



# **BUILDING THE FUTURE OF HEALTHCARE**

Improving operational performance  
in Hong Kong's healthcare industry

# FOREWORD

The priority of making Hong Kong’s healthcare operationally sustainable has significantly increased over the last decade, with the government’s expenditure growing in line with the rising demands of Hong Kong’s citizens. As increased spending continues, the government needs to understand if the additional investment is providing a cost-effective solution and satisfying the on-ground demand.

Hong Kong has one of the longest life expectancies in the world, with its female inhabitants being the longest living demographic group globally. Coupled with a rapidly aging population, this creates a potential long-term issue that if not managed, threatens the public and private healthcare system.

In response, the government has launched a 10-year Hospital Development Plan (HDP) looking at a series of expansions, redevelopments and construction of hospitals to boost the current accessibility and standard of service. It has been branded with a people first mentality, putting patients and the citizens of Hong Kong at the top of the government’s agenda to further enhance the high-quality healthcare service. In 2018, the government took additional long-term steps by allocating HK\$300 billion to support the second 10-Year HDP which will start in 2027.

The large demand for public health services paired with rising medical costs has required the government to increase its annual subvention, year-on-year since 2011. This increase combined with operational challenges has created a need to assess operations and review the additional output generated to identify if operational performance is providing suitable return on its investment.

Facilities Management (FM) plays an important role in delivering a safe and efficient operational environment for built assets, benefiting both public and private

organizations. Currently, FM’s application in a Hong Kong healthcare context is limited, but has the potential, if taken seriously, to provide greater clarity over operational costs, leading to improved financial and operational performance.

This paper explores how hospitals in Hong Kong could evaluate their FM processes to uncover cost-saving opportunities and improve operational efficiencies by looking at an existing primary data source collated by an operations consultancy team\* through a questionnaire survey of long-term staff of a hospital.

As the government looks to enhance healthcare system performance, service and reputation, adding increased budget isn’t always the most effective approach. Taking stock of current performance can not only plug unwanted operational inefficiencies, but it can also refine and streamline the overall operational process to drive cost-savings and enhance safety.



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**The implementation of the 10-year Hospital Development Plan will be carried out by the Hospital Authority and include a provision of HK\$200 billion.**



\* Intelligent assessment for facility management performance: pilot study on a hospital:

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**The 10-year Development Plan will:**

- **Boost hospital bed spaces by 5,000**
- **Create 90 additional operating theatres**
- **Add around 430,000 patients to the annual capacity of general outpatient clinic attendances**

## THE RISING COST OF HONG KONG'S HEALTHCARE

The continued need for financial support to build, refurbish and operate Hong Kong's healthcare facilities is underpinned by fundamental market challenges of an increased number of patients, aging facilities and an increasing elderly population.

Hong Kong is globally renowned for its high-quality healthcare services, leading professionals and affordability delivered under dual public and private sector model. Despite this deserved reputation, Hong Kong is facing an increasing set of challenges to maintain this level of operation, ranging from the number of patients with chronic illness and increasing medical costs, to resource shortages and long waiting times for treatment.

The Department of Health (DoH) and Hospital Authority (HA) state there are 12 registered private hospitals and more than 40 public hospitals in Hong Kong. The current operational consumption, use of medical facilities and professionals is only expected to grow in the years to come, leading to an increase in operational expenditure. However, without a fully informed methodology that measures investment performance and cost-effectiveness, how can the DoH and the HA calculate success against the increase in expenditure and know that the money being invested is being correctly allocated?

FM as a support service for hospitals covers a broad scope, un-locking the potential to deliver new efficiencies and faster operations. Opportunities for existing hospitals include property management, more extensive housekeeping, improved security, focused planned maintenance, more catering options, diverse bio-medical and engineering services. These can be provided as a standalone service, or as part of an integrated strategic approach, creating an opportunity to control overall budget spending, reduce operational waste, inefficiencies, streamline resource and influence long-term planning.

Critically, strategic use of FM not only reduces the upfront operational costs, but also eliminates additional unforeseen incidents. The failure to provide support service provision in hospitals could result in more significant, wide-scale consequences. Therefore, benefits of developing a strategic FM delivery methodology for the long-term, and structured KPI measurements, to optimize cost and operational effectiveness is increasingly important.

### HONG KONG'S FUTURE EXPENDITURE

Public healthcare expenditure will increase to

**\$71.2 BILLION**

in 2018-19, a rise of 13.3%

**\$796 MILLION**

of elderly health care vouchers to be provided by the government

**\$300 BILLION**

has been set aside to support the second 10-year Hospital Development Plan

# UNDERSTANDING FACILITIES MANAGEMENT

The application of FM can vary between organizations with a lack of clarity around its definition limiting its impact. Without openly knowing and acknowledging FM's true value, organizations will always struggle to leverage its long-term benefits.

Innovative FM can deliver significant value to areas such as administrations, operations, life-cycle planning, resourcing, procurement and quality & energy consumption. The focus on overall service delivery will need to increase collaboration and align internal strategies to ensure that 'soft' and 'hard' FM dimensions are well integrated.

As a profession, FM is still relatively new and its application is still being understood. This is especially true within Hong Kong's healthcare facilities and their management, as the uptake of technology is staggered and continually developing potential ways to improve efficiencies and capabilities. The benefits that can be delivered cover a wide range of processes, services and activities, with organizations looking at their own applications and ways of maximizing this opportunity.

In setting some parameters around how FM can be used, it's important to understand buildings have very different functions and performance measurement systems. To build a comprehensive view of FM, and create a framework for hospitals, the primary research reviewed identified 11 aspects that can be challenged to reduce costs, improve efficiencies, speed up medical care service delivery and reduce negative patient experiences:

## 1. REPAIR AND MAINTENANCE OF MEDICAL EQUIPMENT:

- Planned and reactive bio-medical equipment repairs and preventive maintenance
- Create availability for patient-ready equipment
- Manage compliance to legal requirements more effectively

## 2. UPGRADE AND REPLACEMENT OF MEDICAL EQUIPMENT:

- Enhance procurement processes for hospitals, ensuring quality products and reliable alternative suppliers
- Transition management with minimum operational and financial impacts
- Communication with administrators, medical staff, end-users and contractors
- Achievement of the expected outcomes for delivery times

## 3. REPAIR AND MAINTENANCE OF NON-MEDICAL FACILITIES:

- Completion of as-needed and scheduled repairs and preventive maintenance of building systems on a regular basis
- Response to urgent requests and emergencies
- Compliance to building regulations and other legal requirements

## 4. UPGRADE AND REPLACEMENT OF NON-MEDICAL FACILITIES:

- Renovation and replacement at the right time with the right contractors and supplier with the right equipment at the right price
- Site management with minimum impacts to the daily operations and patient care
- Communication with administrators, medical staff, end-users and contractors
- Achievement of the expected outcomes to complete the project within time and to budget

## 5. LINEN SERVICES OF HOUSEKEEPING:

- Collecting soiled linen and uniform from various places, sorting the linen and uniform and cleaning, disinfection and processing
- Inspection and repairs or replacement damaged materials
- Timely distribution of clean linen and uniform to the respective user departments
- Maintaining different types of registers

## 6. CLEANING OF HOUSEKEEPING:

- Cleaning, scrubbing and disinfecting all the areas including A&E, wards, ICUs, OT and all other departments at regular intervals on daily basis and urgent request
- Collection of garbage in specified colour coded bags from all waste units existing insides the premises and effective management of clinical waste
- Effective measures for pest control on a regular basis

## 7. SECURITY:

- Access control and public area surveillance

- Emergency incident dispatch and response including fire alarms
- General patrol of internal and perimeter areas at regular intervals on daily basis
- Escort patients and visitors upon request

## 8. SHUTTLE BUS DURING TYPHOON NO. 8:

- Timely arrangement of shuttle buses during typhoons No. 8 and making sure staff get back to work on time
- Maintaining safety during the travel

## 9. CAR PARK OF TRANSPORTATION:

- Proper parking assignments and enforcements
- Traffic arrangement during peak hours
- Valet parking services
- Time sharing of space resources where needed

## 10. CATERING SERVICES FOR PATIENTS:

- More healthy meal choices for patients with different disease and special dietary requirements
- Improved meal quality if it can meet the expectations
- Efficient and timely meal ordering system to be employed
- Acceptable pricing
- Recycling of food waste and composting

## 11. CATERING SERVICES FOR STAFF:

- More meal choices of staff with different preferences
- Improved meal quality if it can meet the expectations
- Efficient and timely meal ordering system
- Acceptable price
- Recycling of food waste and composting

**The 11 identified FM aspects can be used to improve operational cost-efficiencies in Hong Kong's hospitals.**

**A comprehensive FM performance review is the starting point to identify what technologies can advance operational strategies in Hong Kong's hospitals.**

## THE RESEARCH METHODOLOGY

This paper discusses the importance of understanding the return on financial investment of operational expenditure in Hong Kong's hospitals and finding solutions to improve cost-effectiveness and operational efficiencies. It also draws on existing research completed from an operations consultancy perspective outlining the current opportunities and successes in current FM services.

### METHODOLOGY:

- The primary research that was completed used questionnaire surveys that consisted of 24 questions
- The questionnaire surveys were implemented by a researcher with senior hospital staff members from all departments in the same organization
- To choose the sampled audience three stakeholder categories were considered - patients, visiting physicians and hospital staff. Staff were chosen due to the long-term contact they have with the hospital and its services
- The questionnaire asked staff to indicate their perceived importance and relative importance between pairs of FM services on the effectiveness in driving operational efficiency
- The research looked to compare operational costs, accommodation, maintenance, cleaning, security and reception, utilities, internal decoration, signage and catering in hospital FM services
- The research looked at three sections of questions with the respondents using a five-point scale to collect the data:
  1. The first section looked at the perceived performance of each of the 11 aspects using a five-point scale (one: very poor – five: excellent)
  2. The second section asked the interviewees to indicate their perceived relative importance between pairs of the FM aspects using a nine-point scale (one: equal importance - nine: extreme importance;)
  3. The third section looked at the general information of the overall satisfaction and comment of the facility services

## WHAT IS NEXT FOR HONG KONG?

Authorities and organizations need to innovate new ways of working to provide cost efficient solutions in managing healthcare facilities to challenge rising operational expenditure.

The research reviewed looked specifically at FM services in a Hong Kong hospital and identified several key areas where organizations and practitioners could look to leverage new areas to save against operational expenditure:

- Many of the FM services that were reviewed were scored as an ineffective use of resources, or more resource needed
- High expenditure outlay of services didn't always result in high yielding performance with comparatively low performance scores identifying a need to review and fully understand exact operation returns
- People generally think bio-medical is very important. However, comparing with the large capital expenditure, usually the operation cost of the bio-medical department is small meaning this isn't a cost-effective area to focus on

Evolution is critical for the healthcare industry as it seeks to overcome rising costs. Existing processes need to be examined facility-wide to ensure expenditure is closely monitored, aligned with best and most efficient practices that demonstrates value in justifying overall spending.

New and affordable technologies, smart buildings and big data are enabling facility managers to improve operations, driven by the realities on the ground. The application of technology into FM can also create critical insight and move maintenance from reactive to predictive, driving efficiencies and cost savings. However, the opportunities, existence and benefits of FM in Hong Kong's healthcare are often unknown, or even applied in-efficiently.

There are three key future strategies that hospitals in Hong Kong need to consider to help improve operational performance:

### 1. REVIEW FM PERFORMANCE

Reviewing current operational process and data isn't always engrained in projects and operations. This is partly to budgets, resource limitations and even the knowledge and expertise of a professional to implement the service requirements. A recommendation is to allocate, or re-allocate in-house, or external out-sourcing to conduct a review of the existing hospital operational procedures. Basic research through questionnaires and data analysis can quickly identify ways in which to save costs and improve performance.

### 2. DEVELOP OPERATIONS STRATEGY

In large organizations, it can often be difficult to create an aligned delivery strategy due to fragmentation of teams, large retrofitted buildings and extensive suppliers. This can create a disjointed operational model requiring a need to create a standard set of operating procedures to be built from a clear strategy, challenging workforce effectiveness, and resource utilization - improving overall patient experience.

### 3. DEVELOP PROCUREMENT STRATEGY

It is essential for healthcare organizations to establish a reliable, trusted and efficient procurement supply chain. Without a structured procurement strategy, a hospital could end up with inferior products, delays and inflated prices. To create cost-effectiveness, health care facilities in Hong Kong need to ensure that procurement is aligned with the business strategy and its operating model.

## LOOKING TO THE FUTURE

Hong Kong remains one of the world leading providers of a first-class, affordable and accessible healthcare service. Despite its challenges around an aging population, growing numbers of chronically ill patients and increasing cost pressures, its vision is to create a citizen centric service that works for its 7.4 million inhabitants.

In Hong Kong's cost-pressured environment, running a healthcare facility is increasingly complex and requires visibility of operational quality and expenditure to create a service that delivers the best possible value. Balancing the equation of cost vs quality is challenging as large facilities are big consumers of utilities and have some of the highest fixed and variable costs of any built asset.

Healthcare facilities generate mass volumes of operational data, and if not captured already, can be recorded and analyzed can help extract valuable insight into reducing operational expenditure creating data-driven decision making processes. Big data applied to technology such as the Internet of Things (IoT) can improve user experience ranging from interactive wayfinding signs to user-based cleaning. Connected air quality sensors monitor temperature and humidity along with monitoring food storage and enhancing food and hygiene standards.

The research reviewed identified the leading FM service belonged to upgrade and replacement of medical equipment, highlighting an area of success that can further enhanced. Focus needs to put into improving the performance of non-medical facilities, linen services, catering services, shuttle bus and carpark services.

The research conducted summarizes around key deliverables and areas which can have an immediate and long-lasting impact on the way hospitals are run in Hong Kong, and include:

- Review and develop an operational strategy
- Grasp the opportunity to procure supply-side services with good quality
- Define KPIs and benchmarks with local and international competitors
- Drive continuous improvement to enhance patient experience

**As the 10-year development plan starts to deliver new and regenerated facilities in Hong Kong, now is the time for public and private healthcare facilities to review their FM strategy to see how they can ensure optimization of operational expenditure and achieve operational excellence. Arcadis, along with its extensive expertise and experience in Hong Kong, has the capability to partner with leading healthcare administrations to ensure that safe, cost effective and efficient operational analysis and implementation of hospital facilities can be provided.**

## The 10-year HDP includes:

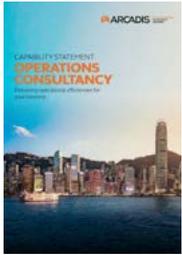
- **A new acute hospital at the Kai Tak Development Area**
- **Redevelopment or expansion 11 hospitals**
- **Construction of 3 new community health centres**



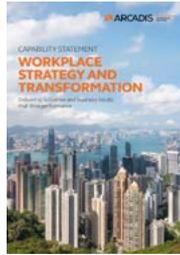
## ABOUT THIS REPORT:

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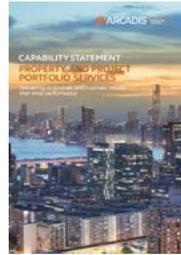
## FURTHER READING:



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