# Third Report of Lambert N. King, MD, PhD, FACP on Correctional Heath Services Compliance with Second Amended Judgment

***Graves v. Arpaio***

**No. CV – 77-0479-PHX-NVW**

**March 1, 2010**

Background

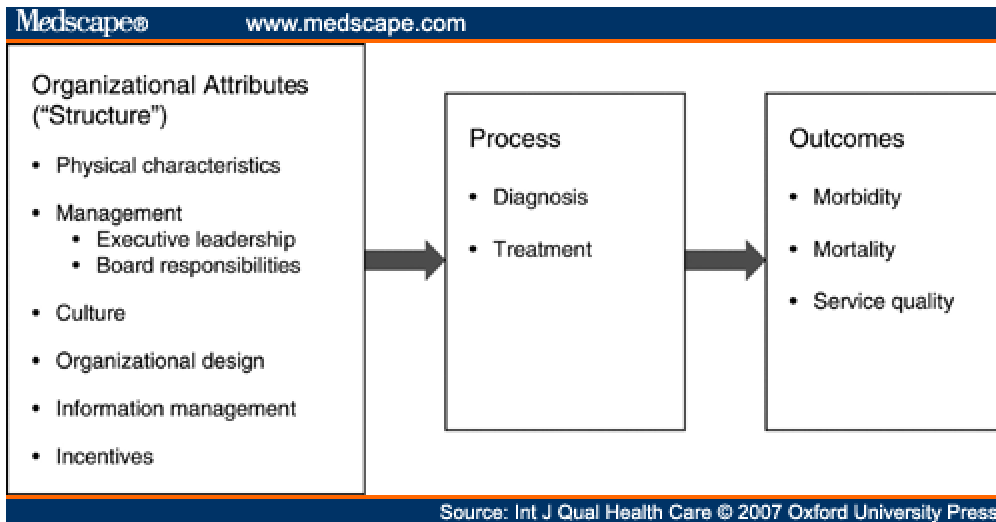
On September 14 – 17, 2009 and January 25 – 28, 2010, Dr. Kathryn Burns and I conducted site visits of Correctional Health Services (CHS) in the Maricopa County Jail system. Dr. Burns and I have prepared reports of our site visit observations regarding mental health and medical services respectively. This report is a summary of my recent observations concerning medical services. It is hereby respectfully submitted to Honorable Judge Neil V. Wake of the United States District Court for the District of Arizona, in response to the requirements of the Second Amended Judgment issued by Judge Wake on October 22, 2008.

The content of this report was informed by the following sources and methods:

- During these last two site visits, I continued to review CHS policies and procedures pertaining to the objectives of the Second Amended Judgment.
- I had detailed discussions with executive and clinical leaders of CHS to review their ongoing actions to assure access to and provision of proper medical care.
- I met with the CHS quality assurance/performance improvement review nurses to understand and assess the validity and implications of their recent Diabetic Patient Outcome Quality Improvement Study and Continuity of Medication Administrative Audit.
- I attended and observed the September 17, 2009 meeting of the CHS Pharmacy and Therapeutics Committee.
- During the September 2009 site visit, I reviewed eighty-nine (89) medical records when I was in the 4th Avenue Jail, LBJ, and Estrella facilities. Twenty-four of these 89 medical records belonged to patients identified by Plaintiffs counsel and referred to me from their prior recent reviews. The remaining majority of the records were selected randomly by me from chronic disease ledgers or lists of persons who recently had been evaluated in the Intake Center at the 4th Avenue Jail.

- During the January 2010 site visit, I reviewed 72 medical records when I was in the 4th Avenue Jail, Estrella, Towers and LBJ facilities. Of these records, twenty-eight (28) belonged to patients identified by Plaintiffs counsel and forty-four (44) were selected randomly by me from active medical records sections of the respective facilities.
- I reviewed the "Detailed Report – November 2009 Health Services Audit" of Correctional Health Services, Maricopa County Sheriff's Office. This 56 page report was prepared by CORRECTHEALTH, which is a private health care consulting company selected by CHS to perform the aforementioned audit.
- I reviewed the professional credentials files of the physicians currently employed by CHS.
- I reviewed a three page document titled "**Appendix 1: Incidents of Security Interference Gleaned from CHS Occurrence Reports**". This document was compiled by Plaintiffs Counsel during their January 2010 site visit. It includes information from CHS Occurrence Reports for the period from July 16, 2009 to November 20, 2009.
- On January 25, 2010, I met with Lisa Gardner, Finance Manager, for CHS. She provided me with specific information concerning the components of the CHS budget and the amounts allocated for health care services, both on-site in the MCJ and in external health care facilities.
- On the final days of my September 2009 and January 2010 site surveys, I met with CHS leaders to discuss my observations during the recent site visits. These observations include those that represent positive accomplishments as well as those that require further study and action by CHS in order to foster compliance with the specific intent of the Second Amended Judgment.

In this report, I will refer to the well established paradigm of quality analysis developed by health care researcher Avedis Donabedian (2). This method is illustrated by the following diagram from the International Journal of Quality Health Care.




The "Donabedian Triad" - Structure/Process/Outcome - is applicable to Correctional Health Services' scope of services and responsibilities in the Maricopa County Jail system. It is apparent that the systematic health care requirements of the Second Amended Judgment necessitate assessment and actions involving all three of the triad's components.

<u>CHS Leadership Structure</u>

1. Based on my observations, I believe that the executive, medical, and nursing leaders of CHS are knowledgeable about contemporary standards of health care delivery and organization. They are also concerned, capable and dedicated to achieving and maintaining proper medical care for the men and women held in the Maricopa County Jail system. These characteristics of leadership are an essential element of **Structure** in assessing adequacy of any health care system as complex as that of CHS.

<u>Intake Assessment and Health Appraisals</u>

2. Regarding the processes of Intake Assessment and follow-up Health Appraisals, my medical records reviews confirmed improvements since my first site visit on

March 30-April 1, 2009. This was especially notable with respect to completion of the Health Appraisals within the requisite 14 day period following reception screening or sooner if clinically necessary and appropriate. Furthermore, the medical records I reviewed indicated that patients who manifest uncontrolled hypertension at the time of reception are receiving timely and effective medications to bring their high blood pressure under control. These observations pertain to important **Process** and **Outcome** measures of medical care delivery and quality.

3. The November 2009 audit of 232 health records by CORRECT**HEALTH** indicated that 79% were completed within 14 days. It was also noted that CHS recently implemented a new process for tracking 14 day assessments, along with a system of checking compliance through the CQI (continuous quality improvement) Process that utilizes a statistical calculation.
4. The CORRECT**HEALTH** audit recommended that the Receiving Screening form used at Intake include a specific area to document disposition. I agree with this recommendation which should include specific aspects and timing of the medical disposition plan. This is especially crucial when an inmate has medical problems that require immediate or prompt follow-up, reassessment, referral to the Infirmary or an outside health care facility.

Continuity of Community-Based Medical Records

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5. CHS continues to perform well in requesting and obtaining prior community-based medical records of persons admitted to the MCJ system. These records are crucial in promoting continuity and quality of medical care within the jails. This observation is an important dual measure of **Structure** (staffing, competency) and **Process** (policies, procedures and their implementation) within the CHS program.

Chronic Disease Policy and Clinical Implementation

6. The CHS Chronic Disease Services Policy is medically appropriate and is designed to identify and manage chronic diseases, decrease frequency and severity of symptoms, prevent disease progression, and foster improved function. For example, in the medical charts I reviewed of patients with asthma, there was consistent use of Peak Expiratory Flow (PEF) measurements to assess severity of symptoms and measure response to treatment. Further evidence of active adherence to the Chronic Disease Services Protocol is seen in the results of the CHS Diabetic Patient Outcome Quality Improvement Study dated 09-12-09. This study presents evidence of improvement in the degree of control of elevated blood glucose (sugar) levels in patients with diabetes between the dates they entered the MCJ after subsequent incarceration for periods of 157 to 1251 days. This example incorporates elements of **Structure, Process,** and **Outcome** that are pertinent in assessing quality and adequacy of a complex health services program.
7. An important standard of care for patients with diabetes is that serum lipids are measured and that treatment is given to control significant abnormalities, especially elevated Low Density Lipoprotein Cholesterol LDL-C). The target recommendation for treatment of LDL-C is that the level should be less than 100 for patients with diabetes alone and less than 70 for patients with diabetes and established cardiovascular disease. The CHS protocol has been modified in concert with my recommendation and the guidelines of the American Diabetes Association (3).
8. Diabetes is a recognized serious risk factor for severe periodontal disease and infection within or near to the oral cavity. Diabetic patients should be carefully examined for periodontal disease and asked about sore, swollen, or bleeding gums, loose teeth, mouth ulcers or pain. If these problems are present, the patient should be referred for timely dental examination and care (4). I recommend that provision for such referrals should be included in the CHS chronic disease protocols.

Medication Administration and Safety Issues

9. The CHS Continuity of Medication Administration Audit of August 2009 analyzes a continuing serious problem, namely a 14.3 % gap in continuity of administration of prescribed medications. This **Outcome** encompasses both patients with Keep on Person (KOP) and Direct Observation Treatment (DOT) prescriptions. The causes of these gaps in continuity are multiple and complex; however, the Audit itself does a good job of identifying causal factors as well as a compelling need for continued medication administration training with emphasis on completeness of Medication Administration Record (MAR) documentation. Continued improvement in continuity and documentation of medication administration continuity encompasses important Process elements of quality assurance, some of which are most likely to be achieved through design and implementation of an electronic order entry and medical records system.
10. During my September 2009 site visit, I devoted substantial time and effort to assessment of the pharmacy services currently provided to CHS under a contractual relationship with Diamond Pharmacy Services. Based on my exploration, as well as my review of medical charts, it remains evident that the CHS medical program lacks several components and capacities that are essential to guide physicians concurrently in minimizing the potential for adverse drug reactions, drug interactions that affect treatment efficacy, and adjustments in drug dosages that may be necessary in patients with impaired kidney, liver, or other metabolic abnormalities. This deficiency –a combination of elements of **Structure** and **Process** that contributes to poor **Outcomes** - was identified in my first formal report and remains unchanged at this time.
11. In several of the medical records I reviewed, there were instances when a physician identified the need for a specific medication to be discontinued. The physician then wrote in the chart that this should be done. However, in some cases – involving the drugs Coumadin, Metformin, and Aldactone –

administration of the medication was continued. These types of medication errors can cause serious negative **Outcomes**. CHS carries the responsibility of detecting such errors, explicating their causes, and implementing changes necessary to prevent recurrences.

Quality Assurance and Importance of Internal Monitoring

12. Regarding points numbered 3, 6 and 7 above, CHS continues to demonstrate commitment and adherence to widely-accepted principles of quality assurance and improvement through self-assessment of multiple **Process** and **Outcome** measures. All complex health care systems and organizations face problems that must be addressed through continuous quality assessment and performance improvement, including iterative analysis followed by corrective actions. The commonly used heuristic for this iterative process is "**Plan, Do, Check, Act**" or PDCA.
13. The decision by CHS leadership to employ CORRECT**HEALTH** to conduct a comprehensive and independent audit in November 2009 is indicative of a responsible and abiding commitment to continuous quality assessment and performance improvement.

Utilization Management and Impact on Quality of Care

14. Like other health care delivery systems or organizations, CHS operates a program of prospective utilization management wherein physician requests are made to approve the use of resource-intensive, costly diagnostic tests or procedures, especially those that require referral to specialists or facilities outside the internal capabilities or facilities of CHS itself.
15. In my September 2009 medical record review, I found that there was a delay of over six months in the diagnosis of cancer of the larynx for a 65-year-old man who entered MCJ in November of 2008 with symptoms of hoarseness and dysphagia (difficulty swallowing). Within the first several weeks of this man's

incarceration, CHS clinicians identified the medical necessity for an outside examination by a specialist in otolaryngology. Nevertheless, there were multiple subsequent delays in scheduling this patient for a diagnostic radiology Computed Tomography (CT) scan requisite to proper evaluation by an otolaryngologist. Repetitive unacceptable delays were due to procedural steps and illogical decisions associated with the utilization management procedures, as well as lack of timely availability of appointments for the ENT service at the Maricopa County Integrated Health Care System. There are clearly **Process** defects needing further scrutiny and modification by CHS if another similar negative **Outcome** is to be prevented.

16. A possible approach to the clinical circumstances described in # 10 above is as follows. Whenever a doctor or other practitioner identifies a patient needing specialized testing or services to diagnose a possible cancer or other serious progressive condition, the office of the medical director should be promptly notified. The progress of the subsequent evaluation can then be closely monitored to assure timely completion and targeted treatment. Illustrative examples include a patient with a smoking history and a pulmonary module or mass; a woman with a breast mass; microscopic hematuria; anemia plus stool positive for occult blood.

Assessment and Treatment of Alcohol and Opiate Withdrawal Conditions

17. The Second Amended Judgment states: "All pretrial detainees confined in the jails shall have ready access to care to meet their serious medical and mental health needs. When necessary, pretrial detainees confined in jail facilities which lack such services shall be transferred to another jail or other location where such services or health care facilities can be provided or shall otherwise be provided with appropriate alternative on-site medical services." Among the most common serious medical needs of men and women entering MCJ are the complications of alcoholism and drug addiction, including life-threatening or extremely painful withdrawal symptoms.

18. In my First Report (section # 11, page 9), I documented that CHS does not offer continued treatment with methadone for pretrial detainees who are enrolled in community-based methadone programs for control of heroin addiction. Furthermore, the existing CHS protocol for assessment and treatment of alcohol and/or opiate withdrawal does not meet any reasonable standard of medical care for patients on a stable methadone maintenance regimen or for those who are dependent on high doses of illicit methadone alone or in combination with heroin.
19. I am informed by CHS leaders that they are continuing to explore options whereby they can provide continued treatment with methadone for those pretrial detainees who are actively participating in licensed methadone treatment programs.
20. One of the medical records I reviewed on 09-16-09 was that of a 52-year-old woman who entered MCJ on 06-08-09. She gave a prior medical history of bipolar disorder and of chronic addiction to and daily abuse of large amounts of alcohol, heroin and methadone (~ 140 mg/day). The CHS staff assessed the patient using the CIWA (Clinical Institute Withdrawal Assessment) protocol and ordered treatment with Vistaril (hydroxyzine), Imodium (Loperamide) and Clonidine. These medications, while somewhat effective in treating symptoms of alcohol and opiate withdrawal, are insufficient to treat the symptoms and physiological changes associated with withdrawal from the amounts of methadone the patient described. On 06-14-09, the patient was vomiting and a CHS staff member decided to give her intravenous fluids; however, staff was unable to insert the intravenous line. As an alternative, albeit a grossly inadequate one, the patient was asked to drink two liters of oral fluids. The outcome of this effort is not well documented in the chart. However, on 06-15-09 the patient was noted to have acute changes in mental status and was transferred to an outside Emergency Department and Hospital, where she required treatment for severe metabolic abnormalities and acute kidney failure.
21. The experience of the patient's care described in # 20 above reflects not only a singular lapse in attention or judgment by an individual practitioner, but also rather deficient **Process** elements including lack of proper multidisciplinary

coordination of care and inadequacy of the CHS protocol to treat some patients with combined drug and alcohol withdrawal conditions.

22. In its evaluation of current policies and procedures for evaluation and treatment of opiate withdrawal, CHS needs to include consideration of the use of methadone, as well as Suboxone (Buprenorphine HCl/naloxone HCl dihydrate) and Subutex (Buprenorphine) for treatment of opiate withdrawal. These several noted agents, now approved by the Food and Drug Administration for use by physicians, are more specific and effective that Clonidine.
23. The current CHS policies and procedures for evaluation and management of alcohol and drug withdrawal do not include evidence-based use of the Clinical Opiate Withdrawal Scale (COWS). This is a serious deficiency in **Structure** and **Process** that can easily lead to poor **Outcomes** in terms of inadequate pain management and morbidity.
24. Without a comprehensive evidence-based program for safe assessment and treatment of alcohol and drug (including opiates) withdrawal, CHS will not be positioned to meet the Second Amended Judgment requirements # 6,7,and 8. Therefore, I recommend that CHS take the following actions.
25. First, CHS should commit to the multiple changes necessary to conform to the <u>General Principles of Medical Detoxification: A Clinical Monograph</u>, published by **Magellan Health Services**, 2002-2008 (emphasis added).
26. Second, CHS should engage a local expert, certified by the American Board of Addiction Medicine, to advise on implementation of the foregoing changes, including establishment of any necessary arrangements with community-based drug treatment programs and steps necessary to institute opiate treatment compliant with approval by the federal Substance Abuse and Mental Health Services Administration.

<u>Review of Medical Records and Coordination of Care – September 2009 Site Visit</u>

27. I reviewed medical records of 89 patients during my September 2009 site visit, including those of the two patients described in sections # 15 and # 20 above.

The majority of these records belonged to patients who have chronic medical conditions and who have had multiple clinical encounters with CHS staff.

28. The organization of the records I reviewed was consistent, orderly and inclusive of pertinent forms and orders. Results of laboratory tests that were performed were usually filed in a timely manner. For records that are still largely paper based (rather than electronic), legibility of physician and nursing notes was mostly acceptable, at least as measured by my ability to understand the pattern and quality of care.
29. In 12 of the 89 medical records I reviewed in September 2009, there were specific instances in which continuity, completeness or coordination of care could have been improved. Examples of these instances are provided in sections # 21 - 31 below.
30. At time of reception evaluation a 20-year-old man with a history of being on treatment for bipolar disorder was not restarted on his medications. The chart documents the community pharmacy that supplied the patient's time of jail reception, medications but does not document who was to verify them and when this was to be done.
31. A reception medical evaluation done on 09-06-09 of a 21-year-old man elicited a history of current treatment for asthma. On a prior reception evaluation dated 04-26-09, the patient gave a history of treatment for anger and anxiety with Depakote prescribed by the Magellan mental health program. It does not appear that the reception staff on 09-06-09 had access to or utilized the information from the earlier reception evaluation. In view of the high frequency of readmissions to the jails, it is important that the clinical staff in the reception center have simultaneous assess to the records of prior reception evaluations.
32. At the time of reception evaluation on 07-30-09, a 49-year-old man gave a history of liver disease and hepatitis C diagnosed in 2002. Although the man had several subsequent clinical visits, liver function tests were apparently never ordered or obtained.
33. In the medical record of a 37-year-old man being followed for epilepsy, the report of a test for serum Dilantin level reported on 07-01-09 was not reviewed by a

practitioner until 07-07-09. The result of the test was below the desired therapeutic target and should have been reviewed earlier.

34. In the medical record of a 52-year-old man with a history of heart disease, evaluation and care were largely appropriate. However, a nursing note dated 08-30-09 stated that the patient complained of dizziness. Rather than being referred for further evaluation by a practitioner, the patient was advised that he should inform medical or detention whenever he has a dizzy spell. Although orthostatic blood pressure checks were ordered, they were not done.
35. In the medical record of a 46-year-old woman with a diagnosis of poorly controlled diabetes, I noted that her finger stick blood sugar was quite elevated (515 mg/dL) at the time of her reception evaluation on 06-02-09. She was started on appropriate medications. However, her subsequent health appraisal was not scheduled and done until 06-13-09. A more timely evaluation health appraisal, within a few days, was indicated.
36. In the medical record of a man with diabetes, his finger stick blood glucose was 329 mg/dL at the time of his reception evaluation on 08-21-09 and treatment with Metformin was continued. An infected left thumb was also identified. His full health appraisal was done the same day and treatment of the infected thumb with the antibiotic Bactrim was started. Several follow-up blood tests for diabetes were scheduled to be done seven days later. However, the blood to be drawn for these tests was not obtained until the time of his chronic disease clinic evaluation on 09-08-09. Since the results were not available until two days later, the practitioner who saw the patient on 09-08-09 did not have the benefit of knowing the results of these tests, including the fact that the patient's hemoglobin A1C level confirmed that the patient's diabetes had been very poorly controlled for at least a few months before he entered the jail. When the report of the tests was reviewed and signed off on 09-10-09, it was noted that the results should be discussed at the next chronic disease visit.
37. When patients are being followed for chronic diseases such as diabetes, it is a medically necessary **Process** component for periodic testing to be done

prospectively, so that the recent results will be available at the time they see the physician, PA or NP.

38. I reviewed the medical record of a 45-year-old woman with a history of congestive heart failure and possible coronary artery disease that was obtained at the time of her reception evaluation on 08-26-09. Her health appraisal was done on 08-31-09, at which time the assessment listed coronary artery disease, status/post two myocardial infarctions; congestive heart failure; pleuritic chest pain; and chronic obstructive pulmonary disease. Appropriate medications were prescribed and there was a subsequent improvement in her respiratory air flow. However, an electrocardiogram was not done until 09-12-09. A spiral CT scan of the chest was ordered "ASAP" (as soon as possible), apparently to exclude the possibility of pulmonary embolism (blood clot in the lung blood vessels). If pulmonary embolism was suspected, this test should have been done immediately. Overall, the coordination and medical decision making in caring for this patient included lapses in standard of care.
39. According to her medical record, a 37-year-old woman with a history of diabetes and neuropathy had her reception admission medical evaluation done on 08-30-09. Her finger stick blood glucose (sugar) was significantly elevated at a level of 361 mg/dL. Appropriate medications were ordered on 08-31-09 but no follow-up blood tests such as complete metabolic panel and hemoglobin A1C were done prior to her health appraisal on 09-12-09. It is not the usual standard of care to defer for 12 days in reassessing a patient with blood glucose of over 350.
40. In the medical record of a 48-year-old woman with a history of epilepsy, an abnormally elevated blood level of the drug phenytoin (Dilantin) was reported on 07-22-09. However, in the clinical encounter dated 08-04-09, no reference to this problem was documented. The phenytoin level was still elevated on 08-07-09 and the dose was lowered on 08-11-09 to achieve a level in the therapeutic range as of 08/21/09.
41. In summary, of the 89 medical records I reviewed during the September 14 – 17, 2009 site visit, there were two instances (See # 15 and 20 above) in which I thought the level of care was such that systematic changes in **Process** are

necessary in order to avoid future adverse **Outcomes.** In ten other instances, I identified gaps in coordination of care which, considered collectively, indicate the need for improved communication among clinical personnel and better methods of tracking and promoting completion of care plans.

42. Overall, in my September 2009 on-site records review, I found that in 12 of the 89 or 13.5% of the medical records, quality of care was problematic in one or more aspects. It is logical and useful to compare this rate of 13.5% with that of a prior review conducted by Dr. Joseph Goldenson, who testified as an expert witness in an Evidentiary Hearing before the Honorable Neil V. Wake on September 4, 2008. Dr. Goldenson testified that among 60 CHS medical records he reviewed, there were serious deficiencies in quality of care in 40 of the records, a 66 % rate.
43. In the interest of objectivity and balance, it is reasonable for me to also observe that among the remainder of the 89 medical records I reviewed, quality of care met basic community standards. Among some of the records of complex patients with chronic illnesses, I found the care that documentation of care was excellent.

<u>Subsequent October 2009 Medical Record Review - Implications for Infirmary Transfer Policy</u>

44. On October 22, 2009, I received a request from Plaintiffs counsel to review the medical record of a 59-year-old man who had been received at the MCJ on 09-22-09. The patient gave a past medical history of diabetes, heart disease including congestive heart failure, asthma, liver dysfunction, eye/vision and ear problems, and protein in his urine. His blood pressure was elevated at a level of 220/110. A finger stick blood test of his glucose level was within normal range. Appropriate medications were ordered at 1800 hours on 09-22-09. He was told to eat and drink fluids and placed in "medical isolation with a mattress in intake" in the 4th Avenue Jail.
45. On the morning 09/24/09, the patient noted in # 44 above apparently fell down and complained of leg pain. According to the "Man-Down Response" form, the patient was found sitting on the floor; he was placed in a wheelchair and taken to

see the medical provider. His respiratory rate was 22/minute and his heart rate was 112/minute. Upon further examination, he was noted to be fragile and mildly short of breath. Appropriate medications were given and it was ordered that he be transferred to the Infirmary at the LBJ facility.

46. The medical record is not entirely clear regarding what happened next to the patient noted above. It does appear that he was transferred out to the Maricopa County Integrated Health System on 09-25-09. He was found to be suffering from an acute asthma exacerbation as well as an elevated level of creatine kinase in his blood that was likely due to muscle necrosis. This muscle damage may have been due to respiratory distress, medications, or the physical hardships of the intake cells in the 4th Avenue Jail or a combination thereof. After being stabilized in the outside hospital, he was transferred back to the LBJ Infirmary on 09-27-09.
47. Although appropriate elements of care were documented and evident in the aforementioned patient's course of treatment, it is clear to me that direct transfer on 09-22-09 from the 4th Avenue Reception Center to the LBJ Infirmary was merited on the basis of his frail condition and multiple co-morbidities involving his cardiovascular and respiratory systems.
48. The medical policy threshold for transfer of complicated patients from the reception center to the Infirmary or an outside medical facility must be timely and directed in favor of transfer. This is an important **Process** element that should be addressed and reviewed (audited) on a regular basis by CHS.
49. In my professional opinion, the 4th Avenue jail intake facility is not medically suitable for persons prone to instability due to complex acute or chronic diseases that require close observation, further medical assessment or intensive treatment. Similarly, the 4th Avenue jail intake facility does not have necessary accommodations for frail elderly persons or those with significant physical or functional disabilities.

Review of Medical Records – January 2010 Site Visit

50. During my January 2010 site visit, I reviewed 44 randomly selected medical records from the 4th Avenue, Estrella, Towers and LBJ facilities. I also reviewed medical records of 28 patients whose names and medical record summaries were sent to me by Plaintiffs counsel.
51. As requested by Plaintiffs counsel, I reviewed the medical records of five patients among the thirty noted above to consider what steps CHS might need to take with respect to appropriate further tests and treatment. I discussed all five of these "Complex Patients of Concern" with Tricia Colpitts, Associate Medical Director of CHS, regarding follow-up assessment and care.
52. Among the 44 randomly chosen records I reviewed, there were six instances in which I thought that quality and coordination of care was seriously deficient, a rate of about 14%. In points # 52 through 57 below, I've specified the types of problems I identified.
53. A 47-year-old man with diabetes had an elevated finger stick blood sugar of 448 at the Reception center on 11-19-09. Appropriate medications were initiated. However, laboratory tests - complete metabolic profile, hemoglobin A1C and lipid profile - were not obtained until 12-04-09. Based on the level of the first ACCU check, completion of these tests within 24 hours of reception would have been a more appropriate guide to effective treatment of this patient whose hemoglobin A1C level of 12.6% was very abnormal.
54. A 42-year-old woman fell and hit her head on 08-19-09. She then complained of visual disturbance for which she was examined by an ophthalmologist on 09-01-09. The ophthalmologist recommended a Magnetic Resonance Imaging study of the brain and orbits. However, this recommended test was not scheduled until 01-25-10.
55. A 25-year-old woman with a medical history of kidney stones and endometriosis was evaluated with reception screening on 12-16-09 and had a health appraisal on 12-27-09 Her urinalysis was abnormal with elevated protein (30 mg/dL),

white blood cells and red blood cells. These abnormalities were not documented as having been further assessed.

56. A 45-year-old man with a medical history of high blood pressure and heart disease was evaluated in the reception center on 01-22-09. His high blood pressure was found to be poorly controlled. His prior medications were continued; he was enrolled in the chronic disease program, and had his health appraisal and physical exam on 01-26-09. The quality and documentation of the health appraisal were excellent. Information elicited included prior liver cirrhosis and emphysema.
57. The patient noted above had several blood tests done on 09-06-09 and 10-14-09. Notably, the patient serum creatinine level increased from 1.09 to 1.78 and his serum potassium level from 4.6 to 5.9 mg/dL. These changes are indicative of a serious decline in kidney function as well as an imminent danger of a rise in serum potassium that could result in fatal heart arrhythmias. Despite these results, the patient continued to be prescribed a medication called Spironolactone (Aldactone) which is known to greatly increase the risk for a dangerously elevated serum potassium level (hyperkalemia), especially in persons with chronic kidney disease. An order to discontinue Spironolactone was not written until 01-27-10.
58. Regarding the thirty patients whose records were reviewed previously by Plaintiff's counsel, some of these records also confirmed serious gaps and deficiencies in coordination and quality of care.
59. For example, the records identified by Plaintiffs counsel included that of a 50-year-old man whose receiving screening evaluation was done on 08-12-09. At that time, no positive responses concerning prior medical problems were recorded. On 08-14-09, the patient submitted a "Tank order", i.e., request for medical attention, asking to be put on the cardiac care clinic roster.
60. The response to the aforementioned request by a nurse was as follows: "you did not list any medical problems, medications, or concerns at pre-booking. Please be more specific and tell us your concerns and medical problems or discuss them at your physical exam." The patient responded on 08-20-09, noting, "I did let intake nurse and give them my medication verapamil 180 mg."

61. Although an electrocardiogram was ordered for the above patient on 09-09-09, there is no record it was ever done. The patient's health appraisal was done on 09-15-09 at which time he reported a prior history of low back pain treated with Neurontin and heart palpitations, apparently treated with verapamil. In summary, the care provided to this patient reflected genuine **Process** deficiencies, including problems with timely access, continuity and scope of care.
62. Another patient whose record was identified by Plaintiffs Counsel was that of a 34-year-old woman who was received at the 4th Avenue Intake Center on 10-16-09. Her health appraisal was done on 10-30-09, at which time her physical exam was noted to be normal.
63. On 11-15-09, the aforementioned patient was seen with symptoms of dizziness, nausea and vomiting, sore throat, and headache. She was found to have a fever, rapid heart rate, and low blood pressure. Intravenous fluids were then given, even though no blood tests to assess body fluid and electrolyte balance were done. There was no follow-up assessment of this patient recorded the next day.
64. The patient noted above was seen on 11-19-09, at which time blood tests were done with results showing a low serum potassium level, severe anemia and elevated white blood count consistent with infection. The patient was then transferred out to a hospital where she was treated until November 25, 2009 for ovarian vein thrombosis, pleural effusions and bacteremia (blood stream infection).
65. It is readily apparent that the use of the 4th Avenue intake facility and clinic to provide intravenous fluid therapy to a patient that has not been thoroughly evaluated represents substandard care. On 11-15-09, it was apparent that this patient required further detailed evaluation and close observation either in the Infirmary at the LBJ facility or in an outside hospital such as the MCIHS.
66. Another medical record that was identified by Plaintiffs Counsel for my review was that of a 68-year-old man with a prior history of high blood pressure, diabetes, deep vein thrombosis, and heart disease, for which two stents had been inserted in his coronary arteries. When seen for his reception examination on 04-20-09, the patient listed his current medications as Lisinopril, Vytorin, Aspirin,

Metoprolol and Coumadin. Coumadin is a blood “thinning” medication that requires frequent monitoring with blood tests to be sure that the level is in the correct therapeutic range and not in the toxic range, wherein it can cause severe bleeding.

67. Review of the chart of the aforementioned patient confirmed that there were serious deficiencies in the monitoring of this patient’s Coumadin levels and in proper clinical management. For example, a physician’s order on 09-20-09 to decrease the dosage of Coumadin was not implemented. Furthermore, the patient did not receive tests that were indicated based on his past medical history, including a lipid profile, electrocardiogram, and stool for occult blood examination.

Mortality Review – Implications for Action by CHS

68. Just prior to our January site visit, CHS notified me of the death on 12-31-09 in an outside hospital of a woman who had been held in the Estrella facility. On January 25, 2009, I reviewed the medical records of this 32-year-old woman who entered the MCJ on 09-19-09 and had her health appraisal done on 10-04-09, 2009. Her past medical history was significant for high blood pressure and abuse of crack, methadone and alcohol.
69. During her subsequent stay at Estrella, the aforementioned patient repeatedly complained of difficulty breathing, especially at night. She was seen frequently in by nurses and clinical practitioners in the Estrella clinic where she was treated for presumptive asthma. Despite the persistence and potential seriousness of her symptoms, other possible causes of shortness of breath, including heart disease, were never considered; though malingering was inappropriately entertained on occasion by at least one staff member.
70. At Estrella, neither an electrocardiogram or chest x-ray was ever ordered for the aforementioned patient. Practitioners who saw the patient never documented a proper differential diagnosis or focused physical examination to evaluate heart

size and function in this patient with shortness of breath and orthopea (breathing difficulty when lying down).

71. Staff who saw the aforementioned patient at Estrella never considered sending her to the Infirmary at LBJ for more thorough evaluation, despite the fact that the patient's symptoms did not resolve with treatment for asthma.
72. When the aforementioned patient was finally referred to an outside hospital, she was found to have severe congestive heart failure, which resulted in her death about ten hours after she was admitted.
73. The level and standard of care provided to the aforementioned patient is not defensible. It is incumbent upon the medical and executive leadership of CHS to interview everyone who cared for this patient; elicit and examine their perspective; counsel them; arrange for requisite education in the evaluation of serious illness; and, if merited on the basis of internal review, take appropriate disciplinary action.
74. The substandard care of the patient described above contrasts sharply with that documented for some other patients whose charts I recently reviewed. For example, in the case of a 43-year-old man with diabetes, hypertension and a wound infection, the comprehensive assessment done on 06-05-09 by the physician included all of the requisite elements of the history, physical examination, differential diagnosis, treatment and follow-up plans. I recommend that CHS utilize this particular record (P551107) and similar examples to illustrate for all of its practitioners the quality of clinical practice expected of them.
75. The Estrella clinic facility is not suitable for evaluation and treatment of patients suffering from deteriorating or life-threatening conditions or for patients with serious symptoms but an unknown diagnosis. All such patients should be properly assessed and referred to either the Infirmary at LBJ or an outside emergency department or hospital, based upon their specific medical needs.

Challenges of Information Management, Technology, and Quality of Care

76. In my First Report on Medical Compliance with Second Amended Judgment, dated June 1, 2009, I observed that the lack of electronic computer-based order entry system constrains the capacity of CHS physicians to receive timely information about possible medication interactions, appropriate dosages and other guidance from clinical pharmacists.
77. My emphasis on the critical role that electronic order entry and record systems occupy in complex health care systems is not original in the record of the *Graves v. Arpaio* litigation. In section # 194 of the FINDINGS OF FACT AND CONCLUSIONS OF LAW and ORDER, Judge Wake was explicit in noting that clinicians at the MCJ cannot provide professional medical judgments due to the lack of medical and information systems to support diagnosis and treatment, including laboratory results and specialty consults.
78. Judge Wake further wrote in section # 202 that although electronic record management is not constitutionally required, the volume of pretrial detainees in the MCJ suggests that CHS likely cannot manage medical records, track inmate locations for pretrial detainees with medical needs and produce reports necessary for health care staff and detention officers to provide access to adequate health care without an electronic system.
79. Based on many facts and information collected in my first two site visits, I believe that CHS has worked diligently and effectively to improve the organization and actual operation of their medical records system. Numerous *ad hoc* "work-around" information management programs have been developed by CHS, although they are not integrated into a comprehensive system. Associated with these efforts has been a substantial improvement in the coordination, completeness, continuity and timeliness of care.
80. One specific interim addition that would be helpful in medical information management would be for CHS to work with its major provider of laboratory services to make available serial laboratory results in a graphical format. This would make it far easier for clinicians to locate and consider changes over time in

key measures of patients' conditions, such as serum anticonvulsant levels, hemoglobin A1C and glucose control in diabetics, and maintenance of kidney and liver functions.

81. To the degree that CHS can continue to compensate for lack of electronic medical information and order entry systems, further progress can no doubt occur. The time required to select and implement an integrated medical information/order entry system can range from 18 months to several years. Nevertheless, the case for doing so remains compelling with respect to patient safety and quality of care, as well as efficiency and costs of medical care.

<u>Observations Regarding CHS Budget and Implications for Quality and Coordination of Care</u>

82. The Correctional Health Services Operating Budget Summary for the period ending December 31, 2009 specifies an Annual Budget of $ 48,804,659.
83. Salaries and fringe benefits comprise $ 29,129,594 of the annual budget; an additional $ 10,873,769 is allocated to "other health care services", mainly professional registry (agency) staffing and payments for emergency, specialty, and hospital charges in facilities external to MCJ.
84. Medical supplies account for $ 4,114,940. Of this amount, approximately $ 3.6 million is spent on pharmacy costs (Diamond Pharmacy Services).
85. Annual "Internal Service Charges" amount to $ 4,037,412. This amount consists mainly of estimated risk management/medical malpractice coverage reserves.
86. Based on the number of new inmates booked into the MCJ system in the last half of calendar year 2009, the current CHS budget for medical and mental health care allocates $ 403 per inmate booked. Since the average length-of-stay for each booked inmate is 24.59 days, the current CHS budget is equivalent to approximately $! 6.39 Per inmate per day.
87. Because CHS is responsible for staffing such multiplicity of clinical locations, mostly not interconnected, there is very limited economy of scale. In my professional opinion, this immutable fact, coupled with the high prevalence of

serious chronic medical and mental health conditions among the inmate, indicates that the current CHS budget is certainly not excessive.

88. In point of fact, the current CHS budget may be insufficient to support the overall professional staffing and external specialty services necessary to close current gaps in quality, coordination, access and continuity of care that are linked to compliance with requirements of the Second Amended Judgment.
89. I recommend that CHS conduct systematic discussions with its clinical practitioners and nurses to identify any patterns of staffing that insufficient to assure medically appropriate patient care assessment, treatment and coordination. This information then needs to be further vetted and analyzed. If validated, then the resources necessary to close any significant gaps in staffing and facilities would need to be sought by CHS and other concerned parties.

Review of Credentials Files of CHS Physicians and Other Practitioners

90. On January 25, 2010, I reviewed the files containing the professional credentials of the physicians (MDs or DOs), physician assistants (PAs) and Nurse Practitioners (NPs) who are currently employed by CHS. In my review, I was assisted by Ms. Amy Engel in the CHS central office. Ms. Engel was recently assigned by CHS to address issues with these files that CHS had already identified.
91. In my review, I noted several issues that are relevant elements of **Structure** in the CHS delivery system. These important elements pertain to the experience, qualifications, continuing education of the clinicians who care for patients on behalf of CHS.
92. Several of the physicians' files lacked up-to-date information concerning whether those physicians who originally were certified in either Internal Medicine or Family Practice had actually recertified if and when their prior certification expired. It is important that these practitioners timely recertify, which is one objective measure of current competency.

93. The files I reviewed lacked up-to-date information on the amount and type of continuing medical education programs that the practitioners had completed over the past several years. Ms. Engel informed me that some of this information may be maintained elsewhere in separate "educational" files. She stated that this type of information would be combined in the near future.
94. The files contained a list of documented peer reviews of professional performance, all signed by the CHC Medical Director, Dr. Vukcevic. However, there was no description of the content and methodology that was associated with these peer reviews.
95. During my September 2009 and January 2010 medical reviews, I observed with serious concern a significant variation in the quality of practice documented among the clinical practitioners employed by CHS. The spectrum of quality, as documented in medical records, ranges from exemplary through average, marginal and substandard. Thus it is imperative that CHS strengthen pertinent elements of **Structure** and **Process** in its review and oversight of physician competencies and practice standards.
96. When I was at the Estrella facility in January 2010, I learned that CHS had hired an additional physician to work there. His professional qualifications and experience are impressive, including the care of patients in emergency medicine settings. In one of the medical records I reviewed, I noted that this recently hired physician had documented an excellent and extensive review of a patient's prior medical record received from an outside facility. .

Interactions of CHS and MCSO Personnel and Support Systems

97. Over the past six months, CHS has encouraged its staff members to complete occurrence reports whenever problems with staffing, information systems, or other factors impede timeliness or completion of patient care. By regularly reviewing these reports, both CHS and MCSO leaders and personnel are in a better position to understand the nature of the problems and take corrective

actions if indicated. The information contained in these reports, as well as the volume of occurrences, constitute important elements in **Process** improvement.

98. I recommend that CHS continue to collect and analyze the data and information contained in these occurrence reports. Furthermore, CHS should document its ongoing communication of the information, when appropriate, with MCSO personnel, as well as any corrective actions taken jointly in response.
99. In my September 2009 and January 2010 visits to the various medical clinics within MCJ, I observed that MCSO officers providing security and escort functions exhibited professionalism, courtesy and respect in their collaboration with CHS health care providers and in their interactions with inmates being evaluated and treated.

Summary of Major Observations and Recommendations

Considered in their entirety, the foregoing observations and recommendations can be summarized as follows:

- ❖ **Compared with the status of medical services prior to issuance of the Second Amended Judgment, CHS has made substantial qualitative and quantitative progress in improving medical care within MCJ facilities, especially with regard to the following components: 1) Organization and management of medical records; 2) Acquisition and use of health care information about prior care in community-based health care facilities; 3) Proportion of health care appraisals completed within 14 days of intake assessment; 4) Development and implementation of quality assurance and performance improvement plans and activities; 5) Chronic disease management guidelines and their utilization in caring for patients; 6) Quality of care provided in the Infirmary at the LBJ facility.**
- ❖ **Substantial systematic deficiencies remain with respect to access, continuity and quality of medical care needed to address serious medical needs of persons confined in the Maricopa County Jails. Specific major deficiencies**

**include the following: 1) Some patients with complex illnesses or acute serious conditions are being inadequately evaluated and treated in jail-based clinics when they should been promptly transferred to a higher level of care, either in the Infirmary at LBJ or in a community-based emergency department or hospital; 2) On the basis of medical chart review, there is troubling variation in the documented quality of care being provided by CHS clinical practitioners; 3) Serious deficiencies exist in the current CHS protocols and policies and actual medical care for patients with alcohol and especially opiate dependence; 4) Medication management systems remain less than effective, especially with respect to prevention of medication errors, adjustments for variations in metabolic dysfunction, and continuity; 5) Frequently, CHS clinical practitioners and nurses apparently lack the time and supervision necessary to adequately review patients and their medical records in order to coordinate care properly and assure that evaluation and treatment plans are complete and up-to-date.**

Throughout this report, I have made a variety or recommendations about how I believe CHS should address the problems and issues summarized above. Not the least of these recommendations addresses the challenges and opportunities associated with design and implementation of electronic health records systems. This report also includes my observation that the current budget allocated for CHS personnel may not be sufficient to achieve adequate medical and mental health standards as specified in the Second Amended Judgment. During my next site visit, scheduled for May 2010, I will devote further time and attention to questions of budgetary sufficiency. As I have indicated previously in this report, I recommend that CHS seriously explore these questions in advance of my next site visit.

Respectfully submitted,

Lambert N. King, MD, PhD, FACP

(FILED ELECTRONICALLY)

1. Including Betty Adams, CHS Director; Diane Shook, CHS Deputy Director; Dr. Zoran Vukcevic, CHS Medical Director; Dr. Tricia Colpitts, FNP-C, CHS Assistant Medical Director; Luanne Kelly, CHS Director of Ancillary Services; Tom Tegeler, CHS Director of Nursing; Dorinne Gray, CHS Manager of Quality Management/Utilization Review, Dr. Gaskins, Chief MD at the Estrella facility.
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4. Diabetes and Periodontal Infection: Making the Connection. Southerland JH, Taylor G, Offenbacher S, in Clinical Diabetes, American Diabetes Association, October, 2005.