VOL. 05 , No. 1, 2025 (19-32)
JIEE:
Jurnal Ilmiah Ekotrans & Erudisi
EISSN: 2777-0184
PISSN: 2797-2259

Hospital Cash Flow Management Strategies in Facing the Post-COVID-19 Global Health Crisis

Nailul Fithri Arrasily[1*], Try Jenny Minarsih[2], Budi Hartono[3], Alfani Ghutsa Daud[4]
[1,2,3] *Master Public Health, Universitas Hang Tuah, Pekanbaru*
[4] *Universitas Indonesia*
** Corresponding author: nailulfithri@gmail.com*

ARTICLE INFO

Article history:
Received 18 July 2025
Received in revised form 16 July 2025
Accepted 17 July 2025

ABSTRACT

The COVID-19 pandemic has exposed significant vulnerabilities in global healthcare systems, severely impacting the financial and operational stability of hospitals. This systematic literature review analyzes the post-COVID-19 global health crisis's effects on hospital cash flow, identifies core principles of effective cash flow management, and formulates comprehensive strategies to enhance hospitals' financial and operational resilience. This study employs the Systematic Literature Review (SLR) method as the primary approach to identify, evaluate, and synthesize findings from various sources of literature relevant to the research topic. Findings reveal that hospitals have faced sharp revenue declines and increased operational burdens, further exacerbated by challenges in claims processing and reimbursement systems. Nevertheless, adaptive hospitals demonstrated resilience through revenue diversification and cost efficiency. This report highlights the importance of proactive cash flow planning and monitoring, optimization of receivables and claims management, prudent debt management, operational efficiency, and strategic investment in digital transformation. Furthermore, human resource development and the establishment of strong crisis management teams are critical elements in building long-term resilience. Recommendations include adopting integrated technologies, enhancing collaboration, and advocating for more efficient payment systems to ensure the sustainability of healthcare services amid future global uncertainties.

Keyword:
Management Strategy, Cash Flow, Health Crisis

[1] *nailulfithri@gmail.com*
©2025. Nailul Fithri Arrasily. Published by Jurnal JIEE

INTRODUCTION

The COVID-19 pandemic that hit the world in 2020 triggered a global economic crisis that had a tremendous impact on almost all sectors, including the health sector, which was at the forefront of its handling (Wijaya, 2021). This crisis not only affected aspects of public health, but also created significant pressure on economic and social stability in various countries. This unexpected situation tested the resilience of various organizations, including hospitals, in adapting and recovering from the unprecedented shock (Darsono, 2022; Mohtady Ali et al., 2022; Ravaghi et al., 2022).

Hospitals are facing tremendous operational and financial pressures, characterized by a surge in the number of COVID-19 patients that directly disrupts their normal cash flow pattern (Azizah, 2022; Carroll et al., 2024; Carroll & Smith, 2020). The operational burden of hospitals increases drastically due to the need for specialized isolation rooms, expensive treatment components such as antivirals, oxygen therapy, and intensive care with ventilators for patients with severe and critical conditions (Ambarwati, 2021; Hassanzadeh et al., 2023; Won et al., 2017). This condition forces hospitals to adapt very quickly, even changing their business strategies dramatically (Agustina & Hayu, 2022).

The increasing spread of the Covid virus in Indonesia has resulted in hospitals that have been designated by the Ministry of Health being unable to accommodate patients infected with Covid. "The Indonesian Private Hospitals Association (ARSSI) noted that 40 to 60 per cent of the total health service claims of COVID-19 patients in private health facilities have not been paid because the budget from the ministry has not been disbursed. This has disrupted the cash flow of private hospitals. This can occur because the hospital's working advance (10-50 per cent) is no longer sufficient for operational costs. Not to mention the added problem of dispute claims and the lack of clarity on when the COVID-19 pandemic will end. Furthermore, the coronavirus outbreak has also caused a decrease in outpatient visits and non-COVID-19 inpatients. This has resulted in a decrease in occupancy rates. As a result, hospital income fell between 30 and 50 per cent (Ristiantri et al., 2022).

Initially, the main focus during the pandemic was on the acute response to the surge in cases and urgent medical needs, which directly led to cash flow disruption and increased hospital operational burden (Azizah, 2022; De Luca et al., 2024). However, as time passed, the long-term impact on the financial and operational stability of hospitals became increasingly apparent, such as a significant decline in non-COVID-19 patient visits (Ambarwati, 2021). The implication of this shift is that post- pandemic cash flow management strategies should be proactive and aim to build long-term resilience, not just short-term recovery. This means considering factors such as sustainable financing, technological adaptation, and integrated risk management to ensure healthcare sustainability amidst evolving global challenges.

According to the statement of accounting standards, what is meant by the cash flow statement is the inflow and outflow of cash or cash equivalents. Cash equivalents can be defined as investments that are liquid, short-term and can be quickly converted into cash in a certain amount without the risk of significant changes in value. Information about the company's cash flows is useful for users of financial statements to assess the company's ability to generate cash and cash equivalents, and to assess the company's need to use these cash flows. The purpose of cash flow information is to

provide historical information about changes in the company's cash and cash equivalents through a cash flow statement that classifies cash flows based on operating, investing, and financing activities during an accounting period (de Andrés Fazio et al., 2022; Filipova et al., 2025; Samara, 2011). Healthy cash flow is a fundamental indicator of business success, and cash flow instability can be a sign of serious financial problems (Ali & Ali, 2021; Pogorelov et al., 2018).

The financial crisis experienced by hospitals, especially during the pandemic, is often rooted in the inability to manage cash flow. This results in severe operational bottlenecks, including the inability to pay obligations to drug and medical device vendors, as well as salary payments for health workers and hospital employees (Ambarwati, 2021). A significant decrease in revenue has a direct impact on cash flow, which in turn increases the operating expenses that hospitals must bear (Rauscher & Wheeler, 2012; Singh & Wheeler, 2012; Upadhyay et al., 2015).

Another challenge that is increasingly surfacing in hospitals is the incomplete preparation of financial reports. BPK RI's findings in the Overview of Semester II Audit Results (2023) show that a number of hospitals in Indonesia are still unable to present adequate financial reports, especially in the aspects of fixed assets, receivables, and revenue recognition. This has a serious impact on the decision-making process because management does not have a reliable financial picture to prepare budgets, plan medical equipment investments, or determine operational efficiency strategies. The mismatch between budget realization data and cash statements leads to misallocation of funds and inefficiency in the use of the budget.

Therefore, strong cash flow management is a fundamental prerequisite for maintaining service quality and operational stability, not just a financial goal. This highlights the need for close integration between financial and operational functions in cash flow management strategies to ensure service continuity and patient satisfaction.

The COVID-19 pandemic has been a major test for the global health system, especially in terms of hospitals' financial resilience. The surge in patients and high operational expenses triggered significant cash flow disruptions, compounded by delays in claims payments as well as a decline in non-COVID-19 patient visits. This situation raises important questions regarding how hospitals can survive and adjust financially in the face of similar global health crises in the future. In this context, it is important to examine the extent to which the COVID-19 pandemic affected the stability of hospitals' cash flows and financial performance, and how hospitals responded to these challenges.

In addition, there is a need to understand the basic principles of effective cash flow management that are relevant for hospitals in the post-pandemic era. There is also the question of what strategies hospitals can implement to strengthen operational and financial resilience, including how technology and financial management information systems (such as SIMRS and SIA) can be utilized to create efficiency and transparency.

As such, this research seeks to answer a number of key questions: what is the impact of the post-COVID-19 crisis on hospital cash flow, what are the main challenges in cash flow management, what effective strategies can be implemented to build resilience, and how technology can play a role in supporting hospital financial sustainability in the future. All of these questions form an important foundation in formulating the direction of adaptive and resilient hospital financial management amid global uncertainty.

RESEARCH METHODS

This research uses the Systematic Literature Review (SLR) method as the main approach to find, assess, and summarize the results of various literatures relevant to the research topic. The SLR method is carried out through several structured stages, starting with the search and collection of journals related to the topic, then continued with in-depth analysis of the contents of the selected journals (Saputra et al., 2024). This approach helps researchers present a complete picture of the research that has been done, so that the results are more objective and can be repeated by other researchers.

In addition, the SLR method has also been proven effective in various studies, such as in assessing the innovations, challenges, and impacts of digital health technologies, which shows that this method is flexible and suitable for use in the healthcare field (Syamsir et al., 2025).

The purpose of this literature review is to analyze how the post-COVID-19 global health crisis has affected hospital cash flow, recognize the basic principles of effectively managing cash flow, and formulate a comprehensive strategy for hospitals to be more resilient and financially and operationally prepared for future crises.

This research includes a review of various sources such as scientific literature, industry reports, and policies related to hospital financial management, pandemic impacts, and post-crisis resilience strategies. The main focus is on relevant data and analyses from 2019 to the present, so as to describe the conditions before, during and after the pandemic in a comprehensive and up- to-date manner.

The scope of this study only concerns research on hospital cash flow management, the impact of the COVID-19 pandemic on hospital finances, financial resilience strategies in the healthcare sector, and crisis management in hospitals. Priority was given to studies published in Indonesian and English. The publication timeline focused on the pandemic period (starting in 2020) to date to capture post-COVID-19 impacts and strategies, although some pre-pandemic data were also considered for contextual comparison.

RESULTS

Impact of COVID-19 Crisis on Hospital Cash Flow and Financial Performance

Decrease in Revenue and Increase in Operating Expenses

During the COVID-19 pandemic, hospitals experienced a drastic decrease in the volume of non-COVID-19 patient visits, which can reach up to 50%, thus directly reducing hospital revenue (Carroll et al., 2024). Many private hospitals reported a significant drop in revenue, ranging from 30-50% of their normal income (De Luca et al., 2024). This decline occurs as people tend to avoid medical facilities for routine check-ups or non-emergency services due to concerns of contracting the virus.

Although the cost of treating COVID-19 patients is largely covered by the government, the surge in the number of COVID-19 patients in referral hospitals continues to disrupt cash flow and substantially increase operational expenses. This burden is particularly high due to the need for specialized isolation rooms, expensive treatment components such as antivirals, oxygen therapy, and intensive care with ventilators (Al Mutair et al., 2022; Seringa et al., 2022). Hospital operating costs increased significantly in the second quarter of 2020 due to the pandemic, and remained above pre-pandemic levels in subsequent years. Before the pandemic, many hospitals focused on expanding and improving healthcare services, but faced Covid-19 challenges in managing operational costs

and improving efficiency of healthcare services (Carroll & Smith, 2020; Orlando & Field, 2021). This cost increase is also driven by the urgent need for medical equipment and personal protective equipment (PPE), as well as regulatory changes related to patient handling.

This creates a double burden for hospitals: they experience a loss of regular income from non-COVID-19 services, while at the same time facing a substantial increase in costs for pandemic-specific services. Despite the government's policy to cover the cost of COVID-19 treatment, delays in payment of claims from third parties exacerbate the liquidity problem. This shows that hospitals are faced with a complex financial dilemma, where the increase in essential services during the crisis can actually erode their financial health if not matched with effective and timely financing mechanisms. Therefore, post-pandemic cash flow strategies should consider revenue diversification and adaptive cost management, as well as risk mitigation mechanisms related to late payments from third parties, especially in the context of a health crisis. This diversification not only means finding new sources of income, but also optimizing existing services to keep cash flow positive.

Claims and Payment Challenges

One of the main obstacle's hospitals face is the delay in payment of COVID-19 patient claims from the Ministry of Health, which can last up to six months from the date of submission. This problem is compounded by the high number of "dispute claims," which account for 38.14% of total claims submitted. These disputes are caused by various factors, including differences in perceptions of applicable regulations, incomplete hospital claim documents, as well as the unpreparedness of application tools and the limited number of verifiers from the Ministry of Health in conducting re-verification (Ambarwati, 2021).

The decrease in cash flow due to these late payments directly resulted in serious operational constraints for the hospital. These obstacles include the inability to fulfil payment obligations to vendors of drugs and medical devices, as well as late payment of salaries for health workers and hospital employees. As a result, the hospital's working capital becomes insufficient to cover daily operational costs (Agustina & Hayu, 2022).

Delays and claim disputes show that despite the government's policy to cover the cost of care, the implementation of regulations and the bureaucracy of verification are critical bottlenecks. This is not only a financial issue, but also an operational issue as it directly impacts the hospital's ability to pay routine obligations. This situation highlights that good macro policies do not always translate into smoothness at the micro level without adequate infrastructure and coordination, leaving hospitals vulnerable to payment system inefficiencies. Hospitals therefore need to develop highly proactive and efficient claims management strategies, including the use of technology and improved documentation quality. In addition, the development of adequate cash reserves is necessary to mitigate the risk of late payments from third parties, especially government or insurance entities that have complex processes. The government also needs to evaluate and simplify the claims process to ensure a smoother flow of funds to hospitals.

Post-Pandemic Financial Ratio Analysis

Studies show that overall, there is no significant difference in the financial performance (liquidity, solvency, activity) of health sector companies (hospitals) listed on the Indonesia Stock Exchange before and after the COVID-19 pandemic, except for the Net Profit Margin (NPM) ratio. This

indicates that most hospitals have not fully maximized the management of their current assets to guarantee current debt significantly (Herey & Temesvari, 2022; Kouanfack et al., 2022).

However, some hospitals showed an improved ability to generate net profit from assets utilized during the pandemic. For example, PT Siloam International Hospitals Tbk managed to improve its operational and financial performance, including net profit and profitability ratios, despite facing severe challenges. The company even showed consistent annual profit growth and regularly paid dividends. RSUD Bima's Net Profit Margin (NPM) ratio also showed an increase that is considered good, from 0.05% in 2018 to 0.58% in 2021. Similarly, RSUD Bima's Return on Assets (ROA) showed an increase, indicating the hospital's ability to maximize assets to generate.

On the other hand, the liquidity ratios (Current Ratio and Quick Ratio) show mixed results. While there was an increase in total current assets in some cases, there was also an increase in short-term liabilities, so the ability to cover short-term debt did not always show a significant difference. The average liquidity of companies in general does not show significant differences before and after the pandemic for most companies. The XYZ Clinic case study also shows a significant increase in revenue of up to 25.18% in 2021, mainly driven by diversification of services such as antigen testing and meningitis vaccination.

However, the clinic's EBITDA declined post-pandemic due to rising operating costs. This suggests that despite revenue growth, profitability could be pressured by increased costs.

These data show that post-pandemic financial resilience is not uniform and is highly dependent on the adaptation strategies implemented by each hospital. While there is data showing no significant difference in aggregate in some financial ratios, case studies such as Siloam and Klinik XYZ show increased profitability and revenue through adaptation and diversification of services. This indicates that "no significant difference" in aggregate may hide highly variable performance at the individual level or hospital type. Hospitals that are proactive in revenue diversification and service adaptation tend to be more resilient. The post-pandemic decline in EBITDA at Klinik XYZ, despite an increase in revenue, suggests that effective operational cost management is as important as revenue growth to maintain financial health (Farina Januaristy Wibisono, 2024). Therefore, this report emphasizes that post-pandemic financial resilience is not uniform and largely depends on the adaptation strategies implemented by each hospital. Diversification of revenue sources and the ability to innovate services are key to maintaining profitability amidst uncertainty, but must be balanced with strict operational cost control.

Table 1: Comparison of Hospital Financial Performance Before and After the COVID-19 Pandemic (Key Financial Ratios)

Financial Ratios	Pre-Pandemic Period (2019)	Pandemic/Post-Pandemic Period (2020-2021/2022-2024)	Changes/Implications
Liquidity			
Current Ratio (CR)	RSUD Bima 2.550% in 2019)	RSUD Bima 51.408% in 2020, then 1.460% in 2021; Majority not significantly different	Fluctuating, increase in 2020 due to decrease in short-term receivables & payables, then decrease in 2021. In general, there is no significant difference for most companies,

			indicating that the management of current assets for current debt is not optimal.
Quick Ratio (QR)	RSUD Bima 20.14% in 2019	RSUD Bima 385.09% in 2020, then 12.72% in 2021; Majority not significantly different	Similar to CR, sharp increase in 2020 and then decrease. The
			majority of companies do not show significant differences.
Solvency			
Debt to Total Assets (DAR)	SAME > HEAL	PRIM > SAME	There is generally no significant difference for most companies, but some show a strong correlation with the proportion of debt. The increase in a company's total debt occurs due to various factors.
Debt to Equity Ratio (DER)	MIKA > PRIM	SILO > MIKA	Generally, there is no significant difference for most companies, however some show a strong correlation with the proportion of debt. An increase in the company's total debt occurred.
Others			
Bed Occupancy Rate (BOR)	Bima Hospital 100%	RSUD Bima 100%	Remained high indicating maximization of patient services, although non-COVID-19 revenues decreased.
Revenue (Total)	XYZ Clinic 25.18% in 2021	Ahmad Ripin Hospital declined dramatically in 2020-2021; XYZ Clinic increased significantly	Varies greatly depending on the diversification of services and types of patients. A decrease in non-COVID-19 patient visits has a negative impact.
Operating Expenses	California hospitals increased significantly in Q2 2020	California hospitals remain higher than pre-pandemic; XYZ clinics increased.	Significant increase due to PPE requirements, medical devices, and regulatory changes.

Cash Flow Management Strategy for Post-COVID-19 Hospital Resilience

To build financial and operational resilience post-COVID-19, hospitals need to implement a comprehensive cash flow management strategy, covering financial, operational, and crisis preparedness aspects.

Accounting Financial Strategy

Budget and Cash Flow Planning and Monitoring

Detailed cash flow planning and realistic budgeting are fundamental steps to ensure the financial stability of a hospital. This planning involves calculating all anticipated income and expenses within a certain period of time, as well as periodic adjustments based on changes in the market or within the company. Monitoring cash flow at regular intervals, e.g. monthly, enables early detection of financial problems and prompt corrective action. The use of financial software is highly recommended to monitor cash flow automatically and accurately. (Finance, 2024)

Optimizing Receivables and Claims Management

Accelerating receivables collection is critical to improving business liquidity.

Strategies that can be implemented include providing discounts for early payment as an incentive, sending payment reminders to customers who have not paid their bills, and periodically evaluating credit policies to reduce the risk of bad debts. Effective claims management is crucial to ensure hospitals receive appropriate and timely payment for services rendered. This includes verifying the completeness of claim documents, accurate coding, timely submission of claims to avoid delays that could lead to denials, monitoring the status of claims by tracking their progress, and analyzing claims data to identify denial patterns and areas of improvement. The use of automated claims verification software and accelerated submission of payments to BPJS Kesehatan can be a solution to the challenge of slow claims.

Debt Management and Cash Reserves

Maintaining a healthy debt ratio is essential so that debt instalment or interest payments do not burden the hospital's cash flow. Prioritize repayment of high-interest debt to reduce the financial burden, and look at the terms and conditions before taking on new debt to prevent cash flow disruptions. Creating cash reserves serves as a "safety net" to deal with unexpected situations, such as a drop in revenue or urgent costs. Strategic capital reserves need to be strengthened to optimally manage hospital finances (Prita Agustina, 2022). The use of deposit funds as a financial lifeline in times of emergency, as some hospitals did during the pandemic, is a clear example of this strategy.

Operational Cost Efficiency and Inventory Management

Reducing operating costs directly impacts the hospital's cash flow. This can be achieved by finding alternative suppliers, renegotiating contracts with suppliers or service providers to get better deals, and using technology that can reduce operating costs. Managing inventory efficiently is key to keeping cash flow current, as excessive inventory can lock up capital that could otherwise be utilized for other operational needs. Hospitals should implement an efficient inventory system to control the use of medical supplies, prevent expiration, and minimize wastage.

Utilization of SIMRS Accounting Information System (AIS) and Financial Module

Accounting Information System (AIS) plays a crucial role in hospital financial management by recording, classifying, and analyzing transactions in real-time, enabling better cash management and budget tracking. It can also automate billing and payment processes, reduce human errors, and generate automated financial reports, providing a clear picture of the hospital's financial position at any given time. The Finance module of SIMRS optimizes the use of the billing and charge module, improves the efficiency and accuracy of financial reports, manages assets and income, and increases financial transparency. The system can reduce billing errors and maximize revenue (Khathimah et al., 2025).

Various sources consistently highlight the central role of the AIS and the financial module of SIMRS. These systems are not just tools, but the backbone that enables all other financial strategies (monitoring, receivables management, cost efficiency) to be effective. Without an integrated system, accurate data is difficult to obtain, analyses are slow, and decision-making tends to be reactive. The pandemic has accelerated this need, as social distancing demands digital interactions. Therefore, the report emphasizes that investing in a robust digital infrastructure is a crucial long-term investment for hospitals' financial and operational

resilience in the post-pandemic era, enabling better visibility and control over cash flow, and supporting faster and more accurate strategic decision-making.

Operational Strategy and Service Adaptation

Improved Operational Efficiency (BOR, Waiting Time Management)

Increasing Bed Occupancy Rate (BOR) is key to hospital efficiency and revenue. An ideal BOR (75-85%) indicates resource optimization, while a BOR below 60% risks a budget deficit. According to Kristyanti (2022) in her research on case study of Panti Waluyo Hospital: showing deficits and cash flow disruptions in 2020 as well as management strategies to maintain "healthy" status in financial terms. Strategies to improve BOR include optimizing elective patient management, using the hospital's ERP software for scheduling and sending reminders via SMS/WhatsApp to reduce cancellations. In addition, increased interdepartmental collaboration, such as establishing a dedicated BOR team with representatives from inpatient, emergency department, polyclinic, and finance, and holding weekly evaluation meetings, can ensure smooth patient flow and overcome coordination barriers. Waiting time management with technology, such as implementing a digital queuing system and analyzing peak hours for additional staff shifts, is also crucial to improving patient satisfaction and BOR.

Investing in Digital Transformation (Telemedicine, EHR, SIMRS)

Digital transformation in hospitals, including electronic health records (EHR), telemedicine, and Hospital Management Information Systems (HIMS), can significantly improve operational efficiency and patient experience. These technologies can speed up administrative and patient care processes, such as scheduling, medical record management, billing, and accounting. Although there are challenges such as lack of digital literacy, management support, data privacy, and high implementation costs, these technologies offer great opportunities to improve the overall efficiency and quality of healthcare (Khathimah et al., 2025).

The COVID-19 pandemic is a strong driver for healthcare organizations to embrace digital change, as social distancing demands interaction through digital technology. The "Smart Hospital" concept involves the integration of Big Data and the Internet of Things (IoT) for better patient care, including dashboard features, patient profiles, scheduling, reminders, inventory, lab tracking systems, preset document forms, transactions, and reporting. This allows for more harmonious interactions between doctors and patients, and increases financial transparency (Dameria & Jane, 2025).

Initially, digital transformation may only be seen as an efficiency endeavor. However, the pandemic accelerated the adoption of technologies such as telemedicine and fueled the concept of "Smart Hospital". It is not just about automating old processes, but also enabling new business models (e.g., remote consultations, online services) and improving patient experience, which in turn can attract more patients and increase revenue. This becomes a significant competitive advantage in the post-pandemic era, where patients increasingly rely on the ease of access and efficiency of digital services. The report therefore emphasizes that digital investment should be seen as a long-term strategy for service innovation and value creation, not just as an expense, which can unlock new revenue streams and improve hospitals' competitiveness in the changing healthcare market.

Human Resource Development and Inter-Departmental Collaboration

Improving staff competence through training and professional development is critical to improving service quality and hospital productivity. Continuous training for medical and administrative staff is essential to maintain high service standards and reduce employee turnover rates. A well-trained and energized team is a great asset to the clinic and hospital. Training programmers such as "Patient Flow Management" and competency-based certification can optimize patient movement from registration to discharge Cross- departmental collaboration, such as the establishment of a dedicated BOR team involving representatives from inpatient, emergency department, polyclinic, and finance, ensures smooth patient flow and overcomes coordination barriers. The strategy implementation process also inherently promotes coordination and co-operation between various departments and units in the hospital, enabling better synergy and achievement of common goals.

Evaluation of Tariff Policy and Service Promotion

Periodic evaluation of tariff policies and service promotion is an important strategy to attract patients and optimize revenue. Hospitals need to analyze inpatient package prices to remain competitive based on applicable regulations, such as Permenkes No. 12/2023. Launching preventive medical check-up packages with discounts or loyalty programmers through partnerships with insurance companies or health communities can increase occupancy on slow days. This strategy helps hospitals to adapt to the evolving dynamics of the healthcare market and maintain a steady revenue stream.

Crisis Preparedness and Resilience Strategies

Team Building and Crisis Management Plan

Effective crisis management begins with the establishment of a solid and well-trained crisis management team. This team is responsible for identifying potential crises, drafting a comprehensive emergency response plan, and developing crisis management procedures. This plan should include detailed risk assessments, resource allocation, communication strategies, and recovery planning. Regular training and realistic crisis simulations, involving all departments, are critical to improving the hospital's ability to effectively respond to and manage emergency situations, minimize negative impacts, and ensure patient and staff safety.

Resource Management (HR, Equipment, Supplies) in a Crisis

Effective resource management during a crisis ensures that the hospital can properly perform its functions and provide the necessary care to patients. This involves rapid assessment of medical and non-medical manpower needs, planning of staff rotations and assignments to avoid fatigue, and identification of areas that are understaffed or overstaffed. Regular inventory of medical and non-medical equipment, setting preventive maintenance schedules, and creating adequate stocks of medical supplies (including drugs, PPE, and consumables) are also crucial. A backup system should be set up to ensure availability of supplies during a crisis, and bulk purchases can be considered if necessary.

The Importance of Collaborative Networking and Effective Communication

Establishing good working relationships with government agencies, aid agencies and other external organizations before a crisis occurs is critical. This includes building networks,

establishing key contacts, and understanding the type of assistance that external parties can provide, such as additional medical supplies or labor. Effective communication is key to successfully managing emergency situations. Clear and timely communication can speed recovery and reduce the impact of the crisis, both internally and externally. Building collaborative networks across the healthcare system and adopting a leadership style that emphasizes humility and adaptability is essential to eliminate competition and foster a cooperative environment.

Table 2: Summary of Cash Flow Management Strategies and their Impact on Hospital Resilience

Strategy Category	Key Strategies	Impact on Cash Flow & Resilience
Financial & Accounting	Budget & Cash Flow Planning & Monitoring	Improves financial visibility, enabling early detection of problems and proactive decision-making.
	Optimization of Receivables & Claims Management	Accelerate cash receipts, reduce bad debts, and improve liquidity.
	Debt Management & Cash Reserves	Prevent financial overload, provide a safety net for unexpected situations, and enhance stability.
	Operating Cost Efficiency & Inventory Management	Reduce expenses, free up trapped capital, and improve internal liquidity.
	Utilization of SIMRS AIS & Financial Module	Improve accuracy, efficiency and transparency of financial reports, supporting data-driven decision-making.
Operations & Service Adaptation	Improved Operational Efficiency (BOR, Waiting Time)	Optimize asset utilization, increase revenue capacity and patient satisfaction.
	Investment in Digital Transformation (Telemedicine, EHR, SIMRS)	Unlock new business models, improve service efficiency and competitiveness.
	People Development & Inter-Departmental Collaboration	Improving productivity, service quality, and internal synergy for operational efficiency.
	Tariff Policy Evaluation & Service Promotion	Attract patients, optimize revenue, and adapt to market dynamics.
Crisis Preparedness & Resilience	Team Building & Crisis Management Plan	Preparing hospitals for shocks, minimizing negative impacts and ensuring continuity of services.
	Resource Management in Crisis	Ensuring the availability of human resources, equipment, and essential supplies during emergency situations.
	Importance of Collaborative Networks & Effective Communication	Facilitate a coordinated response, access external assistance, and maintain public trust.

CONCLUSION

The COVID-19 pandemic has profoundly affected the cash flow and financial performance of hospitals globally, triggering a paradigm shift from acute crisis response towards building systemic resilience. Hospitals experienced a significant drop in revenue from non-COVID-19 services, while operating expenses increased sharply due to the pandemic response. A major challenge that exacerbated the cash flow situation was the late payment of claims and the high number of dispute claims from third parties, which directly hampered the

hospital's ability to fulfil its operational obligations.

Analysis of financial ratios showed that while some hospitals managed to improve profitability through adaptation and diversification of services, overall financial resilience was not uniform and depended heavily on individual strategies. This underscores that hospitals that are proactive in revenue diversification and cost management tend to be more resilient.

Cash flow management strategies for post-COVID-19 resilience include financial- accounting (proactive planning, optimization of receivables and claims, debt and reserve management, cost efficiency, and utilization of AIS/SIMRS), operational-adaptation (improvement of BOR efficiency and waiting times, digital investment, HR development, and tariff evaluation), and crisis preparedness (establishment of crisis teams, resource management, and external collaboration) approaches. Digital transformation, in particular, emerged as the backbone that enables proactive cash flow management, opens up new business models, and improves competitiveness.

The findings of this study have important implications for hospital management and health policy makers. For hospital management, priority should be given to:

1. Strengthening Data-driven Financial Governance: Adopt an integrated accounting information system and financial module of SIMRS to enable real-time cash flow monitoring, accurate financial performance analysis, and rapid strategic decision-making.
2. Revenue Diversification and Cost Efficiency: Develop new services relevant to post- pandemic market needs (e.g., telemedicine, preventive services) to reduce dependence on a single source of revenue. Simultaneously, focus on operational efficiencies, such as strict inventory management and favorable contract negotiations, to optimize the use of internal capital.
3. Aggressive Revenue Cycle Management: Train staff in accurate claims coding, expedite claims submission, and proactively follow up on receivables to minimize payment delays and dispute claims.
4. Strategic Reserve Building: Establish and strengthen cash reserves as a financial buffer to deal with unexpected shocks in the future, reducing reliance on emergency debt.
5. Investment in People and Internal Collaboration: Develop staff competencies through continuous training and encourage cross-departmental collaboration to ensure operational efficiency and high quality of service, ultimately supporting financial health.

REFERENCES

Agustina, P., & Hayu, S. (2022). Managemen keuangan rumah sakit sumber kasih di masa pandemi. *Al Naqdu: Jurnal Kajian Keislaman*, *3*(2).

Al Mutair, A., Layqah, L., Alhassan, B., Alkhalifah, S., Almossabeh, M., AlSaleh, T., AlSulaiman, Z., Alatiyyah, Z., Almusalami, E. M., Al-Jamea, L. H., Woodman, A., Hajissa, K., Alhumaid, S., & Rabaan, A. A. (2022). Estimated cost of treating hospitalized COVID-19 patients in Saudi Arabia. *Scientific Reports*, *12*(1). https://doi.org/10.1038/s41598-022-26042-z

Ali, M. M., & Ali, K. M. (2021). Using a Cash Flow Model to Predict Future Cash Flow from Historical Cash Flow: a Malaysian Perspective. *Academy of Accounting and Financial Studies Journal*, *25*(5), 1–11.

Ambarwati, W. (2021). Pembiayaan pasien covid-19 dan dampak keuangan terhadap rumah sakit yang melayani pasien covid-19 di Indonesia analisis periode maret 2020–desember 2020.

Jurnal Ekonomi Kesehatan Indonesia, *6*(1), 3.

Azizah, A. (2022). Analisis Efektivitas Pendapatan dan Efisiensi Belanja Guna Mengukur Kinerja Keuangan Rumah Sakit Umum Daerah Ahmad Ripin Kabupaten Muaro Jambi Pada Masa Pandemi Covid 19. *Jurnal Manajemen Terapan Dan Keuangan*, *11*(2), 335–347.

Carroll, N. W., Shih, S.-F., Karim, S. A., & Lee, S.-Y. D. (2024). Hospital Finances During the First Two Years of The Covid-19 Pandemic: Evidence from Washington State Hospitals. In *Advances in Health Care Management* (Vol. 22, pp. 143–160). https://doi.org/10.1108/S1474-823120240000022007

Carroll, N. W., & Smith, D. G. (2020). Financial implications of the CoviD-19 epidemic for hospitals: A case study. *Journal of Health Care Finance*, *46*(4), 11–22.

Dameria, K., & Jane, O. (2025). Konteks Transformasi Digital di Sektor Usaha Kesehatan. *AKADEMIK: Jurnal Mahasiswa Ekonomi & Bisnis*, *5*(1), 75–87.

Darsono, A. O. N. A. (2022). Dampak Pandemi Global (COVID19) Terhadap Perekonomian Pekerja Perempuan di Amerika Serikat. *Interdependence Journal of International Studies*, *3*(1), 15–28.

de Andrés Fazio, S., Grande, E. U., & Estébane, R. P. (2022). The "secret life" of the Statement of Cash Flow: A bibliometric analysis. *Cuadernos de Gestion*, *22*(1), 143–159. https://doi.org/10.5295/CDG.211481RP

De Luca, A., Provvidenti, L., Muselli, M., Di Gianfilippo, G., Angelucci, M., Totaro, M. C., Pitorri, M., Marcelli, M., D'Innocenzo, M., Scatigna, M., Mastrantonio, R., Necozione, S., & Fabiani, L. (2024). Implementation of community health care services to counter the SARS-CoV2 pandemic. *BMC Health Services Research*, *24*(1). https://doi.org/10.1186/s12913-024-10607-x

Filipova, F., Atanasov, A., Marinova, R., & Zapryanova, T. (2025). The Usefulness of Cash Flow Statements in Bank Lending Decisions: Insights from Bulgarian Practices. *Financial and Credit Activity: Problems of Theory and Practice*, *1*(60), 33–48. https://doi.org/10.55643/fcaptp.1.60.2025.4622

Hassanzadeh, H., Boyle, J., Khanna, S., Biki, B., Syed, F., Sweeney, L., & Borkwood, E. (2023). A discrete event simulation for improving operating theatre efficiency. *International Journal of Health Planning and Management*, *38*(2), 360–379. https://doi.org/10.1002/hpm.3589

Herey, P., & Temesvari, N. A. (2022). Determinants of Approval Claims at Hospital Among COVID-19 Patients. *Media Kesehatan Masyarakat Indonesia*, *18*(2), 67–73. https://doi.org/10.30597/mkmi.v18i2.19536

Khathimah, H., Farahany, S., & Purba, S. H. (2025). Tantangan dan peluang dalam transformasi digital kesehatan di rumah sakit. *Jurnal Pengabdian Kepada Masyarakat Abdi Putra*, *5*(1), 16–23.

Kouanfack, C., Suzie, F. F., Nguekam, M. F., Whegang, S. Y., Chefor, A. D., Dzudie, A., Ateudjieu, J., Sobngwi, E., & Fouda, P. J. (2022). Effect of the COVID-19 pandemic on the financial revenues of public hospitals with a care centre: case of the Yaoundé Central Hospital. *Journal of Public Health in Africa*, *13*(3). https://doi.org/10.4081/jphia.2022.2195

Kristyanti, M. R. (2022). Covid-19 Pandemic, 2020 Financial Performance and Strategy of Panti Waluyo Hospital Surakarta. *Academic Hospital Journal*, *4*(2), 75.

Mohtady Ali, H., Ranse, J., Roiko, A., & Desha, C. (2022). Investigating Organizational Learning and Adaptations for Improved Disaster Response Towards Resilient Hospitals:

An Integrative Literature Review. *Prehospital and Disaster Medicine*, *37*(5), 665–673. https://doi.org/10.1017/S1049023X2200108X

Orlando, A. W., & Field, R. I. (2021). Measuring the COVID-19 Financial Threat to Hospital Markets. *Inquiry (United States)*, *58*. https://doi.org/10.1177/00469580211059985

Pogorelov, Y., Dubovaya, V., & Bilousova, A. (2018). Relevant cash flows information for Engineering & Construction' companies investors. *International Journal of Engineering and Technology(UAE)*, *7*(3), 322–328. https://doi.org/10.14419/ijet.v7i3.2.14428

Rauscher, S., & Wheeler, J. R. C. (2012). The importance of working capital management for hospital profitability: Evidence from bond-issuing, not-for-profit U.S. hospitals. *Health Care Management Review*, *37*(4), 339–346. https://doi.org/10.1097/HMR.0b013e3182224189

Ravaghi, H., Naidoo, V., Mataria, A., & Khalil, M. (2022). Hospitals early challenges and interventions combatting COVID-19 in the Eastern Mediterranean Region. *PLoS ONE*, *17*(6 June). https://doi.org/10.1371/journal.pone.0268386

Ristiantri, Y. R. A., Susiloningtyas, D., Shidiq, I. P. A., Syetiawan, A., & Azizah, F. N. (2022). Multi-criteria Decision Analysis for Readiness of COVID-19 Referral Hospital in Jakarta. *IOP Conference Series: Earth and Environmental Science*, *1039*(1). https://doi.org/10.1088/1755-1315/1039/1/012022

Samara, S. (2011). Information valences on cash flow statement. National and international. *Quality - Access to Success*, *12*(SUPPL. 2), 641–647.

Saputra, N., Putera, R. E., Zetra, A., Azwar, Valentina, T. R., & Mulia, R. A. (2024). Capacity building for organizational performance: a systematic review, conceptual framework, and future research directions. *Cogent Business and Management*, *11*(1), 2434966. https://doi.org/10.1080/23311975.2024.2434966

Seringa, J., Pedreiras, S., Freitas, M. J., De Matos, R. V, Rocha, J., Millett, C., & Santana, R. (2022). Direct Costs of COVID-19 Inpatient Admissions in a Portuguese Tertiary Care University Centre. *Portuguese Journal of Public Health*, *40*(1), 26–34. https://doi.org/10.1159/000524368

Singh, S. R., & Wheeler, J. (2012). Hospital financial management: What is the link between revenue cycle management, profitability, and not-for-profit hospitals' ability to grow equity? *Journal of Healthcare Management*, *57*(5), 325–339. https://doi.org/10.1097/00115514-201209000-00007

Syamsir, S., Saputra, N., & Mulia, R. A. (2025). Leadership agility in a VUCA world: a systematic review, conceptual insights, and research directions. *Cogent Business and Management*, *12*(1). https://doi.org/10.1080/23311975.2025.2482022

Upadhyay, S., Sen, B., & Smith, D. G. (2015). The cash conversion cycle and profitability: A study of hospitals in the state of Washington. *Journal of Health Care Finance*, *41*(4).

Wijaya, P. Y. (2021). *Membangun Ketangguhan Ekonomi pada Era Pandemi (Kondisi Pariwisata Bali di Tengah Wabah COVID-19 Realitas dan Respons Kebijakan)*. Gramedia Pustaka Utama.

Won, A.-N., Song, H.-E., Yang, Y.-K., Park, J.-C., & Hwang, J.-H. (2017). Calculation of Appropriate Minimum Size of Isolation Rooms based on Questionnaire Survey of Experts and Analysis on Conditions of Isolation Room Use. *Journal of Physics: Conference Series*, *870*(1). https://doi.org/10.1088/1742-6596/870/1/012025