



THE POWER OF PUBLIC-PRIVATE PARTNERSHIPS

Steering Hong Kong towards comprehensive primary care



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ABBREVIATIONS AND ACRONYMS

ACSC	Ambulatory Care Sensitive Condition
A&E	Accident and Emergency Department (hospitals)
ALOS	Average length of stay (hospitals)
COPD	Chronic Obstructive Pulmonary Disease
CHF	Congestive Heart Failure
CMD	Common Mental Disorder(s)
CVD	Cardiovascular Disease(s)
DM	Diabetes Mellitus
eHRSS	Electronic Health Record Sharing System (Hong Kong)
FHB	Food and Health Bureau
FMSC	Family Medicine Specialty Clinic
GAD-7	General Anxiety Disorder Questionnaire
GOPC	General Outpatient Clinic
GP	General Practitioner
HA	Hospital Authority
HEC	Hong Kong East Cluster
HKWC	Hong Kong West Cluster
IMHP	Integrated Mental Health Programme
KEC	Kowloon East Cluster
LTC	Long-term Condition
NCD	Non-communicable Disease
NGO	Non-governmental Organization
NTEC	New Territories East Cluster
PHC	Primary Healthcare
PHN	Primary Health Network
PHQ-9	Patient Health Questionnaire
R&D	Research and Development
SOPC	Specialty Outpatient Clinic
TSW	Tin Shui Wai
UTI	Urinary Tract Infection
WHO	World Health Organization



EXECUTIVE SUMMARY

PPPs in Healthcare - An Overview

- Public-Private Partnership (PPP) is a collaboration between the public and private sector that enables fulfilment of certain common goals and draws from the expertise of both settings.
- Government holds the pivotal role of framing health policies and programmes, ultimately shaping the direction of PPP initiatives.
- In healthcare, PPP models can fill a service gap and leverage primary care for effective disease management and outcomes.
- PPP models are most effective when they meet 5 key criteria: relate to health system needs, are sensitive to context, recognise patients as a third party, focus on problem-solving, and share risk.

The Hospital Authority in Hong Kong will increasingly confront a demand-supply mismatch, escalating costs associated with chronic disease, and a population that is living longer, though not necessarily healthier, lives. Future health solutions must re-think system design in a meaningful way. Globally, Public-Private Partnerships (PPP) have emerged as a tool to expand health services and facilities in both developing and developed health system settings. The defining principle of the PPP model is a collaborative arrangement between the public and private sector that enables fulfilment of certain common goals and promotes the expertise and knowledge-sharing of both sectors. In healthcare, PPP is an arrangement that facilitates efficiency, enhances infrastructure, increases access to healthcare, and promotes better health outcomes.

Governments are responsible for formulating health policies, thereby shaping the direction of PPP initiatives in national settings. Equally as critical, however, is increasing private sector participation. In an overstretched national health system, private sector participation can supplement limited public sector capabilities to meet the growing needs of a country's population.

The global healthcare community is confronting a rapid rise in chronic disease and ever-ageing societies. At country level, this signifies a need for resource allocation and investment in primary care. PPP models can fill a service gap and leverage primary care for effective disease management, better health outcomes, and prevention. This has been well-tested in international models, through the evolution of which, several lessons in best practice have emerged.

PPP models are most effective when they relate to the needs of the health system, are sensitive to context, recognise and actively engage patients as a third-party, focus on problem-solving and sustainable solutions, and share risk between the public and private stakeholders. If designed well, a PPP model will simultaneously support sustainability objectives and improve health outcomes.

Why COPD and Mental Health?

- Total hospital costs for COPD are projected to rise to \$8.37 billion by 2037, which is a 25% increase over the next two decades.
- Inpatient mental health cases are projected to rise to over 15,000 by 2027.
- Outpatient mental health cases will increase by 42% by 2027.

As Hong Kong society continues to experience a rapidly ageing population and a rise in chronic disease, there is a heightened need to invest in disease areas where noticeable gaps in service are driving up A&E attendances and inpatient acute care costs. COPD and Mental Health are two such disease areas. A focus on primary care for management of both COPD and common mental disorders (CMD) has been explored extensively in other health systems. The results have been significant and range from better disease management, to strengthened capacity for self-care, to a reduction in rates of hospitalisation.

Whilst best practices for these disease areas is well-established, current capacity of existing programmes simply cannot address the increasing population demand. The total hospital cost projection for COPD will continue to rise to \$8.37 billion by 2037. Inpatient mental health cases are projected to rise to over 15,000 and outpatient mental health cases will increase by 42% in the next decades.

PPPs offer an opportunity to improve the standard of care for COPD and common mental disorders by expanding access to treatment for patients. Access to care is critically linked to prevention, detection and treatment. Expanded services in the areas of COPD and Mental Health will have meaningful clinical and financial impacts, and ultimately help targeted patients live longer, healthier lives – all whilst keeping healthcare costs down and contributing to the sustainability of Hong Kong's health system.



PROMOTING COLLABORATIVE EFFORTS IN HEALTHCARE: IMPLEMENTATION OF PUBLIC-PRIVATE PARTNERSHIPS

1.1 THE EMERGENCE OF PPPs

Promoting collaborative efforts in healthcare: PPPs for sustainability

Concepts and emerging trends for innovation in overburdened health systems

The cost to deliver healthcare in developed and developing nations has been rising exponentially. Governments around the world are searching for alternative mechanisms to reduce costs whilst increasing sustainability and medical capacity of the health system. A number of countries have employed Public-Private Partnerships (PPPs) as a means to achieving these objectives.

Many countries have rapidly ageing populations, with certain Asian countries ageing at almost twice the rate of some western nations (see fig. 1). The overall dependency ratio is projected to rise continuously across Asia, Africa and the Americas, as both a result of longer life expectancy and declining fertility rates. Concurrently, substantial societal change and lifestyle choices are fueling an increase in chronic diseases such as diabetes and hypertension, and increasingly, mental health. In the near-term, these changes are driving a rapid increase in the demand for healthcare services, and pose mid-term fiscal risks to regional economies. Throughout the developed and developing world, purchasers – governments, insurers and individuals – are grappling with the economic challenge of funding healthcare.

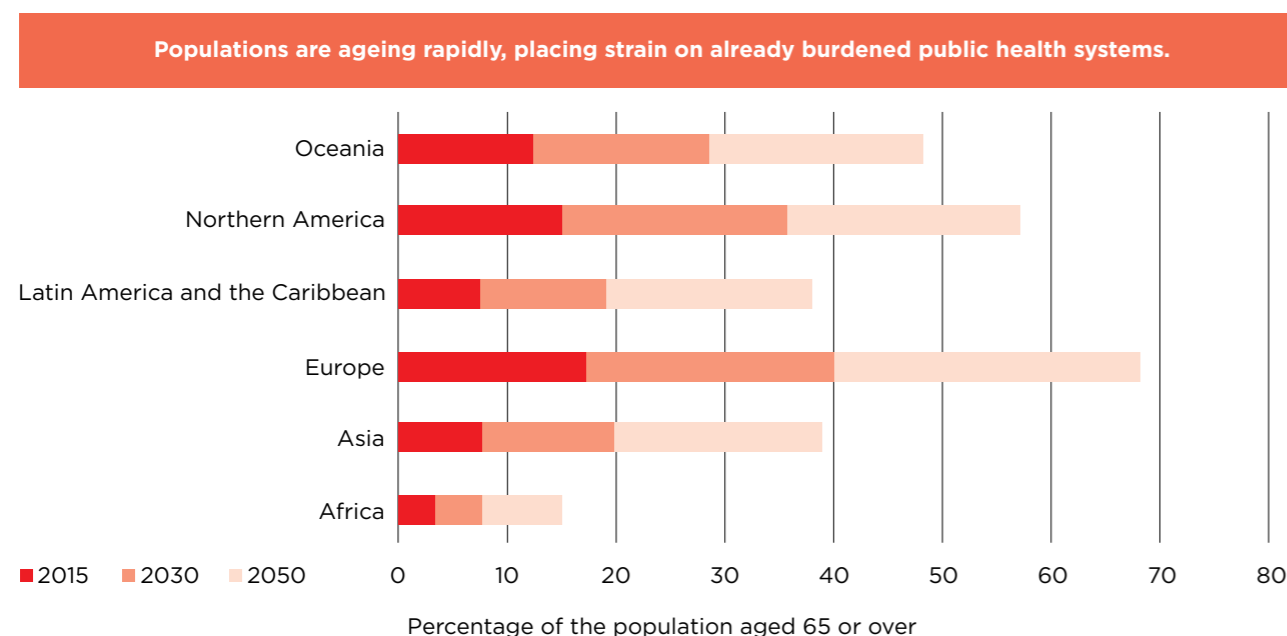
Public systems – where these do exist – are increasingly challenged by demand, unable to meet the growing needs of their populations. Overstretched and confronting shortages in staffing, rising healthcare costs and ongoing budgetary

constraints, many governments are turning to new models of contracting that employ the resources of the private sector.

The provider supply gap, separate evolution of public and private health services, and a lack of integration between acute and primary care are structural challenges facing many economies. In response, governments worldwide, seeking to increase medical capacity and contain costs, have begun to launch initiatives that bring together the public and private sectors for provision of healthcare services.

Whilst terms vary across regions and tiers of government – “social mobilization,” “hospital conversions,” “administrative concessions,” “social organisation,” “co-location,” and most commonly, “public-private partnerships,” or PPPs – these arrangements all have one vital thing in common: they seek to optimize value throughout the entire healthcare system by creating true partnerships. Both the public and private sectors have something to offer, and something to gain, by working together in the pursuit of health system sustainability.

Figure 1: Global Aging Populations



1.2 THE BENEFITS OF PPPs

PPPs: the benefits of PPP models

PPPs exist under many names and models, across countries at various stages of economic and social development. Whilst much has been written on PPPs across sectors, many of the advantages are generalised in a way that leads to misunderstandings among potential stakeholders and partners.

For the health sector in particular, the hypothesised benefits of PPP are considerable, but are dependent upon finding the right partnership, at the right time, for the right reasons (see fig. 2). PPPs in health, by definition, are contractual arrangements that establish a partnership between a public agency and a private entity (for-profit or not-for profit), for the provision of healthcare services. The structure of PPPs allows for the alignment of goals between the public and private sectors. Overburdened public health systems can draw from the resource pool of the private system to bridge capacity gaps, expand funding and medical capacity for services and allow government to undertake larger projects and initiatives.

Specific PPP models can improve healthcare expenditure. For example, a PPP that expands primary care services should decrease the need for expensive secondary and tertiary care via prevention,

education, and diagnostics at primary care level. Similarly, a PPP that delivers transport management in geographically remote regions will increase patient access to health workers, ambulances, pharmaceuticals and supplies; the cost of supplying transport for these factors, which are critical for healthcare delivery, is ultimately less expensive than the cost of hospitalisation for patients who are unable to access early-stage interventions.

In competitive markets, PPPs can decrease cost inefficiencies by fostering competition. Whilst one supplier of services can operate without much consideration for cost or quality, expansion of service providers often results in improvements across the domains of finance, quality, and patient experience – patients, once presented with a larger pool of service providers, tend to become more selective.

Figure 2: The hypothesised benefits of PPP are considerable, but are dependent upon finding the right partnership, at the right time, for the right reasons



1.2 THE BENEFITS OF PPPs

The agreed upon contracting method of a PPP can determine much of its success. In resource-poor settings, governments often seek PPP as a means to deliver a volume of necessary services. In more developed economies, PPPs can be structured to offer value for money through novel contracting methods, e.g. pay-for-quality or pay-for-performance funding schemes, which clearly align payment and incentives to PPP performance.

An additional benefit of PPPs is that they allow formalised arrangements between the public health system and existing community providers, such as non-profit organisations. Many of these organisations provide community-based health services that supplement the existing public system. Community mental health, patient empowerment, disease management, peer support groups, disability and elderly care, and community residential services are provided across developed and developing nations by

non-profit organisations. Funding for these services comes from many donors and divisions, whilst regulation and programme structure are often outside of the domain of the official public system. Through PPP initiatives, these services can be incorporated into public system planning in a more formalised manner; they can be strengthened and expanded.

The use of PPP models broadens out and pluralises the traditional separation of public and private healthcare financing and delivery. Through PPPs, there are multiple opportunities and structures, various combinations of public and private services and settings, that can be brought together with the goal of increasing capacity demands, containing costs, and ensuring health system sustainability (see fig. 3). It is critical that these models employ the best-suited partners, at an opportune moment in the health system's development, whilst addressing a vital healthcare need.

Figure 3: The use of PPP broadens out and pluralises the traditional separation of public and private healthcare financing and delivery, offering multiple opportunities in relation to sustainability

		Delivered	
		Private	Public
Financed	Private	<ul style="list-style-type: none"> Private hospitals Private clinic chains Private residential care homes 	<ul style="list-style-type: none"> Used where there is a significant lack of public funding, especially for capital projects (infrastructure, IT, facilities) Used by private health purchasers (insurers, corporates and on occasion individuals) to purchase care from the public sector or Non-Profits
	Public	<ul style="list-style-type: none"> Used where there is a significant lack of capacity or capability gaps Used where there is a need for new models of care / better use of skill-mix Used to drive competition in service provision Used to bring new services to the population 	<ul style="list-style-type: none"> Government led public health programmes Public hospitals and clinics

1.3 FIVE ATTRIBUTES FOR SUCCESS

PPPs in healthcare: what works

Five attributes of successful PPPs in healthcare

Much has been written about the significant potential and transformational capability of PPPs in healthcare, yet today we see relatively little guidance or support to help Governments decide if, when and how to use PPPs to beneficial effect in moving their health systems forward. Governments, often plagued with a lack of know-how on PPPs, struggle to find a path to new ways of operating.

Added to this, governments often struggle to define the tangible benefit that PPPs could bring; their hard impact on the healthcare system and its operability. PPP remains a source of untapped value. As we have seen in other sectors, those that can overcome challenges posed by PPP, and consider this as a potential tool to support sustainability, will give themselves more options and opportunities for development. In this section we look at five key attributes of successful PPPs, and consider what this means for the development of the PPP model.

1. They clearly address health system needs

The most successful healthcare PPPs have one thing in common: a relentless focus on understanding and responding to the needs of health systems. The assessment of if, where and to what effect PPPs could be used must be underpinned by regular and robust needs assessments to provide a full understanding of current and future requirements. There are many ways in which this can and has been done, though all successful approaches are evidence-based.

Such an underpinning allows governments to prioritise investment according to needs, service requirements and where the greatest return can be achieved for every dollar spent.

The process of identifying health system needs and priorities should involve stakeholders across the healthcare ecosystem to agree on joint outcome-focused strategic priorities and investment plans. These should address long-term health and social care needs and tackle health inequalities.

The benefits of ensuring that use of PPPs are hardwired into a broader process of strategic planning are compelling. Linking decisions back to overarching system goals and needs ensures that PPPs are aiming at the right target. Once this is established, structure and execution become key priorities.

2. They are sensitive to context

The structure and maturity of healthcare systems varies widely across the globe. The differences between markets may have wide-reaching consequences for the development of effective,

sustainable and beneficial PPPs. Countries with considerable structural issues in their overarching healthcare systems, and those without maturity in the breadth, quality and access to care, may require a fundamentally different way of utilizing and structuring PPPs to more developed and sophisticated markets.

1.

They clearly address health system needs

2.

They are sensitive to context

3.

They recognise patients as a third party

4.

They focus on outcomes and problem solving

5.

They share risks

1.3 FIVE ATTRIBUTES FOR SUCCESS

Several observed factors across countries of all stages of development have an impact on success or failure of a PPP. These factors include the following:

- transparency of healthcare financing, pricing and performance;
- healthcare market level;
- capacity and capability of public and private sectors; and
- the regulatory environment.

Differences in economic, market, human and regulatory factors are important when considering how a potential model could be evolved (see fig. 4). For example, a needs assessment may identify that a need exists in relation to primary care in a particular country. However, there may not be the appropriate regulations, standards or even workforce in place to facilitate a PPP around clinical service delivery.

Consideration would need to be given to if and how a PPP could bridge the gap – if it could encourage private providers to deliver new services to new standards, or if it would be unviable or expose a government to too much risk.

The most successful, innovative and game-changing PPPs are those structured to not just plug a gap within an existing system, but are used to push the system forward towards a broader goal, such as expanding medical capacity or achieving economic sustainability. In these types of arrangements, there must be common appreciation and sensitivity to the challenge that is looking to be resolved through the PPP – be this financing or delivery. In building a model for a regional health system, consideration must be given to how a global model and framework can be populated locally, with local intelligence, in order to gain an accurate view of what would work in a given set of circumstances.

The structure and maturity of markets has an impact on both the relevance and variability of PPPs, and the way in which PPP's would need to be structured; the greatest opportunities may exist hand-in-hand with the greatest risk.

Figure 4: Countries are at very different stages of development, but there are common factors that need to be considered



1.3 FIVE ATTRIBUTES FOR SUCCESS

3. They recognize patients as a third party

The value of breaking down traditional boundaries between governments, private companies and their populations has been proven in many different ways. In particular, the value of mobilizing a patient towards becoming an active partner in their care, rather than a passive recipient, is based on good evidence that engaged patients are patients that consistently have better healthcare outcomes and health status in the long-term. This requires new systems and ways of working, new incentives and in-depth understanding of population and patient needs, wants and motivations. This will mean different things to different market segments. Whilst customers are always concerned with access and price, they are increasingly concerned with overall health status – and are beginning to view their health as a continuum rather than as episodic incidents. In response to this, government and the private sector

are beginning to see the value in working together, through formal PPP arrangements to support a shift in mindset and thinking towards patient-centred care approaches.

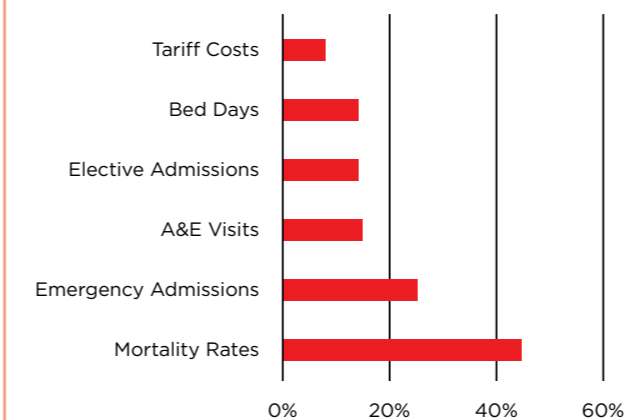
Across markets, we tend to see a small percentage of the population account for a high degree of healthcare usage/claims. Supporting these individuals to manage their health, and intervening earlier, could save considerable downstream costs to governments. Much of the technology that the private sector is developing – in relation to telemedicine, predictive analytics, remote monitoring and so on, has considerable value to the public sector who often has neither the expertise nor the financing to invest in R&D required to develop healthtech solution. As healthcare shifts from being something delivered in hospitals to something supported in the community, so too are PPPs evolving to cater to this new agenda.

Case study: Merck and NHS PPP in the U.K. to improve access to innovative drugs

Challenge:

MSD UK have an extensive portfolio of drugs that are orientated towards the management of long-term conditions (Diabetes, CVD, Respiratory). MSD were struggling to get their drugs sold, given the constraints on public financing. As a solution, they developed the closer care programme which supported patients with chronic illness to better manage their conditions, adhere to drug regimens and improve self-care via telemedicine, health coaching and monitoring. MSD sold their drugs at commercial rates, but provided the rest of the closer care system on a not-for profit basis. This unique PPP around high-cost drugs, enabled the UK's National Health Service to realise significant economic benefits as a result of the programme – including reductions in A&E attendances, reductions in mortality and reductions in unplanned admissions.

Percentage reduction in the following areas as a result of the PPP



- A “whole system” demonstrator of the system was undertaken in 2013 which formed the largest randomised control trial of tele-care and tele-health in the world.

- Key benefits of the closer care system included a 25% reduction in emergency admissions, 45% reduction in mortality rates and 14% reduction in bed days.

- Patient reported satisfaction with the service was higher than with traditional service provision. Patients felt a greater sense of empowerment and reported feeling that services were more tailored to their needs.

- Working “beyond the pill” allowed MSD to improve the appropriate use of drugs, and achieve higher adherence rates.

1.3 FIVE ATTRIBUTES FOR SUCCESS

4. They focus on problem-solving

Healthcare is one of the most dynamic and rapidly changing industries in the world. Almost every day a new technology or solution is introduced to the health market, with the promise of revolutionizing care. However, there is relatively little evidence that rigorously appraises what really works. Whilst pharmaceuticals remain essential, marketing activities can heighten public demand for the latest drugs and therapies, eclipsing the value of existing pharmaceuticals and non-medication lifestyle changes. In some cases, new solutions or services can have adverse consequences, such as unnecessary use of diagnostics or the phenomenon of “overdiagnosis.” In this growing trend, patients are diagnosed with a “disease” that will never cause symptoms or death during their lifetime. Overdiagnosis is a potential side effect of increasing screening for early forms of disease. It’s for these reasons that the most forward looking PPPs are ones in which neither party is unhealthily distracted by novelty.

Additionally, and importantly, successful PPPs are those in which the outcomes are rigorously defined; there is clarity at the outset in terms of what is expected of each party and what overall KPIs will be in place to monitor the success of the PPP. Whilst economic and financial parameters almost always form a core part of PPP monitoring arrangements, increasingly, clinical and service parameters are also incorporated. Overarchingly, the objective is to test if, how and to what extent the PPP helped resolve the original problem and what was the overall value to the health system.

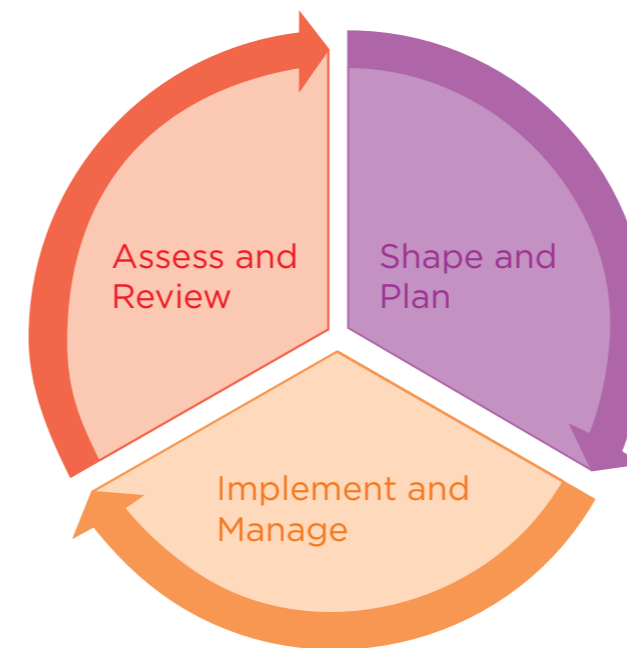
5. They share risks

PPPs represent a fundamentally different arrangement to that of other relationships between the public and private sector. Common to all PPPs is the concept of risk-sharing and the principle that both parties are jointly responsible for the process of risk management. In practice, this is often neglected with one or other parties assuming they can transfer the risk to the other and thus be freed from accountability when things go wrong.

Poor understanding of risk-sharing, combined with poor risk management, is at the core of a number of PPPs that have come under political and media scrutiny in the past few years. These PPPs, often related to complex design, build, and operation, had to be written off as failures – often with public sector bearing a disproportionate share of the cost. Aside from financial issues caused by this, there are broader political and social ramifications. Confidence in the ability of governments and/or certain private companies to deliver PPPs often drops, and with it, public support for such initiatives.

In developing a new PPP model and supporting tools, it will be imperative to ensure these factors are considered and assessment can be made about the structure and capabilities needed to ensure successful delivery of large-scale PPP arrangements.

1.4 KEY STAGES IN HEALTHCARE PPP DEVELOPMENT



A gap exists in current frameworks and models

There is currently no specific model that ties the critical activities of health system planning with sustainability efforts through to the use of PPPs in healthcare. However, there are good strategic planning frameworks, which offer some insight into the critical steps that need to be borne in mind when considering if, how and to what effect the private sector could play a role in health system financing and delivery.

This model, adapted by Asia Care Group from the World Class Commissioning standards, gives some insight into the potential activities that need to be incorporated into a model that could tie health system sustainability to PPPs in a meaningful way.

Health system needs assessment	Identify unmet healthcare needs in the near, mid and longer term using a strong, robust, evidence base.
Reviewing service provision	What do we have in place now in order to meet population health needs? Where are there gaps? Is current provision cost-effective?
Deciding priorities	Identify gaps in overall provision, quality, cost effectiveness, geographical distribution, infrastructure, workforce etc. Considerations of investment return in terms of health gain.
Designing services	Defining the overall service map, and areas that PPP may have beneficial effect, taking account of the context, market, regulation etc. Do we need to stimulate the market? How?
Shaping the structure of supply	Is the PPP process fair, equitable and suited to the goal we are trying to achieve? Is it a real partnership? What is the best PPP structure?
Planning capacity and managing demand	Ensure planned PPP's have sufficient capacity to cope with fluctuations in demand, avoid duplication and ensure delivery of quality.
Supporting patient choice	Ensuring patients receive high quality and up to date information on services, and can fully benefit from PPP arrangements.
Managing performance	Robust monitoring of activity and quality. Is the service/asset delivering to agreed standards? What remedial actions could be taken? What lessons are we learning?
Seeking public and patient views	Engagement with patients and public; Creating an ongoing two-way dialogue to ensure views and experience are captured.

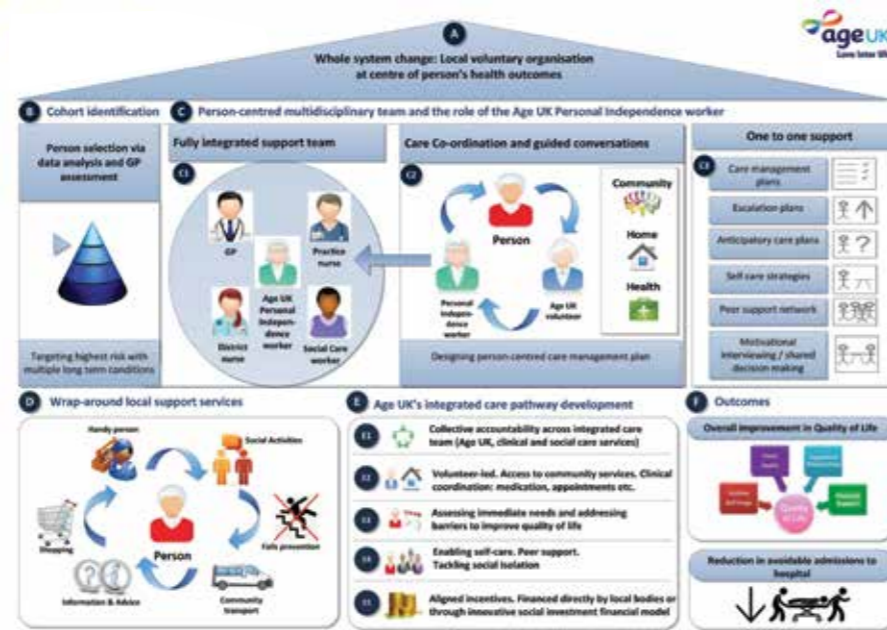
Case study: PPP between Age International and Governments

Challenge:

Age International, the commercial international arm of Age UK, were finding that elderly populations across the globe were struggling to get the support they needed to both tackle health and social care needs. In particular they found that certain groups of individuals were consistently using healthcare services due to deterioration in their conditions due to a lack of community and/or primary care. In many countries, this was placing an increased burden on already stretched public acute care systems.

What did Age International do?

They developed a risk stratification tool that helped Governments and other public providers identify those individuals that were likely to have a high chance of readmission to hospital if there was not better support for them in the community. They then built a support framework (right) which helped providers understand how to support these individuals better and offset potential downstream costs. This was structured as a service PPP between Governments and Age International.



Nora, aged 74
 Conditions
 • Diabetes (not well managed)
 • Anxiety
 • Breathlessness
 • Prior stroke
 • Loneliness

Interventions under the PPP programme

- Tele-health support to help manage her diabetes.
- An 'exercise buddy' who visited Nora, first at home and then as part of a group.
- An organised shopping trip to help her become more independent and confident.
- Attends a ladies' coffee morning and has been able to host one in her home.

The Results:

- In the "Pathfinder" PPP, 100 older people were helped, of whom 60% were women and 40% were men with a mean age of 83.
- Using the Edinburgh and Warwick mental well-being scale, a 23% average improvement was observed amongst older people in the cohort and there were 30% fewer non-elective hospital admissions.
- Early financial calculations showed the potential to save up to \$4 for every \$1 spent. For the local healthcare system, e.g. for every \$100 a health system spent on the PPP, they achieved an estimated ROI of \$400 in economic benefits.

- ✓ Relates to health system needs
- ✓ Sensitive to context
- ✓ Recognises patient as a third party
- ✓ Focuses on problem-solving
- ✓ Shares risk

Case study: The Manises Integrated Healthcare Model – Valencia, Spain

Background:

The Valencia Government first began to explore PPP models in the 1990s in response to escalating healthcare costs, budgetary constraints, and a rising population with growing service demands.

Approach

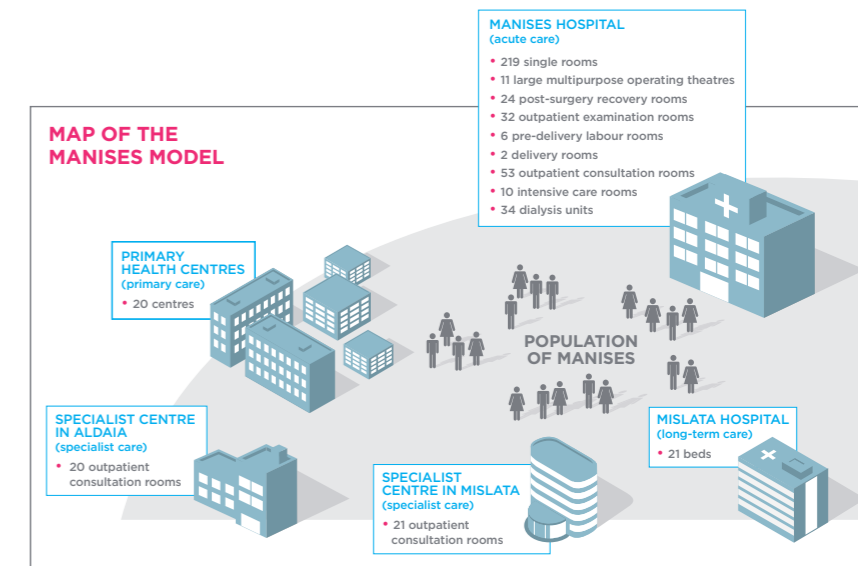
The core principles of the Manises PPP model include the following 4 provisions:

1. Public funding
2. Public control
3. Public ownership
4. Private management

What was done?

- Government pays private operators an annual fee to manage and provide health services to the population of the designated catchment area.
- Private operators comply with the required terms, which include quality and performance indicators to ensure that healthcare is designed to meet the population's needs and is high quality.
- A hospital was built on publicly owned land; initial investment in construction, equipment and human resources came from private capital, with the provision that the hospital becomes entirely the property of the public sector at the point of contract expiration.
- Healthcare services are managed by the private partner during the contract period in exchange for a fee.

- ✓ Relates to health system needs
- ✓ Sensitive to context
- ✓ Recognises patient as a third party
- ✓ Focuses on problem-solving
- ✓ Shares risk



The Results:

- The design of funding enables the Valencia Government to anticipate annual healthcare costs.
- Healthcare is designed to meet population needs whilst meeting Government quality standards.
- The hospital and healthcare infrastructure remain a public asset.
- Risk-sharing increases efficiency, reduces government cost, and drives up quality of healthcare services.
- In 2013, out of 35 high quality general hospitals, Manises ranked: 2nd for the provision of outpatient surgery; 3rd for productivity, which is measured by how efficiently the hospital deploys its staff; 6th for risk-adjusted stays, which looks at the length of time it takes for a person to be discharged from hospital following their treatment; and 9th for mortality, which looks at predictors of mortality and the actual mortality rates experienced at the hospital.

Source: IE Foundation, Bupa



**PPPs IN THE HEALTH SECTOR:
THE HONG KONG EXPERIENCE**

PPPs in the health sector: the Hong Kong experience

Hong Kong's early experiences with PPPs in the health sector have largely focused on the issue of capacity; whilst the public sector employs about 60% of medical staff, it serves 90% of patients. The imbalance of the medical system adds to the existing problems, which include rising costs, insufficient manpower in public hospitals, general population growth and an ageing population that is exerting tremendous pressure on the healthcare system. The earliest experiments have explored an array of common service provisions: diabetes and hypertension, common cataract surgery, diagnostics and screenings, primary care, and patient empowerment (see fig. 6, next page).

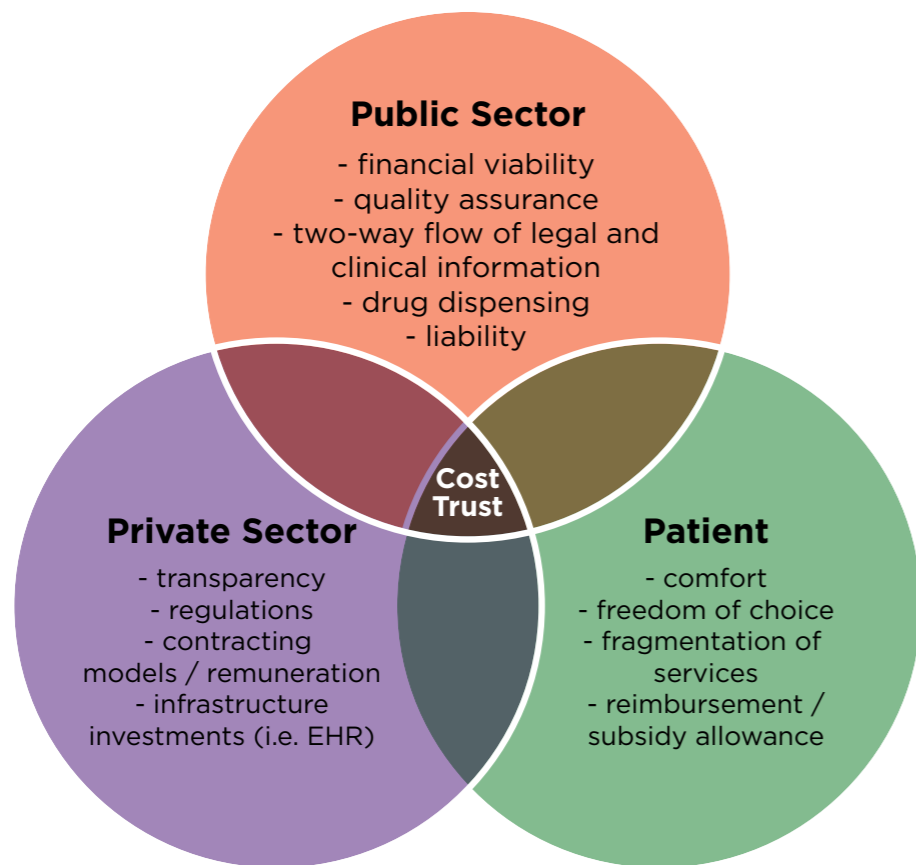
This section will provide an overview of Hong Kong's experience to date, touching upon the areas of PPPs that should be replicated, and those fundamental characteristics that can be strengthened moving

forward. Review of the current market reveals two existing problems that impact healthcare in PPP settings and beyond.

Firstly, patients and providers in Hong Kong have not successfully embraced holistic primary care. Instead, patients engage in an episodic relationship with the health system, driving trends like unnecessary A&E attendances and high readmissions rates for commonly managed conditions and preventable illnesses.

The respective concerns of each stakeholder in a PPP model also impacts an initiative's success or drives its underperformance (see fig 5). Analysis of current and past PPPs reinforces the universal concern of cost containment for all stakeholders. And, for the first time, patient participation and uptake of PPP services is assessed from an array of qualitative data to provide insight into factors driving patient behaviour.

Figure 5: Stakeholder Concerns from All Perspectives



To address the challenges of the Hong Kong health system, namely sustainability of services against increasing population demand, the Hong Kong Government launched a two-stage public consultation on healthcare reform in 2008 that resulted a proposal to include the promotion of PPPs in healthcare, along with a need to enhance primary care. In the 2008-2009 Policy Address, the Government first announced a series of pilot programmes to promote PPP initiatives. By 2011, five PPP programmes had been launched by the Hospital Authority, several vaccination subsidy schemes and

an Elderly Health Care Voucher had been launched by the Department of Health, and several more PPP models were launched in the following years (see fig. 6).

The present-day distribution of these programmes is dense across much of Hong Kong Island and Kowloon, with fewer PPPs across the New Territories (see fig. 7, next page). Many of Hong Kong's PPPs share several aims: to expand services, enhance patient support, reduce complications and hospitalisations, and improve disease-area knowledge and patient capacity for disease management.

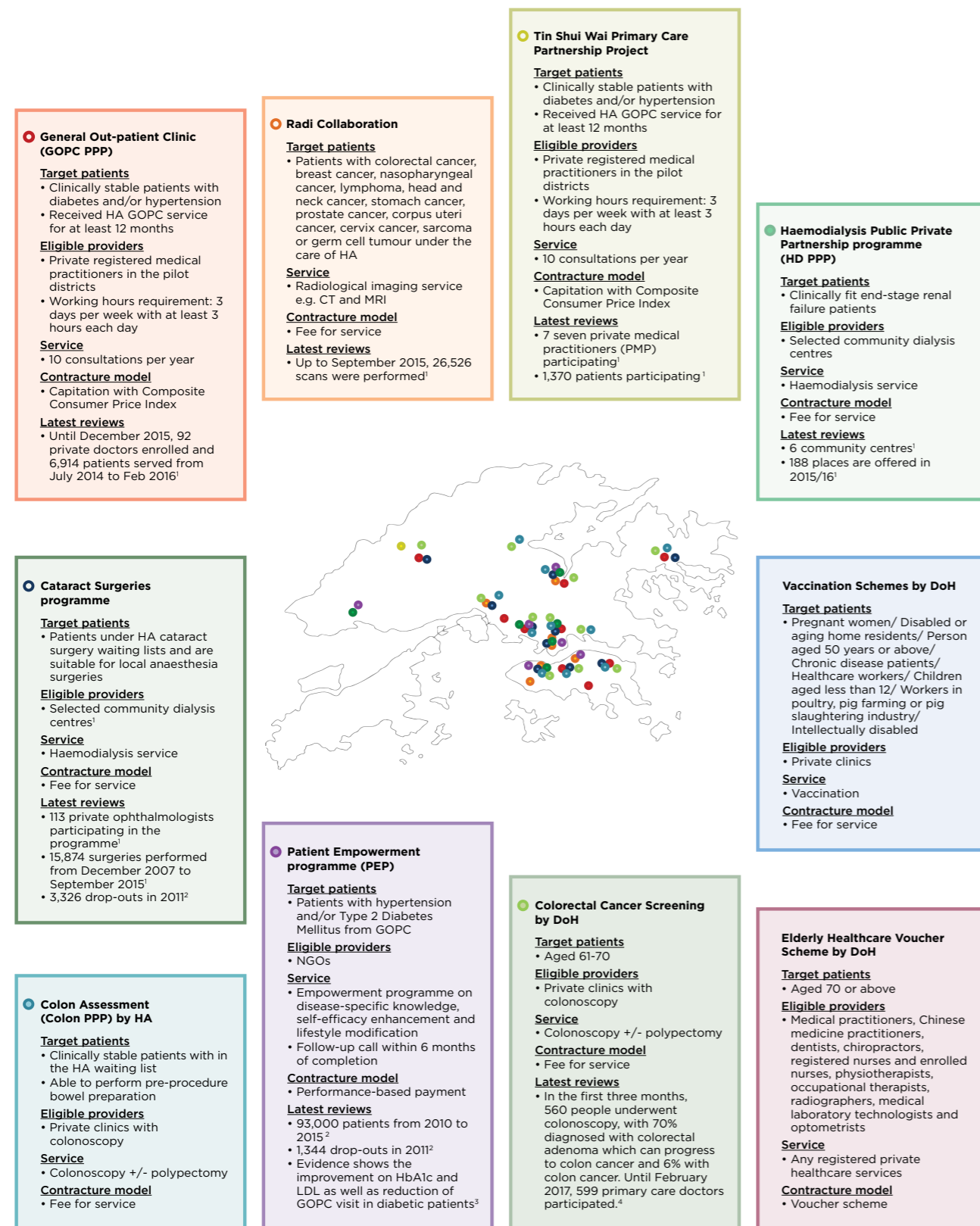
Figure 6: An overview of Hong Kong's healthcare PPPs

Programme Name	Responsible Agency	Target Population	Current Status
Cataract Surgeries Programme (2008)	Hospital Authority	Patients who have been on HA clusters' routine cataract surgery waiting lists for a specified period and are suitable for local anaesthesia surgeries, with priority to those who had waited longest on the waiting lists.	Active
Tin Shui Wai Primary Care Partnership Project (2008) <i>*The first GOPC-PPP site pilot in Hong Kong</i>	Hospital Authority	Patients in Tin Shui Wai North who suffer from specific chronic diseases such as Diabetes and Hypertension with stable medical conditions and in-need of long-term follow-up treatment at GOPCs.	Will merge with GOPC-PPP by 2018
General Outpatient Clinic Public-Private Partnership (2008)	Hospital Authority	Clinically stable patients having hypertension and/ or diabetes mellitus (with or without hyperlipidaemia) currently attending HA general outpatient clinics (GOPC).	Active
Elderly Health Care Voucher Scheme (2009)	Department of Health	Elders persons aged 65 or above who hold a valid Hong Kong Identity Card or Certificate of Exemption issued by the Immigration Department of the HKSARG.	Active
Elderly Influenza Vaccination Subsidy Scheme / Childhood Influenza Vaccination Subsidy Scheme / Human Swine Influenza Vaccination Subsidy Scheme (beginning in 2009)	Department of Health	Disabled or aging home residents / Person aged 50 years or above / Children aged less than 12 / Chronic disease patients / Pregnant women / Intellectually disabled / Healthcare workers / Workers in poultry, pig farming or pig slaughtering industry.	Active
Shared Care Programme (2010)	Hospital Authority	Eligible patients with diabetes mellitus and hypertension.	Discontinued
Haemodialysis Public Private Partnership Programme (2010)	Hospital Authority	Clinically suitable patients, who receive haemodialysis treatment in public hospitals.	Active
Patient Empowerment Programme (2010)	Hospital Authority	Service users with Diabetes Mellitus or Hypertension attending the General Out-patient Clinic of Kowloon West, New Territory West and Hong Kong West Districts.	Active
Elderly Dental Assistance Expanded Programme (2012)	Community Care Fund	Recipients of old age living allowance (aged 70+) or users of home-based services (aged 60+) who have lost all of some of their teeth, suffer from dental disease, and are in need of or suitable to have removable dentures and related dental services.	Active
Project on Enhancing Radiological Investigation Services through Collaboration with the Private Sector (Radi Collaboration Project) (2014)	Hospital Authority	Patients with colorectal cancer, breast cancer, nasopharyngeal cancer, lymphoma, head and neck cancer, stomach cancer, prostate cancer, corpus uteri cancer, cervix cancer, sarcoma or germ cell tumour under the care of HA. Patients fulfilling specific clinical criteria can be referred to the private sector for radiological diagnostic examinations as part of their cancer care.	Active
Colon Assessment Public-Private Partnership Program (2016)	Hospital Authority	Eligible patients include those who are currently on the waiting list for colonoscopy in public hospitals classified as stable cases, and fit for home bowel preparation and colonoscopy under ambulatory setting.	Active
Colorectal Cancer Screening Pilot Program (2016)	Department of Health	Eligible participants who fulfil the following criteria: 1.) born in the years 1946 to 1955 2.) hold a valid Hong Kong Identity Card (HKID) 3.) have already registered with the Electronic Health Record Sharing System (eHRSS)	Active

Source: Hospital Authority, Department of Health, Community Care Fund

2.1 OVERVIEW

Figure 7: Territory Map of PPPs under the Hospital Authority and Department of Health



2.2.1 THE HONG KONG EXPERIENCE: DO PPPs CLEARLY RELATE TO HEALTH SYSTEM NEED?

Health system needs: PPPs for prevention and chronic disease management

Although PPPs have moved some of the demand to primary care, this has largely resulted in shifts in volume rather than prevention of avoidable illness and strategies for chronic disease management.

Within the private marketplace, inpatient care remains skewed towards high volume elective procedures, whilst primary care remains underutilised for prevention. Patients have not been adequately incentivised to use primary care and this stems from a number of historical trends.

The first and most obvious of these trends is the ongoing, episodic relationship Hong Kong citizens have with the system. The health system, and those who use it – across both the public and private spheres – is in need of a paradigm shift. There must be more holistic approach to population health which encompasses continuity of care and places emphasis on prevention.

Within the insurance marketplace, there is a definite lack of managed care in product design. Low-end products offer indemnity cover, whilst high-end products are marketed to offer provider choice. Both of these goals could be managed within provider networks, and assignment of a primary care physician would have several benefits: continuity of patient care, introduction of “gatekeeping” to reduce unnecessary specialist services, reduction in the duplication of services, and provision of much-needed infrastructure to drive prevention strategies.

The design of healthcare reform like VHIS targets already-stable middle class patients. Patients who need prevention and primary care the most – the elderly and those with comorbidities – continue to be treated within the HA. Targeted low-risk patients are less likely to utilise A&E services or risk hospitalisation. Meanwhile, the poor, the elderly, and the chronically ill – the patients who would most benefit from disease management in community care settings – will continue to use public services.

In previous PPP launches, the funding mechanism (i.e. vouchers) also contributed to an initial volume shift but then a drop-off trend was observed immediately thereafter. The reasons behind this will be analysed later in this section, but policymakers should explore other reimbursement schemes in the design of future partnership models.

There are concerns between the public and private sectors that are deeply rooted in the historical relationship. Greater quality assurance and stronger reporting mechanisms within PPPs would enhance stakeholder balance and perhaps ease this historical mistrust.

Whilst PPPs shift volume to primary care, the primary care model in Hong Kong remains under-developed for the aforementioned reasons. Many of the historical system-wide challenges and patient behaviours are simply carried over into the PPP setting. Without strengthening primary care in the design of the PPP model, the benefits of prevention and disease management in community settings are lost to the patient cohorts, and we arrive at a simple volume shift that alleviates pressure on an overstretched public system only in the short-term and offers few economic or clinical gains in the mid- and long-term.

Economic analysis in the next section will show the effects of underutilised primary care in Hong Kong. The analysis makes a strong argument for increased investment in primary care, prevention, chronic disease management, and mental health. And now, as Government looks to expand PPP funding, PPP models could redress many of the system-wide challenges. Reversing trends in avoidable readmissions for common disorders, diverting care to community settings that will ultimately translate to hospital bed days saved, and an overall cost-savings that totals in the billions annually – are all within reach – so long as PPP programme models are appropriately planned to address the specific needs of Hong Kong patients.

Integrated models: sensitive to context

Successful PPP models are sensitive to context, addressing the economic, market, human and regulatory factors that contribute to country-level development.

Economic. The economic factors that impact PPP success and failure largely centre upon transparency of healthcare financing, pricing and performance. Whilst Hong Kong's early exploration of PPP models has been straight forward in their financing structure, pricing and performance has been more opaque. Many of the market hazards encountered in the private sector (upselling, induced demand) will simply be carried over into the PPP model in the absence of structured design measures. In Hong Kong, like many health systems in the early stages of PPP exploration, finance has not yet been tied to performance.

Market. Hong Kong's PPP models have only lightly touched upon the key market factors that drive PPP success; the range and quality of services has made an earnest attempt to address valid health system needs in meaningful areas of chronic disease management, reduced service waiting times, and patient empowerment. At this time, the geographical accessibility of PPP programmes does not ensure equity for all Hong Kong citizens, and the volume of PPP models has not yet driven up market competition. There is potential to address these market factors with future programme expansions.

Human. Staffing shortages across the public health system are a main driver of PPP expansion in the Hong Kong setting; whilst there are many able-bodied medical personnel currently operating in the private sector, very few of the PPP models have been designed to maximise their skillset. These individuals will prove essential to the successful growth and implementation of PPPs in Hong Kong.

Aside from capability to deliver services, the secondary human factor that drives PPP success is the capacity and capability of both the public and private sector to monitor services. Hong Kong's dual-track health system has enormous potential for streamlined services, but data-sharing will be essential to the process. Reporting mechanisms facilitate data-sharing between providers in the healthcare ecosystem, as well as data-sharing between the public and private sector, to ensure continuity of care across the patient pathway. Data can be harnessed to minimise duplication of services, increase efficiency rates, and maximise the volume of patients that can be served.

Additionally, reporting is a vital pillar in establishing safety and quality standards across the care continuum; this strengthens trust in the partnership

and enhances the public's trust in the service option. Data from systematic reviews has shown that the effect of public reporting on clinical outcomes is positive; public reporting can stimulate providers to improve quality healthcare.²¹

Electronic health records are increasingly implemented across health systems, and Hong Kong has recently launched its own framework, the Electronic Health Record Sharing System (eHRSS). This platform provides the ideal infrastructure for data-sharing and reporting of patient data in PPP cohorts. Unfortunately, a very low percentage of private clinics have expressed interest in participating in the initiative. Start-up costs and staff training have been deterrents to adoption of EHR in international settings. For PPP initiatives, Government may wish to take steps to facilitate greater uptake of EHR: ascertain the factors that hinder various users of EHR in Hong Kong currently; increase publicity and marketing of EHR to stakeholders across the healthcare system; and, for specific healthcare partnerships, Government may wish to offset the costs of initial EHR investment. This type of subsidy, and greater uptake of EHR participation, could facilitate a cohesive movement of data across the healthcare system and provide the tools to further strengthen partnership success rates.

Regulatory. Planning initiatives in Hong Kong could do much more to foster PPP success, but would have to address the legal framework and regulatory structure that currently governs public and private healthcare providers; at some point in Hong Kong's future, quality regulations will have to be universal under an overarching national quality framework, irrespective of a provider's "public" or "private" designation.

Patients as a third party: factors influencing programme uptake and patient behaviour

Accurately identifying barriers to patient uptake of PPP programmes during the planning stages will ensure greater success after implementation. The process itself requires a programme design that actively engages patients from the outset. Understanding patient wants, needs, and motivations increases the likelihood of improved outcomes in the mid- and long-term.

Fragmentation of care and delivery of services via a channel of patchwork providers has been one of the main reasons PPPs have had limited impact beyond volume shift. Patients prefer to receive their care in the fewest settings possible, not to travel to several care settings throughout the community wherein there is poor communication between providers, if any. Such a disjointed, patchwork system forces patients to assume the task of care coordination themselves – whilst lacking the medical oversight or clinical understanding to do so. In Hong Kong, the current structure of ambulatory care services falls under several jurisdictions: Hospital Authority, Food and Health Bureau, NGOs, and the Labour and Welfare Bureau. This contributes to confusing patient pathways, unnecessary duplication of services, and continued A&E attendances and hospitalisations for those patients who are unable to appropriately navigate community care.

A secondary issue making PPPs focus on volume shift and impacting uptake of service is embedded in the costs associated with services in primary care settings. Economically depressed patients who are otherwise accustomed to the HA fee schedules will not make meaningful use of clinic visits and follow-ups when the PPP design does not account for the cost of diagnostics or medications. To date, most of the PPP initiatives have focused on a very narrow scope of service provision.

Historical data captures the participation rate of providers, as well as the utilisation and drop-off rates of patients of Hong Kong's PPPs since 2008 (see fig. 8, pg. 26). To better contextualise these numbers, analysis of qualitative data relating to the PPP initiatives was analysed. Data from Government surveys and stakeholder responses for four PPP programmes is presented below.

GOPC PPP 5-10

The HA explains the low participation rate of private providers as a consequence of the extensive administrative procedures and requirements. Since the HA and clinics use incompatible electronic systems, private doctors enrolled in GOPC often have to fill in the same patient data twice.

The bureaucracy surrounding drug procurement from the HA has also proved to be an irritant for some doctors who handle a separate procurement process for normal clinic attendees. They find the programme subsidies insufficient compensation for the required non-monetary costs and loss of time.

For patients, utilisation and drop-off may be directly linked to their understanding of the programme. There is the lingering suspicion that going to a private provider means having to pay the market rate for either the consultation or the prescription, even though the programme guarantees otherwise.

Compared to the existing public clinics patients have been consulting, the quality of which they are most likely happy with, there is limited incentive to switch to the GOPC setting. Under the scheme, each patient is entitled to 10 subsidized visits per year to the private provider, but only four of these can include chronic disease management. Some patients may be worried four times a year is not enough.

There is also concern by patients that their case may be unattended or their care interrupted if the private provider exits the programme. There is no continuity plan and the HA would simply reabsorb these patients should a provider exit the partnership. This specific concern has been cited as an area to improve by the Audit Department. Another cited issue is the lack of choice. Since the participation rate of private providers in specific districts are quite low, some patients find the GOPC PPP a generally unattractive option.

TSW PPP 11-15

TSW PPP was the first GOPC PPP pilot in Hong Kong. It is still a separate programme but is scheduled to be incorporated into the GOPC PPP scheme in 2018. The two programmes currently operate in an almost identical way. Participating patients have cited convenience as the most important reason to enrol.

The programme is notable for the fact that its utilisation rate by both patients and doctors is significantly higher than the GOPC PPP.

2.2.3 THE HONG KONG EXPERIENCE: DO PPPs RECOGNIZE PATIENTS AS A THIRD PARTY?

Whilst the drop-off rates are similar today, before 2016/2017 the programme attendance remained constant at around 1,500-1,600, amounting to an almost 0% drop-off rate over the years for several years.

One significant difference between the GOPC PPP and the TSW PPP is that the former limited the number of consultations regarding chronic disease management to four times per year, whilst the latter entitles participating patients to receive subsidised consultations for chronic disease management at least six times per year.

The Tin Shui Wai district is relatively remote with few transportation links to other urban centres. There was only one major government outpatient clinic servicing the district at the time of the TSW PPP rollout. These factors may have driven up the patient enrolment rate initially. There may be a case that an increased participation by private providers in the district would further boost patient enrolment.

Patient Empowerment PPP¹⁶⁻¹⁷

The HA has not conducted an exit study regarding the dropout rate of this programme, and publicly available statistics are limited. Based on international experience, these models of long-running self-help workshops (around 6 months) generally have difficulty ensuring consistent attendance throughout the programme period.

Lacking motivation to continue with attendance is common among those who have initially signed up, especially if there is the sense that missing the sessions would not hurt their quality of care – as they still received needed medications or advice when necessary.

Privacy is generally another patient concern and many patients do not feel comfortable discussing their situations alongside strangers who are not medical professionals.

To address such issues, hosting organizations usually provide incentives for patients to attend, especially in the first months, to make sure patients participate long enough to see benefits. It is notable that among the 47% who finished the programme, they were generally quite happy about the quality of the sessions and the medical educators. Most felt they benefited from attending the courses. This finding is in line with observations of similar workshops around the world.

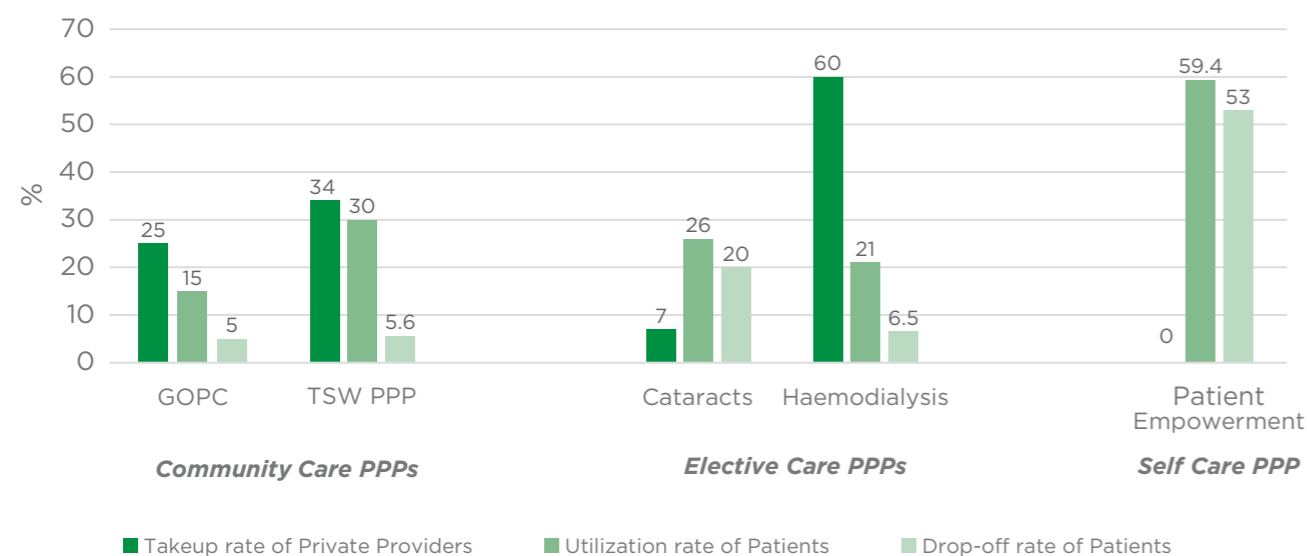
Shared Care PPP⁷

This PPP has been discontinued. The scheme was cancelled after recording only a 6% participation rate. According to the feedback, patients were primarily concerned about having to pay for the care provided by the private providers under the scheme.

Unlike the Cataract programme, even though a small one-time subsidy was provided, the HA did not put a cap on the maximum amount to be paid by patients, and allowed the private providers to charge market rates for services. Most respondents reported feeling:

- Afraid they could not afford the programme indefinitely.
- Displeased with the pricing level set by the private providers.
- Concerned that the private providers would mark up the prices arbitrarily.

Figure 8: Uptake, utilisation and drop-off rates, Hong Kong PPP programmes



Source: Hospital Authority, Food and Health Bureau, Audit Commission, Legislative Council, Asia Care Group analysis

2.2.4 THE HONG KONG EXPERIENCE: DO PPPs FOCUS ON OUTCOMES?

The link between patient cohorts and meaningful outcomes

PPPs could be more effective if patient cohorts were better selected and PPP providers were tasked with reducing and preventing escalations of conditions rather than meeting volume quotas – short-term goals eventually fall flat if the PPP model fails to focus on long-term outcomes.

International evidence suggests that selection of an appropriate cohort of patients to transition from acute care to primary care is vital to improved long-term condition management. The HA's current approach of moving stable patients from the HA to primary care, simply shifts a set volume of patients from one settings to another. There is limited clinical or economic gain in this model, though it does alleviate pressure on the overburdened public system.

In order to derive real economic and clinical gain, there is a need to identify a cohort of patients who have frequent exacerbations of their condition and frequent A&E admissions/emergency hospitalisations. These patients can then be intensively managed in primary care to improve their stability and ability to manage their condition. This approach would go beyond volume shift to a transformation of care for long-term chronically ill patients. A large-scale, national case study in the UK found that 23% of all hospital admissions could be avoided if better primary care was in place. The patients identified had long-term conditions and were often unstable but deemed the most appropriate for intensive primary care.¹⁸

In line with the strategic direction of healthcare reform on enhancing primary care, the current GOPC PPP programme aims to expand GOPC services in districts with increasing demands. PPP models have been piloted for the delivery of primary care service and to promote the family doctor concept in the community.

The archetype for the GOPC PPP is the Tin Shui Wai Primary Care Partnership Project (TSW PPP), which is now set to merge with the GOPC PPP by 2018. Under this PPP, patients in the Tin Shui Wai north region were enrolled to purchase primary care services from private medical practitioners beginning in June 2008, and the programme was later extended throughout the entire TSW area by 2010.

Under the TSW PPP pilot, stable patients suffering from specific chronic diseases such as diabetes and hypertension – who were in need of long-term follow-up treatment – were invited to join

the programme voluntarily at the same fee they currently paid for GOPC services. In each 12-month period, participating patients received a maximum of 10 Government subsidised consultations. At least six of these consultations could be used for chronic disease management. Pathological tests and diagnostic radiological services were provided by the HA. Drugs were also provided by the HA and were dispensed at the private doctors' clinics.

Quality and continuity of care were ensured through developed clinical guidelines and timely information sharing through a designated PPI-ePR platform, namely 'PPI-Primary Care Profile', which facilitated information exchange between the public sector and the provide doctors.

The TSW PPP is relevant to the discussion of cohort selection and chronic disease management in community settings. Notably, during the first 8 years of the pilot, the drop-off rate was nearly 0%, the lowest of any PPP in the Hong Kong setting. Whilst the remote location of Tin Shui Wai and the few transportation links to surrounding areas may have initially driven up programme participation rates – given the lack of options for local residents – patients would not have attended with minimal drop-off if they were not satisfied with the programme services.

The main difference in design between the TSW and the GOPC PPPs is the allowance number for disease management appointments. Whilst both programmes subsidize for up to 10 consultations per year, GOPC PPP only subsidizes for four disease management consultations annually, whilst the TSW PPP subsidized up to six. GOPC PPP patients cited concern over the limited number of disease management consultations, whilst TSW PPP patients praised the six consultations.

Interestingly, these findings from the qualitative data suggest that Hong Kong patients would be receptive to disease management in intensive primary care settings, even though primary care in general is underutilised across the region.

Greater value for money: effective contracting and risk-sharing

PPP models have potential for incentivisation of long-term performance and quality. A robust contractual framework with a well-defined payment mechanism and built-in shared risk can help to align goals and ensure the commitment of all stakeholders to the overarching objectives, as well as strengthen the emphasis on quality outcomes. A clear contractual framework with an outlined termination regime has been successfully employed in many international models, and has been shown to reduce moral hazards like corruption, induced demand, upcoding, and skimming.

An examination of the current financing schemes of PPPs in Hong Kong highlights an important problem area: demand-side financing. Demand-side financing, where funds for specific health services are channelled through, or to, prospective patients — in the form of subsidy, cash transfer, or voucher — often results in an initial uptake of services. Over time, however, this form of financing can lead to induced demand or unfair pricing in the absence of regulatory measures. In the case of Hong Kong's Shared Care PPP, patients were provided a one-time subsidy. Following the use of the subsidy, patients reported fears about programme affordability over time, displeasure with pricing levels set by participating providers, and fears that providers would mark up prices for services arbitrarily.

International data fail to show whether demand-side financing programmes are effective longer-term. In Hong Kong, a study found that despite a reasonably high awareness of the Elderly Health Care Voucher Scheme, its uptake remained low.¹⁹ Most global data focus on short-term uptake that is context-specific and there are few studies that indicate demand-side financing approaches improve quality, health outcomes, or are cost-effective over time.²⁰

Careful thought needs to be given on how to measure, monitor and incentivise positive outcomes. In established markets, PPP models are increasingly employing incentives (and to a lesser degree, penalties) that include pay-for-quality, pay-for-performance, and pay-for-cooperation financing methods (see fig. 9). Unlike demand-side financing, where risk is solely on the payor, these schemes employ a robust form of risk-sharing, which results in better health outcomes.

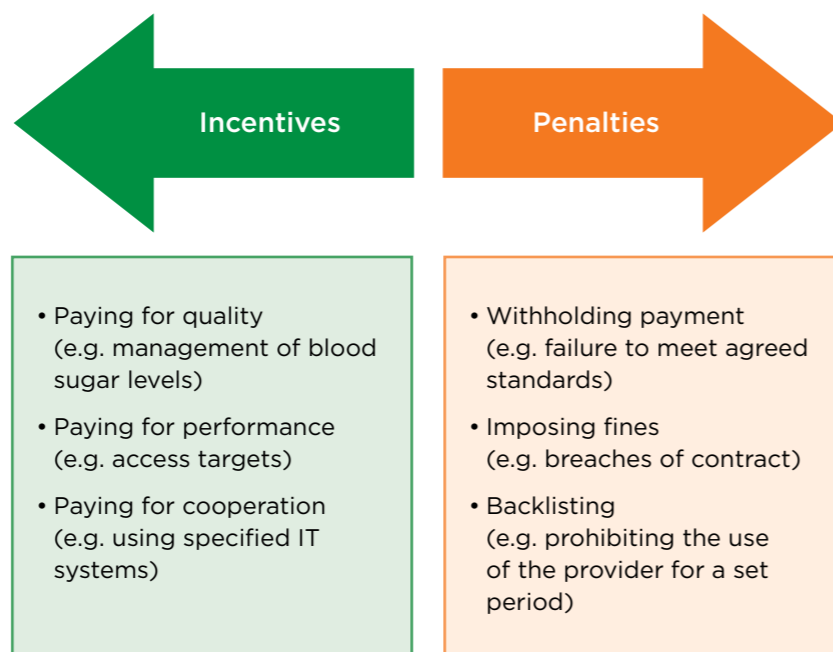
Figure 9: Careful thought needs to be given on how to measure, monitor and incentivise positive outcomes

Performance measures should not be set just because they can be met now – they should be future focused, and encourage both parties involved in the PPP to improve the care for the patient. Metrics work both ways – what can both parties reasonably expect from one another?

Performance and quality measures should be standardised for each PPP (e.g. all providers involved report on the same metrics).

For service related PPP's, some of the best metrics are the “by product” of clinical processes (e.g. blood sugar levels) and are recorded as standard, thus alleviating the administrative pressure of reporting on new measures.

Payments should be carefully crafted to align with the achievement of standards. A sliding scale is always helpful – and incentivises providers to improve.



Evaluating Hong Kong's early experiences with PPP models

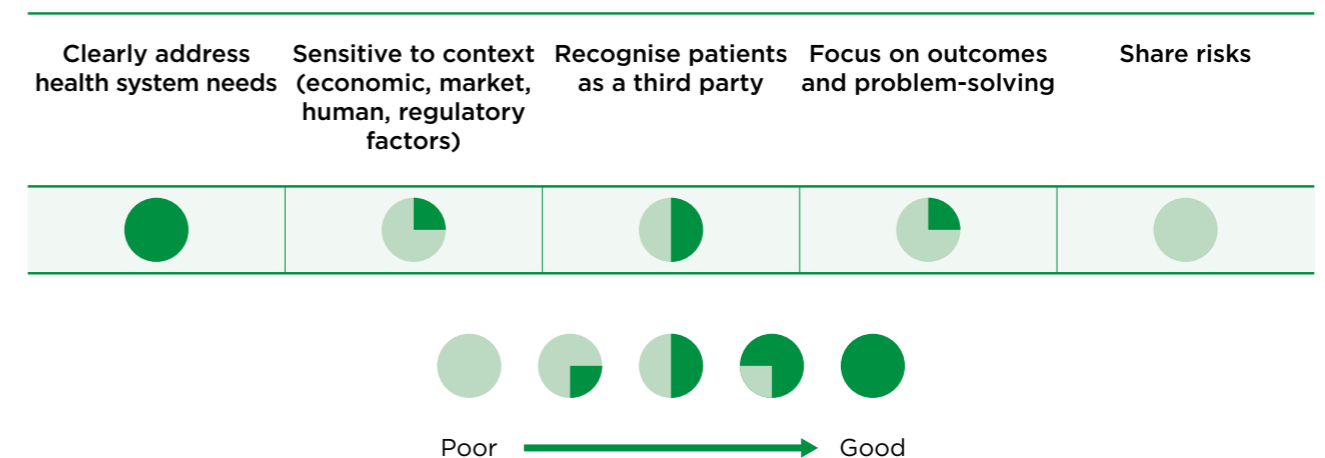
Dating back to 2008, Hong Kong's earliest PPP pilot programmes were carefully designed to address health system needs, though often from the standpoint of expanding immediate medical capacity demands. The design of PPP programmes in Hong Kong requires further growth to address the four factors that impede or drive PPP success; these factors – economic, market, human and regulatory – hold enormous untapped value for Hong Kong's PPP initiatives. In terms of economics, Hong Kong's PPPs are straightforward in design of finance, yet remain opaque in terms of payment structure (for services that fall outside of the scope of the subsidy/voucher) and financial performance, e.g. if the PPP programmes result in cost-savings to the health system. Limited published data on this subject are publicly available.

Many of the PPP programmes set out to actively engage patients in areas of disease management and self-care (diabetes and hypertension patients at the TSW-PPP, GOPC-PPP, and Patient Empowerment PPP). Whilst the TSW and GOPC PPP programmes have had considerable success, the structure of the Patient Empowerment programme has been less successful, though published data are limited on this topic as well. The effort to recognise patients as a third party is built into in Hong Kong's PPP experiments, but closer attention to programme design could result in higher rates of patient engagement, programme uptake, and measurable health improvement.

PPPs could be more effective in the Hong Kong context if patient cohorts were better selected and PPP providers were tasked with reducing and preventing escalations of conditions rather than meeting volume quotas; short-term goals should be phased out in favour of PPP models that focus on long-term outcomes. Given the high volume of preventable illnesses overwhelming the public health system, the architects of Hong Kong's PPP models could benefit from a review of prevention strategies and disease-specific targets that offer high return on investment – both in long-term health and fiscal outcomes.

Currently, Hong Kong's PPPs don't employ any form of meaningful risk-sharing, opting instead for models of demand-side financing. The limitations of these payment methods have been discussed (see pg. 28). In many developed markets, governments have begun to move away from these methods in favour of shared risk. An international case study from the Manises Integrated Healthcare Model in Spain aptly highlights the benefits in quality and cost-containment that can be achieved once risk-sharing models are employed (see pg. 17). Shared risk remains a critical area for improvement in the design of Hong Kong's PPPs (see fig. 10).

Figure 10: Assessing the Attributes of Hong Kong's PPP programmes





**STRENGTH THROUGH CAPACITY
PLANNING: AREAS FOR FURTHER
INVESTMENT**

3.1 NCDs IN AGEING HONG KONG

Meeting the needs of tomorrow: tackling NCDs in ageing Hong Kong

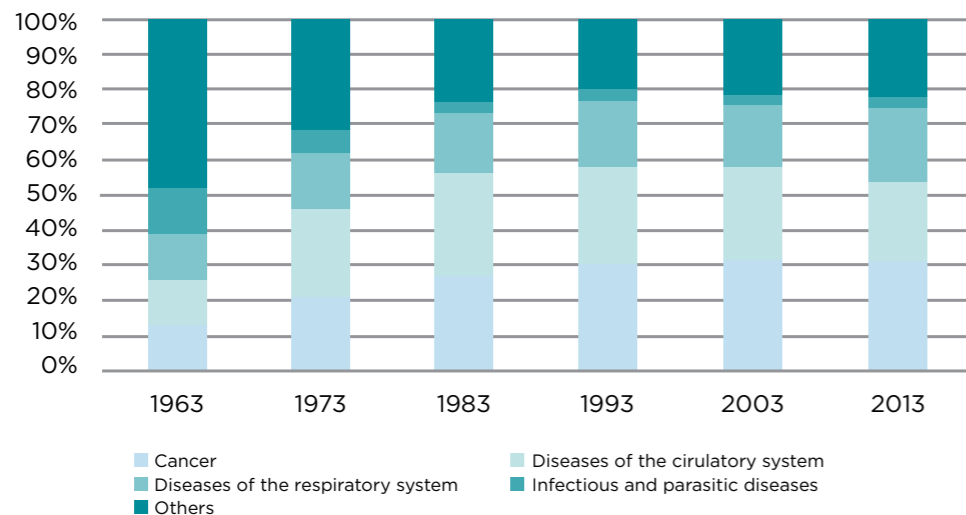
Research suggests that PPPs will have the greatest impact in areas where primary and secondary prevention are key – market analysis reveals that NCDs are best-suited areas to address in integrated primary care.

Non-communicable diseases (NCDs) are collectively responsible for 70% of all deaths worldwide and constitute two-thirds of all mortalities in Hong Kong (see fig. 11).⁽²²⁾⁽²³⁾ NCDs include cardiovascular diseases, cancer, chronic respiratory diseases and diabetes. Over the next 20 years, these disease areas are projected to cumulatively cost more than US\$30 trillion (48% of global GDP in 2010).²⁴

Rates of chronic diseases are increasing faster than anticipated. In 2001, it was predicted that chronic diseases would account for 57% of the global disease burden by 2020, yet they reached 63% of that burden in 2010.²⁵ In Hong Kong the prevalence of major NCDs is projected to rise, further burdening the public health system.

Health policies and strategies rarely give adequate attention to NCDs nor recognise the links between rising NCDs and ageing populations. Whilst this is true of health systems globally, several countries in the Asia Pacific Region are experiencing a rapid increase of ageing populations combined with ever-decreasing fertility rates, impacting the age structure of the population (see next pg, fig. 12). In Hong Kong, the sharp rise in the elderly population is projected to burden the health system; the proportion of the population aged 65 and over is projected to rise markedly from 15% in 2014 to 33% in 2064 (see next pg, fig. 13).²⁶

Figure 11: Proportionate Mortality, 1963-2013, Hong Kong



Source: Hospital Authority, Centre for Health Protection

With a rapidly aging society, services across Hong Kong's dual-track system will be overwhelmed if appropriate provisions are not in place. The city is facing an increasing healthcare burden caused by the rapid increase in demand for inpatient services due to ageing.²⁷ Researchers found for the period of increase (2004-2012), ageing was associated with an increase in total hospitalisation days of 1.03 million, followed by an increase in hospital discharge rates (670,000), and an increase in the number of discharge episodes per patient (620,000).²⁷

The health system will benefit significantly by addressing the needs of ageing populations and harnessing the benefits of supplying ageing individuals with the appropriate tools to manage NCDs in community settings. The complex and interconnected needs associated with ageing should ideally be addressed across all tiers of health service provision.

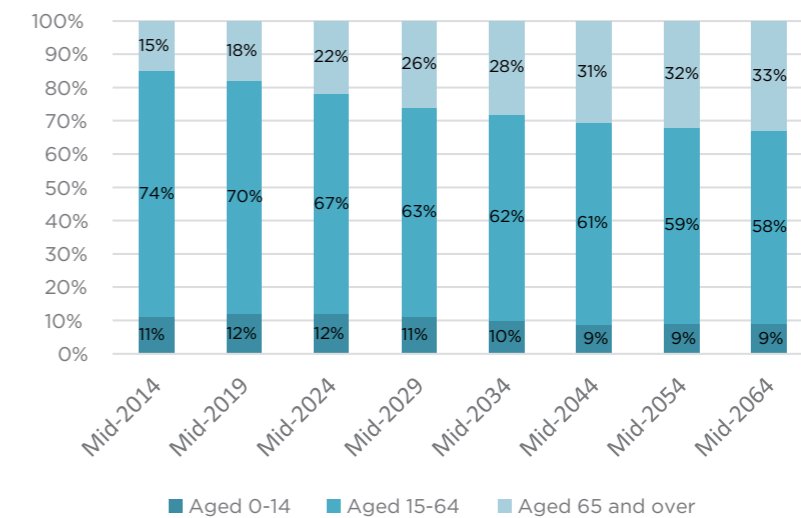
An examination of preventable illnesses, many of which are driven by underlying NCDs, highlights an immediate need in Hong Kong for strengthened primary healthcare – to provide front-line services including NCD diagnosis, treatment, follow-up, disease education, and referral where necessary.

3.1 NCDs IN AGEING HONG KONG

Analysis reveals that PPPs have the greatest impact where primary and secondary prevention are embedded in the model's design. In the Hong Kong health system, robust findings make a strong case for expanded capacity-planning in the areas of NCDs. For policymakers, the rising trend in NCDs should signify two main areas for health system investment moving forward; prevention remains paramount, whilst investing in better disease management is the other major component of NCD response.

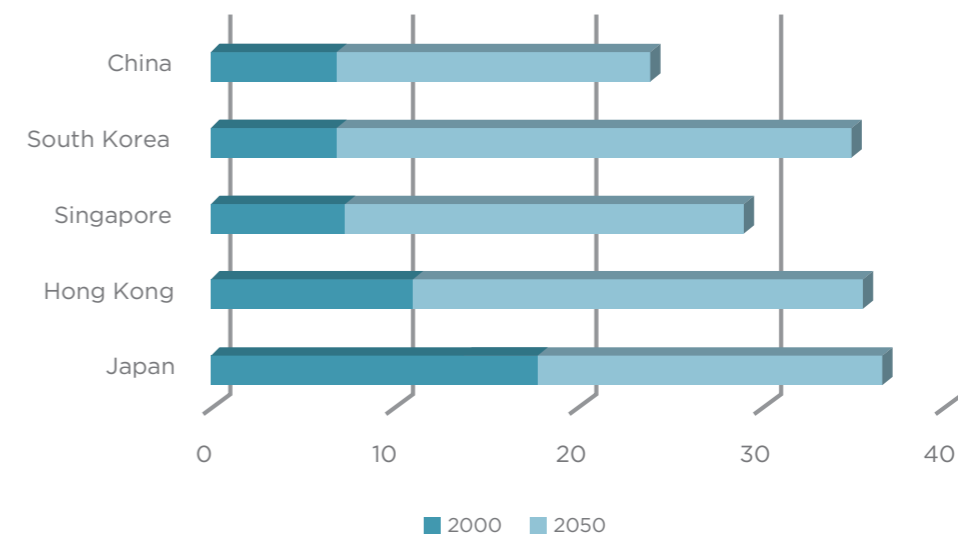
A well-implemented PPP model allows Government to address both components of disease response. In integrated primary care settings, patients stand to benefit from prevention strategies – spanning disease education and risk reduction, testing and diagnostics services, and referral. Primary care is well-equipped to deliver the essential components of chronic disease case management: patient registration, an individualised plan of care, clinical monitoring and medication management. PPPs, if planned correctly, offer a mechanism to strengthen health system sustainability and simultaneously improve the health of Hong Kong's population.

Figure 12: Demographic Changes: Hong Kong's Ageing Population



Source: Hong Kong Population Projections, 2015-2064, Asia Care Group analysis

Figure 13: Percentage of Population 65 and Older



Source: Asia Development Bank, OECD, Asia Care Group analysis

NCDs and preventable illness: how can PPPs help?

The Hospital Authority is experiencing an increase in avoidable admissions, A&E attendances, and specialist consultations for long-term conditions. Much of this demand could be prevented by better use of primary care. A significant number of patients presenting with preventable illnesses in hospital settings in Hong Kong suffer from an underlying Non-Communicable Disease.

Ambulatory Care Sensitive Conditions (ACSCs)		
Conditions for which hospitalisation could be prevented by interventions in primary care.	Hospitalisation rates for ACSCs are often used as a proxy to analyse quality of and access to primary care services.	Poor access or low quality of primary care often results in higher hospitalisation rates for these conditions.

Long-term conditions are increasing in prevalence and severity, resulting in demands on the HA that could outstrip its capacity to treat in less than a decade. Many Hong Kong patients accessing A&E services or being admitted to HA wards actually have underlying long-term chronic conditions that are under-treated, poorly managed, and result in preventable illness and hospitalisation. A review of Ambulatory Care Sensitive Conditions (ACSCs) supports this trend.

The NHS defines Ambulatory Care Sensitive Conditions (ACSCs) as those disease categories in which hospitalisation could be prevented if appropriate, timely and effective community care is provided.²⁹ These conditions can be easily verified from hospital databases and have therefore gained traction internationally as a measure to define potentially avoidable hospitalisations. Even if the ACSC episode itself is managed well, an emergency admission for an ACSC is often a sign of the poor overall quality of primary and community care. Following this rationale, ACSCs can be used as an indicator for the performance of primary health and other out-of-hospital care. High levels of ACSCs admissions indicate poor quality of care at primary level and reflect poor coordination between primary and secondary care.

In 2014, a study by Yam et al. was conducted to identify potentially avoidable Ambulatory Care Sensitive Conditions in Hong Kong. Researchers identified a validated list of ACSCs specific to Hong Kong, taking into account the local context and system constraints, in which 24 conditions were accepted as ACSCs (see fig. 14).³⁰ A significant percentage of admitted patients presenting with ACSCs in A&E departments actually suffer from an underlying NCD (see fig. 14).

The impacts of ACSCs on the health system are crippling. Asia Care Group analysis reveals that these conditions accounted for 44% of all hospitalisations in 2014 (see fig. 13), and 21.4% were readmissions. For a significantly overburdened public health system, these conditions must be managed, and where possible, prevented.

If ACSCs were appropriately treated in primary care settings, analysis suggests significant cost-savings: the average cost per patient day for an ACSC is \$5,170 HKD,³¹ whilst the average length of stay (ALOS) is 5.9 days.³² Taking this into account, the potential cost-savings comes to \$4.47 billion HKD annually. This makes a very strong economic argument for strengthening primary care and prevention, and bringing greater focus to the prevalence of NCDs amongst Hong Kong's population.

Figure 14: ACSCs in Hong Kong

Condition	No. of Patient admitted to A&E	% of All A&E Admission
Pneumonia	27265	8.23%
COPD	24466	7.39%
CHF	13852	4.18%
Pyelonephritis / UTI	12101	3.65%
Chronic Kidney Disease	10743	3.24%
Chest Pain	8837	2.67%
Dizziness and giddiness	8316	2.51%
Other respiratory Infection	5576	1.68%
Convulsions and epilepsy	4792	1.45%
Atrial Fibrillation	4640	1.40%
DM	4465	1.35%
Hypertension	4153	1.25%
Asthma	3425	1.03%
Cellulitis	2546	0.77%
Dehydration & Gastroenteritis	2042	0.62%
Fluid Overload	1995	0.60%
Influenza	1553	0.47%
Angina	1511	0.46%
Iron Deficiency Anaemia	1283	0.39%
Hypokalemia	986	0.30%
Perforated or Bleeding Ulcer	926	0.28%
Constipation	789	0.24%
Hypoglycemia	230	0.07%
Gangrene	205	0.06%
Total	146697	44.29%

Average cost per patient day³¹: \$5170 (HKD, 2017)
 Average Length of Stay for ACSCs³²: 5.9 days
 Estimated Total Cost of ACSCs in A&E admissions
 = \$5170 x 5.9 x 146697
 = **4.47 billion each year**

Effective primary and secondary prevention can alleviate health system strain by ensuring access to timely, effective and coordinated care that emphasises prevention whilst simultaneously helping afflicted patients to manage their condition better. The argument for PPP investment is strengthened by the numbers: local research revealed that over 40% of unplanned readmissions could be avoided through effective community care and case management.⁽³²⁾⁽³³⁾ Asia Care Group analysis suggests that over \$744 million HKD and 144,000 bed days could be saved if effective primary care is provided (see fig. 15).

International data shows that many of these conditions can be effectively controlled in community care settings and better continuity of care is associated with lower hospitalisation rates. In fact, in integrated delivery systems, greater continuity of care is independently associated with lower hospital utilisation for seniors with multiple chronic medical conditions.³⁴

In particular, there is an association with seeing the same GP and experiencing lower hospitalisation rates. Strategies that improve the continuity of care in general practice can reduce secondary care costs, particularly for the heaviest users of healthcare. In the UK, evidence has suggested that older patients who see the same GP most of the time are admitted to hospital 12% less for conditions that could be treated in primary care than those who had a lower continuity of care.³⁵

The importance of investing in primary care cannot be emphasized enough. Disease-specific prevalence rates, inpatient discharges, and deaths have been on the rise over the last decade (see pg. 36, fig. 16-19) and will continue to increase. At the same time, increasing healthcare resources are being spent on chronic disease management, however, resources for primary and community care are still scarce (see pg. 36, fig. 19 and 20).

Health policy initiatives have been introduced to enhance primary care services through the development of community health centres and networks to strengthen chronic disease management for diabetic and hypertensive patients since 2009-10, with annual provision of \$0.6 billion in 2014-15. In spite of this, resource allocation continues to reveal a current system that is still heavily skewed towards inpatient acute care. Whilst strides have been made in looking to primary care, greater investments need to be made across NCD areas. Partnership models afford a strong opportunity to invest in primary care now, before the public health system veers towards capacity overload and collapse.

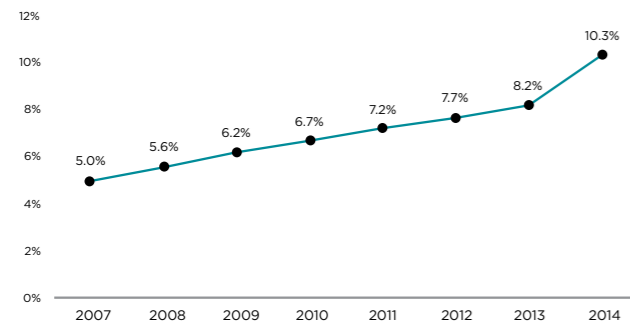
Figure 15: Estimated cost-savings and bed days saved from avoidable readmissions for ACSCs

Condition	Estimated No. of Unplanned Readmission in 2017 ³²	% Avoidable ³²	Average Length of Stay ³³	Total Cost for Readmission ³³ (Million, 2017 HKD)	Estimated Cost Avoidable (Million, 2017 HKD)	Estimated Bed Days Saved
Pneumonia	6,670	27.8%	7.6	\$262.1	\$72.9	14,093
COPD	4,352	39.1%	8.1	\$182.3	\$71.3	13,784
CHF	5,030	53.4%	9.9	\$257.5	\$137.5	26,592
Pyelonephritis	2,080	40.8%	7.6	\$81.8	\$33.4	6,450
Chronic Kidney Disease	2,074	32.6%	7.3	\$78.3	\$25.5	4,936
Chest Pain	2,317	36.4%	6.2	\$74.3	\$27.0	5,230
Diabetes	1,357	65.3%	5.6	\$39.3	\$25.7	4,963
Others	25,266	45.6%	5.9	\$770.7	\$351.4	67,976
Total				\$1,746.1	\$744.7	144,024

Source: Yam et al., Wong et al., Asia Care Group analysis

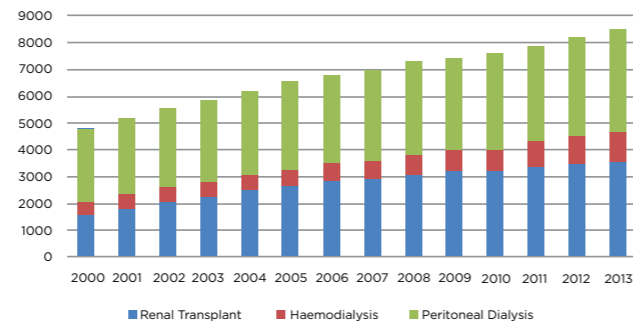
3.1.1 NCDS AND PREVENTABLE ILLNESS: HOW CAN PPPs HELP?

Figure 16: Diabetes Prevalence, 2007-2014, Hong Kong



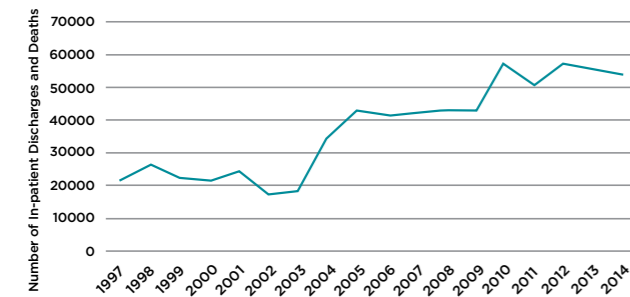
Source: Quan, J., et al. Diabetic Medicine 34.7 (2017): 902-908.

Figure 17: Prevalence of Renal Replacement Therapy, Hong Kong



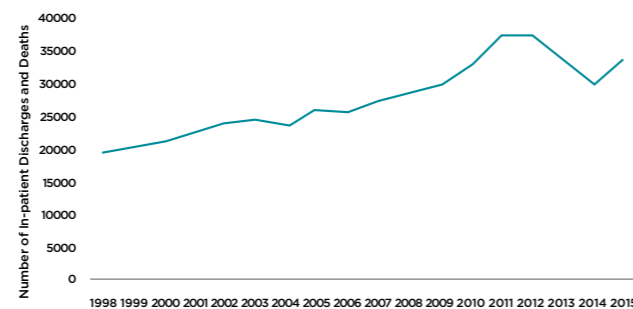
Source: Quan, J., et al. Diabetic Medicine 34.7 (2017): 902-908.

Figure 18: Number of Inpatient Discharges and Deaths due to Pneumonia, 1997-2014



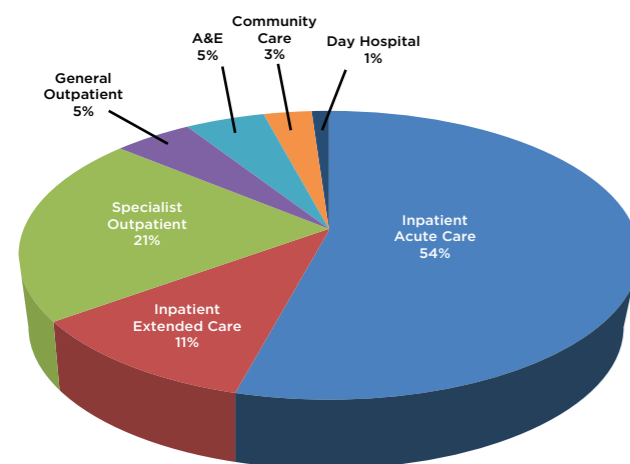
Source: Department of Health

Figure 19: Number of Inpatient Discharges and Deaths due to Congestive Heart Failure, 1998-2015



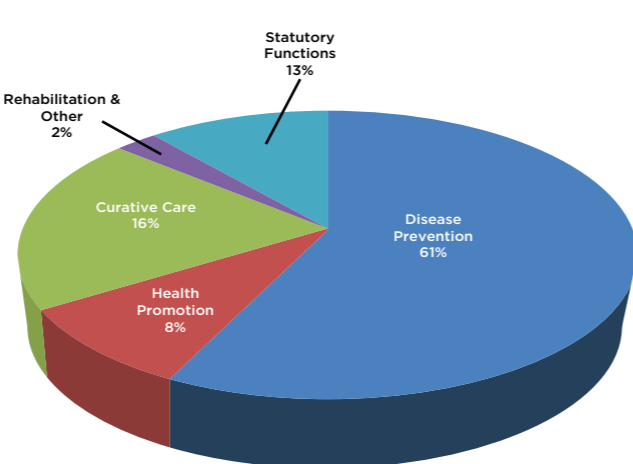
Source: Department of Health

Figure 20: Hospital Authority Resource Utilisation Profile, 2014-15



Source: Hospital Authority

Figure 21: Department of Health Resource Utilisation Profile, 2014-2015



Source: Department of Health

3.1.2 NEW PPP OPPORTUNITY: COPD IN HONG KONG

New PPP Opportunity: COPD in Hong Kong

On the rise globally, COPD represents a heavy burden in the current demand for health services in Hong Kong, with a significant proportion of COPD patients at high risk of COPD exacerbation in current clinic settings.

Chronic Obstructive Pulmonary Disease (COPD) is an increasingly growing health problem globally. The World Health Organisation estimates that there are 64 million people living with COPD worldwide.³⁶ The exact number is unknown but a 2015 study suggested the number is much higher: the number of people living with COPD increased to 384 million in 2010, with a global prevalence of 11.7%.³⁶ More than 3 million deaths were attributed to COPD in 2005, and by 2015 it had risen to the fourth leading cause of death globally, with projections to rise to the third leading cause of death worldwide by 2030.³⁷

In Hong Kong, research has suggested that 9% of people over age 70 currently suffer from COPD.³⁸ Prevalence of COPD was estimated to be 3.5% in 2000,³⁹ by 2012, COPD caused over 31,000 hospitalisations and rose to be the fifth leading cause of death.⁴⁰ COPD is currently the second-most observed category of ACSCs in Hong Kong hospitals (see fig. 14, pg. 32), and highest-ranking NCD on the list.

Asia Care Group analysis suggests the prevalence of COPD by 2037 is projected to increase to over 122,571 in Hong Kong (109,986 of these cases will be persons over age 65)(see fig. 22). Meanwhile, bed days for COPD are projected to rise to 493,554 for patients over age 65, and 575,816 for all total patients by year 2037 (see fig. 23). The total hospital cost projection for COPD rises to \$8.37 billion HKD in 2037, which is a 25.3% increase in the next two decades.⁴⁰

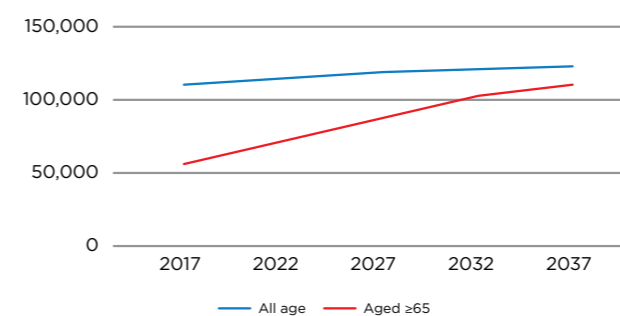
Although there is no cure for COPD, the condition can be improved by early treatment. Currently, COPD patients are commonly encountered in general outpatient clinics (GOPCs). Government has expanded these clinics with PPP models; the GOPC PPP aims to enhance the provision of primary care services, promote the use of a family doctor, and provide disease management for targeted patients with chronic illnesses. The model has been rolled out at several locations throughout Hong Kong, serving just under 7,000 patients from July 2014 to February 2016.

Increased capacity of outpatient clinics could be critical for COPD prevention and management. Due to the progressive nature of the disease, underestimation of symptoms by the patients, lack of knowledge and underuse of spirometry by primary care providers, the disease remains underdiagnosed in about half of cases.⁴¹ Community-based integrated care of COPD in other country settings has resulted in a significant reduction in readmission rates, hospitalisations and emergency department visits, with cost savings ranging from as low as \$9 USD to as high as \$16,996 USD per patient.⁴²

The total hospital cost projection for COPD rises to \$8.37 billion by 2037, which is a 25.3% increase over the next two decades.

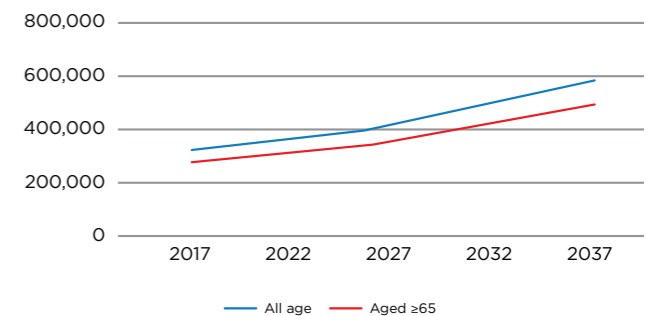
Source: HA Annual Plan 2016-2017; Asia Care Group analysis

Figure 22: Projection of Number of COPD Cases



Source: World Health Organization; HA Annual Plan 2016-2017; Asia Care Group analysis

Figure 23: Projection of COPD Bed Days



3.1.3 INTERNATIONAL CASE STUDY, UK

Case study: Integrated Acute Care and Primary Care Model PPP, Vanguard in Northumbria



Background:

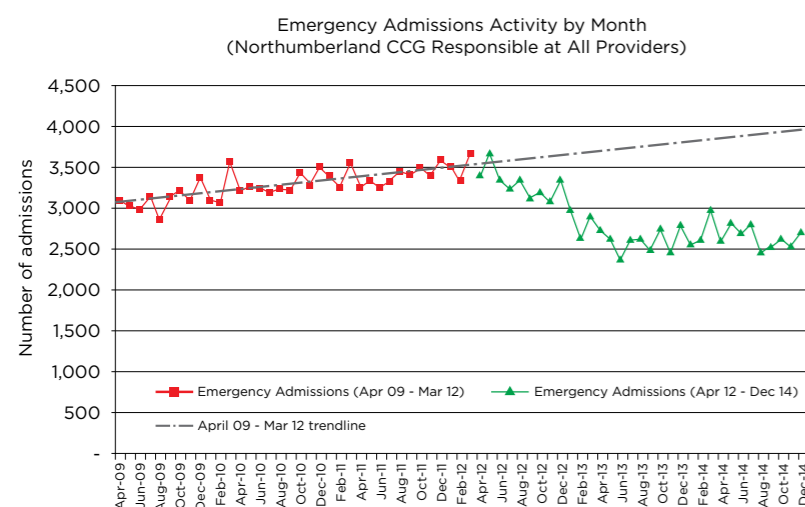
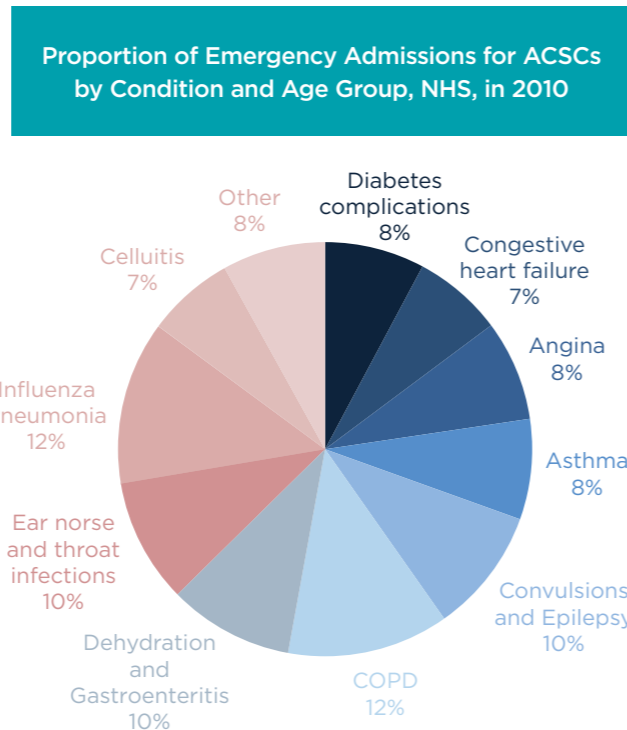
In 2010, ACSCs admission accounted for 5.9% of hospital admissions in the UK. The annual cost for NHS from Emergency admission is £1.42 billion, which accounts for 11.6% of the total emergency admissions.

Approach

In an attempt to provide coordinated and planned care for high-risk patients and reduce admissions, the NHS Northumbria Foundation Trust and the Northumberland County Council has worked together in a unique collaboration for many years to provide integrated care, ensuring patients move seamlessly from hospital to home.

What was done?

- Co-location of GPs within local hospitals: allows integration of acute care and primary care provision and economies of scale to be realized
- Community and acute service redesign: start to move acute medical capacity into community settings, i.e. shifting of nursing work into nursing and residential homes
- Use telemedicine to provide out of hours medical services to prevent unnecessary admissions to hospital
- Establish urgent care centres/ walk-in A&Es that deliver local services for minor injuries
- Shared IT information, patient management system, performance data and payment system across all providers



The Results:

- 36% reduction in emergency admission between 2011 and 2013
- 18% reduction in emergency admission cost between 2012 and 2015
- £4.6 million savings in 2013/2014
- £5.6 million estimated savings in 2014/2015

- ✓ Relates to health system needs
- ✓ Sensitive to context
- ✓ Recognises patient as a third party
- ✓ Focuses on problem-solving
- ✓ Shares risk

Source: NHS, 2013

3.1.4 INTERNATIONAL CASE STUDY, AUSTRALIA

Case study: Australia Primary Care Network PPP



Background:

In Australia, potentially preventable hospitalisations accounted for 6% (~600,267 hospitalisations) of all hospital admission in 2013-14, indicating gaps in coordination between primary and secondary care.

Approach

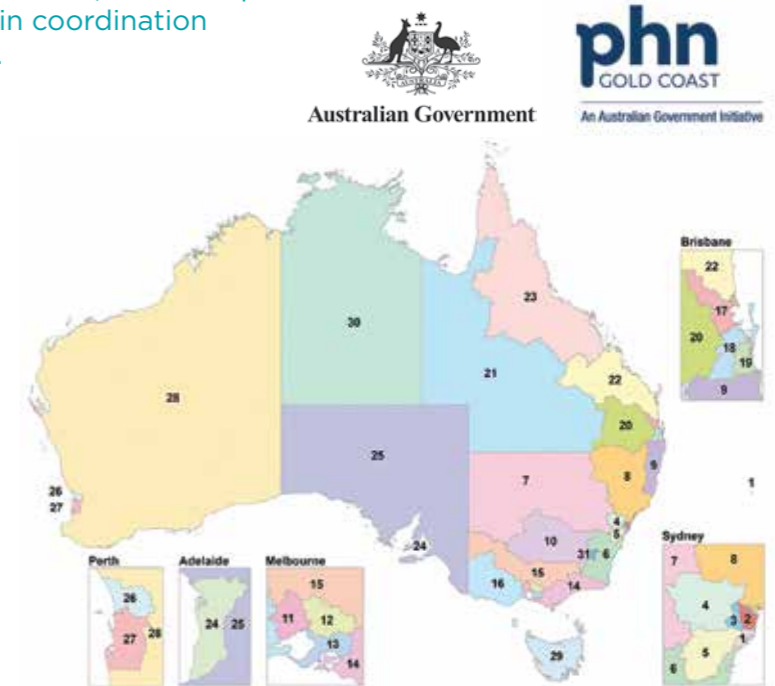
The Primary Health Networks (PHN):

In 2015, the Australian Government established 31 new Primary Health Networks, with the aims to :

- Increase the efficiency and effectiveness of medical services for patients
- Improve coordination of care to ensure patients receive the right care in the right place at the right time

The PHN was established to reduce fragmentation of care by integrating and coordinating health services, supporting the role of general practice, and leveraging and administering health programme funding.

Innovative and incentive funding were provided to PHNs to develop new models of coordinated care between different areas of health service.

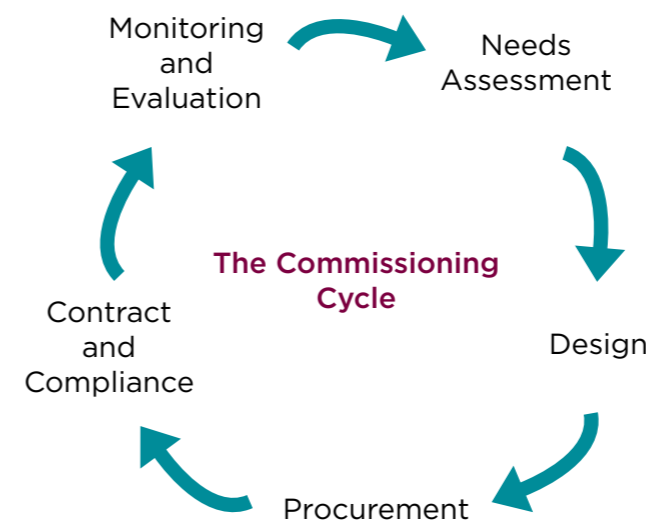


The Results:

Commissioning of Health Service to Bridge Service Gaps:

PHN undertook needs assessments and conducted service planning for their PHN regions, in collaboration with local health service providers to identify the service gaps and priorities in different regions.

The "Commissioning Cycle" model was developed to determine how scarce resources should be allocated to meet the needs of a particular local/national population. Commissioning refers to strategically purchased health services that could bridge the service gaps based on comprehensive need assessments.



Source: Leading Change in Primary Care, 2015

- ✓ Relates to health system needs
- ✓ Sensitive to context
- ✓ Recognises patient as a third party
- ✓ Focuses on problem-solving
- ✓ Shares risk

3.2 OVERBURDENED MENTAL HEALTH SERVICES IN HONG KONG

Meeting the needs of tomorrow: overburdened Mental Health services in Hong Kong

Understaffed and underfunded, Hong Kong’s mental health services face the same economic and social impacts of mental health experienced by other developed nations, whilst lagging behind neighbouring countries in policy and governance – making this sector a prime area for partnership investment.

Among the indicators for mental health service provision, Hong Kong performs most poorly in the area of governance, and currently lags behind Asian neighbours in provision of mental health policies, lacking a formal overarching mental health policy and framework.⁴³ At a societal level, social stigma is still prevalent and there is a need to improve efforts to combat stigma, as it remains a deterrent from early and appropriate intervention of common mental disorders (CMD).

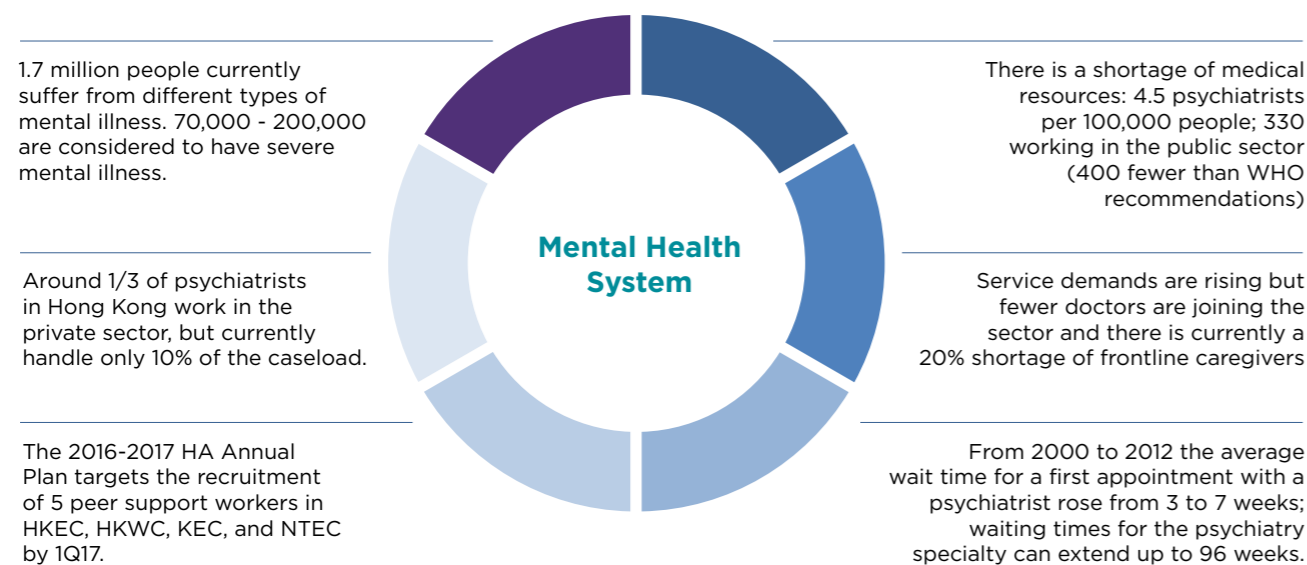
Staffing shortages heavily impact service provision, with the latest public sector staffing ratios falling short of WHO recommendations (see fig. 24). Without private sector partnership, the public system will be unable to meet rising service demands, especially in light of the fact that fewer doctors are joining the sector and frontline caregivers are understaffed by 20%. At the same time, coordination between hospitals and various community remains patchy, whilst screening in primary care settings is virtually non-existent. Government recommendations include an urgent need to review integrated community service models.

In general, mental health trends in Hong Kong follows international norms, with a shift from inpatient to outpatient services. However, the data

from Hong Kong’s health system should be closely monitored. Mental ill-health is undertreated in all countries. Between one-third and one-half of people with disorders do not receive treatment. In Hong Kong, it is estimated that 13.3 per cent of the population suffer from anxiety, depression or other common mood disorders (common mental disorders).⁴⁴

Only 26 per cent of patients seek professional help – mainly from psychiatrists – and very few (<10%) consult general practitioners.⁴⁴ Additionally, only 228,700 people were using psychiatric services in HA in 2015/16, accounting for only 3% of the total population.⁴⁵ Approximately 0.79% of GDP was allocated for mental health services in 2016/2017,⁴⁵ whilst direct and indirect costs of mental ill-health exceeded 4% of GDP in many OECD countries, and indirect costs in the UK were estimated at approximately 4.5% of GDP in lost working days alone. Trends like absenteeism and presenteeism haven’t been studied in Hong Kong, and the indirect costs of mental ill-health remain difficult to quantify (see pg. 45). Likewise, the potential gains from strengthened mental health services are also difficult to quantify, as they often appear across other sectors, including Employment and Labour, and Social Welfare.

Figure 24: Stressors on the Mental Health System



Source: World Health Organization; HA Annual Plan 2016-2017; Asia Care Group analysis

3.2 OVERBURDENED MENTAL HEALTH SERVICES IN HONG KONG

Mental health statistics often belie true health system demand, which is escalating

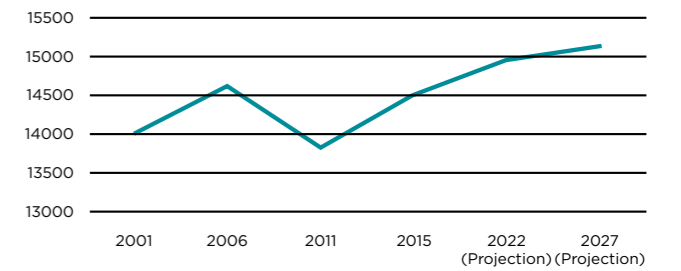
For patients aged 16-74, common disorders in 2017 included mixed anxiety and depression disorder (6.9%), generalised anxiety disorder (4.2%), and depressive episode (2.9%).⁴⁴ Predictors for common mental disorders (CMD) were positively associated with female gender, being divorced or separated, alcohol misuse, substance dependence, lack of regular physical exercise, and a family history of mental disorder.⁴⁴

In response to the prevalence of mental illnesses in Hong Kong, the HA has been increasing its focus on providing ambulatory and community care instead of inpatient care for psychiatric patients. The number of attendances in psychiatric SOPCs and psychiatric outreach attendances increased by 9.2% and 28.2% respectively between 2011-2012 and 2015-2016.⁴⁶ In contrast, the number of psychiatric patients treated in inpatient settings just increased by 2.8%.⁴⁶ At the same time, the number of psychiatric beds provided by HA remained unchanged over the years.

These numbers seem to indicate a declining burden on the health system, however, mental illnesses often go undiagnosed and unreported. In the case of hospitalisations, it is possible for patients with comorbidities to be admitted to hospital for physical disorders whilst their mental disorder is not addressed, or for their classification within the hospital registration system to reflect only one diagnosis, which would result in significant underreporting.

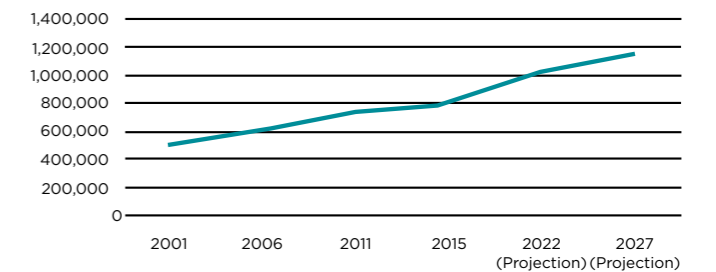
Asia Care Group analysis highlights an escalating trend in number of psychiatric patients the health system will face (see figs. 25 and 26). Inpatient cases are projected to rise to 15,151 by 2027, whilst outpatient cases will increase by 42%, to 1,146,366 cases by year 2027.

Figure 25: Projected Increase in Inpatient Service Demand for the HA



Source: Hospital Authority, Asia Care Group Analysis

Figure 26: Projected Increase in Outpatient Service Demand for the HA



Source: Hospital Authority, Asia Care Group Analysis

3.2 OVERBURDENED MENTAL HEALTH SERVICES IN HONG KONG

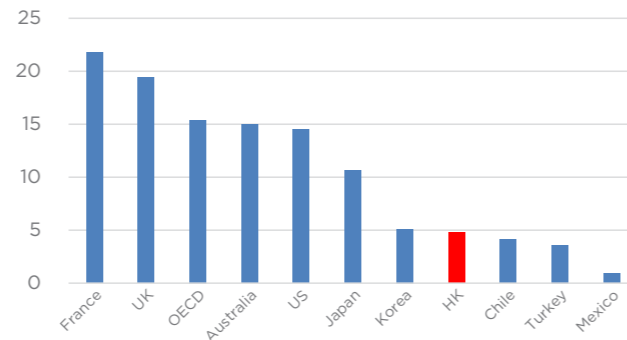
Partnerships offer an answer to manpower shortages and limited mental health resources

Mental and behavioural disorders and suicide accounted for 40,517 inpatient discharges and deaths in Hong Kong in 2014/2015.⁴⁷ Analysis reveals cost per inpatient discharge that year to be \$134,820 whilst cost per inpatient day was \$2,470.⁴⁷ This constitutes a significant strain on the public health system, whereas integrated care would provide a lower cost alternative to continued unnecessary hospitalisations.

A key barrier to providing care in outpatient settings is the significant shortage of manpower witnessed in the Hong Kong market. Compared to international markets, Hong Kong employs far fewer psychiatrists and nurses in the mental health sector (see figs. 27 and 28). The case management ratio for severely mentally ill patients is 1:47 (327 case managers for 15,400 registered patients),⁴⁶ which falls well below WHO recommendations. At the same time, the increase in waiting time for service at the psychiatric SOPCs for new routine cases in recent years reflects the overstretched public mental health system, and one where common mental disorders could be transitioned to the private sector.

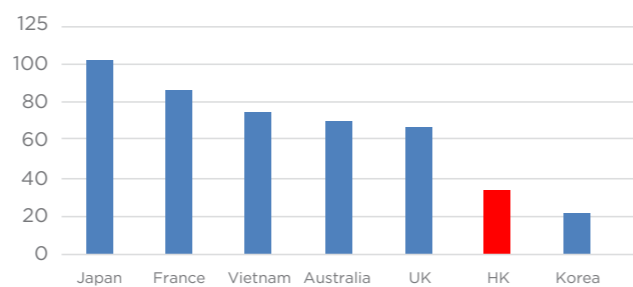
In the wake of these manpower shortages and limited resources, partnership with the private sector will be inevitable to meet growing service demands. Whilst attracting salaried psychiatrists is costly, employing General Practitioners to address mental health needs is both cost-effective and provides better medical oversight to patients than the current community models, which rely heavily on NGO staff participation.

Figure 27: Number of Psychiatrists per 100,000 Population



Source: OECD, Asia Care Group Analysis

Figure 28: Number of Nurses Working in the Mental Health Sector



Source: WHO, Asia Care Group Analysis

3.2.1 MENTAL HEALTH SERVICE FRAGMENTATION: HOW PPPs CAN HELP

The impact of service fragmentation on early diagnosis of mental illness

Prompt diagnosis and early intervention in the initial stages of mental illness can have significant consequences for an individual's mental health. Intervention is critical for preventing and reducing the progress of a mental illness, but it is also essential for improving a person's mental and physical well-being, community participation, and socioeconomic outcomes far into the future.

Mental health patients in Hong Kong currently experience many obstacles: delayed diagnoses of mental illnesses, service fragmentation, and transitions between several settings before reaching the appropriate level of care. Early diagnosis could be improved by simplifying access to mental health services.

A&E doctors and General Practitioners constitute 80% of first carers in most cases.⁴⁷ Patients also enter the health system through contact with Chinese Medicine practitioners, Integrated Community Centres, and in some cases, through contact with the police. Patients frequently go back and forth between GP and hospital settings without receiving a diagnosis.⁴⁸

Whilst this phenomena seems counterintuitive, it is embedded in many characteristics of current primary care settings. It remains challenging to detect and manage mental health problems, given brief consultation times coupled with expression of depressive symptoms as physical pain. Patients presenting with anxiety, depression, and common mental disorders often face long wait times for screening. Patients may experience repeated admissions for physical problems in both A&E and public hospital settings. When the underlying mental illness remains undiagnosed, patients may be referred back to primary care for physical symptoms and this cycle continues.

Other patients receive multiple referrals within public hospital settings before ever reaching psychiatric services, which may result in reluctance for further treatment -- due to repeated traumatic experiences in non-psychiatric service units (see fig. 29, next page). The repetitions and delays along current pathways ultimately drive up the cost of care. Service fragmentation and poorer health outcomes can lead to exacerbation of the health system, captured in unnecessary A&E attendances, preventable hospitalisations, and duplication of services.

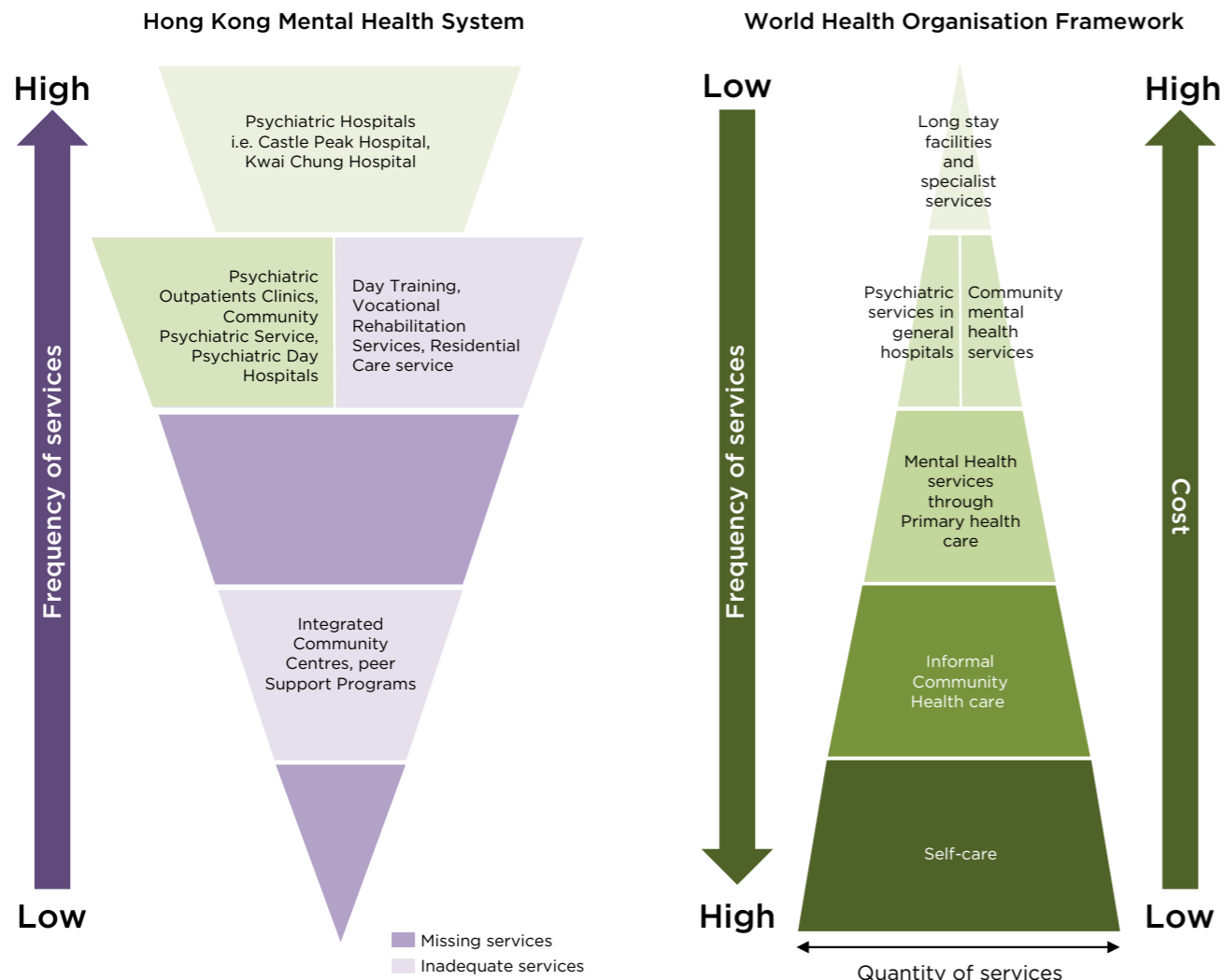
In Hong Kong, 70% of primary care is provided in the private sector.⁵⁰ Patients tend to seek episodic care, as needed, instead of developing an ongoing relationship with a GP.⁵¹ Primary care and the concept of a GP remain underutilised in this market. Mental health screenings are not standard in present-day primary care settings. In the absence of an integrated care model, patients with comorbidities often receive care in multiple settings -- case management for mental health patients is prioritised for high-intensity patients.

GOPC and SOPC clinics fall under the domain of the Hospital Authority along with psychiatric services (both inpatient and outpatient). Meanwhile, social services are performed by NGOs and are regulated by the Social Welfare Department. Community health services (including Day Training, Vocational Rehabilitation, and Residential Services) fall below population demand and international recommendations (see fig. 29, next page). Informal community care, such as the Integrated Community Centres for Mental Wellness (ICCMW), receive limited funding and remain underutilised. Many critical components of a well-functioning mental health system are already in place in Hong Kong, though at the moment these tiers of service are not operated as a cohesive unit.

An integrated care model is a way forward. Drawing from international examples, and the success of the integrated care pilot (the Integrated Mental Health programme, see pg. 46), Hong Kong has a roadmap for change. With the expansion of an integrated care model via a PPP setting, resource allocation and investment will show gains throughout the public system.

3.2.1 MENTAL HEALTH SERVICE FRAGMENTATION: HOW PPPs CAN HELP

Figure 29: International Evidence Points to a Better Model for Resource Allocation in Mental Health Service Planning



Hospital-based clinic services currently play the major role in the system but there are inadequate community-based supports.	Limit mental hospitals Build community mental health services
Psychiatric day hospitals, psychiatric outpatient clinics, and community psychiatric services are in place, but mental health training among general hospital staff remains low. Links from hospital services to community mental health programmes requires strengthening.	Develop mental health service in general hospitals
Integration of mental health services into primary care is lacking, which is the main barrier to early detection, management of stable psychiatric patients, timely referral and prevention.	Integrate mental health into primary care service
Inadequate informal community mental health services for both health and social support	Build informal community mental health services which should not be part of the 'formal' health and welfare system
Lack of self-care support	Promote self-care

3.2.2 NEW PPP OPPORTUNITY: MENTAL HEALTH IN HONG KONG

New PPP Opportunity: Mental Health in Hong Kong

Mounting evidence from international studies highlights the benefits of community-based integration models, with some research estimating cost-savings at \$5 US for every \$1 US invested.⁵² In the specific case of mental health, over 100 trials, mainly in the US and UK, have documented the clinical and financial benefits of community-based care. From prevention to treatment, mental health resources are significantly less expensive in outpatient settings. For common mental disorders, a GP-led integrated primary care model is in line with emerging practices in developed countries.

In Hong Kong, like most countries, people report at least one primary care visit per year. On this basis, greater use of a GP would allow for a deeper understanding of individual vulnerability for certain diseases, illness behaviour, the waxing and waning of disorders, the development of somatic and mental comorbidities, and the ability to overcome the direct and indirect effects of diseases.

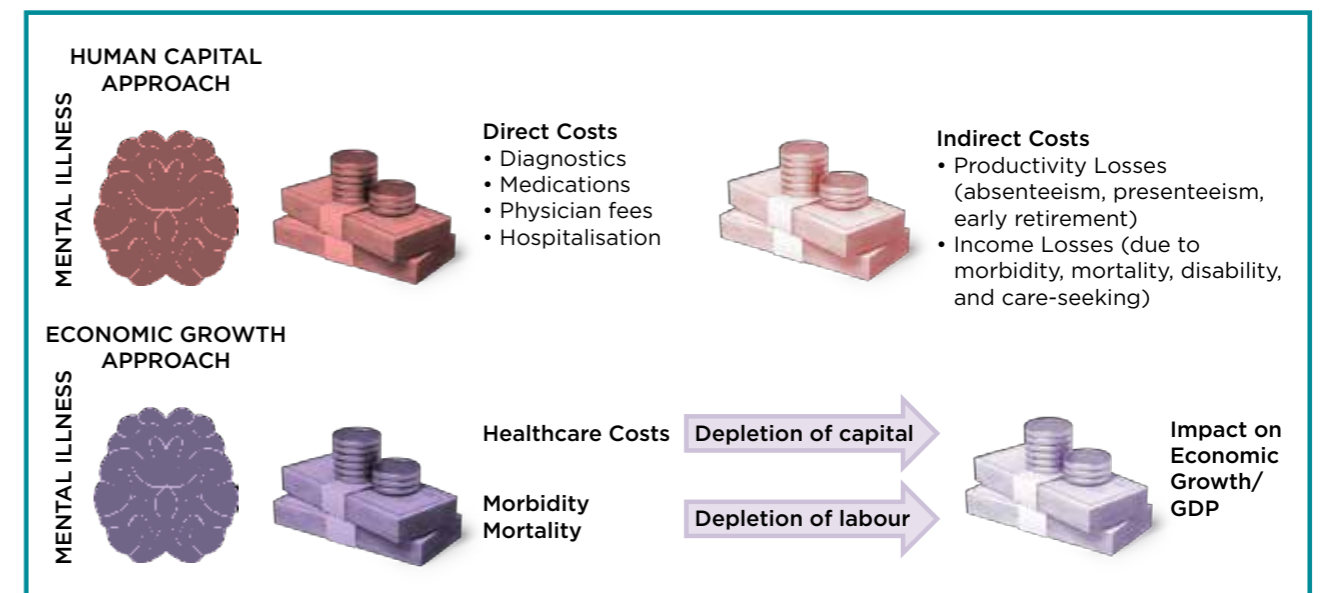
GPs also frequently have a more intimate knowledge of the psychosocial context in which patients' distress and illnesses occur (i.e., interpersonal and family crises, occupational and employment problems, and social, environmental, and financial difficulties). Finally, a visit to a GP even for mental health reasons does not carry the same amount of stigma as a visit to a mental health specialist. Thus, the barriers to help-seeking and acceptance of treatment are considerably reduced in primary care.

The benefits of enhanced primary care and treatment of common mental disorders goes far beyond the quantifiable savings in medical workforce, reduced A&E attendances and hospitalisations, and overall healthcare expenditure. Several models have emerged that measure mental health costs across multiple domains: direct cost and indirect cost; depletion of capital and labour, and impact of economic growth/GDP (see fig. 30).

These models provide a more comprehensive approach to the far-reaching impact of mental health in the modern world. Policymakers often think in terms of finite numbers. In the case of mental health, the stability of patients can impact the workforce in productivity losses (absenteeism, presenteeism, early retirement) and income losses of the patient (due to morbidity, mortality, disability, and care-seeking). The depletion of capital and labour ultimately impacts economic growth.

Likewise, when mental health policies are having a positive effect on patient outcomes, direct cost savings may not be visible in the health sector; the effects may be felt across Employment and Labour, and Social Welfare. For these reasons, mental health policy requires an ongoing, holistic approach. There is no single solution to this problem, only multiple solutions, which must be aimed, consistently and simultaneously, at the level of the patient, the provider, and society.

Figure 30: Models to Calculate Costs of Mental Illness



3.2.2 NEW PPP OPPORTUNITY: MENTAL HEALTH IN HONG KONG

The Integrated Mental Health programme: A model that can be replicated in PPP settings?



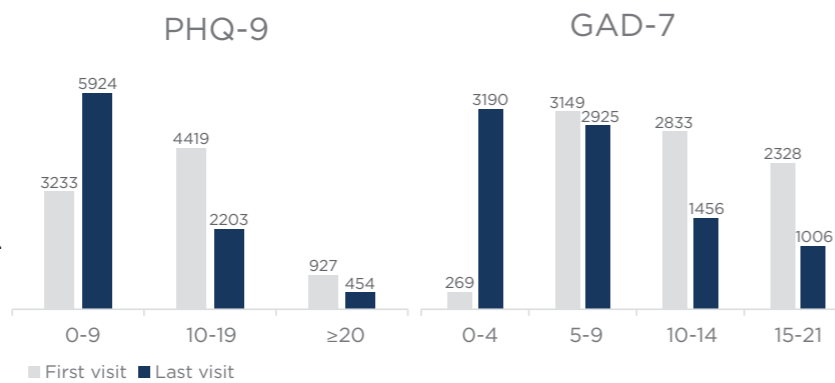
Challenge:

The long waiting time in Psychiatric Specialist Outpatient Clinics in Hong Kong is an intractable problem in the health system and mounting cases are associated with the common mental diseases such as anxiety disorder and mood disorder. An integrated mental health programme was piloted in Hong Kong East Cluster in 2010, joining the Department of Family Medicine & Primary Health Care and St. James' Settlement to provide early detection and early intervention to patients with anxiety or depressive disorders at the Family Medicine Specialist Clinic – General Outpatient Clinic (FMSC-GOPC). The programme offers building blocks for future PPP models.

Approach

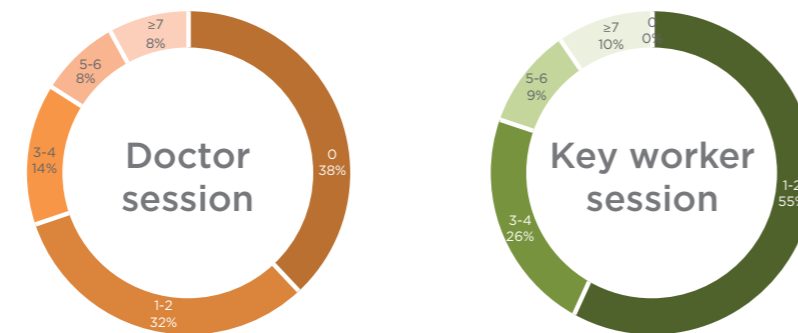
1. Risk stratification

Patients' risk is identified using a self-report depression tool and anxiety tool. Patients are referred to the corresponding department or professional based on the stratified risk.



2. Engagement of a case manager

To provide holistic support for patients with common mental diseases in the community, the programme involved key workers, ranging from a nurse or social worker to an occupational therapist from the NGO. The assigned case manager is responsible for care coordination, initial assessment, patient education, self-management support, symptoms monitoring, simple psychotherapy and relapse prevention. They play a vital role in strengthening a patient's capacity for disease management in the community.



3. Step-down and Step-up mechanism

The Integrated Mental Health programme improves the care pathway from the primary level to the secondary level and vice versa. It enables timely referral from the community to General Outpatient Clinic or Specialist Clinic, and diverts the demand of specialist clinic to the community.

The Results:

From 2010-2014, 3,579 cases were completed and 3,153 cases were still active.

- The percentage of patients scoring ≥ 10 on the Patient Health Questionnaire (PHQ-9), a self-report depression tool, fell from 62.32% in first visit to 30.9% in last visit.
- The percentage of patients scoring ≥ 10 on the Generalized Anxiety Disorder -7, GAD-7, a self-report anxiety disorder tool, fell from 60.16% in first visit to 28.72% in last visit.
- The programme shifts demand for psychiatrists by adopting a multi-disciplinary approach to support holistic care in the community. The ratio of doctor to key worker is approximately 1:2.
- Cost-savings is achieved by diverting the demand of high-cost Specialist Out-patient Clinics to lower-cost community services.

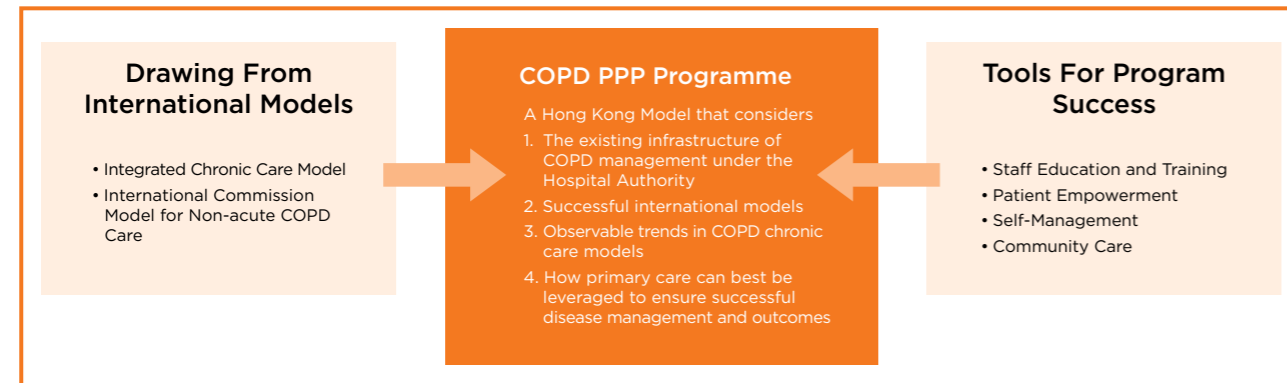
- ✓ Relates to health system needs
- ✓ Sensitive to context
- ✓ Recognises patient as a third party
- ✓ Focuses on problem-solving
- ✗ Shares risk



**CREATING NEW MODELS:
PARTNERSHIP DESIGN FOR
HONG KONG'S FUTURE**

Developing an Integrated Care Model for COPD Management

Figure 31: Building a Successful PPP Model for COPD



Moving forward, a successful PPP model for COPD will need to draw from international models and trends, but also consider the infrastructure of the Hospital Authority, where COPD is currently managed. An examination of models and tools will need to be tailored to the local market, as no PPP programme is one-size-fits-all.

INTEGRATED, CHRONIC CARE MODEL FOR COPD MANAGEMENT

The optimal care of a patient with COPD requires a patient-centred approach that recognizes and treats all aspects of the disease and comorbidities.⁵³⁻⁵⁵ It integrates capacities across healthcare professionals and health sectors. Various chronic disease management approaches have been adopted for COPD patients. Many have been proven effective in both improving patients' quality of life and reducing hospital readmissions. Cost-effectiveness has also been demonstrated in various degrees. These interventions include nurse-administered home care, COPD specific self-management plans, home visits by respiratory health workers, and implementation of a chronic care model.⁵³⁻⁵⁵

Under the current care model in the Hospital Authority, the usual care for COPD patients has been heavily focused on diagnostics and treatment of acute conditions by the attending physician. Prevention and exacerbation of illness requires linkages to primary care in international models. In the absence of this, essential components of self-management support (coordinated care, and community care support) are only available for the most severe cases.

In a positive step, integrated care programmes are being piloted at the Prince of Wales Hospital.⁵⁶⁻⁵⁷ The most recent "comprehensive

COPD care programme" has incorporated a health management approach within the usual care pathway. In this programme, a respiratory nurse interviews COPD patients and provides education in two 1-hour sessions (including basic pathophysiology of COPD, smoking cessation, technique of using medications, dyspnoea management, nutrition, exacerbation-reduction skills, etc). Patients are also assessed by a physiotherapist and educated on exercise strategies and benefits. Individualised physical training programme to perform at home, and outpatient short courses of pulmonary rehabilitation, are also offered. Patients visit a respiratory physician at week 6 and week 16 post-discharge, where the medical therapy for their COPD is optimized according to international guidelines.

INTERNATIONAL COMMISSION MODEL FOR NON-ACUTE COPD CARE

International evidence suggests pulmonary rehabilitation should be provided as a core part of an integrated pathway for COPD management, and it is understandable that it may not be possible to implement the entire care pathway in one hospital setting due to financial and operational constraints. Commissioning the post-acute phase of COPD care to primary care providers is a common practice in developed countries given the clinical and cost-effectiveness under such models.

STAFF EDUCATION AND TRAINING

Local studies have revealed a low level of adherence to best-practice guidelines for COPD management in GOPC clinics, specifically, under-utilisation of effective treatments and under-use of spirometry⁵⁶. This was attributed to the fact that doctors in the general clinics care for a large variety of patients and may be less familiar with COPD treatment

Figure 32: Shifting the Focus from Acute Care to Chronic Care

	Acute Care Approach	Chronic Care Approach
Focus	<ul style="list-style-type: none"> Diagnostic Treatment of acute condition and symptoms 	<ul style="list-style-type: none"> Health promotion Disease self-management
Outcomes	<ul style="list-style-type: none"> Reduction in symptoms 	<ul style="list-style-type: none"> Prevent disease complications and exacerbations Improve quality of life
Healthcare Professionals	<ul style="list-style-type: none"> Take charge of patient's health 	<ul style="list-style-type: none"> Partnership with the patient/family Multi-disciplinary team approach Promotion of patient's autonomy through disease self-management
Patient/ Family	<ul style="list-style-type: none"> Limited participation and no decision-making 	<ul style="list-style-type: none"> Active participation, problem solving and decision-making Goal-setting, communication of own needs

guidelines, as has been shown in overseas studies. A well-educated and knowledgeable professional workforce is a key enabler for effective management of COPD on a long-term basis. Recognising a need for multidisciplinary training, the US National Institutes of Health has suggested in their 2017 COPD National Action Plan the development of a unified, multidisciplinary educational curriculum for primary health care providers as one of the priorities for COPD management. It was recommended that training programme should be disseminated across multiple health professional disciplines and health settings including primary care organizations and community-based groups. A robust training programme and COPD treatment guidelines can easily be implemented for staff participating in the PPP programme, given the targeted nature of service delivery (a much narrower scope than GOPC, which sees patients with many diagnoses) and the fact that patients are already identified.

PATIENT EMPOWERMENT & SELF-MANAGEMENT: ESSENTIAL COMPONENTS OF A COPD INTEGRATED CARE MODEL

The current reality is that most patient education sessions occurs during brief clinical visits and are rarely integrated into COPD care pathways. International best practice indicates self-management programmes are likely to be most effective when education is combined with recurring feedback and reinforcement. A recent study by the Princess Margaret Hospital revealed the lack of patient empowerment under the current model - less than 20% of COPD patients had ever received COPD education.

The importance of shifting long-term chronic disease management services from secondary care to primary care has been well recognised in other countries. A new PPP model for COPD will shift

the focus from an acute care approach a chronic disease management approach, in order to facilitate self-management in a primary care setting (see fig. 32)

COMMUNITY CARE

Patients with COPD may be referred to several outpatient settings when they are being discharged from the Hospital Authority. These may include the Respiratory Specialist Out-Patient Clinic, GOPCs, HA Family Medicine Clinics, or Community Nursing Services — and may receive outpatient physiotherapy services, patient education sessions, and follow-up reviews. Specific patients may be eligible for home visits to support the use of medical equipment and supervision of medication. Unfortunately, clinical management of COPD is complex, and only a fraction of COPD patients are appropriately linked with community care. The current care model for COPD patients under the Hospital Authority contains many of the essential components found in international models, i.e. a chronic care approach to manage COPD at various levels, from primary level, acute level, rehabilitation services, to community care. In practice, however, most patients do not undergo the whole treatment pathway - only the patients with the most severe conditions are referred to respiratory rehabilitation programmes, and only a fraction enter community care programmes. A significant percentage of COPD patients are discharged at acute-level with limited tools to prevent future exacerbation of COPD - which is reflected by the high rate of COPD readmissions among local hospitals (fig. 15, pg. 35). A PPP at primary care level could fill a gap in this space by providing a GP-led service that plays an active role in supporting an ongoing, integrated approach for the management of COPD.

A New PPP Model for COPD

In proposing a PPP model for COPD, inherent in the programme design should be a shift away from an acute care approach. As a solution to both the current overflow in the public system, and the underutilisation of primary care, the programme will draw from international examples for commissioning the post-acute phase of COPD care to primary care providers. The goal is to provide a setting for targeted disease management, that assists patients in remaining stable, learning self-care, and avoiding unnecessary hospitalisation.

Stable patients would have several options for referral, but three are highlighted below (see *fig. 33*). Stable patients may be referred from general hospitals upon discharge, from GOPC/SOPC settings where waiting times are long, and from respiratory rehabilitation settings once patients have stabilised (*shown in red, fig. 33*). The programme aims to allow stable COPD patients to enter a cycle of rehabilitation and community care.

Similar to the respiratory rehabilitation services under the Hospital Authority, the new COPD PPP programme will act as a contact point for follow-up on the patient's health status, provide oversight and capacity for patient education and disease management, and monitoring of drug adherence. The programme doctors would make referrals to relevant community health services as required, e.g. the COPD Support Group. This holistic model aims to address both the health and social factors necessary for appropriate disease management,

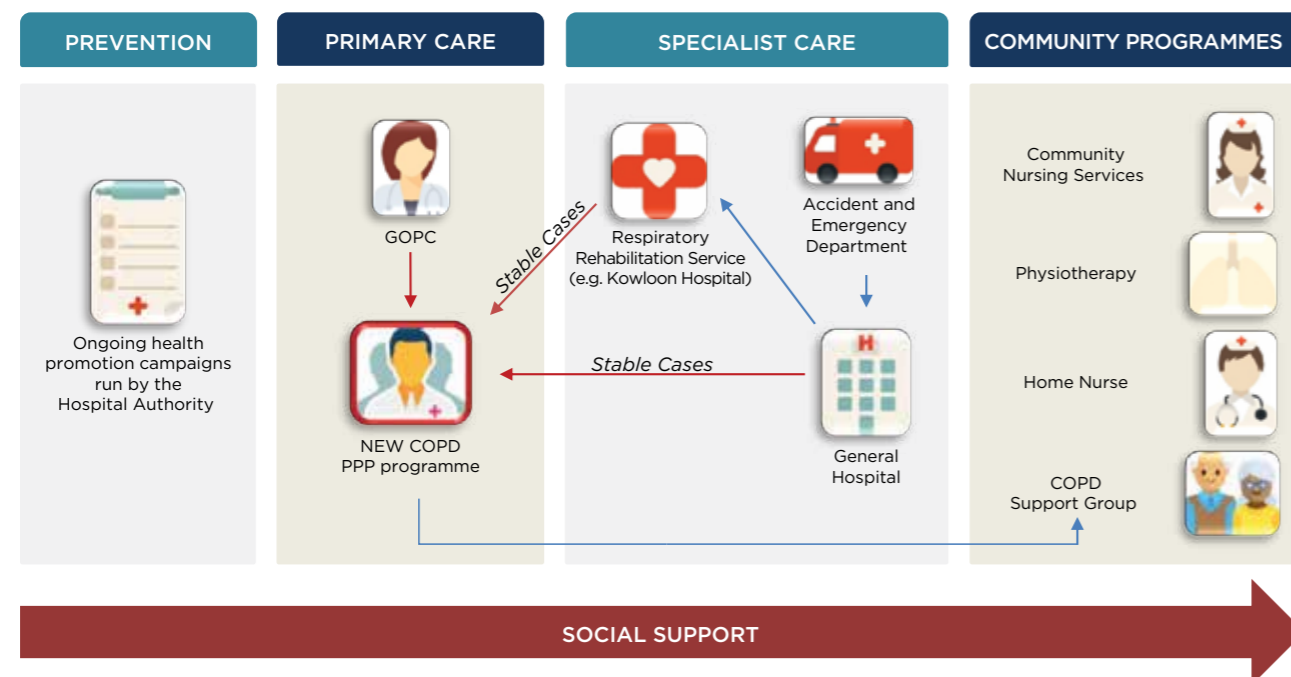
whilst curbing the unnecessary and costly hospitalisation and readmission trends for COPD occurring in Hong Kong currently. With appropriate design and modifications, the PPP programme could be enhanced over time, if needed, to serve a wider COPD patient spectrum.

- ✓ Relates to health system needs
- ✓ Sensitive to context
- ✓ Recognises patient as a third party
- ✓ Focuses on problem-solving
- ✓ Shares risk

Potential PPP Benefits:

- Achieved cost-savings over time by diverting the demand of high-cost respiratory rehabilitation services in hospital clinics to lower-cost primary care settings for post-acute disease management
- Enhanced patient engagement in disease management and self-care
- A reduction in the number of COPD patients admitted to A&E settings
- A reduction in the number of COPD patients experienced unplanned readmissions
- A reduction in hospital bed days

Figure 33: COPD PPP Model



For the pilot phase, the COPD PPP should build upon the progress of previous Government initiatives. In 2012, the Audit Commission published a report on areas in which the Hospital Authority should be developing more useful KPIs to assess the efficiency and effectiveness of its PPP programmes. These included the following:

- Costs per patient
- Percentage of patients satisfied with the PPP programmes
- Percentage of patients with improvement in health condition (e.g. for the Shared Care programme)
- Percentage of patients with improvement in self-management skills (e.g. for the Patient Empowerment programme)
- Extent of meeting the programme's service objective (e.g. overall reduction in waiting time of HA patients requiring cataract surgeries)

At the time, several PPP programmes were collecting KPIs to measure the number of enrolled medical practitioners, number of enrolled patients, and basic measures of patient engagement and response (see *fig. 34*).⁵⁸

In determining the KPIs for the COPD PPP, it is helpful to reference the frameworks employed by various healthcare systems wherein pulmonary rehabilitation programmes have been commissioned out to primary care providers. Local references, however, should also be included based on the integrated care pilot programmes carried out in the Prince of Wales Hospital. One should be aware that KPI standards depend heavily on the pilots at Prince of Wales Hospital, and referencing frameworks used in the NHS, the British Thoracic Society, the Institute of Health Economics Canada, the Australian Institute of Health and Welfare, and the Medical Research Council. The framework for the proposed COPD PPP covers nine domains, with each indicator falling under a primary domain, and then secondary domains, when relevant. The result is a robust framework, in line with the Audit Commission recommendations from 2012.

Key Performance Indicator domains in the COPD PPP:

- ✓ Effective
- ✓ Appropriate
- ✓ Efficient
- ✓ Responsive
- ✓ Accessible
- ✓ Sustainable
- ✓ Capable
- ✓ Safe
- ✓ Continuous

Figure 34: Key Performance Indicators of Select PPPs (2012)

Programme	Key Performance Indicator
Cataract Surgeries	<ul style="list-style-type: none"> • Enrolled private ophthalmologists • Places per month under the charitable arrangement • Enrolled private ophthalmologists who offered to conduct surgeries under the charitable arrangements • Patient applications • Patient with subsidies approved • Patients with surgeries done
GOPC PPP	<ul style="list-style-type: none"> • Enrolled private medical practitioners • Enrolled patients • Patients actively participating in the programme
Shared Care	<ul style="list-style-type: none"> • Patients invited to the programme • Enrolled patients and response rate • Private medical practitioners invited to the programme • Enrolled private medical practitioners and response rate
Haemodialysis PPP	<ul style="list-style-type: none"> • Patients allocated to haemodialysis centres • Patients on haemodialysis
Patient Empowerment	<ul style="list-style-type: none"> • Patients enrolled • Patients attended at least one empowerment session

4.2 COPD PPP PROPOSED MODEL

Figure 35: COPD PPP Key Performance Indicators and Domains

COPD PPP Key Performance Indicators	Effective	Appropriate	Efficient	Responsive	Accessible	Sustainable	Capable	Safe	Continuous
Enrolled medical practitioners				■	■				▲
Enrolled patients					▲				■
Change in patient's clinical outcome • Functional exercise capacity • Quality of life assessment • Subjective feeling of dyspnoea	▲		■						
Compliance with service standards for COPD rehabilitation programme • Flu immunisation rate • Pulmonologist visits • Self-management education • Oxygen programme • Smoke cessation service		▲		▲	■		▲		
Average cost per patient referred			▲						■
Referral rate (Post-exacerbation referral to the primary care programme)		■		■	▲				
Waiting time: The number of weeks from the point of referral to the day of the assessment takes place					▲				
Program participation and completion rate			■	▲			■		■
No. of patients with completed assessment and outcomes measured	■	▲					▲		
Readmissions and length of hospital stay	▲		■					■	
GPs working within the programme are appropriately trained on COPD management		■					■	▲	

▲ Primary Domain ■ Secondary Domain

4.2 COPD PPP PROPOSED MODEL

Financing Mechanism for the COPD PPP Programme

Figure 36: Financing Mechanisms for Current PPP Programmes

Programme	Financing Mechanism	Funding Arrangement
Vaccination Subsidy Scheme	Fee-for-Service	Recipients are entitled to a HK\$190 Government subsidy per dose of seasonal influenza vaccination received from private doctors enrolled in the VSS
Colorectal Cancer Screening Program	Fee-for-Service	Government provides subsidy for up to two consultations delivered by enrolled primary care doctors (\$280 for each consultation)
Health Care Voucher Scheme	Voucher Scheme	Elders aged 70 or above receive \$2,000 health care voucher annually from the government
GOPC PPP Program	Capitation with Composite Consumer Price Index	Participating private doctors receive a maximum total payment of \$3,155 per patient annually from the Hospital Authority (on a reimbursement basis), covering a maximum of 10 consultations
Radi Collaboration Project	Fee-for-Service	The hospital authority provides full subsidy to targeted cancer patients having clinical need to receive CT and MRI services
Colon Assessment PPP Program	Fee-for-Service	The hospital authority offers a one-off fixed subsidy of \$6,800 (without polypectomy) or \$7,500 (with polypectomy) to each patient. The patient will only need to bear a co-payment of \$1,000
Elderly Dental Assistance Expanded Program	Fee-for-Service	Funded by the government's Community Care Fund, the subsidy will be disbursed to dentists directly by the Dental Association for providing free dental service to eligible elders
New proposed PPP area		
COPD PPP Program	Capitation with Composite Consumer Price Index	Participating private doctors receive a maximum total payment annually from the Hospital Authority (on a reimbursement basis), with possible coverage spanning physician review consultations, nurse education sessions, and physiotherapy sessions.

To enhance ongoing patient engagement with private primary care services, the financing model should provide incentive for both providers and COPD patients to participate in the programme. Previous analysis has revealed subsidies in the form of demand-side financing (e.g. voucher/ one-off payment given to patients) often results in induced demand or unfair pricing.

Considering the similarity of the GOPC PPP programme and COPD PPP programme – both aim to encourage ongoing patient care in the primary care level, funding through capitation payment to provider on a reimbursement basis seems to be the most feasible mechanism for a COPD PPP programme (see fig. 36). Private providers will be incentivized to arrange regular follow-up with the

patient in order to receive the full reimbursement amount, whilst efficiently using resources – and patients may utilise this streamlined access to primary care to manage their conditions effectively. The advantages to this form of capitation are outlined on page 57 (see fig. 39).

The HA COPD Management Program, which may serve as a model for how the COPD PPP could be structured, includes the following critical elements:

- Physician Review Consultations
- Nurse Education Sessions
- Physiotherapy Sessions

Strengthening Mental Health Services

Existing mental health and psychosocial services may be strengthened through integration into PHC and community services, which will result in enhanced access to services, better coordination of resources, a stronger patient pathway, and earlier diagnosis of common mental illnesses.

There are several areas along the patient pathway that will improve with strengthening, new partnerships, and clearly defined referral streams. A PPP employing practitioners in private primary care would create an opportunity for increased access to care, improved health outcomes, and cost savings across the health system. The new PPP pilot should draw from the lessons of the Integrated Mental Health programme (IMHP) and international best practice, by incorporating 3 critical elements:

1. Risk stratification
2. Engagement of a case manager
3. Defined referral pathways

WORKFORCE AND TRAINING

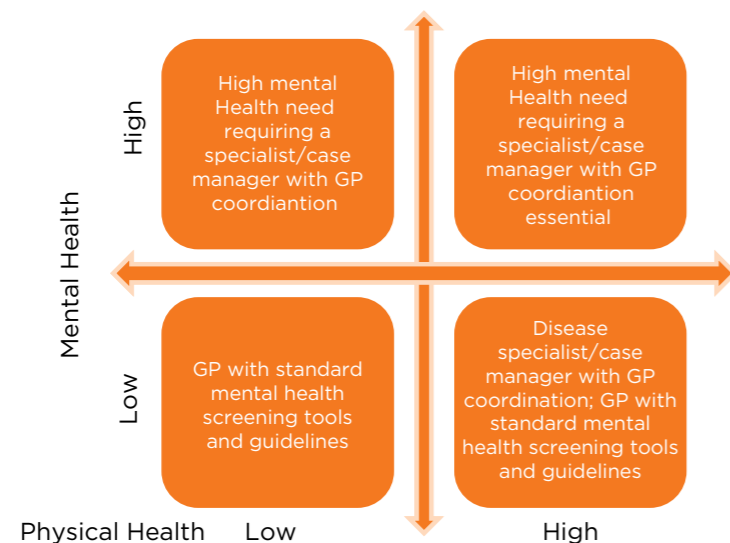
International models all point to the numerous benefits of moving away from costly, inpatient settings to more sustainable, community-based models. Mental health services in Hong Kong should be integrated into primary care settings. Along with hospital doctors, GPs already constitute a high percentage of first carers in the present mental health system. These medical personnel could be mobilised in the design of the PPP model, along with other key workers. Many people suffer from both physical and mental health problems. Integrated primary care models help to ensure that patients are treated in a holistic manner, meeting the mental health needs of patients with physical disorders as well as the physical needs of patients with mental disorders.

Under the current system, several complications are resulting in underdiagnosis of common mental disorders. Consultation times are brief, and depressive symptoms often merge with physical manifestations of distress, which patients relay to their doctor. In such an environment, patients may suffer repeated admissions to A&E departments and public hospitals for physical symptoms.

To successfully launch an integrated care model, GPs must be provided adequate specialist training, appropriate diagnostic tools, and access to psychiatrists for consultation and guidance. This skills training is more cost-effective than employing full-time psychiatrists, and the strength and breadth of medical knowledge GPs already possess make these professionals an ideal population for mental health training. With the appropriate knowledge and skillset, GPs may carry out early detection and diagnosis of common mental illnesses, and oversee treatment for stable patients, whilst simultaneously addressing the physical health problems. Provision of case management could be carried out by key workers, nurses or social workers, as they are in the IMHP example.

Several international models for integration of physical and mental health exist at the primary care level. Identifying patients with comorbidities will help Government determine which patients can be served under public-private partnerships (see fig. 37). At this time, it is recommended that GPs be trained for early mental health screening and treatment of

Figure 37: Primary Care Integration of Physical and Mental Health Needs



stable patients, as they are in the IMHP model. The PPP could be expanded in the future, pending programme outcomes, staffing ratios, and resource allocation.

Mental health workers are the key enablers of mental health reform. An investment in expanded manpower and trainings via a PPP initiative will advance the health system in the direction of addressing population demands. ACG analysis reveals outpatient cases are projected to reach 1,146,366 by 2027, reflecting a 42% increase from 2015 (see fig. 26, pg. 41).

THE CREATION OF NEW REFERRAL PATHWAYS

The success of mental health referral is implicitly tied to the functionality of the mental health system. In its current state, patients experience lengthy wait times and service provision falls under different jurisdictions. To move beyond a patchwork system, the IMHP model has provided a roadmap for better use and integration of primary care.

By design, step-up services allow patients to step up from the community and provide additional support for a person to manage a deterioration in mental health, but in situations where admission to an inpatient setting is not warranted. Step-down services allow patients to step down from a stay in an inpatient facility and provide additional support to individuals who no longer require inpatient acute care but do require assistance in re-establishing independence in a community-setting. A step-down mechanism is more difficult to implement and will not be an area of focus in the PPP pilot.

The new Mental Health PPP will allow the creation of a referral stream from GOPC settings (fig. 39, pg 57), and also create an opportunity to strengthen referral from the PPP to target community services – which remain underutilised. These initiatives allow patients access to community-based programmes that emphasise self-care and peer support, which are highly beneficial to reinforcing the components of the PPP. When provided the right social support and self-help tools, patients with common mental disorders exhibit a high capacity for management of their diagnosis.

AREAS FOR INVESTMENT OUTSIDE OF PPP:

Outside the scope of the PPP, but also critical to the success of the mental health system, remain several key areas for investment.

- A fast-track referral system between GPs and A&E departments would help patients who do not have access to participating IMHP pilot sites (or the proposed PPP) from suffering traumatic experiences in non-psychiatric units. Currently, these patients suffer recursive pathways, are

often treated for physical symptoms, and are discharged or referred back to primary care – and do not receive appropriate care at early stages; symptoms escalate or patients fall out of the care pathway.

- Further funding for psychiatric professions in A&E departments would strengthen manpower, expedite referrals to psychiatric units when appropriate, and accommodate the increased flow of referrals from GPs once integrated primary care models are in place. Fewer professionals are being attracted to these fields, largely due to the intense workloads and high staff turnover, so increasing manpower will be a critical investment moving forward.
- Informal community care remains underfunded in the present Hong Kong model, but has benefits to both lower and high-intensity patients. Peer support programmes and integrated community centres would benefit from expansion of resources to allow for accessible self-care mental health services, peer counsellors and informal community health care. These combined services offer lower-risk patients an environment that fosters awareness and tools for self-care. For higher-intensity patients, integrative aftercare networks provide a foundation for treatment compliance and community reintegration.
- Social stigma and public discrimination are still highly pervasive trends. The success of community programmes will require guidance and development beyond the current volunteer and NGO-led models; success may require greater public health awareness campaigns. To maximize the benefit of informal community care, it should be linked to professional services when possible.

Collaboration between hospital-based mental health services and community-based social services, when strengthened, supports rehabilitation and community integration. Unlike medication, the effects of which are seen immediately, social and community support has a cumulative effect over time. The disease management and independence skills gained from community programmes have been shown to be effective for continued success in community life. A consequence of deinstitutionalization is an increased burden of care falling to immediate relatives following psychiatric discharge. Coping resources and social support help to lessen this burden on caregivers, further supporting the need for linkages to community-based services along the mental health patient pathway.

4.4 MENTAL HEALTH PPP PROPOSED MODEL

A New PPP Model for Mental Health

The Mental Health PPP model can build upon the Integrated Mental Health Programme (IMHP) that was launched by HA in 2010. IMHP aims to provide better support to patients in primary care settings. Under the programme, patients with stabilised conditions are provided treatment for Common Mental Disorders (CMD) by a multidisciplinary team (see pg. 46). Early detection and early intervention are provided to patients presenting with anxiety and/or depressive mood. Under a new referral stream (shown in red, fig. 38), GOPC doctors refer these patients to receive would refer stable cases and those awaiting detection and diagnosis from GOPC settings to the PPP.

The addition of a PPP model in a private primary care setting would expand the existing framework of the IMHP model. It allows step-up services as needed, with referral to the PSY-SOPC. It also creates a platform for linkage and referral to community support programmes under the Social Welfare Department, such as the Integrated Community Centres for Mental Wellness (ICCMW). Such linkages are essential to the successful recovery and self-management of patients with common mental disorders.

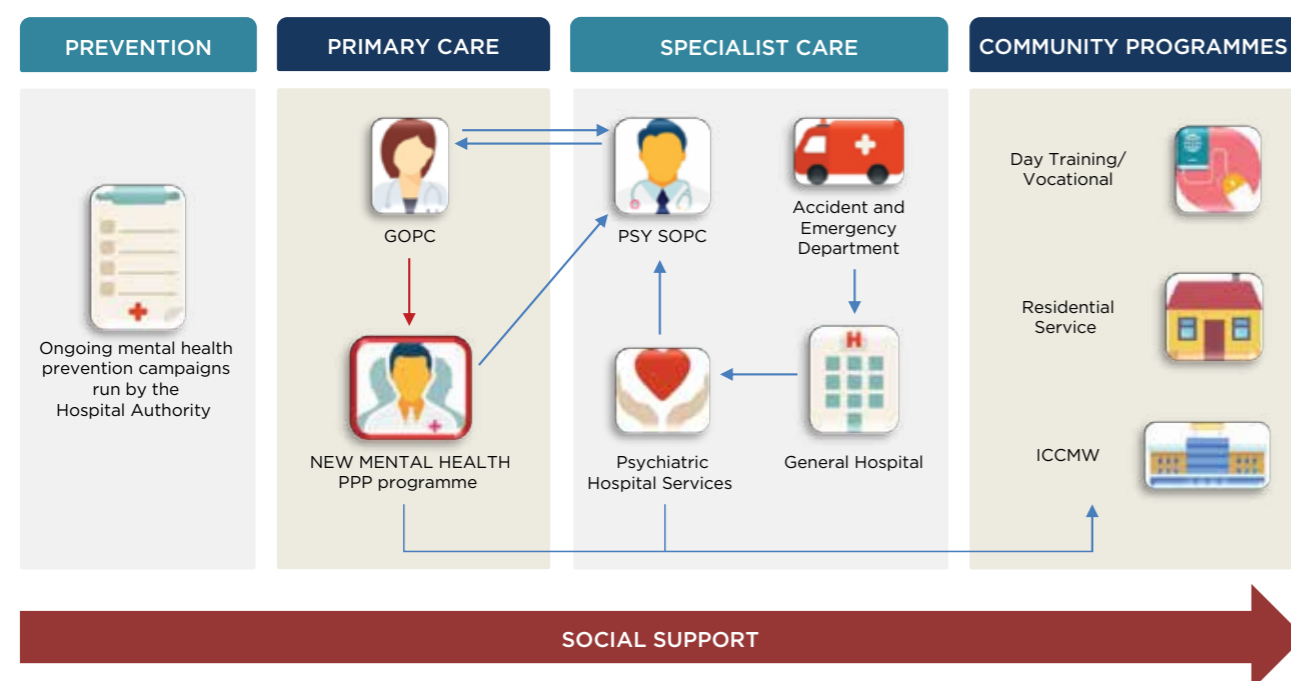
Building upon the successful aspects of IMHP, the PPP model addresses a real need in the health system – access, and is in line with Government initiatives to expand mental health services over time.

- ✓ Relates to health system needs
- ✓ Sensitive to context
- ✓ Recognises patient as a third party
- ✓ Focuses on problem-solving
- ✓ Shares risk

Potential PPP Benefits:

- Increased access to early intervention and detection
- Enhanced patient engagement in disease management and self-care
- Relapse prevention education
- Monitoring for disease management, health status and medication compliance
- Strengthened referral pathways
- A reduction in unnecessary A&E attendances and hospitalisations for patients with CMD
- Achieved cost-savings over time by emphasising prevention – resulting in an average savings per mental illness inpatient discharge of HKD \$134,820 and an average savings per mental illness inpatient day of HKD \$2,470

Figure 38: Mental Health PPP Model



4.4 MENTAL HEALTH PPP PROPOSED MODEL

Figure 39: Mental Health PPP Key Performance Indicators and Domains

Outpatient Mental Health Services Key Performance Indicators	Effective	Appropriate	Efficient	Responsive	Accessible	Sustainable	Capable	Safe	Continuous
Enrolled medical practitioners				■	■				▲
Enrolled patients					▲				■
Change in patients' clinical outcomes	▲								
Compliance with service standards for public mental health programmes		▲					■		
Average treatment days per three month programme period		■	▲						
Average cost per programme treatment day			▲						
Percentage of accepted referrals / re-referrals offered first appointment and seen within 12 weeks / 3 months					▲				
Wait time: The number of weeks from the point at which the referral is received by a member of the PPP Program team to the day the assessment takes place					▲				
Access to mental health services out of hours (GP on call for phone consultation)				■	▲				
Rate of pre-programme social care				■					▲
Rate of post-programme social care				■					▲
Patient outcomes participation (proportion of mental health care visits with completed patient outcome measures)				▲			■		
Outcomes readiness (capable services are results oriented and regularly monitor patient outcomes)	■						▲		
Key workers within the programme are appropriately trained on common mental disorders		■					■	▲	
GPs working within the programme have regular supervision by an appointed psychiatrist		■					■	▲	

▲ Primary Domain ■ Secondary Domain

Performance Indicators and Reimbursement

Given the ongoing nature of the programme structure for IMHP, the Mental Health PPP would be most similar to the GOPC PPP scheme and the proposed COPD PPP programme — therefore, a similar reimbursement method, capitation with composite consumer price index, is proposed (see fig. 36, pg. 53). Whilst there are a myriad of payment systems that fall between fee-for-service and capitation, governments internationally are moving away from contracting models that create an environment for excessive use of resources. Capitation is being progressively employed as a method for reimbursement of health services, with an aim to encourage routine care that can be captured with a global fee. Whilst capitation places the burden of risk more on the side of the provider, there are also many benefits, including the potential for exclusive contracts and guaranteed volume (see fig. 40).

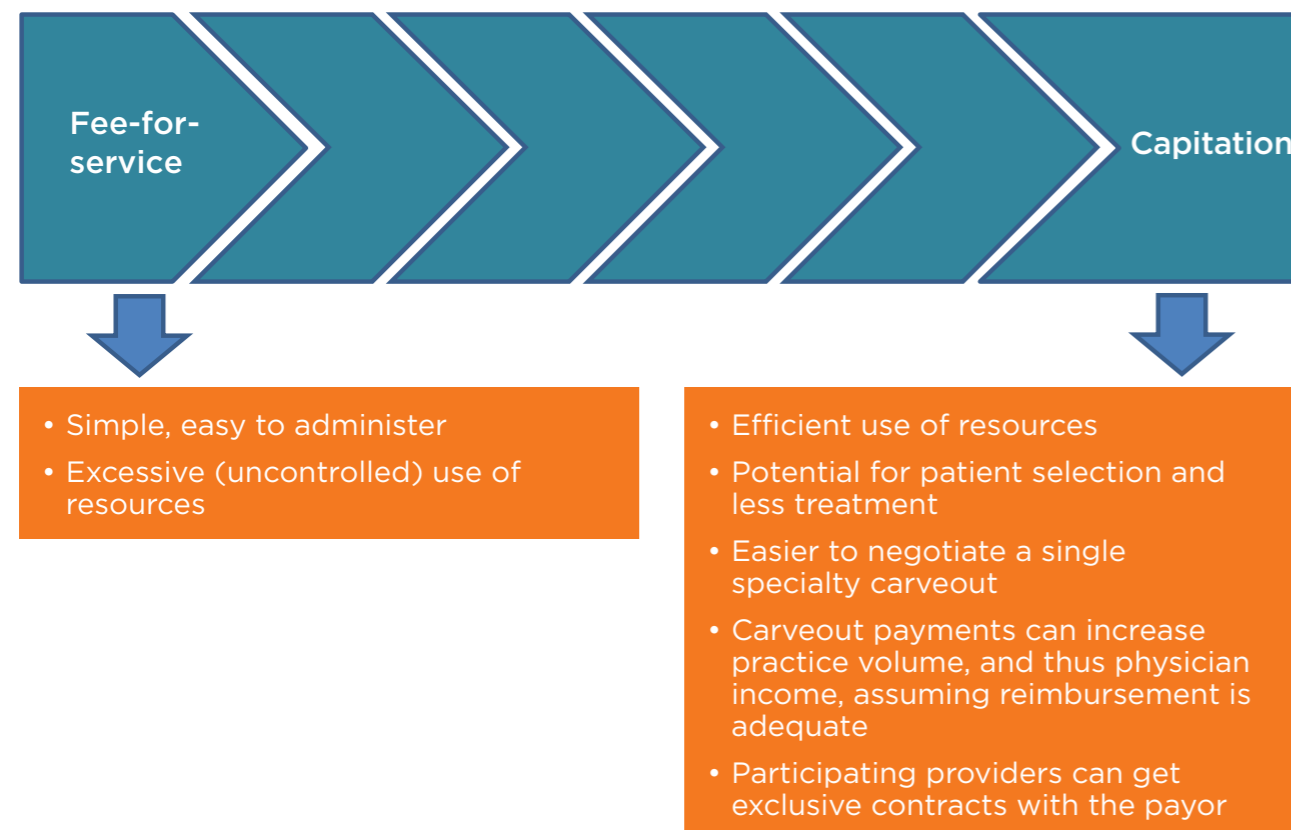
Like most instances where public service is commissioned out to private providers, the Mental Health PPP will require a robust monitoring framework. KPIs were generated after careful review of the Hospital Authority psychiatric services, the NHS frameworks, and the Australian Public Mental

Health Services indicators (see fig. 39, pg. 57). Similar to the framework for COPD, key performance indicators are classified across nine domains, with primary and secondary weighting. The result is a robust framework designed to capture measures of efficiency (following on the recommendations of the Audit Committee), but also includes data capture across several domains of patient engagement and outcomes, which are areas we know to be critical for the continued progress and stability of patients living with Common Mental Disorders.

Key Performance Indicator domains in the Mental Health PPP:

- ✓ Effective
- ✓ Appropriate
- ✓ Efficient
- ✓ Responsive
- ✓ Accessible
- ✓ Sustainable
- ✓ Capable
- ✓ Safe
- ✓ Continuous

Figure 40: Reimbursement Models and Risk



Key Findings

- PPP models are most effective when they meet 5 key criteria: relate to health system needs, are sensitive to context, recognise patients as a third party, focus on problem-solving, and share risk.
- Public-private partnerships offer a potential opportunity to improve the standard of care for COPD and common mental disorders (CMD) by expanding access to treatment.
- The design of PPP models can fill a gap in service and leverage primary care for effective disease management and outcomes.
- A focus on PPP models that address COPD and mental health is in-line with current Government initiatives and expansion goals.

Public-Private Partnership (PPP) is a collaboration between the public and private sector that enables fulfilment of certain common goals and draws from the expertise of both settings. In healthcare, these models are fast-emerging as a way to tackle a demand-supply mismatch and redress the imbalance between public and private healthcare services. As governments grapple with rising costs and increased demands, healthcare PPPs are gaining traction. These programmes have found success in a number of health service and disease areas, in developing regions and well-performing health systems alike.

In the context of Hong Kong, PPPs can serve as a tool to enhance health system sustainability. These models, if implemented well, provide an opportunity to address critical areas of chronic disease. Both COPD and mental health have been highlighted as underserved disease areas where improved standards of care and expanded access to treatment will benefit the population, and strengthen health system response in the process.

The most successful PPP models incorporate 5 key elements. Namely, they relate to health system needs, are sensitive to context, recognise patients as a third party, focus on problem-solving, and share risk. In outlining PPP models for COPD and Mental Health in Hong Kong, the illustrated models address an established need and consider the risks in addition to the benefits likely to emerge over time. This type of forward-thinking design is modelled on the lessons of international cases and backed by clinical and financial data, where possible. Each tailored model touches upon a need in the Hong Kong health system, is sensitive to the context

of the dual-track health system, strives to actively engage patients, focuses on problem-solving and prospective benefits, and moves towards risk-sharing arrangements that have proven successful in similar health system settings.

As a way forward, PPP is only one tool of many that is available to Government. As illustrated, a well-designed PPP model can fill a gap in service and leverage primary care for effective disease management and better patient outcomes. In the case of Hong Kong, a shift to strengthened primary care will be essential in paving the way to sustainable health solutions. In other country settings, Government has held the pivotal role of framing health policies and programmes that ultimately shaped the direction of PPP initiatives. Focused strategies, greater efficiency, stronger resource management and better monetary and clinical outcomes are all possible successes for PPP initiatives.

As Hong Kong's population grows older, individuals are not necessarily living healthier lives – chronic disease will continue to drive up healthcare utilisation and cost. In the near-term, issues of sustainability will continue to manifest in longer waiting times for healthcare services. Now, more than ever, resource allocation would be well-spent on investments in primary and social care. This sentiment has been echoed in policy agendas many times over the last decade, as costs continue to rise and capacity is continually outstripped by population demand. For these reasons, it is an opportune moment to explore PPP models that address COPD and mental health. The models put forward are both in-line with current Government initiatives and expansion goals, and designed in a way that would support health system sustainability and make a positive impact on the lives of Hong Kong citizens.

END NOTES

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APPENDIX

COPD PPP programme Evolution Over Time

	Short term	Medium term	Long term
PPP Solution	A pilot project is undertaken in which HA identify a cohort of patients with COPD who are clinically stable but currently face long wait times at GOPC clinics for regular follow-up and case management at primary care community clinics.	HA identify cohort of COPD patients who are clinically stable and encourage them for regular follow-up and case management at primary care community clinics.	HA identify cohort of COPD patients who are clinically stable and encourage them for regular follow-up and case management at primary care community clinics; HA identify a cohort of COPD patients requiring more intensive respiratory rehabilitation services and refer them for treatment and case management at the designated PPP setting (as an alternative to HA, eg. Kowloon Hospital).
Financial benefits to HA	Reduced A&E attendances and hospitalisations	Reduced A&E attendances and hospitalisations	Cost savings ranging from HK\$70-HK\$132,569 based on international evidence
Non- Financial benefits to HA	<ul style="list-style-type: none"> A volume shift from GOPC to private primary care settings, alleviating long wait times Increased access to care Increased patient empowerment Better care coordination Better health outcomes 	<ul style="list-style-type: none"> A volume shift from GOPC to private primary care settings, alleviating long wait times Increased access to care Increased patient empowerment Better care coordination Better health outcomes 	<ul style="list-style-type: none"> A volume shift from GOPC and Respiratory Rehabilitation Services to private primary care settings, alleviating long wait times Increased access to care Increased patient empowerment Better care coordination Better health outcomes
	Short term	Medium term	Long term
Enablers-Workforce	General Practitioners, registered nurses, administrative staff	General Practitioners, registered nurses, administrative staff	General Practitioners, registered nurses, nurse specialists, physiotherapists, administrative staff
Enablers – Infrastructure	Basic equipment for physical assessment of respiratory conditions: peak flow meter; equipment for oxygen therapy; suction machine; system for accessing patient health records.	Basic equipment for physical assessment of respiratory conditions: peak flow meter; equipment for oxygen therapy; suction machine; system for accessing patient health records.	Basic equipment for physical assessment of respiratory conditions: peak flow meter; equipment for oxygen therapy; suction machine; system for accessing patient health records. Advanced equipment for physical therapy.
Enablers – Contracting model	Pay for volume	Pay for performance	Pay for outcomes
HA Role	Program guidelines; funding; patient referral	Program guidelines; funding; patient referral	Program guidelines; funding; patient referral
Role of Primary Care	Staff training and programme delivery, patient education	Staff training and programme delivery, patient education	Staff training, programme delivery, patient education; Strengthen collaboration with medical device companies to support patients with long-term oxygen therapy or ventilator.
Role of Community Partners/ NGOs	Provide support for social care, including: home care, home visits, application for financial subsidies for home-care equipment, etc.	Provide support for social care, including: home care, home visits, application for financial subsidies for home-care equipment, etc.	Provide support for social care, including: home care, home visits, application for financial subsidies for home-care equipment, etc.

Mental Health PPP Evolution Over Time

	Short term	Medium term	Long term
PPP Solution	A pilot project is undertaken in which HA identify a cohort of patients with mild mental health diagnoses to receive case management in integrated primary care settings by GPs with training in standard mental health tools and management, supported by key workers.	HA continues to identify a cohort of patients with mild mental health diagnoses to receive case management in integrated primary care settings by GPs with training in standard mental health tools and management, supported by key workers.	HA continues to identify a cohort of patients with mild mental health diagnoses to receive case management in integrated primary care settings by GPs with training in standard mental health tools and management, supported by key workers. The programme is expanded to include patients with higher intensity diagnoses.
Financial Benefits to the HA	<ul style="list-style-type: none"> Reduction in unnecessary A&E attendances and hospitalisations; Average savings per mental illness inpatient discharge HKD \$134,820; average savings per mental illness inpatient day HKD \$2,470 	<ul style="list-style-type: none"> Reduction in unnecessary A&E attendances and hospitalisations; Average savings per mental illness inpatient discharge HKD \$134,820; average savings per mental illness inpatient day HKD \$2,470 	<ul style="list-style-type: none"> Reduction in unnecessary A&E attendances and hospitalisations; Average savings per mental illness inpatient discharge HKD \$134,820; average savings per mental illness inpatient day HKD \$2,470
	Short term	Medium term	Long term
Non-financial benefits to the HA	Volume shift in patients who currently face very long wait times for initial consultation and follow-up appointments in the HA system. Follow-up and treatment of the stable mentally ill patients; screening and early detection.	Volume shift in patients who currently long wait times for initial consultation and follow-up appointments in the HA system. Follow-up and treatment of the stable mentally ill patients; screening and early detection.	Volume shift in patients who currently long wait times for initial consultation and follow-up appointments in the HA system. Follow-up and treatment of the stable mentally ill patients; screening and early detection. Peer counselling and PRP provided to higher intensity patients to support development community and independent living skills, thus enabling/facilitating their recovery or preventing relapse or hospitalisation.
Enablers-Workforce	Primary care General Practitioners (with training and oversight by psychiatrists), key workers (nurses, social workers)	<ul style="list-style-type: none"> Primary care General Practitioners (with training and oversight by psychiatrists) Key workers (nurses, social workers) Increased staff (counsellors) 	<ul style="list-style-type: none"> Primary care General Practitioners (with training and oversight by psychiatrists) Key workers (nurses, social workers) Increased staff (counsellors) Recruitment of peer mediators
Enablers – Infrastructure	EHR	EHR	EHR
Enablers – Contracting model	Pay for volume	Pay for performance	Pay for outcomes
HA Role	Program guidelines; funding; patient referral	Program guidelines; funding; patient referral	Program guidelines; funding; patient referral
Role of Primary Care	Screening, detection, disease management, monitoring	Screening, detection, disease management, monitoring	Screening, detection, disease management, monitoring
Role of Community Partners/ NGOs	Referral to NGO/Community Partners	Referral to NGO/Community Partners	NGO partnership for selection of peer mediators and peer programme delivery (with medical oversight by GPs)



About Quality HealthCare

Quality HealthCare Medical Services Limited (QHMS), Hong Kong, became part of Bupa, an international healthcare group, in October 2013. QHMS' operations span diagnostics, primary healthcare and day care specialties. With roots tracing back to 1868, QHMS serves the community through a network of over 110 multi-specialty centres and over 1,200 affiliated clinics offering Western Medicine, Traditional Chinese Medicine, Diagnostics & Imaging, Dental, Physiotherapy services, etc. It also operates a private nursing agency. QHMS is one of the largest providers of healthcare services to corporates in Hong Kong. In 2017, the Group recorded more than 3 million healthcare visits. QHMS endeavors to enhance the quality of our professional services continuously to satisfy the needs of customers and patients.

About Asia Care Group

Asia Care Group ('ACG') is a specialist healthcare advisory firm that focuses on strategy, change and economic consulting. ACG's mission is to support healthcare organisations with their most pressing challenges in order to create more efficient and effective healthcare systems for the populations of Asia's diverse regions. Founded in Hong Kong, ACG now works across all Asian markets, with some of the largest healthcare organisations in the world. ACG are recognised as thought-leaders, innovators and occasionally mavericks - always leading change in the healthcare communities they serve.

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