Dr. Harris evaluates whether Highmark has the incentive and ability to engage in anticompetitive conduct post-Affiliation that may result in a substantial lessening of competition in the commercial insurance market. He identifies the competitive risks and benefits associated with vertical affiliations, generally, and those involving health insurers and providers. He addresses foreclosure theories of vertical mergers in his assessment of potential effects from this Affiliation and effectively premised his work on the five elements discussed above as the appropriate framework to assess the competitive effects of a vertical merger.[148] With regard to incentives, for example, the Harris Report addresses whether "after the proposed change of control WPAHS would have an incentive to increase reimbursement rates to other health insurers, thereby raising their costs, in an effort to advantage Highmark."[149] His analysis of competitive effects turns largely on whether Highmark (or UPE or WPAHS) has market power, and whether it therefore has the incentive and ability profitably to gain from anticompetitive actions from exclusion and the potential for a corresponding partial or full exit of competitors.

The framework set forth above provides a useful context for assessing the likely competitive effects from the vertical transaction involving Highmark and WPAHS. Considering this framework in the next sections, I summarize the relevant economic literature, discuss further Dr. Harris's economic analysis and conclusions with regard to vertical competitive effects, and set out my analysis and any substantive differences with Dr. Harris's or his conclusions. In particular, after reviewing the relevant economic and healthcare literature in the next section, I focus on applying the relevant vertical theories to this specific Affiliation and examine record evidence and information in order to reach conclusions with regard to likely competitive effects.

[148] I note that the five elements listed above are generally somewhat less stringent or restrictive for effects than the ones stated in the Harris Amended Supplement 3 at ¶ 4: "[1] It is necessary for Highmark or WPAHS to have market power…[2] Highmark and WPAHS must be able to engage in some potentially anticompetitive conduct... *in order to force competitor, either fully or partially, from one or more of the relevant markets*… [3 and 4] *Once competitors are excluded from the market..., Highmark or WPAHS must be able to exercise market power and charge higher prices in the future.* These higher prices would enable Highmark or WPAHS…to 'recoup' any losses associated with engaging in the hypothesized anticompetitive foreclosure… [1] *Entry (or re-entry) or expansion will not occur after market power is exercised and prices are increased.*" [Numbers are added to match with prior five elements; emphasis added].

[149] Harris Amended Supplement 3 at ¶ 3.

B. VERTICAL MERGERS AND VERTICAL CONTRACTING IN HEALTHCARE

Vertical theories of harm (and benefit) are not new in the healthcare industry, nor are competitive assessments of insurer or provider market power and vertical business practices involving insurers and providers. Vertical transactions between insurers and providers, however, have been relatively limited until recently.[150]

As with vertical integration studies generally, the healthcare literature suggests that vertical integration and coordination of care can provide substantial opportunities for cost savings and consumer benefits, with limited and specific circumstances in which anticompetitive effects could occur.[151] These welfare-enhancing aspects of vertical integration promote competitive solutions that allow consumers to benefit from vertical integration while mitigating the likelihood that potential adverse competitive consequences will materialize.

Similarly, the healthcare literature on competitive effects of vertical arrangements focuses on the sufficiency of competition at the upstream and downstream levels and market power, whether the vertical arrangement changes the incentives of the integrated firm, and ultimately the effect of potential foreclosure or other actions on rivals, competition, and relevant competitive dimensions (price, quality, output). Specifically, studies evaluate the sufficiency of competitive alternatives

[150] There are increasing numbers of cross-industry affiliations, joint ventures and such other transactions, many in the form of Accountable Care Organizations ("ACOs"), and others involving consolidation and change in ownership, with the goals of aligning care and resources, reducing utilization and improving quality; many involve some degree of vertical affiliation between otherwise independent firms. These include a wide range of alternatives structures for coordination of care, cost and population management, quality enhancement, and alignment of organizations to improve care. See, for example Shih, Anthony, Karen Davis, Stephen C. Schoenbaum, Anne Gautheir, Rachel Nuzum, an d Douglas McCarthy, "Organizing the U.S. Health Care Delivery System for High Performance," Commission on a High Performance Health System, The Commonwealth Fund, August 2008 (hereafter "The Commonwealth Fund") for an extensive review of benefits from several models of integrated delivery systems including, for example, provider integrated networks, which is also discussed in greater detail below. For additional examples, see Claffey, Thomas F., Joseph V. Agostini, Elizabeth N. Collet, Lonny Reisman, and Randall Krakauer, "Payer-Provider Collaboration In Accountable Care Reduced Use And Improved Quality In Maine Medicare Advantage Plan," Health Affairs, (2012), Vol. 3, No. 9 at 2074-83. Medical home models are also being developed by vertically integrated firms. See, e.g., Bolch, Matt Tight, "Payer, Provider Connection Gives Local Plans Advantages," *Managed Healthcare Executive*, (2012),Vol, 22, No. 1 at 8. After a relatively long period with relatively few transactions involving providers and insurers, recently there are several announced deals. See, for example, "Payer-provider M&A roundup: The biggest deals of 2011," FierceHealthPayer, November 7, 2011.

[151] See Section VI below; also Douven, R., Halbersma, R., Katona, K., and Shestalova, V., *Vertical Integration and Exclusive Vertical Restraints Between Insurers and Hospitals*. CPB Discussion Papers. CPB Netherlands Bureau for Economic Policy Analysis, (2010).

for rival insurers and rival hospitals, e.g., effective hospital or healthcare insurance alternatives to which consumers can be directed in sufficient numbers, market conditions such as entry and expansion, dynamic factors, and benefits of vertical alignment and integration as key elements in assessing competitiveness and pro-competitive results of healthcare vertical integration.[152]

1. PRESENCE OF MARKET POWER AND RIVAL COMPETITION

The primary focus of Dr. Harris' analysis of the proposed Affiliation is on a foreclosure theory of harm, which has as its prerequisite the presence of market power enhanced or maintained by merger. I start my review here with consideration of market conditions and market power.

The economic literature on insurer market power focuses on both monopoly and monopsony power and the competitiveness of insurance markets. Monopoly power concerns, or more generally, concerns about the market power of insurers as sellers, relate to the ability of insurers with market power to extract supracompetitive prices such as health insurance premiums from customers. The related concept of monopsony power, i.e., the market power of insurers as buyers, focuses on the ability of dominant insurers to set negotiated reimbursements for providers (physicians and hospitals) at below competitive levels. The exercise of monopoly or monopsony power can result in consumer harm characterized by non-competitive prices and reduced quantity or quality relative to competitive levels. In both instances, market power stems

[152] Braun, C. J., and Short, F. *Going Vertical: The Hospital-Health Insurer Merger.* Paper presented at the Antitrust in Healthcare Conference, Arlington, VA, May 3-4, 2012; Burns, L. R., and Pauly, M. V., "Integrated Delivery Networks: A Detour On The Road To Integrated Health Care?" *Health Affairs,* (2002), Vol. 21, No. 4, at 128-143; Douven, R., Halbersma, R., Katona, K., and Shestalova, V., *Vertical Integration and Exclusive Vertical Restraints Between Insurers and Hospitals*, (2010), CPB Discussion Papers. CPB Netherlands Bureau for Economic Policy Analysis; Gaynor, M., Is vertical integration anticompetitive?: Definitely maybe (but that's not final),"*Journal of Health Economics,* (2006), Vol. 25 No. 1 at 175-180; Hayen, A., Meijboom, B. R., and Westert, G. P., "Vertical Integration of Health Insurance and Care Provision: Does it Improve Service Delivery?" *International Public Health,* (2011), Vol. 3, No. 2, at 215-225; Ho, K., *Barriers to Entry of a Vertically Integrated Health Insurer: An Analysis of Welfare and Entry Costs,* 2008; Robinson, J. C., and Casalino, L. P., "Vertical integration and organizational networks in health care," *Health Affairs,* (1996), Vol. 15, No. 1, at 7-22. See also Ciliberto, F. and D. Dranove , "The effect of physician-hospital affiliations on hospital prices in California," *Journal of Health Economics,* (2006),Vol. 25, No. 1,at 29-38; Cuellar, A. E. and P. J. Gertler, "Strategic integration of hospitals and physicians," *Journal of Health Economics*, (2006), Vol. 25, No. 1, at 1-28; Dafny, L., M. Duggan and S. Ramanarayanan "Paying a Premium on your Premium? Consolidation in the U.S. Health Insurance Industry," NBER Working Paper Series, National Bureau of Economic Research, 2009; McCarthy, K. H. and A. M. Zuckerman, "Realizing the full financial benefits of true integration." Health Finance Management, (2010), Vol. 64, No.11, at 78-82, 84, 86.

from insufficient competitive alternatives or significantly lessening of competitive constraints on the merged firm, and the ability of the merged firm post-merger to exercise market power, for example, by extracting supracompetitive premiums from consumers or imposing below competitive reimbursements on providers. The application of principles of product and geographic market definition aid in assessing the relevant competitive alternatives and are supplemented typically with more dynamic analyses that consider, among other factors, the ability of rivals readily to enter or expand.

Several academic studies and merger cases involve assessment of insurer market power. Academic studies include empirical studies that examine competitive conditions in health insurance; concluding, for example, that some markets are characterized by high concentration, dominant insurers, and limited ability of competitors to enter or expand, and that these conditions are related empirically to the ability of certain insurers to achieve higher premiums than would otherwise exist if the market were competitive. Insurer market power has been a concern in mergers of insurers, where indicia of concern were that the combined firms had large share, the merger took place in local markets with few competitive alternatives, and where there appeared to be limited prospects for effective entry and expansion. These cases have tended to focus on monopsony power as the theory of competitive harm. For example, the DOJ Antitrust Division has undertaken several enforcement actions in the health insurance industry challenging mergers and acquisitions involving allegedly dominant insurers in highly concentrated insurance markets or challenging specific contracting practices.

The DOJ in its press release concerning the proposed Highmark-WPAHS affiliation noted that the WPA marketplace is highly concentrated, with Highmark with high and stable shares and UPMC having a "similar degree of market power," and noted recent changes pre-affiliation and changes from investments in/affiliation with WPAHS that potentially could increase competition in the insurance (and hospital) markets in WPA.

As set out earlier in this report, I assess these pre-Affiliation market conditions and their competitive significance, and also conclude that Highmark has high and stable shares, with rivals other than UPMC Health Plan tending to have lower shares with limited historical changes, and that several market-specific factors unique to WPA substantially affect competitive conditions. As I discussed in Section III.A, the healthcare insurance market in WPA has indicia of market

conditions that raise potential concerns about market power. Historically, Highmark has had some competitive advantage over its insurer rivals from a 10-year low reimbursement rate contract with UPMC (along with a low reimbursement rate contract with WPAHS). This has provided the means for it profitably to offer lower rates and in-network access to the two largest systems in WPA, along with local community hospitals, and to build extensive and relatively stable membership and enrollment in its plans. These competing network configurations provided a competitive advantage to Highmark because it was the only major insurer offering access to both the WPAHS and UPMC system at relatively low reimbursement rates.

As part of an internal WPAHS Collaborative Design Process ("CDP"), WPAHS determined that an affiliation could potentially turn WPAHS and Highmark's individual strengths into a sustainable competitive advantage. The CDP presentation stated, "UPMC [Health Plan] will be limited in its ability to respond to a low-cost, defined network product." Specifically, the CDP presentation noted that if UPMC Health Plan were to match Highmark's reduced Defined Network premiums, UPMC's reimbursements would decline. If it did not match these reduced Defined Network premiums, then UPMC's market share losses would be significant. Either way, according to the presentation, UPMC would be vulnerable to loss of volume or a decline in reimbursements, which would provide a sustainable market advantage for WPAHS/Highmark. Such effects could well be pro-competitive if the benefits of the competition between UPMC Health Plan and Highmark accrue to consumers in the form of reduced premiums or improved access and quality. Whether the competitive pressure to do so is sufficient and sustained depends, in part, on whether other rival insurers have the ability to serve as key competitive constraints.

Dr. Harris concludes that the existence of significant competitors in inconsistent with Highmark or WPAHS market power in the markets in which each competes. Taking this as a pre-requisite for there to be anticompetitive harm from a vertical transaction, Dr. Harris concludes this transaction is unlikely to result in anticompetitive harm to consumers. Dr. Harris's assessment of Highmark's market power relies in part on his interpretation and meaning of Highmark's high and stable share of commercially insured enrollees, and the significance of competitors. Dr. Harris opines that Highmark's high share could be due to superior product and capability and that theoretically rivals could readily expand or enter to discipline Highmark.

Dr. Harris also uses Medical Loss Ratios ("MLRs") to assess Highmark's market power at the insurance level. He presents measures of MLRs for Highmark and its rivals, and concludes that Highmark's are sufficiently high to be inconsistent with market power. While I concur generally with Dr. Harris's observation that low MLRs may be consistent with higher profits and market power, "higher" MLRs do not necessarily reject a conclusion of market power, nor is a low MLR itself sufficient to demonstrate market power. In and of themselves, MLRs do not convey whether rivals have sufficiently close and competitively priced alternatives to discipline pricing, and whether market conditions enable them practically to use these products to provide a reliable constraint on pricing and competitive conduct.

While the presence of competitors is important, the competitive effects analysis should take into account their competitive significance in the specific marketplace. Other than UPMC Health Plan, rival insurers have relatively low shares: Highmark's win-loss data including recent win-loss data fail to support large losses to these rival insurers, although these data do not show the prices at which Highmark retained the business or other competitive terms and conditions. In particular, I note that rival insurers have had limited competitive success against Highmark, as evidenced by changes in shares or win-loss record, when their networks were narrower – e.g., did not include UPMC but did include the majority of other hospitals and WPAHS -- and they were competing against a broad Highmark network with both UPMC and WPAHS.

With recently negotiated member access to UPMC, these rival insurers can and are now offering a broader in-network portfolio of hospitals more comparable to that of Highmark. Based on my review of the record evidence, I view that competitive pressure on Highmark increased with rival insurers' new contracts with UPMC, and their ability to offer broader networks inclusive (now) of UPMC, as well as WPAHS and other hospitals. Rivals appear to be more robust competitors in their ability to attract enrollees and share from Highmark with these broader networks as compared to prior offerings without UPMC, which were more limited than Highmark's.

In evaluating potential changes to competitive constraints and competition post-Affiliation, I therefore examined information on the impact on rival insurers' competitive vigor and pressure on Highmark and on competition were they post-Affiliation to risk losing WPAHS in their (new) broader networks – and the incentives that this may create. I examine this taking into consideration rivals' ability to shift patients from WPAHS to UPMC for comparable services. I

considered the evidence of their competitiveness and constraint on Highmark with rival networks that had narrower networks – e.g., WPAHS (and other community hospitals) -- when Highmark had both UPMC and WPAHS. I took into consideration market conditions as well as Dr. Harris analyses of market power and assessment of networks.

Dr. Harris concludes that UPMC is a close alternative for WPAHS and that if confronted with anticompetitive price increases at WPAHS (or other hospitals), rival insurers could readily shift patients to UPMC presumably at prices that would not alter substantially their pricing of products and still enable them to attract enrollees from Highmark. While this takes into consideration the substitutability of services at UPMC and WPAHS, it does not necessarily address whether the availability of UPMC (and other hospitals) as an alternative to WPAHS is sufficient to demonstrate that rival insurers would to be able to offer a competitively priced network of sufficient quality relative to their pre-Affiliation broad networks and sustain enrollment or affecting significantly their competitiveness against a Highmark broader network.

My assessment was informed by Dr. Harris' analysis of provider networks. In considering the hypothesis that Highmark has market power, the Harris Amended Report finds that even if Highmark's share is indicative of market power, an attempt by Highmark to foreclose providers from its networks would likely reduce its healthcare insurance share. This would occur, according to Dr. Harris, because employers often renew annually, and they may switch health plans if they are not satisfied with quality, network or pricing. A significant change in its provider network compared with that of its rivals, according to Dr. Harris, would affect Highmark's ability to compete against other insurers. Thus, the Harris Amended Report contends that if Highmark attempts to foreclose many providers from its networks, it would harm the quality of its plans and risk losing enrollees.

Symmetrically, it would seem that substantial changes to quality, network, and pricing of rival insurers' networks from pre-Affiliation networks could also risk losses by rivals to Highmark and potentially significantly affect their (recently increased) competitiveness against Highmark which derives significantly from now offering comparable network scope. Were changes in their network quality, pricing or other attributes be realized to be diminished pressure on Highmark this could implicate Highmark's/WPAHS incentives with regard to contracting at WPAHS post-Affiliation.

Given relatively low historic losses to rival insurers when they had narrower networks (without UPMC) and the likely incentives of rivals to keep both WPAHS and UPMC in their current in-network offerings, I attempted to test further whether rival insurers credibly could turn to other alternatives, respond to any potential adverse conduct, and shift substantial and sufficient volumes as Dr. Harris claims. Several factors suggest that their incentives and practical ability may be constrained. As noted above, rival insurers have used WPAHS as an important system to include in their networks in competition with Highmark and UPMC Health Plan. According to interviews and other information, WPAHS is an important alternative to UPMC, particularly for tertiary and quaternary services, but also for primary and secondary acute care hospital services, and is perceived to be a lower cost alternative. In-network access to WPAHS provides rival insurers a point of differentiation against the UPMC Health Plan (which does not have WPAHS in its provider network) and is part of a broad network offering now with UPMC. Insurers may now be less willing or able to lose in-network access to WPAHS and, if this were to occur, could be competitively disadvantaged against Highmark because Highmark includes WPAHS in its provider network.

Competing rivals' ability to expand at lower cost depends on their ability to develop innovative products (e.g., health plans) using lower cost hospitals in greater proportions and to obtain the benefits therefrom. This ability already appears constrained in this particular marketplace by current contractual provisions with UPMC which could be exacerbated were Highmark/UPE to impose similar restrictions on WPAHS contracts or if Highmark were to obtain and respond to competitively sensitive information on rivals' plans for innovative products such that their ability to capture share in the marketplace is limited.

The WPA health insurance marketplace has been largely stable with no significant share shifts, and no evidence of significant inroads made into Highmark by rival insurers other than UPMC Health Plan. With Highmark's relatively stable market share, the presence of contractual impediments to easy entry and expansion by rival insurers against Highmark (even if not imposed by Highmark), and the other factors discussed above, I cannot reject the likelihood that Highmark has market power or the prospect that Highmark/WPAHS have changed incentives post-Affiliation.

2. ABILITY AND INCENTIVE TO ENGAGE IN FORECLOSURE OR RELATED VERTICAL CONTRACTING CONDUCT

According to standard economic theory, a vertically integrated firm faces a different profit maximization problem than two vertically related firms that are not integrated. Before vertically integrating, the upstream and downstream firms maximize profits independently and thus do not take into account how pricing, output and other competitively significant decisions at one level affect those same sorts of decisions and ultimately profits at the other level. In contrast, after vertically integrating, the combined upstream and downstream firms internalize each other's profit streams and jointly maximize profits. Joint profit maximization may alter the incentives of the combined firm and may change pricing and other important decisions, as well as profits compared to profits earned by the two firms operating independently.[153] Vertical transactions may raise the competitive concern that the transaction changes the incentives and may enhance the ability of the merged firm to limit the ability of competitors to discipline anticompetitive effects, such as an output restriction and increased prices.[154] An important inquiry is whether this Transaction alters the merged firm's incentives to engage in anticompetitive behavior and has the necessary mechanisms significantly to disadvantage rivals to that end which did not exist prior to the Transaction, and thereby significantly affect competition. I note that the Transaction may also provide pro-competitive benefits, and here I am addressing specifically whether there is a change that implicates a potential for anticompetitive effects.

Dr. Harris recognizes that a vertically integrated firm may have the incentive to engage in acts that benefit the integrated firm at the expense of rivals, including anticompetitive price increases. He surmises that when a firm considers a price increase, it "considers whether at a higher price it will retain enough sales such that the price increase will be profitable or whether it will lose so

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[153] See, e.g., Hart, O. and J. Tirole, "Vertical Integration and Market Foreclosure," Brookings Papers: Microeconomics, (1990), 205-286 at 223-224.

[154] Botti, M. J. "Observations on and from the Antitrust Division's Buyer-Side Cases: How Can "Lower" Prices Violate Antitrust Laws?" 2007; Ciliberto, F. and D. Dranove , "The effect of physician-hospital affiliations on hospital prices in California," *Journal of Health Economics,* (2006) Vol. 25, No. 1,at 29-38; Cuellar, A. E. and P. J. Gertler, "Strategic integration of hospitals and physicians." *Journal of Health Economics*, (2006), Vol. 25, No. 1, at 1-28; Gaynor, M., Is vertical integration anticompetitive?: Definitely maybe (but that's not final). *Journal of Health Economics, (2006),* Vol. 25 No. 1, at 175-180; Huckman, R. S., "Hospital integration and vertical consolidation: an analysis of acquisitions in New York State," *Journal of Health Economics*, (2006), Vol. 25, No. 1, at 58-80; Moriya, A. S., W. B. Vogt and M. Gaynor, "Hospital prices and market structure in the hospital and insurance industries," *Health Econ Policy Law,* (2010), Vol. 5, No. 4, at 459-479.

many sales such that the price increase will be unprofitable. Similarly, a firm must consider the benefits and costs of attempting a strategy to foreclose its competitors, including whether to attempt to raise rivals' costs."[155]

In analyzing impact on consumers and competition, Dr. Harris addresses the incentives for WPAHS to contract with other health insurers *after* the proposed change of control occurs and whether foreclosure of competition or competitors may take place in any of the markets identified in the Harris Report.[156] He concludes that WPAHS will continue to have the same incentive to negotiate with other health insurers, in addition to Highmark. Dr. Harris further asserts that the incentives of WPAHS and Highmark *will not change with the affiliation.* Specifically, the Harris Report concludes that WPAHS will "continue to negotiate with other health insurers and to participate in these health insurers' provider networks."[157] Dr. Harris bases this conclusion on the need for WPAHS to fill its underutilized beds, arguing that negotiating with other health insurers will continue to be financially desirable to WPAHS as long as these health insurers can supply inpatients to fill WPAHS's bed capacity. In addition, Dr. Harris indicates that WPAHS obtains relatively high variable contribution margins on these hospital patients. Further, Dr. Harris reports that Highmark "plans to negotiate with providers other than WPAHS in order to compete effectively with other health insurers and to continue its efforts to reduce costs and improve quality of care for its health plan enrollees."[158] WPAHS incentives as an independent firm to negotiate with Highmark's rivals for inclusion in their broad networks and for partnering with rivals to develop innovative products that are directly competitive with those of Highmark, however, may differ from those of WPAHS when it is aligned with Highmark. While an independent WPAHS was dependent on revenues from rival insurers (from patient volumes), post-affiliation WPAHS is integrated with Highmark, which can implicate additional revenue streams or funding, as well as changed incentives such as from evaluating the profits of the combined entity from pricing and contracting.

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[155] Harris Amended Supplement 3 at ¶ 7. Dr. Harris notes that the profitability of incremental sales is directly related to a firm's variable contribution margin (defined as the difference between a firm's price and average variable cost as a percentage of its price).

[156] Highmark Response to PID Information Request 4.2.7, Amended Supplement 3 Harris Amended Report at ¶ 1.

[157] Harris Amended Supplement 3 at ¶ 6.

[158] Harris Amended Supplement 3 ¶ 6.

Dr. Harris performs an analysis of the economic risks to the integrated entity if WPAHS were to negotiate higher reimbursement rates with competing health insurers, or forego reimbursement agreements between WPAHS and other competing health plans altogether. Dr. Harris' analysis begins by estimating that the variable contribution margin for WPAHS equaled [redacted] in 2011.[159] He then discusses Highmark's medical loss ratio ("MLR") noting, for example, that Highmark's commercial MLR ranged from [redacted] to [redacted] from 2008 to 2011.[160] The Harris Report notes that these high medical-loss ratios indicate Highmark's margins on additional health plan enrollees are small when compared with the variable contribution margins associated with lost inpatients at WPAHS.[161] Dr. Harris proceeds to estimate the annual margins "at risk" to the integrated entity if WPAHS were to increase reimbursement rates or decline to negotiate with health insurers other than Highmark – He estimates that [redacted] million in margins would be at risk.[162] To offset the estimated amount at risk, Dr. Harris indicates that given a margin of [redacted] on Highmark enrollees and annual premium revenue of roughly [redacted] per commercial enrollee, 141,177 new commercial enrollees would be required as on offset. He concludes that amount of switching is unlikely, as discussed further below.[163]

Based on this analysis of Highmark's MLRs and WPAHS's variable contribution margin, Dr. Harris concludes that if WPAHS attempted to increase reimbursement rates, it risks losing significant margins on patients who will no longer be treated at its hospitals. Dr. Harris asserts that it is unlikely that these margin losses will be offset by enrollment gains for Highmark because the other insurers have alternatives to WPAHS, presumably UPMC and community hospitals, and enrollees have alternatives to Highmark, presumably UPMC and national insurer

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[159] In FY 2011, WPAHS's actual variable costs were approximately [redacted] million, including salaries, benefits, supplies, purchased services and other costs that were determined to vary with patient volume. WPAHS's total hospital payments, for inpatient and outpatient services combined, were approximately [redacted] in FY 2011. Thus, the Harris Report calculates that the variable contribution margin for WPAHS, based on its total patient revenues in 2011 and its estimates of variable costs, is approximately [redacted]. Harris Amended Supplement 3 at ¶ 9.

[160] According to the Harris Amended Supplement 3, for Highmark's WPA service area, each year 2008 through 2011, its commercial medical-loss ratios range from [redacted] to [redacted], and its Medicare Advantage medical-loss ratios range from [redacted] to [redacted] although I note that the medical loss ratio varies directionally by year. See Harris Amended Supplement 3 at ¶ 11 and Table 1.

[161] Harris Amended Supplement 3 at ¶ 12.

[162] Harris Amended Supplement 3 at ¶ 12.

[163] Harris Amended Supplement 3 at ¶ 12.

health plans.[164] This leads Dr. Harris to conclude, "WPAHS does not have the ability to raise rivals' costs in a way that potentially can harm competition or to foreclose these health insurers from any health insurance market."[165]

Dr. Harris' profitability analysis relies on a number of assumptions. It assumes that the MLR is an appropriate measure of Highmark's variable contribution margin or that the MLR estimates are sufficiently refined such that one could appropriately draw relevant inferences from differences between Highmark's MLR and WPAHS's variable contribution margin. It also depends on the assumption that there would be limited expected diversion from rivals to Highmark, which according to Dr. Harris, "...it is not likely that an attempted increase in reimbursement rates at WPAHS (or refusal to negotiate) would result in a significant shift in health plan enrollment away from these other health insurers to Highmark."[166] These assumptions could materially affect the overall assessment of profitability of price increases because they may cause overstatement of profit losses at WPAHS and understatement of increased profits at Highmark.

Additionally, Dr. Harris focuses on the total amount "at risk" from a potential price increase or failure to negotiate. However, a potential price increase imposed by WPAHS on health insurers other than Highmark would not necessarily put all of the $70.5 million in margin at risk. Depending on the relevant underlying price elasticity of demand, only a fraction of commercial patients may shift from WPAHS to another provider when faced with, for example, an increase in premiums or co-payments, thereby implying that only some fraction of the $70.5 million in margins would be at risk. Moreover, Dr. Harris has apparently not taken into account that any diversions to Highmark would also result in "recapture" of some of the lost WPAHS margins. In

[164] Harris Amended Supplement 3 at ¶ 14. This appears to assume that in this particular marketplace with its market conditions that there is no competitively significant impact on the quality or other network attributes of rival insurers from dropping WPAHS from their networks and instead attempting to shift volumes to UPMC or other hospitals.

[165] Harris Amended Supplement 3 at ¶ 15. See also Harris Amended Supplement 3 at ¶ 16 ("Because WPAHS cannot substantially impact the costs of these other health insurers, these other health insurers likely would not have to increase premiums if WPAHS attempted to increase reimbursement rates. Consequently, Highmark is not likely to experience substantial enrollment gains if UPE attempted to raise rivals' costs through WPAHS (or WPAHS refused to negotiate))." As I discuss later, I test this assumption using an alternative methodology.

[166] Harris Amended Supplement 3 at ¶ 16.

addition, Dr. Harris has not provided any sensitivity tests around how varying these underlying assumptions might affect his conclusions.

In my examination of whether the merged entity would have changed incentives from pre-Affiliation, I also focus on whether the expected gains to Highmark on the insurance side outweigh the potential losses on the provider side, and whether WPAHS's incentives change. I agree with Dr. Harris that this is an appropriate approach to evaluating relative profitability. If the merged entity were effectively to restrict the access of other insurance competitors to WPAHS, or alter substantially its pricing, rivals and some of their members would likely suffer harm and competitive constraint could be significantly weakened. All competing insurers currently (except for UPMC) pre-Affiliation have all five WPAHS hospitals as in-network providers, and historically have relied on WPAHS especially for tertiary care prior to their contracts with UPMC. Furthermore, the WPAHS admissions data indicate that a substantial number of rivals' enrollees have been admitted to the WPAHS hospitals.

As discussed below, I conducted a more extensive analysis than Dr. Harris' analysis to evaluate whether there is a plausible basis to conclude that incentives change with the proposed affiliation and thus potentially change behavior relative to the behavior of the two entities operating independently. The empirical methodology described below is a common economic approach for investigating the impact of a vertical transaction or restraint on the incentives of the involved parties, and relies on key data inputs related to, for example, measures of profits and diversion rates, such as I incorporate into my profitability analysis. [167] One can use this methodology to examine hypothetical price increases of various magnitudes at WPAHS post-transaction to

[167] Baker, Jonathan, "Comcast/NBCU: The FCC Provides a Roadmap for Vertical Merger Analysis," Antitrust, Vol. 25, No. 2, Spring 2011at p. 39-40. The relevant literature articulates these same variables. A recent article discussing vertical mergers states for example: "The incentive of the merged firm to engage in foreclosure depends on the profitability of such a strategy…The margins on the upstream and on the downstream market are two of the most important factors…Another critical concern is the extent to which the merged firm can capture the demand diverted away from foreclosed rivals." Petrasincu, Alex, "The Treatment of Vertical and Conglomerate Mergers in the European Union—The European Commission's New Guidelines on the Assessment of Non-Horizontal Mergers," Georgetown Journal of International Law, Vol. 40, 2009 at 669-690.

evaluate whether the combined entity has different incentives from the two firms operating independently pre-transaction.[168]

Specifically, I performed an empirical examination of the profitability to an integrated Highmark-WPAHS of a hypothesized price increase to rival national insurers. In this analysis, I provide more explicit and detailed modeling and sensitivity testing than the analysis performed by Dr. Harris and reflected in his Amended Supplement 3. Moreover, I consider a variety of factors, as described in more detail below, in my assessment of whether the combined entity's incentives would be different with the vertical arrangement.

A hypothesized WPAHS price increase to national insurers would likely have a direct effect on WPAHS's admissions, revenues, and profits, and an indirect effect on Highmark's enrollment, revenues, and profits:

- First, WPAHS would likely lose a number of admissions from national insurers assuming national insurers would pass through the price increase to enrollees, e.g., in the form of higher co-pays and deductibles. Higher co-payments and deductibles would reduce enrollment and admissions to WPAHS. The decrease in admissions translates into a decrease in profits at WPAHS.
- Second, WPAHS would benefit from higher reimbursements for admissions from national insurers that remain at WPAHS.
- Third, Highmark would indirectly benefit from the price increase because some enrollees with the national insurers would switch to Highmark in order to be able to access WPAHS (which could be the preferred provider for some enrollees) at a lower price via Highmark. Those enrollees who switch to Highmark would provide Highmark with additional profits on the insurance side of the UPE enterprise and would allow for some "recapture" of lost WPAHS admissions and profits.

Below, I list the main assumptions and inputs underlying my empirical analysis of the profitability of an increase in WPAHS reimbursement rates to national insurers.

- Percentage increase in the WPAHS reimbursement rate for national insurers: for purposes of the hypothetical, I assume a 10 to 30 percent increase in reimbursement rates for WPAHS services provided to national insurers operating in WPA. [169]

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[168] As noted earlier, the internalization of profits across the two levels of the industry can change incentives, since substantially increased profits at one level can offset lost profits at another level depending on the effects of price increases and the availability of alternatives at each level.

[169] For example, in analysis performed by Grant Thornton on behalf of Highmark, it is assumed that Highmark's and other commercial insurers' reimbursement rates would increase [redacted] and [redacted], respectively, in FY 2014. See "WPAHS – No Affiliation Update, October 2, 2012," UPE-0022413-30 at

- Own price elasticity of demand: I calculate the own price elasticity of demand (reflecting the sensitivity of WPAHS admissions to changes in reimbursement rates) as one divided by the variable margin for WPAHS.[170]

- Highmark's variable contribution margin: I consider two measures of Highmark's variable contribution margin: (1) the variable margin implied by Highmark's MLR for commercial enrollees in 2011 (this is the one Dr. Harris uses), and (2) Highmark's operating margin in 2012, which is significantly lower than the margin according to the MLR.[171]

- WPAHS's variable contribution margin: I employ the same estimate as the one used by Dr. Harris.[172]

- Percentage of lost WPAHS admissions that switch to another health insurance company: I consider a wide range of potential switching rates and note that some amount of switching is plausible given that some patients/enrollees prefer WPAHS (by revealed preference) and might switch to Highmark as a means of accessing WPAHS at a lower cost.

In Appendix V, I describe all of the inputs and the mechanics of the empirical analysis in more detail for reference.

In this analysis, I operationalize an economic framework to evaluate the potential gains and losses in economic profits (approximated by estimates of variable margins) to WPAHS and Highmark from the combined entity's theoretical attempt to increase WPAHS reimbursement rates to the national insurers by 10 to 30 percent. Table 15 provides a summary of this analysis regarding whether it would be profitable to increase WPAHS reimbursement rates to national

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UPE-0022415. An increase in reimbursement rates ranging from 10 to 30 percent is a plausible range of values and includes increases at the higher end consistent with a substantial increase relative to changes in the recent past.

[170] Estimating the price elasticity in this fashion is common in economic modeling (see, e.g., Carlton, Dennis W. and Jeffrey M. Perloff, *Modern Industrial Organization*, 3rd ed., Boston: Pearson/Addison-Wesley, (1999) at 91-92). For example, a 55% variable contribution margin implies an elasticity of -1.82. This elasticity estimate is consistent with the economics literature which includes estimates of the own price elasticity of demand in the elastic portion of the demand curve (See, e.g., Gruber, J. and J. Poterba, "Tax Incentives and the Decision to Purchase Health Insurance: Evidence from the Self-Employed," *The Quarterly Journal of Economics*, August, 1994, which concludes that a 1% increase in the cost of insurance coverage reduces the probability that a self-employed single person will be insured by 1.8%.). We also increase the estimated price elasticity (in absolute value) by 0.5 and 1 as sensitivity tests and also to account for the price elasticity of inpatient health care services at WPAHS accessed through national insurers being more price elastic because of other options at the insurer level.

[171] See Harris Amended Supplement 3 at ¶¶ 10-12 and Addendum No 4 to Amendment No 2 to Confidential Supplement Submitted with Form A at p. 2 (showing Highmark's financial results).

[172] See Harris Amended Supplement 3 ¶ 6.

insurers by 10 to 30 percent after consummating the proposed affiliation. The top panel outlines estimated net UPE profits of the combined entity, while the second and third panels show estimated profits specifically for WPAHS and Highmark (which sum to net UPE profits shown in the top panel). In each cell, the first and second numbers correspond to the estimated profits assuming a 10% and 30% increase in reimbursement rates, respectively. The table also provides ranges for three important variables: a) the own price elasticity (ranging from [redacted] to [redacted] in absolute value); b) estimate of Highmark's variable contribution margin (ranging from [redacted] to [redacted]); and c) percentage of lost WPAHS admissions that switch to another health insurance company (ranging from 20% to 100%).

Table 15

Range of Estimated Net UPE Profits ($MM) from a Hypothetical 10% to 30% Increase in Reimbursement Rates to National Insurers (sum of WPAHS and Highmark profits listed below)

The results of this profitability test indicate a wide range in estimated net profits for UPE, ranging from –$13 million to +$27 million. The results reflect the importance of and sensitivity to the underlying assumptions, including the assumed increase in the reimbursement rate to WPAHS, price elasticity, variable margins, and percentage of enrollees shifting from national insurers to another health insurance company. In many scenarios, profits increase for the

affiliated entity, although there are some in which profits decrease. These findings lead me to reject the conclusion reached by Dr. Harris that WPAHS would have the same incentives pre- and post-Affiliation under a plausible range of assumptions and supporting facts.[173] I note that while my analyses bear some similarity to that conducted by Dr. Harris, his analysis did not implement or assess critical assumptions about the likelihood that Highmark could capture substantial profits at the insurer level even if WPAHS were to lose considerable revenues.

3. COMPETITIVE CONCERNS RELATED TO COMPETITIVELY SENSITIVE INFORMATION AND CONTRACTING PROVISIONS

Providers and insurers routinely contract with each other to create networks of in-market providers from which employers and consumers can choose. The terms and conditions of contracts are constrained by the competitive alternatives that each party has for the other. Competitive issues about contracting practices between insurers and providers arise where there is the prospect that competition is substantially at either or both of the insurer or hospital level. These include circumstances involving dominant insurers and/or dominant providers, and contracts between them that have the effect of inhibiting entry or expansion by competitors or enabling firms to extract supracompetitive rates due to the insufficiency of competitive alternatives for consumers (or insurers).

This vertical affiliation raises the potential concern that Highmark would be able to engage in practices that have the potential competitively to disadvantage its rivals and thereby affect competition. The mechanisms include, but are not limited to (1) disclosure of a rival's competitively sensitive information obtained at one level of competition and passed upstream or downstream to the rival's competitor (Highmark or WPAHS), and (2) control over contracting and the potential to include contracting provisions that would tend to disadvantage the merged firm's rivals. I evaluate each of these here and specifically address the types of contracting

[173] As noted above, a number of conditions are required for a vertical merger or arrangement to have anticompetitive effects. My analysis here suggests a plausible basis for the possibility that the affiliated entity would have an *incentive* to increase reimbursement rates at WPAHS for national insurers that differ from those of WPAHS as an independent hospital because of the internalization of profits at both WPAHS and Highmark. This conclusion, by itself, does not indicate whether the affiliated entity would engage in this behavior, and if it did, whether it would be anticompetitive.

provisions that raise concerns and that have been identified as concerns in this matter in public comments or interviews.

Competitively sensitive information: The economic incentive to compete and innovate depends on the ability to keep competitively sensitive materials confidential and to develop new plans fully before launch. For example, the economic literature notes:

> ... [C]oncerns about the integrated supplier's reliability [e.g., the risk that sensitive information transmitted to the integrated supplier would be exploited by its downstream subsidiary] confer market power to the other suppliers, forcing downstream rivals to share the benefits of their investments with the remaining suppliers, thereby discouraging their efforts.

With a vertical transaction, avoiding the exchange of competitively sensitive information is paramount, particularly in a healthcare marketplace such as WPA where there are a limited number of competitors and where product development by rival insurers can involves active participation by hospitals. The absence of effective firewalls and other protections of information typically provided in contracting with WPAHS could limit the incentive and ability of insurers to contract or to innovate with new insurance plans or networks for fear that competitively-sensitive information would be passed on by WPAHS to Highmark post-Affiliation.

I note that the competitive effects analysis reflected in Dr. Harris's analysis does not take into consideration the effects of potential disclosure of highly confidential price or non-price terms of rivals' offerings or products and their ability to gain therefrom. The Harris Amended Report did not address the vertical incentive issues with regard to maintaining confidentiality of sensitive information and its possible effects on competition at the upstream and downstream levels. The ability to obtain competitively sensitive information, such as information on competing insurer's contract rates and terms with WPAHS by Highmark could significantly advantage Highmark at the expense of its rivals and potentially chill important innovations. Without effective firewalls to protect competitively sensitive information, the likelihood of anticompetitive effects from this vertical Transaction increase significantly.

Contracting provisions: Vertical mergers raise the prospect that the combined firm may have different incentives post-merger with regard to contracts with rivals at one or both stages of production or distribution. Among the contracting provisions that have raised competitive concerns in vertical health insurer matters are Most Favored Nation clauses ("MFNs"),

exclusivity provisions, and prohibitions or limitations on the ability of providers and insurers to offer tiered network products, and I address them here.

I evaluated the competitive implications for consumers and competition if Highmark or UPE were to implement contract provisions that could restrict rival's competitive constraint on the merged firm. For example, the Affiliation may change Highmark's incentives because taking actions that are beneficial to WPAHS, and potentially harmful to WPAHS's rivals in the provider marketplace, would benefit the combined entity including Highmark. WPAHS, for example, has the ability unilaterally to terminate, without cause, payor contracts, with and without the Affiliation. The Affiliation, however, changes WPAHS's incentives because prior to the Affiliation, WPAHS would stand to lose substantial patient volume by engaging in such behavior. After the Agreement, potential losses in patient volume may be offset by gains to Highmark on the insurance side of the business, which could result in incremental admissions to WPAHS because patients might switch to Highmark health plans as a way to access WPAHS. Whether the merged entity will have the incentive to engage in this conduct, however, turns on whether the expected gains on the insurer side outweigh the potential losses on the provider side. Although this could occur with or without the proposed Affiliation, with the Affiliation, Highmark directly benefits from any community hospital refusing to accept contract terms since some, if not all, loss of volume from Highmark-insured patients would likely shift to WPAHS hospitals. The effect of these kinds of contracting provisions could be a substantial lessening of competition or reduced development of new and competitive products in the commercial health insurance relevant market and harm to the public interest.

Contract provisions such as MFNs and exclusivity are studied extensively in the healthcare economics literature with possible adverse vertical implications as well as potential benefits. In a number of cases, the DOJ Antitrust Division challenged these types of contract provisions as eliminating or substantially reducing competition in healthcare, and in some cases, Courts have determined that the facts did not support either the market power or competitive effects tests. The competitive effects of MFNs and exclusivity provisions turn on whether the hospital or insurer imposing the contract provision has market power and whether the actual effect in the market is to limit substantially the competitive constraint of rivals, or alternatively, results in pro-competitive discounts that redound to consumer benefits. MFNs may have procompetitive purposes and effects or may discourage or restrict providers from granting discounts to

competing insurers. MFNs also may create a barrier to entry or expansion by the insurer's rivals or may raise its rivals' costs, which could cause them to be less effective competitors. Absent an MFN clause, some insurers may offer innovative or different products, such as more restricted provider networks or tiered co-payments, which can be pro-competitive. Generally, the literature supports the conclusion that for anticompetitive effects to occur, (in the upstream, downstream, or both levels) firms must have market power. It is my understanding that the Highmark has been prohibited from including MFNs in its provider contracts in the past and continues not to include such provisions in its contracts.

The competitive effects of exclusivity provisions similarly relate to their rationale and impact of their use. For example, if exclusivity provisions were now imposed, they could facilitate anticompetitive effects by preventing a competitor, Highmark, or WPAHS from contracting with other entities that were previously not subject to such provisions. For example, if Highmark required WPAHS to prohibit any rival insurer seeking a contract with WPAHS from contracting with other competing hospitals, this could disadvantage competing insurers by limiting them to a narrower network relative to Highmark's network offering. Alternatively, if UPE Provider Sub, as the controlling entity of WPAHS, negotiated provider contract rates and terms with competing commercial insurers that restricted the insurers' ability to offer tiered products with WPAHS in lower cost tiers or offering terms and conditions that could limit the ability of competing insurers to offer innovative products that would include WPAHS hospitals.

4. DOJ'S VIEWS ON THE COMPETITIVE EFFECTS OF THE AFFILIATION

The DOJ reviewed the affiliation and determined that the agreement "likely will not reduce competition in the markets for hospital, physician or health insurance services."[174] At the time of the DOJ's review, the expectation was that UPMC and Highmark's contract would expire at the end of 2012. The Antitrust Division found that because Highmark does not own any hospitals and only a few physician practices, and WPAHS does not compete in health insurance, the Affiliation "will not eliminate any material horizontal competition between the parties."

[174] "Statement of the Department of Justice's Antitrust Division on Its Decision to Close Its Investigation of Highmark's Affiliation Agreement with West Penn Allegheny Health System, " U.S. Department of Justice, Antitrust Division, Press Release, April 10, 2012.

Moreover, it determined that any horizontal effects resulting from the vertical integration of the parties were unlikely because the Pittsburgh hospital market is highly concentrated, with UPMC as the dominant and only other significant hospital network in addition to WPAHS. On its own, WPAHS would not likely sponsor entry or expansion by other health insurers. Moreover, the DOJ determined that the affiliation agreement would not reduce WPAHS's incentives to offer competitive rates to other insurers because its incentives are to increase patient volumes. Likewise, the Antitrust Division determined that the affiliation would not facilitate horizontal collusion among health plans because expansion by national insurers is occurring now in an attempt to undermine Highmark's dominant market share.[175] It also recognized the significant capital infusion that Highmark would provide to WPAHS, which would increase competition in WPA's health care markets by increasing "the incentives of market participants to compete vigorously."

5. CONCLUSIONS ON THE COMPETITIVE EFFECTS OF THE AFFILIATION

In its closing statement regarding this proposed Affiliation, the DOJ Antitrust Division stated, "[t]he Division remains mindful that vertical acquisitions and affiliations between health insurers and hospitals with market power can potentially reduce competition. The division will continue to monitor developments in the Pittsburgh health care market…" As noted by the Division, vertical acquisitions have the potential to harm competition under certain market conditions: a) Highmark possesses market power; b) WPAHS is an important part of non-integrated rivals' provider networks in WPA (generally and as an alternative to UPMC), and c) sufficient entry or expansion by non-integrated rivals into the health insurance marketplace is difficult. Dr. Harris and Highmark have not presented definitive economic evidence that refutes these three market conditions.

[175] As I understand the DOJ's review as set out in the press release, it assumed that there would be no extension of the Highmark-UPMC contract beyond 2012. Since UPMC had recently negotiated in-network access with these competing national insurers, rival insurers potentially gained a differentiated product compared with Highmark (a broader network offering inclusive of UPMC). For consumers preferring access to UPMC hospitals, this would likely result in more policyholders switching to rival national insurers from Highmark. As events developed and with intervention by the Commonwealth of Pennsylvania, UPMC and Highmark negotiated a new contract through December 31, 2014.

Based on my analysis, I cannot reject the likelihood that Highmark has market power. Post-Affiliation, a reasonable likelihood exists that Highmark would have the incentive to exercise that market power to competitively disadvantage its rival insurers. As noted previously, my analysis takes into consideration the complex facts of the WPA area, which includes a dominant health system that has imposed contract provisions and pricing to constrain rivals' ability to respond with innovative products. To the contrary, effective competition in the health insurance market would compel Highmark to pass on cost savings from this transaction to consumers.

As I stated at the outset of this section, vertical mergers are widely viewed as procompetitive and are likely to be efficiency enhancing and good for consumers. Such benefits may be substantial and sufficient to overcome the risk of an anticompetitive effect from a vertical transaction. Alternatively, the PID may need to take steps at the outset to mitigate the potential for anticompetitive behavior to ensure that consumers will reap the substantial benefits from the transaction. As I discuss in detail in Sections V and VI below, this Transaction, which includes Highmark's affiliation with WPAHS and the establishment of an IDN in WPA, has the potential to provide substantial benefits to consumers of healthcare services in WPA. In my view, the risks of anticompetitive effects from this vertical integration are addressable by imposing certain conditions on Highmark and the UPE Provider Sub that would restrict the exchange of competitively sensitive information and prohibit the use of certain contract provisions that would restrict competition in an already fragile competitive healthcare marketplace. I discuss conditions including, at the request of the PID, those proposed by other commenters in Section VII.

V. THE ECONOMIC IMPACT OF HIGHMARK'S ACQUISITION OF WPAHS ON THE DELIVERY OF HEALTHCARE IN WESTERN PENNSYLVANIA

Overview: Highmark asserts that it needs to acquire WPAHS, as opposed to contracting with an independent WPAHS and operating the IDN without WPAHS as its core, to align WPAHS incentives with Highmark's incentives to achieve high quality, lower cost healthcare in WPA. Highmark views a reinvigorated and lower cost WPAHS providing competitive discipline on UPMC reimbursement rates. Enhancing WPAHS as a viable competitive alternative to UPMC is an important component of Highmark's IDN strategy to reduce healthcare costs for its members. By attracting more enrollee admissions to WPAHS and by WPAHS becoming a more effective competitor against UPMC, Highmark expects this strategy will lower the premium rates paid by Highmark's enrollees below that which enrollees would have paid and make Highmark more competitive in the insurance marketplace.

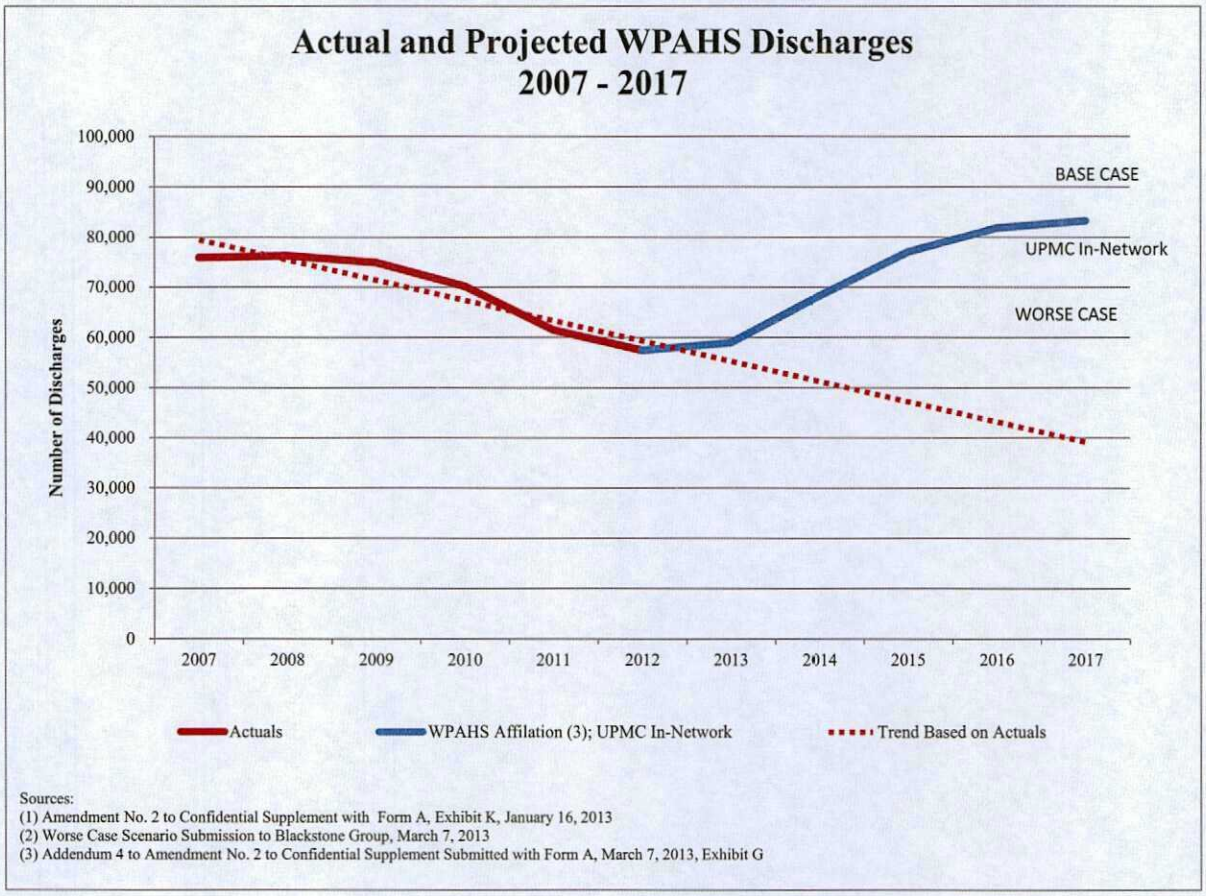
Highmark's IDN strategy, with WPAHS as the core of its provider offerings, would potentially create a viable WPAHS hospital system that will incentivize providers and patients to choose WPAHS, presumably at lower cost and comparable quality for full range of services, instead of UPMC or other hospitals. Highmark's WPAHS "diversion" strategy, incentivizing patients and physicians to choose WPAHS instead of UPMC, includes realigning physicians' incentives, both employed and affiliated, with Highmark's incentives to reinvigorate WPAHS by attracting more patients from other, higher cost facilities, and deliver the IDN benefits Highmark projects. In addition, it incentivizes enrollees to choose WPAHS and other community hospitals as lower cost alternatives for inpatient services compared with UPMC.

Highmark, with the services of Grant Thornton, has projected the incremental discharge volumes of inpatients it expects to attract from UPMC to WPAHS and other lower cost hospitals and associated impact of these incremental discharges on WPAHS's financials. Highmark incorporated the effect of these WPAHS projections from the Affiliation on the projected operations and financials of Highmark, UPE, and UPE Provider Sub. All of these projections rest on the assumption, among many, that UPMC will be out-of-network in Highmark's healthcare insurance plans after December 31, 2104.

At the request of the PID, Highmark also prepared two alternative sets of projections based on the alternative assumption that: (1) UPMC will be an in-network participating provider in

Highmark's health plans, and (2) WPAHS will only generate half of the incremental discharges projected by Grant Thornton. I present the results of these three scenarios graphically in Figure 1 below.

Figure 1 [REDACTED]



As shown in this graphic, the projected discharges at WPAHS vary considerably—the Base Case with UPMC out-of-network ending up well above recent historical levels of WPAHS discharges; the UPMC in-network scenario which ends up somewhat above historical levels; and the 50% of base case discharges which ends up about in the mid-range of recent historical discharge levels.

I note two important factors affecting all three scenarios: (1) the Pittsburgh area has experienced a steady downward trend in inpatient discharges and (2) Highmark assumes that under each scenario, including UPMC in-network, it will not be contractually restricted from offering consumer choice initiatives to incentivize patients to obtain inpatient hospital services at lower cost facilities. The first factor acts as a constraint on increasing discharges at WPAHS in that

these incremental discharges must originate not by relying on gaining some share of increased demand for hospital services, but by convincing patients, and their referring physicians, that would have sought inpatient services at higher cost facilities, such as UPMC, to switch to the lower cost WPAHS. The second factor primarily affects the credibility of the UPMC in-network scenario because it assumes Highmark would be able to negotiate a contract with UPMC that does not prohibit consumer choice initiatives, e.g., tiering and steering—a prohibition that UPMC has sought and negotiated in its contracts with Highmark and other managed care insurers. Without the ability to offer such consumer choice initiative products, it appears that Highmark has limited means to attract patients to WPAHS without violating its contract with UPMC.

My analysis described in this Section leads me to conclude that there is substantial uncertainty about Highmark's proffered projections of large volume shifts of inpatients to WPAHS from existing providers, and some of the economic assumptions underlying Highmark's projected IDN cost savings. Although the likelihood of effectuating these projected incremental discharges and associated financial consequences is highly uncertain, Highmark has articulated a reasonable IDN strategy incorporating the WPAHS affiliation that would provide significant benefits to the healthcare community in WPA and to Highmark's insured members.

Specifically, my overall conclusions on the competitive effects, the economic and community benefits, and public interest of Highmark's proposed IDN with WPAHS as its core, are: the success of Highmark's affiliation with WPAHS depends critically on the ability of the IDN to attract large numbers of inpatients to WPAHS, especially away from UPMC. To do this, Highmark must accomplish two goals: (1) incentivize patients to select WPAHS and other aligned hospitals rather than UPMC for inpatient services by adopting Community Blue and by increasing transparency of cost information relevant for consumer decisions, and (2) incentivize physicians to use and refer patients to WPAHS and other aligned hospitals rather than UPMC. Without achieving these two goals, it is unlikely that Highmark can attract sufficient numbers of patients to WPAHS to make this Affiliation successful in terms of (1) stabilizing WPAHS financially, (2) lowering the cost of care to Highmark members, (3) lowering Highmark's risk exposure to possible WPAHS financial failure, and (4) providing improved competitive healthcare delivery to the WPA community.

Intrinsically linked with this Affiliation is Highmark's plan to establish an IDN in WPA with the goal of providing affordable healthcare for its enrollees. I provide in this section my assessment of the economic impact on healthcare delivery in WPA from the proposed Affiliation in the context of the IDN. Highmark describes its affiliation with WPAHS through UPE as the "cornerstone" of this IDN strategy. As set out by Highmark in its Strategic Plan, it plans to create a structure that "coordinates care, integrates services as appropriate, aligns physician incentives, introduces innovation and choice, and promotes evidence-based care and a differentiated patient experience."[176] Highmark views these components of care as "shortcomings pervasive in the current system."[177]

UPE's IDN strategic plan is to implement a multi-faceted approach to healthcare transformation, which includes:

- Securing access to a "full-service" patient-centered network of lower-cost, high-quality, highly-efficient care providers;
- Building platforms to support care redesign and cost reduction;
- Promoting the introduction of innovative care models and lower-cost sites of treatment;
- Focusing on improved coordination of care;
- Re-aligning provider incentives through new reimbursement models; and
- Developing new insurance product designs that create incentives for value conscious decision-making by consumers, coupled with access to next generation of costs and quality transparency tools.[178]

The delivery network envisions integrated provider management with policyholder/subscriber engagement. Highmark views the affiliation with WPAHS as the core for building an integrated delivery network. WPAHS provides the only quaternary referral hub outside of UPMC, and it accounts for a large percentage of specialty care in southwestern PA—two factors that appear to be important conditions to provider management and subscriber engagement.

Highmark's provider management strategy consists of several initiatives designed to coordinate care at efficient costs:

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[176] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Form A, Tab E at 1-2.
[177] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Form A, Tab E at 1-2.
[178] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Form A, Tab E at 2.

- Re-align physician incentives through new reimbursement models,
- Secure access to a "full service" network of lower-cost, highly efficient care providers, including primary care, specialists care, captive ambulatory service verticals, aligned secondary care through community hospitals, and a quaternary care "hub," which is premised on a revitalized, vibrant WPAHS, specifically Allegheny General Hospital,
- Promote introduction of innovative care models and lower-cost treatment sites, and
- Build platforms (medical service organization ("MSO") and IT infrastructure) to support care redesign and cost reduction within the provider community.[179]

Highmark expects this integrated delivery model to deliver improved costs, quality, choice, access, and experience for its policyholders/subscribers.[180] Specifically, Highmark envisions:

- Lowering the costs of delivery will not lower current premium levels, but will generate lower premiums than would occur if the Transaction is not approved;
- Providing higher quality by linking quality-based reimbursement systems that link provider payments to the provision of quality healthcare, and promoting greater transparency so that consumers know more precisely the healthcare being consumed and its costs;
- Ensuring greater access and choice of healthcare in WPA by preserving WPAHS's financial integrity;
- Developing systems to deliver more integrated healthcare which rewards care coordination and the patient's experience;
- Incentivizing the provision of the right care, in the right place, at the right time; and
- Creating an IDN with significant asset value and the potential to generate substantially more value.[181]

Although Highmark plans to develop and implement an IDN with or without the WPAHS affiliation, the WPAHS affiliation is a key driver of the IDN's benefits. First, Highmark identifies the affiliation with WPAHS as a "core and necessary" component in building the new

[179] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Form A, Tab E at 23. See also Highmark Supplemental Response to May 3, 2012 Letter from the PID, at UPE-0012801and 806.
[180] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Form A, Tab E at 18-21.
[181] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Form A, Tab E at 18-21.

IDN. To Highmark, several WPAHS characteristics particularly support its importance in the overall success of UPE's IDN network:

- WPAHS shares Highmark's vision to lower care costs via new care delivery models and supports Highmark's efforts to change the healthcare market in southwestern Pennsylvania.
- WPAHS provides high-acuity clinical services and is the only realistic alternative to UPMC for these services.
- WPAHS's broad geographic reach serves to offer secondary and tertiary services in competition with UPMC.
- WPAHS is a major employer of physicians who will play a key role in transformation of the healthcare delivery network.
- WPAHS is a major employer in southwestern Pennsylvania.
- Highmark believes WPAHS cannot survive as a non-profit, five-hospital, quaternary facility without affiliating with Highmark.[182]

Second, the majority of the claimed economic benefits for WPAHS of the affiliation, including its competitiveness, sustainability and future financial viability, come through UPE's IDN structure. Third, the value to Highmark and its insured members of implementing the IDN derives substantially from the affiliation with WPAHS and the ability to serve consumers in a lower cost, high quality environment.

Highmark's goal of creating an IDN to provide access to affordable healthcare could result in substantial benefits to consumers of healthcare in WPA, including reduced costs (for insurance and healthcare services), improved quality of care, and improved outcomes. This prospect and the intrinsic relationship between the proposed WPAHS affiliation and the IDN make it appropriate to assess the IDN's costs and benefits as part of my evaluation of the Affiliation, and to evaluate whether the projected benefits will inure to the benefit of Highmark's insured members and to the WPA community at large. The likelihood and magnitude of benefits from the IDN could offset the risks and costs of the transaction. While there are other factors, the impact of the IDN on the volume of inpatients admitted at WPAHS as well as improved costs and quality are core metrics for assessing the impact of the Affiliation.

[182] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Confidential Supplement Submitted with Form A, Tab 2 at 14-16.

In addition to addressing these direct benefits and costs of the proposed transaction, I also consider the potential competitive and public interest effects, including the effect of the Affiliation and IDN on capacity utilization at competing hospitals in the area. Highmark's affiliation with WPAHS, under the organizational structure of UPE, creates a second large vertically integrated healthcare delivery system in WPA. The introduction of a second vertically-integrated system and competition between it and the incumbent vertically-integrated system, UPMC, could yield additional public benefits, such as incentives for lower costs and improved quality that could benefit Highmark's current policyholders as well as those of other insurers. Alternatively, there could be adverse effects and higher costs for consumers. For example, Highmark/WPHAS (or UPMC) might have the incentive to retain or expand capacity in the delivery systems to less efficient levels, which in turn could raise rather than lower the overall costs of healthcare in WPA.[183] Moreover, where there is significant excess capacity in the delivery system, as is the case in WPA, incentives and efforts of Highmark to direct volumes to WPAHS to improve utilization could result in its improved quality and cost structure, but also could materially change the viability of other local hospitals and health plans in competing for customers. I have identified these potential adverse effects in my evaluation of the proposed affiliation.[184]

Based on my review set out in this section, I conclude that the success and impact of Highmark's affiliation with WPAHS depends critically on the ability of the IDN and Highmark to attract large numbers of inpatients away from UPMC to WPAHS. These shifts in volumes could achieve many objectives, including improved profitability and sustainability of WPAHS, potential reduction in costs due to best practices and higher volumes, improvements in quality and strengthening WPAHS as a competitor. To achieve these objectives, however, Highmark

[183] Esther Gal-Or discusses the incentives of hospitals to "over-invest" in capacity relative to the efficient level for the market. See Gal-Or, Esther, "Excessive Investment in Hospital Capacities," *Journal of Economics & Management Strategy*, (1994), 3(1) at 53-70.

[184] The adverse effects of potentially higher costs or financial impacts do not necessarily involve adverse competitive effects. Adverse impacts on rivals or the community may be the consequences of competitively benign actions by WPAHS or Highmark, or may result from the outcome of necessary re-alignment of capacity or from fewer, although a sufficient number of choices in the marketplace. Moreover, the alternative scenario of no affiliation may yield similar or even heightened adverse circumstances with regard to excess capacity and its impact. These are, however, implications or potential outcomes of the transaction that I have been asked to identify and assess as to their likelihood and effect in the context of the public interest.

must accomplish two elements of its strategy: (1) incentivize patients to select WPAHS and other aligned hospitals rather than UPMC for inpatient services by adopting Community Blue and by increasing transparency of cost information relevant for consumer decisions, and (2) encourage physicians to use and refer patients to WPAHS and other aligned hospitals as appropriate points of care rather than UPMC.[185] Without achieving these goals, it will be substantially more difficult for Highmark to attract sufficient numbers of patients to WPAHS to make this Affiliation successful in terms of (1) financially stabilizing WPAHS, (2) lowering the cost of care to Highmark members, (3) lowering Highmark's risk exposure to possible WPAHS financial failure, and (4) providing improved competitive healthcare delivery to the WPA community.[186]

A. ECONOMIC OVERVIEW OF IDNs

1. DR. HARRIS'S OVERVIEW OF AN IDN

Highmark, through its economics expert, Dr. Harris, provides an assessment of the potential benefits and efficiencies that may derive from a vertically integrated health system. Dr. Harris's assessment relies on economic and healthcare literature and information sourced from Highmark's plans for an integrated delivery network submitted in Highmark's original PID 2.1.1 response.[187] These are largely descriptive in nature, and while they indicate Highmark's intentions, Dr. Harris relied upon estimated benefits from other Highmark consultants and did not undertake an *independent* quantitative analysis of Highmark's proposed IDN.[188]

Dr. Harris defines an IDN as "a network of health care providers, sometimes including health plans, affiliated or operating under the same parent company."[189] As described by Dr. Harris, an

[185] Accomplishing these goals largely aligns with the incentives of consumers and employers seeking lower cost, higher quality care and improved competition in the hospital sector in WPA.
[186] As I discuss further below, increasing discharges at WPAHS is not a goal in itself to achieve at the expense of other goals. If Highmark cannot achieve the necessary shift in volumes to sustain WPAHS and achieve specific savings, then other methods may need to supplant or supplement these strategies, including contingency plans.
[187] Harris Amended Supplement 4 at ¶ 4.
[188] McKinsey estimated UPE's IDN savings independently of the Provider Network Investments contained in Amendment No. 2 to Confidential Supplement Submitted with Form A, Tab 8, Exhibit K at 11.
[189] Harris Amended Supplement 4 at ¶ 4.

IDN's structure may include physicians, physicians and hospitals, or physicians, hospitals, and health plans, and would "typically offer a continuum of care."[190] Dr. Harris reports that the goals of an IDN are to achieve cost efficiencies and improve quality and access to care. IDNs often involve "clinical integration and care management measures in order to achieve efficiency goals and to create and align incentives for the participants in the IDN to achieve these efficiency goals."[191]

Relying primarily on a study conducted by the U.S. General Accounting Office, Dr. Harris also examined the incremental benefits of having a health insurance plan in an IDN. He cites several benefits of IDNs, including the view that IDNs are more likely to use patient care strategies, such as coordination of care, compared with non-IDN providers. More fully integrated organizations functioning under "a cohesive strategy can achieve economies of scale and make efficient use of both capital and operating resources..."[192] Citing to the GAO study, Dr. Harris identifies the use of electronic health records, operating a health insurance plan, and employing physicians as elements supporting IDN strategies to improve patient care.

I find these to be plausible and economically well-founded sources of consumer benefits supported in the healthcare economics literature. Using health insurance plans' patient claims data may enable the creation of better-informed disease management programs. Claims data also facilitates tracking and monitoring of patients' treatments and the resulting outcomes, and for identifying patients with certain medical conditions that would enable an IDN to target those patients for further education and treatment.[193] An IDN's use of electronic health records provides the ability to identify potential problems, determine effectiveness of treatments, and facilitate the use of care protocols and clinical practice guidelines.[194]

Finally, adding a health insurance plan to the IDN may enhance the capability of reducing

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[190] Dr. Harris states that WPAHS is already an IDN in that it includes physicians and hospitals. Highmark's affiliation with WPAHS will add to this IDN a health insurer, thus creating an IDN that has health plans, physicians, and hospitals. In my view, WPAHS, as currently configured, does not appear to meet the clinically and fiscally accountable IDN standard discussed herein. I do not have sufficient information to assess whether UPMC, defined by Dr. Harris as an IDN, meets the more widely accepted standard described *infra* at footnote 228.

[191] Harris Amended Supplement 4 at ¶ 6.

[192] Harris Amended Supplement 4 at ¶ 8.

[193] Harris Amended Supplement 4 at ¶ 12.

[194] Harris Amended Supplement 4 at ¶ 11.

hospital utilization with more effective patient care strategies.[195] According to the GAO study cited by Dr. Harris, this may result in lower reimbursement revenues for the IDN's hospitals, but these lower reimbursements "can be offset by savings from reduced hospital admissions for the health insurance plan."[196]

2. EXPANDED REVIEW OF IDNs

I agree with much of Dr. Harris's assessment of the positive theoretical benefits of IDNs and find his review of the theoretical literature to be informative. I find that Dr. Harris's definition of an IDN and his assessment of specific benefits that will likely arise from this transaction, however, are incomplete for purposes of this inquiry and quantification of the specific benefits of this proposed Affiliation. As a result, I undertook to augment Dr. Harris's analyses with an independent and more comprehensive assessment because these benefits are important offsets to potentially higher costs or reduced efficiency or quality from the Affiliation. In this section, I attempt to highlight specific areas of agreement between Dr. Harris's assessment and my own, and to illustrate how my additional independent analyses and supporting documentation expand and augment each area of analysis.

I agree with Dr. Harris's assessment, for example, that an IDN's purpose is to provide a continuum of healthcare services to a defined population based on a market or geographic area or particular healthcare service. An IDN requires more than common ownership or affiliation of physicians, hospitals, or health insurers. An additional important criterion for success is *accountability* for clinical and fiscal outcomes and the health status of a defined population served. Enthoven (2009), for example, discusses an IDS and its benefits as:

> an organized, coordinated, and collaborative network that: (1) links various healthcare providers, via common ownership or contract, across 3 domains of integration—economic, noneconomic, and clinical—to

[195] Approximately 12-15% of hospitals are vertically integrated with insurance plans providing HMO and PPO products, although trends have been highly variable. See, AHA, Table 2.5: Percentage of Hospitals with Insurance Products by Type of Insurance, 2000 – 2010. According to a recent Wall Street Journal article, "A 2011 survey of 100 hospital leaders by health research firm Advisory Board Co. found that 20% of them [hospitals] intended to market an insurance plan. In 2010, around 10% of community hospitals owned, or were part of systems that owned, health plans, according to the American Hospital Association." Matthews, Anna Wilde, "Hospital Systems Branch Out as Insurers," The Wall Street Journal, December 16, 2012.

[196] Harris Amended Supplement 4 at ¶ 11.

> provide a coordinated, vertical continuum of services to a particular patient population or community and (2) is accountable, both clinically and fiscally, for the clinical outcomes and health status of the population or community served, and has systems in place to manage and improve them.[197]

Enthoven's article adds clinical and financial accountability for outcomes and the health of the broader population to the set of core attributes necessary to provide a successful continuum of care. Not all integrated health systems in the United States meet these criteria, but there are some, such as Geisinger Health System operating primarily in Central Pennsylvania.

The fact that not all IDNs are successful in practice in delivering improved clinical and fiscal outcomes opens up a relevant approach for assessing and testing which IDNs, including this one, are likely to be successful. In turn, this approach involves identifying the key attributes that various studies have identified as predictive of success. These attributes provide additional guidance for evaluating the likelihood that the specific IDN contemplated by Highmark both meets the definition of an IDN and is likely to achieve improved clinical and fiscal outcomes for some defined population in WPA. I apply these criteria in the next sections, first setting out more specific information and analyses of IDNs.

3. FORMS OF IDNS

The Commonwealth Fund Commission on a High Performance Health System identified six attributes of an ideal healthcare delivery system:

- Clinically relevant patient data are available to all providers at the point of care through electronic health record systems,

[197] Enthoven, Alain C., "Integrated Delivery Systems: The Cure for Fragmentation," *American Journal of Managed Care,* (2009), 15 at S284-S290 at S285. Others with similar definitions can be found at Washington State Hospital Association, Governing Board Manual, Chapter 11, 2006 at 3 ("…a network of health care providers and organization which provides or arranges to provide a coordinated continuum of services to a defined population and is willing to be held clinically and fiscally accountable for the clinical outcomes and health status of the population served"; Lega, Federico, "Organizational Design for Health Integrated Delivery Systems: Theory and Practice," Science Direct, Health Policy, (2007), at 258-279 ("…provides or aims to provide a coordinated continuum of services to a defined population and are willing to be held clinically and fiscally accountable for the outcomes and the health status of the population served."); Moore, Keith D. and Dean C. Coddington, Multiple Paths to Integrated Health Care," Healthcare Financial Management, (December 2009) ("…uses corporate structure, strategic alliances, governance, management approaches, culture, financial practices, clinical information systems, and other tools to facilitate and insure delivery of this type of care.").

- Patient care is coordinated among multiple provider and transition of care is actively managed,
- Providers have accountability to each other, review each other's work, and collaborate to reliably deliver high quality, high value care,
- Patient access to appropriate care and information is easy, with multiple points of entry to the system,
- Clear accountability exists for the total care of the patient, and
- The System is continuously innovating and learning to improve quality, value and patients' experience.[198]

The authors acknowledge that multiple types of delivery systems can deliver the key attributes of an ideal delivery system. They examine 15 diverse types of healthcare delivery systems recognized for delivering high performance and categorize the 15 systems into four basic models that may promote high performance through integration:

- Model 1: Integrated delivery system or large multi-specialty group practice, with a health plan, e.g., Kaiser Permanente, Geisinger Health System,
- Model 2: Integrated delivery system or large multi-specialty group without a health plan, e.g., Mayo Clinic, Partners HealthCare,
- Model 3: Private networks of independent providers, such as an independent practice association (IPA) or virtual network,
- Model 4: Government-facilitated networks of independent providers.[199]

Model 1, which is the type of IDN that Highmark proposes to implement, characteristically involves a system composed of hospitals, physicians, other providers, and a health plan. Physicians are involved in strategic planning. The insurance component provides flexibility in organizing to deliver health care and provides enhanced collection and integration of data, utilization review, and cost-control, particularly in minimizing duplication of services.[200]

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[198] Shih, Anthony, Karen Davis, Stephen C. Schoenbaum, Anne Gautheir, Rachel Nuzum, an d Douglas McCarthy, "Organizing the U.S. Health Care Delivery System for High Performance," Commission on a High Performance Health System, The Commonwealth Fund, August 2008 at 4-8 (hereafter "The Commonwealth Fund"). The Commonwealth Fund has commissioned studies of 15 different integrated systems, the results of which highlight the diversity of organizational arrangements accomplishing re-alignment of healthcare. Douglas McCarthy and Kimberly Mueller; Organizing the U.S. Health Care Delivery System for High Performance; July 2009.

[199] The Commonwealth Fund at 10-11.

[200] The Commonwealth Fund at 10. See also Enthoven at S286. These studies do not address whether success depends on the providers beginning exclusive to the health plan or vice versa.

4. ATTRIBUTES CONTRIBUTING TO A SUCCESSFUL IDN

From their analysis of successful IDNs, Shih *et al* found that (1) existing healthcare delivery systems are achieving in practice many of the attributes of an ideal health delivery system, (2) there is more than one approach to structuring a successful delivery system, (3) although diverse structures exists, some form of organization and means of working across providers is required, and (4) leadership is a critical factor in achieving success.[201] Similarly, The Commonwealth Fund determined that IDNs that are able to become ideal healthcare delivery systems and achieve specific goals and attributes require some form of organization, i.e., "a relationship among providers with established mechanisms for communication or working across providers and settings."[202]

In addition, many other studies recognize that clinical and fiscal *accountability* is a defining attribute of an ideal IDN. As a matter of economics, establishing appropriate incentives to facilitate clinical and fiscal accountability is critical in changing provider, insurer, and patient behavior to achieve success, i.e., higher quality care at lower costs of delivery. The Commonwealth Fund concludes, for example, that IDNs with health plans have the financial incentive to provide coordination and transition of care, and there are some synergies and complementarities between the insurance and hospital members.[203] IDNs have the ability to structure provider compensation to provide the necessary incentives to drive coordination of care and cost efficiency to achieve system clinical and fiscal accountability. On the patient side, IDNs must set up financial incentives to transform patient behavior. Limited formal incentives exist in the traditional U.S. healthcare delivery system to incentivize patients to seek more efficiently delivered high quality healthcare. Without patient buy-in, an IDN is less likely to be successful. Health plans can add mechanisms, with physician input, to incentivize patients to make more clinically and fiscally effective healthcare choices, which when incorporated into an IDN will likely generate significant benefits.

I further reviewed the works of many researchers to identify key attributes of a successful IDN. I find Enthoven's eight attributes of a successful IDN particularly useful:

(1) shared value and goals such that all participants are committed to delivering high quality,

[201] The Commonwealth Fund at 9.
[202] The Commonwealth Fund at 15-16.
[203] The Commonwealth Fund at 12.