NS WORLD

SARS REVISITED: INSIGHTS FROM SINGAPORE

A CASE STUDY ON ADAPTIVE CAPACITY, MANAGING RISK, AND INNOVATION

A CASE STUDY

Key Topics Discussed:

ADAPTIVE CAPACITY AND INNOVATION

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THE CONTEXT

Singapore's experience in managing the Severe Acute Respiratory Syndrome (SARS) crisis in 2003 must be seen in context. To begin with, an understanding of how history and geography have shaped the nation's evolution and how its founding leaders have perceived the state's unique status and articulated the principles of governance is essential in coming to grips with the process of crisis management in Singapore.

Briefly, together with many South East Asian countries, Singapore lived through a long period of British colonial rule and suffered the atrocities of Japanese occupation. In 1959 when Singapore achieved limited self-government, its only advantage appeared to be its strategic location. However, its vulnerabilities were clear – its miniscule size (about 710 sq kilometers) and population (currently at 4.98 million with more than 1 million foreigners), its lack of natural resources and heavy reliance on external sources for water supply, food and fuel. Its multi-racial and multi-religious population has been both a strength and potential source of social instability. Singapore's location in a geopolitically and ethnically complex region compounds its external security concerns. A senior Minister in the Cabinet summed it up in 2003, that "Like it or not, we live in a state of perpetual insecurity. That is our karma...in our modest way. We must have our own sense of destiny."[1]

Singapore has coped with vulnerability by being different and unique, not allowing its size or location to impose limitations on its economic strength, defence capabilities or foreign policy. The strategic imperatives driving Singapore have remained constant since full independence in 1965 – economic development and domestic stability. The abiding belief is that only when the economy is strong can society achieve all other desired objectives. All these elements form the backdrop for Singapore's development and underpin the foundations of governance.[2] In establishing the foundations for the nation's economic and social achievements, the public sector has played a crucial role.

In the age of globalization, most fundamentals of governance adopted by successful public sector organizations share much in common - for example, the integrity of the service, financial soundness of systems being managed and so forth. Nonetheless, successful governance needs to subscribe to a core set of principles and values that are enduring and relevant and provides a firm footing especially during crises. In 2004, Singapore's Prime Minister Lee Hsien Loong, articulated four key principles combining universal principles as well as policies tailored to meet Singapore's circumstances:

(a) "Leadership is Key" – because we are small and vulnerable;

(b) "Anticipate Change and Stay Relevant";

(c) Reward for Work, and Work for Reward; and

(d) "A Stake for Everyone and Opportunities for All" – the key thrust here being that the end goal of any governance system is not institutional strength, or even economic well-being, but nation-building.[3]

FORMAT OF CASE STUDY

All public sector organizations subscribe to lofty principles, concepts and practices of good governance and share much in common. However, these principles and concepts are best tested in a national crisis. A crisis can break the organization and the nation, revealing all its weaknesses and negative characteristics. On the other hand, it could emerge stronger from a crisis. The SARS crisis of 2003 was such a test.

This case study looks at the way the SARS crisis was managed and attempts to sieve out the capabilities that enabled Singapore to respond to the pandemic. It will tell the story through examples and descriptions of issues, the motivations, constraints and objectives of people, groups, organizations and systems engaged in the pandemic response. Given the limitations of time and space, the study will touch only on the significant actions and decisions taken.

THE SARS ATTACK

SARS was the first pandemic of the 21st century. It started in the Chinese province of Guangdong in November 2002. However, it was not till 11 February 2003 that the

Chinese Ministry of Health notified the World Health Organization (WHO) of the outbreak.

Historically, the spread of contagious diseases followed the routes of commerce along land and sea routes. However, in the age of globalization, air travel made it possible for the virus to leap across from the Pacific Ocean to Toronto. SARS spread from China via Hong Kong to much of the region primarily through air travel. SARS was also seemingly indiscriminating – affecting rich and poor, doctor and patient and crossing borders with impunity. The experience of Toronto, Singapore and Hong Kong with SARS showed clearly that viruses could be choosy – preferring modern cities over rural settings. SARS infected more than 8,400 people worldwide, of which 20 per cent were healthcare workers, and left in its wake, many deaths and untold human suffering.

Singapore began with certain advantages. For starters, it had no rural/urban continuum or federal/state relations to worry about, a serious problem faced by other affected countries like Canada, China and Taiwan during the SARS crisis. When SARS penetrated Singapore in late February 2003, there were already critical foreign media reports circulating about cover-ups and lack of transparency in reporting by governments, especially in North East Asia. Singapore officials were aware and consciously drew their own lessons from the unfolding crisis. They monitored the spread of the disease in Hong Kong and especially the protracted saga of Amoy Gardens in Hong Kong very closely and were able to avoid some of the more obvious mistakes and pitfalls.

SARS hit Singapore even before it had a name. On 25 February 2003, the virus entered its borders. On 1 March, it entered the hospital system when doctors diagnosed three women, who after returning from Hong Kong, developed atypical pneumonia. A week later, healthcare workers started falling ill and they realized they were dealing with a new illness about which little was known. The Ministry of Health in Singapore issued its first SARS update on 13 March, the day after WHO issued its first global alert on SARS, and thereafter issued press releases daily or twice daily till the end of May. The infection was initially confined to one hospital, but subsequently spread to four other healthcare institutions and a wholesale vegetable market. By the third week of March, Singapore's second largest hospital was designated for SARS patients and schools were closed.

The most difficult task was managing the overpowering sense of fear and panic in the domestic population. Not knowing how to avoid infection and what precautions to take, people avoided all contact. Restaurants, hotels, shopping malls, airplanes, cruise ships and major streets all emptied thereafter. The tourist, travel and hospitality industries in Singapore and throughout the region were the first to suffer. Industrial production came close to being disrupted. SARS captured the global imagination, because it reflected cumulative insecurity spawned by the mass destruction in the wake of the 9/11 attack on New York.

RISK COMMUNICATION

A) COMMUNICATING RISKS: TRANSPARENCY & HONESTY

The need for transparency in public health risk communications strategy is widely touted as a given. However, the knee-jerk reaction of most governments is to conceal information about a disease outbreak from the public and international bodies like WHO. Concerns about causing panic and prompting trade and travel restrictions had to be weighed against any benefit in calling for international assistance. It is complicated also because the average layperson cannot be expected to understand the implications of early warning or unravel the mathematics of early epidemic predictive models. The simple fact is that people look to governments to provide clear answers and solutions.

Risk is defined by most experts as simply the probability of an unintended event, and the science of risk assessment traditionally involves estimating the probabilities and consequences of these events.[4] Communicating this risk to the populace at large is a critical area of expertise that has acquired prominence in recent years, with many large-scale disasters threatening the physical and mental health of large populations.

Risk communications calls for difficult decisions from professionals engaged in public health and medicine. The United Kingdom's Department of Health, based on an analysis of more than 1000 studies worldwide, listed succinctly some useful principles for professionals handling public risk issues – the need for active communica-

tion, openness: i.e., always acknowledging problems and uncertainties; transparency; demonstrating action and progress; treating people's fears seriously; ensuring authoritative sources deliver the same messages; framing announcements and responses to provide context; and encouraging and enabling self-responsibility. Similar principles have been proposed by outbreak communications experts elsewhere.[5] Sandman and Lanard have noted that it involves a set of skills which can help health officials find the middle ground between loud warnings provoking needles fear, panic and economic damage and that of building mutual trust, involving the public early in the crisis, arousing appropriate levels of fear and helping people to cope with it.[6]

One US public health scholar suggested that Singapore's communications strategy during SARS could be widely considered to be the industry standard of how to manage a serious infectious disease epidemic.[7] At the start of the outbreak, Singapore's Director of Medical Services was somewhat too confident and assured Singaporeans on 18 March that "We have taken all the measures that should be taken to contain this. Singapore is safe." In the same vein, Hong Kong's Health Secretary insisted on 14 March that "Hong Kong is absolutely safe...Hong Kong does not have an outbreak." Awareness of the seriousness of the outbreak was to come later.

On 15 March, the Singapore Ministry of Health took the unusual step of informing WHO and Germany of the case of a Singapore doctor returning from New York via Frankfurt on a Singapore Airlines (SIA) flight. He had treated the first SARS patient in Singapore and then rushed off to New York to attend an infectious disease conference. The concern was that the outbreak in the hospital could spread internationally. Well aware of longer term implications, the Ministry of Health nonetheless alerted WHO. At Frankfurt, the flight was stopped and the passengers quarantined. Singapore's disclosure allowed WHO to take prompt action and issue an emergency travel advisory on the same day, 15 March 2003. WHO travel advisories had a tremendous impact on world travel during the SARS crisis.

Transparency was also extended to giving WHO untrammeled access. Every afternoon during the crisis, all the data and information on developments over the past 24 hours were collated by the Ministry of Health and discussed at a conference chaired by the Director of Medical Services. The meetings included observers from WHO who had access to the same raw data from the epidemiologists and clinicians as Ministry of Health officials. Whilst Ministry of Health prepared its report for the day, WHO officials prepared their own reports which they sent to WHO Geneva. Transparency helped everyone – it gave WHO confidence in the quality of information they received and gave Singaporeans confidence that they had the support of the international medical community. The Health Minister was praised by Dr Mansoor, the WHO consultant: "*He provided open, honest and frequent communications in a situation of uncertainty. He wisely chose to warn of the worst and not to just hope for the best*".[8] PM Goh Chok Tong agreed with a BBC's correspondent that his remarks could well stoke public fear: "*Well, I think I'm being realistic because we do not quite know how this will develop. This is a global problem and we are the early stage of the disease. ... At the moment, I'd rather be proactive and be a little overreacting so that we get people who are to quarantine themselves to stay at home.*" [9]

Every conceivable communications tool was used by the public sector to explain the outbreak and rally the people. The objective was education and empowerment so—as to promote social responsibility and ownership of good personal hygienic practices to prevent the spread of the disease. Repeated communication of intelligible public health messages about SARS was the key to overcoming the negative effects of the epidemic, to rally Singaporeans to fight SARS together and to get people back to normality.

The Ministry of Health held daily press conferences every evening and a conscious effort was made to accommodate all queries from the local and foreign media. However, transparency in itself, manifested through public statements, press conferences, speeches was not enough. Communication tools had to be finely calibrated to reach out to the maximum numbers. This was achieved successfully through a *blitzkrieg* – a host of government agencies working together and employing every communication tool available:

i. Televised dialogues between political leaders and community. Grassroots leaders also went door to door to talk especially with elderly citizens.
ii. PM's open letter to Singaporeans; Parlia-

mentary debate on SARS.

iii. Dialogues and briefings for foreign business groups, international chambers of commerce, diplomats, religious groups, trade associations.

iv. Mass posters, booklets, collaterals, cartoons, advertisements, video clips on hand washing. A SARS kit with key pamphlets and collaterals including a free thermometer was mailed or hand delivered directly by volunteers to every household in Singapore.

v. SARS Rap and SARS Song which were featured prominently on television.

vi. Online portals/websites; hotlines & promotional campaigns.

B) DEDICATED SARS CHANNEL

The SARS – dedicated free-to-air TV channel was launched with the intention of making information available to all. The idea originated from a member of the public and was supported by private organizations like the Development Bank of Singapore and National Trade Unions Congress. The Media Development Authority facilitated the channel's set-up within 19 days after the idea had been proposed. Ratings were predictably low and critics charged that it was a case of "overkill", noting that countries like China and Taiwan did not see the need in spite of the wider spread of the disease there. Critics wondered if in time to come, a niche channel would need to be set up at great cost every time a crisis cropped up. One media critic charged that "there is a hard line between public education and propaganda, between "info-tainment" and enforced learning. The moment you cross this, you lose your audience." [10] Not surprisingly, the channel had a difficult time sustaining viewer interest, given that it subscribed to only one topic and cause. The principle however was—information had to be made available to the widest numbers, regardless of ratings.

C) ACTING ON FEEDBACK

Nothing was taken for granted and the net was cast as wide as possible. Quick surveys, weekly polls and anecdotal feedback were employed to fill in all the gaps in the information blitz. For example, surveys revealed that elderly, illiterate dialect speaking senior citizens (those over 65 numbered 253,000 in 2003) felt neglected and the official policy restricting dialects was deliberately relaxed to allow for dialect programming on the SARS TV channel and more flexibility on other channels. Segments of the population comprising those living in one to three room flats, the non-English speaking and foreign workers were identified and special efforts taken to accommodate their needs including door to door visits by grassroots leaders. A snap poll on 23 April found that whilst a high proportion had confidence in the government's ability to handle SARS, there were worrying trends – 59 percent were concerned about catching SARS at the SARS dedicated hospital (Tan Tock Seng Hospital) if and when they chose to go there for SARS screening. These concerns were taken seriously and factored in the hospital's overall public relations plan. Indeed, survey findings coincided with data that showed 85 percent of those who caught infections did so in hospital settings, and measures were concentrated on containing the disease in hospitals.

D) RE-BUILDING CONFIDENCE & TRUST

Earning the trust and confidence of Singaporeans was the more difficult process. It did not come naturally with transparency. In the initial weeks, fear was dominant and manifest in all sorts of negative social behaviour as life ground to a halt. Taxi drivers shunned hospitals and healthcare workers in uniforms and people avoided restaurants, hawker centers, gymnasiums and libraries. There were even cases of nurses being evicted by landlords and instances of people breaking rules of quarantine.

Earning the trust of the domestic populace meant taking no chances. The Government had to be seen doing very tangible things to reassure the populace. Ministries went into full gear with a range of campaigns and a mammoth exercise in confidence building. The Environment Ministry launched its SINGAPORE OKAY campaign to reassure Singaporeans. Hawkers, retail and service staff at hotels and restaurants monitored their temperatures and wore special stickers to indicate they were fever free. Temperature taking was introduced on a mass scale for school children, taxi drivers and office workers. A COURAGE Fund was established to help families of

SARS victims and healthcare workers. Many novel ideas were encouraged at Ministry and agency levels.

The Singapore Tourism Board was concerned that if Singaporeans stayed at home, the domestic economy would flounder. They came out with "Step Up Singapore" Programme with a $2 million budget and told retailers: "Come up with a plan to get people back on the streets and we will support you. We projected that the $2 million would generate sales of $100 million, but in the end, our survey found that the promotion effort generated a turnover of $180 million." [11] This effort prompted novel ideas like lucky draws, encouraging people to drop their contact details in specially designed bowls at public venues, so they could be contacted if SARS was detected, etc.

The SARS free corridor was the outcome of a brainstorming session by officials from the Ministry of Trade and Industry. The idea was to make sure airports, taxis, hotels, shopping malls and restaurants were all SARS free, so that a tourist visiting Singapore could be assured that he would not come into contact with anyone infectious during his stay. In effect, it meant creating a sanitized corridor where the people working there were fever-free. The aim was also to boost local consumers' confidence in SARS prevention measures in the retail sector. Thus, was born the COOL Singapore programme, to certify SARS-fighting measures at all major retail outlets. Taxi companies were also persuaded to designate "temperature taking" stations throughout the island for taxi-drivers to take their temperature twice daily, and given stickers to indicate they were fever-free.

E) MANAGING SINGAPORE'S EXTERNAL IMAGE

Transparency also demanded rebuttals to every negative claim that surfaced in reports in the foreign media of foreign visitors getting SARS, infected whilst transiting Singapore. Indeed, there were a total of 80 overseas news reports about Singapore allegedly "exporting" SARS cases which were potentially damaging to the tourism industry and economy. Every case was meticulously checked and rebutted. It was crucial to prove to all that Singapore was a responsible member of the international community, and did not export SARS to other countries. This required diligent efforts at contact tracing and detailed compilation of data by the Ministry of Health and other agencies like the Ministry of Information, Communications and the Arts, Foreign Ministry and Ministry of Defence, with follow-ups through overseas missions on written rebuttals, some published or carried on TV.

Some examples:

- The British press reported that a British national, Lin Thomas had been diagnosed with SARS after transiting Singapore. Our embassy in London contacted the patient and learnt that she did not contract SARS. She thereupon permitted a letter from North Manchester Hospital confirming this to be posted online. This confirmation was also carried in local media & wire reports.

- Similarly, the Indian media reported that an Indian national, Haresh Murjani had picked up SARS in Singapore. Our agencies in Mumbai and New Delhi checked and confirmed he did not have SARS. Also, we established that he had not stepped foot in Singapore and had been turned back to Chennai as there were problems with his passport. Details were then released to the international media.

A multi-agency international Image Task Force was also quickly set up to manage the external image. Apart from diligent rebuttals to negative media stories, the team also tapped on a range of solutions – journalist visit programmes, mini-documentaries, B-rolls, websites, video clips (on all SIA flights arriving at Singapore), hotlines and even a webcam broadcasting live footage of scenes from the city precinct showing Singaporeans going about their normal business, unmasked and ungowned, to assure visitors that Singapore was safe. The website, "*singaporecanlah.com*" was designed specially to communicate with the international community.

A society's ability to overcome the crisis will turn crucially on non-economic factors – trust, truthfulness, transparency and moral authority. It is precisely because the Ministry of Health had been transparent in its handling of information that people were not rushing to catch the next flight out. It is because people trusted the information that they were getting, that the government had the moral authority to take draconian steps to contain the disease. If just one link in this chain had failed,

the entire system could have collapsed. Deprived of authoritative official information, anxious people turned to word of mouth and rumors, a process facilitated by access to cell phones and internet. Singapore's actions prompted the then Director-General of WHO to observe that: "*There are few places that have demonstrated so clearly that the principles of outbreak communications work just as well in Asia as anywhere else, perhaps even better. The risk communications Singapore used during the SARS outbreak won praise worldwide and enhanced the trust its citizens placed in their leaders.*"[12]

INNOVATION & CHANGE

A) PUSHING THE ENVELOPE

Those countries that took swift, open action managed to get the virus under control faster than those which resisted acknowledging it and reacted slowly. Dr Ali Shan Khan of the Atlanta Centres for Disease Control noted that Singapore excelled in being the most aggressive in instituting these measures against SARS. It was the first country to designate a SARS dedicated hospital which served as a model for others to follow. Singapore was also amongst the first to initiate quarantine at home for those who have had close contact with SARS cases and implement a no-visitor rule at public hospitals. Dr Khan concluded that "*Based on the knowledge they had at any given time, they made the right set of decisions... Singapore keeps pushing the envelope.*"[13]

B) SECURING OUR BORDERS : THERMAL SCANNERS

TIME magazine hailed the Infrared Fever Screening system as one of the coolest inventions of 2003. The idea itself originated from an American expatriate engineer based in Singapore who had seen thermal imaging cameras used at the Nokia facility in San Diego. He wondered if this could be adapted for mass temperature screening in the fight against SARS. Subsequently, better known as thermal scanners, the system was jointly developed by the Defence Science & Technology Agency and Singapore Technologies Electronics, adapted from military equipment used by the Air Force and put together within a week or so. During the SARS outbreak, Singapore deployed the scanners at its border checkpoints and key buildings and installations. Marketed at a cost of $90,000, more than 160 of the systems were sold to the government by Singapore Technologies Electronics and to organizations in various countries.

The thermal scanners proved to be a very effective psychological defense barrier and gave confidence to Singaporeans that Government was doing its best to stop the spread of disease to and from Singapore. However, skeptics questioned the scientific effectiveness of such systems. Medical specialists at a WHO event in 2004 concluded that screening incoming travelers for flu symptoms "lacks proven benefits" and they were skeptical about public fever screening and fever hotlines in slowing the spread of the pandemic.[14]

The lesson that could be drawn here is - a multi-disciplinary approach by the public sector is crucial in any crisis and there should be no artificial boundary between medicine, engineering or other disciplines. Indeed a range of other technological aids from a range of agencies made the difference. These included diagnostic kits and devices such as electronic bracelets used by the security agency CISCO to keep track of quarantined persons in households, web portals and extensive use of databases for mass contact tracing. Home Surveillance camera systems were also installed to track those on "Home Quarantine Orders (HQO)". At random hours, officials could ring and ask them to appear in front of cameras. The Criminal Investigations Department of the Singapore Police Force, with experience in forensics and chasing criminals, assisted in training the contact tracing teams in interviewing techniques.

C) DEVELOPING THE CONTACT-TRACING DATABASE

The Ministry of Defence was roped in to strengthen the Ministry of Health's capabilities after the SARS outbreak at a wholesale vegetable market. The Ministry of Defence brought in the Defence Science & Technology Agency (DSTA) to set up an IT system for command and control within 48 hours, employing some 200 computers and more than 200 people. The DSTA built a case management system in two weeks, with a complex architecture covering contact tracing, epidemiology, disease control, frontline operations and even the provision of leave of

absence from work for those in quarantine. Once set-up, contact-tracing became easier to be backed up by extensive national databases capturing addresses, telephone numbers and employee records of hospital staff. Hospital staff were also given radio frequency identification tags, so that their movements could be tracked. It was important to know, when any ward became infected, which doctors or nurses or staff were in the area. Effective contact-tracing and home quarantine ensured that those remained isolated cases with no spread of the virus.

Two academic researchers, Kieron O'Hara & David Stevens of the University of Southampton's School of Electronics & Computer Science & University of Nottingham School of Politics were moved to observe that: "*What is extraordinary is that the Ministry of Health cooperated fully with the Defence Science & Technology Agency's re-engineering of its information management; surely the experience that one would expect in most countries would be inertial resistance to 'outside interference' from people who think they know better'.*[15] *The structural properties of the Singapore Civil Service are a crucial variable for explaining this lack of territorial behavior; the internal ethos of, in this case, the Ministry of Health is quite sacrificeable in this context to the 'national' requirement of combating SARS.*" [16]

D) SEQUENCING THE VIRUS

The SARS Clinical Consortium - a multi-disciplinary group comprising Singapore General Hospital, Defence Research Medical Institution, National University of Singapore, Defence Science Organization, Tan Tock Seng Hospital, Genome Institute of Singapore, the National Environment Agency's laboratory and Institute of Molecular and Cell Biology also helped in the scientific battle with SARS. The effort, spearheaded by the Ministry of Health, contributed to the worldwide assault on the SARS coronavirus by researchers. Singapore's contributions included:

i. Sequencing five strains of the SARS virus, allowing comparisons of the genetic maps of different strains.
ii. Analysing the mutation of the different strains of viruses.
iii. Advancing understanding of how the SARS virus works in the host body.
iv. Developing a diagnostic kit that was licensed by Roche Diagnostics and is among the most widely used today.
v. Each component involved technical excellence, dedication, cooperation and much teamwork.

SERVING BEYOND THE PREDICTABLE

SARS was Singapore's first experience in managing a pandemic. There was no readily available model or authority for reference, no template that could be easily replicated. SARS was a substantive test of the public sector's ability to innovate and craft policies on the run, on occasions, having to execute them as they were being formulated.

Whilst SARS was a 21st century disease, the measures required to control outbreaks recalled traditional back-to-basics approach as used to isolate contacts during epidemics of the 19th century, i.e. through quarantine and virus isolation. The strategy adopted was modeled largely on procedures of the Centres for Disease Control and Prevention in Atlanta, USA, which relied on physicians and hospitals reporting the disease so that outbreaks can be fenced in rings as quickly as possible. The "four rings" strategy adopted by Singapore comprised actions to protect hospitals, the primary healthcare system, promote social responsibility in the community and finally preventing trans-border spread. Singapore's public health measures were essentially a progressive refinement of temperature taking and quarantine.

Indeed, Dr David Heymann, WHO's executive director of communicable diseases in Geneva noted that Singapore's response to SARS was not much different from that of other countries but that whatever Singapore did, it did faster and more thoroughly. What might be some of the capabilities that enabled its response? What were the challenges and what were the capabilities needed that were missing and had to be built after the crisis?

NETWORKED GOVERNMENT: THINKING AHEAD, THINKING AGAIN AND THINKING ACROSS

Singapore's Head of Civil Service observed that networked government is not just about customer service or being a one-stop shop; "it is also about developing the capacities to operate in a more complex and uncertain world, and to be able to continually generate innovations that will sustain Singapore's success." It is a difficult undertaking at the best of times. The preceding paragraphs outlined how networked government was forced into being during the SARS crisis, because the shared purpose was clear. Turf boundaries were seemingly dismantled and no limits placed on innovativeness. People were quick to volunteer what they could do based on their own expertise.

A) WHOLE-OF-GOVERNMENT STRUCTURES

Within a month after the first infection, the Cabinet realized that the crisis went beyond domestic public health issues and the responsibility of just the Ministry of Health. The Prime Minister activated an existing framework to manage civil emergencies - the Executive Group in the National Crisis Management Structure comprising relevant Permanent Secretaries on 4 April, overseen by a Ministerial Committee on 5 April to confront what was now a crisis of fear.

The Executive Group has its roots in an Advisory Committee formed in 1973 to devise crisis plans in the event of an aircraft hijack. It is activated during national emergencies and had swung into action on several occasions such as:

- The Hotel New World Collapse (1986)
- Hijacking of a Singapore Airlines aircraft (1991)
- Attacks on World Trade Center New York (September 2001)

The Executive Group provides the executive command and control mechanism during any civil crisis or emergency. When the Executive Group issues an activation order, all key officials of the Group will assemble promptly under its Chairman to work out strategies and plans to manage the crisis. Cutting across the top levels of the Civil Service, the Group has the breadth to marshall resources across the entire public sector and the teeth to ensure compliance. The Permanent Secretaries from the key Ministries report to the Chairman of the Executive Group, who is the Permanent Secretary of the Ministry of Home Affairs. Additional Ministries and agencies may be roped in as and when required. The Executive Group meets several times a year, planning several exercises annually to keep responses and the machinery well oiled. The Permanent Secretaries are assisted by a Secretariat from the Home Affairs Ministry which helps coordinate all action plans.

Prior to SARS, the Executive Group's roles and functions focused primarily on civil security and civil defence type incidents such as air crash, a bomb blast or a hostage situation. These scenarios were typically conceived to be managed by a single incident manager, supported by various agencies but without requiring a specific and deliberate multi- agency structure to handle the ramifications arising from an incident. Whilst SARS was not a conventional security threat, it had significant social and economic dimensions. So the Group had to adapt and innovate quickly, with the Ministry of Home Affairs coordinating the overall government-wide response. Many cross-agency sub-groups (Crisis Management Groups) were also formed during SARS, around functional areas like Economic, Housing, Transport, Public Communications and Confidence Building.

SARS was very much an institutional watershed. The Executive Group was revamped soon after SARS to create a more multi-dimensional and robust management structure. At the top levels, the HomeFront Crisis Ministerial Committee (HCMC) provides overall strategic and political direction, whilst the HomeFront Crisis Executive Group (HCEG) provides secretariat support, coordinates inter-agency cooperation and issues policy guidance for both peacetime contingency planning, as well as operations during a crisis. At the operational level, there are various functional inter-agency crisis management groups (CMG) with specific responsibilities and tasks. Finally, at the tactical level, there are the crisis and incident managers who oversee direct operations

and coordination at the service-delivery level.

However, having an elaborate institutional structure does not necessarily translate into a solution that ensures all government agencies work together in a coordinated manner. To prepare for crises, comprehensive exercises are conducted regularly to test the readiness and robustness of the structure and to undertake the necessary fine-tuning based on lessons learnt. All systems built to handle crises, which are by nature, very unpredictable, are always evolutionary but the current system is based on fundamentally sound principles with a flexible network for a multi-agency response.

B) SCENARIO PLANNING AS A TOOL

Scenario planning as a tool for anticipating change played a crucial role during SARS. Sub-groups within the Executive Group were tasked very early to learn from Hong Kong's experience in Amoy Gardens, should a similar scenario arise where quarantine requirements were needed if residents in one or several apartments in a block were infected by SARS. The study groups also looked at possible scenarios: healthcare workers deserting their posts in the light of incidents in Taiwan, an outbreak across the Causeway, "what if" borders had to be closed, and the possibility of SARS spreading through the sewerage system. The housing sub-committee looked into detailed contingency plans for housing large numbers of quarantined persons from different groups – citizens, foreign workers, expatriates, etc. The Prime Minister set up a taskforce of three ministers, one of its missions was "*to think in terms of worst-case scenarios*" and that it should be asking a lot of "what if" questions.

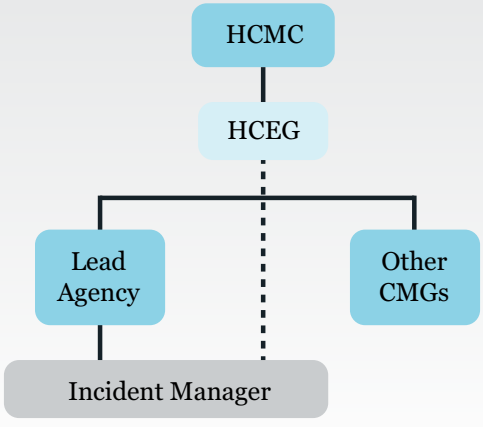

FIGURE 1: HomeFront Crisis Management System

C) LEADERSHIP AT ALL LEVELS

A strong organization requires leaders at all levels. A leader's role is to give direction and create conditions such as culture, structures, systems and people capability to deliver shared outcomes. They are expected to walk the talk and lead by example. Cabinet ministers and officials took pains to walk the ground, setting the example with their behaviors and a range of symbolic gestures to galvanize citizens to follow. The Prime Minister lunched with media editors in a public restaurant to show that it was safe. Senior Minister Lee Kuan Yew told Parliament he never left home without a thermometer. A Member of Parliament, Dr Tan Cheng Bock, quarantined himself after treating a SARS suspect. These examples served to legitimize the public discourse of social responsibility and sacrifice for all Singaporeans.

At the frontlines, healthcare workers and government, grassroots and private sector worked together to fight SARS. SARS was Singapore's 9/11. One commentator observed that the nurses and doctors treating patients infected with the disease were our firemen and policemen rushing into, not out of burning buildings. A whole system of institutions and values supported them. He went on to note that "*It is only when a crisis of this nature hits that one suddenly realizes, acutely and sharply, that government matters.*"[17]

D) PS21 & LEARNING, THE CULTURE ENABLERS

Singapore has always taken a pragmatic, eclectic approach to policy-making; learning from the experience and best practices of other countries and adapting it for our local context. The spirit of learning is reinforced in PS21, a public service wide movement initiated in the mid-1990s, emphasising learning as a key capacity builder for anticipating, embracing and executing change.

During the SARS period, public officers not only learnt from other countries, but also real time from the disease. Many new policies and changes were implemented soon after SARS in anticipation of future pandemics.

Basic hygiene became a key means of defence against a dreaded enemy. At the operational level, hospitals added in more high-tech isolation rooms, redesigned traffic flow through the buildings, curbed the numbers of exit and entry points to have better control of visitor movements. Thermal scanners became an essential part of border security measures and amendments to the Infectious Diseases legislation enacted during SARS were critical to arrangements undertaken for Avian flu and H1N1. SARS showed the importance and need to pool contribution of personnel from a range of other agencies, the Singapore Armed Forces, Singapore Police Force and Singapore Civil Defence Force to enhance the healthcare's response capacity to a pandemic. Cooperation between agencies across disciplines and planning for a collective response to a pandemic became as it were, a standard operating procedure.

LEGISLATIVE & ADMINISTRATIVE TOOLS

A strong and stable government and a professional civil service inherited from over a hundred years of British colonial rule ensured exceptionally rigorous standards of honesty and efficiency and many intervening layers of authority, preventing "fuzzy" data from surfacing. The Prime Minister highlighted this factor at the Administrative Service officers dinner on 24 March 2005 that: "*Few other countries operate like Singapore... it is hard to imagine civil servants operating this way in nearly any other country. But in Singapore administrative officers can practise public administration almost in laboratory conditions.*" [18]

Indeed, it was these "laboratory conditions" that made possible a number of quick actions – the speedy crafting and amendment to the Infectious Diseases Act to give more teeth to enforcement action against quarantine breakers was approved by parliament under a certificate of urgency; immediate acquisition of thermal scanners for use at all border points and key premises; contingency accommodation and also compensation for quarantined persons; mass purchase of masks, gowns and thermometers and equipment; and the deployment of Ministry of Defence staff to assist in contact-tracing and Defence Science & Technology Agency to setup systems in the Ministry of Health and CISCO for enforcement of quarantine.

And, in one instance, whilst Singapore laws have emphasized zero tolerance for immigration offenders, the Minister in charge was prepared to waive prosecution and send illegal immigrants home, if they were willing to come forth should they have a fever or suspect they might have contracted SARS.

MANY HELPING HANDS: A COLLECTIVE APPROACH

One Minister observed that coming up with strategies was not too difficult. Implementing them was a lot more difficult and required the peoples' compliance. Thus, engaging the community and private organizations was a key task facing the public sector during SARS.

Some examples:

- As the crisis deepened, Tan Tock Seng Hospital faced a shortage of gloves, masks and gowns. There was also a worldwide shortage. The Singapore Armed Forces was persuaded to run down its inventory of emergency medical supplies. Subsequently, a team of logistics experts from the Singapore Armed Forces, Defence Science & Technology Agency, Sembawang Logistics and International Enterprise was roped in to procure from all possible sources. Local textile manufacturers were also persuaded to make the hospital gowns with fabric sourced from China, Taiwan, US and Europe and worked at a feverish pace to meet the demand.

- The expatriate Managing Director of a Public Relations company wanted to encourage tourists to Singapore. His team designed a website carrying feature articles on life in Singapore with live footage and photographs, as well as rebuttals to foreign media reports. His team also helped to respond to worldwide queries and provided information to governments overseas and travel publications on the actual situation in Singapore. They produced 17,000 compact discs showcasing what Singapore was really like during the crisis. The project was made possible by a grant from Government and funds raised from

the private sector.

- With support from the People's Association (under the Ministry of Community Development, Youth and Sports) a grassroots association in Buona Vista mobilized 151 volunteers to fight SARS. The volunteers went on patrols armed with packets of tissues, helped to distribute thermometers and SARS collaterals to residents and to report to Operations on litter, choked sewerage pipes, etc, in the neighbourhood.

There were many other instances – one grassroots group organized an outing to the Bird Park for 30 families who had dutifully served home quarantine orders. People volunteered to be quarantined at government-owned chalets, so as not to run the risk of infecting their families. Media companies chipped in – running cartoons on public hygiene on its front page, providing comprehensive coverage of the crisis and even setting aside traditional rivalries to set up a SARS TV channel in just 19 days.

MANAGING A PUBLIC HEALTH CRISIS ACROSS CULTURES

Singapore's management of the SARS crisis has received much recognition from WHO and other quarters. There has also been considerable criticism from foreign media and interested scholars. The points raised by the critics can be briefly summed up:

i. That Singapore's smallness, limited numbers of border entry points, absence of urban/rural continuum and federal/state relations gave Singapore an obvious advantage.
ii. The high degree of government control over domestic print and broadcast media outlets made it possible for government to reach out to its audience efficiently.
iii. Foreign media reports freely used terms like "authoritarian regime", and "ruthless, harsh, draconian measures" in their reporting on Singapore to account for the use of electronic tags, home quarantine, surveillance cameras, etc. [Commenting on foreign media criticism of the harsh measures adopted by Singapore, the then Senior Minister Lee remarked "*Let's produce results. Then the public relations will look after itself*".]
iv. The history of public campaigns is so recent in Singapore's development that it contributes to a culture of citizens willing to accept infringements on individual rights for the greater good of the community. A local columnist lamented that the speedy amendment of the Infectious Diseases Act and use of electronic devices show "*just how powerful the Singapore government is, and how few checks exist to curb it.*" [19]
v. By comparison, scholars have observed that citizens of US and Canada and other Western countries would more than likely make the claim that individual rights were more important than responsibility to the general welfare and public health.

These are difficult, contentious issues which can be debated in many ways, depending on where one stands. The notion that culture is a constraint and the Asian, in particular East Asian penchant for "group harmony" and adherence to a "single, stable source of authority", has been debated widely. Fareed Zakaria in his article *Culture is destiny* in Foreign Affairs has noted that "under the impact of economic growth, technological change and social transformation, no culture has remained the same". It could well be argued that Communist States like China, with far more authoritarian systems in place, fared badly with their public. Also whilst measures taken by Singapore may have been harsh, the potential threat of extinction of an entire small city-state in an extreme case scenario, made draconian preventive measures rational in the long run.

CONCLUSION: BUILDING ADAPTIVE CAPACITY

SARS was a learning experience. It was in many ways a full scale rehearsal for other possible future shocks highlighting key concerns and gaps for security planners. It was also the prelude to new diseases that followed – Avian Flu and H1N1. Having said that, crises are seldom

the same. The SARS experience simply reinforced the role of government in leveraging on its unique position to pull together existing expertise and resources within itself, and harnessing the collective power of society to mitigate the impact. It reinforced the value of active citizenry and strong communities in building a society's ability to absorb shocks, as well as learn and overcome adversity. Hence, the importance of investing in strong institutions, as well as trust within government, and amongst citizens during good times, so that when a disruptive change happens, together they have both the capacity and confidence to take action. To quote, Khoo Boon Hwee, ex-Commissioner of the Singapore Police Force (1997-2010) and current President of Interpol:

> **Order in the chaotic domain comes not through command and control from the top, but through clarity of vision, mission and goals of the leaders on the ground.**
>
> **The important assets in a chaotic state are therefore the leaders and the people... the way we choose to act in chaos is not a decision for the future.**
>
> **It depends on what we do in our organization today, on the investments we put into leaders, the people and the various systems and processes...**
>
> **Our preparedness in future depends on our actions now.**

This essay is based on material from earlier articles published by the author: Menon, K.U(2005), Transparency and trust: risk communications and the Singapore experience in managing SARS, Journal of Communication Management, Vol 9, 4, 375-383

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FROM NS6 TO NS WORLD

THE NEW SYNTHESIS PROJECT

The New Synthesis Project is an international partnership of institutions and individuals who are dedicated to advancing the study and practice of public administration. While they hail from different countries, different political systems and different historical, economic and cultural contexts, all share the view that public administration as a practice and discipline is not yet aligned with the challenges of serving in the 21st century.

THE NEW SYNTHESIS 6 NETWORK

In 2009, Madame Jocelyne Bourgon invited six countries to join the New Synthesis Network (NS6), composed of officials, scholars and experts from Australia, Brazil, Canada, the Netherlands, Singapore and the United Kingdom. Committed to supporting practitioners whose work is becoming increasingly difficult, this network has engaged close to 200 people from more than 24 organizations. Their efforts have resulted in five international roundtables, five post-roundtable reports, and 17 case studies. Collectively, this work has generated significant insights into preparing governments to serve in the 21st century.

The Network's findings have been captured in the publication of a new book entitled *A New Synthesis of Public Administration: Serving in the 21st Century*, and is available in print and electronic formats from McGill-Queen's University Press. Its signature contribution is the presentation of an enabling governance framework that brings together the role of government, society and people to address some of the most complex and intractable problems of our time.

TOWARDS NS WORLD

So where to from here? Reconfiguring and building the capacities of government for the future cannot be accomplished through the publication of a single book. It is a continuous journey which requires the ongoing sharing and synthesis of ideas, as well as the feedback, learning and course adjustments that can only be derived by testing ideas in action.

And so the journey continues and the conversation expands. Our goal is to build upon the rich partnership of the original six participating countries by opening up this exchange with others—wherever they may be located. We seek to create an international community that connects all leaders—from government, the private sector and civil society—committed to helping prepare governments for the challenges ahead.

Next stages of this work will include virtual exchanges supported by web 2.0 technologies, as well as possible thematic and regionally-based networks and events. But no matter the vehicles, success can only be achieved through the active participation and collaboration of those passionate about making a difference.

We encourage you to stay tuned to nsworld.org for more information about how to get engaged.

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