

Supplemental Digital Appendix 2

Further Details on the Compensation Plan

1. How are RVUs calculated for teaching and research?

Total RVU targets were set by Vizient (UHC) national benchmarks for each specialty, plus the amount of RVUs required to cover divisional and departmental overhead, divided by the total faculty. Where there were no published UHC benchmarks (e.g. lung transplantation), UHC responded rapidly to requests for further information, and provided data on reported RVUs for physicians working >50% in specialties not published. The targets for education and research RVUs were set by the amount of assigned RVUs left after subtracting the clinical RVU target (pro-rated for their clinical FTE) from their total RVU target. Then productivity is measured by revenue from the educational and research effort. If that revenue covered that fraction of salary in the specific mission then it met the RVU target. If the revenue generated was over the target, then that was converted into RVUs for an incentive, by dividing the total revenue generated by the amount required to cover the salary within that mission assignment, and then multiplying that ratio by the amount of target RVUs in that assignment. Investigators were asked to cover 70% of the NIH cap, with the remaining 30% and the cap gap covered by endowments (especially the Gatorade Trust) and residual funds from previous departmental surpluses. RVU productivity from all missions was merged to calculate overall incentives. Educational revenue came from three main sources, state general revenue for medical student teaching, hospital funds for graduate medical education, or philanthropy. Research revenue came from external grants and contracts, or internal residual or endowment funds. Further details of RVU assignments are in the compensation plan document, pgs 3-5.

2. What are the sources of revenue for teaching and how is distribution defined?

A key recognition by the compensation committee was that all education and research is funded, just that some funding comes from internal sources and other funding from external sources. Another crucial agreement the compensation committee made was to tie FTE assignment to revenue, so that at each budget there was no FTE that did not have associated revenue, whether internal or external to the department. This permits the plan to be self-funding. External sources of educational revenue were defined above, and there were multiple internal philanthropic endowments that supported educational effort as well. However, in the lone example of cross-subsidy in the plan, internal clinical revenue covered the required fellowship directors not covered by GME funds. No part of the plan was self-reported, including educational effort. All educational effort was defined by assignments of medical student or resident/fellow schedules. Only educational effort that had associated revenue sources counted towards educational RVUs. It should be noted that state general revenue for medical students is disbursed by the college based on face time with medical students, partially pro-rated for how many students were present. Thus, more medical student teaching effort resulted in more revenue to the department.

Supervising residents or fellows in a clinical setting was considered clinical educational effort, and did not receive RVU credit, since there was no external source of funds, and this effort has associated clinical billing. Administrating the residency or a fellowship program did receive cognate RVUs depending on the effort required by GME regulations.

3. *What were the sources of revenue for internally funded research, and how is distribution defined?*

Internal research funds came from either philanthropy (e.g. Gatorade Trust), indirect cost returns (the university returns 7.5% of federal indirect costs to departments and 10% to the investigator), or residuals from contracts. Internal funding supported laboratory start-ups for new faculty, annual pilot projects, and bridge grant funds for investigators who lost all external funding. Bridge funding came first from any individual residual accounts, then divisional residuals or philanthropy, and then departmental funds (2 years at approximately one RO1 equivalent). As mentioned, the research salary targeted for coverage was set at 70% of the NIH cap, pro-rated for the research FTE assignment, and the department covered the gap between that and the actual salary. All internally funded research was peer-reviewed by all division chiefs, with the chief of the division the PI resided in recusing themselves. Funds were distributed based on priority scores until the budgeted departmental allotment was met. Requested amounts could be reduced so that more individuals could be funded, after discussion between the Vice Chair for Research, the relevant Chief, and the Chair.

4. *What is the mechanism for funding clinical services that have few or no RVUs associated?*

There are indeed some clinical services the institution requires but have no RVU productivity, such as MICU attending night call, or care of solid organ transplants after their transplant surgery but still within the bundled period. Included in this category are CMS or Joint Commission required medical directors. In this case, the service is contracted for with the hospital, and RVUs targets subtracted from the assigned FTE. There were a few medical directors, such for as hepatic or renal transplantation, not formally required but deemed necessary by the Chair and Vice Chair of Clinical Affairs, and not supported by the hospital that were supported from clinical funds. This was part of departmental overhead added to RVU targets.

5. *Why were RVUs used as the basis for the plan as opposed to E&M or CPT coding?*

RVUs were chosen as the basis for the plan because there were national benchmarks for RVUs per specialty, and thus productivity was not measured by time, historical assignments, seniority, or anecdotal difficulty of the assignment. The difference between procedural and non-procedural specialties was normalized by using national RVU benchmarks per specialty. GI and cardiology have much higher national RVU benchmarks than ID or rheumatology, but incentives are paid only after reaching benchmarked targets for each discipline. Since the benchmarks are normalized per UHC targets per specialty, it takes relatively equal effort to reach an incentive

between specialties. In addition, RVUs normalize for payor mix and collections. Thus, one lucrative suburban practice will not receive a larger incentive than a clinic in an impoverished area with a worse payor mix. CPT codes do not normalize for effort between disciplines. Benchmarked data from E&M codes between disciplines is difficult to obtain, and then represents selected populations. In addition, the concept of time-based as opposed to productivity-based compensation was considered by the compensation plan committee to be counter-productive. If paid only by time expended, then there is no incentive to be productive within that scheduled time.

6. What added administrative effort was required for implementing the plan?

One additional central administrative FTE was added, although this person had several other assignments besides the compensation plan. The divisional lead administrators were all given some part of the compensation plan metrics that they were responsible for. This created a team effort in administering the plan, and credentialed these administrators in departmental roles, allowing them to obtain promotion to lead administrators in other medical school departments. The plan has since been automated, and individual electronic dashboards of schedules and productivity are available in real time on the department's secure intranet. These dashboards are automatically populated after assignments and budgets are set.

7. Was the quality of teaching or research taken into account for incentives in these areas?

Quality for teaching was rewarded monetarily with annual cash awards (\$250-1500) given to approximately 10% of the teaching faculty based on student, trainee, and peer evaluations. These were funded by philanthropy. Research quality was rewarded by a large monetary award given annually to the junior and senior faculty who made the highest impact discovery in the past year. In addition, investigators received an additional incentive of 5% of their federal indirect cost returns annually, besides any RVU incentive from covering more than 70% of their salary. Quality metrics that have been discussed include: incentivize indirect correlates of quality in each mission, such as patient satisfaction scores, AHCA-reportable adverse events, publication impact factor for research, and board scores and pass rates for education. Adding quality metrics to the compensation plan has been discussed at length, but not yet implemented for several reasons: they are not self-funding, there is no consistent metric that crosses all specialties, and it is difficult to create metrics that are not arbitrary and based on opinion. For example, questions that could not be resolved for just research quality include: At what bar do you set the impact factor? 15? 30? Do reviews count? Do you count the impact factor of the journal or of the publication, or both? What about H-index, which measures career impact? Is that not more important than one paper? Since consensus could not be reached on quality metrics for education or research, and few were self-funding, these have not been systematically implemented. It is recognized that block grants for health of populations could markedly change the metrics of this plan. We have begun planning for this alternative approach.

8. *What effect did the plan have on departmental culture?*

Empowering the faculty to create a self-funding incentive plan was the best mechanism for building trust in institutional leadership, which was essential for the new departmental leadership. The chiefs and vice chairs were recently polled about the effects of the compensation plan on culture. While 8 out of the 10 division chiefs supported the plan, they stated that there were both positive and negative effects on culture with this plan. Positive effects included appropriately rewarding faculty productivity as opposed to seniority, position, or anecdote. The plan increased faculty retention, faculty control of clinical operations, alignment of faculty time with productive efforts, making research and educational efforts eligible for incentives, and normalizing salaries to national benchmarks. A majority of faculty salaries were below the AAMC median at the initiation of the compensation plan. Negative cultural effects included some faculty becoming addicted to the larger incentives through increased clinical effort, which could lead to burn-out. In addition, the plan does not incentivize time spent on difficult patients, which can result in resentment in the patient or faculty. Finally, the Chair and Chiefs now get requests for RVU support for effort previously provided freely, such as student or resident interviews, or committee work. Some committees have associated revenue from the institution, so there are RVUs allotted, such as the IRB, the IACUC, or the medical school admissions committee. Others, such as faculty or trainee recruitment committees or interviews, do not receive RVU credit. For participation in these committees and for those faculty who interview more than 10 student, resident or fellow candidates, the Chair gives a personal gift each year in recognition of their service.

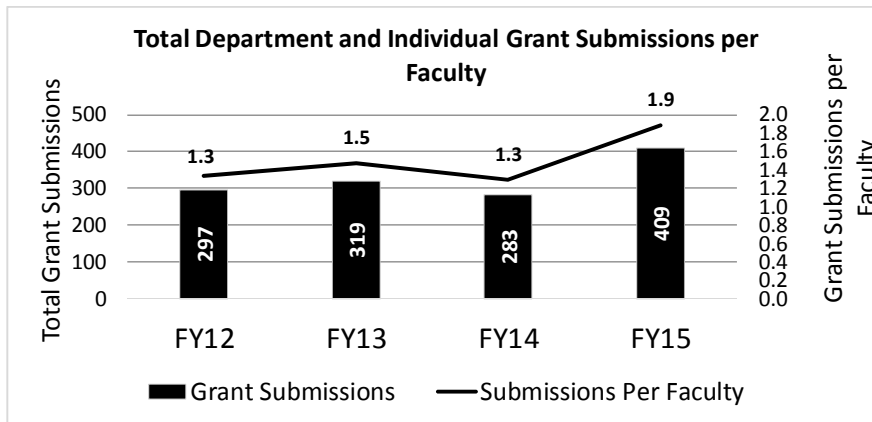
9. *Does such a faculty-generated plan reduce the authority of the Chair and the Dean?*

The plan has not changed the authority of the Chair or Dean. The Chair and Dean review the compensation plan annually, and approve the plan annually, before the beginning of each FY. They both retain the power of revision, never yet exercised, over any aspect of the plan. As long as the same principles of organizational philosophy are adhered to by the compensation committee that they were first charged with, and which led to the plan, there is little need for revision. The plan has increased the responsiveness of the faculty to the Chair and Dean, likely because there is more transparency and accountability between each entity.

10. *How has the plan altered the relationship with the hospital?*

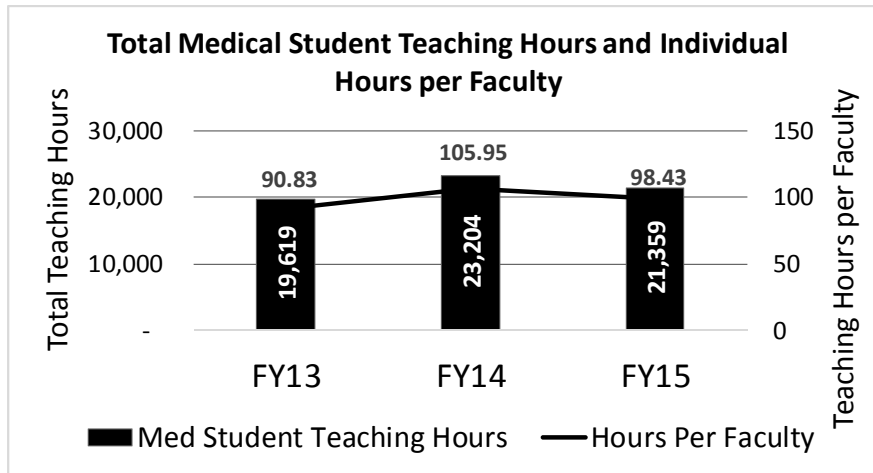
The hospital has been a strong supporter of this plan, since it aligns productivity with compensation, and requires all missions to be self-funding. Many university hospitals struggle with the concept of cross-subsidizing unproductive but historically entrenched research and education. This plan directly addresses that issue by requiring targets and assignments be tied to revenue. It should be noted that the hospital provides 50% of its positive margin to the College of Medicine to support faculty efforts for which there are no attendant RVUs, as mentioned above.

Supplemental Digital Appendix 3



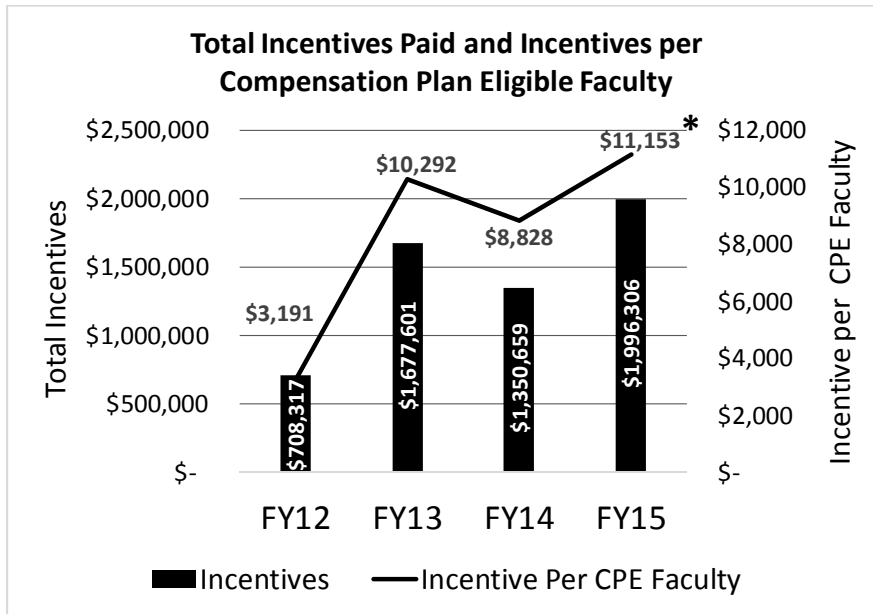
Total grant submissions for the department during each FY, both before (FY12) and the three years after the implementation of the compensation plan. No statistically significant difference.

Supplemental Digital Appendix 4



Total medical student teaching hours for the year before (FY12) and the three years after the implementation of the compensation plan. Average teaching hours prorated for the number of faculty. Student teaching hours were calculated based on scheduled face time with students. No statistical significant difference.

Supplemental Digital Appendix 5



Total incentives paid before (FY12) and the three years after the compensation plan implementation. Average incentives paid normalized for faculty number, $*P \leq .001$.