

# Hospital Liquidity in the COVID-19 Pandemic: Impact and Mitigation Strategies

Richard Becker, M.D.  
Jim Porter  
Peter Yeh

April 29, 2020

# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## EXECUTIVE SUMMARY

1. The cost of business disruption combined with lingering COVID-19 costs will place many independent healthcare organizations on a course to insolvency as shown in Diagram 1 unless revitalization and restructuring actions begin immediately as COVID-19 hospitalizations subside. Our model in Diagram 2 demonstrates that specific, early actions (Scenario 1) can mitigate financial deterioration whereas delayed action, insufficient supplemental funding or a COVID-19 resurgence (Scenario 2) will gravely threaten the financial stability of many hospitals.

Diagram 1

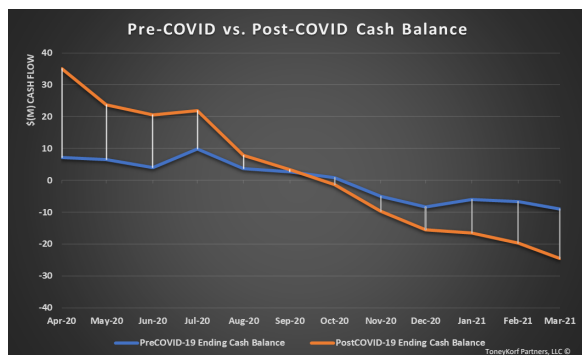
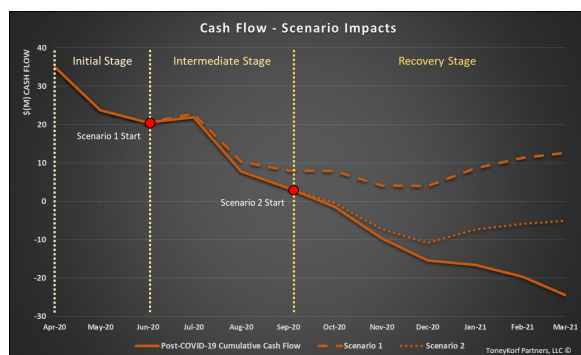


Diagram 2



2. Utilizing predictive epidemiology to quantify the number of COVID-19 patients who will require hospital admission, our Pandemic Impact Mitigation Strategy ("PIMS") model tracks and predicts the impact to short-term and long-term hospital financial stability of surge capacity 'ramp up' expense, direct costs from COVID-19 patient care, and lost revenue from the disruption of elective healthcare services. The model identifies three distinct stages of financial impact:
  - a. Initial Stage (Months 1 – 3) beginning with the first COVID-19 infected patient in a community;
  - b. Intermediate Stage (Months 3 – 5) beginning when COVID-19 hospitalizations decline; and
  - c. Recovery Stage (Month 6 and beyond) beginning when COVID-19 hospitalizations are less than 10% of the average daily census ("ADC").
3. Regardless of the pre-COVID financial position of hospitals or health systems, the compounded losses from the extended course and net impact of this illness, including a potential COVID-19 resurgence later in 2020, will affect the financial stability of most providers. Stimulus funding to date, including Medicare advances that require repayment, are insufficient to make up for the likely post-COVID-19 inpatient and outpatient case volume lag and related revenue shortfalls as our model predicts in the Intermediate Stage.
4. Post-COVID-19, healthcare systems will need to pivot quickly towards meeting variable patient demand for clinical services through a combination of alternative delivery, partnerships, and capital structures better suited to a dramatically different healthcare ecosystem. Irrespective of payer mix but more imminent for the Safety Net, every healthcare system will need to take dramatic and aggressive action to ensure ongoing viability.

# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## INTRODUCTION

*"We sat together in a virtual meeting, looking at each other on the screen and said 'Why weren't we thinking about this in January?'"*

- All of the USA, March 2020

Hospitals are not clinically, operationally, or financially prepared to manage a dramatic surge of acute and critically ill patients. Barring significant operational and financial intervention or transformation, including additional supplemental funding, many hospitals will face potential insolvency as a result of the direct and indirect COVID-19 related business disruption.

In order to provide a more specific forward view of the COVID-19 surge effect on hospital financial viability, we developed a predictive model for the short-term and long-term financial impact based upon hospital case volume presentation and inpatient acuity for the projected period of this illness. We divide the surge into three primary stages of financial impact:

1. Initial Stage (Months 1 – 3) beginning with the first COVID-19 infected patient in the community;
2. Intermediate Stage (Months 3 – 5) beginning when COVID-19 hospitalizations begin to decline; and
3. Recovery Stage (Month 6 and beyond) beginning when COVID-19 hospitalizations are less than 10% of the average daily census ("ADC").

In order to navigate their organizations through the COVID-19 crisis to a sustainable future, hospital administrators need to act quickly to implement specific short-term and long-term changes so that the financial impact of the pandemic that threatens insolvency is arrested.

## COVID-19 CASH FLOW IMPACT

The PIMS model utilizes the COVID-19 Susceptible/Infected/Recovered Curve (SIR-COV), an accepted metric of COVID-19 population impact, and other epidemiologic data, to project hospital resource demand for cash flow requirements through each of these stages.

**Chart 1: SIR Model Output Examples**



# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## COVID-19 CASH FLOW IMPACT (continued)

---

To accurately capture surge-related cash flow volatility, we utilized SIR-COV curve projections of the local and regional rate of spread and the severity of infections to quantify the number of patients presenting to a hospital over time. For illustrative purposes, we identified the susceptible population in PIMS as the 130,000 residents of the primary service area of an independent urban hospital. We also limited the maximum number of infected patients based on adherence to social distancing. This lever assumes that social distancing directly correlates to a percentage of people who will remain uninfected during the initial pandemic. Case volume projections over time are used to consider the following five factors that have a significant financial impact:

### 1. Surge capacity ramp-up and maintenance (Initial & Intermediate Stages)

- The mandated 50% - 100% increase in Med/Surg and ICU capacity requires competition for scarce resources with careful expense tracking necessary to secure reimbursement and, perhaps, mitigate payback requirements.

### 2. Inpatient acuity and COVID-19 surge duration (Initial & Intermediate Stages)

- High resource utilization and expense until after ICU admissions peak and plateau, dramatic patient flow increase impact on care delivery processes, LOS and discharge disposition, and potential new documentation challenges may all impact financial outcomes.

### 3. Post surge operations (Recovery Stage)

- A decline in COVID-19 hospitalizations prior to return to full hospital operations combined with the gradual recovery of elective surgery, outpatient visits, and non-COVID-19 walk-in Emergency Department visits, as well as continued overtime and temporary staffing expenses, will have a defining financial impact as the surge subsides.

These changes are expected to have a negative impact on revenue cycle and cash flow in a manner outlined below that has a delayed effect relative to the peak and plateau of hospitalized COVID-19 patients:

### 4. Revenue Cycle Considerations

- Introduction of new charge codes, system changes to accommodate documentation, authorization, and rate changes, together with the additional pressure of volume increases, are likely to result in leakage and loss.
- Despite COVID-19 related temporary increased volumes, expect ongoing revenue losses from reduced general medical and surgical volumes compared to pre-COVID-19 levels after the surge has subsided.
- Significant risk to revenue still exists, despite temporarily relaxed COVID-19 documentation requirements, due to claim processing backlogs as well as billing system checks and holds that will require specific attention.
- Revenue recovery related to lost services and procedures is unlikely to be timely or proportional.

# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## COVID-19 CASH FLOW IMPACT (continued)

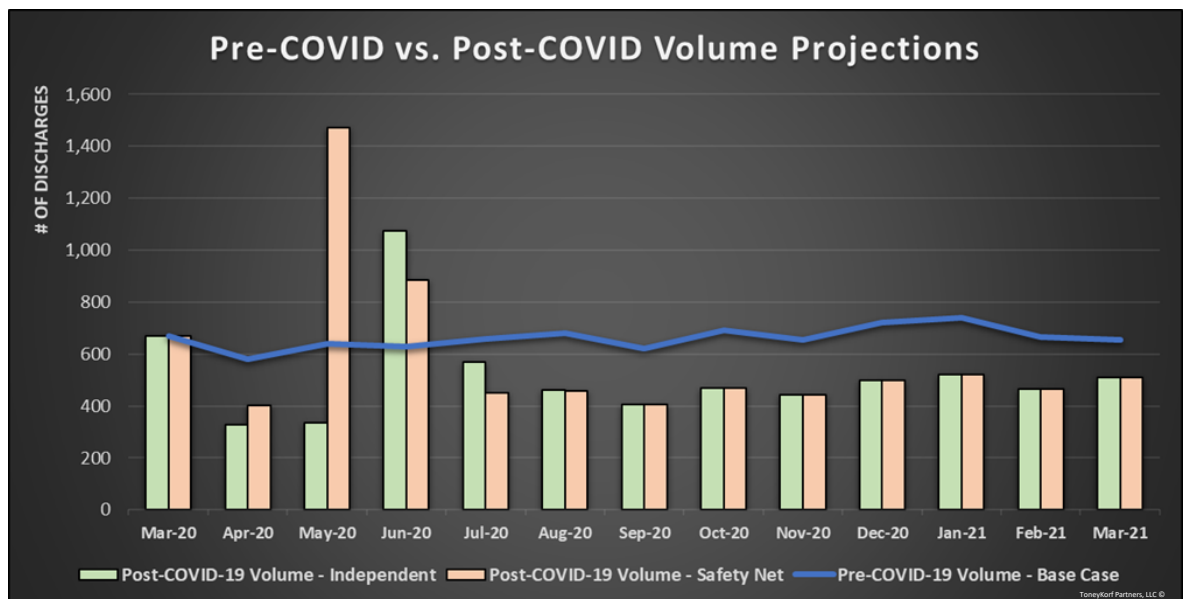
### 5. Supplemental Funding and Financial Assistance

- The Medicare advance is an outstanding short-term support that we consider part of cash reserves. Additional stimulus measures may be layered into cash flow expectations with consideration for repayment of items such as payroll tax deferral.
- Stimulus measures have unique structures and may not cover certain expenses incurred as part of the surge, such as regular payroll.
- Two liquidity risks from stimulus measures: 1) the time gap between payment of expenses and receipt of funds; and 2) total level of stimulus funding vs. total incurred costs.
- Accounting for total direct and indirect COVID-19 costs is untested and may not result in adequate recoupment under recovery grants.

### Projected Cash Flow Impact

Consideration of the outlined factors predict a high likelihood of independent hospital illiquidity and insolvency at some point in the Recovery Stage six months or later from the hospital's first COVID-19 inpatient admission. Stimulus funding, while vital to addressing the pandemic's negative impact on financial condition, will not prevent the liquidity challenges likely to arise in the later stages of the surge as well as in the recovery period. Chart 2 -shows different case volume projections to demonstrate that duration of the COVID-19 surge and subsequent loss of case volume changes only the timing of insolvency and not the outcome.

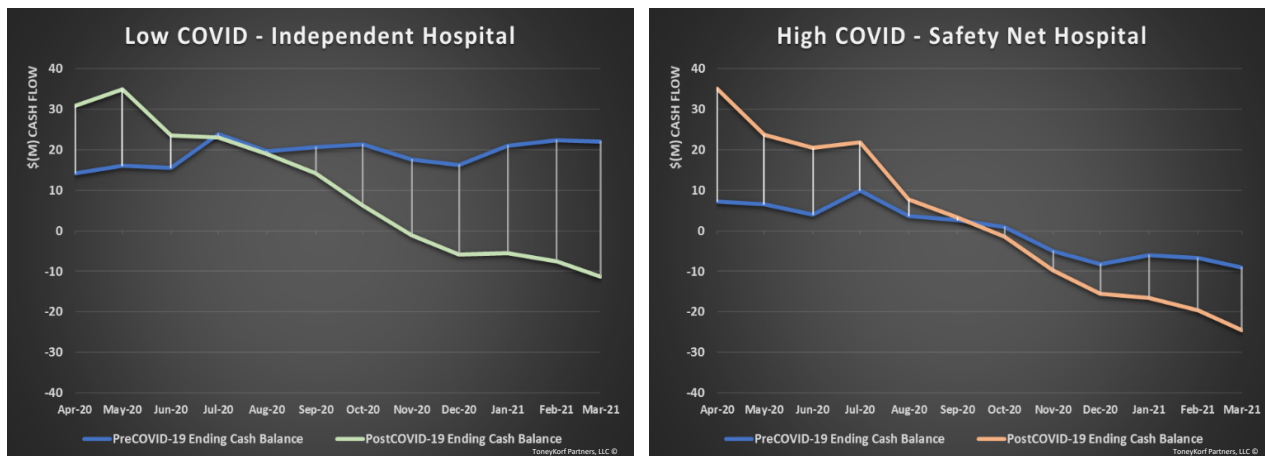
Chart 2: Safety Net and Independent Hospital Volume Projections



# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## COVID-19 CASH FLOW IMPACT (continued)

Chart 3: CARES Act Assistance and Ongoing Losses



While stimulus funds create immediate short-term stability, the compounded losses from the extended course of this illness and its surge requirements will exceed stimulus funding in Q4 of 2020. In the illustrated case above, the combined Medicare and HHS payments received provides short-term cash on hand that proves inadequate to cover the revenue disruption that is predicted to occur in the Recovery Stage. Notable, too, is the current schedule for repayment of the Medicare supplement. This requirement will be difficult to manage even at full recovery to pre-COVID levels of clinical activity.

Given a general understanding of the financial challenges that lay ahead, outlined below are some observations and recommended actions that independent hospital administrators may utilize to help preserve cash and maintain liquidity. Much information exists on managing the Initial Stage of the COVID-19 surge, including ToneyKorf Partners' recently published [guide](#). We, therefore, focus our recommendations beyond the Initial Stage when COVID-19 inpatient admissions are expected to decline, and independent hospitals attempt to recover their pre-pandemic case volumes and revenues:

### Initial Stage (Months 1 – 3):

#### General Observation Summary

- The organization experiences minimal financial disruption during the early presentation of patients, mostly due to receipt of stimulus funding and accrual of costs vs. timing of payment. However, severe burden is placed on administrative areas dealing with surge issues (supply chain, facilities and capital, HR for new staff, and managing sick calls). Later in this stage, costs are paid before revenue is received, eroding cash reserves, including stimulus funds. This may accelerate with delays in billing and reimbursement.

# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## COVID-19 CASH FLOW IMPACT (continued)

### Expected Actions Summary

<b>Day-to-Day Operations</b>  With shutdown of elective case volume, virtually 100% of hospital management efforts are committed to the day-to-day COVID-19 issues that arise related to cash flow, supply chain, staffing, and capital deployment for care delivery	<b>Funding Sources</b>  Resources are allocated to obtain, manage, and react to the constant requirements of Federal, State, and other regulatory bodies. These come rapidly in the form of Executive Orders, new legislation, program needs, industry briefings, grant applications, and survey responses
<b>COVID-19 Surge Related</b>  Insurance carriers (including Workers' Compensation) are put on notice for an expected surge in claims	<b>Future Outlook</b>  Without a known endpoint to the peak in COVID-19 hospital admissions, resources shift to 'hotspots' while individual hospitals maintain readiness to manage in-patient cases as they present. These uncertainties come at significant ongoing cost, not including the lost efficiencies of regular hospital operations  Develop and implement testing protocols for COVID-19 in ongoing patient care operations as well as for employee welfare

### **Intermediate Stage (Months 3 - 5):**

**This stage requires a determined focus on resolving COVID-19 related issues while also mitigating the new post-COVID-19 healthcare service delivery challenges that may create additional financial uncertainty.**

#### Observations

- COVID-19 hospital case volume plateaus and declines at the beginning of the Intermediate Stage, reducing inpatient bed demand
- Substantially all cash receipts related to COVID-19 discharges and visits are received in this period. Cash flow, however, remains highly volatile and dependent successful billing and collection efforts, including the impact of reduced administrative and authorization requirements
- Majority of COVID-19 surge payroll expense and ancillary costs incurred are also paid by the end of this period, potentially stressing liquidity

# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## COVID-19 CASH FLOW IMPACT (continued)

### Suggested Actions

<p><b>Day-to-Day Operations</b></p> <p>Active review of ongoing cash flow performance, including status verification of receivables and accrued costs to determine ongoing cash flow impact</p> <p>Resume pre-crisis activities to limit expense and enhance revenue</p> <p>Analyze revenue streams that are contingent on reporting of and meeting metrics on quality, volume or related information</p> <ul style="list-style-type: none"> <li>• Considerable potential impact on run-rate metrics as a result of volume changes or other reporting disruptions. Examples include:             <ul style="list-style-type: none"> <li>○ Value-based payments;</li> <li>○ Quality incentive reporting;</li> <li>○ Shared savings programs; and</li> <li>○ Core Quality Measures</li> </ul> </li> <li>• Negotiation may be needed to accommodate a waiver or otherwise adjusting baseline data</li> </ul>	<p><b>Funding Sources</b></p> <p>Identify missed financial opportunities and eliminate any previously unchecked costs related to emergency measures such as:</p> <ul style="list-style-type: none"> <li>• Negotiations to recover revenue leakage in prior months;</li> <li>• Negotiations to eliminate payback, offset or other potential losses;</li> <li>• Consider disposal or redeployment of surge supplies to areas of need; and</li> <li>• Cancel emergency rentals and other premium-rate contracts required to meet the anticipated surge needs</li> </ul> <p>Audit progress related to grant programs and other funding sources—FEMA grants, CARES Act items, including tax deferrals—in which you enrolled for disaster recovery:</p> <ul style="list-style-type: none"> <li>• Assess ongoing need, repayment requirements and further deferral or forgiveness;</li> <li>• Implement corrective actions on identified shortfalls, such as with registration, information gathering and reporting and other necessary requirements; and</li> <li>• Continue to monitor and utilize professional organization guidance and opportunities</li> </ul> <p>Remain vigilant in identifying and accessing additional eligible sources of cash available toward the post-pandemic recovery as well as for maintenance of future surge capacity</p>
<p><b>COVID-19 Surge Related</b></p> <p>Begin ramp down of COVID-19 services and capacity as appropriate while also pursuing funding sources available for incurred and ongoing COVID-19 expense</p>	<p><b>Future Outlook</b></p> <p>Evaluate the level and budgetary impact of short-term and long-term decline in performance from an unknown reduction in “routine” case volumes, creating a “worst case” and developing solutions</p> <p>Extend budget outlook to cover funding recoupment period to identify and assess key areas of shortfall</p> <p>Identify resource(s) and define processes to manage new, post-crisis preparedness requirements that most likely will be mandated within the coming months</p>

# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## COVID-19 CASH FLOW IMPACT (continued)

### Recovery Stage (Months 6 and beyond):

Refocus on pre-COVID-19 actions – timely implementation of previously identified revitalization measures is critical for financial recovery from COVID-19 impact. Suggested Actions in this Stage should be initiated in the Intermediate Stage where possible for greater likelihood of recovery.

#### Observations

- Steady-state case volume falls below pre-COVID-19 levels, creating additional cash losses that accelerate burn rate and erode liquidity
  - Reluctance to utilize hospital emergency rooms and inpatient services except for urgent needs may raise individual thresholds to visit independent facilities because of the real or perceived incidence of COVID-19 at these hospitals
  - Rate of economic recovery, if slow, may contribute to patients' ability and willingness to utilize healthcare services, contributing to a sluggish return to pre-COVID-19 levels of healthcare visits
- Hospital services with tenuous or negative financial contribution margin may operate at greater losses due to lower case volume and higher staffing costs
- Independent institutional access to private financing vehicles, such as revolving, maybe even more limited or significantly constrained
- State budget cuts, especially to Medicaid, will have a significant impact on independent reimbursement and will likely have a net negative impact on cash flow and income from operations despite direct COVID-19 case reimbursement
- Supplemental government funding, either grants or loans, may be limited or available only to those organizations willing to significantly restructure their operating platforms for long term sustainability

#### Suggested Actions

##### **Future Outlook**

Clinical services with low to moderate case volume that were operating with financial losses should be restructured, partnered or eliminated

Align professional fees with clinical demand, modifying or eliminating support for services without a financially positive growth trajectory

Eliminate capital projects that are no longer relevant, feasible, or lack full funding, including working capital requirements

Consider the growth of expected high-demand clinical services and explore partnerships to create regional solutions that share cost and risk

Integrate telehealth services as a more efficient and lower-cost mechanism to expand access to and delivery of primary care and specialty outpatient services that are often inefficient or inconvenient in regions with highly vulnerable patient populations

Aggressively develop new partnerships that allow for continued services with shared or reduced costs within structures aligned with clinical integration models

Perform rolling budget updates to consider ongoing economic impact on payor mix and volume

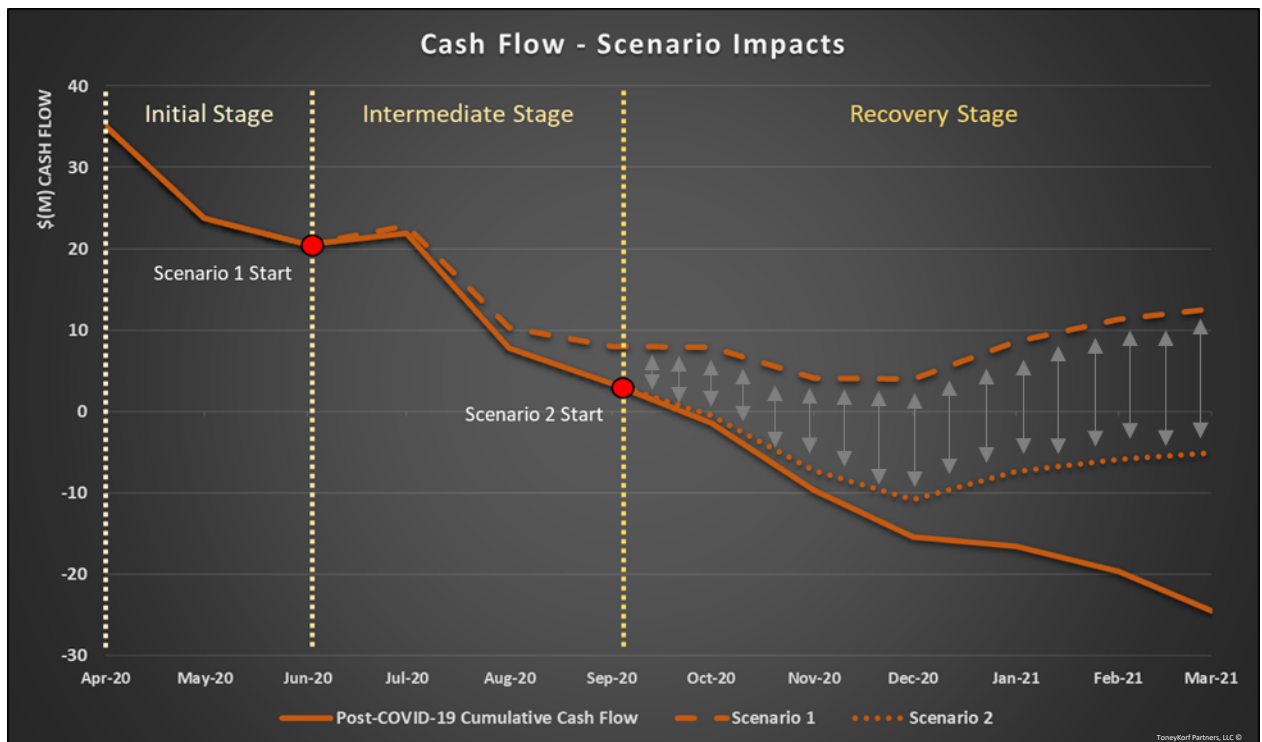
# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## SUMMARY IMPACT OF RECOMMENDED ACTIONS ON CASH FLOW

The observations identified in the PIMS model highlight unprecedented challenges ahead for these organizations. Although the Initial Stage appears to present relief from a financial perspective, absent timely execution of revitalization actions, or other financial support, delayed execution of only a few months creates a high likelihood of financial failure. Chart 4 projects significantly different financial outcomes based upon the timing of initiating recommended actions:

- **Scenario 1 - Actions are initiated in the Intermediate Stage**
  - Suggested actions outlined above begin in ninety days at the start of the Intermediate Stage
  - Cash flow gains are achieved sooner and greatly reduces the risk of insolvency
- **Scenario 2 - Actions are initiated in the Recovery Stage**
  - Suggested actions are delayed due to complete concentration on ramping down operations and begin in 180 days, when cash flow shortfalls are imminent
  - Greatly increases the risk of insolvency, absent additional funding

Chart 4: Cash Flow Impact of Immediate Action Versus Delayed Action



# HOSPITAL LIQUIDITY IN THE COVID-19 PANDEMIC: IMPACT AND MITIGATION STRATEGIES

## CONCLUSIONS

---

Our COVID-19 hospital predictive forecast demonstrates the likelihood of rapidly eroding liquidity without intervention, supplemental funding, and significant transformation beginning soon after the COVID-19 pandemic subsides. With independent and safety net hospitals already facing grave financial challenges prior to this crisis, the cost of business disruption combined with lingering COVID-19 costs not covered through supplemental funding vehicles will place many independent healthcare organizations on a course to insolvency.

As COVID-19 activity diminishes and we enter a transition period back to a new “normal,” it will be critical for healthcare organizations, and especially independent hospitals reliant upon significant external supplemental support, to make structural and operational changes that were perhaps previously contemplated but not enacted. Such changes will help these vital organizations improve their short-term liquidity and move to operating platforms that are more efficient and sustainable, as well as avoid what will otherwise likely become significant jeopardy for the independent provider community.

## NOTES AND ACKNOWLEDGEMENTS

---

*The predictive PIMS model is designed to accommodate any healthcare institution or geographic area any time during the COVID-19 surge. Please reach out to us for more information.*

*We would like to acknowledge and thank the numerous healthcare administration executives who have shared their experiences relating to current challenges relevant to the production of this model. You are part of the unsung heroes, and we are grateful for the work you are doing to support your healthcare facilities, providers, and communities.*



A **MANAGEMENT** and **ADVISORY** firm specializing in  
complex and volatile situations

[www.ToneyKorf.com](http://www.ToneyKorf.com)