ACTUARIAL OPINION ON ISSUES IN THE CAPITATION OF HEMOPHILIA

Introduction and Definitions.

The purpose of this report is to identify and briefly discuss certain issues in the capitation of health care costs for Indiana residents with hemophilia.

A good working definition for a simple approach to capitation is “[a] method of payment and charging for health services in which an HMO, medical group, or institution is paid a fixed amount for each person served, usually monthly. The amount of money paid covers services provided regardless of the actual value of those services...”1 It is important to note that this simple approach is often modified in practice for a number of purposes, including the handling of exceptionally high cost patients. A working definition of hemophilia (haemophilia) is “an X-linked genetic disorder that causes affected people to have a lower activity of the clotting factor proteins, either factor VIII or IX, necessary for normal blood clotting”. 2 The concern for capitation does not arise with all bleeding disorders, even all inherited bleeding disorders, such as the majority of the Von Willebrand cases, but with the more severe and costly versions.

The Financial Framework for Capitation.

In the typical noncapitated arrangement, “fee-for-service”, providers of care are paid some version of their billed charges. Such business structures carry many of the risks of any business, such as low volume of customers (patients) and costs in excess of anticipated in setting charges. The acceptance of capitation changes this business risk profile for providers in a number of ways, particularly when the capitation drives the provider payment directly. Three of these changes in business risk are particularly important for hemophilia capitation. (1) Normally, the provider will be paid to provide care for all of the people covered by the capitated system, including those who receive little or no care in a particular period; so the risk of having too few patients is reduced. (2) In return for receiving a guaranteed flow of business, the group receiving the capitation is usually expected to provide care at a lower cost (as measured by the capitation payments) than in the fee-for-service setting (measured by actual charge reimbursement). The logic underlying this aspect of setting the capitation rates was traditionally based on a provider’s assumed ability to create and maintain through good practice less need for services (hence “health maintenance” organizations), a concept that does not have as much following today. While the theory of reducing costs by improving health is still held in some quarters, the present thinking about the provider’s ability to generate a lower cost is more likely to arise from the perception that with proper incentives the provider can reduce the costs from a “wasteful” fee for service system that creates incentives for providers to overtreat. (3) Capitation changes the payee’s concerns about the volume of care delivered dramatically. Rather than worrying about having too

few patients and too few incidents of care for which the entity can bill, the payees under a capitation system are more likely to worry about a need for services in excess of what was anticipated in the setting of the capitation rate. If the provider delivers less care than assumed in the setting of the capitation rate, they usually profit since they keep the total capitation payments. If the provider delivers more care than assumed in the setting of the capitation rate, the provider, in some sense, loses money. This is especially true if the cost of care provided includes a heavy mix of money that the provider has to pay to other providers outside their capitation system (such as manufacturers of drugs and biologicals) rather than just additional demands on the particular capitated provider’s time.

Characteristics of Hemophilia Particularly Relevant to Capitation.

Several characteristics of hemophilia are special challenges for the capitation process. (1) There are not very many hemophilia patients in the United States. One source estimates that there are only 20,000 with types A and B. Particularly since different funding sources are involved with hemophilia, there have been few studies on hemophilia costs that are useful for analysis in setting capitation rates. (2) Once the need for treatment arises, clotting factors / biologicals account for the great majority of total health care costs. Two examples of estimates of such costs as a percent of total costs are 93% from a British paper published in 1997, 85%-95% from a letter to a medical journal in 2005. (3) While quality of care is said to drive outcomes, successful treatment will not “cure” hemophilia, and a patient receiving top quality care could have extraordinarily high costs shortly thereafter due to an event such as a traffic accident, an unexpected severe bleeding event, or the occurrence of a medical problem that is complicated for these patients by their underlying bleeding disorder. (4) It is very hard to quantify the inherent variability of costs of health care for hemophilia due to the small and widely scattered number of patients, but the few efforts that have been reported in journals, and anecdotal evidence, indicate enormous variability of per person costs, both within the population and over time with the same person.


The capitation setting process builds around estimates of health care costs for the “insureds” capitated. While there are many complexities in the process of setting capitations, the four characteristics of the hemophilia population given above would appear to be a special challenge. (1) The small size of the hemophilia population, and the fact that the population is widely scattered and subject to treatment by many different providers, creates an element of uncertainty in the estimates of the mean (average) costs that are key to the capitation setting process. The result of this uncertainty makes it likely that both the preparation of the capitation rate and the acceptance of that rate will be seen
as high risk. This could lead to difficulties in the negotiation process, and some observers would worry that the accepting entity might be tempted to engage in various denial of care behaviors. (2) Some use of biologicals in the treatment of hemophilia is unpredictable and is a problem with capitation, while other uses are predictable and reduce volatility somewhat. Unpredictable, volatile biological costs reduce greatly the ability of the provider to “manage” the costs to a significantly lower level than that of fee for service care. Anecdotal evidence indicates that it is unlikely that vendors of the biologicals used in the treatment of hemophilia can be led to reduce charges by as much as the vendors of many other elements of health care. Furthermore, hemophilia seems to be a relatively difficult condition for reduction of costs by medical management. The condition can not be cured, and although higher quality care can be brought to bear that will hopefully reduce overall costs, there is no mechanism available to get dramatic reductions in cost as is available with some high cost conditions (as kidney transplants were seen as a reduction in the dialysis driven cost of end stage renal disease). (3) The volatility of the cost of treating hemophilia presents serious difficulties to capitation. This volatility is apparently very high, but also extremely difficult to quantify in a manner that is useful for financial purposes. Volatility is not a function of the mean (the average) of costs, but of “moments about the mean” (the tendency of a particular kind of cost to vary dramatically above and below the mean rather than stay fairly close to it). The standard approaches of the insurance industry and managed care organizations for dealing with volatility of costs are (i) avoiding very volatile business, or, accordingly to some observers, by practicing one type or another of denial of care, (ii) buying some kind of stop loss coverage, and (iii) holding enough surplus to cover such volatility up to a certain level of probability. Avoiding the business entirely is, obviously, a barrier to capitation. Stop loss coverage would not be a good way to deal with the volatility in hemophilia costs. Stop loss coverage works best on costs having well understood volatility. Stop loss premiums have huge risk margins, especially if the volatility that they are covering is not well understood. Surplus as a way to deal with the volatility of hemophilia costs also becomes a problem because of the difficulty of doing the standard calculations to determine the probability of ruin associated with different surplus levels. Supposedly, one hemophilia patient described by a provider as having “severe factor IX deficiency and a high responding inhibitor” had factor costs alone of roughly $12,500,000 over two years. Two Medicaid HMO’s operating in Indiana had less than this amount of total capital and surplus in their 2005 annual statements filed with the Indiana DOI. A third had total capital and surplus not more than 150% of that individual’s cost level. This does not imply that the patient would have bankrupted any of the three HMO’s, but it does show how vulnerable presently operating HMO’s would be to the occurrence of such an event under a capitated arrangement. Such explosive costs from a population as small as Indiana’s hemophilia population create a major threat to capitation under simple capitation structures. Critics of managed care would warn that this is precisely the situation in which denial of care would emerge. The volatility of costs for this population run the risk of alternating windfall profits (when costs are low) and bankruptcy or denial of care (when costs are high).
Other Issues.

There are claims for considerable advantages for hemophilia patients, in terms of both mortality and morbidity, arising from the expertise of their providers. If these claims are valid, it would important to ascertain that the providers receiving capitations have such expertise, and this sometimes makes it difficult in very tough negotiations to get provider costs down.

While some of the studies cited are fairly old, there is at least anecdotal evidence that it is possible to negotiate some savings even from the vendors of factors. There is a good chance that managed care can make some contributions to the problem of financing the care of hemophilia short of full blown capitation.

The small size of the Indiana hemophilia population raises the risk that the distribution of the capitated patients across the various managed care organizations might not be even approximately uniformly distributed, and might cause concentrations of the risk with a few such managed care organizations.

The simple approach of capitation is not the only one available. One of the standard variations on the simple model is to have the capitated entity bear the risk only up to a certain level, in return for a reduction in their capitation rates. While the lack of data on costs and the volatility of the costs makes it very difficult to link (i) a cut off level for the entity’s capitated risk and (ii) the appropriate reduction in the otherwise calculated capitation rate for pay for that relief, this is still an approach that allows some elements of capitation in an environment in which capitation might not otherwise be workable. It might also be possible to capitate only certain elements of hemophilia costs (such as costs other than factor/biological costs). There could also be internal reinsurance systems across all of the managed care organizations. Originality in designing ways to offload some of the most disturbing risks from hemophilia capitation might make it a more acceptable concept, but it could also diminish some of the benefits that proponents expect to receive from capitation.

Conclusion.

There are special characteristics of health care costs of hemophilia that make it advisable to proceed with special care in instituting capitation of such costs.

C. Keith Powell
Associate of the Society of Actuaries
Member of the American Academy of Actuaries

C. Keith Powell

May 10, 2006