

**SENATE FISCAL AGENCY
 MEMORANDUM**

DATE: February 8, 2012
TO: Members of the Department of Corrections Subcommittee
FROM: Dan O'Connor, Fiscal Analyst
RE: 12-Hour Shifts in Michigan Prisons

On January 23, 2012, GONGWER News Service published a story titled, "Corrections, Union Discuss Moving To 12-Hour Shifts." The article states that Russ Marlan, spokesman for the Michigan Department of Corrections (MDOC), said that the concept could lead to a reduction (by attrition) of the MDOC workforce and could also result in less overtime. While any move would "require approval of the Michigan Corrections Organization" (MCO), and officials are classifying the talks as "far from finalization," the article sparked curiosity by many in the public safety budget areas.

As the Department and the union continue in their discussions, it may be worthwhile to explore what the various costs and benefits could be, if such a policy were to be implemented. In order to do this, I will attempt to answer these questions:

- 1) What might a 12-hour shift implementation look like?
- 2) What are the areas of potential savings?
- 3) What are some estimates of those savings?

Several states have already implemented 12-hour shifts for at least some of their corrections staff, including Indiana, Arkansas, Alabama, and Ohio. Other states, such as Florida and California, have initiated discussions and/or pilot programs over the last couple years. At the pilot facility in Florida, officials estimated they would save \$170,000 annually at that 1,200 bed prison. If that level of savings could be achieved across Michigan's roughly 43,000 beds, the resulting savings would be \$6.1 million annually. California estimated that going to 12-hour shifts could save them 5-12% of staffing costs, which would represent very substantial savings if realized. In Michigan, that level of savings on payroll for corrections officers (COs) could be in the range of \$24.0 million to \$57.6 million (this is an estimate based on the roughly 8,000 corrections officers making close to \$60,000 per year on average). Several county jails in Michigan have also begun utilizing 12-hour shifts, so if the State is seeking potential best practices they could also begin looking closer to home.

It is clear that some states at least believe there can be savings achieved, but where exactly do these savings come from? There are two key areas I will discuss: reduced staff-hour needs during the evening lockdown and potential health insurance savings due to staff reduction by attrition. It is very important to note that the items discussed below are strictly hypothetical at this point, and actual savings or costs would vary widely based on the specific implementation plans and the results of the collective bargaining process.

Possible Cost-Saver #1: Reduced Staff-Hour Needs During Evening Lockdown

Currently, under the 8-hour shift policy, there are 3 shifts – the morning shift, the afternoon shift, and the night shift. The night shift requires fewer staff than the other two because the inmates are locked down and there is limited inmate mobility (only an inmate with special circumstances, like working in the kitchen or having a medical appointment, is allowed to exit his or her cell area). If 12-hour shifts were implemented, this reduced staff night shift would be extended by 4 hours, resulting in an overall reduction in the number of staff-hours.

In California, the discussion called for Shift "A" to run from 8pm-8am, Shift "B-early" to run from 5am-5pm, and shift "B-late" to run from 8am to 8pm. Therefore, there would still be three shifts, but they would be longer and overlapping. This would allow the facility to have operational hours be from 5am to 8pm, with the maximum number of staff there between 8am and 5pm (when the "B-early" and "B-late" shifts overlap). Of course there are a number of possible ways to design staff coverage using staggered 12-hour shifts – this just represents one example of how administrators can attempt to efficiently align staff coverage with security need.

Without knowing the number of corrections officers needed at each facility at different times of the day (which varies based on the facility and the security level), it is difficult to get a reasonable estimate of the potential savings. However, I will present an illustration just to show how the potential savings would be generated (but the numbers presented are hypothetical):

Suppose that a given facility currently has 30 staff during both day shifts and 20 staff during the night shift.

30 staff x 8 hour shifts = 240 staff-hours for the morning shift
30 staff x 8 hour shifts = 240 staff-hours for the afternoon shift
20 staff x 8 hour shifts = 160 staff-hours for the night shift

240 + 240 + 160 = 640 total staff-hours per day

Suppose that same facility went to 12-hour shifts:

30 staff x 12 hour shifts = 360 staff-hours for the morning/afternoon shift
20 staff x 12 hour shifts = 240 staff-hours for the night shift

360 + 240 = 600 total staff-hours per day (a 6.25% reduction in total staff-hours)

Or suppose that the same facility implemented the plan discussed in California:

Shift "A" 8pm-8am: 20 staff x 12 hour shift = 240 staff-hours
Shift "B-early" 5am-5pm: 5 staff x 12 hour shift = 60 staff-hours
Shift "B-late" 8am-8pm: 25 staff x 12 hour shift = 300 staff-hours

240 + 60 + 300 = 600 total staff-hours (a 6.25% reduction in total staff-hours)

In the first scenario with the simple 2 shift, 12-hour model, the amount of time that prisoners can be moving about within the facility is shortened by 4 hours. In the second "California-style" scenario the business day is shortened by 1 hour, from 16 to 15, and there would only be 25

staff present for the first 3 and the last 3 hours of that business day (the 9 hours in the middle from 8am to 5pm would still have 30 staff).

If it was determined that utilizing the 12-hour shift model could lessen staff-hour needs without jeopardizing facility safety, then the State could realize an indeterminate, but likely substantial, amount of cost savings. As noted above, a 5% reduction in correction officer staff could represent savings of approximately \$24.0 million. If the staff-hour needs were reduced, then the actual number of staff could also be reduced proportionally (the Department has indicated any reduction would be by attrition).

Possible Cost-Saver #2: Health Insurance Savings from Reduced Staff Size

If the MDOC could reduce staff size in the manner discussed above, it would not only save on the cost of wages, it would also save the cost of fringe benefits – particularly health care. The average of the state share for health insurance premiums for MCO employees in Fiscal Year 2011-12 was \$15,375. Therefore, a 5% reduction in the number of corrections officers or a reduction of about 400 employees would save the State approximately \$6.15 million. The actual reduction would depend on characteristics of those individuals leaving (whether they are single, married, married with children, or single with children). On October 1, 2012, State employees' health care contribution will increase from 10% to 20%, which could reduce the State contribution that would potentially be forgone due to employee reductions.

Other Items of Interest

- Does this mean corrections officers (COs) would work 84 hours per pay period?

It is possible it could mean that. Other states typically have implemented either a 5+2 or a 4+3 shift sequence (5 12-hour shifts in one week, two the next; or 4 12-hour shifts then 3 the next). The 4+3 would obviously spread the workload around, but the 5+2 may be more popular with the COs because if they want to take vacation then they can plan it during their light week and get a full 7 days off by only taking 2 days off (although it would still count as taking off 24 hours' worth of leave time).

By implementing either system (5+2 or 4+3) the end result is that COs wind up working 84 hours per 2-week pay period ($7 \times 12 = 84$). It is not clear to me (yet) whether that 4 hours would count as overtime or straight time (knowing that would obviously be a critical piece to whether this would truly be a money saver). The alternative to having each officer work 84 hours per pay period would be to have a "time adjustment" where every 7th shift (1 out of the 7 shifts per pay period) is reduced to an 8-hour shift instead of a 12-hour shift.

But in the absence of a time adjustment, the extra 4 hours per pay period would add up and allow them to in theory get rid of, by attrition, every 21st worker. Here's why:

Suppose there are 300 COs that work at Prison X.

Right now they all work 5 8-hour shifts per week for a total of 40 hours. Likewise, they work 10 8-hour shifts over a two week period (a pay period), for a total of 80 hours.

Thus, the prison staffing needs for COs are for $40 \times 300 = 12,000$ staff-hours per week, or 24,000 staff-hours per two weeks.

If they switched to working the 12-hour shifts described above (either a 5+2 or 4+3 situation), then each CO would work $12 \times 7 = 84$ hours per pay period.

$84 \times 300 = 25,200$ staff-hours per two week period. Yet, recall above that the facility is fully staffed at 24,000 staff-hours per pay period. So, the extra 4 hours built in to each CO's pay period would eliminate the need for:

$24,000 / 84 = 285.71$ or 286 workers

$300 - 286 = 14$ staff or approximately a 4.667% reduction

The fiscal impact of such a move is solely tied to whether or not the potential extra 4 hours would count as overtime. If the hours were straight time, then the savings would be equal to the cost of health care for each employee position reduced (as said above, it is approximately \$15,375 per year). The cost of the wage-hours would not be reduced, because they are just being redistributed to remaining employees (these wage-hours would still demand a 4-7% contribution for the defined contribution (DC) employees, and would likely count towards final average compensation for defined benefit (DB) employees).

If the extra 4 hours were overtime, there is no way this aspect of the plan could result in savings. If every 21st CO position were eliminated and the work were given to the remaining 20 positions as described above, then every position would get an extra 104 hours per year (4 hours per pay period times 26 pay periods a year). Assuming a wage of approximately \$30 per hour, the overtime premium (time and a half) would be \$15 per hour. Therefore, the marginal impact of paying the overtime premium for those hours would be \$31,200; clearly overshadowing the health care benefit savings of eliminating every 21st person. For the cost of overtime to be less than the savings from health care, the average wage would have to be less than \$14.80 per hour (which is lower than the starting wage).

If the time were worked as straight time it would be the equivalent of a 5% increase in compensation, although it would not technically be a pay increase because the pay *rate* would remain the same (it would be proportional – 5% more work, 5% more pay). If the time were overtime, it would result in a 7.5% increase in compensation; a net raise of 2.5% because the 7.5% bump would result from only 5% more work. If MDOC and MCO instead adopted the "time adjustment" strategy, then this discussion would not be applicable.

- What would this mean for the shift differential?

Civil Service regulations provide for a shift differential if 50% of an employee's shift falls between the hours of 4pm and 5am (so currently the night and afternoon shifts are eligible). The premium provided for corrections officers is 5% of their regular base rate, which means the premium may range from approximately \$0.75 to \$1.50 per hour. By lengthening the night shift, those workers would receive an additional four hours of pay at the differential rate. However, there may be offsetting savings because under a 12-hour shift plan there may not be an afternoon shift, meaning that the night shift workers may become the only shift eligible for the differential. The exact result would depend on the implementation and the timing of the daytime shifts (specifically, whether 50% of any of the shifts would be after 4pm). It is possible the net result could be a cost decrease due to reduced shift differential eligibility (particularly because the afternoon shift is generally larger than the night shift).

- How would this influence overtime use overall?

Russ Marlan said when quoted in GONGWER that the concept could reduce overtime, but it is not clear to me how the mechanics of this might occur. Obviously it would be tough for someone to work a double shift under the 12-hour shift system, but if there is a vacancy that needs to be filled, it seems to me that they would still need to call someone in on their day off to fill it.

- Does this put workers at risk of fatigue?

It's possible. A recent National Institute of Justice study of police officers said that workers self-reported greater levels of sleepiness and lower levels of alertness on 12-hour shifts compared to 8-hour shifts. However, the same study reported that workers who switched from 8-hour shifts to 10-hour shifts reported greater job satisfaction, likely because of the extra day off to spend resting or with family and friends. Evaluating this would be an important component of any pilot study.

- How might this effect the composition of the workforce?

By reducing the workforce through attrition it is worthwhile to keep in mind what might be referred to as the "distilling effect." By stopping the inflow of new workers (who tend to start at lower wages), over time the average wage of corrections officers is likely to rise without the inflow of new workers to dilute the average. In other words, savings calculated based on the average wage have the potential to be overestimated.

Conclusion

The conversation about 12-hour shifts is a conversation worth having. If the lengthened shift could provide a better, more efficient correlation between the security needs and staff scheduling, then it is possible that a "win-win" could be found between the MDOC and the MCO. Creative solutions could also be considered, such as a parallel system where some staff opts into the 12-hour system and others choose to remain in the 8-hour system. Such a system could provide added flexibility for scheduling, while allowing corrections officers the choice to pick the shift that meets their preferences based on their stamina and family obligations.

If you have any questions, please don't hesitate to call.

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c: Ellen Jeffries, Director
Steve Angelotti, Associate Director
Rich Child, Senate Majority Policy Office
Cate McClure, Senate Democratic Staff