

RICHLAND MEMORIAL HOSPITAL'S TEACHING COSTSIntroduction

Several years ago MUSC sought additional funding for teaching costs at the MUSC Medical Center (at that time referred to as the Medical University Hospital) which were not being fully funded by CHE. MUSC produced a study which purported to estimate those costs and asked CHE to reimburse it for the estimated amount. The Commission's formula recommendation for the hospital had been approximately \$10,000,000 or one-third of what was called for by MUSC's study. After some negotiation between MUSC and CHE, it was decided that teaching costs at the Medical Center would be reimbursed based on a formula developed by the Health Care Financing Administration (HCFA) and used in the Medicare and Medicaid programs. This method of reimbursement was placed in CHE's FY 86-87 formula.

In 1986 Richland Memorial Hospital (RMH) performed a study similar in nature to MUSC's original study to show that it too had teaching costs which were not reimbursed by the state and requested that it (RMH) be treated like MUSC. The Commission asked for time to study the issue. This report gives the CHE staff recommendation for funding RMH. The recommendation is based on deliberations of a Committee with members from RMH, USC, and CHE.

## Defining the Problem

All the costs we will be referring to in this discussion are called indirect costs in the literature and by the Federal Government. In this context indirect costs generally refer to all the costs incurred by the hospital. Doctors' fees and salaries paid to residents are examples of direct costs and are not the issue here.

All the studies that staff is aware of conclude that teaching hospitals do indeed incur net costs (i.e., indirect costs) in performing the teaching function. A study performed by HCFA (using a methodology which resulted in the formula used by Medicare and Medicaid to reimburse teaching costs), as well as the studies by MUSC and RMH, all concluded that there is a net teaching cost associated with training residents and undergraduates. However, the studies disagree as to the extent of the cost for reasons which shall explained later. RMH's study gives a good indication of where some of these increased costs are. That study indicates that RMH must employ a greater number of FTE employees per bed than would a non-teaching hospital. It is well documented that in teaching hospitals lab tests are performed as a teaching function which would not ordinarily be performed, nurses spend time instructing residents and responding to their needs, and extra administrators must be hired to oversee the teaching function. Also, teaching hospitals run some out-patient clinics that they would not otherwise have. In addition, there are the usual added overhead costs in the personnel department, payroll department,

cafeteria, etc.

One can think of the increased costs hospitals incur in performing the teaching function as coming from two sources. First, the patient mix in teaching hospitals is different. On average, patients in teaching hospitals tend to be more costly to treat than the patients in non-teaching hospitals. Teaching hospitals attract the poor whose illnesses tend to be more severe and also treat patients with more exotic illnesses as part of the teaching function. Second, the teaching function itself drives up costs through increased numbers of lab tests, etc., as explained above. In comparing the HCFA methodology with the MUSC and RMH studies, we conclude that the HCFA methodology more nearly estimates the increased costs associated with the teaching function itself, while the RMH and MUSC studies estimate the increased cost from both the teaching function and the patient mix. (This is the primary conceptual reason that the studies differ.) Staff contends that the increased cost associated with the first source (i.e., the patient mix) is a medical cost, not a teaching cost, and therefore should not be charged to higher education. This is the reason the methodology of funding MUSC's Medical Center uses the HCFA methodology instead of MUSC's or RMH's methodology.

HCFA's formula is based on the number of residents. HCFA's study originally concluded that, if one considers the ratio of residents to beds in a teaching hospital, then for every 10% in that ratio hospital costs are increased by 5.79%. (For example, if a hospital has 100 beds and 10 residents, then the ratio of

residents to beds would be 10%, and thus, its indirect teaching costs are assumed to be 5.79% greater than they would have been had there been no residents.) This 5.79% rate was used in our original formula to fund MUSC's Medical Center. Because costs were increasing so rapidly at the Medical Center resulting in a rapid increase in the formula, CHE decided to cap the recommendation to the Medical Center and not allow it to rise faster than funding to other institutions. In fact, the FY 89-90 recommendation for MUSC's Medical Center 62.42% of the calculation using in the original formula.

As a framework for dealing with the funding of RMH we consider three types of hospitals. Type I consists of MUSC's hospital and is distinguished by the fact that it trains residents and undergraduates, is a state hospital existing solely to perform the teaching function, and is completely integrated with MUSC's academic function. Type II consists of RMH whose distinguishing characteristic is that it trains both residents and undergraduates but is not a state hospital and does not exist solely in alliance with the USC-School of Medicine. Type III consists of other teaching hospitals and their distinguishing characteristic is that they train residents only and are not directly associated with a medical school.

#### Discussion and Recommendation

RMH plays a vital role in the training of USC's undergraduate

medical students and for that reason staff believes that RMH deserves special recognition in the area of funding. Staff believes that since RMH is distinguished from the other teaching hospitals by its association with USC and by its acting as a training ground for undergraduates, RMH should be compensated by CHE, but only for costs that can be associated with its relationship to USC. The recommendation made here is not intended to apply to hospitals not so associated with a medical school. The principle followed in this recommendation is that RMH should be compensated for costs associated with USC's presence using the same methodology as used at MUSC. The presence of undergraduates at RMH results in an increase in the number of residents and it is these additional residents which are said to be associated with USC's presence. The number of residents that RMH would have, if it were not associated with USC is estimated and then it is assumed that all additional residents are required to support the teaching function associated with USC's undergraduates.

In order to carry out this methodology one would have to estimate the number of residents associated with USC's teaching needs. To do this, the number of residents per bed at Greenville Memorial Hospital was obtained and it was assumed that RMH would have had the same ratio had not been associated with USC. Greenville was chosen because it is the only hospital in South Carolina (besides MUSC's Medical Center) with the wide range of residency programs that one finds at RMH. One then applies the formula used at MUSC to determine the marginal cost increase

associated the residents which are calculated to be associated with USC's presence. This leads to the conclusion that approximately 42 of RMH's 113 residents are at RMH because of RMH's association with USC.

By this methodology, the marginal indirect education cost to RMH that results from residents associated with the presence of USC's undergraduates is \$4,545,685. (See Appendix.) Offsetting this by a prorata share of the Medicare\Medicaid reimbursement for teaching yields a net teaching cost at RMH of \$3,378,807. When this same calculation is applied to MUSC, MUSC's formula recommendation is 62.42% of its calculation. (The reason CHE doesn't recommend 100% funding was that we capped MUSC's recommendation as we explained earlier.) Applying this same percent to RMH's calculation yields a recommendation for funding RMH of \$2,109,162.

The recommended funding level must be offset by compensation which RMH already receives. This includes \$700,000 (adjusted by inflation) in Step 12 of the formula for the USC School of Medicine which is set aside to be given to RMH (i.e., \$765,100 in the FY 89-90 formula). Also included as an offset the fair market value for the rental of space in the Bell Building which USC has set aside for RMH's use. USC has set aside approximately half of the 61,360 square feet for RMH which at a rental of \$12 per square foot amounts to \$368,160. The total of these offsets amount to \$1,133,260. Applying these offsets results in increasing CHE's recommendation for indirect hospital costs by

\$975,902 to \$2,109,162. This recommendation is contingent on USC successfully negotiating affiliation agreements with the appropriate hospital or hospitals. Should the appropriate agreements not be in place then funds recommended here for FY 90-91 will not be expended.

This recommendation is made with two reservations. First, the Federal Government is currently reviewing its methodology of reimbursement of teaching costs. It may be advisable to revisit any decisions made now when that review is complete. Second, if USC shifts some of its undergraduate education away from RMH then its reimbursement of RMH will be scaled down proportionately.

Note that no effort has been made to place a dollar value on the undeniable benefits that accrue to RMH as a result of its association with USC. These benefits include the prestige that comes with being a teaching hospital. This no doubt helps to attract additional patients to RMH.

This recommendation does not address issues concerning the adequacy of the present funding mechanism of the direct costs of residents or of the indirect costs associated with Type III institutions. The Commission may want to study this next year.