

## Memorandum October 6, 2006

TO: Jayson Slotnik, BIO

FROM: Mary Jo Braid-Forbes, The Moran Company

SUBJECT: Findings from our replication of the CMS ASP+5% calculation

---

There has been historical controversy about how overhead and handling costs are recorded for pharmaceuticals under the Hospital Outpatient Prospective Payment System (HOPPS).

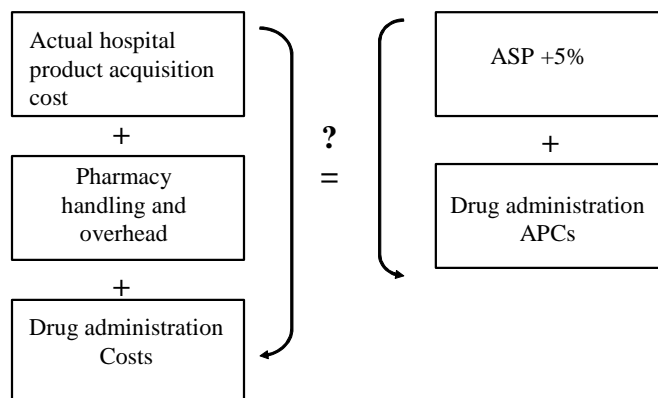
Questions that have arisen include:

- How much of the costs of the pharmacy department is overhead and handling and how much is product costs?
- Have hospitals included these costs in the charges for pharmaceuticals?
- Do all products have the same percentage allocation of overhead or is there a differential mark-up?

Some of the research conducted has on the surface seemed contradictory. Specifically, for the OPSS payment, CMS has calculated that overhead and handling costs are covered if payment for separately payable pharmaceuticals and biologics is set at Average Sales Price (ASP) plus 5%. However, several cost report analyses have concluded that overhead costs are between 25 and 33% of department costs, which would imply a mark-up over acquisition cost of between 33 and 50%.

From a payment system perspective the question becomes whether the costs of the product, pharmacy handling and overhead and drug administration are covered by the drug payment rates calculated at ASP plus 5% and drug administration APC payment rates. See figure 1.

**Figure 1**



Cost report analysis of overhead consistently has shown overhead costs are at least 25% of department costs. These studies have included the CMS contractor Kathpal Technologies (1999) report which analyzed 55 cost reports and found pharmacy overhead to be one-third of pharmacy costs. Using more recent cost report information and over 1,200 cost reports, MedPAC repeated this analysis and found that wages, salary and fringe benefits represented 25% of department costs (June 2006). This would seem to be lower bound on the overhead percentage, since there are additional costs that would be considered overhead and handling that are not direct personnel costs. MedPAC's analysis of more detailed Maryland hospital cost reports found direct personnel costs and non-drug supplies to be between 26 and 28 percent. We have conducted similar analyses on cost report data and had similar findings.

However, CMS calculations of pharmacy overhead costs calculated as a percentage above ASP have been much lower. CMS uses charges submitted by hospitals on their claims for separately payable drugs and biologicals and estimates the cost of these products by applying a cost-to-charge ratio derived from the hospitals' cost reports. Arriving at an average cost per unit using this methodology and weighting that by the observed unit volume, CMS arrives at a pool of dollars that represent their estimate of product cost and overhead. This is compared to the pool of dollars for these same drugs weighted by the ASP.

In its 2006 final rule, CMS calculated that hospital acquisition and handling costs amounted to ASP plus 6%. In the proposed rates for 2007, the calculation is 5% above ASP. Assuming ASP is a close approximation of actual hospital pharmacy product acquisition costs, there is a wide disparity between the calculations using the cost reports directly and CMS's calculations using essentially the same cost report data and comparing this to ASP.

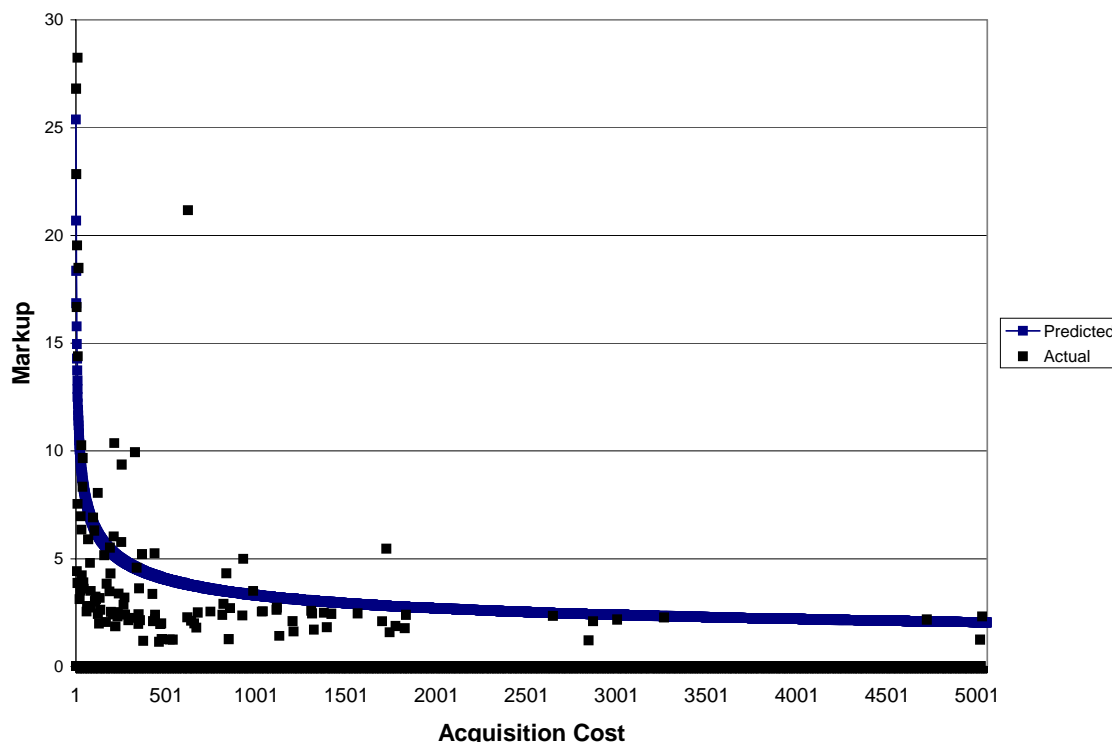
A potential cause of this divergence could be that the cost report analyses have included the entire pharmacy department costs, while CMS's analyses use only separately paid, therefore higher cost, drugs. If overhead was allocated to all drugs dispensed from the pharmacy department, and these charges were marked-up at the same percentage, these two methodologies should produce the approximately the same results. However, if overhead is not allocated to all pharmacy products at the same rate then using a subset of drugs and biologicals for the calculation could result in a biased estimate of overhead.

In a previous study of actual acquisition cost and hospital charges, we found that relatively high cost products have lower mark-ups than lower cost products.<sup>1</sup> The relationship between acquisition cost and mark-up is log-log. Figure 2 below shows the study findings.

---

<sup>1</sup> MJ Braid, KF Forbes, DW Moran. "Pharmaceutical Charge Compression under the Medicare Outpatient Prospective Payment System" *Journal of Health Care Finance* Spring 2004, p. 21-33.

Figure 2



BIO asked us to analyze whether reimbursement at ASP plus 5% would fully capture drug and biological acquisition and handling costs in the Hospital Outpatient department. We repeated CMS's calculation of mean unit cost compared to ASP on a volume weighted basis using only separately payable drugs (SI=K). We then added the lower cost HCPCS coded packaged drugs (SI=N). We used CMS's own published mean costs and units volumes which are based on 2005 claims data. We also used the April 2006 ASP file that CMS stated was used in their calculations.

We found that when we added the lower cost, packaged drugs, our calculation of the necessary markup percentage of ASP to capture hospital acquisition and handling costs doubled. We hypothesize that if it was possible to add non-HCPCS coded pharmacy overhead, the calculation would be closer to the 33 to 50 percent markups implied by various cost report studies. Unfortunately this cannot be tested directly.

Interestingly, in our calculation of the ASP percentage, we found that on a drug-by drug basis the difference between the mean unit cost and ASP varies widely. The range of ASP percentages on a product by product basis, for separately paid drugs without coding changes between 2005 and 2006 was minus 100 to plus 2395. Consequently, the calculation of the ASP percentage can vary substantially based on which drugs are included or not included. Because there were some substantial code definition changes between 2005 and 2006 adjustments need to be made between the claims data which is 2005 data and the ASP data which is 2006 data. Whether some

or all products with coding changes are included, and if so how the adjustments are handled, can also make a material difference in the calculation of the ASP percentage.

In a separate analysis we found that while approximately half of the packaged drug and biological costs (HCPCS coded and revenue coded) were included on ‘single’ bills and used for rate-setting, the vast majority of these were on claims for procedures other than pharmacy administration services.<sup>2</sup> Only 5 percent of packaged drug and biological costs were included in drug administration code median cost calculations. Both the product and handling costs for packaged drugs and biologicals are spread throughout the APC system and are not being reimbursed as separate drug payments or under the drug administration codes. Table 1 below shows the results of this analysis.

**Table 1: Summary of Packaged Drug and Drug Administration in OPSS**

|                                  | LINES      |      | COSTS \$       |      | cost per line |  |
|----------------------------------|------------|------|----------------|------|---------------|--|
| <b>All packaged drugs</b>        |            |      |                |      |               |  |
| <i>(HCPCS and rev code 25x)</i>  |            |      |                |      |               |  |
| singles on drug admin            | 1,371,568  | 4%   | \$ 44,382,385  | 5%   | \$ 32.36      |  |
| singles not on drug admin        | 14,741,503 | 43%  | \$ 436,181,814 | 44%  | \$ 29.59      |  |
| not used                         | 17,893,353 | 53%  | \$ 503,173,980 | 51%  | \$ 28.12      |  |
| total                            | 34,006,424 | 100% | 983,738,179    | 100% | \$ 28.93      |  |
| <i>(HCPCS only)</i>              |            |      |                |      |               |  |
| singles on drug admin            | 478,644    | 3%   | \$ 10,962,485  | 4%   | \$ 22.90      |  |
| singles not on drug admin        | 6,162,022  | 43%  | \$ 111,420,064 | 42%  | \$ 18.08      |  |
| not used                         | 7,613,907  | 53%  | \$ 143,838,249 | 54%  | \$ 18.89      |  |
| total                            | 14,254,573 | 100% | 266,220,798    | 100% | \$ 18.68      |  |
| <i>HCPCS coded as % of total</i> | 42%        |      | 27%            |      |               |  |
| <b>Drug admin codes</b>          |            |      |                |      |               |  |
| singles                          | 2,262,438  | 49%  | \$ 241,801,861 | 51%  | \$ 106.88     |  |
| not used                         | 2,325,093  | 51%  | \$ 236,570,293 | 49%  | \$ 101.75     |  |
| total                            | 4,587,531  | 100% | 478,372,155    | 100% | \$ 104.28     |  |

For this analysis packaged drug lines included both HCPCS coded drugs with an “N” status indicator and lines with a pharmacy revenue code (25x) and no HCPCS code. Hospitals are coding packaged drugs with pharmacy revenue center codes more often and for more charges than HCPCS codes. HCPCS coded drug lines were only 42% of all the packaged drug lines and 27% of all the packaged drug costs.

<sup>2</sup> We replicated the methodology that CMS uses to create single procedure claims and calculate median costs. For the file overall we were within 3 percent of the CMS count of single claims for 78% of the claims. Calculating the median costs we are even closer, we are within 3% for 91% of the claims.

**Summary Findings:**

- In analyzing CMS's finding that mean unit costs in the aggregate were equal to ASP plus 5%, we compared mean unit costs to ASP on a product by product basis. We found a range of mean unit costs for separately paid drugs and biologicals without coding changes between 2005 and 2006 of ASP minus 100 to ASP plus 2395.
- Whether some or all products with coding changes are included, and if so how the adjustments are handled, can also make a material difference in the calculation of the ASP percentage.
- We found that when we added the lower cost, packaged drugs our calculation of the necessary markup percentage of ASP to capture hospital acquisition and handling costs doubled.
- We hypothesize that if it was possible to add non-HCPCS coded pharmacy overhead, the calculation would be closer to the 33 to 50 percent markups implied by various cost report studies. Unfortunately this cannot be tested directly.
- Only 5 percent of packaged drug costs were included in drug administration code median cost calculations.