, Sauter DT. Treatment of odontogenic pain in a correctional setting. *J Correctional Health Care* (2012) 18:1, 58 - 65.
3. Barker TS, Cueva MA, Rivera-Hidalgo F, Beach MM, Rossman JA, Kerns DG, Crump TB, Shulman JD. A comparative study of root coverage using two different acellular dermal matrix products. *J. Periodontology* (2010) 81:11, 1596-1603.
4. Maupomé G, Shulman JD, Medina-Solis CE, Ladeinde O. Is there a relationship between asthma and dental caries? A critical review of the literature. *Journal of the American Dental Association* 2010;141(9):1061-1074.
5. Puttaiah R, Shulman JD, Youngblood D, Bedi R, Tse E, Shetty S, Almas K, Du M. Sample infection control needs assessment survey data from eight countries. *Indian Dental Journal* 2009; 59, 271-276.
6. Fransen JN, He J, Glickman GN, Rios A, Shulman JD, Honeyman A. Comparative Assessment of ActiV GP/Glass Ionomer Sealer, Resilon/Epiphany, and Gutta-Percha/AH Plus Obturation: A Bacterial Leakage Study. *Journal of Endodontics* 2008; 34(6), 725-27.
7. Beach MM, Shulman JD, Johns G, Paas J. Assessing the viability of the independent practice of dental hygiene. *J Public Health Dent.2007;*67(4):250-4.
8. Blackwelder A, Shulman JD. Texas dentists' attitudes towards the dental Medicaid program. *Pediatr Dent* 2007;29:40-4.
9. Massey CC, Shulman JD. Acute ethanol toxicity from ingesting mouthwash in children younger than 6 years of age, 1989-2003. *Pediatr Dent*. 2006; 28:405-409.
10. Shulman JD, Carpenter WM. Prevalence and risk factors associated with geographic tongue among US adults. *Oral Dis*. 2006;12:381-386.

11. Clark DC, Shulman JD, Maupomé G, Levy SM. Changes in dental fluorosis following cessation of water fluoridation. *Community Dent Oral Epidemiol*. 2006;34: 197-204.
12. Shulman JD, Sutherland JN. Reports to the National Practitioner Data Bank involving dentists, 1990-2004. *J Am Dent Assoc* 2006;137:523-528.
13. Holyfield LJ, Bolin KA, Rankin KV, Shulman JD, Jones DL, Eden BD. Use of computer technology to modify objective structured clinical examinations. *J Dent Educ* 2005;10:1133-1136.
14. Benson BW, Shulman JD. Inclusion of tobacco exposure as a predictive factor for decreased bone mineral content. *Nicotine Tob Res* 2005;719-724.
15. Shulman JD, Rivera-Hidalgo F, Beach MM. Risk factors associated with denture stomatitis in the United States. *J Oral Path Med* 2005;340-346.
16. Shulman JD. Is there an association between low birth weight and caries in the primary dentition? *Caries Res* 2005;39:161-167.
17. Shulman JD. The prevalence of oral mucosal lesions in U.S. children and youth. *Int J Pediatr Dent.*2005;15:89-97.
18. Bolin KA, Shulman JD. Nationwide dentist survey of salaries, retention issues, and work environment perceptions in community health centers. *J Am Dent Assoc* 2005;136 (2): 214-220.
19. Shulman JD. Recurrent herpes labialis in US children and youth. *Community Dent Oral Epidemiol* 2004; 32: 402-9.
20. Shulman JD. An exploration of point, annual, and lifetime prevalence in characterizing recurrent aphthous stomatitis in USA children and youth. *J Oral Path Med*. 2004;33: 558.66.
21. Shulman JD, Beach MM, Rivera-Hidalgo F. The prevalence of oral mucosal lesions in U.S. Adults: Data from the Third National Health and Nutrition Examination Survey. *J Am Dent Assoc* 2004;135:1279-86.
22. Bolin KA, Shulman JD. Nationwide survey of dentist recruitment and salaries in community health centers. *J. Health Care for the Poor and Underserved* 2004; 15:161-9.
23. Shulman JD, Maupomé G, Clark DC, Levy SM. Perceptions of tooth color and dental fluorosis among parents, dentists, and children. *J Am Dent Assoc* 2004;135(5):595-604.
24. Rivera-Hidalgo F, Shulman JD, Beach MM. The association of tobacco and other factors with recurrent aphthous stomatitis. *Oral Dis.* 2004;10:335-345.
25. Shulman JD, Peterson J. The association between occlusal characteristics and incisal trauma in individuals 8 - 50 years of age. *Dental Traumatology* 2004; 20: 67-74.

26. Buschang PH, Shulman JD. Crowding in treated and untreated subjects 17-50 years of age. *The Angle Orthodontist* 2003; 73(5):502-8.
27. Maupomé G, Shulman JD, Clark DC, Levy SM. Socio-demographic features and fluoride technologies contributing to higher TFI scores in permanent teeth of Canadian children. *Caries Res* 2003; 37(5):327-34.
28. Shulman JD, Nunn ME, Taylor SE, Rivera-Hidalgo F. The prevalence of periodontal-related changes in adolescents with asthma: Results of the Third Annual National Health and Nutrition Examination Survey. *Pediatr Dent* 2003; 25(3):279-84.
29. Makrides NS, Shulman JD. Dental health care of prison populations. *J Corr Health Care* 2002; 9(3):291-306.
30. Shulman JD, Ezemobi EE, Sutherland JN. Louisiana dentists' attitudes toward the Dental Medicaid program. *Pediatr Dent* 2001; 23(5):395-400.
31. Shulman JD, Taylor SE, Nunn ME. The association between asthma and dental caries in children and adolescents: A population-based case-control study. *Caries Res* 2001; 35:4:240-246.
32. Maupomé G, Shulman JD, Clark DC, Levy SM, Berkowitz J. Tooth-surface progression and reversal changes in fluoridated and no-longer-fluoridated communities over a 3-year period. *Caries Res* 2001; 35:2:95-105.
33. Trautmann G, Gutmann JL, Nunn ME, Witherspoon DE, Shulman JD. Restoring teeth that are endodontically treated through existing crowns. Part I: Survey of pulpal status on access. *Quintessence Int* 2000; 31(10):713-18.
34. Trautmann G, Gutmann JL, Nunn ME, Witherspoon DE, Shulman JD. Restoring teeth that are endodontically treated through existing crowns. Part II: Survey of restorative materials commonly used. *Quintessence Int* 2000; 31(10):719-28.
35. Lalumandier JA, McPhee SD, Riddle S, Shulman JD, Daigle WW. Carpal tunnel syndrome: Effect on Army dental personnel. *Milit Med* 165:372-78,May 2000.
36. McFadyen JA, Shulman JD**.** Orofacial injuries in youth soccer. *Pediatr Dent* 1999; 21:192-96.
37. Cederberg RA, Fredricksen NL, Benson BW, Shulman JD. Influence of the digital image display monitor quality on observer performance. *Dentomaxillofacial Radiology* 1999; 28:203-7.
38. Shulman JD, Niessen LC, Kress GC, DeSpain B, Duffy R. Dental public health for the 21st century: Implications for specialty education and practice*. J Public Health Dent* 1998; 58 (Suppl 1):75-83.
39. Cederberg RA, Fredricksen NL, Benson BW, Shulman JD. Effect of different lighting conditions on diagnostic performance of digital film images. *Dentomaxillofacial Radiology* 1998; 27:293-97.

40. Shulman JD, Lewis DL, Carpenter WM. The prevalence of chapped lips during an Army hot weather exercise. *Milit Med* 1997; 162:817-19.
41. Shulman JD, Wells LM. Acute toxicity due to ethanol ingestion from mouthrinses in children less than six years of age. *Pediatr Dent* 1997; 19(6):404-8.
42. Kress G, Shulman JD. Consumer satisfaction with dental care: where have we been, where are we going? *J Am Coll Dent* 1997; 64 (1):9-15**.**
43. Shulman JD, Wells LM. Acute toxicity in children under the age of six from ingesting home fluoride products: an update. *J Public Health Dent* 1995; 57(3):150-8.
44. McFadyen JA, Seidler KL, Shulman JD, Wells, LM. Provision of free and discounted dental services to selected populations: A survey of attitudes and practices of dentists attending the 1996 Dallas Midwinter Meeting. *Texas Dent J* 1996; 113 (12):10-18.
45. Shulman JD**.** Potential effects of patient opportunity cost on dental school patients. *J Dent Educ* 1996; 60 (8):693-700.
46. Shulman JD, Lalumandier JA, Grabenstein JD. The average daily dose of fluoride: a model based on fluid consumption. *Pediatr Dent* 1995; 17 (1):13-18.
47. Solomon ES, Hasegawa TK, Shulman JD, Walker PO. An application: the cost of clinic care by dental students and its relationship to clinic fees. *J Dent Educ* 1994; 58 (11-12):832-5.
48. Shulman JD, Williams TR, Lalumandier JA. Treatment needs and treatment time for soldiers in Dental Fitness Class 2. *Milit Med* 159, 2:135-138, 1994.
49. Shulman JD, Williams TR, Tupa JE, Lalumandier JA, Richter NW, Olexa BJ. A comparison of dental fitness classification using different class 3 criteria. *Milit Med* 1994; 159 (1):5-10.
50. Amstutz RD, Shulman JD. Perceived needs for dental continuing education within the Army Dental Care System. *Milit Med* 1994; 159 (1):1-4.
51. Shulman JD, Carpenter WM, Lewis DL. The prevalence of recurrent herpes labialis during an Army hot weather exercise. *J Public Health Dent* 1992; 52 (4):198-203.
52. Brusch WA, Shulman JD, Chandler HT. Survey of Army dental practice. *J Am Coll Dent* 1987; 54 (1):54-63.
53. Lewis DM, Shulman JD, Carpenter WM. The prevalence of acute lip damage during a US Army cold weather exercise. *Milit Med* 1985; 150 (2):87-90.
54. Freund DA, Shulman JD. Regulation of the professions, results from dentistry. In Scheffler, Richard (ed.). *Advances in Health Economics and Health Services Research IV* 1984; 5(1):161-180.
55. Baumgartner JC, Brown CM, Mader CL, Peters DD, Shulman JD. Scanning electron microscopic evaluation of root canal irrigation with saline, sodium hypochlorite, and citric acid. *J Endodon.* 1984; 10 (11):525-531.

Book Chapters Monographs, and Non-Peer Reviewed Articles

1. Shulman JD. Structural Reform Litigation in Prison Dental Care: The *Perez* Case. *Correctional Law Reporter* 25(2) August-September 2013.
2. Shulman JD, Gonzales CK. Epidemiology of Oral Cancer. In Cappelli DP, Mosley C, eds. Prevention in Clinical Oral Health Care. Elsevier (2008), 2-13.
3. Cappelli DP, Shulman JD. Epidemiology of Periodontal Diseases. In Cappelli DP, Mosley C, eds. Prevention in Clinical Oral Health Care. Elsevier (2008), 14-26.
4. Shulman JD, Cappelli DP. Epidemiology of Dental Caries. In Cappelli DP, Mosley C, eds. Prevention in Clinical Oral Health Care . Elsevier (2008), 27-43.
5. Shulman JD, Heng C. Meth Mouth: What We Know and What We Don't Know. *Fortune News* 2006;52(1):12-13.

Abstracts Presented (25 since 2003)

1. Yanus M, Rivera-Hidalgo F, Solomon E, Roshan S, Shulman J, Rees TD, Hummel S, Boluri A. Relationship of Candida to Oral Factors in Complete Denture Wearers. *J Dent Res 89* (Special Issue):#4445, 2010.
2. Abraham C, Rivera-Hidalgo F, Kessler H, Rees T, SL Cheng, Y, Shulman J, Solomon E. Inter-Examiner Evaluation of Fluorescence in Oral Lesions. *J Dent Res 89* (Special Issue): #4404, 2010.
3. He J, Solomon E, Shulman J, Rivera-Hidalgo F. Treatment Outcome of Endodontic Therapy with or without Patency Filing. *J Dent Res 89* (Special Issue):#1277, 2010.
4. Harrel SK, Rivera-Hidalgo F, Hamilton K, Shulman JD. Comparison of Ultrasonic Scaling Wear and Roughness Produced In Vitro. *J Dent Res* 87 (Special Issue): # 1018, 2008.
5. Harrel SK, Rivera-Hidalgo F,' Shulman JD. Comparison of Surgical Instrumentation Systems for Minimally Invasive Periodontal Surgery. *J Dent Res* 87 (Special Issue): # 1020, 2008.
6. Shulman JD, Bolin KA. Characterizing Disparities in Root Surface Caries in the US. *J Dent Res* 85 (Special Issue): # 476, 2006.
7. Shulman JD, Bolin KA. Is Root Surface Caries Associated with Xerogenic Medications? *J Dent Res* 85 (Special Issue): # 477, 2006.
8. Shulman JD, Carpenter WM. Risk Factors Associated with Geographic Tongue Among US Children. *J Dent Res* 85 (Special Issue): # 1205, 2006.
9. Shulman JD, Bolin KA, Eden BD. Socio-demographic Factors Associated with Root Surface Caries Prevalence. *J Dent Res* 84 (Special Issue): # 3279, 2005.
10. Shulman JD, Carpenter WM, Rivera-Hidalgo F. Prevalence of Hairy Tongue among US Adults. *J Dent Res* 84 (Special Issue): # 1396, 2005.

11. Eden BD, Shulman JD. Root Caries in the US by Tooth Type and Surface. *J Dent Res* 84 (Special Issue): # 2622, 2005.
12. Mobley CC, Shulman JD. Birth Weight and Caries in the Permanent Dentition of Children. *J Dent Res* 84 (Special Issue): # 86, 2005.
13. Puttaiah R, Shulman JD, Bedi R, Youngblood D, Tse E. Infection Control Profile Scores of Practitioners from Eight Countries. *J Dent Res* 84 (Special Issue): # 1026, 2005.
14. Puttaiah R, Youngblood D, Shulman JD, Bedi R, Tse E. Infection Control Practice Comparisons between Practitioners from Eight Countries. *J Dent Res* 84 (Special Issue): # 3207, 2005.
15. Foyle DM, Rivera-Hidalgo F, Shulman JD, Williams F, Hallmon W, Taylor S. Effect of Selected Therapies on Healing in Rat Calvarial Defects. *J Dent Res* 84 (Special Issue): # 1172, 2005.
16. Puttaiah R, Lin SM, Svoboda KKH, Cederberg R, Shulman JD. Quantitative Comparison of Scanning Electron and Laser Confocal Microscopy Techniques. *J Dent Res* 84 (Special Issue): # 3425, 2005.
17. Holyfield LJ, Bolin KA, Rankin KV, Shulman JD, Jones DL, Eden BD. Use of computer technology to modify objective structured clinical examinations. *J Dent Educ* 69 (1):147 # 113, 2005.
18. Benson BW, Shulman JD. Effect of antepartum natural background radiation on infant low birth weight: a pilot study. American Academy of Oral & Maxillofacial Radiology; Denver, CO. 11/6/04.
19. Shulman JD, Beach MM, Rivera-Hidalgo F. Risk factors associated with denture stomatitis in U.S. adults. *J Dent Res* 83 (Special Issue): # 422, 2004.
20. Puttaiah R, Shulman JD, Bedi R. A multi-country survey data on dental infection control KAP. *J Dent Res*; 82 (Spec Issue):# 3394, 2003.
21. Eden BD, Shulman JD. Perceived need for denture care and professional assessment of dentures. *J of Dent Res* 83 (Special Issue): # 1604.
22. Benson BW, Shulman JD. Inclusion of tobacco exposure as a predictive factor for decreased bone mineral content. *Oral Surg, Oral Med, Oral Pathol, Oral Radiol & Endo* 97(2*)*: 266-267.
23. Eden BD, Shulman JD. Factors influencing self-perceived need for periodontal therapy: Data from the Third National Health and Nutrition Survey (NHANES III). *J Dent Res* 2003; 82(Spec Issue):#0481.
24. Shulman JD, Beach MM, Rivera-Hidalgo F. The Prevalence of oral mucosal lesions among US adults: Results from the Third National Health and Nutrition Survey. *J Dent Res* 82 (Special Issue A): # 1472, 2003.
25. Rivera-Hidalgo F, Shulman JD, Beach MM. Recurrence of aphthous ulcerations in adult tobacco smokers. *JDent Res* 82 (Special Issue A): # 0759, 2003.

EXHIBIT B

Court Expert

2006 - 12 Rule 706 Expert (monitor) and Court Representative, Perez v. Tilton (Perez v. Cate) federal class action lawsuit settlement. C05-5241 JSW (N.D. CA). Monitoring completed June 2012.

2005 - 10 Rule 706 Expert (monitor), Fussell v. Wilkinson federal class action lawsuit settlement. 1:03-cv-00704-SSB (S.D. OH). Monitoring completed October 2010.

Expert for Plaintiff (s)

2012 – Expert Witness. Daryl Farmer v. Gwendolyn Miles, et al. 10-cv-05055 (N.D. IL), Eastern Division. Deposed February 1, 2013. While Wexford is not a defendant, the case involves inadequate care by a dentist in Wexford's employ. Case survived summary judgment – trial has not been scheduled.

2012 – Expert Witness. John Smentek et al. v. Thomas Dart, Sheriff of Cook County et al. 1:09-cv-00529 (N.D. IL). Will likely write expert report in January / February

2012 – Consultant. Quentin Hall et al. v. Margaret Mimms, Sheriff of Fresno County et al. 1:11-cv-02047-LJO-BAM (E.D. CA). PLO is representing plaintiffs. To date I have spent a few hours reviewing named plaintiff records but I haven't heard about the case in several months. It appears that the parties are trying to negotiate a settlement.

2009 - 11 Expert Witness. Inmates of the Northumberland County Prison, et al. v. Ralph Reish, et al. 08-CV-345 (M.D. PA). Wrote expert report but case settled before msj was filed

Defendant (s)

Expert Witness. Flynn v. Doyle 06-C-537-RTR (E.D.WI.) Deposed June 5, 2008. Dental care was dropped from the case.

EXHIBIT C

EXHIBIT C
MATERIALS REVIEWED

Deposition Transcripts and Exhibits (exhibits included unless noted)

Terry Allred, September 18, 2013

Dr. Michael Adu-Tutu, October 1, 2012

Marlena Bedoya, September 12, 2013

Kathleen Campbell, RN, September 23, 2013

Dr. Karen Chu, May 15, 2013 (without exhibits)

Troy Evans, RN, September 17, 2013

Arthur Gross, September 9, 2013

Mark Haldane, September 19, 2013

Yvonne Maese, RN, September 20, 2013

Anthony Medel, September 17, 2013

Jennie Mielke-Fontaine, September 20, 2013

John Mitchell, September 18,2013

Dr. William Smallwood, August 20, 2013 (without exhibits)

Stephen Swartz, August 22, 2013 (pp. 123-34 and 263-73, without exhibits)

Salvatore Tardibuono, September 19, 2013

Dr. Nicole Taylor, September 5, 2013

Dr. Helena Valenzuela, August 23, 2013

Dr. Carlos Weekly, October 23, 2012 (without exhibits)

Named Plaintiffs' Records:

Maryanne Chisholm (200825) (Original public records request, ADC000228-71, ADC071361-93, ADC84454-700, ADC123341-78, ADC130340-719, PLTF-PARSONS-004624-28, PLTF-PARSONS-026008-010)

Victor Parsons (123589) (Original public records request, ADC010146-480, ADC010343, ADC010345, ADC016675-16873, ADC071679-741, 074264-72, ADC074261-63, PLTF-PARSONS-030428-30, WEX006718-6779, WEXFORD06668-69, WEXFORD 06677)

Joshua Polson (205576) (Original public records request, ADC006046-64, ADC006228, ADC006230, ADC006235-36, ADC006243, ADC017218-485, ADC017954-83, ADC050780, 071742-93, 74873-79, 122338-70, 131368-131405, PLTF-PARSONS-023973-24010, PLTF-PARSONS-026526-27187)

Stephen Swartz (102486) (Original public records request, ADC001404, ADC001409-18, ADC001838, ADC001915, ADC071794-919, 74414-40, 76220-82, 76283-323, 82335-494, 122465-90, 122491-565, 129076-212, 133867-134801, PLTF-PARSONS-030446)

Charlotte Wells (247188) (Original public records request, ADC007063-7115, ADC017909-15, ADC071920-50, 082672-896, 122867-920, 134802-135377)

Additional Inmate Records:

Redacted (ADC151155-67, ADC153556-601)
Redacted (ADC042649-739)
Redacted (ADC153458-63)
Redacted (ADC130857-131367)
Redacted (ADC153464-80)
Redacted (ADC153481-524)
Redacted (ADC137179-84)
Redacted (ADC151198-209, ADC153602-46)
Redacted (ADC153525-55)
Redacted (ADC131406-133192)
Redacted (ADC133193-531)
Redacted (ADC153435-57)
Redacted (ADC135378-438)
Redacted (ADC135439-569)
Redacted (ADC135570-724, ADC153647-719)

Inmate Records Reviewed on Expert Tours

Florence: **Redacted**

Safford: **Redacted**

Redacted

Phoenix: Redacted

Tucson: Redacted

Perryville: Redacted

Lewis: Redacted

Eyman: Redacted

Douglas: Redacted

Yuma: **Redacted**

External Documents:

Am. Dental Ass'n. Oral Health Topics. Dental Public Health. http://www.ada.org/6876.aspx Accessed November 4, 2013. ("ADA, Oral Health Topics")

Lake County Jail Settlement Findings Letter re: Investigation of the Lake County Jail. December 7, 2009. Accessed at http://www.justice.gov/crt/about/spl/documents/Lake_County_Jail_findlet_12-07-09.pdf. October 18, 2012. ("Lake County Findings Letter")

Makrides, N.S. et al. (2006) Corr. Dental Servs., in M. Puisis (ed.), *Clinical Practice in Corr. Med.* (2d ed., pp. 556-563) Philadelphia, PA: Mosby Elsevier ("Makrides *et al*.")

Settlement Agreement. *U.S. v. Lupe Valdez, Sheriff of Dallas County, Tex.*, U.S. Dist. Ct. for the N. Dist. of Tex., Civ. No. 307 CV 1559-N. Accessed at http://www.justice.gov/crt/about/spl/documents/dallas_county_order_11-06-07.pdf December 11, 2009. ("Dallas County Agreed Order")

Settlement Agreement. *U.S. v. Cook County, Illinois*. U.S. Dist. Ct. for the N. Dist. of Ill., Civ. No. 10 C 2946. Accessed at http://www.justice.gov/crt/about/spl/documents/CookCountyJail_AgreedOrder_05-13-2010.pdf ("Cook County Agreed Order")

Ariz. Revised Statutes - Title 32 Professions and Occupations - Section 32-1202. Scope of practice; practice of dentistry. http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/32/01202.htm&Title=32&DocType=ARS. Accessed October 21, 2013 ("AZ Code Dentistry")

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