

## TECHNICAL APPENDIX A

# Discussion of Risk Bifurcation in Health Care

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Doug Emery, M.S.

Probability risk is fundamentally different from technical risk. There are five reasons for this, which the bulk of this section will explain. First, it's priced in a radically different way. Since probability risk is about pricing uncertain future events, it's primarily a gross aggregated statistical artifact—what happens with large populations in the past is the best likely predictor of what will happen to the same populations in the future. This makes pricing probability risk the mathematical domain of actuaries. Technical risk, on the other hand, is about pricing clinically integrated episodes of care, which makes it the productive domain of physicians and other allied health care providers. The techniques necessary to pricing these two types of risk are radically different (as Section 2 explained). The problem with both FFS and capitation is that in addition to distorting risk, neither has anything to do with clinical reality. That being the case, any effort to harness FFS or capitation to quality outcomes analysis is like trying to square the circle; it is a forced fit requiring ambiguous proxies that disassociate actual patient experience from the natural flow of care.

Second, it's impossible to price technical risk through a probability mechanism like insurance. There are no modern instances of discrete goods and service being sold in other markets through insurance products. The attempt to integrate probability risk with technical risk sets up an unsolvable transfer pricing problem that shows capitation to be an inherently inefficient solution.<sup>xxvi</sup> As Jerry Solon, the inventor of the episode of care concept wrote in 1967:

The summary statistical data used to describe the medical care received by a population usually take the form of (1) stating how many in the population have obtained medical services in a given period of time (the volume of users), and/or (2) expressing the volume of services in terms of the number of physician visits made, the days of inpatient care provided, the number of x-rays, lab tests, medications, physical therapy treatments, and so on. These culminations are valuable in so far as they represent, in an overall way, the sheer volume of service. But their very simplicity, their objectivity, and apparent precision are deceptively reassuring. *They create the illusion that that the essential facts of utilization are thus expressed.* There is much more to tell of medical care that these superficial counts reveal. [Emphasis added]<sup>xxvii</sup>

Hopefully, most readers will recognize that the coarse statistical indices Solon criticized are precisely the indices upon which capitation rates are calculated. And just as these crude roll-ups give the illusion of understanding care utilization, basing payment on them gives the illusion that care is being managed. Rather than shedding light on care management, capitation only made the delivery system more opaque. And this was true from both sides of the aisle. Health plans could not see through the capitated entity, and providers could not accurately adjust utilization patterns to fit the cap rate.

Third, the business logic of health insurance is categorically different from the business logic of health care. The conflicting incentives mean that one must eventually predominate over the other. As the experiences of Humana, FHP, Sutter Health Systems, and Harvard Pilgrim Health Care in the 1990's demonstrated, a capitated house is a house divided.

As for primary care specifically, verification of this problem came to light during the summer of 1997 when Alta Bates Medical Group, in Emeryville, Calif., announced it would replace capitation with discounted FFS for its primary care providers.<sup>xxviii</sup> Alta Bates made the move because the proportional payments made to its PCPs under capitation did not accurately equate with the actual workload of productive individuals, and without differential rewards, it was extremely difficult to motivate productive activity toward certain quality benchmarks.<sup>xxix</sup> Moreover, the motivation to excel and innovate tends to get lost under such an arrangement. Because capitation is such an extraordinarily crude payment mechanism—determined not as a function of productive activities but as an actuarial artifact—revenue cannot be synergistically linked to processes of care. This is especially noteworthy because Alta Bates constructed itself in the early 1990's to thrive under what was then considered to be the inevitability of capitation and was absolutely couched in the arguments similar to the ones we hear today advocating Medical Homes; namely, that by capitalizing the payment of primary care through capitation to induce proactive care management, patients would be prevented from going better to worse, and kept away from expensive specialists and even more expensive hospital care. But it blew up before any gains could be shown, and this experience was repeated around the nation. By 2001, articles were announcing the end of capitated managed care and the return to FSS.<sup>xxx</sup> Why did this happen?

It is the severance of the production function of care, best described by episodes, and the derivation of capitation from probability functions that makes it nearly impossible to tell from the point of view of the bottom line whether a loss is due to an unanticipated actuarial blip or poor care productivity. Here is an example from a then popular trade journal specializing in capitation issues and dedicated to its success, *Capitation Management Report*, in an article titled, “*Fine Tune Your Strategies to Beat the Capitation Blues*” in 1997:

So how does an organization stay the course when it's having trouble staying afloat under capitation? Organizations first need to determine if their costs are truly out of line and whether the short-fall is temporary—*due to seasonality or unpredicted actuarial (i.e., probability) risk*—or a more pervasive problem related to excessive administration or medical costs... Sometimes, the problem isn't cost... The provider may have accepted a rate that was too low or encountered poor risk selection. That's not something you can manage your way out of. [Emphasis added]<sup>xxxi</sup>

Certainly not. But instead of recognizing the economic contradictions of capitation, the article offered an utterly dumbfounding solution, so common to the times: “If the problem is adverse selection, the provider should monitor the experience of the population and contrast the cost of care with age- and sex-adjusted normative data. Armed with these comparisons, the provider should meet with the health plan, acknowledge

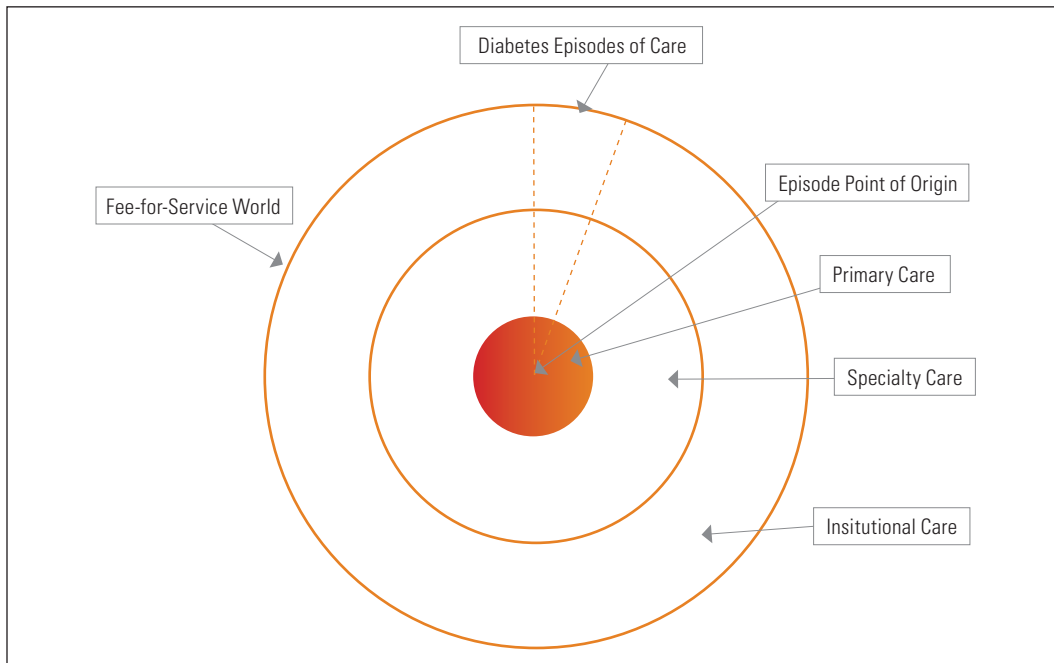
it underestimated risk and cite the need to prevent turnover and maintain patient satisfaction as grounds to increase the cap.”

Passing strange! After confirming our hypothesis that capitation occludes tangible general ledger information for the primary care firm, we are asked to believe that physicians can capably do what even the best social scientists would probably shun; that is, “monitor the population,” and then, using age-sex adjusters the best statisticians in the health services research business have concluded are practically useless<sup>xxxii</sup>, perform an effective general ledger analysis. “Armed with these comparisons,” the poor doctor is supposed to convince health plan executives to raise the capitation rate, not using the analysis *per se*, but by arguing that patient satisfaction and turnover may go south. Such non-sequiturs were the norm for the day.

In addition to the dark matter of trying to cull accurate cost and productivity data through the viscous medium of probability space, capitation tends to fragment intensive episodes of care requiring multiple providers, which brings us to our fourth reason why pricing probability risk is so different from pricing technical risk. Except in the case of global capitation for Integrated Delivery Systems (which, even in the heyday of capitation, was very rare, never rising above 6 percent of all IDS revenue)<sup>xxxiii</sup>, capitating provider components separately such as PCPs, specialists, and hospitals was extremely difficult, and left the coordination of unintegrated episodes up in the air. Shared risk pools were often argued as the means for pulling coordination together and unifying interests, but it never worked out, and shared risk pools were dropped almost as quickly as they appeared. Without the agency of one managerial entity at technical risk for efficiently integrating the entire production function of an episode of care, the unified administrative machinery necessary to tightly align clinically homogenous care processes did not exist—by and large, they still do not. If we resurrect capitation for Medical Homes, lack of financial coordination across clinically homogenous care continua will abide. The following explains why this is so.

Imagine all of health care being divided into three concentric circles. The first is primary care, from which, most other care activities radiate. The second is specialist/tertiary care, and the third is facility/hospital and quaternary care. The totality of the circles is comprised of the total U.S. health care spend, which surpassed \$2 trillion in 2006<sup>xxxiv</sup>, and is dominated by FFS payment. This FFS world can be bisected by slices of care, proportional to the overall spend, which are comprised of all various disease states and injuries. Each of these slices is the full longitudinal pathway any given episode of care can take. In this case, we’ll consider Diabetes Mellitus, an expensive disease and its possible comorbid conditions that gobbles up about 10 percent of the total medical spend (estimated at \$174 billion in 2007 by the American Diabetes Association).<sup>xxxv</sup> As a proportional slice of the overall spend, its area is much larger than, say, Cystic Fibrosis or Tay-Sachs, but not much more than Congestive Heart Failure.

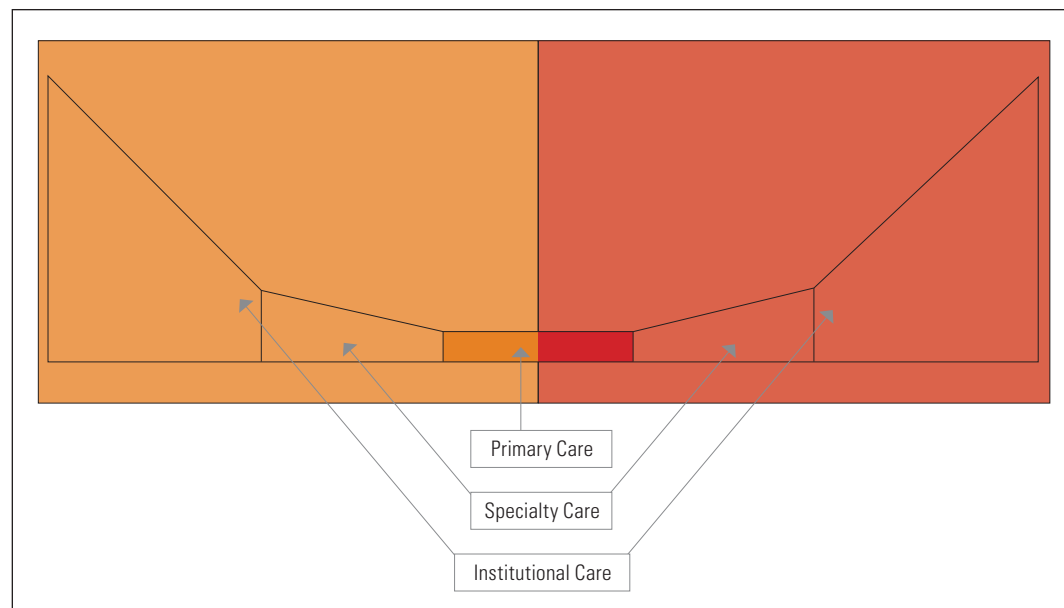
## Total Dollar Continuity Over the Longitudinal Path of Care



The figure above gives us a bird's-eye view of episodes of care relative to one another in terms of the absolute medical spend. But if we flip the chart on its side, we can examine the distribution of dollars within any given episode and their relative rates of expenditure as determined by primary care, specialty care and institutional care boundaries. Now, it should be intuitively obvious that not all diabetics are contained within the boundary of primary care; in fact, as the PROMTHEUS ECR data analysis in Section 2 reveals, a great many patients are radiating out of primary care and into the far more expensive domains of specialty and facility care. This is exemplified by the relative altitudes of the three segments where, for instance, the costs associated with institutional care for diabetics far exceed the costs of primary care. As a result of RBRVS distortions, dollars have been pulled away from primary care into the more care-intensive domains, but exacerbating the problem even more is the fact that only 54.9 percent of patients receive recommended care<sup>xxxvi</sup>, and care coordination between all domains is so poor.<sup>xxxvii</sup> Thus, the dollar altitudes of specialty care and facility care are much higher than primary care.

The guiding assumption informing the move to create Medical Homes—one which we accept—is that by reconstituting primary care through payment reform, primary care providers can invest in Electronic Health Records, care practice reengineering, and more effective care coordination with allied providers. By raising the dollar altitude of primary care, it is hoped that we can lower the altitudes of specialty and facility care, and not just because it's "cheaper" care, but because it represents patient populations who are healthier because their care is being better managed. We enlarge this argument

by stating that merely ramping up primary care dollars to achieve this will never be accepted by plans and payers; additional dollars will only be released when tied to proven care improvement, and that resurrecting capitation is not the optimal means for do so. Again, this requires further elaboration.



Along with the other arguments we have marshaled, primary care capitation leaves the full episode of care financially fragmented. Observe the bird’s-eye figure once again. If a Medical Home is fully capitated, the financial incentive boundary ends at primary care, yet a good deal of the diabetic patients are still flowing into the other domains. Even if primary care for diabetics is greatly improved, there will still be many instances of patients requiring some form of specialty or facility care. By capitating the Medical Home, an artificial financial boundary—determined not by episode of care, but by coarse statistical abstracts drawn over the entire panel of patients—terminates the full pathway of clinically homogenous care at the primary care giver’s doorway. The only way to tie financial incentives to the other care domains is to resurrect the risk pool proxies we observed in the 1990’s or to tie bonuses to PCPs through reduced overall rates of inpatient admissions. But these are exactly the kind of crude indices that Jerry Solon and other health services researchers criticized so long ago, and proved unworkable in the 1990’s. It makes little sense, therefore, to advance progress towards Medical Homes through retrogressive ideas.

By far, it is better to model the reimbursement dollars around the patient and his or her potential care pathway, than to force fit dollars around predetermined structural solutions and crude heterogeneous populations.<sup>xxxviii</sup> No matter how much “risk-adjustment” is fixed to population-based payments, it’s still governed by probability risk, and places

physicians in the business of insurance, a business they are poorly suited to manage and to which their normative fiduciary roles come into profound conflict. As Krane and Emery have written on this subject:

Probability risk is the risk assumed by one entity (the insurer) when it agrees, in exchange for payment (premium), to do something of value for another (the insured) upon the happening of a contingent, future event. Premiums for similar risks are pooled, and the premium charged is calculated to be sufficient to fund the performance obligation from the pooled premium. Therefore, probability risk is the risk that total premiums collected will be adequate to fund the total performance obligation due upon the occurrence of contingent, future events. Capitation is an example of probability or insurance risk because a healthcare provider (insurer) agrees, in exchange for a fixed, per member per month payment (premium), to assume the risk of providing potentially unlimited amounts of defined health benefits (something of value) to the HMO (insured) upon the happening of sickness or injury (a contingent, future event).<sup>xxxix</sup>

By this we observe that capitation is really a fee-for-indemnity concept that, ironically, puts providers in the very business the health plan is ostensibly in business for.<sup>xi</sup> Not only does it bring fiduciary roles into conflict, but it also makes patients—not medical services—the tradable commodity.<sup>xii</sup> In exchange for a certain amount of patients for a fixed price, providers agree to indemnify the plan's assets (e.g., premium reserves) from actuarial payout volatility. But the greatest conflict is yet to come.

The fifth reason that designing provider reimbursement around probability risk is so different from designing reimbursement around technical risk is that delegating risk through episodes of care preserves patient choice (more on this later). There is simply no way to capitate an open panel or a broad network of health care providers. The *sine quo non* of capitation is provider exclusivity. Of all the problems capitated managed care encountered, none even remotely exceeded the frenzy of consumer backlash that arose from restricting patient choice at the point of service. As Richard Wessland, Managing Director of BCD Advisors, noted in an interview in July, 1997: “We have a consumer and purchaser backlash regarding accountability, value, access to care, freedom of choice, and other elements,” all of which he attributed to capitated systems.<sup>xliii</sup> In the same interview, Wessland correctly predicted that pay-for-performance programs would displace capitation. By 1997, the writing was on the wall, as J. Daniel Beckham explained the problem in the *Healthcare Forum Journal*:

[H]undreds of healthcare organizations and thousands of physicians invested heavily, intellectually and financially, in the capitation/channeling presumption only to feel the earth shift under their feet as choice made its power felt. Too invested now to undertake the costs of switching to a new model, they are poised to have their ships wrecked on the rocks of market reality.<sup>xliiii</sup>

Beckham turned out to be right. The market reality of consumers demanding choice at the point of service proved too powerful for capitated systems. Ultimately, it was the market violence of consumer choice that blew capitated managed care to pieces. As some of us predicted well before this all became glaringly apparent, Americans will not tolerate paternalistic health plans and systems telling them where to go for care and what to do with their physicians. Period. The will for choice produced what Jeff Goldsmith once called “selective disintegration” at a time when managed care theory predicted the triumph of large integrated systems operating under capitation.<sup>xliv</sup> They literally began to fall apart. In the dreary year of 1997 for capitated managed care, Goldsmith observed:

Many nationally prominent integrated systems are performing terribly along every dimension of performance that you can think of—earnings, customer satisfaction, productivity, morale... Their theories about what would happen once they reached a certain mass or scale are not proving valid.<sup>xlv</sup>

Despite the fact that PPOs were once believed to be merely transitional products ferrying consumers from traditional indemnity plans to HMO nirvana, by the end of the 1990’s, PPO growth had far outstripped HMO growth, by a factor of about 2 to 1. The reason is simple. For all the toxicities that FFS introduces into the health care delivery system, it has one strength that gives it a triumphant market advantage over capitation: it accommodates patient choice at the point of service. For this reason, discounted FFS dominates provider reimbursement to this day, accounting for well over 90 percent of all health care receipts. Even at the zenith of capitation’s popularity in the 1990’s, an AMA commissioned study showed that only 23 percent of physicians with HMO contracts reported having at least one capitated contract (5 percent for physicians contracting with preferred provider organizations);<sup>xlvi</sup> overall, capitation never exceeded 9 percent of physician reimbursement and 10 percent of hospital reimbursement.<sup>xlvii</sup> Given this truth, it is difficult to fathom why anyone would advocate a payment mechanism as inherently limited in its ability to capture marketshare as capitation—especially if it is to power up Medical Homes across the nation. We have every reason to believe patients, plans and providers will reject this arrangement.

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- <sup>xxvi</sup> Emery DW, et al, Global Theory and the Nature of Risk, in *Global Fees for Episodes of Care: New Approaches to Healthcare Financing*, Emery DW editor, McGraw Hill:1999.
- <sup>xxvii</sup> Solon, JA, et al., Delineating Episodes of Medical Care, *American Journal of Public Health* 57(3) 1967:401-408.
- <sup>xxviii</sup> Emery DW, et al, Global Theory and the Nature of Risk, in *Global Fees for Episodes of Care: New Approaches to Healthcare Financing*, Emery DW editor, McGraw Hill:1999.
- <sup>xxix</sup> Emery, DW, The Coming Transformation of Managed Care, *Managed Healthcare*, October, 1999:18-29.
- <sup>xxx</sup> Robinson JC, The End of Managed Care, *Journal of the American Medical Association*, 2001; 285:2622-2628.
- <sup>xxxi</sup> Fine-Tune Your Strategies to Beat the Capitation Blues, *Capitation Management Report*, 5(2) 1998:17-21.
- <sup>xxxii</sup> "Although it seems clear that adjusters [like age and sex] that can explain only 0.6% of the variance are scarcely better than no adjusters at all, it is less clear what percentage of variance would be satisfactory. Newhouse previously estimated that the maximum percentage that one should expect to explain is about 20%. McCall and Wai estimated the percentage to be 14%. The maximum is, in any event, much less than 100% because many health expenditures cannot be foreseen by either the individual or the HMO; that is, they are truly random." Newhouse JP, et al, Adjusting Capitation Rates Using Objective Health Measures and Prior Utilization, *Health Care Financing Review* (10) 1989:41-53.
- <sup>xxxiii</sup> Health Care Advisory Board Company, *State of the Union* 1997, pp. 30-31.
- <sup>xxxiv</sup> Ginsberg PB, High and Rising Health Care Costs: Demystifying U.S. Health Care Spending, *The Robert Wood Johnson Foundation*, Research Synthesis Report No. 16.
- <sup>xxxv</sup> <http://www.diabetes.org/diabetes-statistics/cost-of-diabetes-in-us.jsp>
- <sup>xxxvi</sup> McGlynn E, et al, The Quality of Health Care Delivered to Adults in the United States, *New England Journal of Medicine*, 2003; 348:2635-2645
- <sup>xxxvii</sup> Paulus Ra, et al, Continuous Innovation in Health Care: Implications of the Geisinger Experience, *Health Affairs*, 27, no. 5 (2008):1235-1245.
- <sup>xxxviii</sup> Engert EB, Emery DW, Integrated Delivery Systems: Non Fait Accompli, *Managed Care Quarterly* 1999; 7(1):29-38.
- <sup>xxxix</sup> Krane D, Emery D, Episode of Care Approach Puts Risk Where It Belongs, Maximizes Outcomes, *BNA's Managed Care Reporter* 3(37) Sept 17, 1997:882-884.
- <sup>xl</sup> Alper PR, Capitated Managed Care: An Exercise in Mediocrity, *Primary Care Weekly*, 2(7) 1996:27-40.
- <sup>xli</sup> Robbins D, Emery D, Fiscal Arrogance: Questioning the Ethics of Capitation, in *Global Fees for Episodes of Care: New Approaches to Healthcare Financing*, Emery DW editor, McGraw Hill, 1999.
- <sup>xlii</sup> Expansion of Pay-For-Performance Will Change the Way Payers Compensate Health Systems, *Medical Network Strategy Report* 6(7) 1997:1-3.
- <sup>xliii</sup> Beckham JD, The Beginning of the End for HMOs, Part1: The Awakening Market, *Healthcare Forum Journal* (Nov-Dec) 1997:1-7
- <sup>xliiv</sup> Goldsmith JC, Goran MJ, Managed Care Mythologies: Supply-Side Dreams Die Hard, *Healthcare Forum Journal*, (36) 1996:42-47
- <sup>xli v</sup> IDS Survival Strategies, *Medical Network Strategy Report* 6(7) 1997:3-8
- <sup>xli vi</sup> Simon CJ, Emmons DW, Physician Earnings at Risk: An Examination of Capitated Contracts, *Health Affairs* 16, no. 3 (1997):29-35.
- <sup>xli vii</sup> Wehrwien P, The March of Capitation: Reversed or Just Delayed?, *Managed Care*, Nov 1997:29-35.