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Not-for-profit hospitals and health systems could experience a drop in their liquidity of 40-to-60 days cash on hand due to COVID-19's two-front war of significant declines in volume, combined with the steep equity market decline, including the Dow's worst first-quarter performance ever.

On January 20, 2020, the first positive case of coronavirus was confirmed by the CDC in Washington state. Now, over two months later, there have been over 450,000 cases confirmed in the US, with New York being the new epicenter of the pandemic. New York City hospitals have experienced an unprecedented strain on their operations. The disruptions started with the cancelation of all elective surgeries and progressed to the cancelation of all non-critical patient visits. New York hospitals are now witnessing their emergency rooms inundated with COVID-19 patients; shortages of personal protective equipment, staff shortages, and shortages of ICU equipment are all meaningfully pressuring operations. At the same time, many hospitals across the country have made these same preparations, canceling elective surgeries and non-critical patient visits, but are still awaiting the surge in COVID-19 volume and are experiencing very low census levels. The anticipation is that these challenges faced by the New York health system will soon extend across our nation. But regardless of which end of the spectrum in terms of COVID-19 activity health systems and hospitals are experiencing, the negative impact to operating results will be very significant.

In addition to the operational strain, the turmoil in the equity markets has already left a mark on balance sheets—the S&P 500 and DJIA are down 20.0% and 23.1%, respectively, through the first quarter of 2020. With uncertainty as to the pace of recovery, a V-shaped recovery being quicker than a U-shaped recovery that will be longer in duration, Balance Sheets may take some time to recover.

Given the rapid evolution and magnitude of these challenges, there was little hospitals and health systems could have done to prepare their organizations for this unforeseen pandemic, yet now they are the focal point and leaders in combating COVID-19.

How could COVID-19 impact hospitals and health systems?

Predicting precisely how the coronavirus will impact each of our communities is very challenging given the lack of data, differences in demographics and other social factors. However, we can look at past events and data to help predict how organizations may be impacted. These challenges will be a combination of operational and balance sheet related difficulties.

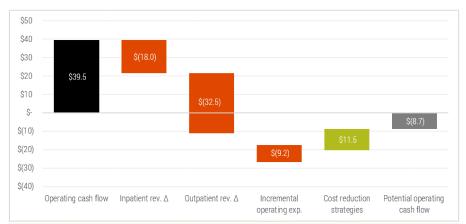
First, from an operational standpoint, organizations are being pulled away from normal course of business to focus on how to prepare and deliver healthcare in the midst of the COVID-19 pandemic. Not only does this interrupt normal revenue streams, but it also brings a new set of challenges needed to be addressed by organizations. These challenges include, but are not limited to, the following:

- Loss in elective procedure volumes
- · Reduced reimbursement is driven by case shift from surgical to medical cases
- Increased length of stay
- Cancelation of non-critical outpatient visits
- A shift in payor mix towards Medicare
- Incremental costs associated with configuring organization to address evolving needs
- Shortages in medical and support staff
- Loss of commercial insurance reimbursement for the newly unemployed



Let's further examine these challenges more tangibly by measuring the impact on a typical mid-sized regional health system with annual revenues of \$500 million. In the analysis below, we have assumed this system is currently operating at the Moody's¹ operating cash flow margin median of 7.9% producing \$39.5 million of operating cash flow. We have also assumed their inpatient to outpatient revenue ratio is at the Moody's NFP Healthcare median level of 52% outpatient. If health systems realize a 40% to 50% decrease in revenue for three months, consistent with early reports, along with an increase in expenses, their ability to counter through cost reduction strategies

Table 1: Potential Operational Impact



- Revenue assumptions: Decrease in inpatient revenue of 30%, decrease in outpatient revenue of 50%
- Expense assumptions: Additional costs associated with the delivery of care, 8% of base expenses
- Cost cutting measures: 10% of base expenses

will do little to address the gap. In the scenario below, the example health system would have negative cash flow margin of 1.9% or (\$8.7) million, down from the positive 7.9% median level. This would be a change in expected cash flow of approximately \$50 million, and, all other things constant, would reduce days cash by approximately 38 days.

Shifting from operations to investment portfolios, to understand the potential impact of the recent market declines to not-for-profit hospital balance sheets, we look back at the financial crisis of 2008 for insight. In Q4 of 2008, the S&P 500 Index dropped more than 39% from the previous year. At the same time, the median days cash for all not-for-profit health systems dropped approximately 23 days or 14%. Applying this ratio to the current market dynamics, we would expect the median days cash to be reduced by approximately 7%, or 14 days for the median.

Table 2: S&P 500 (2007 - 2010)



Table 3: Median Days Cash by Rating Category Freestanding & Single-state Systems (N=401)



¹ Moody's Investor Service report dated September 3, 2019,- Medians - Revenue growth rate inches ahead of expenses as margins hold steady



When pairing the operational and balance sheet pressures, this pandemic could have a considerable impact to hospital balance sheets. Unlike the 2008 financial crisis, this pandemic will put strain on both operational performance and investment portfolios. It will most likely reset median ratios as this impact is industry-wide. For the hardest-hit organizations and those that already have challenged balance sheets, there is a potential for an increase in public

Table 4: Impact on Days Cash

Days cash (Moody's median)	Median 200.9	AA 257.6	A 215.1	Baa 158.0
Impact to operations Impact on investments	-38.4 -14.1	-38.4 -20.8	-38.4 -13.6	-38.4 -8.7
Days cash post COVID-19	148.4	198.4	163.1	110.9

bonds and private bank loans financial covenant breaches. Debt service coverage is the most immediate concern for widespread covenant breaches. Liquidity support through lines of credit or the government accelerated payment program and other such government initiatives may help alleviate days cash on hand pressure, but for many credits, these sources may not be enough to avoid covenant breaches.

What next?

Even after the pandemic passes, organizations will have many challenges ahead in their recovery. Unemployment continues to rise at an unprecedented rate; in the past three weeks, over 17 million new unemployment claims have been filed. How will this reshape the payor mix across the country? There continues to be uncertainty around what this pandemic will look like in the next three to 12 months. The expectation is that the efficiency of health systems will continue to be suppressed by the need for social distancing and other measures put in place to protect society. The question of when health systems will return to prepandemic levels of productivity remains unknown. Once health systems return to full capacity, how and when will they be able to fulfill the pent-up demand for elective procedures? How will private physician practices fare through this disruption? Will the organization be in a position to assist or subsidize practices to ensure their communities maintain coverage? What effect will the furloughing of health systems employees have on their recovery? How and when will federal funding begin to flow to health systems to help bridge the path to recovery? CMS announced its accelerated payment program for Medicare payments; this will help organizations with immediate cash flow but will do little to address the funding gap driven by the loss of revenue.

It is still unclear as to when health systems will be able to return to a more normal state, but it is imperative for all organizations to be assessing their current financial position and short-term preparedness, as well as early development of strategies to begin the recovery over the next couple of years. This assessment would include financial modeling and contingency planning in the event health systems are unable to recover quickly enough to cover financial obligations. At the same time, healthcare systems should prudently and proactively understand their strategic alignment options with other like-minded organizations as an alternative pathway to ensuring the communities' needs are met or as a means of fueling additional growth post pandemic.



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