Dr. Harris also identified and discussed Highmark documents that provide volumes and shares for narrower product markets, such as by employer category. As he notes, these data show some variable shares for Highmark, some are higher and some lower than those reported in Harris Amended Report for an all commercial insurance market.[57] For example, Highmark's share for certain commercial insurance customer segments appears to be substantially higher than the 60% share referenced in the Harris Amended Report that was measured based on aggregating volumes across all customers. The referenced market research study conducted for Highmark shows Highmark's share in WPA for *Direct* commercial customers of 74% and for *Group* customers of 65% in 2011.[58] Table 5 summarizes Highmark's shares for Group and Direct customers.

Table 5

Estimated Share in WPA by Insurance Company and Plan Type*
Time Period: 2009 - 2011

	Group			Direct		
	2009	2010	2011	2009	2010	2011
Highmark	64%	63%	65%	62%	71%	74%
UPMC	6%	6%	8%	6%	5%	6%
HealthAmerica	6%	8%	6%	6%	4%	3%
UHC	3%	3%	4%	5%	4%	4%
Aetna	3%	3%	2%	3%	2%	2%
Geisinger	3%	2%	2%	0%	1%	2%
Other	15%	15%	13%	18%	13%	10%

Note:
*Survey respondents aged 18 to 64 were asked for the name of their primary health insurance plan. Based on these survey results, the study calculated "market shares" over time in WPA, for group and direct plans. The document does not explicitly define "Group" and "Direct" insurance plans.

Source: Market Study Wave XVI: Western PA, Wave X: Central PA, Wave VI: West Virginia, May 2011. UPE-0006784-862, UPE-0006822.

The study and above table also provide insight into the shares of individual insurers for Group and Direct customers, and volatility or lack thereof over time, one of the relevant factors for PID consideration. These share estimates show that UnitedHealthcare, Aetna, Geisinger and

tend to overstate competitors' shares and understate Highmark and UPMC's because they operate primarily in WPA. Moreover, both Dr. Harris and I concur that the relevant geography is WPA and not the Commonwealth.

[57] Harris Amended Report at footnote 39.

[58] Market Study Wave XVI: Western PA, Wave X: Central PA, Wave VI: West Virginia, May 2011, UPE-0006784-862 at UPE-0006822 (see description of this document above). The document does not explicitly define "Group" and "Direct" insurance plans).

HealthAmerica have shares in the 2-4% range for Direct and 2-6% range for Group. UPMC is somewhat differentiated from these other insurers in having 6% and 8% share in Direct and Group, respectively. The shares of the regional and national competitors are relatively stable over the reported period and Highmark's share is relatively stable.[59]

The same study provides estimates of Highmark's market share in WPA using a different definition, i.e., employer size, and over time, for 2005-2011. Table 6 summarizes these statistics. Highmark's share for each of three employee size groupings (<50, 50-999, and >1,000) has been above 54% over the entire period. Its share dropped from 64% to 56% in the smaller size category (<50 employees) and its share grew to 72% in the 50-999 employee segment and to 61% in the >1,000 employee segment.[60]

Table 6

Estimated Highmark Share in WPA by Employer Size*
Time Period: 2005 -2011

	2005	2006	2007	2008	2009	2010	2011
Less than 50 employees	64%	60%	68%	65%	60%	60%	56%
50 - 999 employees	66%	66%	70%	67%	71%	70%	72%
More than 1000 employees	54%	55%	55%	62%	58%	59%	61%

Note:
*Survey respondents aged 18 to 64 were asked for the name of their primary health insurance plan, and how many employees worked at their company. Based on these survey results, the study calculated "market shares" over time in WPA by employer size.

Source: Market Study Wave XVI: Western PA, Wave X: Central PA, Wave VI: West Virginia, May 2011. UPE-0006784-862, UPE-0006823.

Internal contemporaneous documents from Highmark confirm these share trends:

- UPMC has been gaining share while others generally have stable shares,[61]

[59] I note that this period includes a time when national insurers did not have UPMC in-network, and this could affect their ability to attract customers from Highmark, which had a long-term contract with UPMC.
[60] Highmark Response to PID Information Request 3.5, Market Study Wave XVI: Western PA, Wave X: Central PA, Wave VI: West Virginia, May 2011, UPE-0006784-862 at UPE-0006823 (see description of this document above).
[61] See, e.g., Highmark Response to PID Information Request 3.5, Market Study Wave XVI: Western PA, Wave X: Central PA, Wave VI: West Virginia, May 2011, UPE-0006784-862 at UPE-0006817 and UPE-0006822-3 (the three referenced slides were discussed above).

- According to a market research study conducted in November and December 2010 and January 2011, [redacted][62]
- Highmark's submission states that its competitive advantage includes the size of its provider network and its competitive pricing, the latter of which may relate to its historical contract with UPMC.[63]

Tables 7 and 8 (excerpted from a market research study conducted in April 2010) provide further data on the relative rankings of rivals in the small employer segment.[64]

Table 7

Summary of Survey Results Regarding which Health Insurance Company An Employer in WPA Would Most Seriously Consider in Selecting a New Plan Time Period: March/April 2010

	Mentions					
	Total		2-9 Employees		10-49 Employees	
	First	Additional	First	Additional	First	Additional
UPMC	[redacted]					
Highmark BCBS						
HealthAmerica						
Aetna						
UHC						
CIGNA						
Geisinger						
None						

Note:
Survey respondents were asked which health insurer they would most seriously consider the next time they were selecting a new plan to offer to their employees. They were then asked what other health insurers they would seriously consider.

Source: Employer Brand Equity Research, April 2010. UPE-0007027-57, UPE 0007032.

---

[62] Highmark Response to PID Information Request 3.5, Employer Brand Perception and Health Reform Study, January 2011, UPE-0007058-146 at UPE-0007130. The study was conducted using computer-assisted telephone interviews ([redacted] interviews were conducted with employers in WPA). All interviews were completed between November 11 and December 10, 2010 (see UPE-0007061).

[63] See Amendment No. 1 to Confidential Supplement (Volume II) Submitted with Form A, July 13, 2012, Exhibit G, at 4; Exhibit I, at 4; and Exhibit J, at 4. I note that other insurers now have in-network access to UPMC's hospitals and Highmark's costs have increased some owing to the rate increases in its contract extension with UPMC. This may result in future shifts away from Highmark that are not yet apparent in the data.

[64] Employer Brand Equity Research, UPE-0007027-57at UPE-0007032 and UPE-0007045. The document does not appear to provide much information about the survey design although I understand that [redacted] surveys were completed for WPA (see UPE-0007029).

Table 8

Summary of Survey Results Regarding which Health Insurance Company Employers In WPA Believe Provides Good Value and which is Priced Higher than Others
Time Period: March/April 2010

	Provides Good Value		Consistently Priced Higher Than Other Brands	
	Small	Middle/ Large	Small	Middle/ Large
Highmark BCBS	[redacted]			
UPMC				
HealthAmerica				
UHC				
Geisinger				
Aetna				
CIGNA				
None				

Note:
Survey respondents (Small=202, Middle/large 148) were asked which company best fit each statement - "company provides good value" and "company is consistently priced higher than other brands".

Source: Employer Brand Equity Research, April 2010. UPE-0007027-57, UPE-0007045.

Summary: The above share analyses and documents provide measures of share for relevant product markets for rivals as well as Highmark. They also inform whether shares have been volatile or stable over time, i.e., whether competitors have been able to gain share and attract volumes from Highmark. This can provide insights into their ability to discipline pricing and quality in the future. The shares of rivals other than UPMC are also important for testing the assumption set out in the Harris Amended Report that rivals would be readily able to expand and discipline any alleged exercise of market power by shifting volumes of inpatients away from WPAHS and continue to attract enrollees in their health plans.[65] Detailed examination of the volumes and shares of individual insurers reveals that few insurers have experienced substantial growth or change in enrollment or share over the last several years, including up to 2011, although UPMC has experienced the most significant growth. Moreover, volumes and share estimates confirm that shares are significantly skewed in the state level data and even more skewed at the local WPA level, suggesting that rivals represent a smaller competitive fringe to Highmark and UPMC. For certain product lines, Highmark's relative share is both stable and somewhat higher than the estimated levels aggregated across all products, where it also has

[65] Harris Amended Report at ¶ 30.

tended to be high and relatively stable. Finally, these aggregated data show that volume change, other than for UPMC and Highmark, has been modest.[66]

3. EASE OF EXPANSION BY COMPETITORS

A relevant factor for consideration in the evaluation of evidence regarding competitive effects is ease of entry and expansion. Dr. Harris's opinion about the state of competition among insurers depends in large part on his assessment of the ease with which rivals have the ability to expand in the market. Dr. Harris suggests evaluating competition in the insurance market in the context of a bidding model in which the model assigns each rival an equal share of the market:

> A proper calculation of concentration and market share includes all of the competitors in the market *in a manner that reflects the realities of a specific market*. It also may be appropriate for the competitive analysis to consider a bidding model. Additionally, suppliers of health insurance products often have little or no effective capacity constraints (i.e. capacity is often large relative to the overall market or could easily be expanded). In such a market, it may be appropriate to assign each producer capable of competing for new sales an equal market share.[67] [References excluded, emphasis added].

I also considered Dr. Harris's views on the competitive strength of competing insurers and the basis for it in his evaluation of market power:

> Highmark competes with at least five other health insurers in its WPA service area. Although Highmark's current share of commercial enrollment is approximately 59.6%, from a competition analysis perspective it is important to recognize that there is no basis for the contention that a firm with a high market share possesses market power. Typically, the presence of high shares simply reflects the desirability of a firm's product or service at a moment in time. *As long as sufficient alternative exist, competition will remain vigorous. The existence of significant competitors, including UPMC, Health America and the large, national health insurers such as United Healthcare, Aetna and Cigna, in a properly defined antitrust market is inconsistent with Highmark possessing market power*.[68] [References excluded, emphasis added].

---

[66] I caveat this analysis with the fact that the most recent data for 2012 is state level data, and some win-loss data for Highmark. It thus does not reveal the results of the most recent open season, which occurred after rivals had UPMC as in-network hospitals. From interviews, I gleaned that rivals may not have gained substantial share although Highmark has indicated in an interview that it has lost share. There is also limited information available on actual pricing by UPMC, Highmark, and other insurers.

[67] Harris Amended Report at footnote 36.

[68] Harris Amended Supplement 3 at ¶ 19. See also Harris Amended Supplement 3 at footnote 32, which states that "these competing health insurers are well-positioned to gain enrollment if Highmark attempts

While I agree with the propositions that share alone is not indicative of market power, that higher share can be associated with higher quality, and that markets can be competitively vigorous in the presence of firms with higher shares, where there is sufficiency of alternatives, the *existence* of competitors alone is insufficient support. With regard to ease of entry and expansion, I have not found record evidence or support in the Harris amended and supplemental reports sufficient for me to conclude that there is a history of proven capability of existing competitors other than UPMC to attract large magnitudes or proportion of enrollees away from Highmark. Highmark's concern about potential expansion by national competitors in the local marketplace since these rivals recently obtained UPMC provider contracts is not yet reflected in material changes based on an analysis of Highmark's win-loss data.[69]

Win-loss data: As a means of assessing the variability (volatility) and ultimate vulnerability of Highmark's share to competitors' success in marketing to potential enrollees, I examined win-loss data provided by Highmark. Highmark tracks the sources of its customer gains, as well as its customer losses regarding commercial health insurance sold in WPA on an annual basis. In response to a Compass Lexecon data request, Highmark provided a summary of overall annual gains and losses from February 2008 to July 2012 and provided an annual breakdown of the number of gains or losses by source of the gain or loss.[70] These data exclude small group customers.

---

to exercise market power or foreclose providers, because they typically have little or no effective capacity constraints (i.e. capacity is often large relative to the overall market or could easily be expanded)."

[69] 

[70] Highmark specifically noted the following with regard to these data: "The information set forth in this exhibit is based on customer level reports of information voluntarily provided by customers and/or reported by Highmark brokers. Because the information is voluntary and anecdotal, Highmark cannot represent that it is accurate or complete. It is provided as Highmark's best estimates based on the information reported. Note that while 2008-2009 data is included, such information is not complete and more complete information is not available."

While these documents and analyses suggest some recent growth of rivals at Highmark's expense, I am not able to conclude that these Highmark losses [redacted].[71] During most of the period, I note that the national insurers did not have a network offering that included UPMC hospitals. As a general matter, I find that at current prices, which included a favorable contract for Highmark with UPMC relative to its rivals' contracts with UPMC, there was a relatively limited loss of total volume [redacted].

Table 9 presents Highmark's annual fiscal year membership gains and losses over time, and shows that losses represent [redacted] of its total membership in WPA, or between [redacted] enrollees. Highmark's estimated gains from the UPMC Health Plan represented less than [redacted] of its annual members. However, Highmark's losses to UPMC have increased every year from 2009 to 2011, from [redacted], more than a fourfold increase. The general trend of gains by UPMC is consistent with heightened competition between UPMC and Highmark, which could suggest a gradual erosion of Highmark's position as the largest health insurer in WPA.

Table 9

Highmark's Membership History in WPA (excluding Small Group Members)

	2009	2010	2011	Jan - Jul 2012
January Adjusted Baseline (# of Members)	[redacted]			
Gains				
Gains: Approximate gains from UPMC				
Losses				
Losses: Approximate loss to UPMC				
Increases (Existing Clients)				
Decreases (Existing Clients)				
January (Year + 1)*				
Gains as % of Adjusted Baseline				
Gains from UPMC as % of Adjusted Baseline				
Losses as % of Adjusted Baseline				
Losses from UPMC as % of Adjusted Baseline				

Note: *As of July for the Jan - July 2012 period.
Source: Information provided by Highmark (WPA Region Membership History2.xlsx).

The annual number of members gained by Highmark was approximately [redacted] and the number of members lost by Highmark was approximately [redacted]. Table 10 presents Highmark's annual fiscal year membership losses (and gains), and losses (and gains) as

[71] There is some indication that this may be changing in the first half of 2012.

a percent of total losses (and gains), to specific insurance companies. Collectively, the lost volumes represent between [redacted] of Highmark's total volumes, and the gained volumes between [redacted] of Highmark's total volumes.

Table 10

Highmark Member Losses and Gains as a Share of Members by Insurance Company
Geography: 29-County Western PA (WPA) Area
February 2008 - July 2012

January Adjusted Baseline (# of Members)	Feb08 - Jan09[1] 902,036		Feb09 - Jan10[1] 886,175		Feb10 - Jan11 874,276		Feb11 - Jan12 870,324		Feb12 - Jul12[2] 862,441	
Losses to	**Members**	**Share**	**Members**	**Share**	**Members**	**Share**	**Members**	**Share**	**Members**	**Share**
Total	[redacted]									
UPMC										
Cigna										
HealthAmerica										
Aetna										
Geisinger										
United Healthcare										
Other BC/BS										
Change in Ownership/Bankruptcy/Closings										
All Other/Unknown										
Gains from	**Members**	**Share**	**Members**	**Share**	**Members**	**Share**	**Members**	**Share**	**Members**	**Share**
Total	[redacted]									
UPMC										
HealthAmerica										
Cigna										
Geisinger										
United Healthcare										
Aetna										
Other BC/BS										
All Other/Unknown										

Notes:
[redacted]

Source: Information provided by Highmark (WPA Region Membership History2.xlsx).

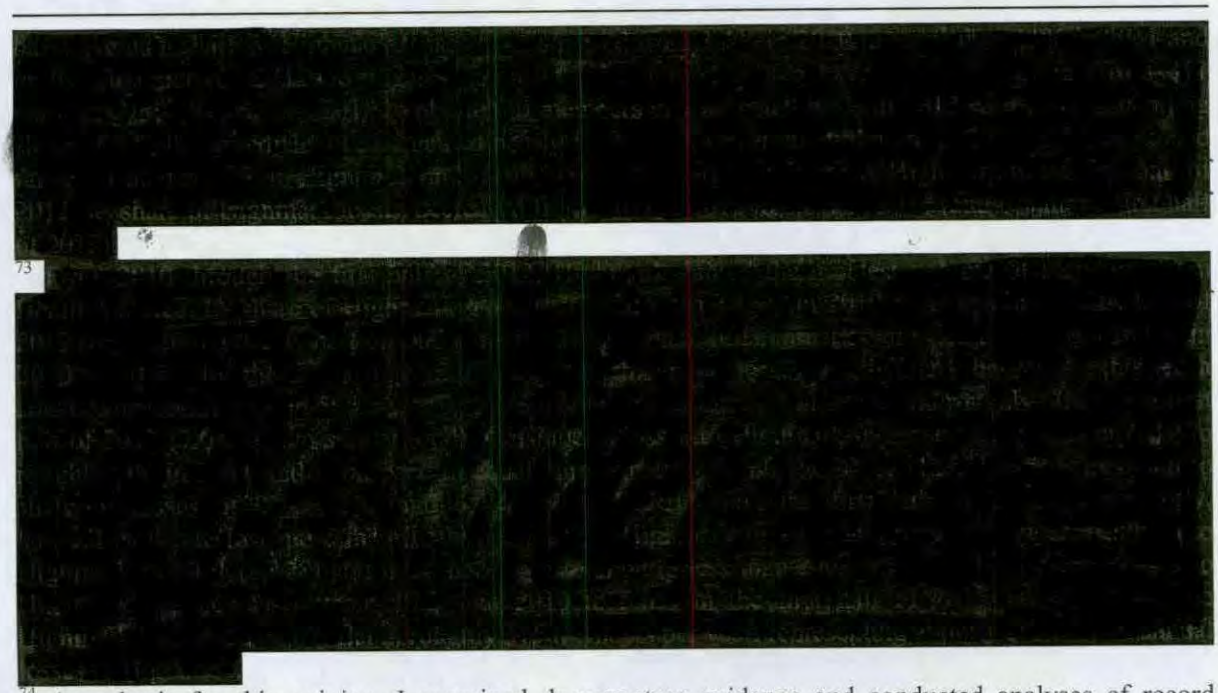
These data show that in the last four years, Highmark has lost [redacted] members with the largest volume loss in 2011-2012. UPMC represents by far the largest recipient of losses, with [redacted] of the 2011-2012 volumes to UPMC.[72]

72 [redacted]

Overall, these data suggest that [redacted] has had the most success attracting members from Highmark, but [redacted], have been able to attract somewhat more members from Highmark over the past year and a half than they were able to do so in the past. The opposite appears to be the case for [redacted].

As shown in Table 10 above, Highmark also tracks gains it achieves from specific insurance companies. In total, Highmark gained [redacted] members over the period. Overall, these data show Highmark's success in attracting members from [redacted], but its success in attracting members from [redacted] has declined in recent years.[73]

Conclusion: In my opinion, the win-loss data, share history, and other data indicate that marketplace realities are inconsistent with, and requires rejection of the use of a bidding model approach (i.e., a 1/n approach where each competitor has the same share equal to one divided by "n" where "n" is the number of competitors). In my view, these data indicate it is less likely that competing insurers would be able to make the substantial and immediate shifts from Highmark in the event of relative pricing or product differences in WPA than are implicated by a bidding model.[74] Analyses of relative size and shares, changes in shares, win-loss data, networks, entry



[74] As a basis for this opinion, I examined documentary evidence and conducted analyses of record evidence to assess factors relevant to entry and expansion of competitors. As noted, this is important to the competitive effects analysis because Highmark bases conclusions about competitive constraints on the ability of new competitors to enter and expand, and take substantial enrollees when it anticipates losing

and expansion indicate that Highmark has had relatively stable and high shares and has lost share and volume primarily to UPMC. Total volume of losses (and gains) is relatively modest, representing about [redacted] of Highmark's members. These marketplace realities, especially taken in the context of market conditions in WPA, do not support a proven ability of competitors to expand readily and effectively to attract substantial volumes of members away from Highmark.

B. PROVISION OF INPATIENT HOSPITAL SERVICES IN WESTERN PENNSYLVANIA

In Appendix II of this Report, I provide a description of hospitals operating in WPA and the provision of hospital services in that area.

1. DEFINITION OF INPATIENT HOSPITAL PRODUCT MARKET(S)

Economists define product markets, like geographic markets, based on consumers' substitution patterns. Markets should include the products to which consumers would practically turn in the event of a hypothetical increase in price (referred to as a small but significant non-transitory increase in price or "SSNIP" test).[75] The Harris Amended Report notes that properly defined, a relevant product market for hospital services could be as narrow as a specific service due to the lack of demand substitutability between many hospital services.[76] However, payors often negotiate rates for a broader grouping of hospital services at the same time because these services share many of the same resources in delivering specialized patient care. Rather than separate, standalone negotiations for each individual service, hospitals and payors arrive at pricing agreements for bundles of services.[77] Dr. Harris bases his inpatient hospital services

---

the UPMC contract. The ability to enter and expand in the healthcare insurance marketplace requires a provider network, some degree of brand recognition, and an attractive overall product. See, e.g., Pozen, Sharis, "Competition and Health Care: A Prescription for High-Quality, Affordable Care," Prepared Remarks, March 19, 2012 at 7.

[75] See, e.g., Carlton, Dennis W. and Jeffrey M. Perloff, *Modern Industrial Organization*, 3rd ed., Boston: Pearson/Addison-Wesley, (1999) at 612-4 and Tirole, Jean, *The Theory of Industrial Organization*, Cambridge, MA: The MIT Press (1988), at 12-3 and Merger Guidelines at § 6.1.

[76] Harris Amended Report at ¶ 71.

[77] See ABA Section of Antitrust Law, Health Care Mergers and Acquisitions Handbook at Chapter 2 for a discussion of payor-provider negotiations, and the concept that payors are negotiating for a hospital to

analysis on this "cluster" of inpatient acute-care services, though Dr. Harris does not specifically define this cluster of services as a relevant product market.[78] For purposes of my analyses, I adopt a similar approach and use the cluster of inpatient acute-care service to approximate a relevant product market. I also reviewed sensitivity analyses at the service line level that Dr. Harris, conducted further to assess competition among hospitals.

2. INPATIENT HOSPITAL GEOGRAPHIC MARKET

Geographic location plays an important role in the provision of medical services for most consumers. Consumers typically consume medical services at the supplier's (provider's) location. For example, a patient needing major surgery likely will find that medical service only available at a hospital. Other services, such as oncology infusion services, typically are available in a number of settings, including hospitals, outpatient clinics, physician offices, and through home infusion programs. Whether, and how far, consumers travel for medical services depends on many factors, among them are: (1) the physical nature of the geography, (2) time and distance, (3) availability of transportation options, (4) frequency and type of medical services required (e.g., elective procedures), (5) outreach efforts, (6) physician referral patterns, (7) availability and quality of medical services at specific locations; and (8) relative cost of choices.

These factors play a role in the evaluation of substitution among suppliers and the geographic dimensions of competition for hospital services, which will be fact intensive. Unless suppliers of medical services have the ability to price discriminate based on the location of the consumer, which is rare, economists generally base a relevant geographic markets involving medical services on the location of suppliers.

In defining the parameters of a relevant geographic market involving medical services, economists consider a number of factors, including ones such as those set forth in the 2010 Horizontal Merger Guideline that apply across industries:

- How customers shift purchases between different geographic locations in response to relative changes in price or other terms and conditions,

---

provide comprehensive services for their enrollees at the point at which they require hospital services, rather than for individual services or a discrete service by service negotiation. This chapter also sets out the economic rationale for use of a general acute care cluster of services, and its use in antitrust cases.

[78] For Dr. Harris's discussion of market definition, see Harris Amended Report at ¶ 71.

- The cost and difficulty of transporting the goods or services relative to its price,
- The importance of a local presence to provide service and support to customers,
- The likelihood that suppliers in their business decisions consider customer switching between geographic locations in response to a relative change in price or other competitive variables,
- The costs and delays of switching suppliers from within a geographic location to suppliers outside that geographic location, and
- The influence of a downstream competition faced by a firm's customers.

The common principle underlying these factors is that the suppliers included as competitors should reflect practical alternatives capable of constraining price and non-price terms of competition. In the context of hospital services, markets may be broader in scope than traditionally thought. For example, the use of new benefit designs, including high deductible plans, encourage consumers to take price into greater consideration in choice of hospital, which can increase consumer's incentives to bypass a more convenient hospital to go to one that is lower priced.[79] Other consumer choice initiatives such as tiered networks that offer lower out-of-pocket costs to consumers for obtaining their care at specific hospitals may have the same effect. Finally, efforts by hospitals to promote the quality of services and convenience of them (including with physician outreach clinics) can increase the scope of area that a hospital practically will serve.[80]

The Harris Amended Report assesses which suppliers (hospitals) to include as competitors for WPAHS and describes a relevant geographic area for evaluating inpatient services using a 90-

---

[79] Employers in choosing among insurers and products will take into consideration a number of these factors potentially across the aggregation of their employees and will do so in a fashion similar to that of a payor. In these contexts, some hospitals may be complements for each other. See Katz, Michael L. "Provider Competition and Healthcare Quality: More Bang for the Buck?" International Journal of Industrial Organization (2013) http://dx.doi.org/10.1016/j.jindorg.2013.02.001. A review of models evaluating competitive alternatives for hospitals including those using travel times and "costs" for use in evaluating competition and hospital merger price effects is provided in: Doane, Michael J., Froeb, Luke M. and Van Horn, R. Lawrence, How Well Do Travel Cost Models Measure Competition Among Hospitals? (March 10, 2012). Vanderbilt Owen Graduate School of Management Research Paper No. 2012-06. Available at SSRN: http://ssrn.com/abstract=1928960.

[80] See, e.g., Buntin, Melinda Beeuwkes, et. al. "Healthcare Spending and Preventive Care in High-Deductible and Consumer-Directed Health Plans" American Journal of Managed Care, 17, No. 3 (March 2011), and Sinaiko, Anna D "Tiered Provider Networks as a Strategy to Improve Health Care Quality and Efficiency" Expert Voices in Health Care Policy, National Institute For Health Care Management Foundation (2012).

percent service area, calculated using all five WPAHS hospitals as a single entity within a single service area. The data comprising these calculations are from a discharge-level database of all hospital inpatients living in a 29-county area in WPA. This analysis determines the fewest number of zip codes from which the combined WPAHS hospital system derives 90 percent of its inpatients.[81] This methodology is well established as a principled approach for preliminary analyses of geographic area of competition, and, as the Harris Amended Report points out, Courts have accepted the approach in litigated matters.[82] Dr. Harris qualifies that "[t]he 90% service area does not precisely define the relevant geographic market."[83] The map below, Exhibit 11 of the Harris Amended Report, shows visually the WPAHS 90-percent commercial service area.

For purposes of my analysis, and consistent with Dr. Harris, I use this 90% area as a reasonable approximation of the relevant geographic market and use it as a basis for evaluation and identification of hospitals that could provide competitive alternatives for WPAHS.[84] I note that the suppliers in the relevant market are those used by residents of the area, and not necessarily limited to those physically located in the area. The 90% area is roughly comparable to the Pittsburgh MSA although relevant suppliers are located outside of this area.[85]

[81] To calculate the combined 90-percent area for all of the WPAHS hospitals, the Harris Amended Report sums up the total number of acute-care discharges by zip code for all patients treated at those facilities. Those zip codes are sorted from the one with the greatest number of discharges to the one with the least. Dr. Harris defines the 90-percent service areas as that with the fewest zip codes that make up 90 percent of WPAHS total number of acute-care.

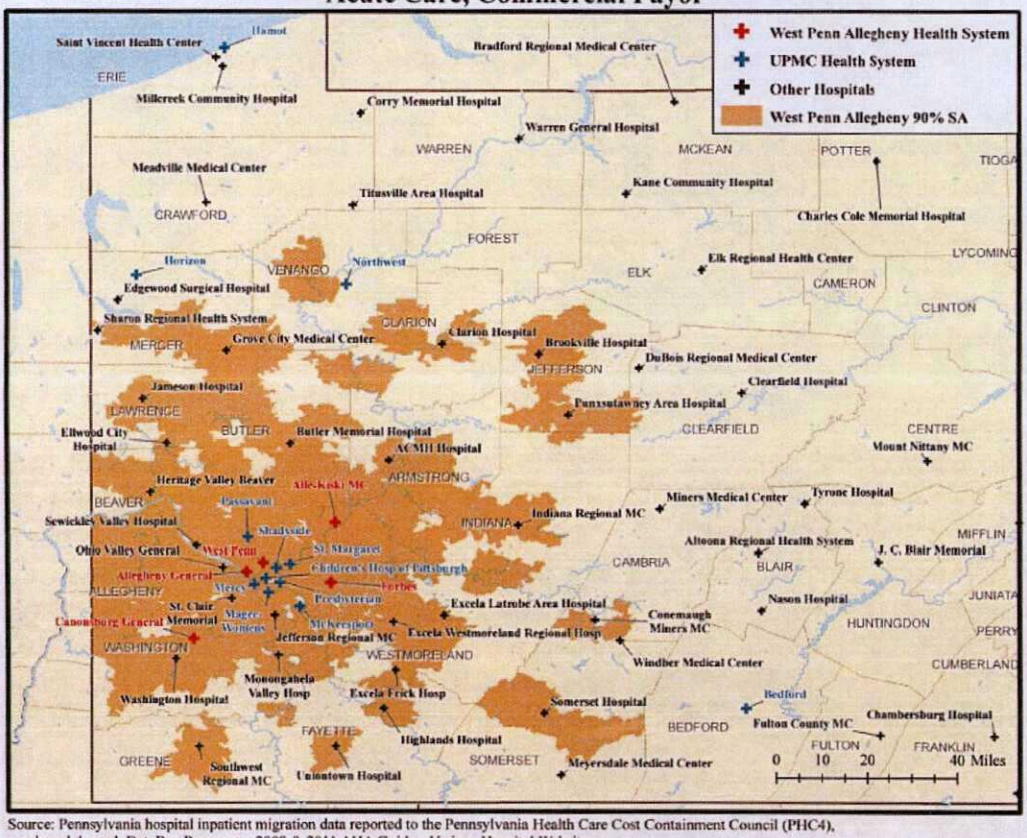
[82] Harris Amended Report at footnote 87.

[83] Harris Amended Report at ¶ 82.

[84] Appendix III at Table 2 lists the hospitals and systems with discharges of 2 percent or more in the 90% area. Appendix III at Table 2b shows beds and shares in the Pittsburgh MSA.

[85] I note that the relevant geographic market for hospitals should be based on the location of the suppliers since patients travel to the location of the supplier (hospital) for services. Since hospitals are not able to price discriminate on price by the location of its patients, the location of the hospital is the relevant metric to use in defining the relevant geographic market. DOJ/FTC 2010 Horizontal Merger Guidelines at §4.2.

Exhibit 11
West Penn Allegheny Health System 90% Service Area
Acute Care, Commercial Payor



Source: Pennsylvania hospital inpatient migration data reported to the Pennsylvania Health Care Cost Containment Council (PHC4), purchased through DataBay Resources; 2009 & 2011 AHA Guides; Various Hospital Websites

3. SHARE CALCULATIONS AND COMPETITORS

Having established an approximation of the relevant product and geographic markets, the Harris Amended Report provides basic structure information on WPA by computing market shares for the hospitals drawing inpatients from WPAHS's 90% draw area. Dr. Harris calculates these shares using each hospital's inpatient discharges from residents residing in this area and the collection of all general acute care inpatient services.[86] I present a summary of the Harris Amended Report's share calculations in Table 11.

[86] From Table 1 of Exhibit 10 of the Harris Amended Report. For convenience, for these same hospitals I present information at Appendix III 2 on an alternative capacity-related share based on bed capacity of these hospitals.

Table 11

Summary of Harris Report Exhibit 10, Table 1
Commercial Discharges in the WPAHS 90% Draw Area

	Discharges	Share
Total	***97,023***	***100%***
UPMC Health System Total	45,154	47%
West Penn Allegheny Health System Total	15,449	16%
St. Clair Memorial Hospital	6,958	7%
Excela System Total	4,468	5%
Jefferson Regional Medical Center	3,473	4%
Washington Hospital	3,021	3%
Heritage Valley Beaver	2,955	3%
Sewickley Valley Hospital	2,693	3%
All Other Hospitals	12,852	13%

This summary provides the following insights into the structure of the relevant market defined as all general acute care inpatient hospital services:

- WPAHS's share is approximately 16 percent within its 90-percent all-patient commercial-payor service area.[87]
- The most notable competitive alternative to WPAHS is the UPMC system, which has a higher share of the WPAHS service area. UPMC hospitals, which include hospitals such as UPMC Presbyterian Shadyside, UPMC Magee Women's Hospital, UPMC Passavant, UPMC Mercy, UPMC Children's Hospital, and UPMC St. Margaret account for about 46.5 percent of commercial inpatient discharges in that geography.[88]
- Jefferson Hospital has 3.6 percent, and including it with the WPAHS hospitals would increase the share among UPE Provider Sub facilities to 19.5 percent.
- The Harris Amended Report also identifies as many as 14 additional competitors that have commercial inpatient discharges in the WPAHS service area, including St. Clair Hospital, Washington Hospital, and the Excela hospitals (Westmoreland Regional Hospital and Latrobe Area Hospital), the Heritage Valley hospitals (Beaver and Sewickley Valley), Butler Memorial Hospital, Jameson Memorial Hospital, Conemaugh Medical Center, Monongahela Valley Hospital, ACMH Hospital, Sharon Regional Health System, Indiana Regional Medical Center, Uniontown Hospital, and the Ohio Valley General Hospital.[89] The largest of these is St. Clair at 7.2%.

[87] Harris Amended Report at ¶ 79.
[88] Harris Amended Report at ¶ 84.
[89] Harris Amended Report at Table 1 of Exhibit 10.

The Harris Amended Report presents a series of sensitivity tests on these calculations to determine whether the results varied substantially when considering different patient populations or geographic areas. He tested share estimates using only normal newborns (DRG 795) as a "proxy for those hospital services for which patients typically travel relatively short distances."[90] When considering this patient population, WPAHS's share is similar and UPMC has a share of about 55 percent.[91] I further tested the sensitivity of the results using a 75-percent service draw area with all payors, and using individual WPAHS facilities' service areas. No material differences arise from the results of these sensitivity analyses.

As I discuss in detail below, UPMC and WPAHS offer some more specialized services in their tertiary/quaternary hospitals (e.g., Allegheny General) that many of the community hospitals do not offer. This offering differentiates UPMC and WPAHS from other hospitals.

In addition to the sensitivities tested in the Harris Amended Report, a document prepared for WPAHS by the investment bank Houlihan Lokey provides share estimates, and H_2C provided additional ones in a report to Highmark's Board of Directors.[92] Each of these sources uses a slightly different geography to define WPAHS's service area, but the resulting share estimates are similar. The Houlihan Lokey documents use a six-county area of Allegheny, Butler, Armstrong, Westmoreland, Washington, and Beaver counties as its "primary service area" for the WPAHS system.[93] It calculates a [redacted] percent share for the UPMC system and a [redacted] percent share for WPAHS (which would rise to [redacted] percent with the inclusion of JRMC's [redacted] percent share in this area).[94] The H_2C report defines the area as the MSA and estimates shares for UPMC in the seven-county MSA as 41% for UPMC and 19% for WPAHS.[95]

---

[90] Harris Amended Report at ¶ 76.
[91] Harris Amended Report at ¶ 84.
[92] H_2C, "Report to the Board of Directors Regarding Affiliation with West Penn Allegheny Health System, February 5, 2013," Addendum No. 2 to Amendment No. 2 at 16.
[93] The primary service area under this definition accounts for about 54 percent of system discharges in FY12. See HL002596-704 at 632.
[94] HL002596-704 at 633.
[95] The Pittsburgh MSA includes the six counties that Houlihan Lokey uses as the WPAHS primary service area plus Fayette County to the south. The report also presents a comparison of concentration across the top 25 MSAs (based on population) in the U.S. and concludes that Pittsburgh is one of the most highly concentrated MSAs (using share of the top two firms as the relevant metric). See H_2C at 14 and 17. The H_2C report also looks at shares in Allegheny County with UPMC at 59% and WPHAS at 18%.

Although these shares differ somewhat across the share measures, these results show that UPMC's shares are significantly above that of the next closest competitor, WPAHS, and well-above other competing hospitals.

4. ENTRY, EXPANSION, AND CAPACITY IN THE PROVISION OF HOSPITAL SERVICES IN WPA

In evaluating competition, it is useful to consider whether conditions are conducive post-Affiliation to attract new entry or expansion by existing competitors, should there be an exercise of market power by a market participant. One factor to consider is the recent history of entry and expansion in the relevant market. The most significant recent addition of capacity in the area was the July 2012 opening of UPMC East, a new 156-bed acute-care hospital in Monroeville.[96] UPMC East is less than one mile from the WPAHS Forbes Regional Hospital.[97]

The UPMC system also expanded its Magee Women's Hospital in a $30 million project completed in June 2012.[98] This provided the hospital with an additional 42 beds and allowed it to extend its service offerings in breast and gynecologic cancer treatment, imaging, bariatric surgery, cardiology, plastic surgery, orthopedics, and geriatric medicine.[99] It also increased the size of Magee Women's obstetrical unit and made room for a new therapeutic nursery.

A number of industry participants interviewed noted that UPMC East exacerbates the existing excess capacity in the Pittsburgh area because WPAHS's Forbes Regional Medical Center provides very similar services, is less than a mile away, and has significant excess capacity. Community hospitals, which also draw from the Monroeville area, also have significant excess capacity. Interviewees reported that the greater Pittsburgh area is already "over-bedded," having too much capacity for the healthcare needs of the population, and that this expansion represents a "medical arms race" between the UPMC system and other providers. In a medical arms race,

---

[96] See http://www.upmc.com/locations/hospitals/east/about/Pages/default.aspx and http://triblive.com/home/2138526-74/upmc-hospital-east-patients-sevco-forbes-department-emergency-monroeville-shadyside.

[97] Forbes Regional has also recently undertaken an expansion of services. In August 2012, it opened a comprehensive breast care center. See press release dated August 6, 2012 in WPAHS response 3.8 (WPAHS-008173-83).

[98] See http://www.bizjournals.com/pittsburgh/news/2012/06/07/magee-womens-expansion-completed.html.

[99] See http://www.upmc.com/locations/hospitals/Magee/about/Pages/expansion.aspx.

providers compete not on price but on the availability of a full range of services and access to the latest in medical technology. This can lead to a duplication of services, the accumulation of more capital than is necessary to treat a given geographic patient population, and increased costs of operating a hospital.[100] These potential efficiency and cost impacts of excess capacity are relevant for assessment of the effects and public benefits of the proposed Transaction.

As a result, I undertook an independent inquiry into the issue of capacity starting with an analysis using national data on bed capacity. The Pittsburgh Metropolitan Statistical Area (MSA) has among the highest rates of beds per population for MSAs with more than two million residents. For every thousand inhabitants of the Pittsburgh MSA, there are 3.12 hospital beds. The national average is 2.6 beds-per-thousand. For cities with more than two million residents, the average is 2.24 bed-per-thousand and the median is 2.15.[101] Table 12 compares Pittsburgh with other large metropolitan areas and shows that its bed capacity per capita is the third highest in the country for this grouping of cities. Its beds-per-person are approximately 40 percent above the mean and 45 percent above the median for cities of comparable size. The number calculated for the Pittsburgh MSA is similar to what Dr. Harris reported. The Harris Amended Report finds 3.1 beds per thousand in Highmark's WPA service area.[102]

[100] See, for example, Carey, Kathleen. "Stochastic Demand for Hospitals and Optimizing 'Excess' Bed Capacity." *Journal of Regulatory Economics* (1998), 14, pp. 165-87 and Gal-Or, Esther. "Excessive Investment in Hospital Capacities," Journal of Economics & Management Strategy (1994), 3(1), pp. 53-70

[101] For the national average, see Harris Supplement 1, Table 3B.

[102] Harris Supplement 1, Table 3B

Table 12

Capacity in MSAs with Population Greater than 2 Million
Sorted by Beds per Capita

MSA	Population	Independent Systems	Total Facilities	Beds per Capita	Total Beds
Estimated National Average (Among Metro MSAs)				*2.79*	
Group Mean	*4,606,035*	*23*	*39*	*2.27*	*10,379*
Group Median	*3,371,437*	*19*	*34*	*2.15*	*7,609*
Cleveland-Elyria-Mentor, OH	2,074,961	12	26	3.57	7,412
St. Louis, MO-IL	2,812,478	21	37	3.25	9,136
Pittsburgh, PA	2,357,710	13	24	3.12	7,350
Miami-Fort Lauderdale-Pompano Beach, FL	5,584,276	21	48	2.92	16,280
Kansas City, MO-KS	2,037,716	20	35	2.80	5,699
Tampa-St. Petersburg-Clearwater, FL	2,792,271	10	29	2.80	7,806
San Antonio-New Braunfels, TX	2,151,498	17	20	2.61	5,625
New York-Northern New Jersey-Long Island, NY-NJ-PA	18,911,903	78	122	2.61	49,336
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	5,968,514	30	51	2.58	15,393
Baltimore-Towson, MD	2,713,224	12	21	2.54	6,889
Orlando-Kissimmee-Sanford, FL	2,140,964	6	10	2.53	5,408
Chicago-Joliet-Naperville, IL-IN-WI	9,468,946	54	88	2.50	23,716
Detroit-Warren-Livonia, MI	4,296,093	15	39	2.44	10,484
Cincinnati-Middletown, OH-KY-IN	2,131,030	13	23	2.28	4,860
San Juan-Caguas-Guaynabo, PR	2,477,414	28	31	2.17	5,375
San Francisco-Oakland-Fremont, CA	4,345,749	19	38	2.14	9,300
Boston-Cambridge-Quincy, MA-NH	4,559,233	28	43	2.10	9,568
Dallas-Fort Worth-Arlington, TX	6,405,191	37	72	1.96	12,542
Houston-Sugar Land-Baytown, TX	5,971,734	34	55	1.96	11,686
Los Angeles-Long Beach-Santa Ana, CA	12,854,583	56	106	1.95	25,122
Phoenix-Mesa-Glendale, AZ	4,208,639	14	32	1.95	8,187
Minneapolis-St. Paul-Bloomington, MN-WI	3,288,637	16	29	1.85	6,082
Washington-Arlington-Alexandria, DC-VA-MD-WV	5,602,475	28	39	1.82	10,205
Portland-Vancouver-Hillsboro, OR-WA	2,234,081	8	16	1.75	3,911
San Diego-Carlsbad-San Marcos, CA	3,102,129	12	21	1.72	5,331
Denver-Aurora-Broomfield, CO	2,554,498	7	16	1.70	4,335
Sacramento--Arden-Arcade--Roseville, CA	2,154,492	8	16	1.64	3,540
Atlanta-Sandy Springs-Marietta, GA	5,289,468	19	37	1.64	8,688
Seattle-Tacoma-Bellevue, WA	3,454,236	20	25	1.61	5,565
Riverside-San Bernardino-Ontario, CA	4,236,896	26	35	1.54	6,530

Source: AHA QuickDisc 2011.

Table 13 presents capacity estimates (measured using staffed beds), average daily census, and occupancy rates for selected area hospitals in WPA.[103]

[103] I excerpted this information from the file "Hospital Locations List_CKD.xlsx" provided by Economists Incorporated and which contains data from the 2011 AHA Guide and the Pennsylvania Department of Health. Dr. Harris provided the average daily census and occupancy rates for all hospitals in Pennsylvania as a measure of utilization at these facilities. Occupancy and utilization information incorporates data from the Pennsylvania Department of Health Bureau of Health Statistics and Research (http://www.portal.state.pa.us/portal/server.pt?open=514&objID=596752&mode=2). Average census is

Table 13

Hospital Capacity and Utilization
Sorted by System and Occupancy Rate

Hospital Name	System	County	All Staffed Beds (Incl. Nursing)	Admissions	Census	Occupancy Rate
Allegheny General Hospital	WPAHS	Allegheny	460	30,102	456	70%
Forbes Regional	WPAHS	Allegheny	300	16,023	201	66%
Alle-Kiski Medical Center	WPAHS	Allegheny	258	10,730	140	57%
Canonsburg General Hospital	WPAHS	Washington	104	4,049	58	45%
Western Pennsylvania Hospital	WPAHS	Allegheny	500	17,337	233	
Jefferson Regional Medical Center	Affiliated with UPE	Allegheny	No Data Available			64%
Saint Vincent Health Center	Affiliated with UPE	Erie	467	16,970	253	57%
UPMC Presbyterian	UPMC	Allegheny	1,510	63,913	1,250	83%
UPMC Shadyside	UPMC	Allegheny	Included with UPMC Presbyterian			
UPMC Montefiore	UPMC	Allegheny	Included with UPMC Presbyterian			
UPMC St. Margaret	UPMC	Allegheny	249	14,996	199	81%
UPMC McKeesport	UPMC	Allegheny	207	9,784	156	80%
UPMC Passavant	UPMC	Allegheny	330	17,031	250	76%
UPMC Mercy	UPMC	Allegheny	395	18,716	282	73%
UPMC Bedford Memorial	UPMC	Bedford	27	2,221	19	60%
UPMC Hamot Medical Center	UPMC	Erie	351	17,410	221	60%
UPMC Northwest	UPMC	Venango	182	8,085	105	56%
UPMC Horizon	UPMC	Mercer	198	8,715	123	54%
Children's Hospital of Pittsburgh of UPMC	UPMC	Allegheny	296	13,006	187	
Magee-Womens Hospital of UPMC	UPMC	Allegheny	278	20,413	233	
Excela Westmoreland Regional Hospital	Excela Health	Westmoreland	365	20,708	281	72%
Excela Frick Hospital	Excela Health	Westmoreland	83	4,121	56	68%
Excela Latrobe Area Hospital	Excela Health	Westmoreland	162	8,858	102	57%
Heritage Valley Beaver	Heritage Valley	Beaver	312	16,486	218	68%
Sewickley Valley Hospital	Heritage Valley	Allegheny	171	9,950	115	63%
Conemaugh Miners Medical Center	Conemaugh	Cambria	503	24,315	369	69%
Meyersdale Medical Center	Conemaugh	Somerset	20	428	5	23%
St. Clair Memorial Hospital		Allegheny	291	15,599	200	69%
Monongahela Valley Hospital		Washington	224	8,811	133	63%
Washington Hospital		Washington	274	15,801	186	62%
Sharon Regional Health System		Mercer	239	10,559	155	61%
Uniontown Hospital		Fayette	189	10,275	126	59%
Indiana Regional Medical Center		Indiana	162	8,817	105	59%
ACMH Hospital		Armstrong	170	No Data Available		59%
Altoona Regional Health System		Blair	440	19,236	247	54%
Ohio Valley General Hospital		Allegheny	92	4,641	58	54%
Butler Memorial Hospital		Butler	260	13,038	175	54%
Jameson Hospital		Lawrence	254	10,662	147	51%
Meadville Medical Center		Crawford	233	7,539	115	51%
DuBois Regional Medical Center		Clearfield	203	No Data Available		48%
Somerset Hospital		Somerset	117	4,630	58	46%
Clarion Hospital		Clarion	79	3,276	34	39%

Note: Butler Memorial Hospital includes values for all locations in the Butler Memorial Health System.
Source: File "Hospital Locations List_CKD" provided by Economists Incorporated on April 3, 2012.

from the 2011 AHA Guide. Appendix III.5 provides additional analysis of estimated excess capacity in the Pittsburgh area.

The WPAHS hospitals have highly varying occupancy rates, with rates up to 70.0 percent at Allegheny General to a low of 44.5 percent at Canonsburg General. Forbes Regional in Monroeville reports an occupancy rate of 66.3 percent, although this figure may decline in the future with the opening of UPMC East.[104] The suburban community hospital Alle-Kiski Medical Center (also called Allegheny Valley) has an average occupancy rate of 57.2 percent. The West Penn Hospital does not report an occupancy rate.[105] JRMC, now affiliated with Highmark, has an occupancy rate in the same range, 64.4 percent. These lower overall occupancy rates suggest that each WPAHS- or UPE-affiliated hospital, on average, has substantial additional capacity that it could deploy to attract patients shifting from UPMC (although staffing and other resource requirements may suggest some increased costs to attract those volumes).[106]

The UPMC hospitals in Pittsburgh and the immediate surroundings have relatively higher utilization rates.[107] Community hospitals in the Pittsburgh area generally have occupancy rates in the 60 percent range.[108]

---

[104] Grant Thornton estimates that inpatient volumes at Forbes Regional will decline by [redacted] discharges per year in FY13 and [redacted] each year thereafter due to the July 2012 opening of UPMC East, but will grow due to UPE's IDN strategy to a new estimated level of [redacted] discharges by FY17. For the estimated impact of UPMC East's opening on Forbes region, see Amendment No. 2 to Confidential Supplement to Form A, Tab 8, Exhibit K at 7.

[105] West Penn Hospital went through a period of departmental closures in 2010 as part of a plan by previous management to shift patients to Allegheny General and reduce costs at West Penn. Units including the emergency room were shut in this effort. When Alvarez & Marsal took over management of the hospital, the new executives reversed this plan and began to reopen the closed units and reinstate services. Any utilization estimates at West Penn over this period would reflect the turmoil at the hospital more than it would provide an accurate assessment of current or expected utilization. For this strategy and its impact on WPAHS, see Amendment No. 2 to Confidential Supplement Submitted with Form A, Tab 8, Exhibit K, Grant Thornton, "Updated Projections: West Penn Allegheny Health Systems," January 2013, at 2.

[106] Occupancy rates for WPAHS hospitals for FY12, based on data through October 31, 2012, were Allegheny General [redacted] West Penn [redacted] Forbes Regional [redacted] Allegheny Valley [redacted] and Canonsburg [redacted] These remain at exceptionally low levels compared with an industry target of around 80%. See Amendment No. 2 to Confidential Supplement Submitted with Form A, Tab 8, Exhibit K, Grant Thornton, "Updated Projections: West Penn Allegheny Health Systems," January 2013, at 12.

[107] UPMC Mercy has the lowest occupancy rate of UPMC facilities at 73.3 percent. The UPMC Passavant hospital has an occupancy rate of 76.2 percent. The downtown academic medical center of Presbyterian-Shadyside has an occupancy rate of 83.1 percent. Utilization also is high at Magee Women's, the other UPMC tertiary-care hospital. Although it does not report an occupancy rate, its number of staffed beds and average daily census imply a utilization rate of approximately 83.8 percent.

[108] St. Clair's is 68.7 percent, Washington Hospital's is 62.0 percent, and the two Heritage Valley hospitals Beaver and Sewickley are 67.6 and 62.5 percent, respectively. Excela's Westmoreland Regional Hospital has a somewhat higher occupancy rate at 71.9 percent, though its Latrobe Area Hospital had a

As detailed below in Table 14, these capacity and occupancy estimates suggest that Highmark (and other insurer rivals) would be able in principle to make use of either tiered or limited networks with WPAHS (and Allegheny General as its tertiary hospital) effectively to attract considerable volumes from UPMC with appropriately configured and priced products. The table indicates that Highmark's Community Blue network, designed to encourage patients to make use of WPAHS and community hospitals, has substantial existing capacity within its network to serve current patient volumes in the area. In total, I estimate that these hospitals could accept nearly 106,330 additional patients annually based on current utilization levels and assumed expansion of patients to occupancy rates of 75%. If they were able to expand to an average 80% occupancy rate, these in-network Community Blue hospitals have the capacity to absorb an additional 137,495 inpatients.

Table 14

Excess Capacity and Potential Incremental Admissions (Community Blue and All Other Hospitals)
Region: 29-County Western PA (WPA) Area

Hospital	Hospital Affiliation	In 7-county Area	Total Staffed Beds	Admissions	Occupancy Rate	Estimated Occupancy at 75%	Estimated Admissions at 75%	Estimated Occupancy at 80%	Estimated Admissions at 80%	Incremental Beds Available		Potential Incremental Admissions	
										at 75%	at 80%	at 75%	at 80%
Total All Area Hospitals		***27***	***13,153***	***573,758***		***9,037***	***630,562***	***9,645***	***672,600***	***1,608***	***2,114***	***121,076***	***152,241***
Accepting Community Blue													
Total Accepting Community Blue		***20***	***9,418***	***391,481***		***6,448***	***467,468***	***6,882***	***498,633***	***1,485***	***1,919***	***106,330***	***137,495***
Western Pennsylvania Hospital	West Penn System	X	500	17,337									
Allegheny General Hospital	West Penn System	X	460	30,102	70.0	345	32,252	368	34,402	23	46	2,150	4,300
Western Pennsylvania Hospital - Forbes Regional Campus	West Penn System	X	300	16,023	66.3	225	18,125	240	19,333	27	42	2,102	3,310
Alle-Kiski Medical Center	West Penn System	X	258	10,730	57.2	193	14,069	206	15,006	46	59	3,339	4,276
Canonsburg General Hospital	West Penn System	X	104	4,049	44.5	78	6,824	83	7,279	32	37	2,775	3,230
All Other			7,796	313,240		5,607	396,198	5,985	422,613	1,357	1,735	95,964	122,379
Not Accepting Community Blue													
Total Not Accepting Community Blue		***7***	***3,735***	***182,277***		***2,589***	***163,094***	***2,763***	***173,967***	***123***	***195***	***14,746***	***14,746***
UPMC Presbyterian	*UPMC System*	*X*	*1,510*	*63,913*	*83.1*	*1,132*	*57,683*	*1,208*	*61,528*				
UPMC Mercy	*UPMC System*	*X*	*395*	*18,716*	*73.3*	*296*	*19,150*	*316*	*20,426*	*7*	*27*	*1,710*	*1,710*
UPMC Passavant	*UPMC System*	*X*	*330*	*17,031*	*76.2*	*247*	*16,762*	*264*	*17,880*		*13*	*849*	*849*
Magee-Womens Hospital of UPMC	*UPMC System*	*X*	*278*	*20,413*									
UPMC St. Margaret	*UPMC System*	*X*	*249*	*14,996*	*81.4*	*186*	*13,816*	*199*	*14,738*				
UPMC McKeesport	*UPMC System*	*X*	*207*	*9,784*	*79.7*	*155*	*9,207*	*165*	*9,820*		*1*	*36*	*36*
UPMC Shadyside	*UPMC System*	*X*	Included with UPMC Presbyterian		*83.1*	Included with UPMC Presbyterian		Included with UPMC Presbyterian		Included with UPMC Presbyterian		Included with UPMC Presbyterian	
UPMC Hamot Medical Center	*UPMC System*		*351*	*17,410*	*60.2*	*263*	*21,690*	*280*	*23,136*	*52*	*69*	*5,726*	*5,726*
Mount Nittany Medical Center			207	11,299	66.7	155	12,705	165	13,552	17	27	*2,253*	2,253
UPMC Horizon	*UPMC System*		*198*	*8,715*	*54.1*	*148*	*12,081*	*158*	*12,887*	*41*	*51*	*4,172*	*4,172*
Edgewood Surgical Hospital			10		10.6	7		8		6	7		

Notes:
The seven counties are Allegheny, Armstrong, Beaver, Butler, Fayette, Washington and Westmoreland.
Incremental beds available are calculated by finding the number of beds that would need to be filled to go from current occupancy rates to rates of 75% and 80%, respectively

Source: Hospital information is from "Hospital Locations List_CKD.xlsx" provided as backup material to the Harris Report.

In addition to assessing whether there is sufficient alternative bed capacity to attract these volumes from UPMC or other hospitals, I examined whether patients shifting from UPMC could obtain the same services at WPAHS or other Community Blue hospitals that they obtained from UPMC. I examined the 739 DRGs that had at least ten inpatient discharges in the 29-county area

relatively lower occupancy rate of 57.4 percent. Of the 12,161 staffed beds identified in the 29-county WPA area, over 8,800 (4,500) beds are in hospitals with less than 75 percent occupancy (60 percent).

in 2011. Of these 739 DRGs, I find that Community Blue in-network hospitals account for at least 20 percent of discharges in 729 out of 739 (98.6 percent of DRGs). This means that nearly all DRGs currently provided at UPMC in large volumes, are available at Community Blue hospitals that are already serving substantial patient volumes across these DRGs. Appendix III at Table 6 provides further details of this analysis.

The foregoing analysis supports the view held by many interested parties that the hospital services market in WPA is over-bedded and likely cannot economically support additional substantial expansion of new capacity or entry of new facilities.[109] In principle, the availability of excess capacity generally suggests that a market is well positioned with available capacity to discipline any exercise of market power by market participants because hospitals with excess capacity could absorb patients leaving from higher prices at another hospital.[110] However, new market equilibria that reduce or eliminate inefficient capacity may be slow to emerge [111]

5. HORIZONTAL EFFECTS OF THE AFFILIATION AND MARKET POWER IN THE RELEVANT MARKET FOR HOSPITAL SERVICES

The Harris Amended Report concludes that from a horizontal perspective, WPAHS does not have market power in a product market of the cluster of all inpatient hospital services in relevant geographies, including WPA. I concur with the Harris Amended Report's conclusions regarding the implications for purely horizontal overlaps from the Affiliation in this broad cluster market of hospital services for plausible relevant geographic markets. The Harris Amended Report did not analyze the inclusion of JRMC in the UPE provider network because Highmark had not yet announced that affiliation. In the WPAHS service area, though, JRMC only accounts for between 3 to 4 percent of discharges, and thus does not substantively change any of the conclusions about horizontal effects of the Affiliation.

---

[109] Discussions with third parties, e.g., payors, providers, and other industry participants, with interests in this proceeding.

[110] Whether in practice market participants can respond to threat of exercise of market power depends on availability of capacity for services at issue and mechanisms for the diversion of patients to occur.

[111] See, for example, Carey, K. "Hospital Cost Efficiency and System Membership." *Inquiry* (2003), 40(1), pp. 25-38; Carey, Kathleen. "Stochastic Demand for Hospitals and Optimizing 'Excess' Bed Capacity." *Journal of Regulatory Economics* (1998), 14, pp. 165-87; Gal-Or, Esther. "Excessive Investment in Hospital Capacities." *Journal of Economics & Management Strategy* (1994), 3(1), pp. 53-70.

C. PROVISION OF PHYSICIAN SERVICES IN THE PITTSBURGH AREA

There is some overlap between Highmark and WPAHS in physician services due to the current employment and affiliation arrangements between Highmark, WPAHS, and area physicians. Highmark currently employs relatively few physicians, and preliminary analysis shows that specialties infrequently overlap between Highmark and WPAHS.[112] Furthermore, UPMC employs or affiliates with a substantial number of third-party physicians. Highmark's plans include the acquisition of additional physician groups. Through 2014, this involves approximately [redacted] million in investment in Highmark's physician network, community hospitals, and outpatient services, and is a key component of its strategy to grow discharge volumes at WPAHS facilities.[113]

The Harris Amended Report defines the product market for physicians' services by their specialties. The important question to consider in defining a product market is the degree to which different physician specialties act as substitutes for each other. Although some patients may be able to substitute between some specialties, the Harris Amended Report notes that specialties "can provide an appropriate starting point for evaluating which choices are available to patients and health insurers…"[114] For purposes of my analyses, given the data provided, I will also use physicians' specialties as the place to begin an analysis of competition for physician services.

The Harris Amended Report's calculates shares of Highmark, WPAHS, and third-party physicians using data maintained by the parties.[115] Economist Incorporated represents that all

---

[112] As of January 9, 2013, Highmark employed [redacted] physicians and had [redacted] offers in progress. See "Highmark/WPAHS Affiliation Update for the Pennsylvania Insurance Department, January 9, 2013." At the time of The Harris Report issued in April 2012, there were [redacted] physicians employed by Highmark. See "Highmark Employed Physician Listing 03-14-2012[2].xls," provided April 17, 2012. Dr. Harris did not update this listing in his amended report.

[113] For the investment amounts, see Amendment No. 2 to Form A, Tab E at 29; for the incremental WPAHS discharges associated with the growth of Highmark's physician network, see Amendment No. 2 to Confidential Supplement Submitted with Form A, Tab 8, Exhibit K, Grant Thornton, "Updated Projections: West Penn Allegheny Health Systems," January 2013, at 10.

[114] Harris Amended Report at ¶ 59. The basic principles for determining the product market for physician services is the same as for hospital services. One must consider the degree of substitutability between different offerings.

[115] Economist Incorporated provided files "Network Practitioners- 1 2012 Highmark Blue Shield.xls", "Highmark Employed Physician Listing 03-14-2012[2].xls," and "WPAHS Employed Physicians with NPI and PA ID 2-24-12 v2.xls" on April 17, 2012.

physicians in the Highmark Blue Shield network account for the universe of physicians in Pennsylvania.[116]

The Harris Amended Report considers only office-based physicians in the set of physicians studied. Dr. Harris assumes that hospitalists, ER staff, and other hospital-based doctors are not affirmatively chosen by patients and thus not relevant to an analysis of physician markets in the context of this Affiliation. Based on my review of the numbers, inclusion of hospital-based physicians would likely not materially change the results in the Harris Amended Report. Additionally, the third-party UPMC system operates the greatest number of hospitals in the region, so the inclusion of hospital-based doctors would not necessarily increase the share of the combined Highmark-WPAHS.

The Harris Amended Report considered a geographic market consisting of a three-county area of Allegheny, Washington, and Westmoreland counties, which encompasses all of the area where either Highmark-or WPAHS-employed physicians have offices. The Harris Amended Report notes that the scope of geographic markets may vary by specialty, but the demand for most physician services is local or regional.[117] This approach is reasonable given the data available and provides an approximation of the competitive landscape for each major specialty. Moreover, since it includes all of the doctors employed by the parties, expanding the geography, which may be appropriate, would only reduce the shares of physicians controlled by the firms involved in the Affiliation.

The Harris Amended Report's analysis shows that WPAHS employs 497 office-based physicians in the three-county area across all specialties.[118] Highmark employs at least 65 office-based

[116] It identifies [redacted] unique practitioner and office location combinations in the Commonwealth. Data elements in this listing include each physician's name, specialty, office address, and office-location and county. Two additional files list the physicians employed by Highmark and WPAHS, respectively. The format of these files is similar, with an observation in the databases being defined each physician's office location. The Highmark file consists of [redacted] worksheets. [redacted]. The physician records contain physician names, specialties, office addresses, and office-location counties. The WPAHS file lists the names of the [redacted] physicians employed by the hospital system, along with their specialties and office zip codes.

[117] Harris Amended Report at ¶ 62, see also footnote 76.

[118] Harris Amended Report at ¶ 64.

physicians in this same geography.[119] Most of the Highmark-employed physicians are in the Premier Medical Associates group recently acquired by the insurer.[120] The combined shares of the two firms are generally less than 30%, depending on the specialty. Exhibit 9 of the Harris Amended Report presents the full details of shares by specialty reproduced below. Combined, the WPAHS and Highmark employ 562 physicians in the counties of Allegheny, Washington, and Westmoreland.at the time of the filing of the Harris Report.

Exhibit 9
WPAHS and Highmark Employed Physicians
Three-County Area (Allegheny, Washington and Westmoreland)

Specialty	WPAHS Employed Physicians	Highmark Employed Physicians	Total Number of Physicians	Highmark/WPAHS Share of Physicians
Allergy				
Cardiology				
CTV Surgery				
Dermatology				
Endocrinology				
ENT				
Family Practice				
Gastroenterology				
General Surgery				
Hematology/Oncology				
Infectious Diseases				
Internal Med				
Nephrology				
Neurology				
Neurosurgery				
ObGyn				
Orthopaedic Surgery/Sports Medicine				
Pediatrics/Neonatology				
Plastic Surgery				
Podiatry				
Psychiatry/Psychology				
Pulmonary				
Radiation Oncology				
Rheumatology				
Total				

Several specialties have combined shares for the two parties that are in the 20 to 30 percent range, although numbers at WPAHS primarily drive these figures. Highmark employs relatively few physicians even after its acquisition of Premier Medical Associates. The incremental share added by the Affiliation is relatively low. Additionally, several specialties with physicians

[119] Harris Amended Report at ¶ 65. This number may have changed with Highmark's physician acquisitions made after Dr. Harris filed his October reports.
[120] "Premier CEO says Highmark affiliation will let it reach more people," *Pittsburgh Post-Gazette*, April 29, 2012

employed by WPAHS and Highmark do not overlap. Overall, other entities control at least 70 percent of physicians in each specialty.[121]

I also undertook further research to identify third-party physician groups in several key specialties. Those specialties are hematology and oncology, neurology, neurosurgery, and radiation oncology. For certain specialized services, WPAHS and UPMC may employ the main physician providers in the geographic area. I identified the WPAHS and Highmark physicians in those specialties and performed additional research on non-Highmark/WPAHS physicians to determine each physician's affiliations with hospitals.[122]

Many of the third-party physicians in these specialties are UPMC-affiliated physicians. Limitations of the information provided online make it difficult to determine which physicians in the dataset UPMC employs. I attempted to ascertain in each specialty the number of physicians employed, affiliated, or "on staff" at UPMC from available information.[123] I also examined information from the UPMC website concerning their employed and affiliated physicians for these specialties, where available, and for total physician employment. UPMC states that it has "[m]ore than 3,200 employed physicians among the 5,500 affiliated doctors" in the system. There is not sufficient information to determine whether these physicians are predominantly in the three-county area, or elsewhere.[124] Based on this research, I determined:

- Out of the 150 physicians listed among Hematology/Oncology specialists in the three-county area, 89 physicians are on staff at UPMC.

[121] I performed independent analyses to verify the share figures proffered by Dr. Harris. In doing so, I was able to closely replicate Exhibit 9 of his report. For the purposes of understanding physician shares in the area around Pittsburgh, I believe that the numbers he reports are reasonable.

[122] Due to limitations in publicly available data, these affiliations do not necessarily represent employment relationships; these third-party groups may be organized in other ownership arrangements but do have affiliations with other area hospitals.

[123] I took the list of physicians in each of four specialties from the list provided by EI for the three county area, which was used in the analysis cited above, and performed online searches of the UPMC website for group and physician names from that list. This search was done to determine whether the physician on the EI list was listed as a provider by UPMC or if there was information provided as to whether they were employed by UPMC. From these searches, I determined that a large number of physicians on the list in the three county area in these four specialties are identified on division, department, and physician group pages of the UPMC website. For convenience of exposition, I refer to these physicians as being "on staff" at UPMC.

[124] See UPMC Provider Services Division Fast Facts at http://www.upmc.com/about/facts/structure/pages/provider-services.aspx.

- Out of the 123 physicians listed among the Neurology specialists in the three-county area, 66 physicians are on staff at UPMC system in the three-county area.
- Out of the 62 physicians listed among Neurosurgery specialists in the three-county area, 36 physicians are on staff at UPMC.
- Out of the 48 physicians listed among Radiation Oncology specialists in the three-county, 23 physicians are on staff at UPMC.

Finally, there is information available in some areas about UPMC-employed physicians in these specialties, suggesting that UPMC employs some number of them.[125]

Highmark has stated that it plans to expand its staff of employed physicians as part of its IDN strategy. In filings, it indicated that it "is in various stages of discussions regarding employment (with or without asset acquisitions) with over [redacted] primary care and specialist physicians primarily in Allegheny County and Erie, Pennsylvania."[126] Since the information used in the Harris Amended Report was gathered, Highmark has acquired additional physicians' practices. As of January 18, 2013, it reported employing [redacted] physicians and again referenced having more than [redacted] offers of employment in process.[127] [redacted].[128] If a considerable number of newly acquired doctors belong to any particular specialty, employment of those physicians could raise concerns about levels of concentration in that specialty. In total, the addition of [redacted] physicians ([redacted] acquired prior to issuance of the Harris Report and the January 18, 2013 Form A filing, plus an additional [redacted]

[125] Overall, UPMC has "180 affiliated oncologists". See http://www.upmc.com/about/facts/structure/pages/provider-services.aspx. UPMC employs at least 17 hematology/oncology and 25 others are described as being central to UPMC's network. The Division of Hematology/Oncology's web page says, "Central to this network is Hematology/Oncology Associates, a 17-member group acquired by the UPMC Health System over the past several years, and the 25-member Oncology Hematology Associates group." See http://www.dept-med.pitt.edu/hemaonc/. In Neurology, UPMC's web page titled "Our Neurology Experts" names 43 doctors. All of these doctors are listed as professors at the University of Pittsburgh's medical school. See http://www.upmc.com/services/neurology/pages/default.aspx. In Neurosurgery, the UPMC Neurosurgery department's website has a page titled "Meet Our Surgeons" that lists 31 doctors. See http://www.upmc.com/Services/neurosurgery/experts/Pages/default.aspx.

[126] See UPE-0019293-4.

[127] "Supplemented Overview of Highmark's Strategic Vision," Addendum No. 5 to Amendment No. 2 to Form A, Tab E at 12 and Amendment No. 2 to Confidential Supplement Submitted with Form A, "Supplemented Overview of Highmark's Strategic Vision," Tab 2 at 12.

[128] JRMC-000418.

offers in process) would increase overall UPE physician employment from [redacted] to [redacted] and increase share in the area from [redacted] percent to [redacted] percent.[129]

In the area of physician competition, I agree with the basic conclusions of the Harris Amended Report. The affiliation, as described in current Form A filings, does not materially change shares nor does it result in substantial lessening of competition in physician services, including services for any particular specialty.

[129] In making this estimate, I assume that all [redacted] physicians hired are from within the area. This represents the highest share UPE would have; if any physicians being recruited were from outside of the region, they would need to be added to both the numerator and denominator resulting in a somewhat lower share than [redacted] percent depending on the magnitude.

IV. COMPETITIVE EFFECTS ARISING FROM THE VERTICAL INTEGRATION OF HIGHMARK AND WPAHS

In this section, I set out my assessment of the potential (horizontal) competitive effects in the insurance and hospital relevant markets resulting from the *vertical* aspects of the Highmark-WPAHS Affiliation.[130]

A. COMPETITIVE EFFECTS OF VERTICAL MERGERS

Vertical mergers are widely viewed as procompetitive in the economics literature and, in many cases, by antitrust authorities. For example, ". . . on both theoretical and empirical grounds, the economic presumption is that vertical mergers are likely efficiency enhancing and good for consumers."[131] A review of empirical literature on effects of actual vertical mergers reveals mixed results but with overall greater support for efficiencies than anticompetitive effects.[132] Similarly, vertical business practices (e.g., contracting practices between suppliers and purchasers) have many efficiency-enhancing benefits, but may potentially raise competitive issues under certain conditions:

> A well-reasoned antitrust policy on vertical practices in the health care industry, as in other industries, must be limited to those few situations where the vertical practice *creates, facilitates or enhances market power*. Conceptually, these

[130] In a vertical merger, firms operate at different stages of the production or distribution chain, with one firm producing an input used by the other. The products or services of the merging parties often are in separate relevant antitrust markets. Prior to the merger, the two firms may be in an actual (or potential) customer-supplier relationship, which may be governed by some form of a contract. Post-merger, the two separate firms are combined into a single firm that operates at both stages of production and/or distribution. A vertical merger obviates the need for a contract involving the trade of an input between the combining firms; instead, a transfer takes place within the same firm. Vertical mergers can involve forward integration in which the upstream firm acquires a downstream firm, or backwards integration, whereby the downstream firm acquires the upstream firm. Church, Jeffrey, Vertical Mergers, in 2 Issues in Competition Law and Policy, ABA Section of Antitrust Law 2008, hereinafter Church (2008) at 1456-7.

[131] Church 2008 at. 1455. Also see Feinstein, Deborah, "Editor's Note: Are the Vertical Merger Guidelines Ripe for Revision?," *Antitrust* (Summer 2010) at 5 ("On average, fewer than one vertical merger is challenged each year.").

[132] For example, in a review of empirical studies on the effects of vertical integration, Lafontaine and Slade conclude that while some researchers have found evidence of foreclosure, in two papers that attempted to weigh foreclosure effects against efficiencies, the two papers conclude that efficiency benefits outweigh foreclosure costs. The authors also note that studies assessing the impact of vertical integration on consumer welfare find that integration benefits consumers (or at a minimum does not harm them). Lafontaine, Francine and Margaret Slade, "Vertical Integration and Firm Boundaries: The Evidence," *Journal of Economic Literature*,(September 2007), Vol. 45, at 672-675.

> practices are limited to those that raise rivals' costs or make entry more difficult, facilitate either regulatory avoidance or price discrimination, or facilitate coordinated interaction.[133] [Emphasis added].

A *vertical* merger or business practice may pose competitive risks predominantly, although not exclusively, by its effect on *horizontal* competition at one or more levels at which the parties operate in competition with others. Vertical mergers enable the combined firm to internalize the changes in profits from actions at both levels of the industry, thereby providing the opportunity to internalize the profits and substantial benefits of integration, but potentially providing the opportunity for reduced profits at one level to be more than offset by increased profits at another level of the combined firm. Evaluation of whether a specific merger risks a substantial lessening of competition depends on the factual circumstances and market conditions at each level of the industry, and the impact of changed incentives brought about by a vertical transaction on competition:

> Vertical mergers involve firms that do not operate in the same markets, and may not result in an overlap between the assets of the purchaser and the acquired entity. A purely vertical merger does not itself change the number of firms competing to produce a particular product or service. *Nevertheless, vertical mergers can create changed incentives and enhance the ability of the merged firm to impair the competitive process*. [Emphasis added].[134]
>
> "…[A]ny anticompetitive effect from a vertical merger must be indirect since the transaction itself does not eliminate a competitor. *Instead, an anticompetitive effect can arise only if the competitive constraints imposed by competitors on the integrated firm are relaxed by the transaction, thereby raising its market power. A*

---

[133] Fenton, Kathryn and Barry Harris, "Vertical integration and antitrust in health care markets," *Antitrust Bulletin* (1994), Vol. 39 at 362.

[134] U.S. Department of Justice, Antitrust Division "Antitrust Division Policy Guide to Merger Remedies;" Department of Justice, 2011. The Guide goes on to address remedies that bring incentives back into alignment with conduct more conducive to competition. "In such situations, a remedy that counteracts these changed incentives or eliminates the merged firm's ability to act on them may be appropriate. Accordingly, in appropriate vertical merger matters the Division will consider tailored conduct remedies designed to prevent conduct that might harm consumers while still allowing the efficiencies that may come from the merger to be realized. The Division also will consider structural remedies in vertical merger matters—they may be particularly effective when the vertical integration is a small part of a larger deal." The impact of vertical transactions on the incentives of the merged firm, as compared to pre-merger incentives, is increasingly a focus of vertical merger analysis: "A fundamental insight of this approach [post-Chicago school] is that vertically integrated firms will have incentives that differ from those of non-integrated ones when competing in the input (upstream) market. An integrated firm will recognize that it can benefit from the higher costs imposed on its downstream rivals when it refrains from pricing aggressively in the upstream market. Vertical foreclosure can therefore arise in equilibrium." Chen, Yongmin, "On Vertical Mergers and Their Competitive Effects," *RAND Journal of Economics*, (2001), Vol. 32, pp. 667-685.

> *well-founded antitrust challenge to a vertical merger must establish that the transaction increases or maintains market power and harms welfare.*[citation omitted] … The literature on the anticompetitive rationales and effect of vertical mergers identifies how the transaction changes incentives and/or constraints on the merged firm, thereby enhancing its market power and reducing welfare." [Emphasis added].[135]

An extensive theoretical literature, including literature referenced by Dr. Harris in his review of these issues, describes these theories of competitive effects from vertical mergers.[136] The literature identifies the market conditions under which a vertical merger is likely to result in a substantial change in the competitive environment, resulting potentially in higher prices or reduced quality or quantity of services.[137] Much of this literature focuses on theories of exclusion/foreclosure or coordinated action. The term "foreclosure" generally refers to a circumstance in which a firm with market power in one market can restrict output in another related market.[138] A vertical transaction may affect or change the terms and conditions on which one or more competitors obtain something of value, such as a critical input into the production of a product or service. A vertical transaction can have significant anticompetitive effects short of actual exit if the actions of the combined firm significantly alter the ability of rivals to compete and provide competitive discipline in the market.[139] Foreclosure theories of harm represent one

---

[135] Church (2008) at p. 7.

[136] Harris Amended Report; Harris Amended Supplement 3; Harris Amended Supplement and Harris Amended Supplement 5.

[137] See, e.g., Church, Jeffrey, Vertical Mergers, in *Issues in Competition Law and Policy* (ABA Section of Antitrust Law (2008) at 1472 ("The modern, or post-Chicago, analysis of the foreclosure effects of a vertical merger focus on how foreclosure either raises rivals' costs or reduces their revenues, and how these negative effects on rivals result in an anticompetitive effect, that is, harm to consumers or efficiency."). One example of a more recent thread in the vertical literature relates to so called "cheap exclusion" in which an exclusionary strategy is inexpensive in the sense that it is not very costly to implement and "cheap" in the sense that it lacks cognizable efficiency benefits (see, for example, Creighton, Susan A., et al., "Cheap Exclusion," *Antitrust Law Journal,* (2005) Vol. 72, Issue 3, at 982-3), and Baker, Jonathan B., Exclusion as a Core Competition Concern (December 11, 2012). Available at SSRN: http://ssrn.com/abstract=2001579 for an overview of this and related theories.

[138] Tirole and Rey define foreclosure as "a dominant firm's denial of proper access to an essential good it produces, with the intent of extending monopoly power from that segment of the market (the bottleneck segment) to an adjacent segment (the potentially competitive segment)." See Rey, Patrick and Jean Tirole, "A Primer on Foreclosure," Handbook of Industrial Organization III, Vol 3, 2007.

[139] I would note that being disadvantaged or competing less effectively may not rise to the level of an anticompetitive effect and must be distinguished from post-transaction losses by rivals due to increased competition or efficiency or higher quality products from merger. See Baker, Jonathan B., Exclusion as a Core Competition Concern (December 11, 2012) at 1.
Available at SSRN: http://ssrn.com/abstract=2001579.

set of competitive effects theories that include, for example, strategies to raise rivals' costs to affect competition adversely.[140]

Other relevant theories of vertical competitive effects involve access to competitively sensitive information at one or both levels of the industry that may reduce competitive constraints by rivals and implicate adverse competitive effects. Customer-supplier relationships with rivals may of necessity involve communication of confidential information, such as price, quality, terms and conditions of contracts, and strategic information, such as the importance of the supplier's input into new and innovative products or the role a supplier or customer may play in promoting the product. One potential source of competitive harm stems from the fact that the vertically integrated firm may become less desirable and "reliable" as a source of supply to rivals, where vertical integration increases the likelihood that information is shared within the integrated entity to the potential detriment of rivals, including chilling of rival innovation and its impact on competition. This diminution in reliability, in turn, could, depending on the market circumstances, enhance the market power of other suppliers, have the effect of raising the costs of nonintegrated rivals, and/or diminish sufficiently the ability of rivals to capture returns from innovation thereby reducing incentives to innovate relative to pre-merger circumstances.[141] These effects on rivals could lead to adverse competitive effects if they, for example, lead to significant decrease in innovation, lower product quality, or higher prices to consumers. Absent effective firewalls and controls, the merging parties may acquire and internally share such information and obtain the means substantially to limit the ability of rivals effectively to compete, thereby adversely affecting horizontal competition and consumers relative to pre-merger conditions:

---

[140] Baker, Jonathan, "Comcast/NBCU: The FCC Provides a Roadmap for Vertical Merger Analysis," *Antitrust*, (2011), Vol. 25, No. 2. ("A vertical merger can harm competition by facilitating exclusion or collusion. The exclusionary possibilities involve foreclosure of unaffiliated downstream rivals from access to the integrated firm's upstream product (input foreclosure), and foreclosure of unaffiliated upstream rivals from access to the integrated firm's downstream business (customer foreclosure). In both of these cases, the term "foreclosure" is understood broadly to include price-raising strategies as well as complete exclusion.") Foreclosure of an "*input*" occurs when a vertically integrated firm ceases to sell, sells at a higher price, or reduces quality of a product to downstream rivals. For input foreclosure to have an anticompetitive effect, the effect of higher input prices and/or reduced quality on nonintegrated rivals must also increase prices or otherwise harm consumers downstream.

[141] See, e.g., Allain, Marie-Laure, Chambolle, Claire and Georges Rey, Patrick, "Vertical Integration, Information and Foreclosure," No 673, IDEI Working Papers from Institut d'Économie Industrielle (IDEI), Toulouse, November 25, 2011.

> ... [V]ertical integration may generate foreclosure when firms need to exchange sensitive information with their suppliers or customers ... foreclosure arises ... whenever vertical integration creates or exacerbates the risk that sensitive information transmitted to the integrated supplier would be exploited by its downstream subsidiary ... [142]
>
> The merged entity may, by vertically integrating, gain access to commercially sensitive information regarding the upstream or downstream activities of rivals. For instance, by becoming the supplier of a downstream competitor, a company may obtain critical information, which allows it to price less aggressively in the downstream market to the detriment of consumers. It may also put competitors at a competitive disadvantage, thereby dissuading them to enter or expand in the market.[143]

Because vertical mergers are likely to yield procompetitive efficiencies by combining two firms into an integrated entity, competitive effects analyses entail close consideration of foreclosure or reduced competition effects in the context of the specific merger and consideration of efficiencies.[144] The literature suggests five elements as central in determining whether a vertical merger is likely to have an anticompetitive effect:[145]

---

[142] Allain, Marie-Laure, Chambolle, Claire and Georges Rey, Patrick, "Vertical Integration, Information and Foreclosure," No. 673, IDEI Working Papers from Institut d'Économie Industrielle (IDEI), Toulouse, November 25, 2011. Also see, e.g., Baker, Jonathan, "Comcast/NBCU: The FCC Provides a Roadmap for Vertical Merger Analysis," *Antitrust*, (2011), Vol. 25, No. 2, at footnote 2. ("A vertical merger can facilitate collusion through the exclusion of a "maverick" rival (either upstream or downstream), or through information sharing. In the latter case, the upstream firm may share with its new downstream affiliate information about the costs or business strategies of the downstream rivals that are customers of the upstream firm, or the downstream firm may share information about its upstream suppliers with its new upstream affiliate. This information may facilitate coordinated conduct at either level. A vertical merger can also harm competition by facilitating the evasion of regulatory constraints.").

[143] Guidelines on the Assessment of Non-Horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings, adopted by the European Commission on October 18, 2008, at ¶78.

[144] This perspective is articulated by Church (2008) and Cooper, James, Luke Froeb, Daniel O'Brien, and Michael Vita (2005) commenting on an earlier version of the Church article. In Section VI below, I set out the extensive literature and practical experience of benefits from vertical integration in healthcare, including integration of insurance and healthcare delivery. Section VI applies that theoretical literature to the Highmark-WPAHS affiliation and the proposed IDN, and provides a comprehensive assessment of the evidence on anticipated and likely benefits.

[145] Church, Jeffrey, Vertical Mergers in *Issues in Competition Law and Policy* (ABA Section of Antitrust Law 2008) at 1461-1464. The possibility of vertical effects from mergers have been explored using variety of empirical approaches (see, e.g., Moresi, Serge and Steven Salop, "vGUPPI: Scoring Unilateral Pricing Incentives in Vertical Mergers," Georgetown Business, Economics and Regulatory Law Research Paper No. 12-022, 2012). See, also Gavil, Andrew I., William K. Kovacic & Jonathan B. Baker, *Antitrust Law In Perspective: Cases, Concepts And Problems In Competition Policy* 869 (2d ed. 2008); Riordan, Michale H. and Steven Salop, "Evaluating Vertical Mergers: A Post-Chicago Approach," *Antitrust Law*

1. Presence of market power;
2. The ability and incentive for foreclosure (and/or related conduct);
3. The effect of foreclosure on rivals and, in turn, how that affects their ability to compete;
4. How the vertical merger changes the incentives of the integrated firm to compete in the downstream or upstream market; and
5. The impact on the welfare of consumers, or efficiency, from the change in competition and the change in behavior of the vertically integrated firm. [146]

With regard to the proposed Highmark/WPAHS affiliation, the competitive effects analysis involves consideration of the sufficiency of close competitive alternatives at the insurer and hospital levels for the parties, the extent to which the Affiliation changes the parties' incentives and ability significantly to affect rivals (by e.g., reduced reimbursements to rival providers or increased reimbursements to rival insurers) with resulting effects on competition. It also takes into consideration current and likely future market conditions, nature of competition between rivals and the parties, and likely implications for competition with/without the Affiliation. By internalizing their profits into a single company, WPAHS's vertical affiliation with Highmark could provide the incentive to increase input prices at the hospital level or to change contract terms with rival insurers to achieve and benefit, for example, from increases in higher premium prices downstream.[147] Whether this hypothetical effect is plausible in this specific market context depends on whether there remain sufficient constraints post-transaction to discipline competitive action by Highmark and WPAHS and whether the Affiliation significantly alters those competitive constraints and competition.

Journal, 1995; and Baker, Jonathan, "Comcast/NBCU: The FCC Provides a Roadmap for Vertical Merger Analysis," *Antitrust*, (2011), Vol. 25, No. 2.

[146] An alternative articulation of these elements is set out in the context of foreclosure as, "The analytical framework for assessing the likelihood of anticompetitive foreclosure (input or customer) involves an evaluation of (i) the integrating firm's ability to foreclose, (ii) the integrating firm's incentives to foreclose, and (iii) the effect of foreclosure on the downstream market." OECD Policy Roundtables Vertical Mergers (2007) at Overview.

[147] Anticompetitive practices might also include those that restrict the ability of insurance rivals to use innovative techniques to expand their product offerings to attract enrollees relative to what rivals could do pre-transaction. For example, if Highmark limited WPAHS's ability (contrary to WPAHS's independent incentives) to offer to participate in other insurers innovative consumer choice and other member cost-sharing initiative products, e.g., tiered and/or limited provider networks, such "input foreclosure" could potentially disadvantage rival insurers and raise competitive concerns.