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Evolution of UPMC Economics 2016 – 2021

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Summary

Between 2016 and 2021, UPMC nearly doubled its operating revenue by acquiring several major delivery systems in northern and central Pennsylvania and sharply expanding its insurance membership. This remarkable growth was bookended by two major disruptions: the eastern expansion was launched shortly after the strategic decoupling with Highmark and the acquisitions were just solidifying as the Covid pandemic struck.

In this paper, we examine how UPMC managed its economics to support this extraordinary growth. Notably, UPMC used growing profits from its insurance business to backfill for rapidly declining care delivery margin. It also used profits from newly acquired hospitals in eastern Pennsylvania to replace declining profits in its western core. Together, profits were sufficient to not only keep UPMC's business going but also support large scale investments in physician affiliations and "retail" care delivery networks across its service area. These investments will likely pay off as the pandemic recedes (they may already be doing so). Thus, a bold business scope and geographic diversification provided UPMC with the critical economic support to transition from its potentially fatal dependence on care delivery in Allegheny and Highmark reimbursement.

The new UPMC economic model arising out of these changes can have significant implications on how the system competes over the medium term. Further, the UPMC case study provides lessons for other provider systems—particularly those now building out health plan subsidiaries—regarding how to create and exploit strategic robustness derived from diversification.

This analysis is a case study of how delivery systems can use scale, vertical scope (insurance business), and market diversification to thrive after major strategic disruptions.

Romoff's legacy

In the last five years, UPMC acquired 13 hospitals from four different systems across northern and central Pennsylvania,[1] launched major investments in physician and outpatient capabilities throughout the state and saw transformative growth in its insurance platform.

As a result, total revenues grew 88%, the insurance business became as big as care delivery, and UPMC is now a major brand in markets with twice as many Pennsylvanians as before.[2] In the process, UPMC upended competitive dynamics in these new markets, driving a series of countermoves: vertical alliances (WellSpan-Highmark[3] and WellSpan-Capital Blue Cross[4]), joint ventures and affiliations (Highmark-Penn State Hershey[5] and Highmark-Geisinger[6]), and consolidations (completion of Highmark-Gateway combination).[7]

The eastward expansion was the culmination of Jeffrey Romoff's reengineering of UPMC after the 2011 strategic break with Highmark.[8] In the first few years after the break-up, UPMC's critical dependence on Highmark reimbursement and profits from its flagship Pittsburgh hospitals was exposed: payer mix decayed, admission volumes declined, and profits in both the care delivery and insurance businesses tumbled to fractions of pre-break-up levels. Now in FY21, UPMC's profitability has reached an all-time high.[9] It has a restored network participation agreement with Highmark and should soon start reaping the volume benefits of its big investments in outpatient capabilities. All of this is a fitting capstone to Jeffrey Romoff's storied career (he has recently announced his retirement).

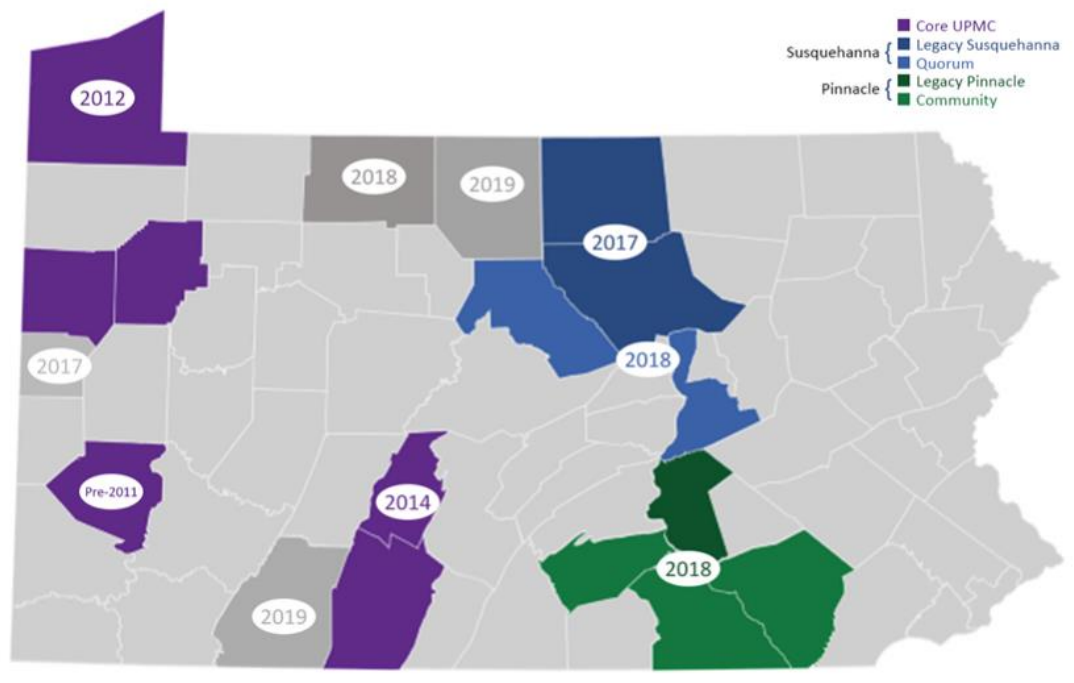


Figure 1. Pennsylvania counties served by UPMC care delivery and fiscal year of entry

This paper offers seven observations about the evolution of UPMC economics during this eastward expansion.[10] It also serves as a basis for assessing where UPMC might be headed in the post-Romoff era. We rely primarily on public financial data.[11] Because that data is not complete, there are gaps in what we can explain which we sometimes try to fill with transparently reasoned speculation.[12]

1. Swapping out profit engines: insurance fills in for care delivery (perhaps temporarily)

Historically, the Health Services division—and primarily its "Core"[13] hospitals in western Pennsylvania—provided the profits for UPMC, with the Insurance division being largely supplemental.

Since the strategic decoupling with Highmark, however, Health Services saw operating margins fall from 5% in 2011 to effectively break-even in 2019. Insurance also saw a margin dip from 2011 to 2015 but this was temporary. Since 2016, the Insurance margin held steady at around 2%. Coupling this flat margin with rapid revenue growth turned Insurance into UPMC's primary economic engine.[14] See Figure 2.

It is hard to sort out how much of the FY20 to 1H:21 changes in Health Services profits are driven by Covid volatility, even once one-time support payments from the government are removed. The $358 million operational loss posted early in the pandemic (excluding Covid relief)[15] seems an expected result of a weakly performing business platform severely tested by Covid.

> Insurance went from providing ~20% of UPMC's aggregate operating income between FY11-15 to ~60% between FY16-19.

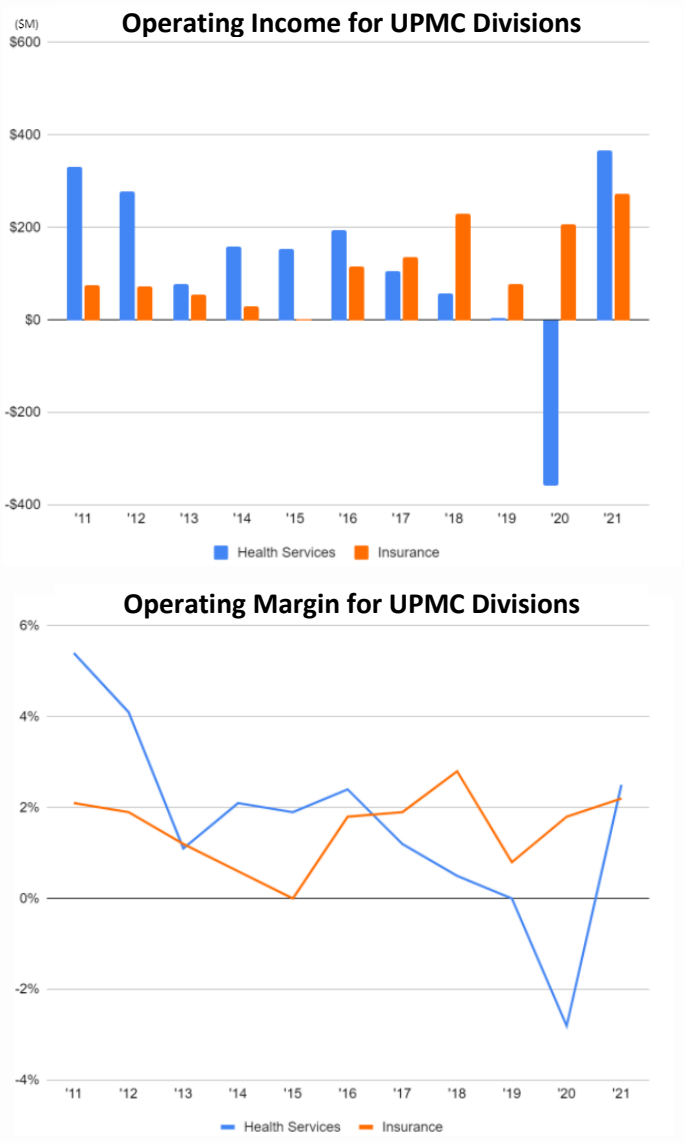


Figure 2. Insurance replaced health services as UPMC's primary economic engine

However, the large $367 million operating income gain in FY21 net of one-time payments suggests that the Health Services division may be on the mend.[16] More data is needed to see if UPMC's Health Services and Insurance divisions will, from now on, more equally contribute to the overall economics. Perhaps the FY16-20 period of low margins in Health Services was temporary while UPMC absorbed the new systems, invested in their competitiveness, and weathered Covid. If so, Health Services can now start reaping the rewards. There are some signals supporting this hypothesis discussed below.

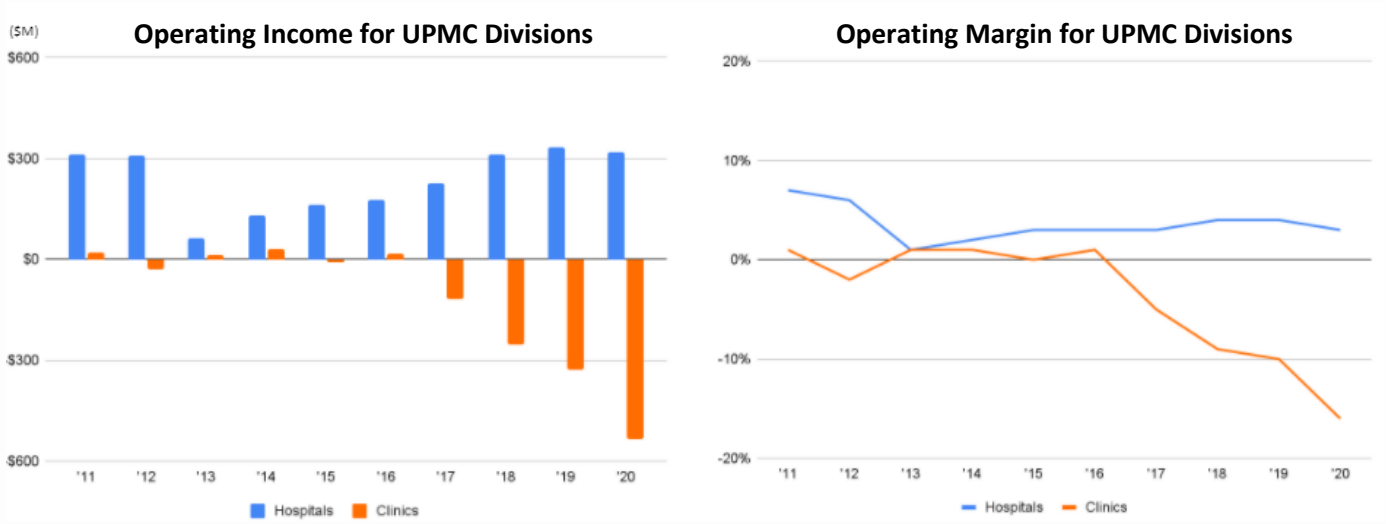


Figure 3. Health Services operating income and margin split into PA hospitals and Clinics/Other

2. Backfilling for declining hospital profits in the West with hospital profits from the East

To understand why Health Services profits declined, we need to disaggregate into components.

We can split Health Services economics out into the Pennsylvania hospitals (hereinafter referred to as "Hospitals")[17] and all other care delivery (hereinafter referred to as "Clinics").[18] The Hospitals have, in fact, held a consistent 2-3% operating margin since the big drop from the 6-7% levels prevalent in FY12-13 (likely an impact of the Highmark break-up). What dragged aggregate Health Services margins down were the Clinics. The Clinics were essentially break-even to 2016, but then saw a rapid decline until reaching ~$500M loss in FY20.[19] See Figure 3.

The Core UPMC hospitals were the exclusive source of Hospital profits through FY16. The Highmark break-up appears to take a toll in FY13 in particular but by FY16, profits recovered to $175M or a little over half of pre-break-up levels.

Starting in FY17, however, the Core profits declined continuously and essentially disappeared four years later. The "margin gap" was filled by profits from the newly acquired hospitals in the East which had very high percentage margins both before and after acquisition by UPMC. See Figure 4.

The available profit and loss statements for the Core hospitals do not offer enough granularity to determine exactly why margins declined so rapidly after 2016.

The stability of hospital profits in aggregate masks significant volatility at the regional level, especially since expanding eastward in 2016.

Some possibilities:

- Top line: UPMC saw a decay in payer mix including sharp decline in Highmark share which may have constrained UPMC's ability to keep prices in line with cost inflation (e.g., with specialty Rx).
- Service mix: volume mix shifted away from inpatient (discharges fell 14% between FY15-20) towards outpatient (visits grew 20%) over the same timeframe—a change towards a possibly less profitable service mix depending on where UPMC loads its margin.
- Overhead cost management: growth in overhead costs outpaced Net Patient Service Revenue (NPSR) between FY15-20 while salaries and other expenses remained roughly in line with NPSR.

In FY11-12, UPMC's Allegheny County hospitals provided 70% of overall operating margin, an average of $272M annually. By FY19, these same hospitals could contribute just $9M.

Perhaps UPMC did not do enough restructuring in the face of these shifts (there was only a 3.5% reduction in staffed beds in aggregate between FY15-20) because it was assuming there would be a quicker resolution to the Highmark dispute, or it is anticipating new sources of patient volume.

See Appendix B for more detail on Core hospital economics and Section 5 on payer mix shifts.

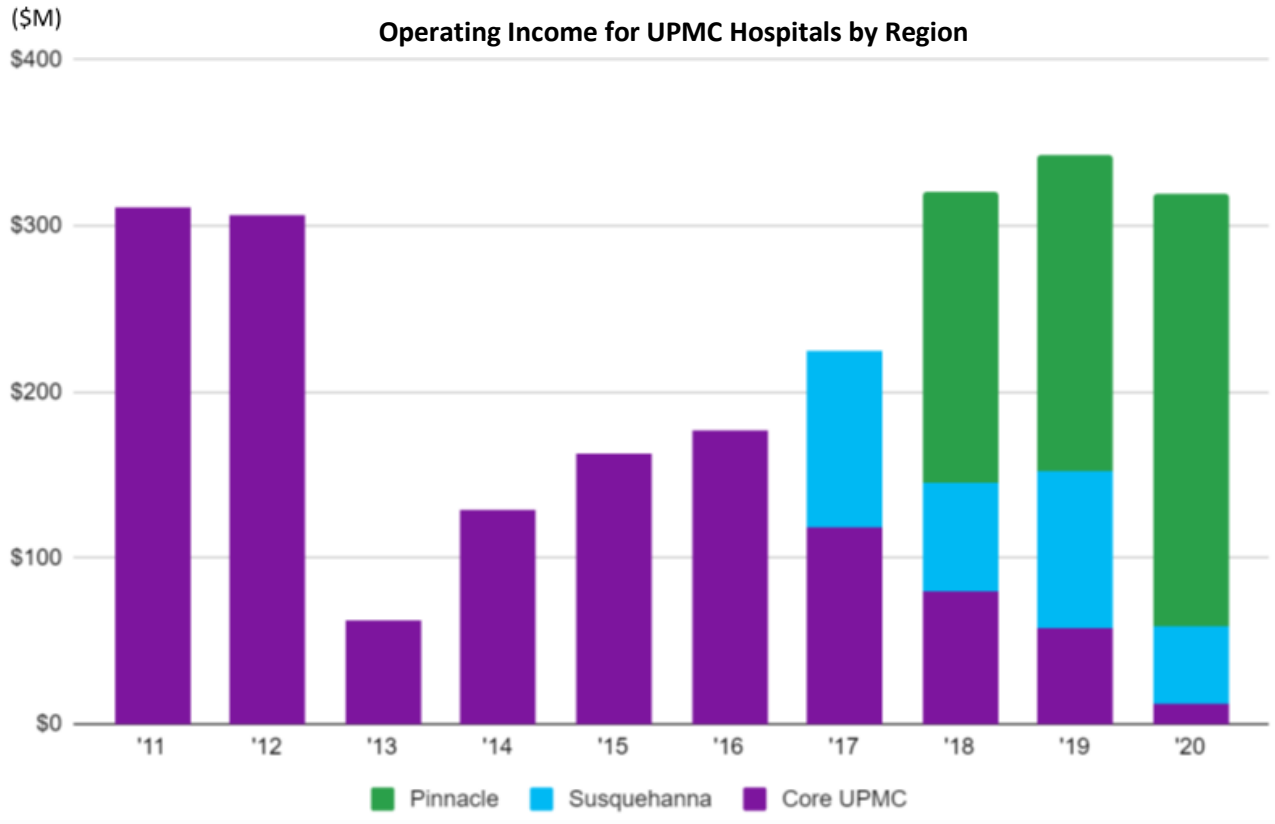


Figure 4. Profitable Central Pennsylvania hospital acquisitions backfilled for sagging profits in western Core hospitals

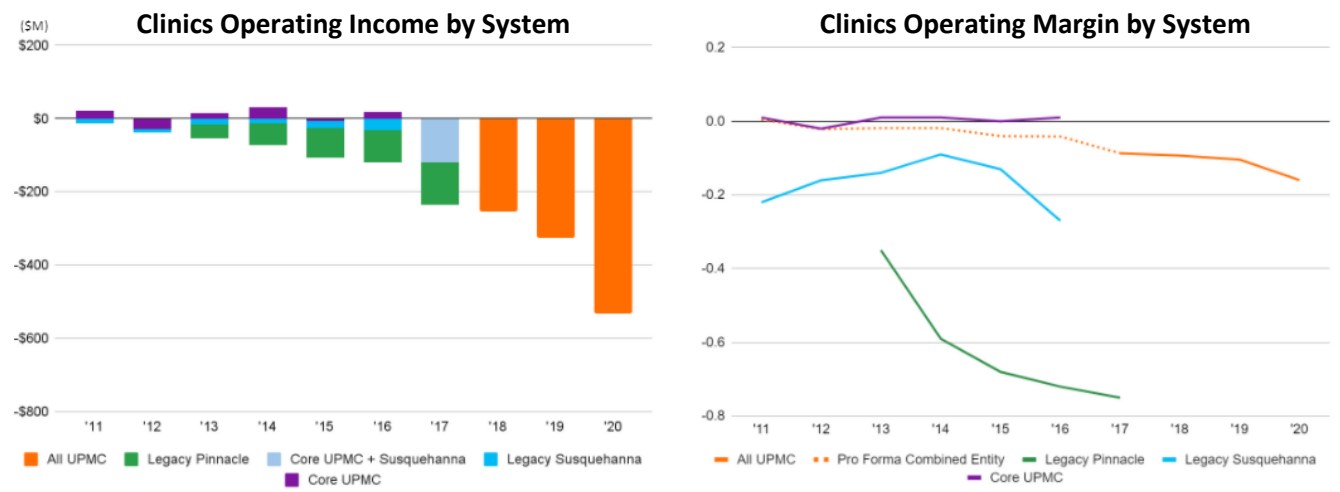


Figure 5. System Clinic margins dragged down by loss-making acquisitions and (likely) hit hard by Covid in H1:20

3. Rapid decay in operating returns to the Clinics (non-hospital) part of Health Services

Part of the reason why the aggregate "Clinic"[20] business started losing money after 2016 was likely the new acquisitions. Both Susquehanna and Pinnacle appear to have operated their Clinics at consistent and significant losses prior to their acquisition, while legacy UPMC ("Core") managed their Clinics at close to break-even.[21] These Clinics placed an immediate burden on the aggregate Clinic bottom line operation once they were rolled into UPMC. See Figure 5.

This can only be a partial explanation, however, since margins on the Clinic business in aggregate continue to degrade after these acquisitions.[22] The publicly available data does not allow further dissection of the economics. Two potential explanations to consider:

First: there appears to be a negative correlation between UPMC's aggregate hospital outpatient (HOPD) revenues and its Clinic-based revenues. When the HOPD revenues go up for a couple quarters, the Clinic revenues go down in parallel.[23] These correlated swings also occur shortly after the announcement of various acquisitions: Altoona, Susquehanna, Pinnacle, and most recently Somerset.[24] Perhaps as a result of acquisition, UPMC management results in the transition of clinic-based services to the hospital. See Figure 6.

The most likely services to be transferred from the Clinic to the HOPD would be diagnostic or procedural which tend to carry with them substantial margin (of course, once located at the HOPD, the services can capture an additional site-of-service premium).[25] Subsequent to UPMC takeover, therefore, the mix of services done at the Clinic would change towards a less profitable mix, effectively driving down operating income from the aggregate Clinic business.

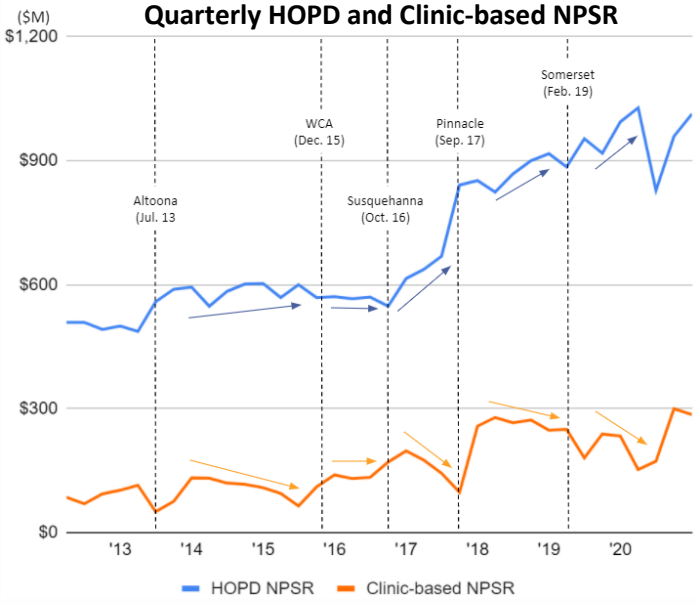


Figure 6. UPMC's aggregate HOPD and Clinic-based NPSR

The number of physicians reporting exclusively affiliations with Susquehanna or Pinnacle has more than doubled since FY15.

Second: as part of each acquisition, UPMC committed to sizable investments in expanding care delivery services at the acquired operations—in some cases, several hundred million dollars over a period of years.[26] Investment activity can end up driving operating costs either by disrupting operations during construction or by creating temporary capacity overhangs until the business grows to fit the new infrastructure. And while there was no explicit commitment on how much of the capital budget would be spent in the Clinics, there has been a lot of activity in building physician affiliations and acquiring or opening new delivery locations (see next section).

4. "Arms races" for exclusively affiliated physicians and Clinic sites in key markets

Over the past 5 years, UPMC sharply expanded their network of exclusively affiliated physicians in its new eastern markets and also expanded the number of Clinic locations across both its western and eastern markets.[27] See Figure 7.

UPMC has almost doubled their number of locations in Pennsylvania, from 89 census-designated towns reaching 10% of the state population in 2015 to 165 reaching 26% of the state population in 2021, according to our analysis of the CMS Physician Compare database (please see Appendix C).[28]

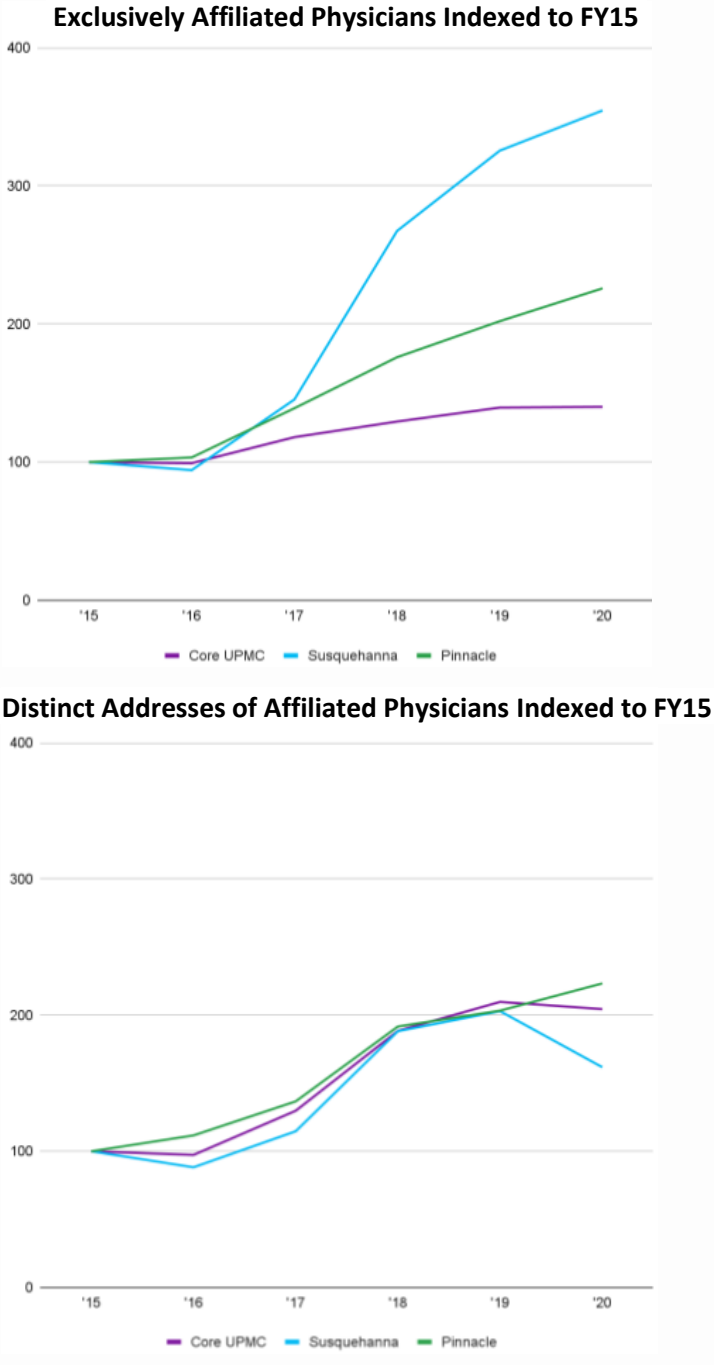


Figure 7. UPMC investing heavily in Clinics and physicians in the newly acquired markets

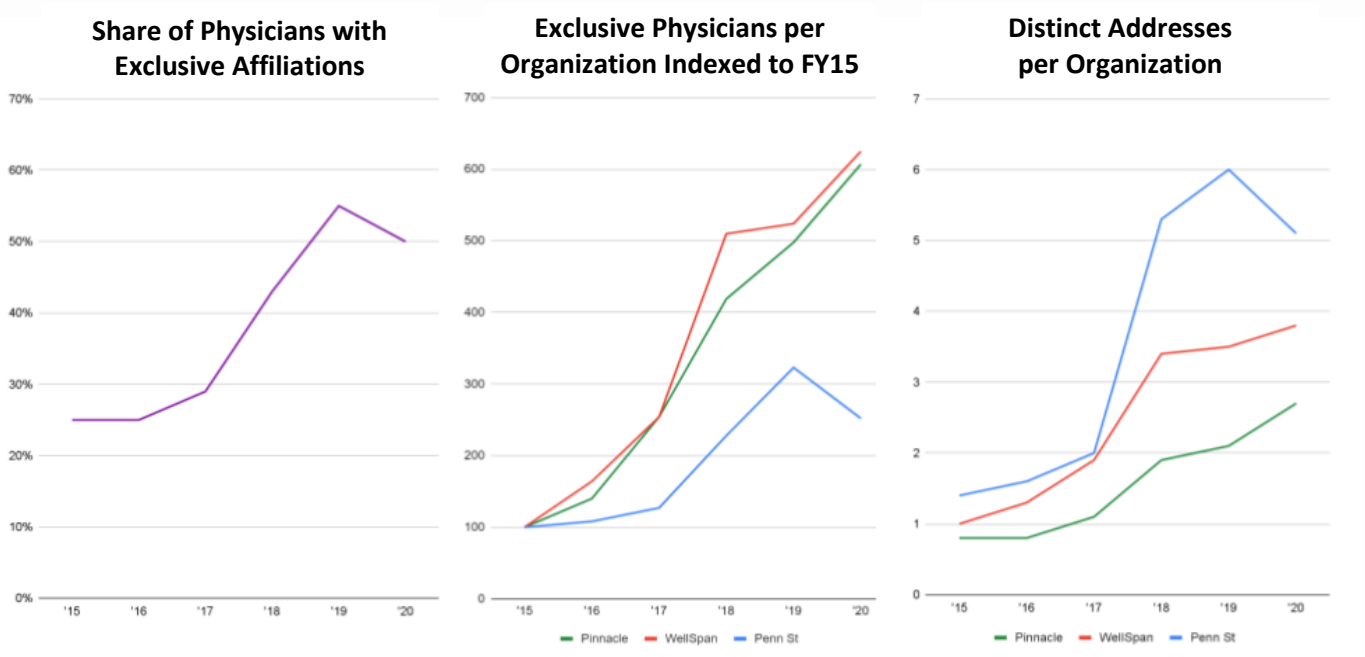


Figure 8. Capital District physicians increasingly aligning with system partners and scaling

UPMC's new competitors in the Capital District have been investing heavily in the same strategy. Our data cannot determine whether these affiliations are coincident to or in response to UPMC's entry, although tit-for-tat practice acquisitions and site builds suggest competitive strategy is playing a driving role. Both WellSpan and Penn State Hershey (bolstered by Highmark's affiliation and capital spending support) have dramatically increased the number of exclusively affiliated physicians and care delivery locations. See Figure 8 and also Appendix C.

As a result, the Capital District physician landscape has been transformed, with the share of physicians with exclusive system affiliations having risen from 25% in FY15 to 50% by FY20.

It can take a few years for new sites to reach break-even volumes. It would not be surprising, therefore, if the operating volume of these new sites built over the last few years was still a way from break-even and, therefore, adding to the aggregate operating loss for Clinics in the UPMC financials (see Figures 3 and 5 above). Covid must have also sharply reduced patient flow and perhaps restarted the clock on acquiring patient flow and reaching break-even.

5. Filling the Highmark gap with a mix of UPMC commercial and government reimbursement

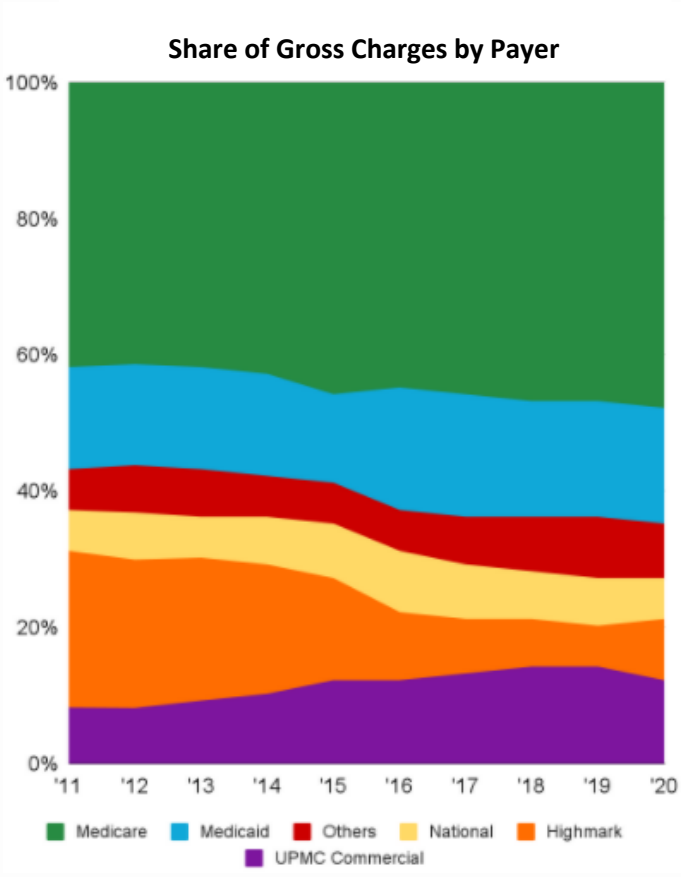
Highmark represented around 20% of UPMC's gross charges (and obviously a much larger share of net charges) before their break-up. Despite various interim patches put in place (consent decrees, etc.), Highmark's share of charges declined to just 6% by FY19. Volume coming from national plans to UPMC essentially remained flat. On the other hand, volume from UPMC covered members—whether commercial coverage or through various government programs—grew from 14% of Health Services revenues in FY15 to a peak of 22% in FY17.[29]

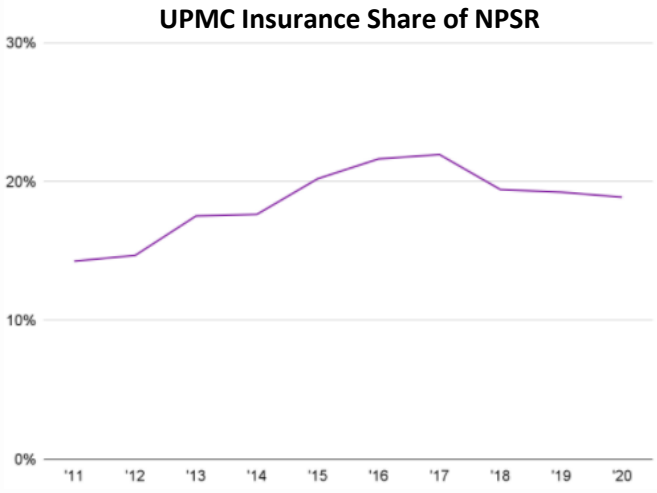
Health Services replaced 35% of lost Highmark volume with UPMC's own commercial plan.

It is not possible to sort out how much of that 22% is at commercial, Medicare, or Medicaid rates, but given UPMC's member mix, it is likely that government programs represented a very large share. Accordingly, the Health Services net revenue as a percentage of gross charges (corollary to its overall discount position and mostly a function of payer mix) declined from about 27% in FY11 to just about 20% in FY19. UPMC no doubt increased its chargemaster rates over that window in parallel, but it is unclear whether any such increases fully made up for the decay in its aggregate discount position driven by payer mix shifts. See Figure 9.

As it turns out, UPMC just needed to weather the storm. In June 2019, UPMC and Highmark agreed to an extension of the consent decree for another ten years. Immediately in the following year, Highmark share of charges jumped and UPMC share of charges declined as the market reacted to the new flexibility. Presumably, UPMC can anticipate more volume at attractive commercial rates as Covid frictions on volume disappear. Long term, however, UPMC seems to have been able to use the contract uncertainty to grow its Insurance business substantially at Highmark's expense: Insurance premiums grew from $3.3 billion in FY11 to $11.8 billion in FY21.

With the announcement of the ten-year network deal with Highmark, it is likely that overall commercial share will increase.





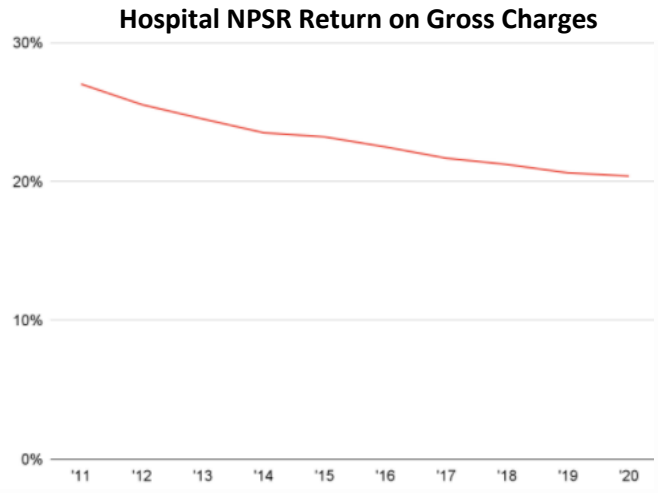


Figure 9. UPMC gross charges payer mix, UPMC Insurance share of revenue, and NPSR yield on gross charges

6. Geographically diversifying health plan membership across Pennsylvania

While Insurance plays an important role for Health Services by providing ~20% of revenues, Health Services plays an even more important role in supporting Insurance by reportedly providing ~40% of the care.[30] And a powerful platform it has proven to be: overall, the Insurance division grew lives at a 10% compound annual growth rate (CAGR) over the last five years. Most of the growth in lives was concentrated in Medicaid (12% CAGR) and Commercial Group (10% CAGR). Medicare grew at a steady 6% per year. UPMC dove deep into the exchange in 2016, nearly tripling the number of lives but shedding ~4% of those lives each year since.

Profitability across lines of business was very volatile: Medicaid profits were remarkably strong in 2015-2016 (with underwriting margins consistently ~$20 PMPM) but these dropped to a loss in 2019.

UPMC leveraged its expanded service area to grow Insurance membership in northern and central Pennsylvania while also evidently cleaning their historically insolvent Exchange book of bad risk.

The Exchange business saw an entirely different trajectory with $50-60 PMPM underwriting losses in 2015-2016 improving to yield a $25 PMPM profit in 2019. All lines of business saw profits increase in 2020 although much of this was likely a one-time gain due to Covid. See Figure 10.

The expansion of Health Services in eastern Pennsylvania (especially the Capital District) appears to have helped support both growth and margin in the Insurance business. Two examples:

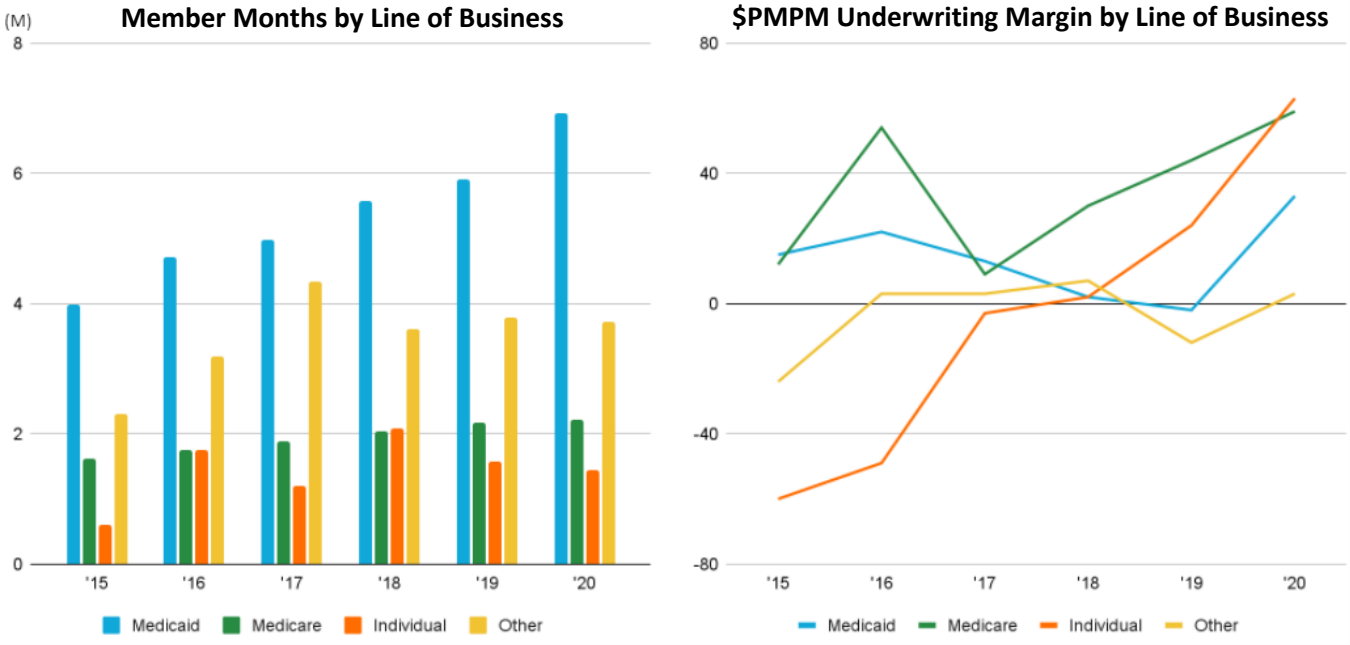


Figure 10. UPMC has turned around Exchange profitability; Medicaid lives grew but margins declined (until FY21)

UPMC's Exchange business grew itself into a "bad book" by trebling its size in 2016, requiring a large shedding of bad risk in the West (especially Allegheny County). At the same time, however, it was able to launch Exchange products and grow lives in the Capital District. See Figure 11.

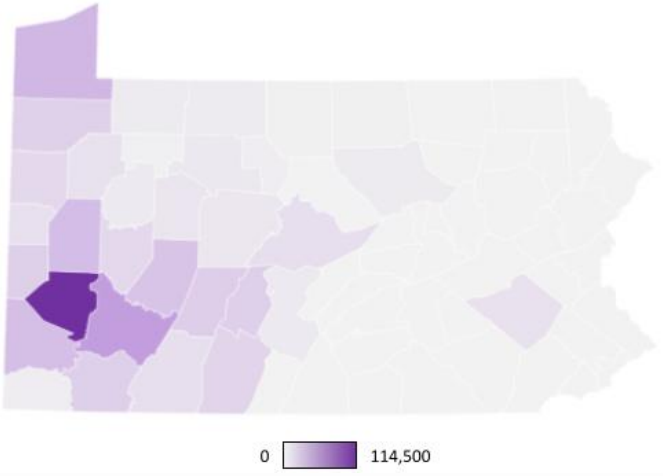
Also in the Capital District, UPMC was able to increase Medicaid market share from 8.6% to 12.1% over 4 years. All of that share seems to have come from Gateway (whose market share went from 32.8% in 2017 to 27.4% in 2021). Having experienced the power of UPMC's vertical integration, Gateway has started building its own close ties with local providers including a strategic collaboration with WellSpan (a major delivery system in the Capital District) and selling itself to Highmark which has an affiliation with Penn State Hershey.

7. Pouring on the CapEx despite cash flow volatility and rating agency apprehensions

In the years prior to the expansion eastward, UPMC's capital expenditures peaked in FY12 (~$600 million) and were subsequently throttled down to under $400 million by FY16—possibly in response to rating agency handwringing (UPMC bond outlook was downgraded to negative in 2013) or other uncertainties about the path out of the Highmark decoupling.

Starting in FY17, however, UPMC embarked on an extraordinary CapEx program—not only in the newly acquired Susquehanna and Pinnacle systems but also in the western Core—averaging between $850-$950 million in each of the most recent three years. See Figure 12. UPMC still has over $1 billion left in public CapEx commitments (presumably on top of ongoing run of the mill replacement and upgrades) as of early 2021.[31]

UPMC Health Options Membership FY18



UPMC Health Options Membership Changes FY18-20

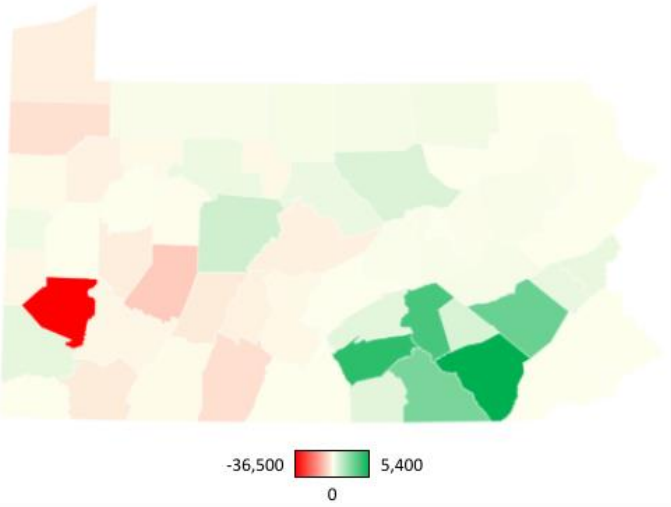


Figure 11. UPMC Health Options shedding unprofitable segments in Allegheny and building presence in the Capital District

The UPMC case demonstrates the strategic robustness enabled by combining a vertical business model with a willingness to expand geographically.

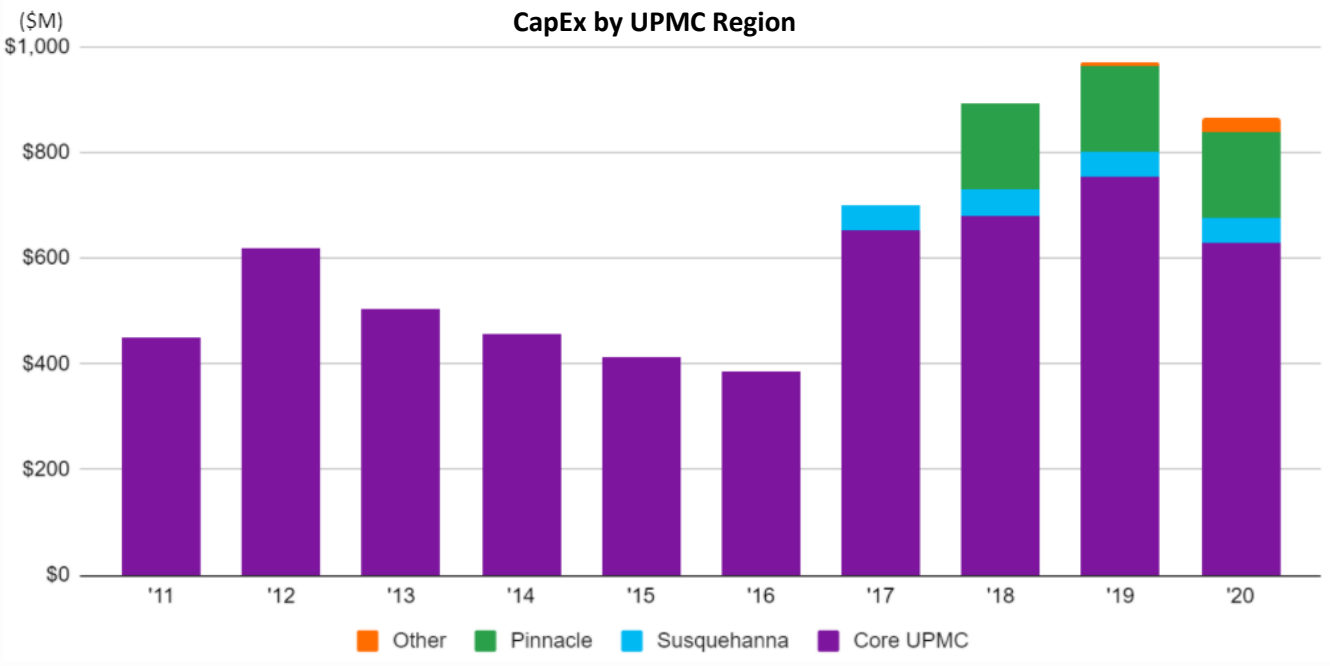


Figure 12. CapEx trimmed after break-up, but sped up after 2016 in both Core and new acquisitions

Much of the investment has focused on large-scale new care delivery sites: since 2018, UPMC has opened outpatient centers with a collective 228,000 square feet of space in rural townships in southwestern Pennsylvania.[32] In northern and central Pennsylvania, UPMC is bulking up its hospital capacity, including a $111M inpatient tower in Hamot, Pinnacle Harrisburg's $12M Children's unit, and the $105M replacement hospital for Pinnacle Memorial.[33]

At the same time, UPMC saw significant draw downs in cash flows (captured as changes in the "operating cash flow" category in the statements).

- In 2017, a $600M loss on investments and a $600M purchase of "non-alternative investments"
- In the first half of 2021, a $320 million investment loss, a $750 million loss in "non-alternative investments," and a $600 million increase in accounts receivable (mostly payment delays from the Pennsylvania state government)

UPMC filled these cash gaps with new debt in 2017, drawing down cash reserves in 2018 and 2019, and then by taking on significant new debt in 2020 and the first half of 2021, all the while supporting the large CapEx program. See Figure 13.

The new profit engines of acquisition hospitals and the insurance business not only sustained the enterprise through the economic headwinds of the Highmark decoupling, but also enabled UPMC to continue investing in new and improved facilities, tightening physician affiliations, and expanding clinic networks.

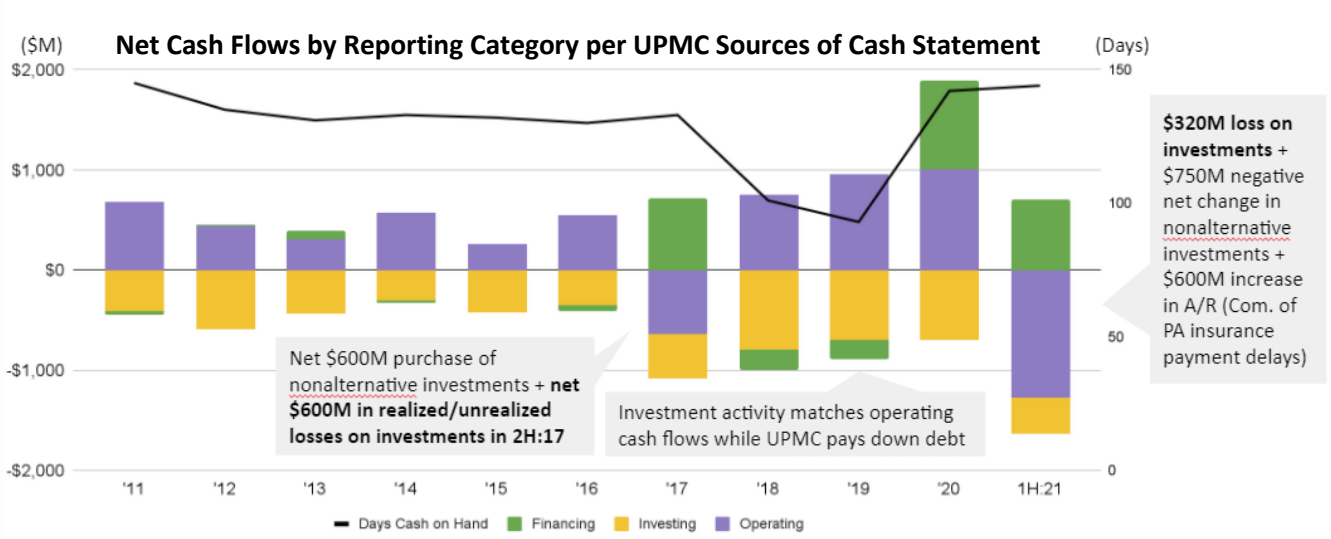


Figure 13. UPMC cash "hiccups" in 2017 and 2021 required significant financing to plug operating gaps

Bond rating agencies have taken notice, but the comments and downgrades have had more "shots across the bow" than any constraint on accessing the debt markets. While UPMC's cash to debt ratio was wobbly the last ten years, it never went below the benchmarks set back in FY12-13 when UPMC was still enjoying significant access to Highmark's commercial rates. See Figure 14.

Thus, despite the massive expansion eastward, large capital investments, and significant disruptions in cash flow due to investment losses and Covid-driven payment delays—all requiring significant incremental debt—UPMC's days cash on hand and cash to debt position remain relatively steady. Now that Highmark's share of UPMC's payer mix is growing again and significant investments in distributed care delivery networks can start pulling in volume post-Covid, it seems likely that UPMC's financial strength will only improve.

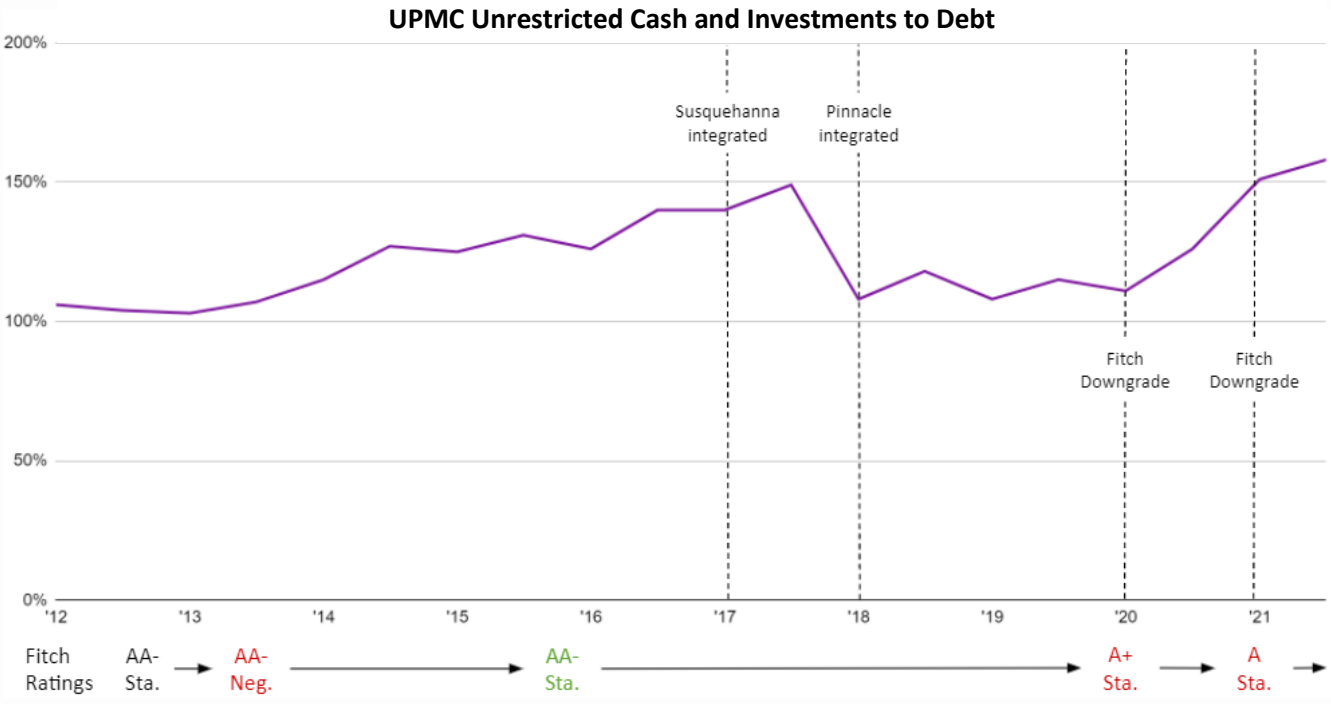


Figure 14. Rating agencies concerned by low liquidity and heightened dependence on new, competitive markets

A post-Romoff UPMC

Credit rating agencies have, in the past, grounded their financial analysis of UPMC with an emphasis on two key sources of reliability within the system—a strong, leading market share in Allegheny County and a moderate hedging advantage with its health plan.[34] The Highmark decoupling crisis threw the most important of those linchpins into jeopardy.

Romoff's response was a big eastward expansion, managed thanks to a series of handoffs in the economics (Health Services to Insurance and, within Insurance, Medicaid margin to Individual insurance margin, profits from hospitals in the West to profits from hospitals in the East, and CapEx in hospitals to CapEx in "retail" care delivery access).

As a result, UPMC's strategic dependence on care delivery on Allegheny sharply diminished (from delivering 70%+ of operating margin in FY11-12 to between 10-20% in FY18-19).[35] Now, it has a much broader geographic footprint and a more diverse set of economics, a substantial de-risking of the UPMC enterprise compared with its 2011 model.

Early data from 2021 suggest the big strategic bets are paying off: Health Services margins have returned to 2011 levels (even after adjusting for one-time Covid payouts) and Medicaid margins appear strong.[36]

Needless to say, Covid one-time impacts may also be playing an obfuscating role, so more data is needed to confirm whether UPMC's handoffs between the different economic components are permanent diversions from the historical UPMC model or just temporary measures designed to sustain the system through the reengineering.

Of course, UPMC's competitors have not been idle—forming alliances and building up capabilities in both the legacy markets in the West and new markets in the East. But UPMC also has a new ten-year deal with Highmark which will provide a strong payer mix tailwind to UPMC economics as care delivery realigns itself to patient preferences.

Jeffrey Romoff is retiring with much to be proud of.

Appendix A - Data sources and analytics methods

All fiscal years (FY) referenced in this analysis run from July 1 to June 30, such that FY21 ended on June 30, 2021.

Volume and financial data for UPMC's Pennsylvania hospitals are sourced from the Pennsylvania Healthcare Cost Containment Council (PHC4) and CMS's Medicare Cost Report (Hospital 2552-2010 form, MCR). Aggregate-level volume and financial data for the UPMC system is available through UPMC's revenue bond offering continuing disclosures on MSRB's Electronic Municipal Market Access (EMMA).

In order to split Health Services economics out into the Pennsylvania hospitals (referred to as "Hospitals" which would include both inpatient and outpatient care) and all other care delivery (referred to as "Clinics")[37], we subtract Hospital-level financials from PHC4 and MCR away from the aggregate-level Health Services financials from EMMA to derive Clinic financials.

Clinic-based revenues are estimated per hospital by quarter using two metrics. Total outpatient revenues (including both Clinic and Hospital outpatient) are reported in UPMC's bond disclosures. Hospital outpatient revenues are calculated by subtracting inpatient revenues away from total patient revenues, where both are provided by MCR, and distributing each fiscal year's revenues by quarter in respect to that quarter's outpatient visits provided by PHC4 (e.g., if each quarter represents 25% of annual outpatient visits, then annual outpatient revenues are distributed evenly among each quarter). We then subtract Hospital outpatient revenues from total outpatient revenues to arrive at an estimate for Clinic-based revenues.

Annual physician data is taken from Medicare's Physician Compare database. In our analysis we look specifically at physicians who possess an "exclusive" affiliation with a single system. We define system exclusivity in the following way.

Each physician can have between zero and five hospital affiliations listed in the data (locations where the physician provides service). If a physician lists zero affiliations, we classify them as non-exclusive. If a physician lists only one affiliated hospital, we classify them as exclusive to the system that owns that hospital. If a physician lists multiple hospital affiliations, we classify them as exclusive only if all of those affiliated hospitals belong to the same system, otherwise they are classified as non-exclusive.

Because this is a strict filter, and because Physician Compare is an imperfect data source, we capture about 4,100 physicians exclusive to UPMC hospitals in Pennsylvania whereas their bond disclosures report that they employ about 4,900. We find this number to be of satisfactory accuracy for a few reasons. First, it naturally excludes any UPMC physicians outside of Pennsylvania that are counted in the total of 4,900. Second, we believe that some UPMC physicians may have affiliations with hospitals that are collaborating with UPMC (e.g., on a cancer JV) but still independent. Third, Physician Compare is an imperfect database and some UPMC physicians may simply not be included.

Units for all tallies of physicians are in terms of full-time equivalents—acting as an estimate for the relative commitment that a physician makes to each of their different addresses, specialties, or system affiliations.

That is to say, each physician can have multiple data entries in the Physician Compare database representing different addresses at which they practice or their multiple specialties. We assign each unique physician 1 unit of full-time equivalence (e.g., their entire time spent practicing) and if they have multiple data entries, we distribute that unit in equal fractions across their multiple entries. Most physicians only have one data entry—as in they primarily practice at only one location in one specialty—which represents 1 full-time equivalent. However, in some cases, this methodology is needed in order to not over-represent the amount of commitment that physicians are making to a particular address or system.

For example, if a physician practices at two different addresses affiliated with two different systems, we assign their commitment to each address as one half of a full-time-equivalent. If at one of these addresses, the physician is exclusively affiliated with a particular system (see above) then that physician will count in that system's total count of physicians—but only as one half.

Overall economics for the Insurance business are drawn from the bond filings. Economics for each line of business (Medicaid, Medicare, Individual, Other) are taken from UPMC's NAIC insurance filings. Included are the primary providers of full medical coverage—UPMC For You, UPMC Health Options, and UPMC Health Plan subsidiaries. Other Insurance subsidiaries offering specialty lines of business are not included but represent only a small share of the overall Insurance business. Insurance metrics are aggregated by line of business, detailed in Figure 15.

Line of Business	Medicaid	Medicare	Individual	Other
Included subsidiaries	- UPMC For You Medicaid	- UPMC For You Medicare - UPMC Health Plan Medicare	- UPMC Health Plan Individual - UPMC Health Options Individual	- UPMC Health Plan Small Group - UPMC Health Plan FEHBP - UPMC Health Options Large Group - UPMC Health Options Student

Figure 15. UPMC Insurance subsidiaries aggregated by line of business

Appendix B – Core UPMC Hospitals financials FY10-20

Core UPMC Volumes, Revenues, and Costs ($ in millions)

	'10	'15	'20	CAGR '10 - '20	CAGR '15 - '20
Total Beds	3,985	4,168	4,021	0%	-1%
Discharges (Occupancy)	200,616 (71%)	193,915 (67%)	166,924 (63%)	-2%	-3%
O/P Visits	205,207*	223,367	268,984	3%	4%
Admission Equivalents*	356,321*	407,288	384,593	1%	-1%
NPSR	$4,404	$5,352	$6,162	3%	3%
Salaries	$1,394 (33%)	$1,568 (29%)	$1,748 (27%)	2%	2%
Non-Salary Overhead	$937 (22%)	$1,308 (25%)	$1,880 (29%)	7%	8%
Other Expenses	$1,895 (45%)	$2,443 (46%)	$2,870 (44%)	4%	3%
Operating Income (Margin)	$217 (5%)	$163 (3%)	$12 (0%)	-25%	-40%

*Figure 16. Core UPMC operating income dragged down by undermanaged overhead (*See Figure Notes)*

Appendix C - Geographic projections of physicians

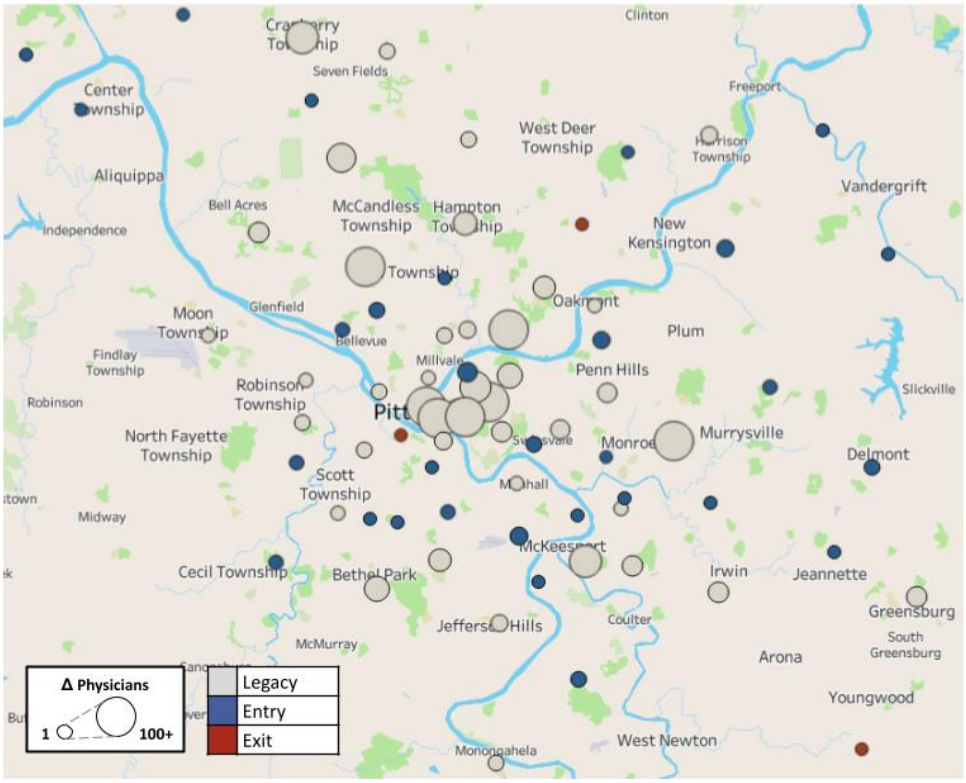


Figure 17. Change in UPMC physician presence in Allegheny County by zip code of practicing location 2015 - 2021

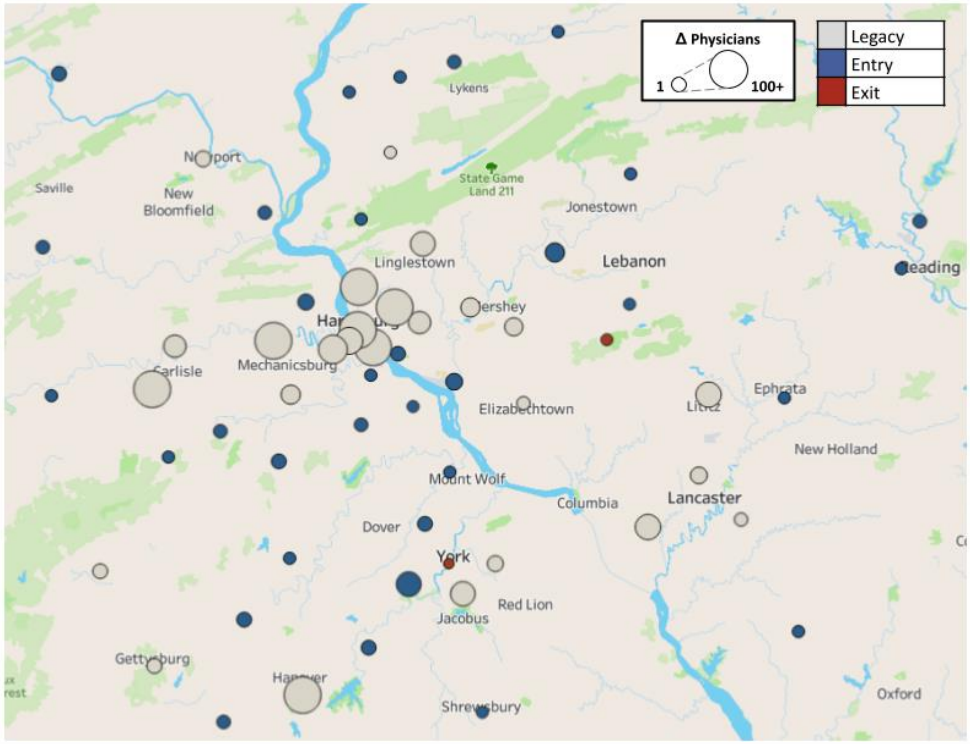


Figure 18. Change in UPMC physician presence in the Capital District by zip code of practicing location 2015 - 2021

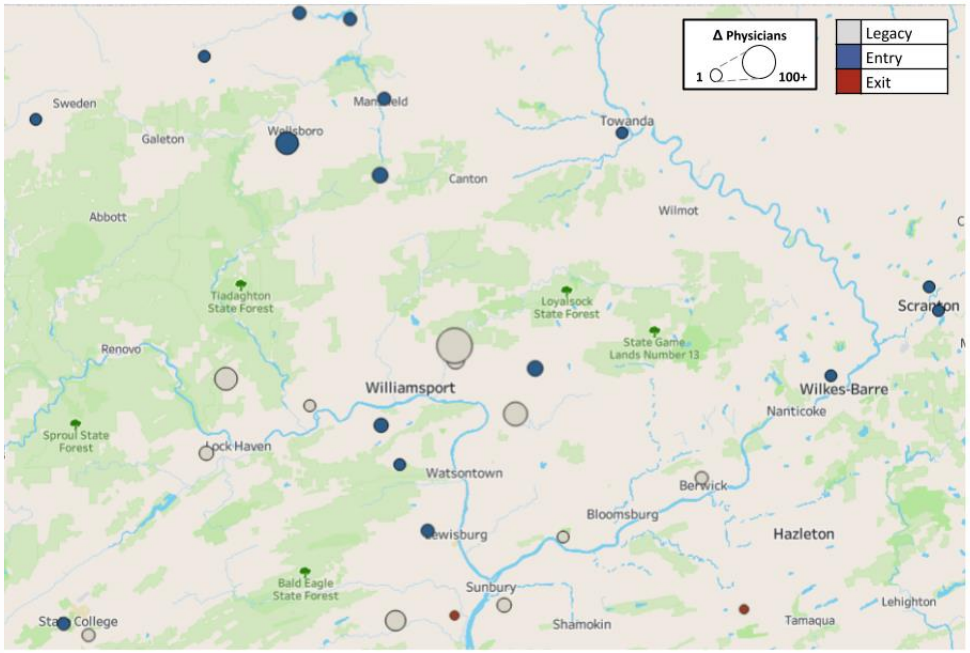


Figure 19. Change in UPMC physician presence in Susquehanna by zip code of practicing location 2015 - 2021

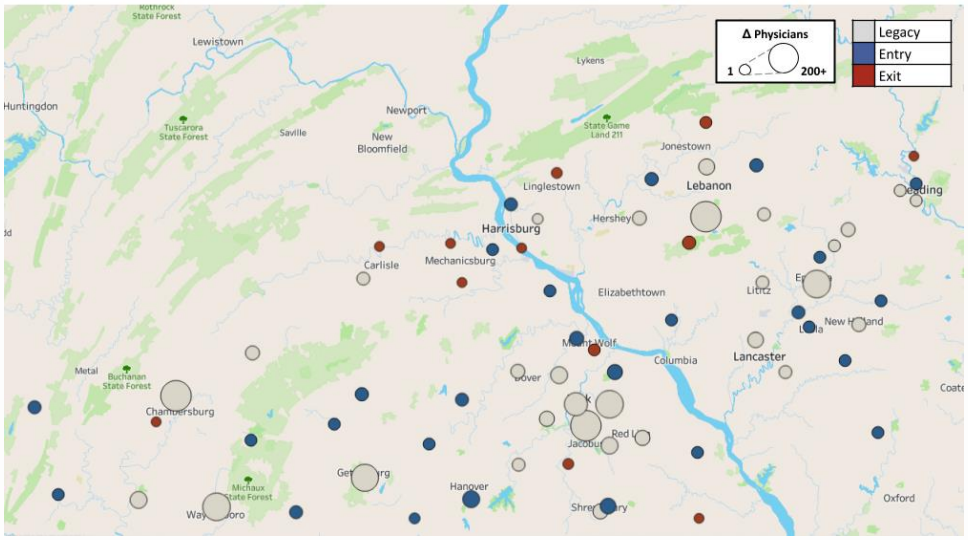


Figure 20. Change in WellSpan physician presence in the Capital District by zip code of practicing location 2015 - 2021

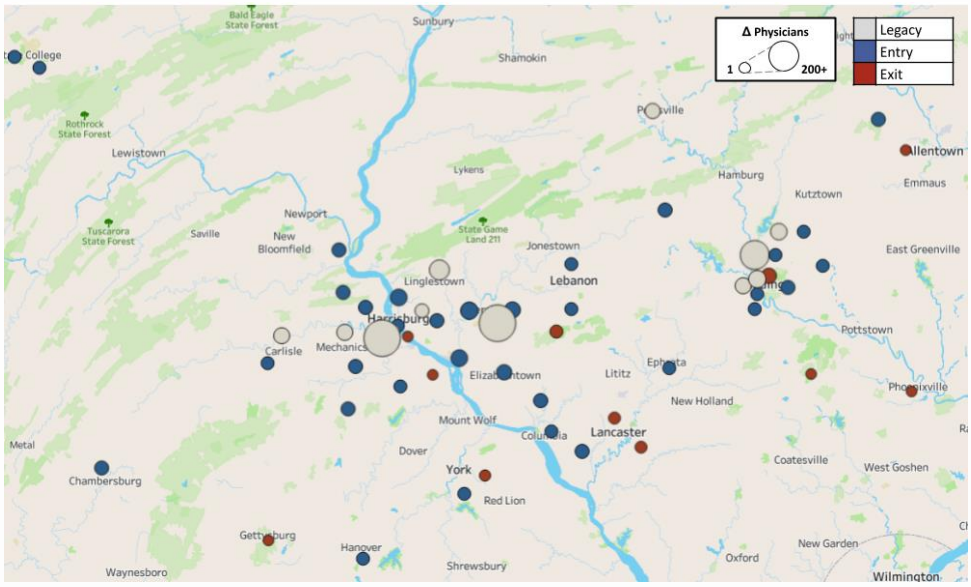


Figure 21. Change in Penn State Hershey physician presence in the Capital District by zip code of practicing location 2015 - 2021

Figure Notes

Figure 1. All counties in purple are classified as Core UPMC, and all but two had UPMC-owned hospitals prior to 2011. Those two are Erie County (UPMC Hamot acquired in FY12) and Blair County (UPMC Altoona acquired in FY14). UPMC East opened in Allegheny County in FY13. Counties in gray represent small-scale, individual hospital acquisitions that account for less than 3% of total beds.

Figure 2. FY15 excludes a one-time gain of $233 million from UPMC's Evolent IPO. FY20 excludes $257 million in CARES Funding for Covid relief. FY21 excludes a one-time gain of $201 million from UPMC's sale of Chartwell, a one-time legal settlement of $42 million, $336 million in CARES Funding for Covid relief, and $51 million in CARES Employee Retention for Covid relief.

Figure 3. FY15 excludes a one-time gain of $233 million from UPMC's Evolent IPO. FY20 excludes $257 million in CARES Funding for Covid relief.

Figure 5. The data does not allow disaggregation of Clinics economics by region once they have been integrated with UPMC.

Figure 7. All values are indexed to FY15. Data excludes physicians affiliated with Sunbury Community Hospital (Susquehanna).

Figure 8. All values are specific to physicians practicing in Capital District hospitals belonging to Pinnacle, WellSpan, or Penn State Hershey.

Figure 10. Figure displays data aggregated by calendar year rather than fiscal year, per the NAIC reporting period.

Figure 13. UPMC changes their financial statements' period of reporting in 2017, from July-June fiscal years to January-December calendar years. As a result, 2H:16 is not reported in the data for this figure and all years after FY16 are in units of calendar year rather than fiscal year. All periods shown are annual except for 1H:21, which reflects only January-June cash flows in 2021. Data is not yet publicly available for 2H:21.

Figure 14. Figure displays semi-annual data and is labeled by fiscal year.

Figure 16. O/P visits available only for FY11 rather than FY10. Admission equivalents were calculated per hospital as the product of two metrics: discharges and the ratio of total patient revenue to inpatient revenue. Admission equivalents in FY10 are unavailable for Presbyterian Shadyside—FY11 admission equivalents for Presbyterian Shadyside are used instead.

Endnotes

[1] UPMC also moved out of state with hospital acquisitions in western New York and Maryland as well as expanded its international reach with acquisitions and joint ventures in Ireland and Italy.

[2] UPMC hospitals were active in counties with 1.8 million people in 2016 and 3.8 million by 2021.

[3] In March 2020, Highmark and WellSpan announced an agreement to create joint products and collaborations for the Capital District, including care navigation, telehealth, alternative payment mechanisms, and insurance products focused on the WellSpan clinically integrated network.

[4] In May 2019, Capital Blue Cross and WellSpan formed a strategic partnership to create new products, care coordination and navigation services, and digital health services, all reinforced with new payment mechanisms focused on employers. They then followed up in September 2021 with a comparable deal on Medicare Advantage.

[5] In late 2017, Highmark and Penn State Hershey agreed to an affiliation agreement including a joint $1 billion investment in care delivery in the Capital District. See here: The UPMC/Highmark brawl spills into Philadelphia's backyard – what happens next?

[6] In May 2017, Highmark and Geisinger agreed to a clinical joint venture to expand care in four rural counties in north-central Pennsylvania. See here: UPMC's race to the sea and the tentative steps towards Highmark-Geisinger alliance

[7] Gateway Health is a Medicaid-focused health plan set up as a joint venture between Highmark and Mercy Health in 1992. Early in September 2021, Highmark announced an agreement to acquire Mercy's 50% share to become a full owner of the plan.

[8] In 2011, Highmark began the process of acquiring then-bankrupt West Penn Allegheny Health System, UPMC's largest care delivery competitor in the Allegheny market. See here: Getting the troubled Highmark-West Penn relationship back on track: an outside-in speculation. Thereafter, UPMC did not renew its network participation agreement with Highmark.

[9] A record year even excluding one-time effects of government Covid financial support. See Figure 2.

[10] Given the importance of geography, we look at UPMC in terms of its legacy market in the western part of the state ("Core UPMC" as shown in Figure 1), the north central part of the state ("Susquehanna"), and the Capital District in the south-central part of the state ("Pinnacle").

[11] See Appendix A for a brief description of sources and methods.

[12] This is particularly true in 2021, where the financial reporting is not yet complete and Covid makes extrapolations from past years inappropriate.

[13] We define UPMC's "Core" hospitals as all western Pennsylvania hospitals they owned before FY16—primarily consisting of its flagships in Allegheny County, but also its smaller hospitals in neighboring Bedford, Mercer, and Venango Counties, as well as its nearby acquisition hospitals in Blair and Erie Counties.

[14] This figure excludes key one-time cash flows from both the Health Services and Insurance divisions in FY15 (Evolent IPO), FY20 (CARES relief), and FY21 (Chartwell sale, legal settlement, and CARES relief).

[15] UPMC received $257 million in one-time Covid relief funding in FY20, which masked to a large degree a true operating loss of $358 million from the precedent Health Services operations. Conversely, despite receiving $630 million in one-time funding in FY21, precedent Health Services income net of any one-time cash flows soared to $367 million.

[16] Pennsylvania hospital inpatient bed days in Q2:21 (329,897) exceed those of Q4:19 (315,568). Pennsylvania hospital outpatient visits in Q2:21 (105,285) also exceed those of Q4:19 (100,289).

[17] Note that this will include both inpatient and outpatient care.

[18] Mostly physician groups and clinics but also the small number of hospitals outside of Pennsylvania. UPMC's hospitals outside of Pennsylvania accounted for 5% of total NPSR in 2020, or about $558 million of the system-wide $10.7 billion hospital NPSR. At a hypothetical -2.8% operating margin (that of UPMC Health Services in FY20 net any one-time funding), non-Pennsylvania hospitals would have only contributed $15.6 million or 3% of UPMC's total non-hospital income loss of $533 million.

[19] Hospital-level financial data is not yet publicly available for FY21. As such, we are unable to disaggregate income between Hospitals and Clinics for this year. Figures which include Hospitals or Clinics financials can only provide information through FY20 because of this constraint. See Appendix A.

[20] We can split Health Services economics out into the Pennsylvania hospitals (referred to as "Hospitals") and all other care delivery (referred to as "Clinics").

[21] The margin performance of Susquehanna and Pinnacle Clinics relative to legacy UPMC appears to be the inverse of the hospital performance: both Susquehanna and Pinnacle reported significantly higher margins than UPMC hospitals even back as far in 2011 before the Highmark breakup could have serious effects. This may reflect some fundamental differences in legacy pricing strategy across the three systems (e.g., Susquehanna and Pinnacle loaded their hospital pricing with more margin than their Clinics while UPMC took a more balanced approach) versus any real difference in operations. Notably, though, Pinnacle's Clinic operations were, relative to system size, a lot smaller than those of legacy UPMC before the takeover: Pinnacle Clinic revenues are around 16% the size of Pinnacle Hospital revenues before the UPMC takeover, while legacy UPMC Clinics averaged around 33% of the size of the UPMC Hospital business between FY11-16).

[22] The data does not allow disaggregation of Clinics economics by region once integrated with UPMC.

[23] Clinic-based revenues are estimated as the residual between two statistics: total outpatient revenues and hospital outpatient revenues. See Appendix A.

[24] The only case in which hospital outpatient revenues do not rise at the expense of Clinic revenues occurs during UPMC's acquisition of Chautauqua Hospital (WCA) in New York, which is also the only instance in which there was no nearby Pennsylvania hospital to which the Clinics could transition volumes into.

[25] Disputes about site of service charges was one of the proximate causes of the Highmark-UPMC clash.

[26] For example, UPMC committed to invest $500 million over 7 years in the Susquehanna operation and "up to" $145 million per year over 7 years in the Pinnacle operation.

[27] We define a physician as "exclusive" to a system based on their hospital affiliations as reported in Medicare's Physician Compare database. If a physician is affiliated with at least one of UPMC's hospitals and is not affiliated with any other system's hospitals, then we classify that physician as exclusively affiliated with UPMC. This filter yields about 4,100 exclusive UPMC physicians in Pennsylvania, where UPMC's bond disclosures report 4,900 employed physicians total. See Appendix A for a more detailed walkthrough of the Physician Compare methodology.

[28] Population in these towns is derived from the US Census Bureau's 2019 population data by city and town. Towns in which UPMC-exclusive physicians practiced in 2021 had a total population of 3,325,490 in 2019 and towns in which UPMC-exclusive physicians practiced in 2015 had a total population of 1,258,688 in 2019. Pennsylvania's state population was 12.8 million in 2019. This statistic controls for the fact that overall population increased between 2015 and 2021.

[29] This calculation is based on the accounting eliminations in the UPMC financials. It is not possible based on publicly available data to identify the share of UPMC in the Medicare and Medicaid gross charges.

[30] S&P's May 2019 rating of UPMC estimates that "approximately 40% of the clinical services are provided to health plan membership by UPMC hospitals and physicians." That said, the overall financial reporting for UPMC suggests Health Services delivers about 25% of the care required by Insurance division members (measured on a revenue basis using the reported eliminations).

[31] Since 2013, UPMC has publicly committed $1.9 billion in CapEx to its various acquisition hospitals. $862 million has been spent as of December 31, 2020, implying the following remaining commitments that total just over $1 billion: $84 million in Altoona, $309 million in Susquehanna, $544 million in Pinnacle, $12 million in Cole, $38 million in Somerset, and $79 million in Western MD. $937 million in CapEx commitments are scheduled to be spent between 2021 and 2023, over half of which in Pinnacle.

[32] UPMC reports business highlights in their bond disclosures that account for 228,000 square feet and $80 million in costs dedicated to multi-specialty outpatient facilities constructed in small townships like Ebensburg and Hampton between 2018 and 2021.

[33] All that said, two of the three new specialty hospitals planned for Pittsburgh which UPMC announced as part of a $2 billion commitment in 2017 are currently on hold. See here: What precisely lies behind UPMC's $2B investment in three new specialty hospitals?

[34] Fitch's May 2019 rating downgrade of UPMC lists the system's "strong and leading market share of the western Pennsylvania market" as its main credit strength. Fitch's subsequent April 2020 rating downgrade of UPMC refers to the hedging advantage of an "integrated delivery model with its aligned physician base, extensive health plan, and sizable delivery network" as being of key strategic importance despite the system's financial profile warranting a lower rating.

[35] Allegheny hospitals delivered 31% of the aggregate operating margin in FY20, still substantially less than the highs in FY11-12. It is not possible to sort out the impact of Covid disruptions and financial support on the FY20 figure.

[36] While the Exchange book of business was cleaned of bad risk prior to the pandemic, it appears that so far in 2021, it is struggling with medical cost surge and selection issues that other plans are seeing: the UPMC Health Options subsidiary (mostly Exchange business) lost $40 million in 1H:21. Overall, however, UPMC Insurance is weathering 1H:21 medical cost surge relatively well with the UPMC For You subsidiary (mostly Medicaid) seeing total underwriting margins almost double what they were a year ago ($241 million in 1H:21 versus $124 million in 1H:20).

[37] Mostly physician groups and clinics but also the small number of hospitals outside of Pennsylvania. UPMC's hospitals outside of Pennsylvania accounted for 5% of total NPSR in 2020, or about $558 million of the system-wide $10.7 billion hospital NPSR. At a hypothetical -2.8% operating margin (that of UPMC Health Services in FY20 net any one-time funding), non-Pennsylvania hospitals would have only contributed $15.6 million or 3% of UPMC's total non-hospital income loss of $533 million.

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