QUALITY AND COST EVALUATION OF THE PRIVATIZATION OF PRISON HEALTH SERVICES

AT THE

FEDERAL CORRECTIONAL COMPLEX BEAUMONT, TEXAS

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1. Executive Summary

In FY 96, the United States Senate Subcommittee charged with BOP oversight "directed the BOP to develop a 3-year demonstration project to evaluate privatization of health services in Federal Prisons." In response, the BOP entered into an agreement with the University of Texas Medical Branch, Correctional Managed Care (UTMB CMC) Galveston, Texas to provide all health services to inmates at the Federal Correctional Complex (FCC) in Beaumont, TX for a period of one year with four renewal years. This report is an evaluation of this demonstration project as directed by Congress.

The essential question asked in this study was "Does the taxpayer receive greater value when privatized health services are provided to Federal inmates?" If value is defined as a simultaneous measure of the cost and quality of care, the answer, in this instance, is "No." This study found that the quality of care received by inmates was no greater when health services were provided by a private vendor – and, in some cases, the privatized care failed to reach the level of quality found at prison complexes where Bureau of Prisons (BOP) staff provided health care. Furthermore, the cost to the taxpayer for privatized inmate health care was not significantly lower than the cost of health care provided directly by the BOP in Federal prison complexes.

FCC Beaumont is a prison complex housing 5,361 inmates at the time of this review. All medical services received by inmates at FCC Beaumont are provided through a comprehensive managed care contract with UTMB CMC. The contract specifies a fixed payment per inmate regardless of the services used. The start-up year's manday fee was $6.81; the fee for the remaining four years of the contract was $5.12 per inmate per day. Adjustments to the fees received by UTMB CMC include reimbursement by UTMB CMC to the BOP for security services provided to transport inmates for routine inmate treatment.

There are several unique features of the UTMB CMC system. It is a vertically-integrated managed care provider with telemedicine facilities that provide access to healthcare experts located at UTMB Galveston. UTMB CMC also provides health care services for up to 80% of the Texas Department of Criminal Justice System.

This study responds to the issues raised by the GAO report "Public and Private Prisons: Comparing Operational Costs and/or Quality of Services."[1] The GAO report asserted that future studies comparing private and public prison facilities must evaluate both operational costs and quality outcomes; operational costs at existing facilities; and employ multiple indicators to objectively measure quality of services. This study was designed to evaluate both the quality and the cost of health care services provided by UTMB CMC in the context of those available at comparable Federal Facilities and the extent to which the elements of the UTMB CMC program can and should be replicated in publicly managed facilities elsewhere. Specifically, value was assessed using standards promulgated by national advisory bodies, service satisfaction, inmate access to services,

[1] 1996. General Accounting Office. Public and Private Prisons: Studies Comparing Operational Costs and/or Quality of Services. GAO/GGP 96-268

health care delivery systems, and cost. Health services received at FCC Beaumont were compared to that of Federal Correctional Complexes located in Florence, CO and Allenwood, PA, institutions similar to FCC Beaumont in terms of their populations' health care requirements and health consumption predictors.

Onsite reviews regarding the quality and cost of health services were performed in the fourth quarter of FY 99 and the First and Second Quarters of FY 00. A total of 671 inmate records were reviewed and 220 inmate satisfaction questionnaires were collected.

This study avoids one of the primary criticisms of the Taft demonstration project in that neither of the facilities under review (Florence or Allenwood) were aware that they were to be used as comparison sites up until the time of our onsite review – affording them no opportunity to change as a result of this comparison study. In short, the facilities reviewed did not know that they were in competition with a private provider and therefore could not change processes and reduce costs to meet or exceed contractor standards.

1.1. Clinical Findings

This review examines trends in inmate health care and systems for the year prior to the beginning of the study. One question asked in this study is whether or not standards of care for inmates should be the same as those of the community at large. In support of this concept, the American Diabetes Association (ADA) unequivocally stated that "people with diabetes in correctional facilities should be provided care equivalent to that provided to all patients with diabetes."[2]

The health conditions selected for evaluation reflect a range of acute and chronic illnesses, as well as the level of general preventative care, thereby establishing comparability across institutions. This executive summary will primarily highlight organizational differences among the facilities being evaluated. A complete review of all findings is contained in the body of the report.

Moment-to-moment care – treating inmates according to protocols designed to address routine health conditions – was generally performed at the same level by UTMB CMC and the BOP. However, there are three aspects of the healthcare provided by UTMB CMC that reduce the value of services provided: first, the long-term consequences of current management of chronically ill inmates; second, the level of staff who routinely deal with urgent care issues (i.e., the limited access to highly trained medical providers); and third, the lack of effective system controls and systematic quality improvement by UTMB CMC.

The level of quality of chronic ambulatory care provided by UTMB CMC (a significant issue given the age of the BOP population and the lengthy incarceration time for most inmates) serves to illustrate this point. There were deficiencies observed at FCC

[2] January 2000. American Diabetes Association: Clinical Practice Recommendations 2000, Position Statement, "Management of Diabetes in Correctional Institutions." Diabetes Care, 23(Supplement 1), 98-100.

Beaumont relative to the relevant standards for chronic ambulatory care that were not generally seen at the BOP complexes reviewed.

1.2.Insulin Dependent Diabetes Mellitus

Diabetes is a chronic illness that requires ongoing health care and education to prevent both acute and long term care complications. There were some notable differences in the approach to treatment among facilities.

The most consistent diabetic control was achieved at Florence FCI, as demonstrated by current Glycated Hemoglobin values. A statistically significant difference exists ($p=.001$) between Florence, Allenwood and Beaumont inmate blood sugar control. Further, greater attention was paid to long-range health issues that may arise from IDDM at FCC Florence and FCC Allenwood than at FCC Beaumont. Specifically, the BOP Health Services units provided inmate testing and prophylactic treatment of those at high risk for cardiovascular disease and other diabetic sequela more often than UTMB CMC-managed units. The differences between monitoring related to these parameters was statistically significant ($p<.005$) between BOP- managed health service units and those at FCC Beaumont (IDDM Statistical Tables 6 and 11).

An example of the long term follow-up relative to this population involves blood pressure control. While routine blood pressure checks were performed consistently at all facilities (IDDM Statistical Table 18), long term control of elevated blood pressure (defined as maintaining blood pressures at less than 130/85) was obtained in only 44.44% of the Diabetics at Beaumont compared to 73.33% at Florence and 82.5% at Allenwood (a statistically significant finding where $p=.001$) (IDDM Statistical Table 19).

1.3.Asthma

Clinical protocols used by UTMB CMC are adequate to control urgent presentations and symptoms. However, there are quality of care issues at UTMB CMC that should be raised. First, there were multiple instances where inmates presented with acute asthma attacks, were documented to be symptomatically improved and discharged back into the general population with no documentation that a practitioner with advanced assessment skills (either a physician, Physician's Assistant, Nurse Practitioner or even a Registered Nurse) had examined the inmate and deemed him fit for discharge. Although there was no statistically significant difference in the urgent treatment relative to the therapeutic modalities used, there was a lack of documentation and a level of authority given to the LVNs providing treatment at FCC Beaumont that is of concern. It is questionable whether someone who has completed one year of formal training and a brief (three day) patient assessment course (P.I.E.) can truly be deemed capable of having the expertise to determine the stability of an inmate and their ability to be discharged back to the general population. While the inmate records examined did not reveal any specific deleterious effects of these encounters, this practice (as allowed by their clinical protocols) was not seen in Federal facilities. This lack of follow up is echoed in the findings of the BOP Health Services Program Review.

Perhaps the most clinically significant measure of asthma control is the frequency with which inmates are forced to present to the health unit with an asthma attack. A greater number of inmates at FCC Beaumont presented for urgent care in the past year than inmates at either FCC Florence or FCC Allenwood. More than one-third (38.78%) of the inmates with a diagnosis of asthma presented for urgent care in the health unit in the past year at FCC Beaumont, compared to 13.21% at FCC Florence and 12.50% at Allenwood (Asthma Statistical Table 15).[3]

Prophylactic control as evidenced by the administration of an annual flu shot as recommended for these at-risk patients was completed at a significantly higher rate at FCC Florence and FCC Allenwood than at FCC Beaumont (Asthma Statistical Table 4).

1.4.Emergency Treatment

A review was performed of offsite Emergency Department (ED) treatment transfers for the past 6 months at each of the facilities. FCC Beaumont has the lowest rate of inmate transfers for the period under examination. This is consistent with a managed care program, since ED costs would be charges incurred outside the capitated system of UTMB CMC care at local hospitals. However, it is interesting to note that FCC Florence is a close second, in large part since the FCC Florence Camp and FCI physicians had adopted a policy of holding inmates onsite for extended observation and treatment. It should be remembered that this lowered frequency of transfer to an external healthcare facility saves not only the hospital charges to the system but the security transportation costs and reduces the security risk to the institution. However, this practice of reducing ED transfers carries some risk of delayed treatment that could result in serious morbidity and mortality.

Undoubtedly, the reduced transfer rate at FCC Florence had a substantial economic impact in a short period of time. A comparison of FCC Florence and FCC Allenwood indicates the scope of potential cost savings. FCC Florence spent more (on a per inmate per day basis) than FCC Allenwood on in-house expertise, but spent less on external medical services (including visits to the ED). The net effect of this policy was that healthcare costs were $.24 lower at FCC Florence than at FCC Allenwood, a difference that translates into a costs savings of over $260,000 per year at a single institution with an average daily population of 3,000.

1.5.Inmate Satisfaction

A primary component of quality is the subjective judgment made by the receiver of care. There were a number of statements made by inmates that unfavorably compared the UTMB CMC system with the rest of the BOP's health services. In general, the UTMB CMC health care staff did not receive high ratings for their attitudes towards inmates.

[3] It was noted by one medical reviewer that the air quality is significantly worse in Houston than in Florence CO and could have an effect on the frequency of presentation by asthmatic inmates at FCC Beaumont.

Positive comments at FCC Florence (largely from the FCC and the Camp) provided the only statistically significant difference among the complexes visited (Florence v. Beaumont p=.03 for percentage of positive comments – Satisfaction Statistical Table 6).

One incident which took place during the course of our onsite review at FCC Beaumont left a poor impression of the staff's attitude towards the inmates. An inmate was denied access to the health care unit and argued about his case with the staff. He then spoke to the review team and asked if we were from "Central Office." The inmate explained that he was angry about his treatment by the health services staff and said that they had threatened to "send him to the hole" (segregation unit) if he didn't leave. The Head Nurse verified his statement and confirmed that the inmate did have an appointment that the staff had overlooked. This type of interaction can have a chilling effect on the willingness of inmates to seek care. This is particularly problematic in a system that must rely on inmates to return for care on their own volition whenever they feel symptoms have worsened.[4]

Inmate dissatisfaction is also reflected in the frequency with which inmates seek administrative remedies. Inmates at FCC Beaumont sought administrative remedies in medical services almost twice as often as inmates at FCC Florence and substantially more often than FCC Allenwood during FY 99.

1.6. Telemedicine Usage

Telemedicine is the provision of health care services using interactive telecommunications technology. Studies citing exceptional cost savings and improved access to specialists fill the literature and have driven the majority of state Departments of Correction to implement or at least consider the use of this technology. However, UTMB CMC Directors contend that they are "just breaking even" with the current system, and may, in fact, be losing money with the use of this modality.[5] This is in contrast to earlier published reports in which UTMB reported that telemedicine was a cost-effective and efficient means of providing care.

Telemedicine usage at FCC Beaumont among all facilities averaged 82.75 encounters per month. This is a usage rate of 15.43 per 1000 inmates. Another interesting statistic is the frequency of face to face encounters following a telemedicine encounter. Figures supplied by UTMB CMC for FCC Beaumont revealed an average of 29.87% of the patients seen by telemedicine were referred for an outside consult. This encompassed a monthly range of 18.95% to 52.00%.

Often the basic logic of the cost calculations used to support the use of telemedicine leads to overstate the potential cost savings attributable to this technology by deducting all costs associated with external providers. These costs are deemed "saved" through the use of telemedicine despite the fact that consultants will charge *at least some* fee for their

[4] The need for inmates to self report symptoms is a reality of any ambulatory care system and is not the structure of the delivery system unique to FCC Beaumont.
[5] Presentation by UTMB CMC management John Allen, Pete Donzello, Steve Alderman.

services whether performed in person or via video communication. In general, security costs represent the primary source of genuine cost savings attributable to telemedicine.

1.7.Clinical Protocols

Clinical protocols are standardized templates for practice that allow non-physician health care providers to evaluate and treat health conditions without the intervention of a physician in specific circumstances. A review of the clinical protocols used by Mid-Level Practitioners (MLPs) i.e., Nurse Practitioner or Physician Assistant at the BOP and UTMB CMC reveals few fundamental differences. However, there are some striking differences between the clinical protocols used by "nurses" in the BOP and UTMB CMC systems.

Within the UTMB CMC system, the term "nurse" refers to both a Registered Nurse (RN) and a Licensed Vocational Nurse (LVN). While both are licensed, there are key training and practice differences between the two levels. The BOP vests the responsibility for implementing nursing protocols with RNs whereas UTMB CMC relies on LVNs to carry out treatment. While UTMB CMC states that the LVN is responsible for "recognizing and reporting," these protocols call for the use of physical assessment and diagnostic skills. For example, in the clinical protocol on diarrhea, physical assessment skills are specifically required to elicit specific findings. It can be argued that LVNs are merely assessing inmates for abnormal findings, but they are then required to determine that their findings are consistent with common diarrhea and not a more significant condition (such as a bowel obstruction).

There are further clinically significant differences in the parameters used for referral to an MLP or physician in the nursing protocols at the BOP and UTMB CMC as shown in Table 17 below. As seen in this summary table, the threshold for referral is much lower at the BOP than at UTMB in the majority of parameters.

Table 1. Referral Parameters Based Upon Diarrhea Protocols

	BOP	UTMB CMC
Temperature	>99	>101
Diarrhea Symptoms	>24 hours	>72 hours
Abdominal pain	presence of pain	severe abdominal pain in the last 24 hours
Blood in stool	yes	yes
Weight change	>5% of body wt.	not measured

1.8.Health Care Staffing Models

One significant change in staffing that should be noted at FCC Beaumont is the elimination of the Nurse Practitioner positions by UTMB CMC after they received JCAHO accreditation in 1997. JCAHO complimented UTMB CMC for employing more NPs to perform many of the functions typically done by Physician Assistants (PAs) at

BOP facilities. As of October 1999, no NPs were employed by UTMB, thus effectively eliminating this perceived advantage.
It is clear that UTMB CMC uses far more low level practitioners (LVNs and Health Technicians) and records technicians per inmate than does the BOP. Nevertheless, there is a tradeoff: UTMB CMC uses substantially fewer high and mid-level practitioners (MDs, Dentists, Physician's Assistants, and RNs) per inmate than does the BOP. In other words, UTMB CMC has substituted LVNs and EMTs for staff with greater clinical expertise.

The critical question at FCC Beaumont is whether the level of authority for clinical practice vested in the Licensed Vocational Nurses (LVNs) is one that should be replicated in the BOP. LVN staff costs far less than MLP or RN staff. LVNs and LPNs are being afforded a greater scope of practice in many states due to the worsening professional nursing shortage in the United States. Indeed, there is no prohibition by the Texas Board of Nursing [6] for an expanded role as long as the staff member has been trained and there exists supervision and back-up for any questions the individual LVN has in implementing protocols.

Nursing protocols for the treatment of inmates at UTMB CMC state that an RN must be consulted if the LVN has "any questions how to proceed.[7] The question becomes not if this is legal within the State of Texas but whether this skill mix is appropriate. To date, there are no studies that have documented the effects of LVN/RN skill mix on patient outcomes in the outpatient clinical setting. However, we do have literature that supports the contention that a higher proportion of RNs in a staffing mix lowers the incidence of adverse occurrences on inpatient care units.[8] Thus, the reliance on a heavily weighted LVN staff mix must call into question their ability to maintain high quality care.

The primary difference between the clinical competencies required of RNs and LVNs within the UTMB CMC system is that the RN must display the ability to "assess and document" while the LVN "recognizes and reports" findings. "Reporting" in this case generally consists of documenting in the patient medical record, not a supervisory level of reporting whereby a more skilled practitioner makes a final professional clinical judgment. We could elicit no written UTMB CMC requirement for the LVN to report findings to a more highly skilled health provider in any of the protocols for the LVN or the RN unless they believe they need assistance. Indeed both the RN and LVN are expected to "recognize abnormal findings and initiate interventions using protocols".[9]

[6] This fact was verified by the Texas State Board of Nursing in correspondence dated April 9, 1998 from Marjorie A. Bronk, RN, MSHP Executive Director of the Texas Board of Vocational Nurse Examiners.
[7] June 15, 1998. UTMB CMC Managed Care Assessment Protocols. Signed by Charles D. Adams, M.D., Regional Medical Director, UTMB Managed Care.
[8] When patient outcomes such as medication errors, patient falls, pressure ulcers, and nosocomial infections and patient/family complaints were examined it was found that the proportion of RN care hours delivered was inversely related to adverse patient outcomes. These effects were found up to a staffing mix of 87.5% RN staff. Blegen, M., Goode, C. and Reed, L.(1998) "Nurse Staffing and Patient Outcomes." Nursing Research 47:1, 43-49.
[9] UTMB CMC Competency Based Orientation Basic Competencies Checklists.

Does an RN staffing mix cost more? Yes and no. RN salaries are higher than those of LVNs and RNs may be more difficult to recruit. However, RNs have been found to be more productive than LVNs, when productivity is defined as the percentage of time spent in direct care, indirect care and unit-related activities.[10] RNs require less direct supervision and have the training to practice in an independent manner. Thus, RNs may be less costly in terms of practice.

Apart from the different clinical skill mix used by UTMB CMC, there is also a notable difference in staff compensation between the BOP and the UTMB system: the disparity in compensation rates between highly trained clinical staff and technical or clerical staff is greater in the UTMB CMC system. Specifically, compensation for MDs, DDSs, PAs, RN managers, etc. is higher in the UTMB CMC system than in the BOP, while compensation for clerical staff and practitioners with only technical training is lower at UTMB CMC. The cost impact of differences in staffing mix depends on the pay scale used. At UTMB CMC wage and benefit rates, the UTMB CMC staffing mix costs significantly less than the BOP currently spends on healthcare staff. Thus, even though UTMB CMC uses roughly 24 percent more staff per inmate than the BOP, it *spends* roughly 18 percent less per inmate on healthcare providers.

Nevertheless, there is a limit to how much the BOP could save by adopting the staffing pattern now used at UTMB CMC. At GS wage and benefit rates, the current UTMB CMC staffing mix would cost roughly the same (on a per inmate basis) as what the BOP currently spends on healthcare staff. Specifically, if the BOP were to hire UTMB CMC staff and pay them at the currently prevailing GS rates, the health care staff cost per inmate would be $2.89 per inmate per day. This amount is no different from the one currently observed at prison complexes with BOP-operated healthcare units.

1.9.Program and Operational Reviews

The most recent Program Review evaluations performed within an 18 month time period from the start of this study were examined to provide an additional rating source comparing these three institutions. Of all the facilities at the three complexes reviewed during this time frame the only facility that received a "deficient" rating was FCC Beaumont in June of 2000. Further, the reviewers concurred with the findings of this study that "Inmates placed in chronic care clinics did not always receive the appropriate follow-up monitoring." The Program Review Evaluation determined that the primary area of weakness at FCC Beaumont UTMB CMC Health Services was its lack of systems of internal control, a finding that is echoed throughout this report. This lack of systems of internal control is at the core of the deficiencies in their organizational improvement activities and the concerns raised about the level of quality of care in this report. There was no evidence provided to this review team that there were systematic methods to identify and correct variances before they become serious problems and thus maintain a high level of quality of care.

[10] Minyard, K., Wall, J., Turner, R. (1986) RNs may cost less than you think. Journal of Nursing Administration, 16(5), 28-34.

Conversely, FCI Florence was commended by the reviewers for their consistent improvement since the time of their last review in the quality of care provided. The reviewers noted "that there are no areas of weakness or concern validates the quality of this program."[11]

1.10. Quality Control and Response to Issues

There is an emphasis at FCC Florence, FCI and Camp on improving quality of follow-up and documentation for chronic care inmates that can be considered as a benchmark for care within the BOP. The staff at these institutions have implemented a series of flow sheets designed to ensure that exams, patient education, follow-up consultation needs are all performed in a timely and complete manner. Further, they are working with the HSA to streamline the list of specialty contracts and have set up a more cost-efficient arrangement. They have reduced Emergency Department transport to 0-1 per month by holding more inmates in observation facilities overnight and have saved significant dollars as a result.

The structure of FCC Beaumont assumes a level of responsibility and self-care among inmates that may not be present. For example, inmates are told to return if they are not doing better but given the level of self-care and responsibility exhibited by these inmates this may be difficult without ongoing patient education and counseling with structured follow up appointments. At FCC Beaumont USP during treatment for an asthmatic episode, an LVN recorded that the patient experienced "petite seizures"[12] However, no RN, MLP or MD was called to evaluate the inmate further and no medications or other follow-up on this possible disorder occurred. Another example where the quality of care provided is at issue occurred at FCC Beaumont USP where an inmate with asthma presented for treatment with an acute exacerbation of symptoms. While this inmate had not been given a spirometry test in more than a year, he was simply given medication (Theodur). There was no record that his status was evaluated at a later time.[13]

The reviewers repeatedly saw Post - it™ notes used on Medical Records. Some of these notes stated "please have provider review chart patient needs follow-up outpatient appointment." Such a non-permanent system of tracking needed inmate follow up is a serious process issue at FCC Beaumont.

In contrast to this lack of follow-up at Beaumont, at FCC Allenwood Camp an asthmatic had anaphylactic reaction which in turn caused a bronchial asthma attack. The inmate

[11] Florence FCI Program Review Notes

[12] Recorded exactly as written. Presume that the staff member meant "petit mal" seizure.

[13] Further examples of instances where the lack of system CQI designed to ensure that follow up occurs and that clinical standards of care are met include: FCC Beaumont USP where two inmates did not receive PFTs when ordered. The tests were reordered and not done more than 3 and 8 months later. A PA notes that a lab test that was ordered was not done and a theophylline level was not monitored. An inmate with IDDM did not have a dilated eye exam performed even when he presents with complains of blurred vision. BEAUMONT MEDIUM asthmatic persistently elevated BP not addressed 194/112 158/93 136/86 lowest reading - no consistent follow up ; presented with productive cough and green-gray sputum not treated until one week later (8/23 to 9/2)

had used an inhaler without relief and was treated in the clinic. He was maintained on albuterol and benadryl for 1 day and seen again in the health service unit for follow-up the next day and referred to pulmonary clinic for ongoing follow up. Thorough patient education was documented at the time of the attack and overall provides a contrast to the follow-up at FCC Beaumont.

1.11. Beaumont Cost Comparisons

Cost comparisons are an integral part of the evaluation of any demonstration project. It is important to measure these costs carefully: a recent GAO report illustrates the consequences of failing to do so. The report understates the cost of privatized inmate healthcare at Beaumont, overstates the cost of BOP-provided healthcare at comparable facilities, and concludes that privatization was saving the Federal government $4.09 per inmate per day at Beaumont.

A more accurate analysis paints a substantially different picture. The Federal Government spent a total of $5.55 per inmate per day on privatized healthcare at the Beaumont complex in FY 99. Of this amount, $5.12 was paid to UTMB CMC at fixed rate per inmate; the remaining $.43 reflects monitoring and healthcare expenses that remained the responsibility of the BOP. These costs include the overtime costs incurred when BOP security staff accompany inmates on local off-site medical trips. In this report we show that the per diem healthcare cost at Beaumont was only $.64 lower than the average per diem cost computed for prison complexes with BOP-provided healthcare. The per diem cost of healthcare at Beaumont was actually $.11 per inmate per day *higher* than the cost observed at the most efficient BOP prison complex. It is unclear whether the results from the Beaumont demonstration project can be replicated elsewhere, since our calculations indicate that the manday rate of $5.12 does not allow UTMB CMC to cover its costs.

1.12. BOP Healthcare Costs at Federally-Operated Adult Facilities

A rough measure of how much the BOP would have spent to provide its own healthcare services at Beaumont can be obtained from an analysis of healthcare spending reported by other Federal facilities. It is tempting to start with reported BOP healthcare spending ($11,109,640), reported BOP average daily inmate population (109,616), and compare the implied "internal" healthcare per diem ($9.30) with either the UTMB CMC capitation rate ($5.12) or the per diem rate ($5.55).

This approach is both inappropriate and misleading. It wrongly combines overhead and operating costs and does not allow for differences in the security level, scale and purpose of Federal institutions. It also fails to account for the onsite healthcare costs that remain the responsibility of the BOP even in a privatized healthcare system.

The healthcare per diem averages $6.06 for BOP prison complexes as a group (including Beaumont). The per diem for *Federally-provided* healthcare at prison complexes ranges from $5.44 at Florence to $7.78 at Lompoc. The average for this group of facilities is

$6.19. In other words, the $5.55 per diem cost to the Federal government of the Beaumont demonstration project was within the range observed in FY 1999 at prison facilities with BOP-provided health care.

1.13. The Potential for Implementing the UTMB CMC Model Elsewhere

If the current Beaumont contract is to provide a measure of the potential impact of healthcare privatization elsewhere, then the terms of the existing contract with UTMB CMC must be attractive to healthcare providers elsewhere. One indication of the contract's general profitability is whether or not it allows UTMB CMC to cover its costs, i.e., the expenditures directly related to the project and a reasonable contribution to its overhead costs. To answer this question, we calculated the direct cost of providing healthcare services for the September 1999 inmate population of 4,907 using the staffing model adopted by UTMB CMC and the costs of goods and services that prevailed during 1999. We also extrapolated these estimated costs for larger inmate populations.

These cost calculations show that the healthcare savings imputed to the UTMB CMC model are not a result of differences in practice that can and should be replicated by the BOP. In fact, the limited cost information provided by UTMB CMC reveals that the $5.12 manday fee does not cover the expected cost of operating the facility even with an average inmate population of 6,000.

The capitation rate of $5.12 failed to cover the direct cost incurred by UTMB when providing inmate health even when the average inmate population rose to 6,000. For example, with an inmate population of 5,400 (roughly the population at Beaumont in December 1999), the per diem direct cost (i.e., excluding overhead expenses), was $5.47 per inmate per day. This per diem cost translates into an expected loss of $.35 per inmate per day (or a loss of almost $690,000 per year) before any allowances are made for the general support services provided by the UTMB.

If these estimates are correct and healthcare costs elsewhere are no lower than they are in Texas, then it is unlikely that healthcare providers elsewhere will be able to break even if they

- accept a manday fee close to the UTMB CMC fee of $5.12;
- offer an integrated set of healthcare services to inmates at other Federal prisons; and
- use staffing patterns similar to those found in the health unit run by UTMB CMC at FCC Beaumont

1.14. Conclusion

We began this study by asking what level of quality was achieved in privatized healthcare services at FCC Beaumont, whether this level of quality represented good value for the money spent, and what lessons the BOP could learn from this care delivery system. In short, we asked to what extent can and should the elements of the UTMB CMC program be replicated in publicly managed facilities elsewhere.

Overall, this study found that the care provided at FCC Beaumont did not represent a measurably superior value for the money spent, and did not necessarily offer substantial savings relative to the cost of BOP operations properly measured.

The skill mix used at FCC Beaumont is a pivotal issue from a cost and quality of care standpoint. At first it would appear that the use of less costly and less skilled healthcare personnel would substantially decrease costs and may provide a sufficient level of quality of care. But whether this is true and how patient outcomes driven by this skill mix differ from the BOP and community standards brings this conclusion into question. The question becomes whether or not LVNs and RNs are capable of assuming the level of responsibility required by their roles in the UTMB CMC system. The evidence of this study and others suggests that there is little value in having the BOP change to this skill mix. Studies have documented that productivity decreases with LVN usage when compared to more skilled nursing practitioners, and that patient outcomes also suffer with a lower skill mix.[14]

The use of more highly-trained healthcare practitioners may well be more cost effective, as demonstrated by FCC Florence. The decision by the physicians and the HSA at FCC Florence FCI and Camp to treat inmates more aggressively at the facility (rather than send them offsite for care) resulted in a substantial cost savings when compared with FCC Allenwood. It is also striking that the facility-level per diem at FCC Florence was $.11 lower than the cost per inmate per day at FCC Beaumont. This $.11 difference translates into a annual savings of more than $120,000 for a 3000-inmate prison such as FCC Florence.

It is interesting to note that even as the BOP is embarking on a national telemedicine network, UTMB CMC has declared its existing system to be inefficient from a cost standpoint. UTMB CMC is however now focusing on a new telemedicine system (Cyb-R Care) that includes an electronic medical record in an effort to overcome these difficulties.

Our estimates of the costs incurred by UTMB cast doubt on the potential for realizing large-scale cost savings by attempting to replicate the UTMB CMC contract at other BOP facilities. Our estimates show that for average inmate populations as high as 6,000, the UTMB capitation rate of $5.12 failed to cover even the direct cost of providing inmate health care. If these estimates are consistent with healthcare costs elsewhere, then an integrated healthcare services contract (with fees and staffing comparable to those provided by UTMB CMC) would seem at a minimum to require a nearby, large, publicly-funded medical school with specific expertise in correctional medicine.

[14] When patient outcomes such as medication errors, patient falls, pressure ulcers, and nosocomial infections and patient/family complaints were examined it was found that the proportion of RN care hours delivered was inversely related to adverse patient outcomes. These effects were found up to a staffing mix of 87.5% RN staff. Blegen, M., Goode, C. and Reed, L.(1998) "Nurse Staffing and Patient Outcomes." Nursing Research 47:1, 43-49.

What can be learned from this privatization project for inmate healthcare? Exact replication of the UTMB CMC contract terms and staffing is inadvisable and almost certainly impossible in most locations. Nevertheless, a number of possible lessons may be learned from the experience with UTMB CMC. The fundamental message that can be gleaned from this project is that it is not the fact of privatization per se that will reduce costs while delivering a reasonable quality of care. Rather, it is the set of management practices associated with private industry -- ones not typically seen in Federal Government operations -- that are most instructive.

Indeed, the UTMB CMC managed care experience can help set the stage for the BOP to:

- review the current BOP staffing skill mix to ensure that all functions are being performed at the appropriate skill level;
- develop a more effective program of Utilization Review;
- identify the strengths and weaknesses of telemedicine as a substitute and complement for face-to-face contact with healthcare providers and
- strengthen procurement operations when contracting with external healthcare providers.

Ultimately, there were no single acts of commission or omission resulting in serious injury or mortality to the inmates at FCC Beaumont. There were no extraordinary deviations from acceptable community standards. Although there was not a set of glaring errors or deficiencies found at the FCC Beaumont, there was the risk of adverse outcomes due to a lack of system controls. In the period for which we reviewed records, no inmate deaths could be attributed to a lack of systems control and continuous evaluation, but there was always the potential for problems due to a lack of adequate follow-up. UTMB CMC had, at the time of this review and the later BOP program review, implemented few checks and balances to ensure that variances from the expected standard of care and expected processes were identified, corrected, and most importantly kept from recurring.

The majority of quality issues identified in this study can be traced back to the lack of "systems of internal control" as identified by the Federal Bureau of Prisons Health Services Program Review in June 2000. Overall, this study finds that the BOP has clusters of excellence and achievement in the institutions reviewed. At the same time, we observed a lack of consistency in practices and processes that created some uneven results within the Federally-run institutions. However, the quality and economic value received by UTMB CMC is not sufficient to recommend that such a model be implemented throughout the BOP.

2. *Introduction*

In fiscal year 1996, the United States Senate Subcommitte providing BOP oversight, "directed the Bureau of Prisons (BOP) to develop a 3-year demonstration project to evaluate privatization of health services in Federal Prisons."[15] In response to this mandate, the BOP issued a request for proposals, evaluated the bids submitted, and entered into an agreement with the University of Texas Medical Branch, Correctional Managed Care (UTMB CMC) Galveston, Texas. In the contract signed on September 16, 1996, UTMB CMC agreed to provide comprehensive health services to inmates at the Federal Correctional Complex (FCC) in Beaumont, Texas for a period of one year with four renewal years. Inmates were first accepted to the institution on September 26, 1996. This report is an evaluation of this project as directed by Congress.

FCC Beaumont, Texas is a prison complex consisting of a high security United States Penitentiary (USP), a Medium Security Facility, a Low Security Facility, a Federal Prison Camp, and a Central Administration Building. As of late 1999, the time of this review, the complex housed approximately 5,361 inmates. FCC Beaumont rated capacity and the actual average daily population as of December 1999 is as follows:

Table 2: FCC Beaumont Rated Capacity and ADP as of December 1999

Security Level	Rated Capacity	Average Daily Population
High Security	960	1,486
Medium Security	1,152	1,569
Low Security	1,536	1,929
Minimum Security Camp	350	377
TOTAL	3,998	5,361

All medical services for the inmates at FCC Beaumont are provided through a "comprehensive managed care contract" with UTMB CMC. This contract is intended to cover *all* health services for the inmate population both onsite and offsite. This includes all ambulatory, hospital and emergency care services.

The contract between the BOP and UTMB CMC is unique in many respects, including the fact that it is the first completely private health services project within the Bureau. The contract was negotiated and administered by the Southeast Regional Health Services Office since the BOP's Central Office Privatization Division was not yet operational. More importantly, the contract form is a fixed-rate capitated payment or "manday" fee for the life of the contract.

[15] Senate Report 104-353, August 27, 1996. 105th Congress; 2nd Session . This language was incorporated by reference into Public Law 104-208, "The Omnibus Consolidated Appropriations Act of 1997."

Capitation involves a fixed payment per inmate for a specified set of benefits (in this case all health care services), regardless of the services actually used. After the first year's premium manday fee of $6.81 (designed to cover start up costs and adjust for a small initial inmate population), a flat fee of $5.12 per inmate per day is paid over remaining years of the contract. Adjustments to the manday fees received by UTMB CMC include reimbursement by UTMB CMC for BOP security services provided to transport inmates to the UTMB Galveston Hospital for routine inmate treatment.[16] In addition, although UTMB CMC waived the right to a catastrophic limitation to the cost of caring for any one inmate, it reserved the right to bill the BOP for the hospitalization cost of an inmate deemed medically stable for discharge and awaiting transfer back to a Federal facility.

There are several distinctive features of the health services provided by UTMB CMC, some of which have evolved over the life of the contract. First, UTMB CMC is a managed care provider. This means that their health services delivery system is tightly controlled and resource utilization by providers is closely monitored through a system of utilization review. The UTMB system is vertically integrated, with the majority of health services provided by UTMB employees. Secondly, the telemedicine facilities at FCC Beaumont provide onsite staff with ready access to healthcare experts located at UTMB Galveston. Inmates are taken either to UTMB's Hospital in Galveston or (as is becoming more common) to local healthcare providers for scheduled treatments and non-emergent hospitalizations. Third, the fact that the UTMB CMC provides health care services for up to 80%[17] of the Texas Department of Criminal Justice System implies that UTMB CMC has considerable "jail-hospital" experience and resources. In addition to UTMB CMC inmates (including Federal inmates from FCC Beaumont), UTMB Correctional hospital accepts inmates from Texas Tech's sector of the Texas Department of Corrections contract; the Texas Youth Commission; and the Galveston County Jail.[18]

This study avoids one of the primary criticisms of the Taft demonstration project in that neither of the facilities under review (Florence or Allenwood) were aware that they were to be used as comparison sites up until the time of our onsite review – affording them no opportunity to change as a result of this comparison study. In short, the facilities reviewed did not know that they were in competition with a private provider and therefore could not change processes and reduce costs to meet or exceed contractor standards.

[16] One of the most impressive features of the UTMB CMC operations is that of the UTMB Federal Prison Unit at their hospital. Michael J. Megna, CHE, Hospital Administrator, UTMB CMC Hospital conducted a tour of the inpatient hospital Galveston facility. No review of medical records was performed at that time. A cursory review of the facility and questioning of key administrative personnel affirmed that this is a state-of-the-art facility. Privacy afforded to inmates from a clinical standpoint and a complete range of acute care services is available to inmates. Currently, according to Mr. Megna, the hospital is running at 'peak' capacity with an average daily census of 110-112.

[17] Healthcare services for the remaining inmates within the TDCJ is provided by Texas Tech.

[18] UTMB CMC response to questions during the onsite services review. Document entitled "Federal Bureau of Prison Contract Review, 18 November 1999".

3. Study Purpose

The purpose in this study is to assess both the quality and the cost of health care services provided in this privatized managed care project. Rather than consider the performance of UTMB CMC in isolation, the study is designed to evaluate the services provided in the context of those available at other Federal Facilities. The fundamental questions asked in this review are:

1. To what extent is the customer receiving *value* (by comparison with other programs) for the dollars spent on inmate healthcare in the program operated by UTMB CMC? The customer in this instance is not one entity but a variety of consumers including: the inmates receiving services, the BOP, and US taxpayers.

    a. In the context of this study, value is defined as a combination of meeting customer expectations for technical quality (meeting standards); service satisfaction (as perceived by the relevant stakeholders); access, and functional status at a price that is considered reasonable by the customer. The assessment of value is being made both relative to preset standards and other institutions.
    b. The study asked how the level of health services available to Federal inmates at FCC Beaumont compares to that of other Federal institutions, specifically contrasting health services received at FCC Beaumont with that of two Federal Prison Complexes located in Florence, CO and Allenwood, PA.
    c. Quality of services were evaluated based upon nationally recognized standards and clinical practice guidelines whenever feasible. The same standards were applied to all three complexes.

2. To what extent can and should the elements of the UTMB CMC program be replicated in publicly managed facilities elsewhere?

The concept of quality as used in this study is not an absolute. Rather, quality exists along a continuum. Quality does not possess an intrinsic value of goodness. Nor does quality mean that all resources will be made available to provide the highest level of care possible. Ultimately, the level of quality desired by an organization is a judgment shaped by the interests of the individual or group making the judgment. The key interests of stakeholders relative to healthcare delivery include the patient, the provider and the payor. At FCC Beaumont, as at other Federal prisons, there are really two payors -- the BOP and the taxpayer. Given a definition of value as meeting the customer's expectation at a price considered reasonable, we must first establish what the expectations of the customer are and then determine what price would be appropriate.

4. Quality of Services

The customer's expectation of quality of care is predicated upon the representations made by UTMB CMC in its response to the request for proposals (RFP) by the South East Region of the BOP – RFP 463-0001. In its technical proposal UTMB CMC stated that it "intend(ed) to deliver health services in a manner that consistently meets or exceeds BOP philosophical and technical requirements."[19] UTMB CMC further asserted that they use

> National practice standards compiled from medical specialty boards combined with community practice standards to develop their patient care utilization review program standards.[20]

As a part of their response to the BOP RFP, these assertions have been incorporated into the contract between UTMB CMC and the Bureau. Thus, these statements provide a sound philosophical basis for evaluating the UTMB CMC system using national standards.

These Utilization Review standards guide the treatment available to inmates within the UTMB CMC system as is common to all managed care programs. Standardizing access and treatment is a key element in all cost-containment efforts throughout managed care and Continuous Quality Improvement (CQI). One of the primary lessons learned from CQI is that of consistency. The need to continually improve organizational performance is a fundamental principle in health care organizations today. Reducing or eliminating variance to ensure a consistent outcome through standardized processes has been demonstrated to be the most effective means of achieving this goal and ensuring consistently high quality health services. This method of operating to improve overall organization performance has been adopted as the standard by which health care organizations are currently evaluated in the United States by the Joint Commission for Healthcare Organizations. Systems that deviate from this model tend to be less efficient and effective in resource utilization as well as clinical outcomes. Eliminating variance from expected processes and the need to continually improve organizational performance is an axiom in health care today. The rapidly changing health care environment mandates that organizations endlessly evaluate their systems for improvement opportunities and consistently codify appropriate actions (establish processes that will lead to positive outcomes). Systems must be developed that ensure that actual and potential problems are rapidly identified, corrected and that the corrective actions are effective.

This study uses a retrospective and concurrent approach to evaluate the quality of care provided to inmates in selected institutions. This study responds to the issues raised by the GAO report "Public and Private Prisons: Comparing Operational Costs and/or

[19] UTMB CMC Technical Proposal in Response to Requests for Proposals Bureau of Prisons Solicitation RFP 463-00001 dated February 27, 1996, p. 3.
[20] Ibid. p. 7.

Quality of Services."[21] This report asserted that future studies comparing private and public prison facilities must:

- evaluate both operational costs and quality outcomes;
- evaluate operational costs at existing facilities;
- employ multiple indicators to objectively measure quality of services, and;
- use data over several years to empirically assess cost and quality.

The GAO report particularly noted that the comparison of quality within and between institutions was not clear and that future studies should remedy this fact. This study was able to address three of these four issues. The time frame for this report precluded a multiple year assessment but did tackle the other issues raised by this GAO report.

[21] 1996. General Accounting Office. Public and Private Prisons: Studies Comparing Operational Costs and/or Quality of Services. GAO/GGP 96-268

5. *General Structure of Health Care Quality Analysis*

Donabedian's[22] evaluation model was used to structure the analysis of the quality of health care provided by the institutions in this study. Donabedian identifies *process*, *structure* and *outcomes* as distinct aspects of the quality of health care services. *Process* evaluation assesses the step-by-step actions performed by health providers within the system of care delivery. *Structure* evaluation examines the resources (delivery system, technologies, and organizational structure) available to provide care and analyzes how these resources enhance or impede health service delivery. *Outcome* evaluation focuses on the results of care delivery. Outcomes indicate the global effect of the processes and structure of an organization as they relate to the provision of services. Examples include desirable service effects and prevention of health care complications; or, adverse effects of treatment. Ideally, outcome evaluation should answer the question "What happens as a result of the services provided by this organization?" Outcome measures can both help identify the impact of privatization on the provision of public services and serve as a means of holding service-providers accountable for the results produced.

This three-part approach to measuring the *effectiveness* of medical care given for specific disease entities within representative inmate populations was adopted to ensure consistency of measurement and evaluation. "Effectiveness" in this context means the "impact of the intervention or technology under routine (average) operating conditions."[23] Representative inmate populations are those found at Beaumont and two BOP comparison sites, FCC Florence and FCC Allenwood. An example of this tripartite evaluation approach relative to the treatment of inmates with a diagnosis of asthma allows us to measure the quality of care provided in terms of process, structure and outcomes as follows:[24]

1. Process Evaluation:
   a. measurement of pulmonary function;
   b. frequency of chronic care visits;
   c. whether patient education is performed consistently, completely and documented;
   d. are the reasons for lack of control adequately assessed?

2. Structure Evaluation: resource utilization
   a. acute presentation due to poor asthma control (hospitalization and ER use)

[22] For more formal statements of this model, see A. Donabedian, *The methods and findings of quality assessment and monitoring; an illustration analysis* (Ann Arbor, MI: Health Administration Press, 1985); *The criteria and standards of quality* (Ann Arbor, MI: Health Administration Press, 1982); and *The definition of quality and approaches to its assessment* (Ann Arbor, MI: Health Administration Press, 1980).

[23] Joint Commission for the Accreditation of Health Care Organizations. Manual for the Accreditation of Health Care Organizations. This approach distinguishes effectiveness from efficacy, or "the impact of the intervention under ideal conditions"

[24] National Asthma Education and Prevention Program Task Force on the Cost Effectiveness, Quality of Care, and Financing of Asthma Care NIH Publication No. 50-807 September 1996).

b. organizational costs of care - direct medical costs

3. Outcome Evaluation:
   a. symptom-free day as a principal outcome measure for the cost-effectiveness of asthma treatment;
   b. physiologic measures of airway obstruction (Peak Flow Measurements);
   c. inmate measures of functional status and exacerbations;
   d. inmate satisfaction with care.

6. Comparison Sites

In selecting appropriate comparison sites, we first defined the key characteristics of the Beaumont population relative to its population's health care requirements and health consumption predictors. The characteristics used when choosing comparison sites included:

1. inmate age, gender, race and/or ethnicity, and mental status;
2. presence of high risk/high cost disease conditions;
3. the number of chronic diseases (as a proxy for severity of illness);
4. inmate injury rates;
5. use of telemedicine
6. capacity of prison facility
7. facility security levels (behavior of inmates, as well as a potential predictor for costs associated with prisoner security during health encounters);

Based upon data received from the BOP *Population Monitoring Census/Roster* and the *Key Indicators Database,* FCC Allenwood and FCC Florence were selected as the most appropriate comparison sites. Both sites were Federal complexes similar in inmate population distribution to FCC Beaumont. FCC Allenwood uses telemedicine to an increasing extent whereas FCC Florence did not use this technology at the time of the onsite review. All male facilities reviewed were similar in terms of the number of inmates with chronic conditions under review at the time of site selection.

It must be remembered that this is a limited review performed as part of a BOP - commissioned study examining the cost and quality of UTMB CMC health services at FCC Beaumont. This review is not designed to supplant the BOP program review since it does not address the scope of medical services contained in these program evaluations. However, the information obtained from the BOP Program review services for all three (3) sites will be referenced in this document as appropriate.

All three facilities are all male complexes meaning that they house offenders at different levels of security but have at least some shared administrative services.

FCC Florence is part of a federal correctional complex that includes a high security penitentiary of __ inmates, a medium security facility of 1390 inmates, a satellite camp of 407 inmates and an administrative maximum facility (ADMAX). Three of the four facilities were reviewed as a part of this study, the ADMAX facility was excluded from analysis since it has no counterpart within FCC Beaumont and the general BOP prison population. On-site medical staff coverage is provided from 6:00 a.m. to 12:00 midnight, seven days a week. After hours care is available by a mid-level practitioner (MLP) who is on call for inmate healthcare requirements. Inmates who require medical specialty evaluation or acute hospitalization are admitted to Parkview Hospital in Pueblo or St. Thomas Hospital in Canon City. Patients who require long-term care or extensive treatment are referred to the BOP Medical Designator.

FCI Allenwood is a multi-institution correctional complex consisting of a USP housing __ inmates, a ___ bed medium security unit, a low security ___ man facility and a satellite camp with ___ inmates. The facility is located approximately 10 miles south of Williamsport, Pennsylvania. On-site medical staff coverage was provided 24-hours daily, seven days a week at the time of the review. Inmates requiring hospitalization or medical specialty evaluation are routinely taken to Susquehanna Health Care, Evangelical Community, or Geisinger Penn State. Inmates requiring long-term care or extensive treatment are referred to the BOP Medical Designator for appropriate placement.

7. Elements of Quality and Cost Comparisons:

Onsite reviews at specific facilities regarding the quality and cost of health services were performed in the fourth quarter of FY 99 and the First and Second Quarters of FY 00. The onsite evaluation was primarily restricted to: medical record reviews of specific chronic care inmates, emergency care in the past six months and certain acute conditions; inmate satisfaction questionnaires; review of Organization Improvement activities and staffing; as well as brief tours of the health services units and observation of staff interactions with inmates and other staff whenever possible. The reviews made no attempt to survey compliance in terms of safety practices (such as pharmacy stocking, disaster drill staging, and infectious disease control). Reviews of medical records and inmate surveys were designed to address prisoner health care system issues. The specific disease entities chosen for review including high-volume, high-risk and problem-prone conditions and treatments that would enable the review team to compile a wide range of clinical information including:

- Health promotion and health education of inmates.
- High volume and high cost case reviews.
- Communicable Disease and Infection Control clinical practices
- Chronic diseases for which national standards of treatment exist and which further enable the reviewers to capture information concerning urgent treatment as well as speculate as to the possible long term consequences resulting from short term interventions based upon sound clinical research.

- The access and adequacy of acute interventions such as clinic and emergency treatment as well as judgments regarding whether the episode could have been avoided and whether the costly external trip was necessary.
- General preventative dental and physical health parameters for a geriatric population (defined as over the age of 55 due to the advanced physiologic age of the inmates).
- Inmate perceptions of the quality of care and access to providers.

Ultimately, the evaluation of quality and costs was determined using the following broad criteria:

1. Technical quality defined as meeting standards[25] specified for:
   a. Asthmatics[26]
   b. Insulin Dependent Diabetics[27]
   c. Low Back Pain
   d. Emergency Room Visits
   e. HIV positive inmates
   f. General preventative health care for inmates over the age of 55
   g. Mortality Reviews

2. Service Satisfaction:
   a. inmate satisfaction questionnaires
   b. interviews with key staff members

3. Access:
   a. inmate satisfaction with service access to both internal and external health services
   b. telemedicine usage
   c. urgent clinical treatment
   d. external emergency treatment

4. Functional status as the ability to engage in activities of daily living without restriction from disease processes:
   a. Asthmatics
   b. Low Back Pain

5. Review and evaluation of the Improving Organizational Performance (IOP) or Continuous Quality Improvement programs at each institution on the basis of
   a. written program

[25] Complete sets of all data collection instruments are contained in Appendix A.
[26] Indicators derived from the: Practical Guide for the Diagnosis and Management of Asthma based on the Expert Panel Report 2: Guidelines for the diagnosis and management of asthma. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung, and Blood Institute; 1997 release, updated 1999 March.
[27] Indicators derived from the American Diabetes Association Position Statement appearing in: June 28, 1999. "Standards of Medical Care for Patients with Diabetes Mellitus," Diabetes Care, 22:Supplement 1. www.diabetes.org/DiabetesCare/Supplement199/S32.htm. Position reiterated January 2000.

b. program results
c. consistency of results held
d. level of understanding by key organization participants of the IOP (how the plan is operationalized and what their level of participation in the current program is on a daily basis – in short, how does it affect their clinical practice, if at all)

6. Structure of health care services:
   a. health care provider mix
   b. staff credentials
   c. the impact of telemedicine (where it is used)
   d. consultant usage (outpatient services);

7. Resource Utilization
   a. resource cost and quantities: How are actual *expenses* incurred (relative to health care programs), tracked, and reported?
   b. the recent history of costs (total and per inmate levels)
   c. volume of service;
   d. distinctions between fixed and variable costs;
   e. how costs are split between on-site and off-site services
   f. the total number of inpatient days and the average length of stay (ALOS) by diagnosis (when available);
   g. tracking for transportation and security costs
   h. review of last 6 months ED transfer costs

The limitations of this study include:

- the fact that much of the quality indicator data collection was based upon retrospective record reviews. While this is standard practice for this type of evaluation, the adage "if it's not documented, it's not done" applies. There was no charting by exception at any of the facilities reviewed.[28]
- the reviewers had limited inmate contact and few direct clinical observations;
- the case examples used to illustrate specific issues of concern. For every negative example there may be another good example that was not observed, or the example may have some explanation that could not be elicited at the time of the review.

The focus of this review was not specific examples to evaluate quality of care, rather we examined trends—asking what was the overall picture of care and the system operation for a period of six to twelve months prior to the date of the review.

[28] Charting by exception refers to a specific method of recording clinical findings and actions whereby specific normative standards, processes of assessment, and care provision are set and applied to all patients. All systems, care, etc. is considered normal unless otherwise recorded.

8. Data Collection

The selection of inmates for inclusion in this study follows. In order to not unduly disrupt clinical care inmates who were out of the facility or whose medical records were in active use during the period of review these records were excluded. This was a small, three to five person subset in each institution and seemed to occur in a random manner (based upon occasional cross checks at the end of a day's review there were no deviations in the medical records in use as compared to the other records reviewed).

- Asthmatics – all records, or due to time constraints and record availability, a minimum of 20 randomly selected medical records where more than 20 existed
- Insulin Dependent Diabetics - all inmates with this diagnosis whose medical records were available at the time of review.
- General Preventative – a list of inmates of all inmates in a given facility over the age of 55 was generated from the Sensitive Medical Data Base in the Sentry Medical Records system. The reviewers randomly selected medical records for 10 inmates for review in this list.
- Low back pain - from a list of inmates seen in the health services unit over the past year with a diagnosis of low back pain, the reviewers randomly selected 10 inmates' medical records for review.
- HIV positive inmates - all inmates with this diagnosis whose medical records were available at the time of review.
- Emergency Department Treatment - all inmates receiving external ED treatment in the past 6 months whose medical records were available at the time of review.
- Inmate satisfaction – a convenience sample of 20 inmates who presented to the health services unit were asked to complete the inmate satisfaction questionnaire. Spanish interpretation was provided for non-English speakers.

A total of 671 inmate records were reviewed using these criteria. A list of inmate records to be pulled for the reviewers was sent within one week of the team's arrival on site. An additional 220 inmate satisfaction questionnaires were collected using a convenience sample. Table 3 details the number of inmate medical records for which data was collected in each facility by security level by condition. Relative to inmate satisfaction questionnaires, the only exception to this was at Beaumont Camp where the surveys were distributed and collected by the HSA assigned to the Camp since, due to work assignments, no inmates were accessible to the review team at the time of their visit.

Table 3. Inmate Medical Record Review by Facility

	Beaumont				Florence			Allenwood			
Sample Size	Min	Low	Med	High	Min	FCI	USP	Min	Low	Med	High
Asthma	11*	16*	14*	15*	5*	19*	29*	20	20	20	20
IDDM	5*	12*	10*	10*	8*	9*	11*	10*	11*	8*	11*
General Preventative	10	10	10	10	10	10	10	10	10	10	10
Low Back Pain	10	10	10	10	6*	7*	10	10	10	10	10
HIV +	1*	9*	8*	19*	1*	9*	10*	6*	12*	20*	9*
ED Visits	3*	7*	8*	3*	3*	4	8*	7*	5*	6*	10*
Mortality	0*	2*	0*	6	0*	*	*	0*	1	1*	3*
Inmate Satisfaction	20	20	20	20	20	20	20	20	20	20	20

* All available records reviewed

Data was collected by five (5) reviewers trained in the use of the data collection instruments by the lead health care researcher who has more than 20 years experience in quality of care evaluation for both public and private sector healthcare organizations. The lead researcher was present during all on site reviews and was queried by the other members of the team whenever an issue of clarification or final judgment was required.

9. *Quality Indicators*

Indicators serve as a filter through which clinical information documented in the inmate medical record is assessed. While not an absolute measure of quality, the frequency with which the care observed meets the relevant indicators provides a standard that enables us to compare objectively the care received at the different facilities. Indicators are defined by JCAHO as a "measure used to determine, over time, an organization's performance of functions, processes and outcomes"[29]

The indicators used in this study were predicated upon the assertion by both the BOP and UTMB CMC that they use prevailing community standards to provide care to inmates. In particular, quality of care indicators were not derived from the items used in program review evaluations by the BOP nor were they based on the BOP manual for inmate care. Instead, our quality of care indicators were developed from national standards established for the general US population.

Asthma indicators were derived from the 1999 National Institutes of Health, National Heart, Lung, and Blood Institute Expert Panel Report 2: Guidelines for the diagnosis and management of asthma.

Indicators for the management of insulin dependent diabetics were taken from the medical standards established by the American Diabetes Association (ADA). One question that will be asked in the context of this study is whether or not the standard of care for diabetic inmates in a correctional facility should be the same as those of the community at large. The answer, according to the ADA, is resoundingly YES! In a position paper released in early 2000, the ADA stated unequivocally that "people with diabetes in correctional facilities should be provided care equivalent to that provided to all patients with diabetes."[30] In light of this recommendation, all parameters (or indicators) evaluated in our study -- from blood pressure control to frequency of eye examinations -- were derived from this ADA position statement.

The criteria used to evaluate HIV treatment were taken from reports issued by the National Institutes of Health Panel to Define Principles of Therapy of HIV Infection and the panel on Clinical Practices for the Treatment of HIV Infection.[31]

The criteria used to evaluate the treatment of lower back pain were derived from two reports, one issued by the American Academy of Orthopaedic Surgeons, North American Spine Society[32] and a second issued by the Institute for Clinical Systems Improvement.[33]

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[29] JCAHO Manual p 291.

[30] January 2000. American Diabetes Association: Clinical Practice Recommendations 2000, Position Statement, "Management of Diabetes in Correctional Institutions." Diabetes Care, 23(Supplement 1), 98-100.

[31] Indicators derived from "Guidelines for the Use of Antiretroviral Agents in HIV-Infected Adults and Adolescents." MMWR April 24, 1998, 47(RR-J); 1-41

[32] Rosemont and LaGrange. "Clinical Guideline on Low Back Pain." American Academy of Orthopaedic Surgeons, North American Spine Society; 1996.

10. Clinical Findings

The results of this study can be broken down into many separate components, from statistical analysis detailing the level of compliance with a standard to individual inmate comments, health services treatment and encounter costs. In any judgment of the value of services, some level of subjectivity is required to complete the evaluation. In this document, such subjectivity will generally take the form of anecdotal references brought in to support specific, objective findings. In a few cases, it appears in the form of more general impressions and observations.

Since the services, policies, procedures and protocols, as well as the staff are similar throughout a complex, observations made at each of the four security levels were taken together. There is an increasing trend within the Federal facilities to share resources and planning. For example, there are many shared services throughout each of the complexes, from physician coverage to telemedicine services. The four facilities at FCC Beaumont under the direction of UTMB CMC and the BOP managed FCC Allenwood, in particular, are increasingly working together to plan health service resource needs and quality evaluation as one institution. This combination of observations within the complexes into one site allowed us to gather sample sizes that were large enough to justify standard statistical comparisons. Thus, although there were some noteworthy differences among health units within a given complex; unless otherwise noted, a reference to a facility (i.e., Beaumont) means *all* health units contained within that complex.

These findings are of course limited by the fact that only selected conditions were evaluated and not all aspects of operations were evaluated. However, we believe that the selection of these conditions has a sound basis and adequately reflects a range of acute and chronic illnesses, as well as the level of general preventative care thereby establishing a comparability across institutions.

One key difference between the BOP and UTMB CMC is their staffing of Chronic Care Clinics (CCCs). The BOP staffs CCCs with Mid-level Practitioners (MLPs) and physicians whereas UTMB CMC staffs its CCCs with nursing personnel. However, the BOP elected to accept this staffing pattern by accepting UTMB CMC's proposal as stated in their RFP "nurses and physician extenders will manage the care of stable patients under the direction of a physician."[34]

The use of clinical protocols in CCCs varied by facility. USP Allenwood had no CCC protocols in place. The need for consultation or specialty visits outside the institution is reviewed on a case-by-case basis by the Clinical Director.

Among the lessons learned was the fact that the compliance with chronic care standards was greatly enhanced at Florence FCI due to the implementation of CCC protocols,

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[33] Institute for Clinical Systems Improvement. "Adult Low Back Pain Health Care Guidelines" No GO3. November 1998.

[34] UTMB CMC Technical Proposal in Response to Requests for Proposals Bureau of Prisons Solicitation RFP 463-00001 dated February 27, 1996, p. 7.

which were preprinted by the staff for use in the medical record. It reduced charting time and ensured that all tests required were performed in a timely manner. This was an IOP initiative that was highly successful as demonstrated in the statistical findings below.

At FCC Allenwood FCI Chronic Care Clinic protocols were implemented at this facility in March of 1999. They detail clinical testing, as well as periodic exams. These protocols are generally clear and well written, including recent clinical recommendations with references (such as the use of ACE Inhibitor for diabetics) and criteria for treatment failure for HIV treatment.

11. Chronic Care Statistical Results

Complete cross tab results for each data element under consideration are presented in Appendices B-G. Specific results discussed at length in the text will be repeated for ease of reader reference in this section. The measure of statistical significance used throughout this report uses the Z-test for the equality of two proportions based on the binomial distribution.[35] We assume that the difference in the proportion of particular findings observed at two institutions is statistically significant if the p-level computed on the basis of this statistic is less than or equal to 0.05. This indicates that there is a less than a 5 percent probability that the difference in the means is due to chance. More formally, we are able to reject the null hypothesis that the two populations are the same.

In general, the acute presentation of symptoms (as in the case of asthma attacks and hypoglycemia) was generally well-treated across institutions. It was the longer-term considerations – ones that may lead to longer range, but nevertheless insidious, consequences – where the differences between institutions are most evident.

12. Insulin Dependent Diabetes Mellitus

Diabetes is a chronic illness that requires ongoing health care and education to prevent both acute and long term care complications.

While there was no difference in the frequency of chronic care clinic visits among inmates with insulin dependent diabetes mellitus (IDDM) among the facilities (IDDM Statistical Table 1), there are some notable differences in the approach to treatment

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[35] Specifically, the p-level is computed based on the t-value computed for the statistic

$$|t| = [\, N_1 * N_2 / (N_1 + N_2)]^{1/2} * |p_1 - p_2| / (p*q)^{1/2}$$

where $p = (p_1*N_1 + p_2*N_2) / (N_1 + N_2)$
$q = 1 - p$

and p_i represents the proportion of positive responses in group i=1,2 and N_i represents the number of responses in group i=1,2. *Statistica: Volume I: GENERAL CONVENTIONS AND STATISTICS I*, StatSoft, 2000, pp. 1551-52.

among facilities. The results demonstrate that the Health Services units for the Florence Camp and Medium Security facilities (directed by the same physicians) are achieving more consistent positive outcomes by treating inmates in accordance with guidelines supported by the American Diabetes Association. This finding is supported by the consistently high compliance ratings found in the course of these reviews.

As seen in Table 4 below, the most consistent diabetic control was achieved at Florence FCI, as demonstrated by current Glycated Hemoglobin values. A statistically significant difference exists (p=.001) between Florence, Allenwood and Beaumont patient blood sugar control. There was a tighter control of inmate blood glucose levels with a definite emphasis documented in the inmate medical record on self-care, counseling and patient education as well as the use of self-monitored blood glucose (SMBG) at FCC Florence.

This self-care modality was specifically not used at Allenwood by policy since the clinical staff did not feel that the benefits of this outweighed the costs. Yet, the results demonstrate improved blood sugar control among the Florence inmates. This tight control and insulin adjustment as a result of ongoing monitoring efforts did result in a higher frequency of hypoglycemic episodes at Florence. However this is an expected finding and inmates were consistently evaluated and educated to prevent hypoglycemic episode occurrences. SMBG was reiterated as a vital for all patients by the ADA in their recent statement on management of diabetic inmates with a recommendation to discuss target values at the initial encounter with the inmate.[36]

Table 4 Diabetic Control Results

Glycated Hemoglobin most current value less than or equal to 7.2%			
	BEAUMONT	FLORENCE	ALLENWOOD
Yes	13.89%	46.67%	32.50%
No	77.78%	53.33%	65.00%
New to Facility	5.56%	0.00%	2.50%
REFUSED	2.78%	0.00%	0.00%

Further, the results indicate that greater attention was paid to long-range health issues that may arise from IDDM at FCC Florence and FCC Allenwood than at FCC Beaumont. Specifically, the BOP Health Services units provided inmate testing and prophylactic treatment of those at high risk for cardiovascular disease and other diabetic sequela more often than UTMB CMC managed units. Laboratory tests to evaluate disease progress – especially microvascular changes (blood urea nitrogen and creatinine), serum lipids, and regular ophthalmologic examinations – were consistently monitored in more than 80% of the inmates with this disease at Florence and Allenwood. The differences between monitoring related to these parameters was statistically significant (p<.005) between BOP- managed health service units and those at FCC Beaumont (IDDM Statistical Tables 6 and 11).

[36] Ibid.

FCC Florence was the only facility that consistently documented ophthalmologic follow-up visits in the presence of routine eye exam abnormalities. Florence FCI was in 100% compliance with this standard compared with 87.50% compliance achieved at Allenwood and 80.59% at Beaumont (IDDM Statistical Table 7). Given the risk of retinopathy and the personal sight loss (as well as the increased resource utilization necessitated by these conditions) dilated eye exams are critical for an inmate population with lengthy sentences. However, this is an example of the difference in practice between UTMB CMC and the BOP. One IDDM at Beaumont did not receive a dilated eye exam since he "did not meet criteria" even though he has had diabetes for 7.5 years and currently reported random blood sugars as high as 578. Again, this attention to long-range consequences and planning in the form of long-term goal setting was more evident at Florence and Allenwood than at Beaumont (IDDM Statistical Table 12). Short-term goal setting was similar throughout the three institutions (IDDM Statistical Table 13).

Prophylactic aspirin usage, as recommended by the ADA to prevent cardiovascular complications, was being used consistently only at FCC Florence (100% compliance with standard). Only 47.50% of the diabetics who had a history indicating the need for this therapy at Allenwood and 63.89% of those at Beaumont were receiving aspirin. In all cases inmates for whom this treatment was contraindicated were excluded from the analysis, scored as not applicable. (IDDM Statistical Table 17). Routine blood pressure checks were performed consistently at all facilities (IDDM Statistical Table 18). However, long term control of elevated blood pressure (defined as maintaining blood pressures at less than 130/85) was obtained in only 44.44% of the Diabetics at Beaumont compared to 73.33% at Florence and 82.5% at Allenwood (a statistically significant finding where p=.001) (IDDM Statistical Table 19).

Foot exams were performed at least twice a year (or once in 6 months if the inmate was in the facility for less than 6 months) for only 69.44% of the inmates at Beaumont while 100% of the inmates at Florence, and 82.50% at Allenwood (IDDM Statistical Table 23). The consequences of policies that deny soft shoes and the lack of foot examinations can result in serious consequences such as the case of the inmate at FCC Beaumont Medium who required hospitalization at Galveston for an ulcerated foot. No foot exams were recorded prior to the time of this inmate's admission to the hospital for treatment.

Weight control through diet and exercise counseling was achieved in 46.67% of the diabetic inmates at Florence compared to 38.89% at Beaumont and 32.50% at Allenwood (IDDM Statistical Table 24). Hypoglycemic episodes were more common at Florence (40% of the inmates had experienced at least one episode requiring medial intervention) compared to Beaumont and Allenwood but this is a consequence of tighter blood sugar control and was not repeated in the inmates under consideration at Florence once patient education and counseling had been provided (IDDM Statistical Table 26).

The lack of inmate follow up and the concern regarding consistency is illustrated by the case of an inmate at Beaumont Medium. Although his diabetes was poorly controlled, he was placed on a sliding scale for insulin for 2 months without being started on any

routine long-acting insulin to begin to achieve control. Another inmate with IDDM at Beaumont FCC had a documented nosebleed every day for at least ten (10) days. He presented to the health unit with an extremely high blood pressure (200/110). The inmate saw an LVN who simply documented the encounter and noted the nosebleed was stopped during the clinic visit. When the inmate presented again for the same complaint later, he saw an RN at that time and received a provider appointment. There was no mention made in 4 visits with various providers of the nosebleeds although he presented on multiple occasions with a persistent cough. Another IDDM inmate was scheduled for urology telemedicine instead of nephrology telemedicine which delayed treatment. There was no treatment plan for this inmate when he presented with End Stage Renal Disease.[37]

The staff skill level for chronic care clinics (CCC) is one of the most profound differences between the BOP and UTMB CMC. CCCs are typically run by mid-level practitioners or physicians at BOP staffed health units while they are routinely handled by RNs and LVNs at UTMB CMC. This difference in the skill level of personnel treating inmates on an ongoing basis could account for some of the differences in long term disease control. For example, an inmate with IDDM at FCC Beaumont was seen in his first chronic care clinic visit by an RN only and was seen by an LVN in between CCCs for complaints concerning insulin doses and syringes. He did see the physician for his second CCC, but was again only seen by an RN for his next CCC. The inmate has a recorded HbA_1C over 9 and required treatment on an urgent basis for hyperglycemia (high blood sugar), both indications of poor blood sugar control and the need for change in treatment.

The only medication variance found was at Allenwood USP where the wrong insulin dose was administered. The dose given was intended for another inmate and led to hypoglycemia requiring treatment. However, this incident led to a review of medication administration procedures and corrective action taken. No further incidents were found during the quality review.

Providing a balanced picture, FCC Allenwood Camp also had a number of IDDM patients that lacked appropriate follow-up to prevent complications. One inmate had a random blood sugar reading of 488 (normal less 120). The value was marked as "noted value" but there was no change in patient therapy including education. This was not a one-time occurrence since this inmate had an obvious history of poorly-controlled diabetes as demonstrated by his last Glycated Hemoglobin (HbA_1C) reading of 9.3 (normal value <7.5). Another inmate had an elevated intraocular pressure[38] reading during his annual eye exam but was not flagged for follow up treatment. Lastly, we found an inmate with IDDM at FCC Allenwood Camp who was documented as being in compliance with his regimen even though his HbA_1C was 12, indicating poor diabetic control. However, there were no changes in his treatment with this reading despite this inmate's potential for renal failure with an already elevated urinary protein.

[37] This inmate had a BUN (Blood Urea Nitrogen) of 64 and a Cr (Creatinine) of 5.14 He should have had instructions to decrease the protein in his diet to reduce the renal load and have been considered for a nephrology consult.

[38] Elevated intraocular pressure may indicate the presence of glaucoma, a leading cause of blindness.

13. Asthma

Clinical protocols used by UTMB CMC are adequate to control urgent presentations and symptoms. However, there are quality of care issues at UTMB CMC that should be raised. First, there were multiple instances where inmates presented with acute asthma attacks, were documented to be symptomatically improved and discharged back into the general population with no documentation that a practitioner with advanced assessment skills (either a physician, Physician's Assistant, Nurse Practitioner or even a Registered Nurse) had examined the inmate and deemed him fit for discharge. Only a Licensed Vocational Nurse with little formal assessment training, assessed, treated and discharged the inmate. In contrast, evaluation by an advanced practitioner would be routine in the general community. While the inmate records examined did not reveal any specific deleterious effects of these encounters, this practice (as allowed by their clinical protocols) is disturbing and was not seen in Federal facilities. This lack of follow up is echoed in the findings of the BOP Health Services Program Review.

There was no statistically significant difference in the frequency of clinic visits between FCC Allenwood and FCC Florence. Inmates at FCC Beaumont were seen less frequently at a statistically significant rate from both FCC Allenwood (p=.0003) and FCC Florence (p=.01) (Asthma Statistical Table 1.) There was no difference in the frequency with which baseline and ongoing pulmonary function testing in the form of preak low assessments were performed. All three facilities ranged from 73.47% to 81.94% (Asthma Statistical Table 2). Asthma control as signified by a peak expiratory flow rate greater than or equal to 80% of the baseline normal for the patient was statistically better at FCC Allenwood than at FCC Beaumont (p=.01 Asthma Statistical Table 3). However, symptoms including more than three asthma attacks per week (Asthma Statistical Table 10), sleep disruptions (Asthma Statistical Table 11) and whether or not their asthma interfered with activities of daily living were not documented as reported by clients more often at FCC Beaumont than at FCC Allenwood or FCC Florence. However, although there were no statistically significant differences in the number of reported attacks, FCC Allenwood had better reported rates than the other facilities (1.39% to 2.78%). Lost work days as an indicator of overall asthma control and functional status appears to be better at FCC Allenwood than at FCC Beaumont and FCC Florence. However, this factor was influenced by the willingness of providers to give time off (Asthma Statistical Table 15).

Perhaps the most clinically significant measure of asthma control is the frequency with which inmates are forced to present to the health unit with an asthma attack. A greater number of inmates at FCC Beaumont presented for urgent care in the past year than inmates at either FCC Florence (p=.003) or FCC Allenwood (p=.001). More than one-third (38.78%) of the inmates with a diagnosis of asthma presented for urgent care in the

health unit in the past year at FCC Beaumont, compared to 13.21% at FCC Florence and 12.50% at Allenwood (Asthma Statistical Table 15).[39]

The need for Emergency Room (ER) treatment outside the facility occurred at a low rate at all three complexes: 2.04% at FCC Beaumont, 0.00% at FCC Florence and 1.39% at FCC Allenwood (Asthma Statistical Table 17.) All these patients were admitted for stabilization post ER treatment (Asthma Statistical Table 18).

Based upon Peak Flow Assessments and the frequency of reported symptoms, slightly more inmates at FCC Beaumont (12.33%) would be classed as having moderate persistent asthma than those at FCC Allenwood and FCC Florence.

Prophylactic control as evidenced by the administration of an annual flu shot as recommended for these at-risk patients was completed at a significantly higher rate at FCC Florence and FCC Allenwood than at FCC Beaumont with a rate of 16.33%, compared to 64.15% and 61.11% (p=.000, Statistical Table 4.)

Anti-inflammatory medications were used more frequently at FCC Allenwood than FCC Beaumont (p=.01) but the 6% difference between FCC Beaumont and Florence was not statistically significant (Asthma Statistical Table 5). An inmate with asthma at FCC Beaumont Camp presented multiple times in a 2 week period for acute treatment. He received nebulization treatments but no education except to return; he was seen by an RN, but not an MD. A PA provided a telephone order for treatment on one occasion but there was no indication in the chart that the PA followed up to see the inmate later even though the inmate response to respiratory therapy treatments was less than 70% of his baseline. Further, this inmate was only placed on an inhaled corticosteroid after multiple presentations.

Patient education was consistently better documented at FCC Allenwood and FCC Florence (statistically significant and clinically significant percent differences with Allenwood at nearly 100% compliance and Florence at 88%). Critical patient instruction regarding avoiding asthma triggers, the proper use of inhalers and monitoring asthma symptoms may well be provided at FCC Beaumont, but is not documented consistently (Asthma Statistical Table 6 - Asthma Statistical Table 9). Long-term treatment plans were better documented at FCC Florence and FCC Allenwood than at FCC Beaumont (p=.0003 and p=.007 Asthma Statistical Table 13).

Although there was no statistically significant difference in the emergency clinical treatment relative to the therapeutic modalities used, there was a lack of documentation and a level of authority given to the LVNs providing treatment at FCC Beaumont that is of concern. It is questionable whether someone who has completed one year of formal training and a brief (three day) patient assessment course (P.I.E.) can truly be deemed capable of having the expertise to determine the stability of an inmate and their ability to

[39] It was noted by one medical reviewer that the air quality is significantly worse in Houston than in Florence CO and could have an effect on the frequency of presentation by asthmatic inmates at FCC Beaumont.

be discharged back to the general population. In most health care institutions, a Registered Nurse cannot discharge a patient after a stay in a Post-Anesthesia Recovery Unit (PACU) or an Emergency Department. Such authority is generally vested in a Physician or Nurse Practitioner.

14. HIV Positive Inmates

As mentioned earlier, the indicators used in evaluating the treatment received by HIV positive inmates were developed from the guidelines published by the National Institutes of Health Panel to Define Principles of Therapy of HIV Infection[40] and the Panel on Clinical Practices for the Treatment of HIV Infection[41]. The need for active antiretroviral therapy is paramount among these patients, since ongoing HIV replication leads to immune system damage and progression to AIDS. However, since antiretroviral therapy itself changes so rapidly and the measurement of clinical treatment in this study was performed over a period of approximately 9 months, we elected not to assess the appropriateness of the drugs used. Instead, the combination of medication and the avoidance of monotherapy was evaluated, since this is consistent with clinical guidelines.[42] Specifically, we focused on inmate outcomes (stable or improved CD4 and T cell counts, and treatment failures) and the processes associated with the management of these individuals. The panel asserts that regular, periodic measurements of plasma HIV RNA levels and CD4+ T cell counts are necessary to determine the risk for disease progression in an HIV-infected person and to determine when to initiate or modify antiretroviral treatment regimens.

The number of HIV positive inmates was exceptionally high at FCI Allenwood (25 inmates) for a population of 1119 (2.23%) According to the BOP Sentry Medical Data Base, the only other institution with a remotely comparable percentage of HIV positive inmates was FOC Miami with 2.02%. In October 1999, the institutions examined in this study had on average 0.94% of their inmate population listed as HIV positive (ranging from 0.129% to 2.23%). This amounted to an average of 10 infected inmates per institution (with a range from 3 to 20 infected inmates). When questioned, the HSA at FCI Allenwood did not know why his institution had such a high percentage of HIV

[40] This Panel was asked to define essential scientific principles that should be used to guide the most effective use of antiretroviral therapies and viral load testing in clinical practice. Based on detailed consideration of the most current data, the Panel delineated eleven principles that address issues of fundamental importance for the treatment of HIV infection. Appearing in the MMWR April 24, 1998, 47(RR-J); 1-41

[41] The Health and Human Services Panel was charged with developing recommendations, based on the scientific principles, for the clinical use of antiretroviral drugs and laboratory monitoring methods in the treatment of HIV-infected persons. Appearing in the MMWR April 24, 1998, 47(RR-J); 1-41.

[42] "No single antiretroviral drug that is currently available, even the more potent protease inhibitors (PIs), can ensure sufficient and durable suppression of HIV replication when used as a single agent ("monotherapy"). Furthermore, the use of potent antiretroviral drugs as single agents presents a great risk for the development of drug resistance and the potential development of cross-resistance to related drugs. Thus, antiretroviral monotherapy is no longer a recommended option for treatment of HIV-infected persons." MMWR April 24, 1998, 47(RR-J); 1-41

positive inmates. He indicated that no one at the facility had a particular expertise in the area of Infectious Disease which might explain preferential designation within the region.

The term "Not Applicable" in the scoring of these indicators refers to an inmate who is either new to the facility or has refused treatment. Due to the smaller number of HIV positive inmates at FCC Florence, the majority of the comparisons in this analysis are made between FCC Beaumont and FCC Allenwood, two institutions with similar numbers of HIV positive inmates.

Overall, there were few differences in the treatment received by inmates at FCC Beaumont and FCC Allenwood, as seen in Table 5 to Table 8. Inmates at FCC Allenwood did not have their blood work drawn for a six month period while the BOP was changing vendors. According to the personnel at this facility, there was no provision made to have the necessary tests performed through another laboratory in the interim. A UTMB CMC Infectious Disease consultant noted that blood work ordered some five months before was not done on an inmate whose prior viral load and CD4 count indicated that the current treatment regimen was not working. Thus, no effective changes could be made to the treatment regimen.

Table 5. HIV Positive Inmate Assessed Quarterly

	FCC Beaumont	FCC Florence	FCC Allenwood
Yes	47.22%	54.55%	50.00%
No	30.56%	0.00%	32.61%
Not Applicable	22.22%	45.45%	17.39%
Total	100.00%	100.00%	100.00%

As Table 6 demonstrates, medications for inmates at FCC Allenwood and FCC Beaumont were adjusted on the basis of current guidelines at approximately the same rate, with Allenwood USP having a higher frequency of not following recommendations or of a particular fault found in ongoing treatment by an independent Infectious Disease Specialist.

The lack of needed Infectious Disease expertise was evident at Allenwood USP. There were multiple notations in consultant records (for the Infectious Disease Clinic) documenting the lack of follow up by the USP physician such as "lab profiles delayed"; "Indinavir causes renal stones...potentially unsafe to continue Indinavir in the presence of renal stone;" "viral loads trending upward as a result of new medications not started per consult-labs drawn 9/13 but not read until 10/28." This consultant was part of the BOP system in telemedicine; no other such notations were found in other inmate records at the rest of the Allenwood facility. At FCC Beaumont, the pharmacist's notes contained concerns directed towards the primary care physician that an inmate was only on one HIV medication. However, the record demonstrated no follow-up notation. The inmate was placed on a second drug some weeks later and the pharmacist again expressed his concern that the standard of care for triple antiretroviral therapy was not being met. Another inmate transferred to FCC Beaumont continued to take drugs from a

discontinued therapy because he was not informed that his medications had been changed and was not given a new prescription or instructions.

Table 6. HIV Medications Adjusted According to Recommendations[43]

	FCC Beaumont	FCC Florence	FCC Allenwood
Yes	30.56%	27.27%	32.61%
No	19.44%	0.00%	26.09%
Not Applicable	50.00%	72.73%	41.30%
Total	100.00%	100.00%	100.00%

The goal of HIV antiretroviral therapy is to achieve maximum viral load suppression. Viral load trends as an indicator of treatment outcomes are displayed in Table 7 below. Again, while FCC Florence (with a smaller HIV positive population) had a greater percentage of their inmates with stable viral loads, FCC Beaumont and FCC Allenwood were matched almost exactly in their numbers of inmates whose viral loads are increasing and for whom viral load were not drawn quarterly to evaluate progress. These figures specifically exclude inmates who are non compliant with their medication regimens and those inmates refusing treatment. Both of these groups of inmates are contained in the "not applicable" category.

Table 7. Viral Load Measures over a 12 month period

	FCC Beaumont	FCC Florence	FCC Allenwood
Decreasing	19.44%	0.00%	19.57%
Increasing	16.67%	0.00%	21.74%
Stable	25.00%	45.45%	21.74%
Not Drawn Quarterly	11.11%	0.00%	10.87%
Not Applicable	27.78%	54.55%	26.08%
	100.00%	100.00%	100.00%

Table 8. HIV Inmate Treatment Issues Observed

	FCC Beaumont	FCC Florence	FCC Allenwood
None	66.67%	90.91%	52.17%
Delay	22.22%	9.09%	26.09%
Treatment Issue	11.11%	0.00%	21.74%
	100.00%	100.00%	100.00%

[43] We chose a highly conservative standard for the requirement of changing the inmate medication regimen. Generally the criteria used was whether or not an Infectious Disease specialist or Pharmacist recorded that the inmate should have their medications changed. Two exceptions (one at FCC Beaumont and one at FCC Allenwood had obvious treatment failures with Viral Loads increasing of more than 150,000 with no change in therapy)

15. General Preventative Care – Inmates Over 55 years of Age

The indicators for general preventative health care for this over 55 population were based upon the Health Plan Employer Data and Information Set 2.5 (HEDIS) from the National Committee for Quality Assurance. The HEDIS indicators are used as the measures of quality of care from Managed Care Organizations. The indicators are further consistent with the Healthy People Year 2000 established by the U.S. Public Health Service. A random sample of inmates in this age group were selected at random for review by the BOP research staff from population rosters drawn from the Key Indicators data base.

The indicators assessed the frequency of physical examinations and preventative screenings for high risk conditions associated with aging such as cholesterol screening (cardiovascular disease), testicular and prostate exams (cancer), as well as preventive dentistry and TB testing. FCC Beaumont was in 90% compliance with performing physical examinations at least every 5 years. When compared to BOP managed facilities, they were statistically different (p=.04) from FCC Allenwood which was in 100% compliance with this standard but not statistically significant compared to FCC Florence which was in 96.77% compliance. Cholesterol screening performed every five years was statistically significant (p=.02) between FCC Florence and FCC Beaumont (80.65% versus 55.00%). (Preventative Care Statistical Table 2.) TB testing performed on admission and with exposure was done in only 57.50% of the cases at FCC Beaumont while FCC Florence was in 100% compliance and FCC Allenwood was in 79.41% compliance with this standard. Preventive dentistry performed at least annually on this over 55 age population occurred only half the time at FCC Beaumont while it was done in 90.32% of the cases at FCC Florence and 79.41% at FCC Allenwood (Preventative Care Statistical Table 6).

16. Low Back Pain

Low back pain is both an acute and chronic condition, as well as one that has the potential to consume significant resources from extensive testing, therapies and even surgical intervention. While recent studies have found little advantage to the use of therapeutic modalities such as traction, surgical interventions, or physical therapy, studies have shown that patients seek reassurance and relief from symptoms.[44] Reassurance often takes the form of "low tech" interventions such as instruction in back exercises and the use of Non Steroidal Anti Inflammatory Drugs. UTMB CMC at FCC Beaumont was less likely than either FCC Florence (p=.01) or FCC Allenwood (p=.02) to prescribe *any* treatment for low back pain (Low Back Pain Statistical Table 1). Practitioners at FCC Beaumont were also more likely to rely on physical examination only rather than

[44] Carey, T.S., Jackman, A, and Hadler, N. (1999) "Recurrence and care seeking after acute back pain: Results of a long-term follow-up study." Medical Care 37(2), pp 157-164.

diagnostic testing (i.e., X-rays) than either of the comparison sites (Low Back Pain Statistical Table 2). All three sites used an MRI as a diagnostic modality infrequently, which supports current cost-effective practice. Inmates at FCC Florence were more likely to receive back exercise instruction than those at FCC Allenwood and FCC Beaumont. However, FCC Beaumont exceeded FCC Allenwood in the appropriate rate of patient instruction in back exercises than FCC Allenwood p=.009). However, under their managed care program and policy of rarely prescribing soft shoes, FCC Beaumont was less likely to prescribe therapeutic devices than either FCC Florence and FCC Allenwood at a statistically significant level (Low Back Pain Statistical Table 5).

17. Emergency Treatment

A review was performed of all offsite Emergency treatment transfers for the past 6 months at each of the facilities. We examined the:

- frequency of transfers;
- reasons for inmate emergent transfer;
- whether or not the inmate was admitted to the hospital;
- how long the inmate spent in the hospital if admitted;
- whether the inmate was assessed by a physician or mid-level practitioner prior to transfer; and,
- whether or not treatment prior to transfer could have prevented the need for the transfer.

As seen in Table 9, FCC Beaumont has the lowest rate of inmate transfers for the 6 month period prior to review. This is consistent with a managed care program, since Emergency Department (ED) costs would be charges incurred outside the capitated system of UTMB CMC care at local area hospitals. Thus, the patterns of all such systems would be to contain costs through the judicious use of such external treatment modalities. However, it is interesting to note that FCC Florence is a close second, in large part since the FCC Florence Camp and FCI physicians had adopted a more managed care policy of transfers, including holding inmates onsite for extended observation and treatment. It should be remembered that this lowered frequency of transfer to an external healthcare facility saves not only the hospital charges to the system but the security transportation costs and reduces the security risk to the institution. However, this practice of reducing ED transfers carries some risk of delayed treatment that could result in serious morbidity and mortality. Further, the physicians and MLPs available to the inmates at a given facility must be willing and able to assume the urgent care required if an inmate held in observation becomes unstable.

Table 9. Frequency of Inmate Transfers for Emergency Treatment

	FCC Beaumont	FCC Allenwood	FCC Florence
Number of Emergency Department Transfers	13	33	10
Rate of Transfers per 1000 inmates	3.23	7.94	3.35

Undoubtedly, the reduced transfer rate at FCC Florence had a substantial economic impact in a short period of time. A comparison of FCC Florence and FCC Allenwood indicates the scope of potential cost savings. In particular, the per diem costs in Table 10 illustrate the tradeoff between spending on internal staff and external consultants. FCC Florence spent more (on a per inmate per day basis) than FCC Allenwood on in-house expertise, but spent less on external medical services (including visits to the ED). The net effect of this policy was that healthcare costs were $.24 lower at FCC Florence, a difference that translates into a costs savings of over $260,000 per year at a single institution with an average daily population of 3,000.

Table 10: Selected Per Diem Costs

	FCC Florence	*FCC Allenwood*
Internal Staff	$2.62	$2.28
PHS	$0.81	$0.38
External Medical Services (including ED)	$1.02	$2.03
Total	$4.45	$4.69

Due to the small number of inmates that were treated in offsite EDs, no other statistical analyses of the differences between facilities were performed.

The reasons for offsite ED transfer are displayed in Table 11. Head injury treatment followed standards of care in that CT Scans were performed offsite to determine the extent of injury and risk of intracranial hemorrhage.

Table 11. Reasons for Offsite Emergency Treatment

	Beaumont	Allenwood	Florence
Abdominal Pain	0.00%	24.24%	30.00%
Burn	0.00%	0.00%	10.00%
Cellulitis	0.00%	3.03%	0.00%
Chest Pain	23.08%	9.09%	0.00%
Diabetic Ketoacidosis	0.00%	3.03%	0.00%
Dislocation	7.69%	6.06%	0.00%
Eye Injury	7.69%	3.03%	10.00%
GI Bleed	0.00%	0.00%	10.00%
Head Injury	15.38%	12.12%	20.00%
Incision & Drainage	15.38%	0.00%	0.00%
Minor injury	0.00%	9.09%	0.00%
Pain Management	0.00%	3.03%	0.00%
Plastic Surgery	0.00%	3.03%	0.00%
Pneumonia	0.00%	3.03%	0.00%
Possible Fracture	23.08%	9.09%	10.00%
Possible Stroke	7.69%	0.00%	10.00%
Septic	0.00%	3.03%	0.00%
Surgical	0.00%	6.06%	0.00%
Upper Respiratory Infection	0.00%	3.03%	0.00%
TOTAL	100.00%	100.00%	100.00%

Table 12 displays how often inmates were admitted for further evaluation or treatment following their ED transfer. FCC Beaumont and FCC Allenwood have similar admission rates while FCC Florence has almost twice the admission rate of the other two facilities. This is interesting primarily as an indicator of resource utilization.

Table 12. Frequency of Hospital Admission Post Emergency Department Treatment

	Beaumont	Allenwood	Florence
Yes	46.15%	48.48%	90.00%
No	53.85%	51.52%	10.00%
	100.00%	100.00%	100.00%

A more subjective evaluation relative to ED treatment was whether or not the inmate could have possibly been treated at the institution and whether there were any variances from the care expected at the facilities. The onsite treatment at the facility preceding transfer for ED treatment met community standards in the majority of cases. FCC Allenwood had a higher rate (21.21%) of inmates whose transfer to a local ED could be examined further for possible resource utilization. For example, one inmate who had experienced two days of abdominal cramping was sent offsite by a PA since the MD could not be reached by telephone. Another FCC Allenwood inmate was sent offsite for a stapled finger; the ED cleaned the wound and sent the inmate back to the facility with

oral antibiotics; at least two other inmates were sent to the ED for possible fractures without X-Rays being taken at the institution. Another inmate was sent for Sickle Cell pain and was given oral medications at the ED and told to rest. It is possible that the staff feels overwhelmed and cannot observe inmates in the facility for any length of time. There is a fine trade-off in cost containment between lowering staff ratios and transferring inmates to local EDs for treatment. FCC Florence has chosen to retain inmates more often for observation (with no deleterious outcomes) with sufficient cost-savings to fund additional staff positions. The BOP may want to examine this issue further.

FCC Florence and FCC Beaumont had a greater frequency of possible treatment variances than FCC Allenwood. These variances can not be attributed to the decision to hold inmates onsite for extended observation. The variances that are reported for FCC Florence in this report all occurred at the Florence USP. However since the decision to retain inmates onsite was only seen at the Florence Camp and FCI, the variance at Florence USP cannot be attributed to this decision. Again, these are *very* small numbers of inmates and do not alone form the basis for judgment about the level of quality of care provided at any single facility. Florence USP had a delayed transfer for an inmate with abdominal pain for whom blood work was not drawn during this time. The inmate was eventually sent on an emergent basis with a ruptured appendix. At FCC Beaumont, an inmate with a history of cardiac disease complained of chest pain and took 5-6 nitroglycerine (NTG) tablets. He was not seen by an MLP or physician until the next morning which could have resulted in serious morbidity as evidenced in the next case.[45] Another inmate with chest pain ambulated to the clinic on call out. His blood pressure was elevated at 180/120. There was a delay in transfer to the local ED of almost 6 hours due to the wrong blood tube being used to draw stat blood work. His diagnosis upon arrival to the ED was an acute Myocardial Infarction (MI) and the inmate was listed in critical status.[46]

Table 13. Emergency Department Transfer Issues

	FCC Beaumont	FCC Allenwood	FCC Florence
None	69.23%	60.61%	90.00%
Inmate Non Compliance	0.00%	6.06%	0.00%
No Treatment Provided	0.00%	9.09%	0.00%
Offsite Transfer Necessity Question	7.69%	21.21%	0.00%
Possible Variance	23.08%	3.03%	10.00%
	100.00%	100.00%	100.00%

[45] Ultimately the chest pain was found not to be of cardiac origin and the inmate was diagnosed with GERD (Gastrointestinal Reflux Disease) after a complete work-up at the local hospital.
[46] It is unknown whether or not this time delay led to an extension of the MI but the inmate was not provided with "clot busting" drugs due to the delay in treatment.

18. Mortality Reviews

Ultimately mortality reviews serve as sentinel events, valuable more for their ability to highlight the possible need for system improvements rather than as indicators of a lack of high quality care. There were only 13 inmate deaths during the relevant study period. Due to this small sample, tests for significance between institutions were not performed. Cases were examined for: underlying cause of death, treatment prior to death, and whether there were opportunities for organizational improvement. Ten of the 13 (76.92%) of the deaths were due to natural causes, two were a result of trauma (stab wounds) and one inmate died as a result of post operative complications (emergency surgery without which he would certainly have died). The primary causes of death are displayed in Table 14 below.

Table 14. Primary Cause of Death

Cause of Death	Frequency	Percent
Arteriosclerotic Heart Disease	4	30.77
Myocardial Infarction	5	38.46
Trauma	2	15.38
Surgical (femoral artery bypass graft)	1	7.69
Pulmonary Embolism	1	7.69

Mortality review issues identified for improvement in the course of the mortality reviews include:

- FCC Beaumont Low: An inmate presented with non specific EKG changes in the presence of chest pain and was released by an LVN into the general population without treatment after she communicated with the providers following the EKG. Two days later the inmate presented with chest pain again and was given a respiratory therapy treatment by the LVN. His blood pressure at that time was slightly elevated to 156/88. 10 hours later the inmate was found collapsed with fixed pupils (a sign of lack of oxygen to the brain) and Cardiopulmonary Resuscitation (CPR) was begun without success. Opportunity for improvement: Have a Mid-level Practitioner direct assessment of inmate with chest pain or EKG changes.
- FCC Beaumont USP: Inmate presented to clinic with complaint of dizziness and a right facial droop (signs of a stroke). He was then transported to UTMB Galveston rather than a local hospital. Ultimately the inmate suffered a cardiac arrest at UTMB Galveston and lapsed into a persistent vegetative state and expired. Opportunity for improvement: assess whether or not lengthy transports (greater than 1 hour) should be undertaken with inmates who have a medical emergency in progress.
- FCC Beaumont USP: Resuscitation efforts performed with a 22 gauge (small bore) needle. This inhibits the ability of fluids and medication to be administered. Opportunity for improvement: review with providers and emphasize the need for larger IV catheters to be used in emergency situations.

- FCC Allenwood USP: Inmate en route to airport for transport to USMCFP Springfield for a psychotic break was unaccompanied in the vehicle by a health care provider. The inmate was found dead upon arrival to the airport and resuscitation efforts failed. Opportunity for improvement: inmates en route to transfer to a medical center should be accompanied in the vehicle by a health care practitioner (ideally an MLP).
- FCC Allenwood USP: an inmate with a history of cardiovascular disease and hypertension was not placed on the medications he had been on prior to his transfer (Lisinopril). While there may not be a causal link, at the time of his cardiac arrest the inmate had been off his medication for 9 days. Opportunity for improvement - recheck list of transfer medications for all inmates in Chronic Care Clinics with the inmates at the time of orientation and receiving.

19. Inmate Satisfaction

A primary component of quality is the subjective judgment made by the receiver of care. Thus, the rating of care by inmates becomes important in any discussion of quality of services. The results from the satisfaction surveys comprise a most interesting set of findings. The level of satisfaction was generally consistent across single institutions but not entire complexes and, at least at FCC Florence one could conclude highly dependent upon the specific providers as well as systems of service provision. At FCC Florence, the FCI and the Camp had exceptionally high inmate satisfaction ratings. Inmates in these two facilities (with a shared health services staff) provided the most positive comments of any facilities included in the study. Positive comments at FCC Florence (largely from the FCC and the Camp) provided the only statistically significant difference among the complexes visited (Florence v. Beaumont p=.03 for percentage of positive comments – Satisfaction Statistical Table 6).

Individual remarks written by inmates help to illustrate some of the issues of concern to the inmates and their general perceptions of quality at the facilities evaluated. Please note that all comments from inmates are recorded *exactly* as written.

There were a number of statements made by inmates that unfavorably compared the UTMB CMC system with the rest of the BOP's health services. Some comments illustrating this feeling are as follows: "This is the sorriest medical service I have seen in the federal system" (written by an inmate with chronic hepatitis at FCC Beaumont Medium); "This place is unbelievable it takes forever to see a Doctor. A disgrace to the BOP (seen for Hypertension)"; "I am very frustrated with the medical assistance and some of the person who work in there, the medicine comes to you 2 weeks later after your pain or problems are gone! This is the worst medical attention I have ever have in the BOP. We need somebody to hear us and treat us like human beings…"

In general, the UTMB CMC health care staff did not receive high ratings for their caring and compassionate attitudes towards inmates. The staff was seen as becoming, "upset if you ask questions" or "they need someone who wants to help and then knows what they are doing" very nasty attitudes" "they never help no one. "They don't care." Of greater concern to the reviewers was the hypertensive patient who said he does not go to sick call because it is "too much hassle to be seen".

Responses by inmates at FCC Allenwood were varied, but less emphatically negative than at FCC Beaumont. At LSCI Allenwood, inmate responses included the observation that, "I feel tests are more needed to watch for improvement, there seem to be to many roadblocks, to get to where you get the help you need. Myself, I feel I have been treated right and had fast responses to my ailments. I have seen where both prisoners and staff could be more patient and have better manners. PA & doctors need to really listen to the patients and maybe not blow off some one who could really be ill. Also they need to follow instructions given when prisoners are transferred. Some guys are not getting adiquit treatment when they are transfered from one prison to another." Another inmate

said " the health professionals here lacks the ethics" and that "the medical staff at LSCI Allenwood are more worried about being correctional officer, then providing necessary medical care and treatment."

At USP Allenwood one inmate observed, "I would rate overall health care good." But again, this facility is not without its detractors: some inmates noted "need more qualified physicians"; "medical staff is ignorant, unknowledgeable, uncaring & rude".

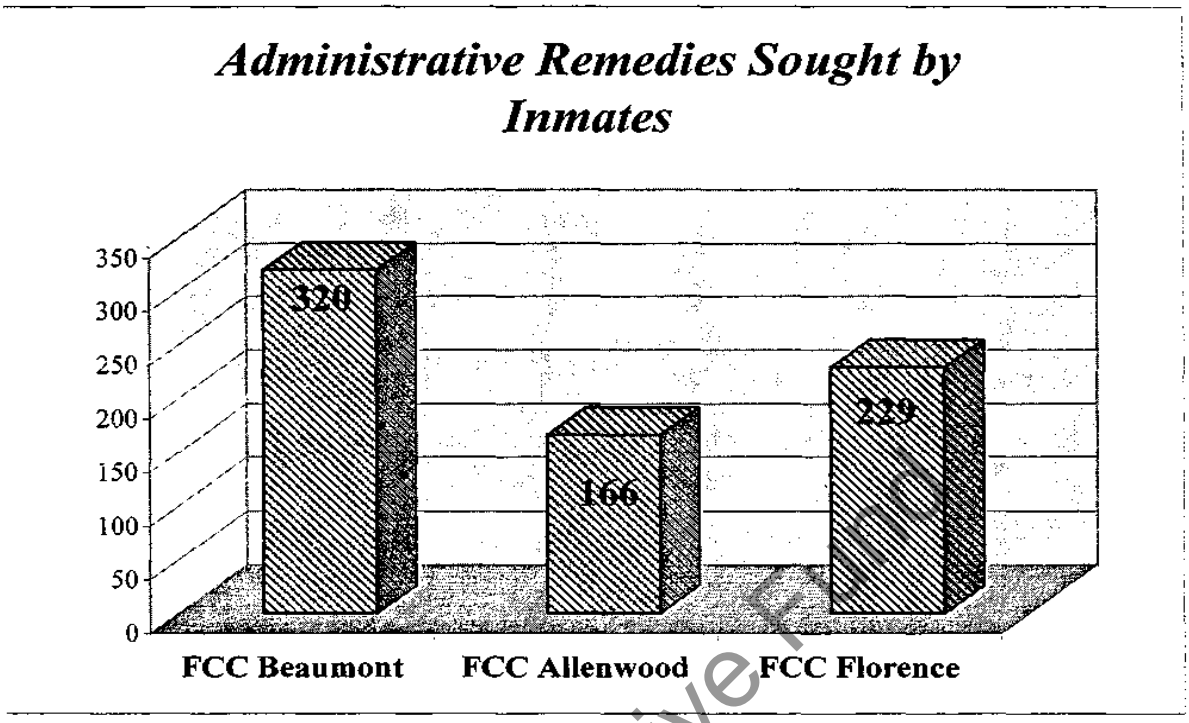
At Allenwood Medium, inmates indicated that "So far things have been satisfactory", but also that "Treatment needs to be sooner (dental)" and that "There is an attitude (generally) that many inmates are malingering that the inmate's input in whatever his malady may be of secondary concern."

In contrast to these comments regarding UTMB CMC and FCC Allenwood, health services inmates at FCC Florence FCI and Camp wrote about the fairness and quality of treatment. Again the personal attributes of staff and caring attitudes cannot be stressed enough. Inmates at FCC Florence consistently wrote comments such as "the medical staff here at Florence FCP far exceeds care I have received at other BOP facilities" and "Dr. __ has been right on top of my health problems. I have been in 4 institutions and have never had the health care that Dr. __ has provided. I am grateful for him and Mrs.___".

FCC Florence Penitentiary received the most negative comments of all BOP-managed facilities "The medical department is the worst I have seen out of 3 USPs. The doctor is lazy. When I see the psych both the doctor and the hosp admin are there which breaches my and my psych's confidentiality. 3/4s of the PA's don't know what they are doing. The lab doesn't run chronic care tests on time. For chronic care an inmate shouldn't have to put in a cop-out to see the doctor or have blood work these things 'should be' automatically scheduled.

Inmate dissatisfaction is also reflected in the frequency with which inmates seek administrative remedies. As seen in Figure 1 inmates at FCC Beaumont sought administrative remedies in medical services almost twice as often as inmates at FCC Florence and substantially more often than FCC Allenwood during FY 99.

Figure 1. Administrative Remedies Filed – Medical Subject FY 99



20. Organizational Structure and Performance

This section focuses on the organizational structure of the health care services at the three complexes being evaluated. This includes:

- how well their systems for improving organizational performance are designed, and what evidence exists that systematic evaluation of the processes, outcomes and structure of the services provided are performed;
- the use of telemedicine as a technologic support for the system;
- the evolution of BOP Health services and UTMB CMC over the life of the contract—how they have become more like one another and where they continue to diverge;
- the use of clinical protocols within the BOP and UTMB CMC system;
- staff training and expertise, staffing patterns at the institutions; and,
- finally general impressions of these reviews as well as the formal operational and program reviews of the BOP as an adjunct to this evaluation.

21. Improving Organizational Performance

According to JCAHO, "the goal of improving organization performance is to continuously improve health outcomes."[47] This model looks to an ongoing cycle of designing a system of processes with expected outcomes, measuring these outcomes, comparing performance to other organizations, and selecting areas for priority attention and improvement based upon these findings. In this context, performance means doing the right thing and doing it well. This means achieving the desired outcomes in a timely, effective, safe and efficient manner. Efficiency is defined by JCAHO as "the relationship between the outcomes of care and the resources used to deliver patient care." This is an area that is examined closely by UTMB CMC given their organizational mission and one which has gained an increased emphasis in the BOP – particularly at FCC Florence. Standards for measuring performance include the concept that these IOP activities are carried out in a collaborative and interdisciplinary manner and that they focus on a balanced approach to measuring important processes or outcomes related to patient care and organization functions.[48] Assessment means drawing conclusions about the organization's performance, asking if there are areas for improvement, and if they met process design specifications (reducing or eliminating variance from the expected norms by eliminating common-cause variation) and by comparing current performance with past organizational performance and other organizations. While the organization's leaders are ultimately responsible for improving performance by ensuring that these evaluative processes take place, the best resource to ensure lasting change is the staff. Thus, involvement by staff in all aspects of this process is imperative for success.

[47] JCAHO 1998-99 Comprehensive Accreditation Manual for Ambulatory Care. p. 287.
[48] Ibid. p 295

The FY 2000 Operational Performance Evaluation System (OPES) is the UTMB CMC organizational plan to improve performance. The document states that it is to:

1. Serve as a tool to measure relative performance between all units on like type functions;
2. Serve as an early warning system on critical elements of the contractual obligation to Texas Department of Correctional Justice and their patient population; and,
3. Serve as a standard/universal tool for UTMB CMC to evaluate their clinical and contractual obligations.[49]

This tool was updated from prior versions and is ambitious in its scope; containing 27 objectives in a more than 200 page document. Its focus is generally on traditional audits of medical records. Although the audits are performed on a unit level the summary and actions taken to improve performance are not specified. Further, the structure and responsibilities of the Quality Management Team (or at what level they exist) are not explicitly found in this OPES plan. Customer satisfaction is to be measured annually, yet no recommended questions/instruments are contained in the plan.[50] The issue of measuring inmate satisfaction was one that the UTMB CMC facility staff was struggling with during our site visit. The staff was reluctant to share the results of their FY 99 inmate satisfaction survey because they felt it did not adequately reflect their practice and key indicators of quality.[51]

Many of the indicators specified in this plan are simple compliance measures, such as the fact that annual safety training courses will be attended or that "Each time medication is given by EMS, the staff will document which medication was given, the type of administration, the amount administered, the route of administration, the result of administration."[52]

Indicators regarding medical compliance relative to access specified only that if an inmate is referred to medical that they are seen by a provider within 7 days. [53] Presumably this refers to non-urgent care treatment.

Most importantly, there was a lack of knowledge among providers and even nursing management regarding key indicators. There was no mechanism in place for reporting

[49] University of Texas Medical Branch Correctional Managed Care document. "Operational Performance Evaluation System, FY 2000.
[50] Although JCAHO does expect site specific questions, there is also the matter of the ability to analyze system wide patient satisfaction with services.
[51] Interview with IOP Program Coordinator Sherri Morgan.
[52] Ibid., p 113. This indicator is a minimal standard of practice for all medication administration and is questionable as an indicator worthy of organizational performance improvement unless documentation exists that this is a particular problem within the system. There appear to be a number of such policies and procedures mixed into this OPES program plan such as "Prior to such deficiencies being detected during external audits, the Regional Records Administrators will have identified and documented areas of non-compliance with policies/standards and reviews and related corrective action plans." page 125
[53] Ibid., p. 13.

findings of medical quality audits to the rest of the provider staff – rather this was reported only to the medical staff itself and performed as a part of isolated peer review. Multidisciplinary review is at the IOP Board (management) level – with no direct communication to staff of results documented. Dr. Charles D. Adams confirmed that medical staff and Mid level practitioner reviews of quality issues were separate and distinct from the IOP program reviewed by the general staff working in the Beaumont Facility. Peer review criteria were general and consisted of "randomly selected" medical records. A review of these peer review documents revealed that there were no formal criteria (i.e., indicators) as to what constituted appropriateness or the level of quality expected from practitioners.[54]

Dr. Adams stated that the results of care outcomes are presented to the management team and not line staff at Beaumont for action. Dr. Adams shared with us a list of indicators that are currently in the implementation process for medical review. Again, all indicators are of a process type (i.e., frequency of visits to chronic care clinic, frequency of various lab tests etc.) -- some are less than BOP standards (i.e., chronic care clinic reviews two per year versus four per year at the BOP) and others exceed standards (i.e., Peak Flows for asthmatics at each visit).

The lead healthcare team investigator for this study met with the UTMB CMC IOP Program Coordinator at FCC Beaumont. The FY 99 OPES System in place is managed by UTMB in Galveston. Indicators and criteria are all set at Galveston including (after a general review) process indicators. Although basic, these FY 99 indicators are appropriate to examine process meet fundamental quality assurance standards. These indicators included:

- Annual physical exams offered
- Intake physicals performed within 14 days
- Orders transcribed correctly
- Medication variances
- Documentation format appropriate
- Patient education documented

Local level initiatives are problem-focused. One example provided by the IOP Coordinator dealt with staff morale and ways to improve current perceived morale problems. Follow-up results were not available. There was no formalized method to report important events (or sentinel events) within the system. The only follow-up action for medication variances was employee counseling. There was no evidence demonstrated that the system was examined to determine if there are any processes that required evaluation or retooling to prevent variances.

The UTMB CMC Executive staff acknowledged the absence of systematic IOP – i.e., a method or system of reviewing and tracking care outcomes to ensure that system changes

[54] Charles D. (Danny) Adams, MD, MPH met with the team to discuss UTMB CMC health care policies and utilization practices in his role as UTMB CMC Regional Medical Director.

remain in effect and that no recidivism occurs. They do have a process that requires an internal facility review within seven (7) days of an emergent transfer -- and a report indicating that the transfer was in fact reviewed.[55] Staff believes that OPES (their IOP system) assesses outcomes of care. In a review of the nursing indicators currently reported there is no evidence that any treatment or care outcomes are systematically assessed. All indicators and data provided are process indicators with data collected from retrospective audits of a selected sample. There was no evidence that MD and Mid Level Practitioner peer review was based upon any explicit criteria or indicators and no systematic reporting of results from these audits – with the exception of mortality review. When asked about systematic review and reporting of medical quality of care, the UTMB CMC Management staff stated that there was a reporting system that required internal staff to review all emergent transfers, but that there was no one person to whom the results of this review were reported. The FCC Management team meeting minutes reported various problematic issues and designated someone to "look into the matter" but there were few follow up resolutions, no statistics, no quality measurement reported, and no clinical discussions.

UTMB CMC again indicated that part of their tracking and reporting system is impeded by the lack of computerized enrollment data from BOP. They acknowledged that this information was available but they declined to pay the service fee the BOP needed to provide this information. We note, in passing, that the practice of charging the BOP's partner for an essential service is counterproductive.

The BOP's Performance Improvement Plan is more decentralized than that of UTMB CMC. Specifically the BOP requires that all facilities have a designated IOP Plan. The Health Services Administrator (HSA) is required to develop a committee or quality council to "systematically assess the IOP at that institution." This committee must be interdisciplinary and must act to improve the performance of the institution. [56] All new HSAs are orientated to the system and there are yearly BOP training programs offered to health services staff to assist them in the development and implementation of their IOP program.

The BOP Office of Quality Management has developed and implemented a set of process, structure, and outcome measures that are collected and analyzed by all BOP Health Units that include:

- Diabetic retinal examination compliance (process)
- HIV counseling being performed (process)
- Medication errors (process)
- Diabetic patients with HbA1c at 7.5 or less (outcome)
- Blood Pressure Control - hypertensive patients with Blood Pressure of 135/80 or less at each clinic visit (outcome)
- Mid-level provider certification (structure)

[55] UTMB CMC management John Allen, Pete Donzello, Steve Alderman. November 18, 1999
[56] Federal Bureau of Prisons PS 6000.05Chapter XII September 15, 1996.

More interesting than these system-wide indicators is the fact that the BOP is just starting to share information and success stories on a regional basis. This practice should be commended and more of this type of sharing and lauding of success stories as well as sharing issues for improvement should continue within the BOP.

FCC Florence FCI was exemplary in that it includes all disciplines in its IOP meetings and also includes budget topics. The minutes of their meetings for a period of 6 months prior to the visit reflected follow up of issues, ongoing monitoring and marked improvement.

FCC Florence USP focuses predominately on Quality Assurance audits and compliance with technical aspects of documentation and record keeping rather than IOP.

FCC Allenwood Camp has a practical IOP program. It is not sophisticated in its use of terminology but discussions with staff and a review of the program indicates that the staff is actively improving systems and processes based upon assessed needs. The staff is actively engaged in streamlining, increasing efficiency and reducing risk. Unfortunately, they have not documented one important change that was a result of true IOP – the use of blister packs for medication administration. Due to a concern voiced by the health services staff over the risk of medication errors in dispensing medication from a card/cup (pour) system, the facility changed to a process whereby the Pharmacist packages medications for each inmate on a monthly basis. The result is that:

- the staff reduces the possibility of medication error during medication distribution;
- they are able to rapidly check for inmate compliance; and
- the time for medication distribution is reduced, leaving staff with time for more inmate interaction.

The staff and pharmacist are pleased with the result, there have been no medication variances and there is increased surveillance regarding inmate medication compliance.

Allenwood Low has focused mainly on inmate and staff satisfaction. They found that with a 60% Hispanic population only 30% were satisfied with their care despite the fact that they have a large number of bilingual staff. The health services staff worked diligently to increase their communication skills with inmates re: treatment and options and had increased the inmate satisfaction to 70-80% for this population in a later survey.

FCC Allenwood Medium has had a Consult Committee (Utilization Review Process) since February 1999 as an IOP initiative. All referrals are reviewed by an internal team consisting of the Clinical Director, HSA and PA. Approximately 30 cases are presented weekly by the referring practitioner. Cases are given a priority or denied on a case-by-case basis. No written guidelines are used in this review process. A rating system assigns one of four priority levels to consultations. Level I is seen within 30 days; Level II is seen within 60 days (need to be done but not urgent), Level III is done within 90

days. Level IV does not need to be seen at the present time. The HSA asserts that this system of reviews has saved the institution $100,000 since its inception 1 year ago. (Note that no dollar figures were available for review relative to this change, this is a self-report by the HSA. However, the following statistics support this contention.)

There were a total of 264 Total External Trips in FY 98 compared to only 162 Total External Trips during the 12 month period extending from February 1999 to January 2000 (manual count performed at facility). During this period a total of 99 telemedicine consults were obtained (almost an EXACT replication of prior year statistics BUT using telemedicine in place of external trips). Thus, saving the cost of inmate transport for this period.

22. Telemedicine Usage

Telemedicine is the provision of health care services using interactive telecommunications technology. The use of telemedicine in correctional facilities is one that has gained a great deal of support in its early stages.[57] Studies citing exceptional cost savings and improved access to specialists fill the literature and have driven the majority of state Departments of Correction to implement or at least consider the use of this technology. The intensive use of telemedicine at UTMB CMC was at least in part a reason for their selection as the contractor in this demonstration project.

What can the BOP learn from the UTMB CMC experience with telemedicine at FCC Beaumont? One interesting lesson is the fact that UTMB CMC Directors contend that they are "just breaking even" with the current system, and may, in fact, be losing money with the use of this modality.[58] The UTMB CMC CEO stated that telemedicine was "barely breaking even," and thus they were moving away from its utilization as a solo technological entity. However, the UTMB CMC CEO did not elaborate as to reason for the absence of cost savings. The UTMB CMC CEO described Cyb-R Care (an integrated electronic medical record and telemedicine project due to 'go live' mid-December 1999) as a broader-based, more effective alternative to Telemedicine. This is in contrast to earlier published reports in which UTMB reported that telemedicine was a cost-effective and efficient means of providing care. It was reported that the cost of a telemedicine encounter with high-volume use would range from $40 to $70 per consultation. Current figures could not be made available from UTMB CMC.[59]

These statements provide a contrast to the earlier reports of cost-savings associated with the use of telemedicine in a corrections environment. A more recent report by the Medical College of Virginia in association with the Powhatan Correctional Center of the

[57] Mekhjian, H., Warisse, J, Gailiun, M., and McCain, T. November 1, 1996. "An Ohio Telemedicine System for Prison Inmates: A Case Report.: Telemedicine Journal 2(1),17-24

[58] Presentation by UTMB CMC management John Allen, Pete Donzello, Steve Alderman.

[59] Brecht, R.M., Gray, C, Peterson, C., and Youngblood, B. November 1, 1996. "The University of Texas Medical Branch – Texas Department of Criminal Justice Telemedicine Project: Findings from the First Year of Operation. Telemedicine Journal, 2(1), 25-35

Virginia Department of Corrections found that the cost savings per telemedicine encounter was only $14 ($401 for onsite treatment and $387 for telemedicine).[60] A follow-up analysis of the Ohio Prison Telemedicine program demonstrated a cost-savings per consult of only $8.48 per consult. Telemedicine usage at FCC Beaumont among all facilities averaged 82.75 encounters per month. This is a usage rate of 15.43 per 1000 inmates.

Table 15. Telemedicine Encounters FCC Beaumont

Oct-98	84
Nov-98	66
Dec-98	105
Jan-99	107
Feb-99	91
Mar-99	86
Apr-99	67
May-99	85
Jun-99*	93
Jul-99*	67
Aug-99*	58
Sep-99*	84
Average # per month	82.75

* includes the addition of Medium Security Facility to USP, Camp and low facilities in prior months

Another interesting statistic is the frequency of face to face encounters following a telemedicine encounter. Figures supplied by UTMB CMC for FCC Beaumont revealed an average of 29.87% of the patients seen by telemedicine were referred for an outside consult. This encompassed a monthly range of 18.95% to 52.00%.

Table 16. FCC Beaumont Inmates Sent Offsite – Total v. Post Telemedicine

	Location of Offsite Visit		Total # of Inmates sent offsite	patients referred offsite after telemedicine appointment	
	UTMB Galveston	Local Hospitals		# of inmates	% of inmates
Oct-98	33	12	45	24	28.92%
Nov-98	44	10	54	26	52.00%
Dec-98	38	14	52	15	21.43%
Jan-99	43	16	59	32	27.59%
Feb-99	47	14	61	18	18.95%
Mar-99	33	16	49	24	24.24%
Apr-99	46	5	51	22	29.33%
May-99	55	14	69	35	37.63%
Jun-99*	48	34	82	21	24.42%
Jul-99*	69	14	83	18	25.35%
Aug-99*	76	14	90	27	42.19%
Sep-99*	93	19	112	18	20.22%

[60] McCue, MJ., Mazmanian, P. et.al. November 4, 1998. "Cost-Minimization Analysis: A Follow-Up Study of a Telemedicine Program." Telemedicine Journal 4(4), 323-327.

Often the basic logic of the cost calculations used to support the use of telemedicine leads to overstate the potential cost savings attributable to this technology. The BOP Telemedicine Needs Assessment template is one such example. This worksheet deducts all costs associated with external providers. These costs are deemed "saved" through the use of telemedicine despite the fact that consultants will charge *at least some* fee for their services whether performed in person or via video communication. In general, security costs represent the primary source of genuine cost savings attributable to telemedicine.

One of the goals of this project, and a key projected cost-savings, was the proposed use of telemedicine for triage on off hours (nights and weekends), a modality that was not in evidence while we were at FCC Beaumont. This is a potential cost-savings for the BOP and could be explored for its utility.

Another key difference from the initial program stages and that of the current operations was the current use of LVNs as presenters as opposed to PAs in the initial stages of this project. While the use of LVNs as presenters does reduce costs there is a fine line between useful hands-on physical examinations that could be conducted and reports of findings via telemedicine by a PA versus that of an LVN.

A study of an internal telemedicine demonstration project by the BOP at three (3) facilities reported that telemedicine was considered by physicians at the BOP an effective substitute for hands-on consultations and that 35 trips to local specialists were avoided through the use of telemedicine during this pilot project. Further, they contend that with approximately 100 encounters per month the initial cost of the system would be recovered in approximately 15 months with a monthly savings of approximately $14,200 after that time.[61] But the authors of this report caution that it must be remembered that the cost savings associated with telemedicine are only applicable when trips are actually prevented (i.e., specialty providers will not come to an institution to see inmates in a clinic at the facility and the inmate would have been seen by a consultant in any event), and the fact that the primary cost savings refer to savings in overtime security costs.

We had the opportunity to see two Telemedicine demonstrations, with the permission of the inmates involved at FCC Beaumont and FCC Allenwood. One was made at FCC Beaumont during an inmate's clinical visit with an Orthopedic Specialist. This observation was most interesting since it actually demonstrated some of the inherent difficulties with this technology. The inmate was 18 months post surgery for an Anterior Cruciate Ligament Repair. The inmate reported some joint discomfort to the Orthopedist after exercising on the Stairmaster and upon awakening. The Orthopedist scheduled an onsite consultation in Galveston for follow-up. This interaction illustrated the inherent weakness in telemedicine – it is no substitute for hands-on examination, even when practitioners such as this Orthopedist who use telemedicine daily are involved. The claim of telemedicine is that it avoids inmate transport to the remote provider. This case

[61] June 16, 1998. McDondald, D. et. al. Telemedicine Can Reduce Spending for Prisoner Healthcare An Evaluation of a Prison Telemedicine Network. Abt Associates, Cambridge, MA.

illustrated the exact opposite – it actually consumed more resources than if the inmate had been taken to the Orthopedist in the first place.

Although we can only speculate, one lesson that may be gleaned from this demonstration is that if the Orthopedist had the services of a skilled practitioner (such as a Physician Assistant or a Nurse Practitioner) to assist him by providing a remote (in-facility) physical examination, this trip may have been avoided. Unfortunately, the onsite system at Beaumont was not staffed in this manner.

The psychiatric consultation telemedicine demonstration at FCC Allenwood was more successful for this very reason. The inmate case was initially presented by the Physician Assistant to the consulting Psychiatrist. The Psychiatrist then had the opportunity to discuss medication options with the inmate to the stated satisfaction of the inmate. A brief interview with the inmate following this telemedicine encounter elicited very positive comments from the inmate who felt that this session was useful and gave him access to a psychiatrist who was working to help him with his depression.

Denial rate for telemedicine by UTMB CMC Utilization Review was reported as less than 2%.[62] This low denial rate by UR suggests either that on-site health care providers are effectively policing themselves or that the referral criteria used by UR are not very stringent.

The BOP began its telemedicine initiative in 1996. This video conferencing project goals included reducing costs, improving access to medically necessary resources, and enhancing security while delivering quality medical care to the inmate population. The BOP credits this initiative to reducing costs in guard escort services (per capita costs of $286 in FY 96 and $199 in FY 98.)[63]

In contrast to the rest of the complex, Allenwood Camp does not use telemedicine extensively since the staff believes that they have excellent contacts with local (community) providers. The HSA at the Camp asserts that it is more cost-efficient since they can send inmates out for clinical consultations offsite without guards much of the time since community release inmates are able to accompany other inmates on physician trips. The HSA estimates that he has used only $18,000 in the past year for guard services for this reason.

23. Evolution of BOP Health Services and UTMB CMC Services

One significant change in staffing that should be noted at FCC Beaumont is the elimination of the Nurse Practitioner positions by UTMB CMC after they received JCAHO accreditation in 1997. JCAHO complimented UTMB CMC for employing more NPs to perform many of the functions typically done by Physician Assistants (PAs) at

[62] UTMB CMC management John Allen, Pete Donzello, Steve Alderman. November 18, 1999
[63] GAO Exit Conference Materials for BOP Health Care Costs.

BOP facilities. As of October 1999, no NPs were employed by UTMB, thus effectively eliminating this perceived advantage.

During the course of this study other significant policy changes have taken place at FCC Beaumont Health Service Units. Extensive discussion with the Utilization Review (UR) Coordinator confirmed a recent shift in inmate specialty care to local hospitals away from UTMB CMC Galveston and Telemedicine. The UR Coordinator stated that UTMB CMC had understood that the shift to the increased use of local hospitals was at the express desire of the BOP to reduce inmate transport to UTMB Galveston. In fact, the BOP has found it difficult to obtain enough personnel to transport inmates to UTMB Galveston at the frequency requested by consulting physicians at UTMB CMC. However, according to the onsite BOP Contract Monitor, it was not the intent of the BOP to entirely substitute local care for either UTMB CMC telemedicine or UTMB Galveston on-site care, but rather to encourage a more judicious use of local hospitals.

The question was asked as to why telemedicine was not used as an initial screening device to determine whether or not an inmate required hands-on care by a specialist at a local hospital. In other words, why not use telemedicine as a form of triage or perhaps a one-time specialty encounter and thereby save a trip outside the institution altogether? The UR Coordinator at UTMB CMC responded that this "was not fair" to the specialist at UTMB CMC since the specialist would have developed a rapport with the patient once a telemedicine interview had been conducted. This response was confusing. The only way we can conceive that such an encounter would not "be fair" would be if the specialist lost income due to a referral of this patient to a local provider after an initial work-up by the UTMB CMC specialist through telemedicine. Further questioning regarding the payment method to specialists yielded the response that specialists were capitated in terms of inmate enrollment. Although the exact cost implications of this capitation arrangement are unclear, it would appear that specialists at UTMB CMC are paid differently when the referrals actually occur rather than when only telemedicine visits are conducted.

24. Clinical Protocols

Clinical protocols are standardized templates for practice that allow non-physician health care providers to diagnose and treat health conditions without the intervention of a physician in specific circumstances. Generally, over the counter (OTC) medication such as antacids, acetaminophen, anti-fungal foot powders or topical hydrocortisone medications are used to treat these common conditions. However, at times prescription medications, such as inhaled bronchodilators for the treatment of acute asthma or antibiotics, are included in these protocols. Clinical protocols are time and cost saving mechanisms used throughout the health care industry to enable more highly trained practitioners to focus their efforts on patients that require their interventions.

A review of the clinical protocols used by Mid-Level Practitioners (MLPs) such as a Nurse Practitioner or Physician Assistant at the BOP and UTMB CMC reveals few

fundamental differences. The protocols for MLPs at UTMB CMC have blank spaces for recommended medications allowing flexibility for changes in current practices (state-of-the-art and cost effective medications), a variable element that may have utility for the BOP.

However, there are some striking differences between the clinical protocols used by "nurses" at the BOP and UTMB CMC at Beaumont. One of the key elements in the UTMB CMC system is the consistent effort to "drive-down" tasks to the lowest cost employee. The consequence of this action is that these tasks are often relegated to the least skilled employee.

Within the UTMB CMC system, the term "nurse" refers to both a Registered Nurse (RN) and a Licensed Vocational Nurse (LVN). While both are licensed, there are key training and practice differences between the two levels of nurses as discussed in Section 26. The BOP vests the responsibility for implementing nursing protocols with RNs whereas UTMB CMC relies on LVNs to carry out this treatment plan. While UTMB CMC states that the LVN is responsible for "recognizing and reporting," these protocols call for the use of physical assessment skills and differential diagnosis based upon these findings. For example, in the clinical protocol on diarrhea, abdominal auscultation and palpation are specifically required to elicit specific findings. It can be argued that the LVN is merely assessing the inmate for abnormal findings, but they are then required to determine that their findings are consistent with common diarrhea and not a more significant condition (such as a bowel obstruction).

There are further clinically significant differences in the parameters used for referral to a MLP or physician in the nursing protocols at the BOP and UTMB CMC as shown in Table 17 below. This decision to refer the inmate to a more skilled practitioner is called a 'gatekeeper' function: meaning that the RN or LVN maintains control over access to the more highly trained provider.

Table 17. Referral Parameters Based Upon Diarrhea Protocols

	BOP	UTMB CMC
Temperature	>99	>101
Diarrhea Symptoms	>24 hours	>72 hours
Abdominal pain	presence of pain	severe abdominal pain in the last 24 hours
Blood in stool	yes	yes
Weight change	>5% of body wt.	not measured

25. General Impressions

FCC Florence FCI:
During this review, we were impressed with the proactive method adopted by the health staff to implement new processes that addressed issues identified by the staff as a part of

their Improving Organizational Performance (IOP) program. There is evidence that the health services staff has taken steps to improve efficiency and effectiveness. Specifically, the inmates' medical records demonstrated continuous improvement –particularly in terms of chronic care inmates. The documentation found in the records reviewed was complete and well-organized due to the implementation of their new flow sheets. The documentation was, in fact, better than that which is commonly seen in among health care providers working with the general public (i.e., private physician offices.) The staff works well as a team. They are supportive of one another and have good communication. For example, there was no written sniping among the staff in the medical records and our observations of interpersonal interactions were very positive and pleasant even in an urgent care situation. The staff was cost conscious and has implemented initiatives to reduce external health care costs that appear to be effective and appropriate in a brief review. The staff was also capable of handing many urgent care situations, holding inmates for observation rather than sending them out for evaluation to the local Emergency Room. The question must be asked whether these changes are physician-specific given the background of the current providers, or whether this approach has had sufficient time to become part of the local culture, i.e., whether or not FCC Florence will continue to be able to maintain inmates onsite and thus reducing costs of offsite urgent care transport.

The level of staff clinical expertise and their confidence in their ability to successfully care for acute and chronic complex patients at the FCC Florence FCI and Camp was exceptional. From the medical records and programs implemented at these facilities it would appear that their confidence was well founded.

The Florence USP was observed to have fractious staff interactions with a strong union influence.

FCC Allenwood Health Services:

There are no 24-hour observation capabilities at this facility, so anyone requiring observation longer than a few hours is sent out of the institution. Their transfer rate to local EDs was 7.94 per 1000 inmates compared to 3.35 at FCC Florence and 3.32 at FCC Beaumont.

This medium security facility uses a rubberstamp reading "Patient education and instruction given and patient verbalizes understanding about (*blank space left to insert specifics.)*" Use of this stamp provided excellent documentation regarding patient education, specifying the area(s) of education and comprehension in the medical records reviewed.

At Allenwood Camp, one inmate record reviewed raised a question of resource use by the BOP. The inmate in question was an asthmatic who has had multiple ER visits, 3 bursts of Prednisone and numerous acute asthma attacks due to the cold weather. The HSA has been attempting to transfer this individual out of this facility to one in a warmer climate

for more than six months without success because he has been refused by other institutions. (He has been redesignated 3 times to other facilities but was rejected twice.) The inmate is clinically unstable due to the extreme cold and uses a CPAP machine for sleep apnea. This decentralized system that enables individual institutions to reject inmates (possibly as being too costly) is one that may require additional study by the Bureau although we do not know the extent of this issue.

The staff and inmates at this institution appear to discourse freely; and the inmates seem able to ask the MD and PAs questions without fear of "sanction". A positive "can do" attitude was evident throughout the unit during a casual observation of staff. Further, there was a sense of collegiality that was unaffected (MD pulling charts and staff asking each other questions; Pharmacist, MD and PA discussing a case –confidentially out of range of inmates hearing etc.).

FCC Beaumont Health Services:

There was a greater hierarchical division observed among the staff at FCC Beaumont, one more in keeping with a traditional medical model. For example, the results of MLP or physician Quality Assurance reviews were not discussed with line staff. The staff appeared pleasant to one another, but tended generally to avoid the reviewers and asked if their annual bonuses were going to be taken away as a result of this review. One incident which took place during the course of our onsite review at FCC Beaumont left a poor impression of the staff's attitude towards the inmates. An inmate who claimed to have an appointment at the health clinic was denied access. The inmate was upset about being turned away from the clinic and argued about his case with the staff. He then spoke to the review team and asked if we were from "Central Office." The inmate proceeded to explain that he was angry about his treatment by the health services staff and said that they had threatened to "send him to the hole" if he didn't leave. When the Head Nurse was questioned, she verified his statement and confirmed that the inmate did indeed have an appointment that the staff had overlooked. This type of interaction can have a chilling effect on the willingness of inmates to seek care. This is particularly problematic in a system that must rely on inmates to return for care on their own volition whenever they feel symptoms have worsened.[64]

26. Staff Training and Scope of Practice

It is clear that UTMB CMC uses far more low level practitioners (LVNs and Health Technicians) per inmate than does the BOP. It also uses more Medical Records Techs and Health Info Tech than does the Bureau. Nevertheless, there is a tradeoff: UTMB CMC uses substantially fewer high and mid-level practitioners (MDs, Dentists, Physician's Assistants, and RNs) per inmate than does the BOP. In other words, UTMB CMC has substituted LVNs and EMTs for staff with greater clinical expertise.

[64] The need for inmates to self report symptoms is a reality of any ambulatory care system and is not the structure of the delivery system unique to FCC Beaumont.

Defining the limits of the scope of practice for health care workers is both an external regulatory function (generally provided by State Licensing Boards) and an internal institutional interpretation of the rules set forth by external regulators. One area that often creates a great deal of discussion is that of "supervision". Often, the term supervision is used as a means of 'pushing the envelope' of the skills and practice limits of a less skilled category of workers. This is accomplished by writing internal policies that authorize a vague ideal of supervision (read oversight) for less skilled workers by more highly skilled ones (i.e., the supervision of a Physician's Assistant by a Physician or the supervision of a Licensed Vocational Nurse (LVN) by a Registered Nurse (RN) for certain procedures). Sometimes the supervision is implied by the presence or the 'availability' of the more highly trained professional to the less proficient staff member.

However, it is often not clear what such supervision means, and whether it requires the physical presence of the supervisor. In general, supervision may be mandated at one or more "intensity" levels. These levels may include:

> Low-level supervision: predominantly retrospective in nature, involving informal data gathering; generally performed by a manager based on reports, occasional document review, and discussions with others. Most employees in a health care organization are subject to this type of supervision. The reporting frequency is annual, usually in the form of a performance review.
>
> Moderate-level supervision: retrospective or concurrent in nature, involving formal and informal data-gathering, periodic reports from the institution's performance improvement process, and annual or biannual reappraisal or performance evaluation. Physicians on the medical staff of a health care institution are usually subject to this level of supervision. Reporting frequency is biannual, with routine reports of performance improvement activities considered throughout the year.
>
> Maximum-level supervision: mostly concurrent, some retrospective; is often protocol-based. Physician Assistants, some Nurse Practitioners, LVNs and LPNs (Licensed Practical Nurses) are mostly subject to this type of supervision. Reporting frequency is designated in a job description, scope of practice or privileges.[65]

By policy, at FCC Beaumont Physician Assistants (PAs) provide care "under direct supervision and responsibility of a physician"[66] Yet, there is no such requirement for RNs or LVNs (including LVNs practicing under the supervision of an RN) at UTMB CMC. The US Department of Labor Employment Standards Administration Wage Hour Division in its directory of Occupations defines the duties and responsibilities of

[65] Greeley, H., July 28, 2000. Credentialing Connection @ www.credentialinfo.com
[66] UTMB Job Description Physician Assistant Creation Date 3/1/90, revision date 6/1/94. This document was produced when the UTMB CMC staff was asked for the position description for PAs.

Licensed Practical Nurses[67] from Level I (lowest) to Level III (highest). Those functions appear below.

> LVN I is :licensed to provide practical or vocational nursing to patients in hospitals, nursing homes, clinics, health units, and community health organizations. They typically work under the supervision of a registered nurse or physician, and may supervise unlicensed personnel.
>
> LVN III : provide(s) nursing care for patients in various stages of dependency, setting priorities and deadlines for patient care as necessary prior to notifying the supervisor.[68]

The UTMB CMC system is designed to vest responsibility in the first line contact, a common occurrence in all managed care systems. It is an approach designed to reduce costs by having the less costly provider serve as a gatekeeper for access to more highly trained health care providers. The BOP utilizes a similar system in which MLPs and RNs serve as gatekeepers to physicians.

The critical question at FCC Beaumont is whether the level of authority for clinical practice vested in the Licensed Vocational Nurses (LVNs) is one that should be replicated in the BOP. LVN staff costs far less than MLP or RN staff. LVNs are generally in greater supply than MLPs and RNs and therefore easier to recruit. LVNs and Licensed Practical Nurses (LPNs) are being afforded a greater scope of practice in many states due to the worsening professional nursing shortage in the United States. Indeed, there is no prohibition by the Texas Board of Nursing[69] for an expanded role as long as the staff member has been trained and there exists supervision and back-up for any questions the individual LVN has in implementing protocols. No co-signature of an MD, MLP or RN is required for the LVN to treat an inmate. Additionally, LVNs can receive verbal orders from a MLP or physician in Texas in a medically underserved area such as Beaumont.[70]

All managed care clinical nursing protocols for the treatment of inmates by UTMB CMC state:

> If, based upon your collection of the above data, a Registered Nurse's professional judgment is required or if you have any questions how to proceed, you must consult with a Registered Nurse while the patient is still onsite.[71]

[67] This is simply a nomenclature difference in the State of Texas.
[68] www.dol.gov/dol/esa/public/regs/complianceUS Department of Labor Employment of Labor Employment Standards Administration Wage Hour Division. Service Contract Act Directory of Occupations.
[69] This fact was verified by the Texas State Board of Nursing in correspondence dated April 9, 1998 from Marjorie A. Bronk, RN, MSHP Executive Director of the Texas Board of Vocational Nurse Examiners.
[70] Ibid.
[71] June 15, 1998. UTMB CMC Managed Care Assessment Protocols. Signed by Charles D. Adams, M.D., Regional Medical Director, UTMB Managed Care.

It should be noted that the RN does not have to be onsite but simply on duty.[72]

The question becomes not if this is legal within the State of Texas but whether this skill mix is appropriate. It is often difficult to know what you don't know. The level of training and structured knowledge base of LVNs may not be sufficient to ensure that adequate care is being provided. LVNs are largely considered by the nursing profession as technical workers, whereas RNs are the professional nurses who have the ability to sort through complex situations and perform critical thinking and analysis. To date, there are no studies that have documented the effects of LVN/RN skill mix on patient outcomes in the outpatient clinical setting. However, we do have literature that supports a higher RN skill mix to lower the incidence of adverse occurrences on inpatient care units.[73] Thus, the reliance on a heavily weighted LVN staff mix must be called into question as to their ability to maintain high quality care.

Further, there exists a natural tension between perceived professionalism and the ability of the LVN to obtain the advice that may be required; specifically, all health providers take professional pride in what they do and their expertise. Calling upon another provider can easily be seen as a sign of personal weakness or even incompetence in one's assigned role. The structure of the UTMB CMC managed care system is such that an LVN who constantly checks their assessments and differential diagnoses with an RN or who refers too many patients to an MLP or physician would be seen as not doing their job well.

The process for training LVNs and RNs in the use of these managed care protocols consists of the successful completion of a UTMB CMC-developed Patient Interviewing and Examination or "P.I.E." course. According to both Sallie Brown, Director of Nursing, and Eddy Chastain, Regional Director of Nursing, staff orientation and verification of core staff competencies (i.e., proof of staff members' ability to implement relevant protocols and perform various technical and assessment skills) consists of the LVN or RN completing a self-assessment of skills according to the written guidelines. This self-assessment forms the basis of the orientation with a preceptor. The preceptor can be either an LVN or an RN. Of concern is the fact that there is no special training for a preceptor –he or she is simply a more experienced staff member.[74] A new staff member completes a probationary period from 3-5 months depending upon the staff member's needs. The assessment of these needs is evidently a flexible issue depending upon the staff member's perception of their abilities and the staffing needs of the unit. According to staff the actual *demonstration* of competency in all areas was not required prior to the individual becoming a regular part of the staffing pattern. When pressed regarding the

[72] Telephone conversation with Cleanthe Russo, RN, UTMB CMC Nursing Coordinator.
[73] When patient outcomes such as medication errors, patient falls, pressure ulcers, and nosocomial infections and patient/family complaints were examined it was found that the proportion of RN care hours delivered was inversely related to adverse patient outcomes. These effects were found up to a staffing mix of 87.5% RN staff. Blegen, M., Goode, C. and Reed, L.(1998) "Nurse Staffing and Patient Outcomes." Nursing Research 47:1, 43-49.
[74] According to both Sallie Brown, RN, Director of Nursing, and Eddy Chastain Regional Director of Nursing

actual time a new staff member spends in orientation, the response was that the time frame varies according to the staffing needs of the unit.[75] This process is not in violation of UTMB CMC policy that does not specify the minimum orientation time for new employees.

When questioned, both the Head Nurse of the Low Facility and the Regional Director acknowledged that LVNs are not required to confer with an RN before implementing protocols or caring for inmates. The supervision default is that an RN is available in the facility and can be questioned if the LVN feels that he or she requires assistance.

"Core Competencies " is the term used by UTMB CMC as verifying that a nurse has the "basic knowledge, skills, and abilities to perform assigned job responsibilities."[76] The primary difference between the clinical competencies that must be demonstrated by RNs and LVNs is that the RN is to display the ability to "assess and document" and the LVN "recognizes and reports" findings. Reporting in this case generally consists of documenting in the patient medical record, not a supervisory level of reporting whereby a more skilled practitioner makes a final professional clinical judgment. We could elicit no written UTMB CMC requirement for the LVN to report findings to a more highly skilled health provider in any of the protocols for the LVN or the RN unless they believe they need assistance. Indeed both the RN and LVN are expected to "recognize abnormal findings and initiate interventions using protocols".[77] RNs do appropriately have an expanded scope of practice incorporating unit management, system functioning and expanded responsibility for patient education over the LVN.

An example of the concerns regarding the LVN scope of practice allowed by UTMB CMC occurred at the Beaumont USP. The LVN noted "brownish" emesis (vomit) on observation but she failed to perform what would be standard practice for an RN.[78] No documentation other than LVN notes were found until a decision was made to transport the inmate more than 24 hours later to local the Emergency Department. The inmate was found to have a Mallory Weiss Tear which was successfully repaired but which had serious potential for inmate morbidity or mortality.

Another inmate at Beaumont (Medium FCI) presented with an episode of apparent hypoglycemia (low blood sugar). Prior to this episode his IDDM was in poor control as evidenced by blood glucose readings ranging from 75 mg/dL to 313 mg/dL (normal range 70-110). His self-monitoring blood glucose log was equally variable over a period of months. At the time of his presentation for hypoglycemia, he was treated with a standard high concentration of intravenous dextrose (D50) and advised on eating habits with exercise. These symptoms are not an uncommon occurrence but they are interesting

[75] Ibid.
[76] FCC Beaumont Procedure Manual Effective 7/11/97, revised 2/2/99. Competence Assessment and Evaluation Procedure Number 4-12.
[77] UTMB CMC Competency Based Orientation Basic Competencies Checklists.
[78] For example, no test for occult blood was performed and no orthostatic Blood Pressure checks were done. More than 2000 cc emesis occurred during a 24 hr observation. No BP checks recorded but an IV of Lactated Ringers was started. The inmate complained of Left Lower Quadrant abdominal and epigastric pain.

in light of the fact that no documented prior education regarding this topic was performed and the fact that there was no documentation that the inmate was seen by a physician during his time at Beaumont.

At UTMB CMC 10% of all PA charts were signed off by MDs and it was "assumed" that this meant that the orders and care were reviewed and that any variances were reported.[79]

One of the primary questions asked in this study was: "Is the FCC Beaumont experience capable of replication by the BOP in other situations." The answer relative to the extensive use of LVNs is probably not. In Wisconsin for example, the Nurse Practice Act defines the practice of Practical Nursing as:

> the performance for compensation of any simple acts in the care of convalescent, subacute or chronically ill, injured or infirm persons, or any act or procedure in the care of the more acutely ill, injured or infirm under the specific direction of a nurse, physician, podiatrist…A simple act is one which does not require any substantial nursing skill, knowledge or training, or the application of nursing principles based on biological, physical or social sciences, or the understanding of cause and effect in such acts and is one which is of a nature of those approved by the board for the curriculum of schools for licensed practical nurses.[80]

Does an RN staffing mix cost more? Yes and no. RN salaries are undoubtedly higher than that of LVNs. With the current RN shortage throughout the nation they may be more difficult to recruit. However, RNs have been found to be more productive than LVNs, when productivity is defined as the percentage of time spent in direct care, indirect care and unit-related activities.[81] RNs require less direct supervision and have the training to practice in an independent manner. Thus RNs are less costly in terms ofpractice.

27. Healthcare Staffing Models

Staffing is the major issue at FCC Florence USP. Nine (9) positions are budgeted with one permanently vacant since 1995. Two other PA positions were also unfilled. Only one PA is licensed. Given the internal BOP policy that defines PAs as Independent Practitioner and the fact that they have a credentialing process that requires license verification for all Independent Practitioners this is contradictory. There is only one MD covering both the Penitentiary *and* the ADMAX . He is an orthopedic surgeon and is split between the facilities. The MD is available mainly for triage, emergent patients and must, of necessity, spend the majority of time signing off on charts from PAs. The Union

[79] Interview with Dr. Charles Adams on November 18, 1999 in his role as UTMB CMC Regional Medical Director.
[80] State of Wisconsin Nurse Practice Act Chapter 441 Board of Nursing. 441.11(3).
[81] Minyard, K., Wall, J., Turner, R. (1986) RNs may cost less than you think. Journal of Nursing Administration, 16(5), 28-34.

is extremely strong in this facility. This is confirmed by the Asst. Health Services Admin, the AW and the Warden. The union controls staff assignments and rotations – the impact on inmate care is that the one position that they would like to stabilize (that of chronic care) is the one that is the most controversial since it is a M-F day shift position; currently rotated through every 3 months; administration would like a one year or permanent rotation.

At FCC Beaumont, the Regional Director of Nursing, stated that current staff turnover in the facilities at Beaumont has dropped from 33% to "about 15%". The UTMB CMC system-wide average is at 31%.

We reviewed credential files for 42 medical staff (not RNs or LVNs). Of these, 13 files did not contain proof of current licenses (but all 13 did contain proof of expired licenses). Some staff with no proof of a current license may no longer work at Beaumont. The licenses of the 4 main PAs were up to date. However, we were not able to establish from available records that they were each supervised by an MD working on-site in the Beaumont clinic facilities.

Dr. Adams stated that he has set as a standard 20-25 visits per day by MDs and Mid Level Practitioners. This is less than the number reported to be seen at the BOP facilities where MLPs and MDs see about 20 inmates in sick call and then see an additional 10-15 patients in chronic care clinics or follow-up visits. Dr. Adams reported that turnover from the physician and Mid Level Practitioner Staff was low with only one MLP and one physician leaving FCC Beaumont in FY 99.

USP Allenwood has no coverage for their Clinical Director. Thus, when he was on vacation in December, there was no physician covering his practice at the facility. According to the HSA there were no specific issues that arose during this time but the PA was forced to send inmates out of the USP for evaluation – thus engendering increased costs and security issues. At FCC Allenwood USP the Clinical Director is 70 years old and credentialed as a Category 1. This is a level of privileges defined in BOP materials as able to treat: "Non-complicated illnesses without serious threat to life. MD will request consultation in the local community or BOP." The Clinical Director does indeed send out complex cases for local provider evaluation as well as seek telemedicine and local consults as necessary.

Periodic contract specialists are used on an as needed basis. These consultants include:

- Pharmacy technicians;
- Audiologists;
- Psychiatrists;
- Optometrists;
- Podiatrists;
- Radiology technicians;
- Dieticians;
- Laboratory Technicians;

A detailed comparison of healthcare costs should examine the actual number staff used both at Beaumont and at directly comparable BOP facilities. Table 18 indicates the differences in healthcare staffing patterns at the three complexes visited.

Several technical comments are necessary to explain the calculations in this table. Table 18 indicates the staff positions filled at each of the three prison complexes and calculates the expected cost of these individuals in two ways. The specific staffing data (i.e., full time equivalents or FTEs) used were provided directly by the institutions during FY 2000. The staff reported at BOP facilities included both BOP and Public Health Services (PHS) staff.

The cost of BOP staff is computed using the typical GS rank for the position. The salary assigned to each position is taken from Step 5 for the relevant grade as listed in the "Rest of the US" pay scale for Federal law enforcement personnel for 1999 as per instructions for law enforcement personnel in OMB circular A-76. Staff benefits are calculated as 46.95% of salary.

The cost of UTMB CMC staff is computed first by using the same pay scale used for civil service staff and then by using the UTMB CMC pay scale in effect through September 1999. For the UTMB CMC pay scale, the full cost of each FTE is estimated by (i) using the average FY 1999 salary for each job description (i.e., the midpoint between upper and lower salary limits for each job description); and (ii) by assuming that all employees have the average benefit rate of 24 percent. For those positions with no *official* average salary (i.e., for those positions with no "upper limit" on salary levels), one was estimated by assuming that average compensation was roughly the same proportion of base compensation for *all* job categories. Specifically, since most official average salary rates were about 31 percent higher than base salary rates for the relevant job categories, we used this markup to estimate average salaries where necessary.

Per diem staffing costs were computed using the average daily population (ADP) for December 1999. This period was chosen as representative of the period during which the staffing data were obtained. This ADP choice also allowed us to account for the growth in the Beaumont inmate population during FY 1999 and early FY 2000. Although the ADP at Beaumont grew from 3366 in October 1998 to 4907 in September 1999 and 5361 in December 1999, the healthcare staffing did not increase at the same rate. We therefore assumed that year-end healthcare staffing was appropriate to the year-end inmate population and computed inmate-to-staff ratios on this basis.

With these staffing patterns and the dual approach to calculating staff costs, it is possible to identify the differences in staffing philosophy and to examine their cost implications.

Table 18: Staffing Comparisons

	GS Rank	BOP Pay Scale	UTMB CMC Pay Scale	*Florence* FTEs	*Florence* BOP Cost	*Allenwood* FTEs	*Allenwood* BOP Cost	*Beaumont* FTEs	*Beaumont* BOP Cost	*Beaumont* UTMB Cost
Program Director P. T.	13	$94,847	$121,830					1	$9,485	$12,183
Sr. Practice Manager	13	$94,847	$74,028		$0		$0	1	$94,847	$74,028
HSA/Faci Nurse Mgr.	12	$79,760	$74,028	2	$159,520	3	$239,280	1	$79,760	$74,028.00
Asst HSA	11	$66,549		2	$133,098	0	$0			
Clinical Director	15	$131,836	$201,426	1	$131,836	2	$263,672	1	$131,836	$201,425.60
Medical Officer	15	$131,836	$201,426	2	$263,672	4	$527,345	1	$131,836	$201,425.60
Psychiatrist	14	$112,082	$121,830					0.3	$33,625	$36,549.00
Optometrist	12	$79,760	$121,830					.14	$11,166	$17,056.20
Dentist	12	$79,760	$121,830	3	$239,280	6	$478,560	3.6	$287,136	$438,588.00
Supv PA	11	$66,549		1	$66,549	4	$266,197			
PAs	11	$66,549	$78,157	12	$798,591	18	$1,197,886	4	$266,197	$312,628.80
NPs	11	$66,549		1	$66,549	6	$0			
RN Mgrs	11	$66,549	$77,748		$0		$0	2	$133,098	$155,496.00
RNs	9	$56,621	$54,392	2	$113,243	4	$226,485	14	$792,698	$761,484.00
LVNs	7	$50,252	$36,084	0	$0	1	$50,252	25.6	$1,286,464	$923,750.40
Other Health Services	9	$56,621	$54,808		$0		$0	0.28	$15,854	$15,346.24
EMTs/Pt Care Assist.	9	$56,621	$28,272	3	$169,864	6	$339,728	11	$622,834	$310,992.00
Pharmacist	11	$66,549		2	$133,098	4	$266,197			
Health Technologist	9	$56,621		0	$0	1	$56,621			
Radiology Tech	8	$52,721	$42,830	1	$52,721	0	$0	2	$105,443	$85,659.20
Dental Hygienist	8	$52,721	$46,756	1	$52,721	0	$0	2	$105,443	$91,512.00
Dental Assistant	6	$46,413	$26,784		$0		$0	6	$278,476	$160,704.00
Pharmacy Tech	5	$43,769		0	$0	0	$0			
Med Records Admin	9	$56,621	$54,312	1	$56,621			1	$5,662	$5,431.00
Medical Records Tech	8	$52,721	$30,132	1	$52,721	2	$105,443	8	$421,770	$241,056.00
Coord. Special Proj.	7	$50,252	$37,696					1	$50,252	$37,696.00
Health Info Tech/Clerk	7	$50,252	$23,684	2	$100,505	5	$251,262	11	$552,777	$260,524.00
Mgmt Asst/Admin Assoc	7	$50,252	$49,352	0	$0	1	$50,252	3	$150,757	$148,056.00
Secretary	6	$46,413	$30,132	1	$46,413	2	$92,825	2	$92,825	$60,264.00
Total	**38**			**38**	**$2,637,005**	**63**	**$4,412,008**	**100.12**	**$5,660,244**	**$4,625,883**
Avg Daily Population 12/1999				2540		4152		5361		
FTEs per 100 Inmates				**1.50**		**1.52**		**1.87**		
Staff Cost Per Diem					**$2.84**		**$2.91**		**$2.89**	**$2.36**

There is also some evidence for a change in staffing philosophy at UTMB CMC between the time the contract bid was submitted and the present. Table 19 compares the staffing proposal submitted by UTMB CMC in its original "technical proposal" for the Beaumont demonstration project with the staffing levels actually on site in late FY 1999 and early FY 2000. The proposed staff mix was developed for a prison complex with an average daily population of 5200, a number smaller than the actual inmate population in December 1999. The difference in total FTEs is relatively small: there are 4 fewer FTEs on site currently than indicated in the technical proposal staffing plan.

However, there is a more significant difference in the clinical skill mix. More than 7 positions supervising patient care have been eliminated or left unfilled, including Director of Nursing (1), Assistant Unit Health Administrator (1), CID Nurses (2), RNs (1) and Patient Care Coordinators (2). A number of part-time specialist positions have been either scaled back or left unfilled. Some of this decrease in clinical staff has been offset by increases in clerical and technical staff, including the addition of 3 Medical Records Techs a Radiology Tech and a Dental Assistant. These changes appear to be consistent with the terms of the contract between the BOP and UTMB CMC. Nevertheless, they may represent a shift away from the level onsite clinical expertise initially expected by the BOP.

Table 19 Actual and Proposed Staffing, UTMB CMC Healthcare Unit

	Actual	*Proposed*	
	FTEs	**FTEs**	**Difference**
Senior Practice Manager /Managed Care Administrator	1	1	0.00
Director of Nursing		1	(1.00)
Facility Nurse Manager/Assistant Unit Health Administrator	1	2	(1.00)
Clinical Director	1	1	0.00
Medical Officer	1	1	0.00
PT/OT Coordinator	0.1	0.05	0.05
Physiatrist		0.05	(0.05)
Psychiatrist	0.3	0.3	0.00
Optometrist	0.14	0.2	(0.06)
Dentist	3.6	3	0.60
PAs/Physician Extender	4	4	0.00
RN Mgrs/CID Nurses	2	4	(2.00)
RNs	14	15	(1.00)
LVNs	25.6	25	0.60
Other Health Services	0.28	1.3	(1.02)
Health Technician/Medication Aides	11	12	(1.00)
Health Technologist		1.5	(1.50)
Radiology Tech	2	1	1.00
Dental Hygienist	2	2	0.00
Dental Assistant	6	5	1.00
Health Info Administrator	0.1		0.10
Medical Records Tech	8	5	3.00
Coord. Special Proj./Patient Care Coordinator	1	3	(2.00)
Health Info Tech	11	12	(1.00)
Management Asst/Clerical Super.	3	2	1.00
Secretary	2	2	0.00
Total	**100.12**	104.4	(4.28)

Apart from the different clinical skill mix used by UTMB CMC, there is also a notable difference in staff compensation between the BOP and the Texas system: the difference in compensation rates between highly trained clinical staff and technical or clerical staff is greater in the UTMB CMC system. Specifically, compensation for MDs, DDSs, PAs, RN managers, etc. is higher in the UTMB CMC system than in the BOP, while compensation for clerical staff and practitioners with only technical training is lower at UTMB CMC.

The cost impact of these differences in staffing mix depends on the pay scale used. At UTMB CMC wage and benefit rates, the UTMB CMC staffing mix costs significantly less than the BOP currently spends on healthcare staff. As Table 18 demonstrates, even though UTMB CMC uses roughly 24 percent more staff per inmate than the BOP, it *spends* roughly 18 percent less per inmate on healthcare providers.

Nevertheless, there is a limit to how much the BOP could save by adopting the staffing pattern now used at UTMB CMC. At GS wage and benefit rates, the current UTMB CMC staffing mix would cost roughly the same (on a per inmate basis) as what the BOP currently spends on healthcare staff. Specifically, if the BOP were to hire UTMB CMC staff and pay them at the currently prevailing GS rates, the health care staff cost per inmate would be $2.89 per inmate per day. Table 18 shows that this amount is no different from the one currently observed at prison complexes with BOP-operated healthcare units.

28. Program and Operational Reviews

The most recent program review evaluations performed within an 18 month time period from the start of this study were examined to provide an additional rating source comparing these three institutions. It should be noted that we did not receive the BOP Program Review results until after we had completed our analysis of all three facilities.

FCC Florence Health Services:

A program review was conducted at Florence FCI in February of 2000. The health services unit was commended by the reviewers for their consistent improvement since the time of their last review in the quality of care provided. The reviewers noted that the FCI had undertaken a series of team building exercises including staff retreats, restructuring and group session to improve their program operations. "The fact that there are no areas of weakness or concern validates the quality of this program."[82]

Areas of significant accomplishment noted by the Program Review team (and echoed by these reviewers) included the Florence FCI IOP program and their maintenance of health information (medical records management). This IOP program is proactive and addresses processes, outcomes, and the structure of the organization with an eye towards improvement rather than simply correcting things that are wrong. The organizations' focus on the effectiveness of health services and most importantly, its team approach are key elements in the ongoing improvement of performance.

> Areas of strength noted during the review were overall patient care, clinical and administrative oversight, and the professionalism of the health care team. Overall patient care, to include chronic care and specialty clinics, sick call, and diagnostic procedures, was exceptional. Patients assigned to chronic care clinics receive excellent clinical care including diagnostic monitoring and timely clinical care. Additional emphases on patient education, compliance with treatment, and lifestyle changes have been instrumental in decreasing the cost of medical care delivery. The sick call triage system reduced waiting time for the patient, improved the utilization of the MLP, and increased patient satisfaction. Finally, and most importantly, is the overall health care team. The entire staff recognized that they perform as a highly professional and dedicated team. This was evident throughout the week. Staff function as a team to complete tasks in all areas, are proud of their accomplishments,

[82] Florence FCI Program Review Notes

and are committed to the overall success of the department. When staff are absent, other staff assumes additional responsibilities to ensure the quality and performance of patient care is not jeopardized.

The FCC Florence USP was reviewed in June of 1998. They found no significant quality deficiencies at that time and that the referral, monitoring, evaluation, and treatment of inmates with chronic medical conditions has improved significantly.

FCC Allenwood Health Services:

FCC Allenwood Medium was reviewed in March of 2000. They had no significant findings in this review and no repeat significant findings The rating while acceptable was not at the high level of FCC Florence FCI and it was felt by the reviewer to have "some regression" in the areas of infectious disease and continuation of programs after the loss of key staff, contracts, or damaged equipment." The line staff was commended for their professionalism and teamwork. As we noted earlier in this report, the program review team also cited loss of the national contract for specialized HIV testing and the lack of a plan to continue audiology testing when the equipment was non-functioning as high priority quality issues. The fact that over 50 examinations did not always include EKG and hemocult testing was noted, again deficiencies that were noted in the course of this study.

FCC Allenwood LSCI received a program review of its health services on September 1999. Overall it was found that "the mission of this program is fully met and quality health care is provided to the inmate population by dedicated and professional staff". There was only one repeat deficiency in that staff or inmates assigned work involving occupational exposure to bloodborne pathogens were not offered or received hepatitis B vaccination within 10 days of beginning work. The Health Services Unit had not fully implemented an effective Improving Organizational Performance Program. Eleven (11) other technical deficiencies were noted from not completing the required biannual rehearsal of the disaster plan to the fact that it was not recorded that a physician always reviewed the records of inmates injured after regular duty hours.

The last review conducted at FCC Allenwood USP was April of 1998. At that time the overall rating of the Health Services operation at USP Allenwood was superior. The Health Services Unit is performing all vital functions in a superb manner. Systems of control are very good and the quality of health care is excellent. However, the program review team did note that there was no documentation that chronic care inmates always receive the appropriate follow-up monitoring. (i.e., Peak Flow, elevated glucose follow-up, etc.) and inmates over age 50 were not always offered electrocardiogram and rectal examinations during their physical examination.

FCC Beaumont Health Services:

The FCC Beaumont received a program review of its health services in June 2000. The overall rating was "deficient". They found that DEA controlled medications were not appropriately prescribed and accounted for due to the fact that:

> Local procedures and systems of control have not been developed or implemented to ensure compliance with federal and state laws, policies, and established criteria related to DEA controlled substances. There is inadequate oversight of the daily pharmacy operations. The absence of a licensed pharmacist, on site, contributes significantly to this finding.

Further they concurred with the findings of this study that "Inmates placed in chronic care clinics did not always receive the appropriate follow-up monitoring." The program review evaluation determined that the primary area of weakness at FCC Beaumont UTMB CMC Health Services was its lack of systems of internal control. A finding that is echoed throughout this report. This lack of systems of internal control is at the core of the deficiencies in their organizational improvement activities and most importantly the concerns raised about the level of quality of care in this report. There was no evidence provided to this review team that there were systematic methods to identify and correct variances before they become serious problems and thus maintain a high level of quality of care.

29. Quality Control and Response to Issues

At FCC Allenwood, shipment of supplies for HIV patient monitoring was delayed approximately 60 days throughout the BOP as of 10/26/99 due to the fact that the BOP was changing vendors. However, no contingency was in place to provide needed inmate testing during this period of time. This failure to provide necessary supplies was well documented in the medical record of those inmates whose treatment monitoring was delayed. However, after a 60-day delay, the Allenwood FCI HSA acted appropriately and had the inmates tested using a local lab so as not to delay their testing further and possibly not detect treatment failures that could have serious inmate consequences.

There is an emphasis at FCC Florence FCI and Camp on improving quality of follow-up and documentation for chronic care inmates that can only be considered as a benchmark for care within the BOP. The staff at these institutions has implemented a series of flow sheets designed to ensure that exams, patient education, follow-up consultation needs are all performed in a timely and complete manner. Further, they are working with the HSA to streamline the list of specialty contracts – the providers were not satisfied with the charges and services obtained at the local hospital and have set up a more satisfactory arrangement with Parkview Hospital in Pueblo, CO. They have reduced Emergency Department transport to 0-1 per month – they are holding more inmates in observation facilities overnight and have saved significant dollars as a result (see Section 17). Another cost-effective process they employ frequently is to draw blood onsite and send out stat blood work (instead of sending out the inmate) thereby reducing the need for security overtime and reducing security risks.

The structure of FCC Beaumont assumes a level of responsibility and self-care among inmates that may not be present. For example, inmates are told to return if they are not doing better but given the level of self-care and responsibility exhibited by these inmates this may be difficult without ongoing patient education and counseling with structured follow up appointments.

At FCC Beaumont Low, an inmate presented with a severe headache, a possible symptom of elevated blood pressure. He was given Clonidine .1mg for a Blood Pressure reading of 144/110. While the initial treatment was appropriate, the inmate did not receive a documented recheck of his blood pressure and was not kept for observation to see if his blood pressure decreased to within normal limits. The inmate was seen only by an LVN.

An inmate at FCC Beaumont Low presented with a wrist injury and a wrist splint was applied by LVN. At that time the inmate had a recorded blood pressure of 148/100 and received no documented follow up on his blood pressure. Although the elevation may have been due to pain from the acute injury, prudent practice would be to recheck the inmate blood pressure at time of follow up for splint removal.

At FCC Beaumont USP during treatment for an asthmatic episode, an LVN recorded that the patient experienced "petite seizures"[83] However, no RN, MLP or MD was called to evaluate the inmate further and no medications or other follow-up on this possible disorder occurred. Another example where the quality of care provided is at issue occurred at FCC Beaumont USP where an inmate with asthma presented for treatment with an acute exacerbation of symptoms. While this inmate had not been given a spirometry test in more than a year, he was simply given medication (Theodur). There was no record that his status was evaluated at a later time.[84]

The reviewers repeatedly saw Post - it™ notes used on Medical Records. Some of these notes stated "please have provider review chart patient needs follow-up outpatient appointment." Such a non-permanent system of tracking needed inmate follow up is another example of follow-up process issues at FCC Beaumont.

In contrast to this lack of follow-up at Beaumont, at FCC Allenwood Camp an asthmatic had anaphylactic reaction which in turn caused a bronchial asthma attack. The inmate

[83] Recorded exactly as written. Presume that the staff member meant "petit mal" seizure.

[84] Further examples of instances where the lack of system CQI designed to ensure that follow up occurs and that clinical standards of care are met include: FCC Beaumont USP where two inmates did not receive PFTs when ordered. The tests were reordered and not done more than 3 and 8 months later. A PA notes that a lab test that was ordered was not done and a theophylline level was not monitored. An inmate presenting with chest pain and was noted to have poor circulation in lower extremities. He was placed in Trendelenberg position for Chest Pain for 30 minutes, which would be contraindicated. An inmate with IDDM did not have a dilated eye exam performed even when he presents with complains of blurred vision. BEAUMONT MEDIUM asthmatic persistently elevated BP not addressed 194/112 158/93 136/86 lowest reading - no consistent follow up ; presented with productive cough and green-gray sputum not treated until one week later (8/23 to 9/2)

had used an inhaler without relief and was treated in the clinic. He was maintained on albuterol and benadryl for 1 day and seen again in the health service unit for follow-up the next day and referred to pulmonary clinic for ongoing follow up. Thorough patient education was documented at the time of the attack and overall provides a good contrast to the follow-up care at FCC Beaumont.

Another example of improved follow-up of treatment was observed at FCC Florence Camp. Patient records demonstrated an excellent assessment regarding the reasons for poor inmate asthma control. This patient education included a complete review of inhaler/spacer technique verified by return demonstration.

30. Beaumont Cost Comparisons

Cost comparisons are an integral part of the evaluation of any demonstration project. The precise form of this economic analysis is shaped by the underlying purpose of the demonstration project itself. In the case of privatized health care at FCC Beaumont, we assume that the project was designed in part to help identify the extent of potential cost savings. To evaluate the Beaumont project, it is therefore necessary to ask:

- whether or not taxpayer money was saved by awarding the contract to UTMB CMC;
- whether or not this contracting "model" could be adapted for use elsewhere in the BOP healthcare system; and
- what cost savings (if any) could be realized by modifying current BOP practices to reflect those used by UTMB CMC.

Answering these questions requires a range of cost data, including:

- amounts actually spent by the BOP on privatized health care services at Beaumont;
- the amount it *would have cost* the BOP to provide such health care services itself; and
- the extent to which the terms of the current Beaumont contract would be attractive to healthcare providers located elsewhere in the country.

It is important to measure these costs carefully: a recent GAO report, "Containing Health Care Costs for an Increasing Inmate Population"[85] illustrates the consequences of failing to do so. The report understates the cost of privatized inmate healthcare at Beaumont, overstates the cost of BOP-provided healthcare at comparable facilities, and concludes that privatization was saving the Federal government $4.09 per inmate per day at Beaumont.

A more accurate analysis paints a substantially different picture. In this report we show that the per diem healthcare cost at Beaumont was only $.64 lower than the average per diem cost computed for prison complexes with BOP-provided healthcare. Furthermore, the per diem cost of healthcare at Beaumont was actually $.11 per inmate per day *higher* than the cost observed at the most efficient BOP prison complex. It is even unclear whether these results from the Beaumont demonstration project can be replicated elsewhere, since calculations based upon data provided by UTMB CMC demonstrate that the manday rate of $5.12 does not allow UTMB CMC to cover the costs associated with the project.

31. BOP Healthcare Expenditures at Beaumont

There are two major components of BOP healthcare spending at Beaumont: (1) contract payments to UTMB CMC and (2) local BOP monitoring and support costs. These

[85] GAO/T-GGD-00-112, April 2, 2000.

support costs include the salary and benefits paid to contract monitors, as well as the overtime costs incurred when BOP security staff accompany inmates on local off-site medical trips. Both of these costs need to be considered when comparing public and privatized inmate healthcare, a fact overlooked in the recent GAO report on this topic.

Table 20 itemizes these expenditures. A few technical notes concerning the data are in order. The contract between the BOP and UTMB CMC specifies a fee of $5.12 per inmate per day, but requires UTMB CMC to pay for the cost of transporting inmates to and from UTMB Galveston. The BOP remains responsible for the cost of transporting inmates to local healthcare providers and the cost of onsite monitoring.[86]

The BOP cost accounting system reflects this allocation of responsibilities. The amount indicated in Table 20 for "consultant" expenses reflects the payments made to UTMB CMC *before* any adjustments for overtime reimbursements. Thus, consultant expenses reflect the full manday fee of $5.12 times the number of inmate days reported for the year. Overtime expenses reimbursed by UTMB CMC are deducted directly from the cost of BOP overtime. Specifically, the overtime amount listed for "Outside Medical" represents only the BOP share of the cost of transporting inmates to offsite healthcare providers. This net overtime cost is computed as the total cost of medical overtime *minus* reimbursements from UTMB CMC. The salaries and benefits listed for Inside Medical and for PHS reflect payments to Federal staff onsite.

The increased emphasis on the use of local hospitals (rather than UTMB Galveston) has the potential to change the nature of the care provided by UTMB CMC. To the extent that it no longer utilizes the UTMB Hospital, UTMB CMC is essentially in the same position as the BOP relative to contracting with external health care providers. Further, this change may increase the BOP's share of medical security costs. Although the BOP had sought some increase in the use of local providers (to alleviate the need for offsite medical security), the cost of security for routine care is shifted from UTMB CMC back to the BOP if local hospitals are used.

UTMB CMC could have an advantage relative to the BOP if telemedicine were used by Galveston staff to determine if inmates require offsite care by *local* specialists. When asked about the feasibility of this approach, the UR Coordinator for UTMB CMC indicated that it would be "unfair" to Galveston specialists. However, this fairness issue would primarily seem to be a problem if it affected the payments received by the specialists (i.e., if the Galveston specialist was not paid for time spent screening and 'lost' patients to a local specialist after an initial work-up). However, if specialists at UTMB CMC are reimbursed under a capitated payment system (as indicated by UTMB CMC management) rather than a fee-for-service or encounter basis, this should not be an issue. The system should save money if inmates can be treated on a telemedicine basis since transport security charges are saved.

[86] According to the contract monitors onsite, the BOP is responsible for the cost of security for all emergency transport costs whether to local providers or to Galveston. The BOP is also responsible for "routine" transport costs to *local* providers. UTMB CMC is responsible for routine transport costs to Galveston.

The ADP listed for FY 1999 reflects the total number of inmate days reported by the four Beaumont facilities for the period October 1, 1998 to September 30, 1999, i.e., the average daily population for the FY 1999 as a whole. The ADP did grow during this period: from 3,366 in October 1998 to 4,907 in September 1999.

Table 20: BOP Expenditure on Beaumont, FY 1999

Decision Unit	*Item*	*Cost*
B	**PHS**	**89,773.50**
B25	**Outside Medical**	
	Overtime	110,872.87
	Medicare	6,731.64
	Travel	6,145.40
	Other	1,197.34
	Total, B25	**124,947.25**
B50	**Inside Medical**	
	Salaries	219,860.40
	Benefits	62,955.98
	Background Inv.	1,258.00
	Consultants	7,483,878.55
	Credit card	24,357.60
	Supplies	2,628.00
	Equipment	18,733.75
	Total, B50	**7,813,672.28**
B64	**Airlift**	**132,362.10**
	Total, Facility	**8,160,755.13**
	FY 1999 ADP=4,024	
	Per Diem Medical Cost	**$5.55**

Table 20 demonstrates that the true BOP healthcare per diem cost at FCC Beaumont was $5.55 in FY 1999. The Federal Government spent a total of $5.55 per inmate per day on privatized healthcare at the Beaumont complex. Of this amount, $5.12 was paid to UTMB CMC at fixed rate per inmate; the remaining $.43 reflects monitoring and healthcare expenses that remained the responsibility of the BOP.

The current $5.55 per diem cost observed at FCC Beaumont is likely to evolve in future years. Growth in the inmate population will *reduce* one portion of this per diem cost: once all facilities at the complex are fully "on-line", the average daily population is likely to rise to 5400 or more, thus lowering the per diem monitoring cost. On the other hand, the recent policy change concerning the use of Galveston hospital facilities is likely to *raise* the security component of per diem costs. The BOP and UTMB CMC have agreed to make greater use of local specialists and local hospital facilities, thereby reducing the need for trips to Galveston -- and the extent of overtime costs that are reimbursed by UTMB CMC. Since the BOP is responsible for the cost of overtime incurred during

visits to *local* health care providers, this policy change has the potential to shift much of the responsibility for medical overtime to the BOP (i.e., *increase* BOP overtime costs) and thereby increase the actual health care per diem cost at this institution.

32. BOP Healthcare Costs at Federally-Operated Adult Facilities

A rough measure of how much the BOP would have spent to provide its own healthcare services at Beaumont can be obtained from an analysis of healthcare spending reported by other Federal facilities. It is tempting to start with reported BOP healthcare spending ($11,109,640), reported BOP average daily inmate population (109,616), and compare the implied "internal" healthcare per diem ($9.30) with either the UTMB CMC capitation rate ($5.12) or the per diem rate ($5.55) discussed in the previous section. This is, in fact, the approach taken in the GAO report mentioned in Section 30. In this report, the GAO estimated the "overall" per diem cost of BOP-provided health care at $9.21 a day and concluded that the UTMB capitation rate of $5.12 was saving the system $4.09 per day.

This approach is both inappropriate and misleading. It wrongly combines overhead and operating costs and does not allow for differences in the security level, scale and purpose of Federal institutions. It also fails to account for the previously-discussed onsite healthcare costs that remain the responsibility of the BOP even in a privatized healthcare system.

The breakdown reported in Table 21 allows for needed distinctions in the cost of BOP-provided healthcare.[87] The table separates healthcare overhead cost from direct (facility-level) cost and reports direct cost by security level. This breakdown makes it possible to compute the direct healthcare cost per inmate per day at BOP prison complexes -- an initial estimate of BOP medical costs that can be appropriately compared with the $5.55 UTMB CMC per diem cost discussed in the previous section.

Critics of this approach -- i.e., one that focuses on facility-level costs -- might argue that a portion of the cost of BOP Medical Centers and/or central office overhead should be included in Federal per diem rate. The appropriate response is that these costs do not depend on whether or not health care services at FCC Beaumont are privatized. The current contract allows inmates cared for by UTMB CMC the same access to BOP Medical Centers that is given to inmates cared for by BOP staff. The cost of the Medical Centers is therefore the same with or without privatization. Central office costs are similarly unaffected by this demonstration project. Since these costs are the same in both scenarios, they are irrelevant to the decision of whether or not to privatize.

Table 21 BOP Medical Costs, FY 1999

Security Level	*ADP*	*Cost*	*Per diem*
Minimum	4,861	$11,109,640	$6.26
Low	24,252	$50,972,656	$5.76
Medium	28,617	$67,591,755	$6.47
High	8,218	$21,065,832	$7.02
Complex	19,918	$44,047,270	$6.06
Detention	1,142	$3,287,398	$7.89
Total Direct Cost, Male Adult Facilities	**87,008**	**198,074,551**	**$6.24**
Medical Facilities	7,310	$97,334,494	$36.48
Female Facilities	15,298	$57,502,523	$10.30
Total, Other Secure Facilities	22,608	154,837,016	$18.76
Total Direct Cost, All Secure Facilities	**109,616**	**352,911,567**	**$8.82**
Offline Facilities	0	$13,596,703	
Overhead Facilities	0	$5,610,225	
Total Cost	**109,616**	**372,118,495**	**$9.30**

Table 21 and the facility-level data reported in Appendix G indicate that the healthcare per diem averages $6.06 for BOP prison complexes as a group (including Beaumont). The per diem for *Federally-provided* healthcare at prison complexes ranges from $5.44 at Florence to $7.78 at Lompoc. The average for this group of facilities is $6.19. In other words, the $5.55 per diem cost to the Federal government of the Beaumont demonstration project was within the range observed in FY 1999 at prison facilities with BOP-provided health care.

As noted above, the per diem cost at FCC Beaumont is likely to change in the future as inmate populations, capitation rates, off-site security costs and on-site monitoring costs evolve over time. Nevertheless, it is unlikely that the cost to the government of healthcare at the Beaumont facility will be far outside the range observed at BOP-managed healthcare units.

33. Healthcare Costs at Prison Complexes

A more complete analysis of the differences between the cost of healthcare services provided by the BOP and UTMB CMC requires the analysis of spending on other components of the care provided. Table 22 indicates the full set of expenditures reported in FY 1999 at five BOP prison complexes (including the Beaumont facility). These expenditures are grouped into five categories (Decision Units): PHS staff costs (DU B), Outside Medical (DU B25), Inside Medical (DU B50), Medical Airlift (DU B64), and Dental Labs (B65).

The average daily population listed for each complex was the official ADP reported for FY 1999.

Table 22 Medical Costs at BOP Complexes, FY 1999

DU		Allenwood		Coleman		Florence		Oakdale		Lompoc	
	ADP	4,156		3,706		2,985		2,273		2,770	
		Total	Per Diem	Total	Per Diem	Total	Per Diem	Total	Per Diem	Total	Per Diem
B	Perm Salaries	558,557.51	$0.37	710,806.18	$0.53	856,141.55	$0.79	$156,373.11	$0.19	$882,368.54	$0.87
	Travel	1,216.69	$0.00	595.14	$0.00	603.00	$0.00		$0.00		$0.00
	Other Services	19,571.40	$0.01	23,128.13	$0.02	30,948.41	$0.03	$4,831.60	$0.01	$36,778.29	$0.04
	TOTAL, DU B	**579,345.60**	**$0.38**	**734,529.45**	**$0.54**	**887,692.96**	**$0.81**	**161,204.71**	**$0.19**	**919,146.83**	**$0.91**
B25	Assigned Sale		$0.00		$0.00	555.18	$0.00		$0.00		$0.00
	Perm Salaries		$0.00		$0.00	1,421.30	$0.00		$0.00	$657.88	$0.00
	Holiday	183.84	$0.00		$0.00		$0.00		$0.00	$126.72	$0.00
	Overtime	868,730.35	$0.57	635,753.46	$0.47	291,392.32	$0.27	$323,191.54	$0.39	$725,653.39	$0.72
	Prem Comp, Other	191.42	$0.00		$0.00		$0.00		$0.00	$92.88	$0.00
	Transfer Res		$0.00		$0.00		$0.00			$24.48	$0.00
	Ben Civ -Pers	50,952.49	$0.03	34,533.51	$0.03	18,019.30	$0.02	$20,076.53	$0.02	$43,050.66	$0.04
	FERS Haz Ret		$0.00	36.50	$0.00	29.73	$0.00	$33.83	$0.00	$182.91	$0.00
	Medicare	11,416.42	$0.01	8,122.57	$0.01	4,145.01	$0.00	$4,412.30	$0.01	$9,347.73	$0.01
	Thrift Plan		$0.00	7.83	$0.00	6.38	$0.00	$7.13	$0.00	$22.82	$0.00
	Background Reinv		$0.00		$0.00		$0.00	-$9.00	$0.00	-$3,507.97	$0.00
	Travel	5,161.47	$0.00	2.25	$0.00		$0.00		$0.00	$6,563.34	$0.01
	Comm-Util-Misc		$0.00		$0.00	50.00	$0.00		$0.00		$0.00
	Consultants	2,069,903.72	$1.36	1,753,247.59	$1.30	641,721.05	$0.59	$904,751.45	$1.09	$1,809,136.40	$1.79
	Other Services	46,268.75	$0.03	647.34	$0.00	7,214.05	$0.01	$1,265.84	$0.00	$6,174.66	$0.01
	Transfer Reg		$0.00	501.08	$0.00		$0.00	$1,330.28	$0.00		$0.00
	Credidt Card	23,089.49	$0.02	705,915.68	$0.52	138,993.22	$0.13	$17,580.30	$0.02	$19,441.72	$0.02
	Supplies	708.52	$0.00	273.00	$0.00	3,537.50	$0.00		$0.00	$5,332.44	$0.01
	TOTAL, DU B25	**3,076,606.47**	**$2.03**	**3,139,040.81**	**$2.32**	**1,107,085.04**	**$1.02**	**1,272,640.20**	**$1.53**	**2,622,300.06**	**$2.59**
B64	Overtime Reserv	28,457.55	$0.02	11,564.88	$0.01	36,623.85	$0.03	$4,764.45	$0.01	$43,494.21	$0.04
	Travel & Transfer	196,421.67	$0.13	185,072.78	$0.14	214,518.86	$0.20	$33,326.93	$0.04	$233,774.79	$0.23
	Cons Reserve		$0.00		$0.00		$0.00		$0.00	$33,218.00	$0.03
	TOTAL, DU B64	**224,879.22**	**$0.15**	**196,637.66**	**$0.15**	**251,142.71**	**$0.23**	**38,091.38**	**$0.05**	**310,487.00**	**$0.31**
B65	Credit Card		$0.00		$0.00		$0.00			$63,751.27	$0.06
	Supplies		$0.00		$0.00		$0.00			$6,741.85	$0.01
	TOTAL, DU B65	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$70,493.12**	**$0.07**

Table 22 *(continued)*

DU		Allenwood		Coleman		Florence		Oakdale		Lompoc	
	ADP	4,156		3,706		2,985		2,273		2,770	
		Total	Per Diem	Total	Per Diem	Total	Per Diem	Total	Per Diem	Total	Per Diem
B50	Lump Sum	5,783.97	$0.00	5,305.11	$0.00	5,688.78	$0.01	$13,239.89	$0.02	$13,632.11	$0.01
	Perm Salaries	2,462,115.34	$1.62	1,710,729.61	$1.26	1,991,038.87	$1.83	$1,762,601.82	$2.12	$1,760,662.95	$1.74
	Other than Perm	8,175.44	$0.01		$0.00		$0.00		$0.00		$0.00
	Holiday	29,191.77	$0.02	9,249.92	$0.01	21,411.79	$0.02	$13,539.08	$0.02	$18,119.00	$0.02
	Incentive Award	16,450.00	$0.01	8,400.00	$0.01	8,200.00	$0.01	$4,600.00	$0.01	$12,400.00	$0.01
	Overtime Allot	21,631.34	$0.01	4,828.62	$0.00	41,708.47	$0.04	$13,560.98	$0.02	$7,015.81	$0.01
	Prem Comp. Other	49,209.45	$0.03	14,916.96	$0.01	39,678.29	$0.04	$24,685.63	$0.03	$33,380.64	$0.03
	Ben Civ.-Pers	302,169.45	$0.20	219,728.70	$0.16	247,485.98	$0.23	$228,923.61	$0.28	$212,062.39	$0.21
	CSRS, FERS Haz Ret	468,746.50	$0.31	360,535.61	$0.27	376,500.86	$0.35	$375,323.23	$0.45	$348,695.82	$0.34
	Medicare	35,406.47	$0.02	23,991.75	$0.02	28,395.22	$0.03	$24,135.67	$0.03	$25,391.03	$0.03
	Thrift Plan	78,872.16	$0.05	68,870.01	$0.05	64,707.35	$0.06	$65,600.16	$0.08	$61,234.32	$0.06
	Travel	697.13	$0.00		$0.00	7,054.86	$0.01	$614.43	$0.00	$12,637.89	$0.01
	Comm-Util-Misc	13,688.00	$0.01		$0.00	15,272.76	$0.01	$5,896.23	$0.01	$252.01	$0.00
	Background Invest	1,609.00	$0.00		$0.00		$0.00	$178.00	$0.00		$0.00
	Background Reinv	-1,579.81	$0.00		$0.00		$0.00		$0.00	$296.00	$0.00
	Cons Reserve	36,984.78	$0.02	35,740.89	$0.03	8,867.19	$0.01	$16,608.58	$0.02	$1,934.99	$0.00
	Consultants	449,280.91	$0.30	345,876.94	$0.26	139,954.38	$0.13	$282,567.00	$0.34	$530,152.06	$0.52
	Medical Cre Ver	168.00	$0.00		$0.00		$0.00	$25.00	$0.00		$0.00
	Other Services	45,934.97	$0.03	9,558.08	$0.01	95,865.12	$0.09	$46,644.26	$0.06	$59,842.88	$0.06
	Solid Waste	1,250.89	$0.00		$0.00		$0.00		$0.00	$2,416.65	$0.00
	Credit Card	192,942.22	$0.13	222,619.78	$0.16	234,819.97	$0.22	$136,636.70	$0.16	$220,753.44	$0.22
	Supplies	114,286.33	$0.08	2,148.25	$0.00	29,124.55	$0.03	$65,063.20	$0.08	$129,050.79	$0.13
	Supplies Reserv	682,597.63	$0.45	777,960.92	$0.58	319,153.46	$0.29	$251,286.21	$0.30	$488,965.00	$0.48
	Equip Major	10,569.00	$0.01	377,575.17	$0.28		$0.00		$0.00		$0.00
	Equipment	66,695.71	$0.04	2,778.00	$0.00	7,508.14	$0.01	$47,539.31	$0.06		$0.00
	Insurance Claims		$0.00		$0.00		$0.00	$800.00	$0.00		$0.00
	TOTAL, DU B50	**5,092,876.65**	**$3.36**	**4,200,814.32**	**$3.11**	**3,682,436.04**	**$3.38**	**3,380,068.99**	**$4.07**	**3,938,895.78**	**$3.90**
	INSTIT. TOTAL	***8,973,707.94***	***$5.92***	***8,271,022.24***	***$6.11***	***5,928,356.75***	***$5.44***	***4,852,005.28***	***$5.85***	***7,861,322.79***	***$7.78***

Again, the per diem calculations in Table 22 indicate that the $5.55 per diem cost to the BOP of privatized healthcare at the Beaumont facility was not significantly lower than the cost of such care provided at BOP complexes in FY 99.

We can also see that there is considerable variation in the cost of healthcare provided directly by BOP staff. The greatest variation is in the "Outside Medical" (DU B25) category, with a difference of more than $1.50 per inmate per day between the lowest (Florence) and highest (Lompoc) cost facilities. This difference can be attributed in part to the decision by the Florence staff to handle more cases internally. Such a policy choice may not always be possible – it requires onsite practitioners with expertise in emergency medicine. Florence did spend more per inmate day on staff salaries, but more than made up the difference through savings on internal and external consultants as well as overtime. Florence also spent less per inmate day on supplies than three of the four other complexes.

34. The Potential for Implementing the UTMB CMC Model Elsewhere

If the current Beaumont contract is to provide a measure of the potential impact of healthcare privatization elsewhere, then the terms of the existing contract with UTMB CMC must be attractive to healthcare providers elsewhere. One indication of the contract's general profitability is whether or not it allows UTMB CMC to cover its costs, i.e., the expenditures directly related to the project and a reasonable contribution to its overhead costs.[89] To answer this question, we calculated the direct cost of providing healthcare services for the September 1999 inmate population of 4,907 using the staffing model adopted by UTMB CMC and the costs of goods and services that prevailed during 1999. We also extrapolated these estimated costs for larger inmate populations.

These cost calculations show that the healthcare savings imputed to the UTMB CMC model are not a result of differences in practice that can and should be replicated by the BOP. In fact, the limited cost information provided by UTMB CMC reveals that the $5.12 manday fee does not cover the expected cost of operating the facility even with an average inmate population of 6000. Table 23 presents these details of this analysis.

Since UTMB CMC declined to provide complete expenditure data, UTMB direct cost components are estimated from the best available information. A number of technical notes are necessary to document the precise nature of the cost data used. The major components of direct cost are assumed to be compensation for onsite staff, specialists, telemedicine fees, prescription medications, diagnostic tests, and other medical supplies used onsite, as well as the expenses associated with offsite healthcare (ambulance services, offsite specialist and hospital care, and security costs).

To compute the cost of staff salaries, we used the compensation cost estimate reported in Table 18. Salaries for specific job categories were provided by UTMB CMC, as were the current staffing levels. All staff were assumed to have the same 24% benefit rate supplied by UTMB CMC.

The cost cited for telemedicine services was the fixed fee paid in FY 99 by UTMB CMC for access to off-site providers in Galveston.

Since UTMB CMC did not provide a specific capitated fee for its cost of prescription medicine, it was necessary to use the best available information. This was done by taking the most recently available UTMB CMC system-wide average prescription cost per inmate per month (i.e., $19.50 as reported in the UTMB CMC TDCJ Executive Summary for August 1996). This was adjusted for inflation by using the change in the pharmaceutical Producers' Price Index over the period August 1996 to September 1998 (i.e., a 16.43 percent increase for the period); and divided by 31 (the number of days in August) to derive an average cost per inmate day. This adjustment was intended to

[89] Of course, UTMB/CMC need only cover its direct (or operating) costs in order to avoid losing money on this particular project. However, in general, UBMB/CMC (and all other healthcare contractors) will need to recover some portion of overhead costs from the projects undertaken.

provide an estimate of the per diem cost of pharmaceuticals at the beginning of FY 99. This unit cost was then used to adjust expenditure estimates for changes in the inmate population.

The FY 99 cost of supplies per inmate per day was provided directly by UTMB CMC. This unit cost was then used to adjust expenditure estimates for changes in the inmate population.

The FY 99 per diem cost of ambulance services was computed by taking actual UTMB CMC expenditure on ambulance services in FY 99 ($25,640), and dividing by the actual number of inmate days in the year (365*3899). This unit cost was then used to adjust expenditure estimates for changes in the inmate population.

The FY 99 per diem cost of lab tests is based on a capitation formula provided by UTMB CMC. The capitation rate was defined as "14.26% of the available funds for specialty services." We estimated the total amount spent on lab tests as 14.26 percent of the *allowed* amounts paid to non-UTMB providers listed on the UTMB CMC Claim Analysis Summary by Payee for 9/1/98 to 8/31/1999.[90] The per inmate cost of lab tests was derived by dividing total spending by the actual number of inmate days for FY 99. This unit cost was then used to adjust expenditure estimates for changes in the inmate population.

The per diem cost of X-rays was estimated in a manner similar to that used for prescription medications. We started with the average cost per inmate month reported for the UTMB system in August 1996 ($.45), adjusted for changes in the average cost of such services using the change in the pharmaceutical Producers' Price Index over the period August 1996 to September 1998 (16.43%) and dividing by 31 (the number of days in August) to compute an average expenditure per inmate day. This unit cost was then used to adjust expenditure estimates for changes in the inmate population.

The cost of specialists and hospitalization was computed using the *allowed* amounts paid to all offsite healthcare providers listed on the UTMB CMC Claim Analysis Summary by Payee for 9/1/98 to 8/31/1999 and the total number of inmate days reported for the period. This unit cost was then used to adjust expenditure estimates for changes in the inmate population.

The UTMB CMC share of BOP security expenses was computed from the billings for the first half of FY 2000. The cost per inmate day was calculated by taking the total amount of overtime billed by the BOP to UTMB for the period 10/1/1999 to 4/22/2000 and dividing by the number of inmate days reported for these pay periods. This unit cost was then used to adjust expenditure estimates for changes in the inmate population.

UTMB CMC also had to pay the cost of its own security staff for offsite trips. We estimated the per diem cost of these services by using the most currently available data.

[90] Here and elsewhere, the term "allowed" refers to the amount actually paid by UTMB CMC, as opposed to the higher amounts typically billed by healthcare providers.

We took the net UTMB CMC spending on its own security staff for the period 12/27/1997 to 7/31/1998[91] and divided it by the total number of inmate days reported for the Beaumont facility in this period.

Given this estimate of *direct* cost, it was then necessary to estimate the share of UTMB CMC overhead cost allocated to the Beaumont project. The UTMB CMC staff indicated that there were two components of this overhead cost. One was a fixed amount equal to $270,000 annually designed to cover certain "non-direct care costs associated with the contract." The other charge for overhead cost was an amount equal to 2.39% of "capitated revenue less charges paid to the Practice Plan and less charges reimbursed to the FBOP for security costs." We estimated this amount by taking 2.39 percent of the manday rate ($5.12) *less* (a) the per inmate cost calculated for the UTMB CMC share of BOP security costs in FY 1999 (i.e., $.28); and (b) the per inmate cost calculated for services rendered by UTMB Hospital and UTMB PBS during FY 1999 (i.e., $1.24). This overhead rate was applied to the number of inmate days assumed in each cost scenario reported in Table 23.

Given the relative small proportion of BOP inmates housed FCC Beaumont, this privatization experiment was assumed to have no impact on BOP centralized support costs.

Our estimate of the *direct* cost of the healthcare services that UTMB CMC provides to the BOP indicates that UTMB CMC is losing money on this contract. As the calculations reported in Table 23 show, the capitation rate of $5.12 failed to cover the direct cost incurred by UTMB when providing inmate health even when the average inmate population rose to 6000. For example, with an inmate population of 5400 (roughly the population at Beaumont in December 1999), the per diem direct cost (i.e., excluding overhead expenses), was $5.47 per inmate per day. This per diem cost translates into an expected loss of $.35 per inmate per day (or a loss of almost $690,000 per year) before any allowances are made for the general support services provided by the UTMB.

However, prior to renegotiating capitated rates solely on the basis of this finding, we would recommend a more thorough FCC Beaumont-specific cost accounting.

Table 23 documents the difficulty of realizing the cost savings attributed to UTMB CMC model. There is also some supporting evidence of these assertions in the capitation agreement between UTMB CMC and TDCJ in force in 1997. A case study prepared by Robert Brecht, Ph.D., the CEO of the International Telemedicine Center, Inc. indicated that the manday fee paid to UTMB CMC by the TDCJ was $5.39 in FY 1997, an amount $.27 higher than the manday fee in effect for FCC Beaumont. If these estimates are correct and healthcare costs elsewhere are no lower than they are in Texas, then it is unlikely that healthcare providers elsewhere will be able to break even if they

- accept a manday fee close to the UTMB CMC fee of $5.12;

[91] As reported in a memo dated August 21, 1998 from James Hyder (Director, Contracts, UTMB CMC) to Al Rauschuber, Jr. (Administrative Contracting Officer).

- offer an integrated set of healthcare services to inmates at other Federal prisons; and
- use staffing patterns similar to those found in the health unit run by UTMB CMC at FCC Beaumont.

Table 23: Cost Calculations for UTMB CMC Operations

	Cost per Unit	*# of Units*	*Total*	*# of Units*	*Total*	*# of Units*	*Total*
Average Daily Population		*4,907*		*5,400*		*6000*	
On-Site Staff Compensation (annual)			$4,625,883		$4,625,883		$4,625,883
Telemedicine (annual fixed fee)			$129,517		$129,517		$129,517
RXs (cost per inmate day)	$0.73	1,791,055	$1,311,737	1,971,000	$1,443,525	2,190,000	$1,603,917
Supplies (cost per inmate day)	$0.204	1,791,055	$365,375	1,971,000	$402,084	2,190,000	$446,760
Ambulance Services (avg per diem cost)	$0.02	1,791,055	$32,269	1,971,000	$35,511	2,190,000	$39,456
Lab tests (cost per inmate day)	$0.03	1,791,055	$56,370	1,971,000	$62,033	2,190,000	$68,925
X-rays (cost per inmate day)	$0.02	1,791,055	$30,271	1,971,000	$33,312	2,190,000	$37,013
Specialists & Hospitalization (per inmate day)	$1.46	1,791,055	$2,614,940	1,971,000	$2,877,660	2,190,000	$3,197,400
BOP Security & Trans (cost per inmate day)	$0.28	1,791,055	$495,888	1,971,000	$545,709	2,190,000	$606,343
UTMB Security & Trans (cost per inmate day)	$0.32	1,791,055	$573,138	1,971,000	$630,720	2,190,000	$700,800
CMC Direct Cost (excluding direct support costs)			***$10,235,387***		***$10.785,954***		***$11,456,016***
Direct Cost per Inmate per Day (excluding BOP support costs)			***$5.71***		***$5.47***		***$5.23***
CMC Indirect Cost (lump sum amt)			***$270,000***		***$270,000***		***$270,000***
CMC Overhead Cost (2.39% of Contract Value)			***$154,236***		***$169,732***		***$188,591***
Total Cost (Direct and Indirect)			***$10,659,624***		***$11,225,687***		***$11,914,607***
Capitation Paid			$5.12		$5.12		$5.12
Revenue Received			$9,170.202		$10,091,520		$11,212,800
Net Profit			***-$1,489,422***		***-$1,134,167***		***-$701,807***

35. Conclusion

We began this study by asking what level of quality was achieved in privatized healthcare services at FCC Beaumont, whether this level of quality represented good value for the money spent, and what lessons the BOP could learn from this care delivery system. In short, we asked to what extent can and should the elements of the UTMB CMC program be replicated in publicly managed facilities elsewhere.

In the context of this study, value is defined as a combination of meeting customer expectations for technical quality, service satisfaction, access, and inmate functional status at a price that is considered reasonable by the customer. Our assessment of value is being made both relative to preset standards and to other institutions. Specifically, the study asked how the level of health services available to Federal inmates at FCC Beaumont compares to that of other Federal institutions, contrasting health services received at FCC Beaumont with those of Federal Prison Complexes located in Florence, CO and Allenwood, PA. The observed quality of healthcare services was evaluated based upon nationally recognized standards and clinical practice guidelines whenever feasible. The same standards were applied to all three facilities.

Overall, this study found that the care provided at FCC Beaumont did not represent a measurably superior value for the money spent, and did not necessarily offer substantial savings relative to the cost of BOP operations properly measured. The level of quality of care provided was no greater when health services were provided by a private vendor and frequently lacked overall systems of control that would ensure consistent high quality outcomes.

Moment-to-moment care – treating inmates according to protocols designed to address routine health conditions – was generally performed at the same level by UTMB CMC and the BOP. However, there are three aspects of the healthcare provided by UTMB CMC that reduce the value of services provided: First, the long-term consequences of current management of chronically ill inmates; Second, the level of staff expertise who routinely deal with urgent care issues (i.e., the limited access to highly trained medical providers); and third, the lack of systematic quality improvement by UTMB CMC.

The level of quality of chronic ambulatory care provided by UTMB CMC (a significant issue given the age of the BOP population and the lengthy incarceration time for most inmates) serves to illustrate this point. There were deficiencies observed at FCC Beaumont relative to community standards for chronic ambulatory care that were not generally seen at the BOP complexes reviewed. Some of these issues may be attributable to the fact the LVNs and RN, rather than MLPs and MDs, staff the Chronic Care Clinics. Other failures to meet the same level of standards met by the BOP-managed facilities may be due to differences in the methods used to mange urgent care. Further there were differences in the level of inmate satisfaction with care as evidenced by the number of grievances filed by inmates against health services at FCC Beaumont in comparison to FCC Allenwood or FCC Florence.

The skill mix used at FCC Beaumont is a pivotal issue from a cost and quality of care standpoint. At first it would appear that the use of less costly and less skilled healthcare personnel would substantially decrease costs and may provide a sufficient level of quality of care. But whether this is true and how patient outcomes driven by this skill mix differ from the BOP and community standards brings this conclusion into question. The question becomes whether or not LVNs and even RNs are capable of assuming the level of responsibility required by their roles in the UTMB CMC system. The evidence of this study and others suggests that there is little value in having the BOP change to this skill mix. Studies have documented that productivity decreases with LVN usage when compared to more skilled nursing practitioners, and that patient outcomes also suffer with a lower skill mix.[92] Even if these factors were not present, it is doubtful that LVNs could assume this expanded role in some states such as Wisconsin, which limits LVN practice to "simple" nursing acts.

The use of more highly-trained healthcare practitioners may well be more cost effective, as demonstrated by FCC Florence The decision by the physicians and the HSA at FCC Florence FCI and Camp to treat inmates more aggressively at the facility (rather than send them offsite for care) resulted in a substantial cost savings when compared with FCC Allenwood. It is also striking that the facility-level per diem at FCC Florence was $.11 lower than the cost per inmate per day at FCC Beaumont. This $.11 difference translates into a annual savings of more than $120,000 for a 3000-inmate prison such as FCC Florence.

The IOP system at FCC Beaumont is a top-down driven system that requires staff to audit and report a multitude of routine compliance indicators. However, UTMB CMC was never able to demonstrate that the results of these audits, and most importantly, the results of peer-reviewed clinical care, are communicated to other staff in a manner that facilitates timely and effective actions. Additionally, there is little concurrent evaluation of care based upon pre-set indicators that would enable staff to ensure that appropriate processes occur. Lastly, since performance bonuses depend directly on OPES scores, there is a financial disincentive built into the system that discourages the reporting of negative findings.

It is interesting to note that even as the BOP is embarking on a national telemedicine network, UTMB CMC has declared its existing system to be inefficient from a cost standpoint. UTMB CMC is however now focusing on a new telemedicine system (Cyb-R Care) that includes an electronic medical record in an effort to overcome these difficulties.

In passing we note that there is a potentially important difference between this demonstration project – designed to evaluate the privatization of healthcare at FCC

[92] When patient outcomes such as medication errors, patient falls, pressure ulcers, and nosocomial infections and patient/family complaints were examined it was found that the proportion of RN care hours delivered was inversely related to adverse patient outcomes. These effects were found up to a staffing mix of 87.5% RN staff. Blegen, M., Goode, C. and Reed, L.(1998) "Nurse Staffing and Patient Outcomes." Nursing Research 47:1, 43-49.

Beaumont – and the experiment at FCC Taft – intended to examine the implications of privatizing an entire privatize prison complex. In the Beaumont evaluation, the BOP comparison facilities studied (FCC Allenwood and FCC Florence) did not know that they were to be included in the study until they were contacted by the BOP Office of Research and Evaluation just prior to our visits. Thus, there can be no claim that the BOP institutions recognized that they were part of a "competition" or a privatization evaluation and had time to "clean up their act". The records at all facilities were reviewed in exactly the same manner and for the same time period for each aspect of care and financial management.

Our estimates of the costs incurred by UTMB CMC (see Table 23) cast doubt on the potential for realizing large-scale cost savings by attempting to replicate the UTMB CMC contract at other BOP facilities. Our estimates show that for average inmate populations as high as 6000, the UTMB capitation rate of $5.12 failed to cover even the direct cost of providing inmate health care. If these estimates are consistent with healthcare costs elsewhere, then an integrated healthcare services contract (with fees and staffing comparable to those provided by UTMB CMC) would seem at a minimum to require a nearby, large, publicly-funded medical school with specific expertise in correctional medicine.

What can be learned from this privatization project for inmate healthcare? Exact replication of the UTMB CMC contract terms and staffing is inadvisable and almost certainly impossible in most locations. Nevertheless, a number of possible lessons may be learned from the experience with UTMB CMC.

The fundamental message that can be gleaned from this project is that it is not the fact of privatization per se that will reduce costs while delivering a reasonable quality of care. Rather, it is the set of management practices associated with private industry -- ones not typically seen in Federal Government operations -- that are most instructive.

Indeed, the UTMB CMC managed care experience can help set the stage for the BOP to:

- review the current BOP staffing skill mix to ensure that all functions are being performed at the appropriate skill level;
- develop a more effective program of Utilization Review;
- identify the strengths and weaknesses of telemedicine as a substitute and complement for face-to-face contact with healthcare providers and
- strengthen procurement operations when contracting with external healthcare providers.

However, it should be remembered that UTMB CMC is not the only source of information on reinventing healthcare at the BOP. The reforms undertaken at facilities such as FCC Florence can provide the BOP with alternative healthcare management models.

Ultimately, there were no single acts of commission or omission resulting in serious injury or mortality to the inmates at FCC Beaumont. There were no extraordinary deviations from acceptable community standards. There was not a set of glaring errors or deficiencies found at the Beaumont Health Services units as there was the risk of adverse outcomes due to a lack of system controls. In the period for which we reviewed records, no inmates died directly as a result of the lack of systems control and continuous evaluation, but there was always the potential for problems due to a lack of follow-up. UTMB CMC had, at the time of this review and the later BOP program review, implemented few checks and balances to ensure that variances from the expected standard of care and expected processes were identified, corrected, and most importantly kept from recurring.

The majority of quality issues identified in this study can be traced back to the lack of "systems of internal control" as identified by the Federal Bureau of Prisons Health Services Program Review in June 2000. Overall, this study finds that the Federal Bureau of Prisons has clusters of excellence and achievement in the institutions reviewed. This does not mean that we did not observe a lack of consistency in practices and processes that created some uneven results within the Federally-run institutions. However, the quality and economic value received by UTMB CMC is not sufficient to recommend that such a model be implemented throughout the BOP.

Appendix A: Clinical Data Collection Forms

Clinical Data Collection Forms

ASTHMA

Indicator	*Location in Medical Record*	*Yes*	*No*	*N/A*	*Comments*
Office Visit at least 2 x per year	Progress notes				
Spirometry (pulmonary function testing) performed at least at:	lab tests				
initial assessment;					
after treatment has stabilized symptoms;					
every 1-2 years					
PEFR (Peak Expiratory Flow Rate) ≥ 80% of baseline norm for patient	Progress notes				
Annual flu shot provided	Progress notes				score yes if refused
Anti-inflammatory medications used for patients with mild, moderate or severe persistent asthma (i.e., inhaled steroids, cromolyn, or nedocromil)	Orders/Drug Book				
Patient Education includes knowledge of self-care behaviors in:					
• what to do when asthma flares up	Progress notes				
• how to adjust medication when asthma worsens	Progress notes				
• knows asthma triggers and how to avoid them	Progress notes				
• knows how to monitor asthma symptoms	Progress notes				
Client reports more than 3 asthma attacks per week	Progress notes				
Client reports sleep disruption due to asthma	Progress notes				
Client reports being unable to maintain normal activity levels	Progress notes				
Evidence exists that a treatment plan has been initiated to gradual step-down of long-term medication (generally at 25% decrease every 2-3 months)	Problem List updated/Progress				
Lost work days due to health reasons in past 6 months	Progress notes				note # of days in past 6 months
Emergency Physician Clinic Treatment Required in past year	Progress notes				note frequency in past year
prompt use of short-acting beta2-agonist (albuterol), if moderate to severe a 3-10 day course of oral steroids	Orders/Drug Book				
Symptoms required Emergency Department visit in past 12 months	Progress notes				note frequency in past year
Hospitalization for asthma in past 12 months	Progress notes				note frequency in past year
Referred to specialist in asthma care if:	Progress notes				Bd Certified Pulmonologist or Allergist
patient is not meeting goals of asthma therapy after 3-6 months	Progress notes				
life threatening asthma exacerbation occurred	Progress notes				
patient has severe persistent asthma requiring daily medication of anti-inflammatory inhaled high dose steroids and long-acting bronchodilator, sustained release theophylline or long-acting beta2-agonist (inhaled or systemic--i.e.,terbutaline, albuterol, bioterol, pirbuterol) and steroids	Progress notes				
patient has had more than 2 bursts of oral steroids in 1 year	Orders/Drug Book				
Referral to psychologist or psychiatrist if it is determined that a psychogenic component is causing exacerbation	Progress notes/consultation				
Reasons for poor asthma control assessed	Progress notes				
inhaler technique checked	Progress notes				
compliance with medications	Progress notes				
environmental factors changed	Progress notes				
alternative diagnoses considered	Progress notes				
Patients over the age of 55 given calcium and vitamin D supplements	Orders/Drug Book				
Asthma Classification Category: Clinical Features					
Circle one in each category	Days with symptoms*	PEF or	Nights with	PEF or	PEF Variability

		FEV1	Symptoms*	FEV1"+"	
Severe persistent	continual	<=6-%	frequent	<=60%	>30%
Moderate persistent	daily	>60%<80%	>= 5 x/month	>60% <80%	>30%
Mild persistent	3-6 x per week	>= 80%	3-4 x /month	>=80%	20-30%
Mild intermittent	<= 2 x per week	>=80%	<=2x /month	>=80%	<20%
*Chest tightness, wheezing, shortness of breath, cough, sputum production					
"+" PEF = peak expiratory flow; measure of personal best for patient					
FEV1= forced expiratory volume in 1 second					

INSULIN DEPENDENT DIABETES MELLITUS

Indicator	*Location in Medical Record*	*Indicator Met*			*Comments*
		Yes	*No*	*N/A*	
Seen at least 4 times per year	Progress notes				
Glycated Hemoglobin checked 2x per year	Lab Tests				
Glycated Hemoglobin < =7.2%a	Lab Tests				Record last value
Cholesterol checked annually	Lab Tests				
Lipid profile checked at diagnosis or at least every 5 years	Lab Tests				
Dilated eye exam performed annually (with diabetics over 30 years old or having diabetes more than 5 years duration)	Progress notes				if present give to DLM
Abnormalities noted in fundoscopic exam referred to ophthalmalogist for f/u	Progress notes/Consult present				
Pneumococcal vaccine offered annually	Progress notes/Orders				client refusal should be scored as yes
Urinary protein checked annually	Lab Tests				
if negative checked for microalbuinuria (see comments)	Lab Tests				
Serum Blood Urea Nitrogen (BUN), Creatinine checked annually	Lab Tests				
Treatment goals set initially and reviewed with each exam Problem List Updated). Includes:	Progress Notes				
a. long term goals	Progress Notes				
b. short term goals	Progress Notes				
c. medications	Progress Notes				
d. nutrition recommendations	Progress Notes				
e. evidence of education	Progress Notes				
Aspirin given 1x per day for anyone with the following risks: hypertension, obesity, smoker, high cholesterol (hyperlipidemia) LDL >=130; HDL <35; triglycerides >=400, protein in urine (proteinuria), family history of cardiovascular disease, personal history of cardiovascular disease (heart attack, stroke, claudication, and or angina)	Progress Notes, Initial Intake Exam/Problem List				
BP checked at least 2x per year	Progress Notes				
BP maintained at <130/85	Progress Notes or Nurses Notes				if present give to DLM
Self-monitoring Blood Glucose performed at least 1x per day	SMBG Log				if no, # of times in past month
Target of Self-monitored Blood Glucose (SMBG) met (if none specifically set by Health Care Practitioner use 80-120 before meals & 100-140 bedtime	SMBG Log				specific follow up recorded - circle one (non-compliance, change in meds, illness, other) if present give to DLM
Inmate instructed in dietary planning	Progress Notes				
Feet examined by health practitioner at least 2x per year	Progress Notes				
Client maintains weight within preset parameters	Progress Notes				if no, why
Hospitalization in past year	Progress Notes				if present give to DLM; reason
No hypoglycemic episodes interfering with Activities of Daily Living and requiring medical intervention	SMBG Log/Progress Notes				if present give to DLM; # & reason

REG NO: _____ Location :

The purpose of the survey is to compare the quality of care provided to inmates at this prison with the quality of care provided at other Federal prisons. The survey is being done by consultants being hired by the Bureau of Prisons. Your answers will be completely confidential and the questionnaires will be kept by the consultants. Results provided to the Bureau of Prisons will not contain any individual inmate identifiers. This survey will take about 5 minutes to complete. Thank you very much for your assistance.

Facility:

Do you have regular appointments at the health care unit such as chronic care, orthopedic, diabetic? **Yes No**

What condition do you have?

How many times have you been seen in sick call in the last 6 months?

Have you been treated by any outside health care provider (not a regular prison medical staff or prison dentist) in the past year?

Please answer whether you agree strongly, agree, disagree, or strongly disagree with the following:

I am able to get answers to the questions I ask of the Health Care Providers (Doctors, Physician Assistants, Nurses) who treat me	Strongly Agree	Agree	Disagree	Strongly Disagree	
I feel that I have a say in the decisions about my health conditions	Strongly Agree	Agree	Disagree	Strongly Disagree	
I feel I understand my overall health condition	Strongly Agree	Agree	Disagree	Strongly Disagree	
I feel I understand the medications I take (what they are and why I take them)	Strongly Agree	Agree	Disagree	Strongly Disagree	No Medications Taken
I feel I am able to get treatment when I am seriously ill	Strongly Agree	Agree	Disagree	Strongly Disagree	Never been seriously ill
I can see an outside health care provider pretty quickly when my prison Doctor has ordered it	Strongly Agree	Agree	Disagree	Strongly Disagree	Never ordered

Comments:

GENERAL MEDICAL RECORD REVIEW

Indicator	*Yes*	*No*	*N/A*	*Comments*
Physical Examination performed at least every 5 years				
Cholesterol screening performed over age of 40 every 5 yrs				
Testicular exam annually				
Prostate exam 1x age 40-49; annual 50+				
TB testing performed on admission and with exposure				
Preventative Dentistry performed				

REG NO
LOCATION

Appendix B: IDDM Statistical Results

IDDM Statistical Table 1

Seen at least 4 times per year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	94.44%	100.00%	95.00%
NO	2.78%	0.00%	2.50%
NA	2.78%	0.00%	2.50%

No statistically significant differences

IDDM Statistical Table 2

Glycated Hemoglobin checked 2x per year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	83.33%	100.00%	87.50%
NO	13.89%	0.00%	10.00%
NA	0.00%	0.00%	2.50%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont p= .029
Allenwood v. Beaumont No statistically significant differences

IDDM Statistical Table 3

Glycated Hemoglobin < =7.2%			
HGB7	BEAUMONT	FLORENCE	ALLENWOOD
YES	13.89%	46.67%	32.50%
NO	77.78%	53.33%	65.00%
NA	5.56%	0.00%	2.50%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont p= .01
Allenwood v. Beaumont p = .05

IDDM Statistical Table 4

Cholesterol checked annually			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	41.67%	100.00%	82.50%
NO	50.00%	0.00%	17.50%
NA	5.56%	0.00%	0.00%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont p= .0001
Allenwood v. Beaumont p = .0000

IDDM Statistical Table 5

Lipid profile checked at diagnosis or at least every 5 years			
LIPID	BEAUMONT	FLORENCE	ALLENWOOD
YES	36.11%	100.00%	90.00%
NO	55.56%	0.00%	10.00%
NA	5.56%	0.00%	0.00%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont p= .0000
Allenwood v. Beaumont p = .0000

IDDM Statistical Table 6

Dilated eye exam performed annually (with diabetics over 30 years old or having diabetes more than 5 years duration)			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	8.33%	86.67%	82.50%
NO	75.00%	13.33%	15.00%
NA	8.33%	0.00%	2.50%
REFUSED	8.33%	0.00%	0.00%

Florence v. Beaumont p= .001
Allenwood v. Beaumont p = .0000

IDDM Statistical Table 7

Abnormalities noted in fundoscopic exam referred to ophthalmologist for follow up			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	5.56%	53.33%	7.50%
NO	19.44%	0.00%	12.50%
NA	69.44%	46.67%	80.00%
REFUSED	5.56%	0.00%	0.00%

Florence v. Beaumont p=
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 8

Pneumococcal vaccine offered annually			
VACCINE	BEAUMONT	FLORENCE	ALLENWOOD
YES	8.33%	73.33%	20.00%
NO	83.33%	26.67%	80.00%
REFUSED	8.33%	0.00%	0.00%

Florence v. Beaumont p= .001
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 9

Urinary protein checked annually			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	69.44%	100.00%	67.50%
NO	19.44%	0.00%	30.00%
NA	8.33%	0.00%	2.50%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont p= .002
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 10

If urinary protein negative checked for microalbuinuria			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	30.56%	80.00%	27.50%
NO	41.67%	20.00%	30.00%
NA	27.78%	0.00%	42.50%

Florence v. Beaumont p= .0002
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 11

Serum Blood Urea Nitrogen (BUN), Creatinine checked annually			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	69.44%	100.00%	95.00%
NO	22.22%	0.00%	5.00%
NA	5.56%	0.00%	0.00%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont p= .002
Allenwood v. Beaumont p = .003

IDDM Statistical Table 12

Treatment goals set initially and reviewed with each exam Problem List Updated. Includes Long Term Goals			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	32.43%	80.00%	82.50%
NO	67.57%	20.00%	17.50%

Florence v. Beaumont p= .0004
Allenwood v. Beaumont p = .000

IDDM Statistical Table 13

Treatment goals set initially and reviewed with each exam Problem List Updated. Includes Short Term Goals			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	81.08%	100.00%	97.50%
NO	18.92%	0.00%	2.50%

Florence v. Beaumont p= .01
Allenwood v. Beaumont p = .02

IDDM Statistical Table 14

Treatment goals set initially and reviewed with each exam Problem List Updated. Includes Medications			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	83.78%	100.00%	97.50%
NO	16.22%	0.00%	2.50%

Florence v. Beaumont p= .03
Allenwood v. Beaumont p = .03

IDDM Statistical Table 15

Treatment goals set initially and reviewed with each exam Problem List Updated. Includes Nutrition			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	81.08%	100.00%	95.00%
NO	18.92%	0.00%	5.00%

Florence v. Beaumont p= .01
Allenwood v. Beaumont p = .06

IDDM Statistical Table 16

Treatment goals set initially and reviewed with each exam Problem List Updated. Includes evidence of patient education regarding self-care			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	89.19%	100.00%	100.00%
NO	10.81%	0.00%	0.00%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont p = .03

IDDM Statistical Table 17

Aspirin given 1x per day for anyone with at least one of the following: hypertension, obesity, smoker, high cholesterol (hyperlipidemia) LDL >=130; HDL <35; triglycerides >=400, protein in urine (proteinuria), family history of cardiovascular disease, personal history of cardiovascular disease (heart attack, stroke, claudication, and or angina)			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	8.33%	80.00%	25.00%
NO	63.89%	0.00%	47.50%
NA	27.78%	20.00%	27.50%

Florence v. Beaumont p= .0000
Allenwood v. Beaumont p = .05

IDDM Statistical Table 18

BP checked at least 2x per year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	97.22%	93.33%	97.50%
NO	0.00%	6.67%	0.00%
NA	2.78%	0.00%	2.50%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 19

BP maintained at <130/85			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	44.44%	73.33%	82.50%
NO	55.56%	26.67%	17.50%

Florence v. Beaumont p= .02
Allenwood v. Beaumont p = .0007

IDDM Statistical Table 20

Self-monitoring Blood Glucose performed at least 1x per day			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	27.78%	26.67%	12.50%
NO	52.78%	20.00%	85.00%
NA	8.33%	26.67%	0.00%
REFUSED	11.11%	26.67%	2.50%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 21

Target of Self-monitored Blood Glucose (SMBG) met (if none specifically set by Health Care Practitioner use 80-120 before meals & 100-140 bedtime			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	5.56%	20.00%	7.50%
NO	36.11%	6.67%	17.50%
NA	55.56%	73.33%	75.00%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 22

Inmate instructed in dietary planning			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	61.11%	100.00%	92.50%
NO	36.11%	0.00%	5.00%
NA	0.00%	0.00%	2.50%
REFUSED	2.78%	0.00%	0.00%

Florence v. Beaumont p= .0005
Allenwood v. Beaumont p = .0015

IDDM Statistical Table 23

Feet examined by health practitioner at least 2x per year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	69.44%	100.00%	82.50%
NO	30.56%	0.00%	17.50%

Florence v. Beaumont p= .002
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 24

Client maintains weight within preset parameters			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	38.89%	46.67%	32.50%
NO	61.11%	53.33%	67.50%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 25

Hospitalizations for IDDM or complications within the past year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	8.33%	13.33%	2.50%
NO	91.67%	86.67%	97.50%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 26

No hypoglycemic episodes interfering with Activities of Daily Living and requiring medical intervention			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	69.44%	53.33%	72.50%
NO	27.78%	46.67%	27.50%
HYPERGLYCEMIA	2.78%	0.00%	0.00%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

IDDM Statistical Table 27

General Comments Categorized – Review Comments			
COMMENTS	BEAUMONT	FLORENCE	ALLENWOOD
SEE NOTES	57.89%	16.67%	45.83%
NON COMPLIANT	26.32%	8.33%	33.33%
RETINOPATHY	5.26%	0.00%	4.17%
SOFT SHOE	0.00%	58.33%	0.00%
IMPROVED	0.00%	16.67%	0.00%
NEW PATIENT	10.53%	0.00%	0.00%
NEUROPATHY	0.00%	0.00%	4.17%
INFECTED TOE	0.00%	0.00%	4.17%
HYPOGLYCEMIC FREQUENTLY	0.00%	0.00%	4.17%
MED VARIANCE	0.00%	0.00%	4.17%

Appendix C: Asthma Statistical Results

Asthma Statistical Table 1

Clinic visit at least twice a year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	83.67%	98.11%	100.00%
NO	4.12%	0.00%	0.00%
N/A (new inmate)	10.16%	1.89%	0.00%
REFUSED	2.05%	0.00%	0.00%

Florence v. Beaumont p= .01
Allenwood v. Beaumont p = .0003

Asthma Statistical Table 2

Pulmonary Function Testing Performed at Least at initial assessment, after treatment has stabilized symptoms and every 1-2 years			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	73.47%	75.47%	81.94%
NO	26.53%	22.64%	16.67%
NA	0.00%	0.00%	1.39%
PENDING	0.00%	1.89%	0.00%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 3

PEFR greater than or equal to 80% of baseline norm for patient			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	53.06%	69.81%	74.83%
NO	20.41%	5.66%	11.11%
NO READING	26.53%	5.66%	14.06%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont p = .01

Asthma Statistical Table 4

Annual flu shot provided			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	16.33%	64.15%	61.11%
NO	69.39%	33.96%	26.39%
NA	10.20%	0.00%	2.78%
REFUSED	4.08%	1.89%	9.72%

Florence v. Beaumont p= .0000
Allenwood v. Beaumont p = .0000

Asthma Statistical Table 5

Anti-inflammatory medications used for patients with mild, moderate or persistent asthma			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	65.31%	71.70%	84.72%
NO	18.37%	9.43%	4.17%
NA	16.33%	18.87%	9.72%
REFUSED	0.00%	0.00%	1.39%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont p = .01

Asthma Statistical Table 6

Patient education includes knowledge of self-care behaviors: what to do when asthma flares up.			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	55.10%	86.79%	100.00%
NO	44.90%	13.21%	0.00%

Florence v. Beaumont p= .0004
Allenwood v. Beaumont p = .0000

Asthma Statistical Table 7

Patient education includes knowledge of self-care behaviors: how to adjust medication when asthma worsens			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	61.22%	88.68%	100.00%
NO	38.78%	11.32%	0.00%

Florence v. Beaumont p= .001
Allenwood v. Beaumont p = .0000

Asthma Statistical Table 8

Patient education includes: knowing asthma triggers and how to avoid them.			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	57.14%	88.68%	97.22%
NO	42.86%	11.32%	2.78%

Florence v. Beaumont p= .0003
Allenwood v. Beaumont p =.0000

Asthma Statistical Table 9

Patient education includes: how to monitor asthma symptoms.			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	57.14%	88.68%	100.00%
NO	42.86%	11.32%	0.00%

Florence v. Beaumont p= .0004
Allenwood v. Beaumont p = .0000

Asthma Statistical Table 10

Client reports more than 3 asthma attacks per week			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	10.20%	13.21%	2.78%
NO	89.80%	86.79%	97.22%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 11

Client reports sleep disruption due to asthma			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	4.08%	3.77%	1.39%
NO	95.92%	96.23%	98.61%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 12

Client reports being unable to maintain normal activity levels			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	8.16%	13.21%	2.78%
NO	91.84%	86.79%	97.22%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 13

Evidence exists that a treatment plan has been initiated to gradually step-down long-term medications			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	30.61%	56.60%	66.67%
NO	69.39%	39.62%	11.11%
NA	0.00%	3.77%	22.22%

Florence v. Beaumont p= .007
Allenwood v. Beaumont p = .0003

Asthma Statistical Table 14

Lost work days due to health reasons in past 6 months			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	16.33%	15.09%	4.17%
NO	83.67%	84.91%	95.83%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont p = .02

Asthma Statistical Table 15

Emergency care in clinic required in past year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	38.78%	13.21%	12.50%
NO	61.22%	86.79%	87.50%

Florence v. Beaumont p= .003
Allenwood v. Beaumont p = .0012

Asthma Statistical Table 16

Emergency Treatment in Clinic meets standards			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	20.41%	13.21%	11.11%
NO	18.37%	0.00%	1.39%
NA	61.22%	86.79%	87.50%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 17

Symptoms required Emergency Room Treatment in the past 12 months			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	2.04%	0.00%	1.39%
NO	97.96%	100.00%	98.61%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 18

Hospitalization for asthma in past 12 months			
HOSPITAL	BEAUMONT	FLORENCE	ALLENWOOD
YES	2.04%	0.00%	1.39%
NO	97.96%	100.00%	98.61%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 19

Referred to specialist in asthma if: patient is not meeting goals of asthma therapy after 3-6 months; or life threatening exacerbation occurs; or patient has severe and persistent asthma requiring daily medication of anti-inflammatory inhaled high dose steroids and long acting bronchodilator, sustained release theophylline and steroids; or, patient has more than 2 bursts of oral steroids in a year			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	0.00%	15.09%	5.56%
SHOULD	4.08%	1.89%	1.39%
NO NEED	95.92%	83.02%	93.06%

Florence v. Beaumont p= .01
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 20

Reasons for poor asthma control assessed			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	12.24%	16.98%	13.89%
SHOULD	14.29%	1.89%	0.00%
NO NEED	73.47%	81.13%	86.11%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Asthma Statistical Table 21

Patients over the age of 55 given calcium and vitamin D supplements			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	0.00%	3.77%	8.33%
SHOULD	6.12%	7.55%	2.78%
NO NEED	93.88%	88.68%	88.89%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant (p = .06)

Asthma Statistical Table 22

Asthma Classification Category by Clinical Features			
	BEAUMONT	FLORENCE	ALLENWOOD
Severe persistent	0.00%	0.00%	1.39%
Moderate persistent	12.33%	7.69%	2.78%
Mild persistent	22.37%	26.92%	15.28%
Mild intermittent	65.31%	65.38%	80.56%

No statistically significant differences

Appendix D: Preventative General Health Care Age 55 and Over

Preventative Care Statistical Table 1

Physical Examination performed at least every 5 years			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	90.00%	96.77%	100.00%
NO	5.00%	3.23%	0.00%
NA	5.00%	0.00%	0.00%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont p = .04

Preventative Care Statistical Table 2

Cholesterol screening performed over age 40 every 5 years			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	55.00%	80.65%	73.53%
NO	42.50%	19.35%	23.53%
NA	2.50%	0.00%	2.94%

Florence v. Beaumont p= .02
Allenwood v. Beaumont not statistically significant

Preventative Care Statistical Table 3

Testicular exam performed annually			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	35.00%	48.39%	32.35%
NO	52.50%	41.94%	32.35%
NA	0.00%	0.00%	2.94%
REFUSED	12.50%	9.68%	32.35%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Preventative Care Statistical Table 4

Prostate exam done at least once age 40-49 and annually over 50			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	35.00%	51.61%	47.06%
NO	50.00%	29.03%	20.59%
NA	5.00%	0.00%	2.94%
REFUSED	10.00%	19.35%	29.41%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Preventative Care Statistical Table 5

Tuberculosis testing performed on admission and with exposure			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	57.50%	100.00%	79.41%
NO	35.00%	0.00%	20.59%
NA	7.50%	0.00%	0.00%

Florence v. Beaumont p= .0001
Allenwood v. Beaumont p = .03

Preventative Care Statistical Table 6

Preventative Dentistry performed at least annually			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	50.00%	90.32%	79.41%
NO	50.00%	9.68%	11.76%
NA	0.00%	0.00%	8.82%

Florence v. Beaumont p= .0007
Allenwood v. Beaumont p = .007

Appendix E: Inmate Satisfaction with Health Services

Satisfaction Statistical Table 1

Do you have regular appointments at the health unit such as chronic care clinic, orthopedic, diabetic ?			
	BEAUMONT	FLORENCE	ALLENWOOD
YES	45.68%	45.76%	43.04%
NO	54.32%	54.24%	56.96%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Satisfaction Statistical Table 2

What condition do you have?			
CONDITION	BEAUMONT	FLORENCE	ALLENWOOD
ACUTE	41.98%	54.24%	54.43%
CHRONIC	24.69%	20.34%	26.58%
DIABETES	7.41%	8.47%	3.80%
HYPERTENSION	13.58%	3.39%	5.06%
ORTHOPEDIC	4.94%	1.69%	6.33%
INFECTIOUS DISEASE	1.23%	3.39%	0.00%
CARDIAC	2.47%	3.39%	0.00%
PULMONARY	3.70%	5.08%	3.80%

Satisfaction Statistical Table 3

How many times have you been seen in sick call in the last 6 months?			
SICK CALL	BEAUMONT	FLORENCE	ALLENWOOD
0	14.10%	3.51%	7.79%
1	23.08%	26.32%	37.66%
2	11.54%	14.04%	22.08%
3	15.38%	8.77%	6.49%
4	10.26%	10.53%	2.60%
5	5.13%	12.28%	1.30%
6	6.41%	14.04%	5.19%
7	0.00%	0.00%	2.60%
8	0.00%	1.75%	7.79%
10 OR MORE	14.09%	8.77%	6.50%
MEAN 3.75			

Satisfaction Statistical Table 4

Have you been treated by any outside health care provider (not a regular prison medical staff member or dentist) in the past year?			
OUTSIDE PROVIDER	BEAUMONT	FLORENCE	ALLENWOOD
YES	20.99%	13.56%	25.32%
NO	75.31%	84.75%	74.68%
NA	2.47%	1.69%	0.00%
WAITING	1.23%	0.00%	0.00%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Satisfaction Statistical Table 5

I am able to get answers to the questions I ask of the Health Care Providers (Doctors, Physician Assistants, Nurses) who treat me			
	BEAUMONT	FLORENCE	ALLENWOOD
STRONGLY AGREE	19.75%	28.81%	16.46%
AGREE	34.57%	45.76%	41.77%
DISAGREE	24.69%	15.25%	24.05%
STRONGLY DISAGREE	20.99%	10.17%	17.72%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Satisfaction Statistical Table 6

I feel I have a say in the decisions about my health conditions			
	BEAUMONT	FLORENCE	ALLENWOOD
STRONGLY AGREE	27.16%	27.59%	26.92%
AGREE	33.33%	44.83%	35.90%
DISAGREE	24.69%	18.97%	20.51%
STRONGLY DISAGREE	14.81%	8.62%	16.67%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Satisfaction Statistical Table 7

I feel I understand my overall health condition			
	BEAUMONT	FLORENCE	ALLENWOOD
STRONGLY AGREE	27.16%	30.51%	23.08%
AGREE	45.68%	55.93%	51.28%
DISAGREE	14.81%	10.17%	17.95%
STRONGLY DISAGREE	12.35%	3.39%	7.69%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Satisfaction Statistical Table 8

I feel I understand the medication I take (what they are and why I take them)			
	BEAUMONT	FLORENCE	ALLENWOOD
STRONGLY AGREE	25.93%	30.51%	19.23%
AGREE	32.10%	42.37%	50.00%
DISAGREE	18.52%	6.78%	12.82%
STRONGLY DISAGREE	16.05%	1.69%	8.97%
NO MEDICATIONS	7.41%	18.64%	8.97%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Satisfaction Statistical Table 9

I feel I am able to get treatment when I am seriously ill			
	BEAUMONT	FLORENCE	ALLENWOOD
STRONGLY AGREE	13.58%	27.12%	16.67%
AGREE	24.69%	20.34%	34.62%
DISAGREE	22.22%	23.73%	24.36%
STRONGLY DISAGREE	20.99%	5.08%	19.23%
NOT ILL	18.52%	23.73%	5.13%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Satisfaction Statistical Table 10

I can seen an outside health provider pretty quickly when my prison Doctor has ordered it.			
	BEAUMONT	FLORENCE	ALLENWOOD
STRONGLY AGREE	9.88%	18.64%	8.97%
AGREE	19.75%	23.73%	26.92%
DISAGREE	18.52%	13.56%	25.64%
STRONGLY DISAGREE	19.75%	11.86%	20.51%
NOT ORDERED	32.10%	32.20%	17.95%

Florence v. Beaumont not statistically significant
Allenwood v. Beaumont not statistically significant

Satisfaction Statistical Table 11

COMMENTS (RATING BY REVIEWER)			
	BEAUMONT	FLORENCE	ALLENWOOD
NEGATIVE	28.40%	10.00%	39.24%
POSITIVE	3.70%	20.00%	6.33%
NONE	67.90%	70.00%	54.43%

Florence v. Beaumont p=.03 for percentage of positive comments
Allenwood v. Beaumont not statistically significant

Appendix F: Low Back Pain Results

Low Back Pain Statistical Table 1

Treatment for Low Back Pain			
	Beaumont	Florence	Allenwood
None	18.18%	0.00%	2.94%
Steroids	6.06%	0.00%	0.00%
NSAIDs	51.52%	61.54%	85.29%
Physical Therapy	0.00%	15.38%	2.94%
Heat/Ice	24.24%	23.08%	2.94%
Surgical	0.00%	0.00%	2.94%
Emergency Room	0.00%	0.00%	2.94%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Low Back Pain Statistical Table 2

Diagnostic Testing Performed			
	Beaumont	Florence	Allenwood
Physical Exam Only	84.85%	69.23%	29.41%
X-Ray	9.09%	30.77%	58.82%
MRI	6.06%	0.00%	8.82%
Myeolgram	0.00%	0.00%	2.94%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Low Back Pain Statistical Table 3

Inmate Instructed in Exercises			
	Beaumont	Florence	Allenwood
None	51.52%	38.46%	79.41%
Yoga	6.06%	0.00%	0.00%
Back	42.42%	61.54%	20.59%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Low Back Pain Statistical Table 4

Off Work			
	Beaumont	Florence	Allenwood
No	36.36%	7.69%	39.39%
Light Duty	9.09%	15.38%	15.15%
Off Less Than 1 Week	45.45%	69.23%	33.33%
Off More Than 1 Week	9.09%	7.69%	3.03%
Restrictions	0.00%	0.00%	9.09%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Low Back Pain Statistical Table 5

Devices Prescribed			
	Beaumont	Florence	Allenwood
None	78.12%	46.15%	52.94%
Soft Shoe	12.50%	15.38%	8.82%
Special Mattress	3.12%	0.00%	0.00%
Brace	3.12%	7.69%	2.94%
Arch Supports	0.00%	7.69%	0.00%
Ice	3.12%	23.08%	5.88%
NA	0.00%	0.00%	5.88%
Low Bunk	0.00%	0.00%	8.82%
Orthopedic Consult	0.00%	0.00%	14.71%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Evaluation			
	Beaumont	Florence	Allenwood
Delayed Treatment	16.67%	33.33%	8.70%
Appropriate	62.50%	66.67%	82.61%
Needs Education	0.00%	0.00%	4.35%
Less Than Expected	16.67%	0.00%	0.00%
Refused Requests	4.17%	0.00%	0.00%
Referral May Exceed Requirements	0.00%	0.00%	4.35%

Florence v. Beaumont p=
Allenwood v. Beaumont p =

Appendix G: BOP Healthcare Expenditures by Facility, FY 1999

Security	Female	Facility	ADP FY99	B (PHS)	B 25	B 50	B 64	B 65	B73	Total	Per Diem
overhead		Central Office		$2,796,600						$2,796,600	
overhead		MARO		$526	$209,958		$2,791			$213,274	
overhead		National Programs		$399,148		$100,000	$150,000			$649,148	
overhead		NCRO		$1,916	$153,394					$155,310	
overhead		NERO			$491,407					$491,407	
overhead		SCRO		$14,900	$418,243	$66,619				$499,763	
overhead		SERO		$35,932	$99,750					$135,682	
overhead		WRO		$734	$668,307					$669,040	
offline		Boron		$189,001	$213,955	$630,945	$17,667			$1,051,567	
offline		Brooklyn		$120,844	$124,885	$2,299,437	$9,043			$2,554,209	
offline		Butner FMC		$95,253		$60,748				$156,001	
offline		Edgefield		$208,938	$1,248,268	$1,845,518	$66,718			$3,369,442	
offline		El Paso			$81,018	$372,999				$454,018	
offline		FMC Devens		$1,302,966	$415,217	$2,795,292	$24,937			$4,538,411	
offline		Houston		$5,661		$911,219				$916,880	
offline		Philadelphia		$641		$30,872				$31,513	
offline		Victorville		$9,663		$514,999				$524,662	
min		Duluth	559	$87,649	$273,697	$713,447	$6,860			$1,081,653	
min		Eglin	811	$153,345	$590,478	$937,050	$47,045			$1,727,918	$5.84
min		Montgomery	740	$245,848	$567,679	$864,821	$4,056			$1,682,404	$6.23
min		Morgantown	891	$348,417	$422,823	$1,165,929	$5,047		$213.14	$1,942,429	$5.97
min		Nellis	435	$305,020	$256,875	$542,551				$1,104,447	$6.96
min		Pensacola	445	$81,488	$279,306	$840,994	$12,618			$1,214,406	$7.48
min		Seymour Johnson	488	$147,830	$324,755	$802,897	$15,104			$1,290,585	$7.25
min		Yankton	492	$226,956	$269,162	$568,479	$1,199			$1,065,796	$5.93
medical		Butner	1,035	$1,839,095	$942,770	$4,509,928	$33,561		$103	$7,325,457	$19.39
medical		Fort Worth	1,471	$2,444,001	$6,671,708	$8,547,887	$143,460			$17,807,056	$33.17
medical		Lexington	1,798	$1,674,158	$4,692,352	$10,134,605	$129,872	$74,703		$16,705,690	$25.46
medical		Rochester	813	$1,607,539	$5,472,110	$14,641,242	$44,977	$772		$21,766,640	$73.35
medical		Springfield	1,182	$1,376,363	$5,298,198	$22,898,948	$124,273		$71.38	$29,697,853	$68.84
med		Beckley	1,778	$191,921	$1,368,278	$1,655,456	$50,871			$3,266,527	$5.03
med		Cumberland	1,418	$145,468	$1,206,449	$1,517,598	$110,477			$2,979,991	$5.76

Security	Female	Facility	ADP FY99	B (PHS)	B 25	B 50	B 64	B 65	B73	Total	Per Diem
med		El Reno	1,423	$536,345	$2,703,347	$1,604,869	$78,344	$21,637		$4,944,542	$9.52
med		Englewood	1,005	$685,634	$376,177	$1,093,179	$24,535			$2,179,525	$5.94
med		Estill	1,202	$304,457	$923,851	$1,783,385	$39,010			$3,050,703	$6.95
med		Fairton	1,252	$226,512	$523,538	$1,450,125	$94,326			$2,294,501	$5.02
med		Greenville	1,387	$267,402	$638,473	$1,799,817	$22,286			$2,727,978	$5.39
med		Jesup	1,492	$364,454	$1,467,979	$1,442,407	$98,465			$3,373,305	$6.19
med		Manchester	1,467	$227,235	$1,191,297	$1,876,745	$394			$3,295,671	$6.15
med		Marianna	1,377	$204,453	$824,229	$2,389,231	$74,195			$3,492,109	$6.95
med		McKean	1,343	$36,052	$951,590	$1,522,361	$72,185			$2,582,188	$5.27
med		Memphis	1,183	$457,490	$1,565,657	$1,950,229	$23,230			$3,996,606	$9.26
med		Miami FCI	1,192	$197,997	$907,914	$1,999,272	$58,808			$3,163,990	$7.27
med		Oxford	1,246	$168,842	$525,452	$1,573,284	$8,379	$23,964		$2,299,922	$5.06
med		Pekin	1,471	$299,113	$1,132,073	$1,747,152	$40,143	$194		$3,218,675	$5.99
med		Phoenix	1,428	$504,956	$2,776,089	$1,939,293	$86,062			$5,306,401	$10.18
med		Ray Brook	1,085	$415,887	$694,610	$1,107,765	$119,055			$2,337,317	$5.90
med		Schuylkill	1,374	$302,236	$883,406	$1,701,156	$102,819			$2,989,616	$5.96
med		Sheridan	1,801	$634,194	$1,470,771	$1,617,464	$104,898			$3,827,328	$5.82
med		Talladega	1,338	$174,453	$941,369	$1,918,518	$19,353			$3,053,693	$6.25
medical		Terminal Island	1,011	$1,010,091	$1,153,781	$1,791,588	$76,338			$4,031,797	$10.93
med		Three Rivers	1,355	$459,981	$895,468	$1,735,577	$120,143			$3,211,169	$6.49
low		Ashland	1,309	$387,774	$1,724,348	$1,603,934	$6,805			$3,722,861	$7.79
low		Bastrop	1,244	$280,345	$1,095,590	$1,680,878	$41,379			$3,098,191	$6.82
low		Big Spring	1,119	$299,792	$675,926	$1,433,503	$40,172			$2,449,393	$6.00
low		Butner LSCI	1,241	$603,739	$829,831	$1,460,236	$32,998			$2,926,804	$6.46
low		Elkton	2,013	$384,146	$940,440	$1,756,218	$63,311			$3,144,116	$4.28
low		Forest City	1,780	$185,370	$996,156	$1,749,935	$43,387			$2,974,848	$4.58
low		Ft. Dix	3,695	$386,479	$2,928,021	$3,260,442	$108,627			$6,683,568	$4.96
low		La Tuna	1,322	$319,931	$1,145,608	$1,524,806	$22,603			$3,012,948	$6.24
low		Loretto	837	$311,754	$598,638	$1,025,447	$10,100			$1,945,938	$6.37
low		Milan	1,369	$155,360	$874,911	$1,987,301	$13,566			$3,031,139	$6.07
low		Petersburg	1,389	$409,382	$1,732,277	$1,972,247	$56,853			$4,170,758	$8.23
low		Safford	777	$278,787	$424,612	$788,518	$20,556			$1,512,474	$5.33
low		Sandstone	819	$275,640	$406,946	$1,222,426	$23,324			$1,928,336	$6.45
low		Seagoville	1,196	$472,003	$251,574	$1,495,982	$38,428			$2,257,988	$5.17
low		Texarkana	1,655	$338,423	$1,464,204	$1,778,374	$22,199			$3,603,201	$5.96

Security	Female	Facility	ADP FY99	B (PHS)	B 25	B 50	B 64	B 65	B73	Total	Per Diem
low		Waseca	838	$370,383	$396,859	$889,195				$1,656,437	$5.42
low		Yazoo City	1,649	$296,166	$1,224,926	$1,314,024	$18,539			$2,853,655	$4.74
high		Atlanta	2,537	$950,823	$1,714,552	$3,307,783	$64,280			$6,037,438	$6.52
high		Leavenworth	2,226	$234,079	$2,039,443	$2,018,494	$37,539			$4,329,555	$5.33
high		Lewisburg	1,514	$441,384	$998,165	$2,379,543	$191,143	$53,301		$4,063,536	$7.35
high		Marion	542	$269,288	$497,246	$1,029,212	$61,141			$1,856,887	$9.39
high		Terre Haute	1,399	$494,310	$2,033,402	$2,224,332	$26,371			$4,778,415	$9.36
female	min	Alderson	869	$230,069	$616,714	$1,463,968	$59,332			$2,370,083	$7.47
female	min	Bryan	827	$374,513	$479,822	$1,153,135	$0			$2,007,470	$6.65
female	med	Carswell	1,052	$2,540,083	$4,457,665	$9,646,421	$21,166			$16,665,335	$43.40
female	det	Chicago	730	$110,115	$113,954	$1,861,081	$13,068			$2,098,217	$7.87
female	low	Danbury	1,156	$332,059	$1,046,509	$2,128,024	$253,436		$124	$3,760,152	$8.91
female	admin	Dublin	1,427	$431,311	$2,178,928	$2,310,767	$83,909			$5,004,915	$9.61
female	det	Guaynabo	996	$489,147	$283,201	$1,988,229	$15,115			$2,775,692	$7.64
female	det	Los Angeles	1,013	$78,562	$317,507	$2,230,891	$17,668			$2,644,627	$7.15
female	det	Miami FDC	1,522	$344,010	$738,940	$2,581,314	$22,718			$3,686,982	$6.64
female	det	New York	875	$177,785	$539,874	$2,207,785	$7,531			$2,932,974	$9.18
female	admin	Oklahoma	1,447	$632,556	$575,117	$2,094,437	$4,521			$3,306,631	$6.26
female	det	San Diego	910	$504,286	$691,784	$2,034,049				$3,230,119	$9.72
female	det	Seattle	687	$384,646	$64,828	$1,275,328				$1,724,802	$6.88
female	low	Tallahassee	1,009	$354,091	$853,929	$2,067,028	$40,190			$3,315,238	$9.00
female	med	Tucson	778	$320,996	$414,833	$1,228,931	$14,527			$1,979,285	$6.97
det		Otisville	1,142	$324,244	$1,356,783	$1,561,868	$44,504			$3,287,398	$7.89
comp		Allenwood	4,156	$579,346	$3,076,606	$5,092,877	$224,879			$8,973,708	$5.92
comp		Beaumont	4,028	$89,774	$124,947	$7,813,772	$132,362			$8,160,855	$5.55
comp		Coleman	3,706	$734,529	$3,139,041	$4,200,814	$196,638			$8,271,022	$6.11
comp		Florence	2,985	$887,693	$1,107,085	$3,682,436	$251,143			$5,928,357	$5.44
comp		Lompoc	2,770	$919,147	$2,622,300	$3,938,896	$310,487	$70,493		$7,861,323	$7.78
comp		Oakdale Consolidated	2,273	$161,205	$1,272,640	$3,380,069	$38,091			$4,852,005	$5.85
			109,616							$372,118,495	$9.30