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Unintended Consequences of Sentencing Policy:

The Creation of Long- Term Healthcare Obligations

Executive Summary

February 2000

Prepared for
National Institute of Justice
810 Seventh Street, N.W.
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Executive Summary

With passage of the Violent Offender Truth in Sentencing Act (VOTIS), Congress attempted to extend the duration of prison for repeat and violent offenders. Unless that extension is counterbalanced by fewer or shorter prison terms for less serious offenders, VOTIS will result in higher prison costs. This report examines one of those costs – expenditures for medical care.

This is an empirical study. The Federal Bureau of Prisons provided data about health care utilization by prisoners. Using those data, we developed statistical models of how costs increased for male offenders based on age when they entered prison and time spent in prison. The estimates are specific to 200 types of medical conditions that occur most frequently among Federal inmates.

Inmates suffer from a variety of medical conditions, but for purposes of modeling, we divided these conditions into three types: intermittent, chronic with intermittent recurrence, and chronic requiring continuous treatment.

Some medical episodes occur, receive treatment, and then the condition disappears; although additional episodes might occur subsequently, they are unrelated to the first episode. We call these intermittent conditions. A sprain provides an illustration. Many offenders never receive treatment for a sprain. Others receive several treatments clustered into a single episode – that is, several treatment events associated with the same episode of having sprained an ankle or other body part. Still other offenders are treated for more than one episode, and each episode represents the recurrence of an injury.

Other medical conditions occur and require more or less continuous treatment. Hypertension is an illustration; cancer is another. We call these chronic conditions with continuous treatment, and we model them differently than we modeled intermittent conditions.

The third category of medical condition is a combination of the first two. It comprises chronic conditions requiring episodic treatments. A bad back is an illustration. Typically a person develops a chronic condition that requires treatment when it first happens, then enters a quiescent period; the condition then recurs periodically.

Although we were able to make preliminary projections for nearly 200 of the most prevalent medical conditions observed among Federal prisoners, we were unable to solve all the technical issues that arose in this study. It is best to consider this report as providing an approach, but not a final solution, to the problem of projecting prisoners' health care needs. Nevertheless, this report contains preliminary estimates that provide both researchers and practitioners with a reasoned basis for figuring how health care costs will increase as VOTIS alters the number and mix of prison inmates.

We had to develop a procedure for distinguishing between medical conditions that were chronic and medical conditions that were not chronic. We proposed two empirical tests, and while they were helpful, we learned that empirical tests alone could not determine how to classify medical conditions. Of course, health care providers could probably do a reliable job of making these classifications, but they too would have missed some interesting findings. Offenders apparently go without medical attention, so that when they enter prison, the need for providing medical care is especially heavy. Dental attention, although not part of our data, would seem to be the prototypical illustration. People

who lack medical insurance because they are unemployed or underemployed probably forego seeking medical care. They may even be so uninterested in their medical condition that they forego care available through free clinics. At any rate, when these people go through prison medical diagnosis, such conditions are detected and treatment is rendered.

Our findings suggest also that predictions of the need for medical care cannot be based upon the prevalence of disease outside of prison. Although we do not make any such comparison, it seems reasonable to assume that prisoners suffer from certain medical conditions at higher rates than do others who are not involved with the criminal justice system. Indeed, for communicable diseases, this is demonstrable – people who go through jails and prisons account for a large proportion of diseases such as HIV, AIDS, TB and Hepatitis B and C. Thus, it seems necessary to base projections on a prisoner population.

Our findings also suggest that prison can retard the onset of certain medical conditions. This is easy to understand. Medical care received in prison can be a preventative, and at the least, early diagnoses can lead to more efficacious treatments. Furthermore, inmates are removed from unhealthy conditions (such as substance abuse) and introduced to healthy conditions (including regular sleep, exercise, food and hygiene). This is not to say that prisons are the healthiest alternative. For example, it is difficult to believe that prisons promote mental health. The point, however, is that the incidence and prevalence of medical conditions among prison inmates should be different from the incidence and prevalence of medical conditions among otherwise similarly situated offenders who are not in prison.

This latter effect – that prisons are more or less conducive to health compared with not being in prison – was difficult to model. Indeed, we were not especially successful. While we could almost always uncover what appeared to be a prison effect on the incidence and prevalence of medical conditions, the effect was often too large to be reasonable.

We think that future study of the incidence and prevalence of medical conditions in an offender population has to deal with this prison effect. To do so, however, we believe that researcher will have to acquire data from a longer period of time. Our “window” was three years of medical records. Although three years would seem to be a long time to study the progression of medical conditions, the apparent length of that window is deceptive. Many offenders enter prison during the window. For them, the window is shorter than three years, and it is shortened even more by the need to discard data from windows that are shorter than six months. Of course, offenders may end their sentences before the end of the window, and for them, the window is necessarily less than three years. A new study needs to examine a window that is as long as possible. With computerized databases, such data are readily available, and the models developed in this study can be used to derive useful estimates.

We also had to deal with the problem of left-hand censoring. This is unavoidable since there is no way to observe the onset of chronic medical conditions that occurred before the beginning of prison. But self-imposition of left-hand censoring, which happens when the window is abbreviated, seems like a needless complication that could be overcome by expanding the width of the data collection window.

Several remaining problems received no attention here. Some diseases either end in death or have a high probability of ending in death. Cancer is an illustration. We did not attempt to model death rates, but of course, it would be unreasonable to assume that someone who entered prison with a

terminal malignancy could serve a twenty-year prison term. More refined models would certainly cut the average life-span at some empirically-derived threshold. We have not done that here.

We spent considerable effort attempting to convert medical treatment into dollar costs, but ultimately, we were not successful. There is a conceptual problem converting medical treatment into costs, and that is that prisons vary greatly in the quality and quantity of treatment given to inmates. The cost of treating condition X in prison A is not the same as the cost of treating condition X in prison B. There is no universal standard. The best way for prison administrators to use the projections developed here probably is to apply judgement about how trends will affect the current delivery of health care services and, in turn, how this will effect costs.

There was an additional practical problem with developing cost estimates. We could not find good translations from ICD-9 codes (the basis for classifying medical conditions and treatment procedures) into estimates of how much it costs to treat the conditions. We were not able to develop a useful algorithm for assigning costs to conditions.

Ultimately, we find it difficult to answer the penultimate questions that motivated this research: How will medical health care costs change as prisoners age? We note that a prison system that has a high turnover of inmates has high medical care costs. This is because inmates enter prison with preexisting medical conditions that require treatment; health care likely diminishes for most inmates following this initial period of relatively high intensity health care. If fewer inmates go to prison for relatively short terms, and if those inmates who go to prison stay for extended periods, prison costs would go down provided everything else were held constant.

Of course, not everything else would be held constant. Some medical conditions actually decrease with age – sprains are an illustration. We assume this happens because young inmates are more active physically, and that physical activity leads to the same ailments inside prison as they do outside prison. However, for the most part, these would seem to be conditions that are relatively inexpensive to treat.

In fact, many serious medical conditions – heart disease, for example – increase with age. These will be increasingly expensive to treat. Thus, while the total number of medical events may decrease (e.g., fewer sprains) the expense of medical costs is still likely to increase (e.g., more heart bypass surgery).

Estimating this increase has been very difficult, for reasons illustrated. Although medical conditions will increase as offenders age, for many medical conditions, prison may be a relatively healthy environment. While few of us would exchange freedom for prison, incarceration does provide regular meals, sleep, and exercise which are often avoided by those with the freedom to choose. For some medical conditions, especially communicable diseases, prison may be unhealthy. We are not promoting prisons as health care spas. The point is simply that making projections of health care needs requires some adequate way of modeling the healthy or unhealthy effects that prisons have on the incidence and prevalence of medical conditions. Although our results are suggestive, we were not able to provide that model. We hope that future studies will, and that those future attempts will be assisted by the work reported here.