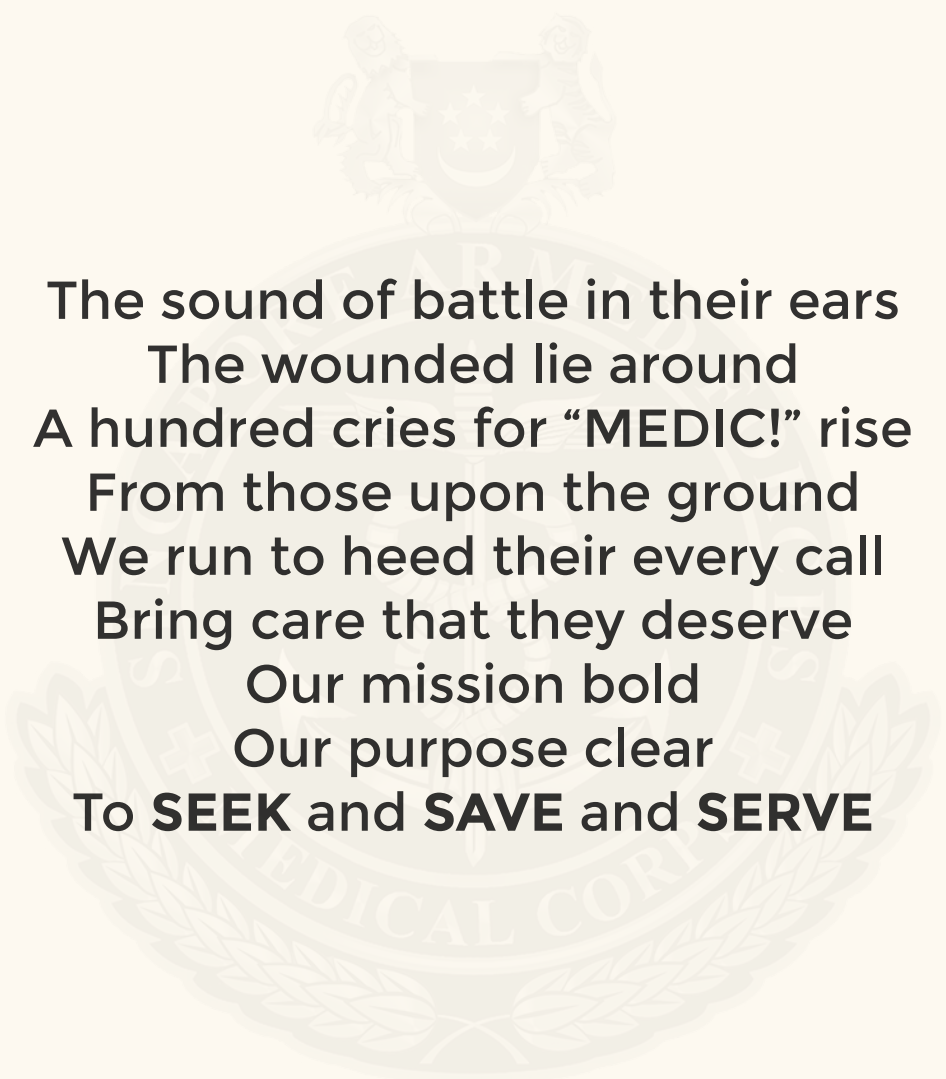


55TH
ANNIVERSARY



SEEK · SAVE · SERVE



The sound of battle in their ears
The wounded lie around
A hundred cries for “MEDIC!” rise
From those upon the ground
We run to heed their every call
Bring care that they deserve
Our mission bold
Our purpose clear
To **SEEK** and **SAVE** and **SERVE**



Learn about the Medical Corps' history!



Something to Sing About THE MEDICAL CORPS MARCH

The Medical Corps now has a song that we can call our very own,
"The Medics of the Field."

Interestingly enough, this tune dates back more than 40 years ago, when it was felt that the Combat Support Hospitals should have a song to rally around during their gatherings and official functions. Then LTC(DR) Cheong San Thau penned the rousing lyrics for the original version, while CPT(DR) Koh Eng Kheng wrote the score.

Unfortunately it remained a hidden gem, stored in our archives until 1996, when CMC, COL(DR) Lionel Lee felt that "The Medics of the Field" deserved a long overdue 'resurrection'. Under his direction, MAJ Tonni Wei, Director of the SAF Central Band, modified the tempo and melodic phrasing of the tune, bringing it closer to that of a march rhythm, while CPT(DR) Wong Hon Tym updated the lyrics.

The song today proudly incorporates our motto "Seek, Save, Serve" and reaffirms our role as the "Lifeline of the SAF" while retaining the rich sentiments of the original version.

"The Medics of the Field" is now sung at SAF Medical Corps major events and celebrations. So learn it well and sing it loud!



LEAD SHEET

VERSE 1

OUR NA- TION CALLED AS NEED A- ROSK FOR STA- TIONS IN THE FIELD TO
TREAT OUR FAL- LEN BRO- THERS ALL THE WOUND- ED AND THE ILL OUR
PIO- NEERS RAL- LIED TO THE CALL THEN THOU- SANDS JOINED THIS BAND AND
SOON A NEW CRY COULD BE HEARD A- RING- ING THRU THE LAND

CHORUS

ME- DICS ALL ARE WE. THE ME- DICS OF THE FIELD WE SERVE THE WOUND- ED
AND THE SICK THE BRAVE WHO WILL NOT YIELD OUR HEARTS WE GIVE OUR
SKILLS WE SHARE WITH VA- LOUR PRIDE AND WILL NO MAT- TER WHEN WE'RE
BAT- TLE REA- DY THE ME- DICS OF THE FIELD

VERSE 2

THE SOUND OF BATTLE IN THEIR EARS
THE WOUNDED LIE AROUND
A HUNDRED CRIES FOR "MEDIC!" RISE
FROM THOSE UPON THE GROUND
WE RUN TO HEED THEIR EVERY CALL
BRING CARE THAT THEY DESERVE
OUR MISSION BOLD, OUR PURPOSE CLEAR
TO SEEK AND SAVE AND SERVE

VERSE 3

THEY COME TO US BY LAND AND SEA
THEY'RE SENT TO US BY AIR
THE WOUNDED AND THE DYING TOO
FOR TREATMENT AND FOR CARE
BY DAY OR NIGHT, IN WAR OR PEACE
WE SERVE THE BEST WE CAN
THE LIFELINE OF THE S.A.F
WE'RE THERE FOR EVERY MAN



CONTENTS

FOREWORD

SEEK

| | |
|--|----|
| ENHANCING HEAT MANAGEMENT IN THE SAF | 4 |
| ENHANCING AEROMEDICAL CAPABILITIES | 6 |
| TRAINING THE FUTURE NAVY MEDICAL SERVICE | 7 |
| REVISED COMBAT CASUALTY AID COURSE | 10 |
| INAUGURAL MOCC AND EMT COMBINED SUMMARY EXERCISE | 11 |
| PATIENT ASSESSMENT MODEL 2.0 | 13 |
| FIRST EMERGENCY MEDICAL SERVICES TACTICAL COURSE | 15 |
| ENHANCING NATIONAL PARAMEDIC PROFESSIONAL STANDARDS | 16 |
| TRANSFER OF MEDICAL RESPONSE FORCE COMMAND TO HQ AMS | 17 |
| INAUGURATION OF FORCE HEALTH GROUP | 18 |

SAVE

| | |
|-------------------------------------|----|
| ANSWERING THE CALL TO SAVE LIVES | 21 |
| SWIFT RESPONSE TO EMERGENCIES | 25 |
| ONE LIFE SAVED RESUSCITATION AWARDS | 27 |

SERVE

| | |
|--|----|
| NEW KRANJI MEDICAL AND DENTAL CENTRE | 30 |
| GOMBAK REGIONAL MEDICAL AND DENTAL CENTRE AT NS HUB | 32 |
| SUPPORTING MENTAL HEALTH IN THE SAF | 33 |
| MEETING HEALTH-SCREENING NEEDS | 34 |
| SAF DENTAL SERVICE | 35 |
| MMI REORGANISATION | 36 |
| SMTI REORGANISATION | 37 |
| INTRODUCTION OF ENHANCED FITNESS PROGRAMME AND EQUIPMENT | 38 |
| ENHANCING THE SAF HEALTHCARE SERVICE | 39 |
| ENHANCING OPERATIONAL MEDICAL SUPPORT FOR THE RSN - SAVING LIVES OUT AT SEA | 41 |
| SERVING THE RSN THROUGH PREVENTIVE HEALTH | 43 |
| NEWLY OPERATIONAL RSAF HYPOBARIC CHAMBER | 45 |
| RSAF 50 @ HEARTLANDS | 46 |
| SMOKING CESSATION EFFORTS ON WORLD NO TOBACCO DAY | 47 |

THE COVID BATTLE

| | |
|--|----|
| STANDING STRONG THROUGH THE STORM | 50 |
| OUR COVID-19 OPERATIONS ACROSS SINGAPORE | 56 |
| THE COVID BATTLE | 58 |
| DORMITORY OPERATIONS | 60 |
| MEDICAL LOGISTICS SUPPORT TO THE MINISTRY OF HEALTH | 65 |
| CCF@EXPO | 66 |
| OUR NSMEN AT CCF@EXPO | 71 |
| SAF STANDING DOWN FROM CCF | 73 |
| SWAB AND ISOLATIONS FACILITIES AT CHERRYLOFT RESORTS | 79 |
| SAR OPERATION DURING COVID | 82 |
| THE COVID SURVEILLANCE UNIT | 83 |
| IISS SHANGRI-LA DIALOGUE SHERPA MEETING | 84 |
| SAF VACCINATION OPERATIONS | 85 |
| EMERGENCY HOUSING TASK FORCE | 87 |
| REGIONAL SWAB CENTRE | 88 |
| SWAB OPERATIONS @ BIG BOX | 89 |
| HOME VACCINATION OPERATIONS | 90 |
| COVID TREATMENT FACILITY | 92 |
| SUPPORTING OUR COVID-19 FRONT-LINE FIGHTERS | 94 |
| DR NG ENG HEN'S SAF DAY 2021 MESSAGE | 97 |

THE NEW NORM

| | |
|---|-----|
| RSAF INNOVATION EFFORTS | 103 |
| TENGAH AIR BASE MEDICAL CENTRE | 104 |
| INTRODUCTION OF XR IN MEDICAL TRAINING | 105 |
| DIGITALISATION OF MEDIC PROFICIENCY LOGBOOK | 106 |
| DIGITALISATION OF ASSESSMENTS & PROPRIETARY PERFORMANCE DASHBOARD FOR SMTI | 106 |
| HOME-BASED LEARNING FOR EMT | 107 |
| ANNUAL MEDIC PROFICIENCY TEST | 108 |
| DEPLOYMENT OF SAF MEDICS TO SCDF AMBULANCES AND RESTRUCTURED HOSPITAL | 109 |
| MMI DIGITALISATION JOURNEY | 110 |
| DEFENCE EXECUTIVE OFFICERS CAREER ROAD MAP | 111 |
| MEDIC CENTRALISATION TRIAL | 111 |
| SERVING THE RSN THROUGH TECHNOLOGY IN HEALTHCARE DELIVERY | 112 |



FOREWORD



The history of SAF Medical Corps has been defined by periods where we were shaped and transformed by critical global events, and we currently stand on the cusp of such an event. What started off as a seemingly innocuous outbreak, quickly transformed into one of the worst pandemics humanity has seen in recent memory.

Our COVID-19 operations have been a rallying cry for the SAF Medical Corps. When the pandemic landed on our shores in early 2020, the Men and Women of SAF Medical Corps swung into action. They organised themselves, and supported the various task forces assigned to deal with the pandemic. They were in the dormitories supporting our migrant workers and at the Emergency Departments helping to relieve the strain felt by our healthcare workers. They stepped fearlessly into the Community Care Facilities to provide care and comfort to the sick. Over the last 2 years, the men and women of the SAF Medical Corps stepped forward, putting aside their concerns, and placing the well-being of others before themselves.

To the Men and Women of the SAF Medical Corps, I salute you.

While our generation may be defined by COVID-19, it should not overshadow other achievements. Not merely content with the status quo, our Men and Women continue to challenge old conventions and beliefs. It is this disruptive mindset, one where we are constructively discontent, that led to many

innovations and progress over the last 5 years. Today, we are an organisation that strives to be agile and nimble, one that continues to respect military traditions and values, but is not afraid to embrace changes. We continue to seek improvement, and find new ways to provide excellent and comprehensive healthcare for our soldiers, optimise their combat performance, and enhance the SAF's operational edge.

This book is dedicated to the Men and Women of the SAF Medical Corps, who have served with distinction over the last 55 years. Their dedication is truly inspiring, and I cannot be prouder of the team. The theme for the book is our motto, "SEEK, SAVE, SERVE"; three simple words which encapsulate our mission, and are clearly and firmly etched in our hearts. This is our North Star, and it guides us as we navigate the uncertain world. I may not be certain of what the future has in store for us, but I am confident that our people will continue to do our best, to seek excellence, to save lives, and to serve the SAF.

A handwritten signature in black ink, appearing to read "Lee Wei Ting", with a long, sweeping underline that extends to the right.

COL(DR) LEE WEI TING
Chief of Medical Corps
Singapore Armed Forces



SEEK

SAVE



SERVE



INTRODUCTORY NOTE

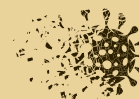
Taken from **MED50** Commemorative Book **“OUR LEGACY OUR FUTURE”** published five years ago, then Chief of Medical Corps (CMC), RADM(DR) Tang Kong Choong, said, “The future operating environment for the SAF will be a challenging one. Emerging threats and socio-demographic changes in Singapore will require the SAF to develop new fighting concepts and, at the same time, harness the potential in every soldier, sailor, and airman in order to maintain the fighting strength of the SAF.”

How often do you walk past a building and wonder what it would look like 50 years later? Or you may ponder upon RADM(NS)(DR) Tang’s statement about the “Future” and how relatable his words are to our reality. You are sure to face a multitude of obstacles that you had pretty much no idea about. Learning how to overcome them as you cruise through with the SAF Medical Corps will be one of the best experiences that life can offer you - To Seek Excellence, to Save Lives and to Serve the SAF.

The theme for this book **“SEEK SAVE SERVE”** was chosen as the continuum of the last MED50 Commemorative Book. It is a collection of personal stories of different generations told by our Officers, MMEs, DXOs and Medics. This commemorative book captures major events and achievements over the past years, as well as our aspirations for the future in a “New Normal”. Each topic will illustrate how various Services integrated seamlessly to contribute to the SAF and the battle against COVID-19.

ME5 CHAN SIEW LEARN DANIEL

Formation Sergeant Major
(2006-2022)
SAF Medical Corps





SEEK

EXCELLENCE. PARTNERSHIPS.

ENHANCING HEAT MANAGEMENT IN THE SAF

PURPOSE - BUILT COOLING PADS

What Are Purpose - Built Cooling Pads?

Purpose-built cooling pads are produced specifically to cool down a casualty. These cooling pads utilise a highly thermally conductive cooling medium to absorb heat from the body.

When secured onto the casualty's body via a bodysuit, they create a "thermal enclosure". This enhances cooling efficiency and insulates the pads from ambient temperature, prolonging their effectiveness.

Ice packs are replaced by six large cooling pads placed across the chest, abdomen, thighs, and back. It is the new standard measure by the Medics for immediate on-site cooling of servicemen with suspected heat injuries.

When Was This Implemented?

Usage of cooling pads has been implemented since August 2018 to support various units in the SAF, including overseas trainings and the Emergency Ambulance Services.

Benefits

In a study done by the SAF and the Defence Science Organisation (DSO) National Laboratories, the cooling pads demonstrated a cooling rate approximately four times faster than by ice packs. Immediate and effective cooling is key in the management of heat injuries.



SAFETY EDUCATION DID YOU KNOW

23/21

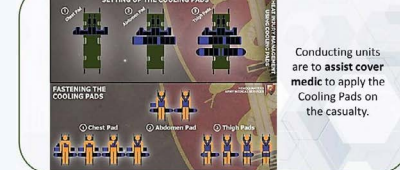
Cooling Pads

What are Cooling Pads?

Portable cooling system: Reduces body core temperature. Deployed on-site: First line cooling option for casualties with suspected heat injury.

Per Casualty

Application of Cooling Pads during Training



Re-Supply of Cooling Pads during Training

For Medical Covers < 8 hrs: Cooler Box - Keep Cooling Pads for medical cover < 8 hrs. (Cooling Pads to be prepared by cover medic) No Requirement to Re-Supply

For Medical Covers 8 - 12 hrs: Insulator Bag - Keep Cooling Pads for medical cover up to 12 hrs.

For Medical Covers > 12 hrs: Conducting Unit to plan for re-supply of frozen MPads 1hr before the 12th hr mark. Make necessary adjustments to re-supply timings if traveling time takes more than 1hr. Re-Supply is Required

#1 Safety Is A Mission Outcome
An effective unit ensures safety, so that it can preserve its combat effectiveness and our soldiers' will to fight.

#SafeBuddy - Safety Materials on the Go!
Find more Safety/DYK @ <https://go.gov.sg/safebuddy>

ARMY SAFETY MEDICAL SERVICES
Mission Success, Safety Always.



ENHANCING HEAT MANAGEMENT IN THE SAF

ARM IMMERSION COOLING SYSTEM

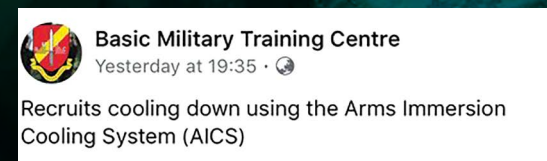
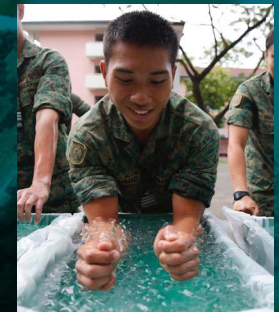
What is the AICS?

The AICS is a simple and efficient method to cool the core body temperature through full submersion of hands and forearms into iced water. Soldiers dip their arms into iced water for 15 to 30 seconds. This is normally done during rest periods and after the conclusion of training.

When was it implemented?

AICS was used selectively since 2015 in Basic Military Training Centre (BMTc), Officer Cadet School (OCS) and Specialist Cadet School (SCS), all of which conduct high intensity training.

With recommendation from the Committee of Inquiry (COI), this practice has been implemented across the SAF in phases from August 2018 for fast marches and route marches that are 12km or longer. These activities were chosen because they are intense training activities that take place over an extended period.

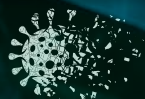


| Heat Injury Prevention Measures | SAF | US | UK | NATO | ADF | Industry |
|--------------------------------------|-----|----|----|------|-----|----------|
| Hydration Regime | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Work Rest Cycle based on WBGT | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Heat Acclimatisation & Periodisation | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Rest Management (7 hrs of rest) | ✓ | ✓ | × | × | × | × |
| Outlier Management | ✓ | ✓ | × | × | × | × |
| Temperature Taking Regime | ✓ | × | × | × | × | × |

Benefits of AICS

AICS is a technique used by the United States and Australian militaries and has been found to be effective in reducing core body temperature.

Water is able to remove heat 25 times faster than air. In addition, the forearms are highly vascularised with a large surface area relative to body mass, which increases blood flow to the skin as body temperature increases. As such, submerging the forearms in iced water cools the blood, which flows directly back to the body, reducing its core temperature.



ENHANCING AEROMEDICAL CAPABILITIES

The Aeromedical Evacuation (AME) capabilities of Air Force Medical Service (AFMS) was vastly enhanced when the previous KC-135R aircraft was replaced with the Airbus A330 Multi-Role Tanker Transport (MRTT).

With the Full Operational Capability (FOC) of MRTT being officiated on 20 April 2021, AFMS personnel can now provide care for up to three critical care patients, or 12 patients requiring light to moderate care when called to action for missions that include the repatriation of critically injured persons for Humanitarian Assistance and Disaster Relief (HADR) missions or Peace Support Operations.

One example of the transformations made in the structures of MRTT was that stretchers are now mounted in the cabin instead of being attached onto the floorboard, which was the case with the previous KC-135R aircraft. This proved to be sturdier and more secure against air turbulence. In addition, personnel can now power medical equipment with the MRTT aircraft's power supply instead of using portable batteries. A Negative Pressure Individual Isolation System (NPIIS) can also be set up on board to transfer patients with airborne infectious diseases. This is vital in the COVID-19 pandemic. The A330-MRTT's better endurance shortens the duration required for AME.



TRAINING THE FUTURE NAVY MEDICAL SERVICE

Navy Medical Service (NMS) was established in 1967 to provide excellent medical support and comprehensive healthcare for the Republic of Singapore Navy (RSN). Since then, the provision of timely and relevant medical training by NMS has been integral in enabling the men and women of NMS to perform this critical mission.

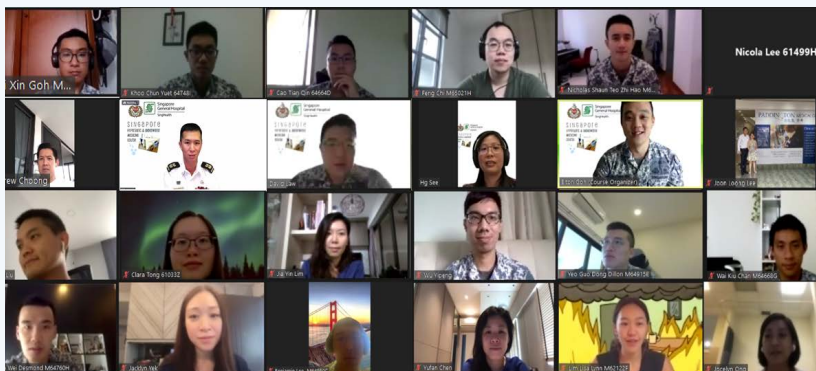


Medical Officer providing medical support in our Medical Centres.

Training Our Medical Personnel

NMS conducts training for medical personnel including Naval Medical Officers, Underwater Medics, Military Medical Experts (Underwater) as well as the RSN's medical NSmen. Efforts are constantly ongoing to improve medical training standards in the RSN, and to align these with the Navy's operational demands.

All newly posted Naval Medical Officers will undergo the Navy Undersea Medical Officer Course (NUMOC), which incorporates the essentials of Diving, Hyperbaric and Submarine Medicine, as well as the provision of medical support in the ashore, afloat and underwater domains. In addition, Naval Medical Officers attend the Singapore Hyperbaric and Underwater Medicine Course (SHUMEC), a Diving Medical Advisory Council (DMAC) Level 1 course, jointly conducted by NMS and the Hyperbaric and Diving Medicine Centre (HDMC), Singapore General Hospital (SGH) to become qualified medical examiners for divers. Selected Regular Naval Medical Officers will be sent abroad to participate in DMAC Level 2D courses to be accredited in the provision of advanced medical management for diving accidents and illness. NMS also conducts the Underwater Medics (UM) Course for Medics who are newly posted to the Unit, where they undergo basic training in the provision of medical support ashore and afloat, including shipboard, diving and hyperbaric chamber operations.



The first online SHUMEC was successfully conducted in 2020 amidst the COVID-19 pandemic.

The Military Medicine Experts (Underwater) begin their journey as Underwater Medics and subsequently obtain qualifications in Paramedicine. Part of their training includes attending the Submarine Independent Duty Corpsman (IDC) Course in USA to attain qualification to serve on board our submarines as IDCs. Upon their return, our IDCs who are trained to the level of Advanced Practice Nurses (APN), and continue to undergo rigorous annual currency training, ensuring that they are kept up to date on their clinical skills and knowledge. Deserving military experts are groomed to take up further staff and leadership appointments in NMS.



A Medic assisting a Medical Officer in performing intubation of a casualty.

Naval Underwater Medicine Centre (NUMC) Medic undergoing training to provide medical care within the RSN Hyperbaric Chamber.





Senior Minister of State for Defence Mr Heng Chee How (left) joins LTC(NS)(DR) Cheng Shin Chuen (right) in performing a simulated surgical procedure on the Human Worn Surgical Cut Suit inside the RSN's Rapidly Deployable Maritime Container (RDMC).

Enabling our NSmen Through Safe And Realistic Training

The RSN's Medical NSmen regularly return for In-Camp Training (ICT) as part of their medical role in providing RSN with operational medical support across the RSN's full spectrum of operations. Together, they provide critical medical support in RSN medical centres and aboard various RSN platforms.

The structured NS training framework allows for RSN Medical NSmen to be safely and progressively trained during their 10-year ORNS cycles. Broadly, the cycle is divided into three phases, focusing on component training during the initial years, before scaling up to integrated team training, and finally culminating in operational deployments.

Training for the Future

Medical training serves as an indispensable bridge for NMS to maintain, and sometimes even enhance the capabilities of its medical personnel. With up-to-date training requirements, NMS is ready to integrate new technologies to pass on invaluable lifesaving skills to our trainees.

It is indeed an exciting time for NMS as it stands ready to embrace the future in training its next generation of medical professionals to meet the medical support requirements of the RSN.





Medical Officers and Medics undergoing resuscitation training using high fidelity medical simulation.



NSmen practicing rearward evacuation of casualties via the Naval Helicopter.

With a high level of portability, these simulator technologies are routinely deployed on board our ships for shipboard medical training, providing another layer of realism as our medical personnel practice their craft in the actual environment.

Did you know that NMS provides training for non-medical personnel as well?

- NMS trains up to 230 non-medical shipboard personnel annually. These sailors serve on board the RSN platforms as part of the First Aid Party. As Advanced First Aiders, they provide basic first aid support and augment the Shipboard Medical Team (SMT) comprising Medical Officers and Medics afloat.
- NMS also supports RSN Fighting Formations and Flotillas in developing their platform-specific medical training packages to better support their naval combatants.

Enhancing Training with Simulation

Most would remember early training aids such as manikins for CPR and casualty evacuation, as well as prosthetic limbs and their trustworthy buddy for bandaging and IV cannulation. Over the years, NMS has continued to leverage advances in technology to upgrade and refresh its medical training equipment. In the recent years, it has procured High-Fidelity Patient Simulators and Human-worn Surgical Cut Suits, which serve to provide real-time feedback and enhance medical and surgical training realism.

These medical training simulators are routinely deployed on board our ships to maximise training efficiency for Shipboard Medical Teams (SMT), enabling them to 'train as they deploy' and providing medical personnel with an added layer of realism as they hone their skills within the actual shipboard environment. The National Healthcare landscape has continued to evolve rapidly, and with advances in Digital Health, NMS has also worked with partners from institutes of higher learning, to explore the use of Virtual Reality (VR) to enhance medical training for medical personnel.





REVISED COMBAT CASUALTY AID COURSE

In 2020, Combat Casualty Aid Course (CCAC) went through a curriculum transformation exercise to revamp the entire course syllabus for independent troops (e.g. Scouts, Snipers, Anti-Tank Guided Missile, Rebros, Signallers) to administer medical treatment in the absence of an organic medic, complementing the SAF TCCC framework. New skills include providing care under fire, arresting haemorrhage, treatment of thoracic injuries and prevention of hypothermia.

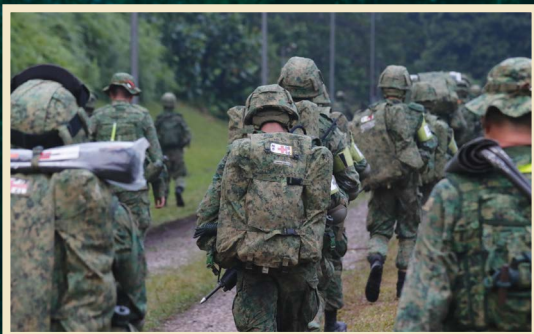


Assessments were incorporated to ensure that trainees display required competencies as effective Combat Casualty Aid (CCA) providers. These assessments provide a means of feedback to improve trainee performance during practice and to assess their competencies through a scenario at the end of the course.

What was previously a three-day course has been truncated to a two-and-a-half-day course with the introduction of LEARNet courseware, requiring trainees to have self-directed learning and pass a pre-course quiz before the face-to-face component.



INAUGURAL MOCC AND EMT COMBINED SUMMARY EXERCISE



The First Combined Medical Officer Cadet Course (MOCC) and Emergency Medical Technician (EMT) Course Summary Exercise was conceived in 2018 to integrate wartime/tactical medical care between MOCC and EMT trainees. After their time at the training schools, Medical Officers and Medics have to work closely and extensively in their respective medical centres or battalions. However, there is almost no interaction between both parties during the duration of their courses. This exercise was designed to overcome this particular shortcoming.

This exercise was initially designed as a five days / four nights outfield combined Summary Exercise (SUMMEX), to be held at Murai Urban Training Facility (MUTF). The exercise includes missions that assesses both jungle warfare and Fighting In a Built-Up Area (FIBUA); and tests MOCC cadets on their concepts in planning a

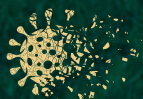
viable Medical Support Plan (MSP) – where they would weather through variable environments and lead their medical platoon in executing it. Tactical Combat Casualty Care (TCCC), a key focus for all medical personnel, was also weaved into the missions.

The first two days consisted of an in-camp Just-In-Time (JIT) training for MOCC cadets to share medical knowledge and expertise with EMT trainees in preparation for the outfield component. During this time, MOCC cadets were also tasked with educating EMT trainees and refreshing pertinent concepts, procedures and protocols. The JIT provided commanders with not just the opportunity to assess the trainees' medical competency and capabilities, but also their ability to build trust and respect.

For the subsequent four days and three nights, EMT and MOCC trainees were split into four

combat groups participating in four concurrent missions spread throughout different areas of MUTF. Day five consisted of a grueling casualty evacuation in teams of eight, where a stretcher with 60kg load was carried around MUTF for 8km.

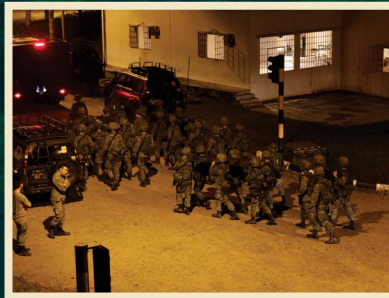
Planning an outfield exercise between two schools is no small feat. Subtle differences in the training between MOCC and EMT trainees would also surface throughout the combined SUMMEX, where MOCC trainees would help share practical and tactical level adjustments to maximise the use of certain medical equipment. The product of this SUMMEX was a shared, mutual understanding of basic medical practicum that would positively influence the practice of each individual upon posting to their unit of service.





Since the SUMMEX was implemented, feedback has been overwhelmingly positive. Many participating trainees on both sides have described it as eye-opening and character-building.

“Receiving the exercise badge from my sergeant, I realised how much we had learnt in this exercise. We got the opportunity to work alongside MOs, we got first-hand experience of how our lives as platoon medics would be like.” - PTE Thota (EMT Trainee)



“All in all, this exercise was undoubtedly an experience I will never forget and I am grateful for all the friends I made throughout the course. It was our honour to have the medics with us on this exercise... I look forward to working with them in the future.” - OCT(DR) Christopher Matthew (85th MOCC)

“This exercise is what embodies the spirit of National Service: where two groups of strangers can come together, develop skills and mutual respect that enables them to fulfil their mission together. I am proud of every single Singaporean Son who completed this exercise and I am confident that this experience will go on to make them better men.” – MAJ(DR) Zhang Hao Tian (Course Commander, MOCC).



To support the scale of the exercise, all branches took up essential roles that contributed to its administrative needs. Army Medical Training Centre (AMTC) operated an Ops Hub which provided 24hr manning and monitoring of all activities throughout the exercise.

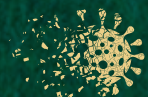


Moulage casualties and Third Generation Simulation Manikins from Training & Learning Systems Branch (TLSB) were used to simulate casualty situations. During the exercise, skills of each participant would be evaluated by TLSB instructors. HQ AMS Logistics Branch provided ration runs, water runs and stores, with a Unit Safety Officer (USO) performing safety and training inspections throughout the exercise.

Upon completion of four missions and one casualty evacuation, MOCC trainees are presented with their Third White Bar (Cadet Rank), while EMTs are presented with the red-cross armband to signify the successful completion of their final exercise.



We should cherish this collaboration between all the branches and schools within SAF Medical Training Institute (SMTI), and continuously strive for excellence.



PATIENT ASSESSMENT MODEL 2.0

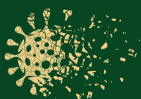
In 1995, a tripartite committee formed by the Ministry of Health, Ministry of Home Affairs, and Ministry of Defence was tasked to look into pre-hospital healthcare needs in Singapore. This led to the SAF's collaboration with the Justice Institute of British Columbia (JIBC) and the founding of paramedic training in Singapore.

Patient Assessment Model (PAM) was introduced to the School of Military Medicine (SMM) in 1996 as one of the key components in a Medic's training. PAM is a framework that guides the Medics in deriving appropriate treatment protocols in the management of patients with medical or trauma-related conditions. SAF Medics are required to execute PAM by assessing the patient based on clinical presentations and the patient's complaints. Over the years, SMTI has continued to refine and modify PAM based on the learner's profile as well as operational needs of the SAF.



The latest adaptation of PAM was introduced in December 2018. PAM 2.0 was developed with the following considerations:

- (1) **Simplicity.** When Medics are confronted with an unwell patient or casualty, PAM should be simple to apply with little room for ambiguity. For this reason, two separate pathways were created for conscious (Alert, or responsive to Verbal stimuli) and unconscious patients (responsive only to Pain, or Unresponsive). These two distinctive pathways of assessment are also aligned to the "AVPU" and "Man-Down Drill" that commanders are familiar with.
- (2) **Clarity.** To enhance clarity, PAM assessments are based on the presenting signs and symptoms of the patient. This is contrary to the previous iteration where medics were required to make a diagnosis before they could initiate a protocol. In doing so, we were able to streamline the eight SAF Medic field protocols (introduced in January 2014) to five management protocols instead.



(3) **Speed.** To minimise any delay in evacuation, Medics are required to complete primary assessment within five minutes and determine the need for evacuation. To aid them in doing so, the acronym N.A.C.T.O. (Neurological, Airway and breathing, Circulation, Trauma / Toxins & Others) was introduced in PAM 2.0. Should patients have any condition listed in NACTO, they are required to request for immediate evacuation. This has allowed Medics to make swifter decisions on whether a patient requires evacuation, and to render targeted care on-scene when necessary. With PAM 2.0, patients are promptly evacuated to the next level of medical care, increasing their chance of survival and recovery.



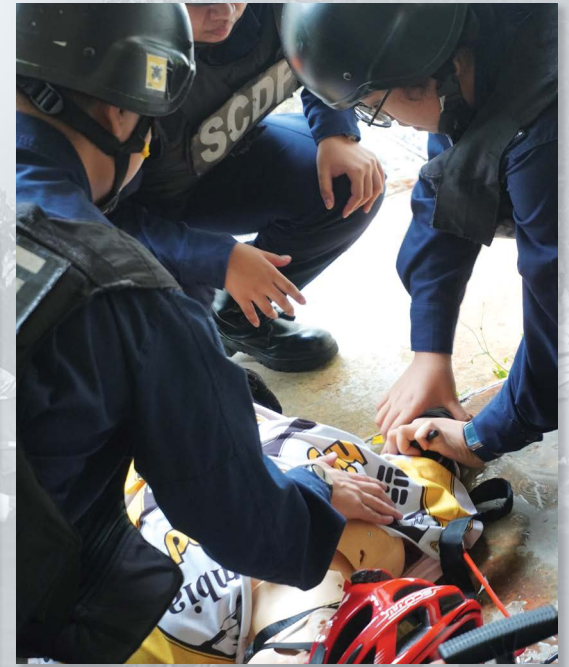
From a training school's perspective, having NACTO and reducing eight protocols to five has allowed learners to better remember and understand how and when to apply the protocols. PAM 2.0 has since been well integrated into the EMT/EMTS syllabus. Today, the PAM 2.0 concept is taught to learners in a blended approach through e-learning and face-to-face practical sessions. Learners are encouraged to internalise the concept of PAM 2.0 through discussions, presentations, and practical lessons. The trainers then go on to facilitate deeper understanding of PAM 2.0 by teaching learners its application in the five protocols. Medics will therefore be confident to handle actual medical covers after graduation.



FIRST EMERGENCY MEDICAL SERVICES TACTICAL COURSE

In partnership with HQ SCDF, SAF Medical Training Institute (SMTI) created an Emergency Medical Services (EMS) Tactical course to equip SCDF personnel with medical and tactical skills needed to perform life-saving interventions in hostile situations during civil emergencies as Basic Task Force Members. 24 SCDF paramedics attended the two-day course held on 23-24 April 2019 conducted by Medic Vocational Training School. The course was designed to provide tactical context to fulfil their operational needs; using the guiding principles of Tactical Emergency Casualty Care.

The two-day training involves lecture-discussions, individual skills practicum and group practicum in a simulated environment. Through this course, the SCDF paramedics learn essential skills such as adopting tactical movement, raising their alertness when approaching hostile environments, triaging in mass casualty situations, and performing treatment under stress including arresting massive haemorrhage and treating tension pneumothorax.





ENHANCING NATIONAL PARAMEDIC PROFESSIONAL STANDARDS

On 18 May 2021, SAF, SCDF, and Nanyang Polytechnic signed a Memorandum of Understanding (MOU) for the enhancement of National Paramedic professional standards through the development of quality tertiary Paramedic educational programmes. The full-time twelve-month Diploma (Conversion) in Paramedic Science (Dip PRM) was also launched during the signing event.

Dip PRM is conducted over four terms with each term comprising a classroom phase and an SCDF Ambulance attachment phase. The course integrates textbook learning with clinical placements which streamlines the curriculum and optimises learning outcomes. The integrated curriculum provides graduates with strong theoretical foundations and real-world experiences. This is essential as frontline paramedics have to deal with increasingly complex pre-hospital care that requires diagnosis and prioritisation of treatments for patients.



TRANSFER OF MEDICAL RESPONSE FORCE COMMAND TO HQ AMS

As part of the Medical Corps' reorganisation efforts, the Force Medical Protection Command (FMPC) stood down on 1 October 2019 and transferred its command to Medical Response Force (MRF) to HQ AMS. Higher HQ command of MRF was transferred from FMPC to HQ AMS. This allowed for better synergy and closer partnership between MRF and her sister executive units in the Army. Since then, MRF has leveraged on the strong support and expertise of HQ AMS. MRF has forged closer relationships with stakeholders within the SAF and strengthened cross-links with external agencies dealing with pre-hospital care.



INAUGURATION OF FORCE HEALTH GROUP



"What does it mean when we are called the Force Health Group (FHG)? Firstly, in the SAF setting, a Group reports to a BG grade officer – in this case, it is to CMC. In the SAF, Groups are led by a COL/ME7 grade officer. Our estabs remain unchanged, and the Head is pegged to the ME7 grade. Changing this classification to Group is a recognition of the strong operational nature of our work, and the high complexity of the work that we do."

"FHG is the fresh new identity of the Biodefence and Medical Policy Centre (BMPC). As naming conventions can influence the outlook of a unit / team, the change of name was made to become more outcome-based instead of descriptive to improve team morale."

LTC(DR) CLIVE TAN, HD FHG





Good evening team. Thanks for gathering here at 6pm. I promise to keep this short. The reason why I gathered everyone here is because I have an important announcement to make.

First, let me say that 2020 has been a very eventful year. Since I took on this appointment in April, it has been one hell of a rollercoaster ride. Looking back, the team has done exceptionally well to ride the waves that had come at us. So do give yourselves, and your buddies, a pat on the back.

We are still a relatively new unit, so as we were going through the events of 2020, me and my leadership team – James, Joachim and Jia Chen, have been thinking hard about the structural issues for our unit. Just to remind everyone how our unit was formed; we took the Biodefence Centre, BDFC, from FMPC, Force Medical Protection Command, and combined it with Healthcare Branch and Patient Care Enhancement System (PACES) Office from Military Medical Institute (MMI), to form the Biodefence and Medical Policy Centre (BMPC).

I want to share that after approximately six months of leadership conversations and navigation through the meetings and forums, we have gotten approval for the following:

- A. BMPC will be renamed and re-profiled to Force Health Group (FHG).
- B. Infectious Disease Branch (ID Br) will be

renamed and re-profiled to Biodefence Centre, BDFC (its old name, which was very well established and branded).

- C. Healthcare Policy Branch will be renamed and re-profiled to Healthcare Policy Centre – new acronym will be HCPC.
- D. For Medical Informatics Branch (MIB), there will be no change at the moment. There are ongoing discussions with Chief Medical Informatics Officer and Plans Branch. Any changes will be incorporated into the HQ Medical Corps (HQMC) re-organisation Post-Implementation Review due next year.

Let me explain the significance of these changes.

Naming conventions - How a good name can change the outlook of the unit and team.

Naming nomenclature has evolved towards using more holistic and outcome-based terms. For example – PACES Office was renamed to Medical Informatics Branch, which better reflects the future work that the team needs to perform, and enables us to rethink our job scope and how the team can better value-add to the organisation. So changing “Biodefence & Medical Policy” to “Force Health” is a similar move, where we move away from a descriptive term to a more outcome-based term.

Re-profiling ID Br to Biodefence Centre builds on a similar paradigm. Making it a Centre is an effort to recognise its role as a Centre of Excellence (CoE) and its mandate to serve the whole SAF. The term BDFC had also enjoyed strong branding for close to a decade, and going back to that term builds on that strong established branding. For Healthcare Policy Branch, I have had several discussions with James and we both agree that healthcare policy has much room to grow and develop in the SAF. Now that the Service Medical HQs have their own Healthcare Branches, this Healthcare Policy Centre will bring together this

Community of Practice (CoP) and further strengthen Medical Corps’ professionalism in healthcare and medical policy.

For Medical Informatics, it continues to be a growth area. The workload on the newly formed MIB has been tremendous this year, and it looks set to continue along this trajectory as digitalisation efforts pick up the pace. Our leadership is keenly aware of this, and will continue discussions on how to optimise our structure moving forward.

What does it mean when we are called the Force Health Group? Firstly, in the SAF setting, a Group reports to a Brigadier General grade officer – in this case, it is to CMC. In the SAF, Groups are led by a COL/ME7 grade officer. Our estabs remain unchanged, and the Head is pegged to the ME7 grade. Changing this classification to Group is recognition of the strong operational nature of our work, and the high complexity of the work that we do. I believe that this change is positive for the growth and future of our work, and our Group. I think some of you might be worried about the admin – having to change your email title, your name cards, medical directives, etc. Yes these details are important, but we can take a phased approach.

For a start, we are only going to effect these changes early next year. There will be a communications plan that we will co-develop with Plans Branch. Along the way, we might need to develop a logo for our Group. I still do not have all the details at the moment, but those with a creative streak, please do give it some thought.

As we move into the Army Recess week, I hope you and the team will be able to find some time to rest and recharge, amidst the ongoing work revolving around COVID-19. It has been an exceptional 2020, and you have all earned your right to take a good break. Thank you.

Warm Regards,

- LTC(DR) CLIVE TAN, HD FHG





SAVE

SO THEY MAY LIVE.

ANSWERING THE CALL TO SAVE LIVES

Responding to Disaster Relief – The search for KRI Nanggala

23 nautical miles north of Bali, five Indonesian warships and a helicopter were scanning the waters for the Indonesian submarine KRI Nanggala and its 53 sailors on 21 April 2021. The Indonesian Navy had lost contact with the submarine, which was undergoing a training drill that very morning. Shortly after, the international distress signal was broadcasted. Singapore, along with Australia, India and several other countries, responded swiftly to assist in the search operation.

More than 30 Medical Officers, Nurses, Medics and logistics staff from Navy Medical Service (NMS) deployed within hours on board MV Swift Rescue, the Republic of Singapore Navy's submarine support vessel, to aid in the search for KRI Nanggala. The urgency of the deployment was clear – with only 72 hours' worth of oxygen supply on board the submarine, time was of the essence.

MV Swift Rescue was one of the first international rescue efforts to arrive on-scene. En-route to the Area of Operations (AO), the medical team performed a last-mile refresher training to ensure that everyone was familiar with their role and ready to provide emergency medical and hyperbaric care for potential survivors in the Recompression Chamber Complex (RCC) on board MV Swift Rescue. The RCC had recently undergone a mid-life upgrade in 2019 to increase its patient capacity and smoothen medical workflow processes, thereby enhancing operational efficiency.

On 25 April 2021 at around 9am, MV Swift Rescue's Remotely Operated Vehicle (ROV) obtained the first visual confirmation of KRI Nanggala at a depth of 850m. The submarine had broken into three parts – the hull, the stern and the main body. The Indonesian Navy announced that all 53 submariners on board were lost. Even as the tragedy weighed heavy in the hearts of the medical team on board MV Swift Rescue, the find brought some measure of closure to families of the submariners. While submarine-related accidents are uncommon, the KRI Nanggala tragedy is a stark reminder that submarine rescue is a complex and multi-faceted undertaking. NMS continues to ensure that its medical support processes as part of the RSN's Submarine Abandonment, Escape and Rescue (SAER) capabilities are well-oiled through regular training and drills, thereby maintaining a high level of operational readiness to support the Fleet's submariners as well as our international submarine-faring neighbours should the need ever arise again.



Medical Team dispatched with Medical Vessel (MV) Swift Rescue for the KRI Nanggala search effort.



RCC Chamber Operators performing equipment checks and drills.



NMS' Medical Team embarking MV Swift Rescue for the KRI Nanggala Search and Locate (SAL)/ Search and Rescue (SAR) effort.



Footage of the sunken KRI Nanggala captured by MV Swift Rescue's ROV.



Learn about the capabilities of MV Swift Rescue!



Supporting Regional Humanitarian Efforts

NMS also collaborates with regional and international partners for various humanitarian efforts. Since 2006, NMS has sent medical teams to participate in the Pacific Partnership (PP) series. Initiated by the US Indo-Pacific Command, medical teams from partner nations and non-governmental organisations work together on board United States Navy (USN) platforms such as the USNS Mercy (TH-AH-19) or other naval vessels to conduct humanitarian assistance and socio-civic missions in the Pacific region.

In 2018, four NMS representatives, comprising both Regulars and NSmen, participated in the 13th annual Pacific Partnership deployment. Together with over 800 military and civilian personnel from various nations, NMS medical personnel provided medical care to a total of 12,700 patients, performing 62 surgeries for patients in need. They also participated in professional medical Subject Matter Expert Exchanges (SMEE) and table-top exercises with partner nations to enhance disaster relief preparedness in the Pacific region.



PP18 medical team from NMS. From left: then-ME2 Jimmy Woo, then-MAJ(NS)(DR) Matthew Yeo, then-LTC(DR) James Kwek and then-CPT(NS)(DR) Kevin Koo.



Then-LTC(DR) James Kwek with CAPT John R. Rotruck, Commanding Officer Medical Treatment Facility, on board USNS Mercy.



Oxygen supplies being prepared for deployment on board RSS Endeavour.

More recently in July 2021, the RSN was mobilised to deliver two shipments of emergency oxygen supplies and equipment to Indonesia amidst a surge in COVID-19 cases. NMS was tasked to provide medical support to ensure the success of the medical relief operations. In addition, interfacing with our neighbouring countries amidst the epidemic also provided another element of complexity to our medical support. Minister For Defence, Dr Ng Eng Hen affirmed the long-standing ties we share with Indonesia. In his Facebook post he shared that "Our military ties with Indonesia are very close, built up over the years of bilateral exercises and engagements at all levels. It is only natural that we do whatever we can to assist in times like this.

NMS has always stood ready to assist during our nation's and our neighbours' time of need. From keeping the RSN safe, healthy and operationally ready, to contributing to national and regional efforts during times of contingency, NMS will continue to maintain its operational edge and readiness, so that it may answer the call to save lives 24/7.



Learn about the capabilities of underwater medicine!



Enhancing Evacuation Capabilities Out At Sea

The RSN's Naval Helicopter (NH) serves as a potential heliborne medical evacuation (heli-MEDEVAC) asset that can be leveraged for the expedient rearward evacuation of stricken casualties afloat, to higher levels of medical care ashore. The NH plays an integral role in the RSN medical evacuation system at sea, in particular on board the Frigate platforms, as they may be deployed as organic assets for longer range sailing deployments and missions beyond the RSAF's Search and Rescue (SAR) range.

To ensure that the RSN NH is capable of fulfilling its heli-MEDEVAC role, NMS has procured critical life-saving medical equipment which have been certified as air-worthy. The NH-MEDEVAC capability is currently being operationalised with NMS' Medical Officers (both active and NSmen) and Independent Duty Corpsmen (IDC) undergoing integrated training with ship crew to triage, treat and initiate medical evacuation of casualties leveraging embarked NH assets.



Wide range of surgeries performed within the Rapidly Deployable Maritime Container (RDMC) ranging from general surgery to fine microscopic cataract surgery.

Through better medical equipping of our deployed SMTs and enhancement of rearward casualty medical evacuation capabilities, NMS will continue to ensure the provision of comprehensive operational medical support and expedient rearward transfer of critically injured naval combatants afloat thereby engendering the confidence of RSN Commanders and naval combatants.



Set up of the Air Mobile Life Support Unit (AMLSU) system on a paragard stretcher used for NH-MEDEVAC.



The many capabilities of the MV Swift Rescue!

The MV Swift Rescue is equipped with state-of-the-art equipment for search and rescue operations out at sea. Some of the ship's unique capabilities includes:

- Deep Search and Rescue Six (DSAR 6) submersible vessel that is capable of attaching itself to crippled submarines for transfer under pressure and to facilitate rescue.
- Remotely Operated Vehicle (ROV) to locate and to clear the debris around the distressed submarine. Recompression Chamber Complex (RCC) (i.e. multiplace hyperbaric chamber) capable of providing Hyperbaric Oxygen Therapy (HBOT) for casualties suffering from Decompression Illness (DCI) e.g. Decompression Sickness (DCS) and Cerebral Arterial Gas Embolism (CAGE). High Dependency Ward to provide end-to-end resuscitative and critical care.

RCC all set up and ready to receive casualties requiring Hyperbaric Oxygen Therapy.



An NMS Medical Officer providing "fitness to dive" assessment.

Building our niche capability in Underwater Medicine – the Naval Underwater Medicine Centre

Naval Underwater Medicine Centre (NUMC) anchors the RTS and operational readiness of operational underwater medical support for the RSN naval divers and submariners. This includes RSN's deployable Submarine Abandonment, Escape and Rescue (SAER) Capability on board MV Swift Rescue. Its rapid deployment in response to the KRI Nanggala incident in late 2021, and the RSN's agreements for submarine rescue support and cooperation with multiple countries that operate submarines in the region, is testament to NMS' ability to anchor this niche capability.

Apart from operational underwater medical support, NUMC also provides expertise in underwater healthcare through medical screening, selection and recertification for RSN divers and submariners, as well as conducting Underwater Medical Boards (UMB).

Since 2008, NMS has partnered with the Singapore General Hospital (SGH) Hyperbaric and Diving Medicine Centre (HDMC) through the RSN-SGH Memorandum of Understanding (MoU), to provide 24/7 Diving and Hyperbaric Medicine support for recreational, commercial and military divers in Singapore and regionally. As part of this strategic partnership, NMS medical personnel are deployed at the SGH HDMC to provide after-hours medical support for patients suffering from Decompression Illness (DCI). This symbiotic relationship provides NMS medical personnel with an invaluable platform to train and maintain their currency in Hyperbaric and Diving Medicine. Beyond the provision of clinical services, this partnership also seeks to strengthen collaboration between NMS and HDMC in the domains of medical education, training, and research. Notably, NMS and HDMC continue to co-organise and conduct the annual Singapore Hyperbaric and Underwater Medicine Course (SHUMEC) – the only Diving Medical Advisory Committee (DMAC) Level 1 certified course in the Asia-Pacific region, which qualifies physicians to perform the periodic "fitness to dive" assessments for recreational and commercial divers as well as hyperbaric chamber workers. Physicians who have successfully completed this course are eligible to be registered as a Designated Workplace Doctor (Compressed Air Works) with the Ministry of Manpower (MOM).



SWIFT RESPONSE TO EMERGENCIES

Responding to Traffic Accident Outside Mandai Hill Camp

Six soldiers, CPT(DR) Vikram Manian, 3SG Ni Xu Gang Metta, CPL Joseph Andrei Aczon Dacanay, CPL B Aravind Krishna, CPL Kinson Tan Kai Feng and LCP David Lee Wei Ming, were commended for swiftly responding to an accident that occurred along Mandai Road.

A 46-year-old man was injured after he was hit by a minibus on 18 February 2019 at 8.52am outside Mandai Hill Camp. The injured man was then evacuated to Khoo Teck Puat Hospital, while the male driver of the bus was arrested.

CPT(DR) Vikram observed that the injured man was lying motionless on the road when the medics arrived. After an initial assessment, they provided cervical spine stabilisation, compression and dressing to his head wound. The main aim was to prevent further exacerbation of his injuries before SCDF paramedics arrive at the scene.

3SG Ni Xu Gang Metta said: "As soldiers and trained medics, we were taught that we have to care beyond our military community. We have to care for anyone in need in our civilian society as well."



Responding to Road Accident Along Woodlands Avenue 12



In the afternoon of 23 May 2019, a road accident occurred along Woodlands Avenue 12. Three Army personnel, 2WO James Goh (left), ME3 Cheung Chin Hei (centre) and 2WO Ong Cheng Chye (right) were on their way to Sembawang Camp for part of their Regimental Sergeant Major Course, when they spotted an injured man lying on the road. Trained in first aid, they attended to him and checked with the bystanders if an ambulance was called.

The injured man involved was a motorcyclist who had suffered a deep laceration on his right knee. 2WO James Goh proceeded to stabilise the injured man while waiting for the ambulance. ME3 Cheung Chin Hei, a Military Medical Expert (MME), took over and did a quick assessment to determine the injured man's condition. At the same time, 2WO Ong Cheng Chye helped to redirect the traffic. The ambulance arrived shortly, and ME3 Cheung Chin Hei assisted the SCDF Paramedics on site.

These soldiers exemplified SAF's values of Care for Soldiers, Ethics and Leadership. 2WO Ong Cheng Chye explained that "We must have the moral courage to help, not just in the Army, but display such values anywhere."



RSAF SEARCH AND RESCUE MISSION FOR DIVER FOUND DRIFTING IN SOUTH CHINA SEA

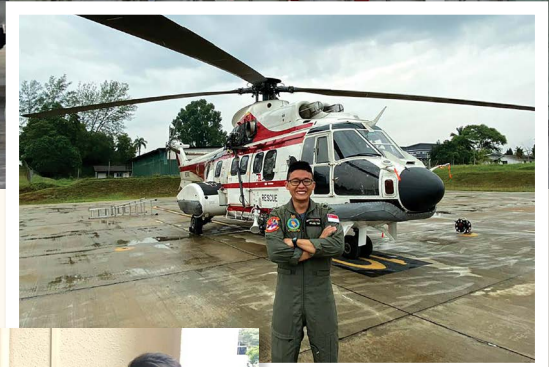
“The rescue of Mr. John Low was the first Search And Rescue (SAR) scramble that I responded to as a newly commissioned MO. The RSAF maintains a 24-hour standby for SAR in the region and 1 Medical Squadron (1 MS) serves as the medical element of the SAR team. As the MO on board, I am responsible for the initial assessment and stabilisation of casualties rescued during the scramble.

This SAR scramble was extraordinary from the get-go. Mr. Low was rescued from a commercial vessel that found him after he was stranded out at sea for three days. His initial medical condition was critical and his resuscitation required me to draw on my prior knowledge and skills in acute medicine in order to stabilise him. Mr. Low’s rescue turned out to be a tremendous success where he not only recovered to a clean bill of health, but also hosted us for a visit at his home.

I subsequently had the privilege of responding to two more successful SAR scrambles. Although they were equally memorable in their own right, Mr. John Low’s rescue would always remain close to my heart as the most visible example of the value of my service to our nation so ‘that others might live’.”

- CPT(DR) JOEL TAN KIN

GOING BEYOND THE CALL OF DUTY



ME3 Thangaraj received the COA Certificate of Appreciation presented during 11/18 Army Commanders Conference

ME3 Thangaraj was on a flight back to Singapore after his holiday when he heard an announcement requesting for medical assistance for a child suffering from breathing difficulty.

ME3 Thangaraj assessed the patient, obtained medical history from the parents and stayed with the child to monitor his vital signs until the plane landed. The child was eventually handed over to the medical team at Changi Airport.

“It is a privilege to be able to provide medical care to another person, who is undoubtedly someone’s loved one.”

ME3 THANGARAJ



"One Life Saved" Resuscitation Award



2018



2020



CPT(DR) DANIEL CHEW
CPT(DR) JARED RYAN DURNFORD
CPT(DR) LOUIS WANG ZIZHAO
CPT(DR) SHOBAN KRISHNA KUMAR
CPT(DR) TAN TOON WEI
CPT(DR) TAN ZHI CHIEN JOSHUA
CPT(DR) TRIN LYOVARIN
LTA(DR) CHOW WENG KEONG BRYAN
LTA(DR) FONG JIE MING NIGEL
LTA(DR) MAUNG LIT HTET
CFC MUHAMMAD RAIHAN BIN KHALID
CFC MUHAMMAD RUSYAI DI BIN ABDUL RASHID
CPL BEMINA HENNADIGE D CHETHANA PEIVIS
CPL JONATHAN TENG JUN JIE

CPL JORDAN RAHUL SABANAYAGAM
CPL MOHAMAD ISKANDAR BIN MOHAMAD
CPL NELSON CHOO
CPL SHERMAN MARK JOSEPH
CPL TEOH YI XIN
CPL THOMAS MAUNG
LCP ANG QI AN
LCP FRANKLIN SEBASTIAN ANN
LCP LEE ZHU HUI
LCP SADESH S/O KAWTHAMAN
LCP WONG YAN ZHI
PTE SYABIL IHSAN BIN MOHD HASHIM
PTE WANG ZIAN

CPT (DR) JONATHAN WONG JIA JUN
CPT (DR) KO YONG SHENG MOSES
CPT (DR) MATTHIAS LIM
3SG EUGENE
CPL HUANG QIMING
CPL KULDEEPAR S BALA
CPL MUHAMMAD AIDIL BIN SAMINGAN
LCP HAO XIANG
LCP ISAIHAH CHIA HONG EN
LCP JING WEI
LCP ZHEN YANG



2019



2021

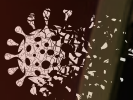


CPT(DR) DANIEL LAU JIAN DA
CPT(DR) ERIC FOK TONG KIT
CPT(DR) JIMMY CHEW
CPT(DR) KENNETH YONG
CPT(DR) KENRIC FAN RUI-PIN
CPT(DR) LIM ZHEN YU
CPT(DR) MA RONALD
CPT(DR) NORMAN FONG EN LI
CPT(DR) SETH YEAK ZONG EN
CPT(DR) TEO KOK KUAN
CPT(DR) WANG YUCHEN
CPT(DR) YII ZHENG-WEI
LTA(DR) AMRISH SOUNDARARAJAN
LTA(DR) DARREN LOW ZHI-YANG
LTA(DR) DOMINIC FONG
LTA(DR) KWEK JUN HONG, KEVIN
LTA(DR) MAGNUS LIM JING SHUAN
LTA(DR) QUEK XIN ERN NATHANIEL
LTA(DR) R R PRAVIN
ME2 KENNETH ENG
ME2 KOH HONG YUN
ME2 POR GUOLIANG
ME2 TAY RUI SHENG ISAAC
MEI FUNG XUE CHENG
MEI LIM JUN YAO
3SG JORDAN FREDERICK CHAN
3SG LAU RONG XIAN
CFC FAIZ
CFC LUAN ZHAO PENG
CFC TAN HUAMING BRENT
CPL AHMAD KHAN
CPL AKID
CPL BENOSA RYAN
CPL CHENG CHANG WEI
CPL CHEONG MING
CPL CHIRAG
CPL CHRISTOPHER WAH BOON CHUAN
CPL HAFEZ
CPL JAMES LAO
CPL JEFFERSON TAN
CPL JEREMY ONG
CPL JOEL MATTHEW CHIAM ZHI QIANG
CPL JONAN
CPL JORDON TAN
CPL LAI JIA LE
CPL MUHAMMAD AKID
CPL MUHD ARIF BIN ABDUL KADIR

CPL MUHD HAZIQ SHAH
CPL MUHD HILMAN BIN RAMADAN
CPL MUHD NASRI
CPL NABIL
CPL PRATIK PANDAY
CPL QUEK YU DA
CPL S MATHAN RAJU
CPL SHAH RIDZWAN
CPL SOH ZHENG XIAN
CPL TSENG CHEN YU
CPL XAVIER GOH JIA QING
CPL ZULHILMI BIN MAZLAN
LCP CHUA MING MAZLAN
LCP DANUSH NAIDU MUTHUSAMY
LCP DARRYL LIEO KENG SIANG
LCP DHIRAJ G CHAINANI
LCP FAHMI AKMAL
LCP JOSEPH TAN WEI EN
LCP LIU WEINAN
LCP M MURALI
LCP MARCUS LEW
LCP MD IRSHAD
LCP MICHAEL IAN FORBES
LCP MUHAMAD AZRI
LCP MUHD IZZUL BIN SUHAINI
LCP OOI YI HANG
LCP SAADAN
LCP SER XIAN
LCP SHAFIQ
LCP SHAIK M. HAMZAH
LCP SU HAO YU ALBERT
LCP TEVIN TEO HEE HEONG
LCP YEO ZHI EN
LCP YI HANG
LCP ZACHERY QUEK BOON HONG
PTE ISSAC CHIN
PTE JOSEPH TAN
PTE LIM WEI YI
PTE LOH BI ZHAN
PTE MARCUS LEW JUN HAO
PTE MUHAMMAD ZULHAZIQ BIN MAZLAN
PTE ONG YE JUN
PTE SHAHRUL IZWAN BIN FARIZAL
PTE TAN ZHEN XUAN
DXO KARUPPIAH SARASWATHI
DXO SELVAKKUMARI

CPT (DR) ANG CHEN XIANG
CPT (DR) GWEE YONG XIANG
CPT (DR) HERSH ATTAL
CPT (DR) JOHN TAN ZHEN RONG
CPT (DR) JUSTIN JANG JIN HAO
CPT (DR) KALYANASUNDARAM RAGAVENDRA
CPT (DR) NATHANIEL TAN RUI XIAN
CPT (DR) RUSSELL JOHN CHUAH
CPT (DR) TAN JON WEI
LTA (DR) EUGENE NG
LTA (DR) JONATHAN PEH
LTA (DR) ONG SIONG GIM
LTA (DR) TAN HONG JIE GABRIEL
LTA (DR) TIONG WEN SHUO
MEI TAN YUXUAN
3SG RYAN TENG XIN JUN
3SG SHEU JIA HO MATTHEW
3SG DEL MUNDO NINO HUBERT ATIENZA
3SG NICHOLAS WONG
CFC JUSTIN SOONG YOONG KAI
CFC M.SREENIVAAS
CFC MALIK MATIN
CPL ADRAIN KEE BOON LENG
CPL ALRICK KOK ZI XIN
CPL DEON TANG
CPL KONG CHEUK YIN
CPL TAN DING XUAN

CPL RAGAVENDRA THAIYAN RAJENDRAN
LCP AFIQ HAIDHIR
LCP AZHAIRIEE
LCP DAVE NG
LCP ELRON WEE SOON HAO
LCP GANESH RAJESH HONNUR
LCP GOH KUN JI
LCP GIRISH KUMAR
LCP JOSHUA YEO WEI REN
LCP KAUNG SET
LCP LEE ZE REY
LCP LIM WEI XIANG
LCP MUHAMMAD ARIF BIN MOHAMED SALLEH
LCP NG HONG ZHI
LCP RYAN HO WEI EN
LCP SE PENG YUAN EDMOND
LCP TAN JUN HAO ETHAN
LCP WILLIAM AUSTEN
LCP WU ZIMING
LCP YIT CHEN JIE
PTE CHIANG EE CHUAN
PTE DAVID LOW
PTE SKY LIM KAI YI
PTE WU ZIMING
DXO FARAH MUSLIHAH
DXO FARIDA BINTE MOHAMED ISMAIL



Resuscitation Merit Award



2018



CPT(DR) ANG AN SHING
 CPT(DR) C THIAGHU
 CPT(DR) CHAN SHU KIAT
 CPT(DR) CHRISTOPHER MATTHEW
 CPT(DR) DAVID NG
 CPT(DR) EDWIN THONG
 CPT(DR) JASON GOH CHIN HOCK
 CPT(DR) KEGAN LIM
 CPT(DR) LEE SHI HENG
 CPT(DR) ONG YING FA WILSON
 CPT(DR) PAUL YUEN
 CPT(DR) RAN HUI-MENG GEORGE
 CPT(DR) TAN WINJIM
 CPT(DR) TRIN LYOVARIN
 CPT(DR) WONG JIE JUN
 LTA(DR) ASHVIN S/O VARDZA, RAJU
 LTA(DR) GIDEON TAN
 LTA(DR) HOW GUO YAN
 LTA(DR) SHAUN LEE JIAN JIE
 MEI HARESH KUMARAN
 2SG MUHAMMAD SIKANDER KHAN
 3SG SEAH KAI XIANG
 3SG ZHUANG JUN JIE
 CFC HELMI BIN HAMAD
 CFC IRFAN SHAMAL BIN SAMSUDIN
 CFC MENG FANQI
 CFC MUHAMMAD RUSYAIKI BIN ABDUL RASHID
 CPL ADBUL HAFIZ BIN RASHID
 CPL ANG JUN XIONG LORENZO
 CPL AW NING HONG
 CPL FIRDAUS BIN RIDZWAN
 CPL GIORGIO LI JIE HAN
 CPL HAZIQ ARIFFIN BIN ZAINAL ABIDIN
 CPL JED REUBEN LIM
 CPL JONATHAN RAFAEL C ODOT
 CPL KWAN YU KAI
 CPL JUSTIN KOH JIE HUI
 CPL KHOO JING YAN
 CPL(NS) MOHAMMAD YAZDAN BIN YAHYA
 CPL MUHAMMAD AHZA BIN MOHAMAD LAZIM
 CPL MUHAMMAD DANIAL BIN MURAD ASFANDI
 CPL MUHAMMAD MARTHIUS BIN ZULKIFLI
 CPL MUHAMMAD NAQUIDDIN BIN MUHAMMAD NODIN
 CPL MUHAMMAD SAIFUL BAHARI BIN AZHAN

CPL MUHD JUNAIDI BIN RAMLAN
 CPL RYAN LEE XUAN YI
 CPL SOH JUN ZE
 CPL SYED MUHAMMAD HAFIZUL BIN SYED SALLAHUDIN
 CPL TAN XIN YU, QUEENTON
 CPL THIVANESHWARAN THULAISIDAS NAIDU
 LCP ABDUL HAFEZ BIN ABUDOLL RAHIM
 LCP AIZAT ZULFAQQAR BIN ABDUL HALIM
 LCP A'KASHAH BIN KAMARUDIN
 LCP ANWAR BIN AZLAN GHAZALI
 LCP ALEX CHUA
 LCP BALRAM VIVASVAT BIN YAHYA
 LCP CAESAR IAN PAUL REYNANTE GARCIA
 LCP CHUA WEN HAO
 LCP FRIDAUS BIN RIDZWAN
 LCP JACKSON LAU
 LCP JORDAN RAHUL SABANAYAGAM
 LCP LAO JAMES MATTHEW KIN
 LCP LEONARD LEE ZHEN JIANG
 LCP LIM WEI CONG
 LCP LOW KULATHORN
 LCP LOW WEE KIAT
 LCP PNG CHUANG TECK
 LCP MOHAMED AFIQ BIN MOHAMED ARIS
 LCP MUHAMMAD FAIZ BIN AMIR ZAINOL
 LCP MUHAMMAD HAFIZ BIN ZAHARI
 LCP MUHAMMAD HAMZAH BIN SYED AHMED KABEER
 LCP MUHAMMAD IMRAN BIN MARITZ
 LCP MUHAMMAD TAUFIQ BIN KAMAL
 LCP MOHD HAIDIR
 LCP NICHOLAS CHONG
 LCP SADESH S/O KAWTHAMAN
 LCP SAMUEL TAN
 LCP SU HAO YU
 LCP SUM JUN YANG
 LCP TAN KAI WEI
 LCP THET NUANG HEIN
 LCP TSENG CHEN YU
 LCP WANG XI YUAN
 PTE CHUA MING MARCUS
 PTE JONATHAN LEE CHENG JUAN
 PTE JONAN LING SI HONG
 PTE LIU ZHAO
 PTE MOHAMAD SABUDIN BIN MOHAMAD YUSOFF
 PTE SAMUEL EDWIN LEE SENG OON



2019



CPT(NS)(DR) BENSON YEO KOON WEE
 CPT(DR) JIMMY CHEW
 CPT(DR) KOH TIAN EN JONATHAN
 CPT(DR) TEO KOK KUAN
 CFC SEBASTIAN TOH TENG HWEI
 CFC STANLEY WONG QI REN
 CPL PHANG KAH WEE BRUCE
 CPL TRISTON SIEW YONG WEI
 CPL YEO ZHI EN
 LCP DAINE SEAH
 PTE AMIR HAZIQ
 PTE HARRESH RUBAN
 PTE KEN CHIONH JUN WEI
 DXO SHIVAKAYATHRI

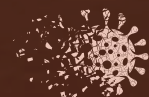


2021



CPT(DR) JOEL MAK ZU WEI
 CPT(DR) JOHN TAN
 CPT(DR) LOW WEI TING GABRIEL
 CPT(DR) MICHAEL WONG KIEN YEE
 CPT(DR) RYAN LEE JIN HERN
 LTA(DR) CHENG YONG JIAN
 LTA(DR) TAN HONG JIE GABRIEL
 ME2 LIEW SHANZHI
 3SG LEE JIA BAO
 3SG NICHOLAS WOONG
 3SG TOH CHENG ZE
 3SG XAVIER TEO
 CFC CALEB HO KOON TENG
 CFC CHEOK XIN LIN
 CFC SUN HAO
 CFC RYAN PANG
 CPL MARCUS LAU
 CPL NG HONG ZHI
 CPL NOR'AZHARI BIN NOR'AZMI
 CPL NUR 'AFIZ AZFAR BIN NOOR IZWAR

CPL SUASIN JORGE
 CPL SAHIL PREMAL PATEL
 CPL TAY JING LIN
 CPL WEE PUI CHONG
 CPL XAVIER WONG
 LCP ADAM AFIF BIN SHAHRIN
 LCP ALRICK KOK
 LCP KEVEN ONG
 LCP LING ZHONG ZHI
 LCP MARCUS LIM HAO WEI
 LCP ONG CHUN WEI
 LCP SHAWN KOH JUN YING
 LCP TAY HAO WEN
 LCP TEO JUN JIE
 LCP THE KAI YONG ZACCHAEUS
 LCP WEI LIANG
 LCP YEW SHAO YANG
 PTE TEOH JING XIANG
 PTE TERRIL TAN
 DXO JOSEPH LIM





SERVE

OUR PEOPLE. OUR NATION.

NEW KRANJI MEDICAL AND DENTAL CENTRE

Kranji Regional Health Hub (KRHH) will be the first integrated medical facility in the SAF as part of a plan to improve the quality of clinical services and patient experience. It will provide one-stop medical, dental, psychological, radiological and medical board services for tenant units in Kranji Camp Complex and units in the region to increase convenience and achieve economies of scale.

KRHH was designed to be pandemic-ready, with differentiated patient areas, negative pressure rooms and no-touch technology incorporated into the building infrastructure.

KRHH is also equipped to introduce digital healthcare elements such as telehealth and teledentistry, remote queue systems, digital dispensaries and smart lockers, and automated sterilisation. These efforts aim to increase patient convenience and reduce demands on manpower for manual tasks.

KRHH is also the test bed for an outsourced Vendor Management System (VMS) aimed at enhancing patient safety and convenience, while alleviating logistical workload with automation. The VMS trial includes a vendor managed dispensary and medical logistics system.

The infrastructure was designed to be environmentally sustainable with features such as: (1) a three - storey high skylight void for natural lighting; (2) rooftop solar panels to power the building; (3) Building Management System (BMS) to manage energy consumption; and (4) biophilic designs with outdoor and indoor plants.



Upon its completion, KRHH will improve healthcare delivery for SAF personnel while meeting rising national standards of care. This project has pushed the boundaries of what the SAF is capable of in moving forward despite disruptions like COVID-19. A prime consideration in the project was to ensure relevance not just for the present but transcending it, to leave a legacy for future generations.

14 JUN



From left, then-Assistant Director, Centre for Heritage Services Mr Kuldip Singh, then-Comd CSSCOM COL Terry Tan, then-CMC RADM(DR) Tang Kong Choong, then-Director Building & Infrastructure - DSTA Mr Lee Eng Hua and then-Comd MMI SLTC(DR) Timothy Teoh performing the Ground Breaking Ceremony of Kranji Regional Medical Centre.



Read about the new Kranji Regional Health Hub!

KRANJI REGIONAL HEALTH HUB

SAF's first Regional Health Hub was operationalised on 5 September 2022 in Kranji Camp Three, marking a significant milestone in SAF Medical Corps' healthcare transformation journey. As the first of six regional health hubs planned to be established across Singapore, Kranji Regional Health Hub (KRHH) is designed to provide enhanced one-stop healthcare services tailored to the region. On top of emergency care and routine primary care, KRHH will also provide enhanced services like dental surgery, radiological services, health screening, specialist psychiatrist and mental wellness services.

The concept of regional health hubs was first approved in 2012 to meet the increasing healthcare demands and rising expectations of our servicemen in a sustainable manner, benchmarked to national standards. With the key aims of improving patient experience and outcomes, KRHH seeks to enhance and consolidate healthcare services under one roof to better serve the needs of Kranji Camp and surrounding camps like Mowbray and Stagmont camp.

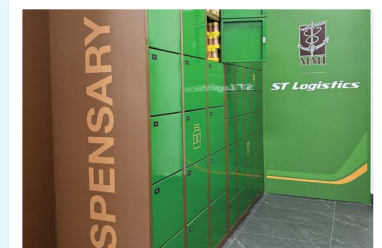
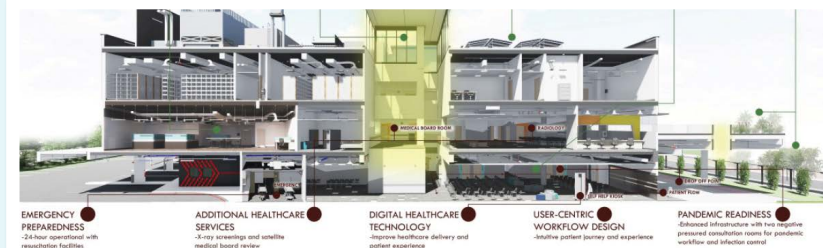
By partnering industry experts and leveraging technology, KRHH is able to provide greater convenience and healthcare accessibility to servicemen, while reducing the logistics and administrative burden on our healthcare staff. Some of the new initiatives that KRHH has rolled out (1) Medic "Go-Bag" locker system to enhance operational readiness of our cover medic stores, (2) vendor-managed smart medical dispensary system

designed to reduce medication errors and enhance peacetime logistics management, (3) smart lockers to support self-collection of medications, and (4) integrating telemedicine efforts with the rest of Kranji Camps and the region.

KRHH also boasts several other capabilities, including pandemic-ready infrastructure, and negative-pressure HEPA-filtered consultation and isolation rooms capable of holding individuals with airborne infections. KRHH's infection control and pandemic designs were further enhanced to incorporate the lessons learnt from the ongoing COVID-19 outbreak and to ensure safe and sustainable medical operations as Singapore transits towards an endemic COVID-19 posture.

The KRHH building has also incorporated several environmentally-sustainable and smart-building features, including: (1) a three-storey high skylight void for natural lighting; (2) rooftop solar panels; (3) Building Management System (BMS) to manage energy consumption; and (4) biophilic designs with outdoor and indoor plants.

Through clear foresight and tremendous efforts over the years, this multi-generational project truly embodies the forward-looking spirit of SAF Medical Corps and each generation's endless pursuit towards securing a better future for generations to come.



GOMBAK REGIONAL MEDICAL AND DENTAL CENTRE AT NS HUB

Gombak Regional Medical and Dental Centre at NS Hub will be the second Regional Health Hub (RHH). It aims to provide one-stop primary medical and dental services, health screenings and specialist services to pre-enlistees and all SAF personnel, including our NSmen.

The planning of NS Hub began as early as 2010 when Gombak Redevelopment Project Office (GRPO) was created. The development began construction in November 2019. The completion of Phase One of NS Hub, which includes the relocation of MMIHQ, MINDEF Medical & Dental Centre, and MMI Kent Ridge (KR) to NS Hub, is targeted for 2024.



Gombak RHH will feature state-of-the-art building technology, facial recognition software, and remote queue systems among other innovations, setting it apart as a leading medical installation in the region.



SUPPORTING MENTAL HEALTH IN THE SAF

Psychological Care Centre (PCC) is an important part of the SAF Mental Health Support System that looks after the mental health and resilience of our soldiers. Over the past five years, numerous initiatives have allowed PCC to grow in its efforts to extend its provision of care.

The Clinical Psychology and Rehabilitation Services (CPRS) houses the various branches of PCC, as well as its psychologists and psychiatrists. Its expansion from one to four clinical psychologists has enabled PCC to extend psychotherapy services to a greater number of patients. An additional organisational psychologist monitors mental health data trends within the SAF, working closely with the public health sector to track self-harm rates, suicide numbers and other mental health concerns. This culminates in an annual health report submitted to Ministry of Defence (MINDEF) for data analysis and with recommendations for intervention.

These same clinical psychologists contributed to the setting up of PCC Ward where rehabilitation programmes are developed and run. With an annual admission of approximately 200 servicemen, the SAF Ward at IMH helps these servicemen gradually acclimatise to National Service by enforcing military behaviours of punctuality, uniformity in dressing, and adherence to regimentation and discipline; while being in an environment with readily-accessible tertiary psychiatric care for those with higher needs. The programmes also help these individuals form better relationships with their units and with others in the force, reducing the incidence of self-harm in these individuals.

PCC works closely with trained Defence Psychologists (Psychological Health) (DPPH) in each unit, counsellors from the SAF Counselling Centre, and partners in the national healthcare system to provide holistic care and support for servicemen with mental health needs.



PCC is currently working to develop a Centre of Excellence (CoE) in Military Psychiatry, and will be hiring non-uniformed psychiatrists to shorten waiting times and reduce dependency on public institutions for provision of tertiary psychiatric care for SAF personnel. SLTC(DR) Adrian Loh, Head PCC, firmly believes that given the right support and treatment, individuals with mental health conditions will be able to contribute safely and meaningfully in their National Service.



MEETING HEALTH-SCREENING NEEDS

The journey to establish the SAF Health Screening Programme (HSP) Centre began in 2019 as part of a slew of initiatives to improve the experience of NSmen. The site at MMI Kent Ridge was officially opened on 2 July 2021. The location at MMI Kent Ridge was deliberately chosen as it is in a convenient location easily accessible by public transport. NSmen have the choice to complete their HSP at their own medical centres or at the SAF HSP Centre.

To enhance the experience of NSmen, a concierge-type service delivery model was adopted where dedicated staff would usher NSmen through their entire journey at the centre instead of NSmen navigating through the HSP stations on their own.

In addition, changes to the HSP workflow now allow a one-stop HSP model where NSmen would only require one trip to the centre and subsequent follow-ups would be done via teleconsultation, if needed.

The establishment of the SAF HSP Centre was a significant achievement by MMI and was only possible with teamwork and perseverance. The MMI Kent Ridge team, led by ME5 Pauline Teo and SLTC(DR) Adrian Tan, was supported by the staff branches in HQ MMI and HQMC from conceptualisation to implementation. That this was done amidst the backdrop of the COVID-19 pandemic made the realisation of the SAF HSP Centre even more significant. Eventually, the HSP Centre will be moved to NS Hub to collocate with Gombak Regional Medical Centre.



SAF HEALTH SCREENING PROGRAMME CENTRE
WAS OFFICIALLY OPENED

BY

MG GOH SI HOU
Chief of Army
SERVE Singapore Army

MRS ELAINE NG
Deputy Secretary (Administration)
Ministry of Defence

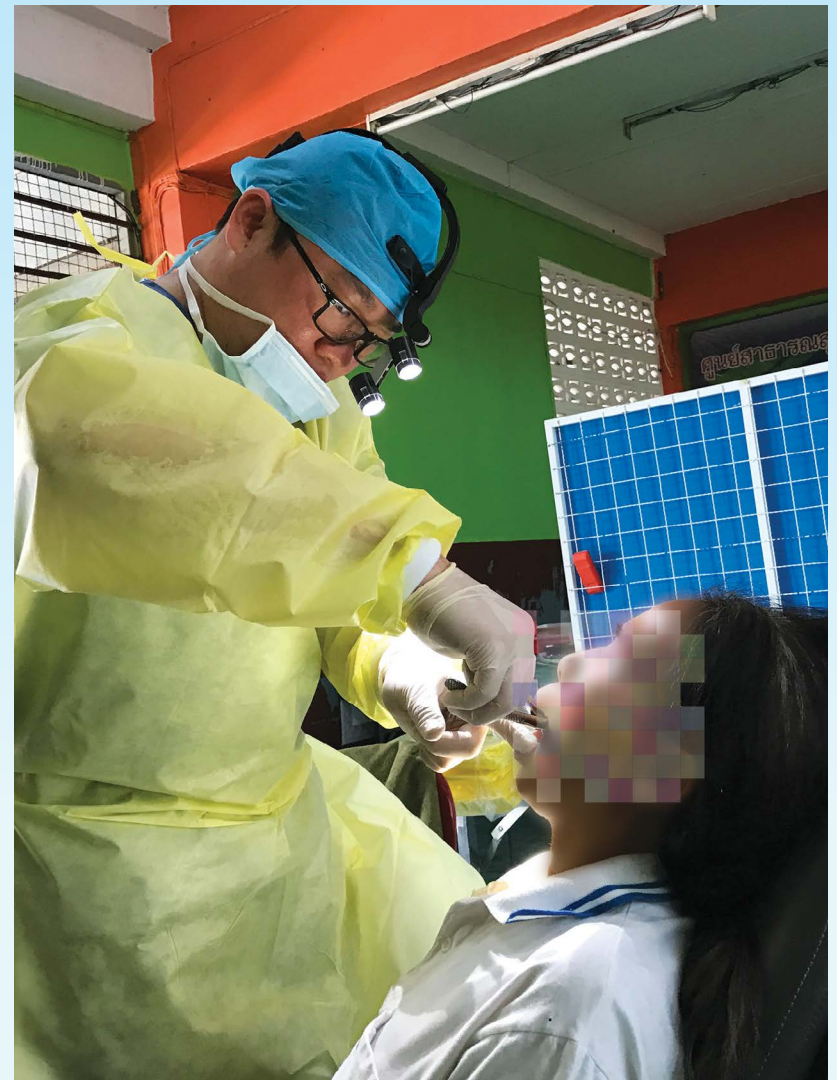
2 July 2021

SAF DENTAL SERVICE

The SAF Dental Branch celebrated her 50th anniversary in 2018, a significant milestone in commemorating her past achievements while recognising the pioneering generation of its Regular Dental Officers and Senior Dental Supervisors. The occasion served to raise awareness of the importance of military dentistry and its impact on the health and readiness of the SAF, highlighting the key efforts of the SAF Dental Branch in ensuring the provision of quality dental care for our service members.

In 2020, with the commendable effort and coordination of MAJ(DR) Tay Koong Jiuun, the first Oral Health Vending Machine was successfully installed in Nee Soon Medical Centre. Given the limited availability of oral care products in the SAF, service members have faced difficulties looking for suitable products to manage their oral health. To facilitate the provision and purchase of oral care products, this vending machine merchandises them from a local company, Pearlie White, at discounted rates. Located outside the dental centre, it is very convenient for SAF personnel to purchase

the products recommended by their dentists. Whilst this Oral Health Vending Machine is still in its initial trial, plans are made to bring oral care to every soldier's doorstep by eventually installing these vending machines across all SAF Camps. Over the past five years, Dental Branch has also been engaged in various medical socio-civic missions like the Sai Yok Camp Dental Community Assistance Programme and Exercise Cope Tiger, providing much needed dental care to local populations through field dental clinics.



MMI REORGANISATION

Military Medicine Institute (MMI) underwent reorganisation in 2019 to: (1) Align MMI's peacetime structure to its conceptualised wartime structure for seamless transition from peace to war; (2) Clearly delineate policy making and execution roles; (3) Reassign Medical Centre staffing according to patient load and the profile of units they support.

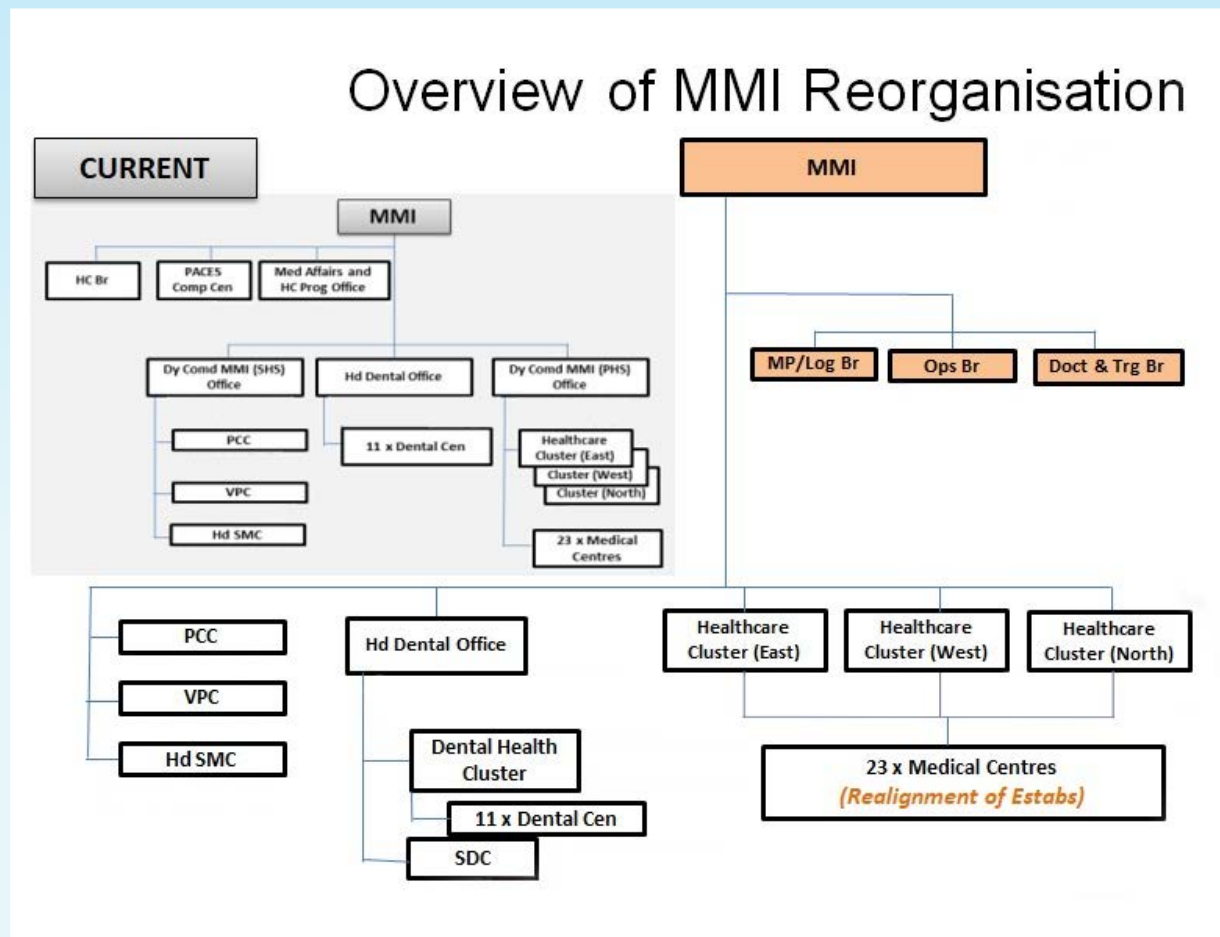
MMIHQ was redesigned with four distinct branches (1) Manpower and Logistics; (2) Operations; (3) Doctrine and Training, and (4) Dental, to support the three medical clusters, dental cluster, and specialist health services in

the above domains. A Brigade Sergeant Major (BSM) appointment was established, improving discipline, regimentation and force preparation. This also afforded Comd MMI additional avenues for better communication with and feedback from the ground medical centres.

To clearly delineate policy making and executive functions, the Healthcare Branch (renamed Healthcare Policy Centre in 2021), PACES Offices (subsumed under Medical Informatics Branch in Force Health Group) and Medical Affairs Section (subsumed under HCPC) were transferred to HQMC. The executive units, Blood

Supply Company (BSC) and Rapid Bioresponse Company (RBC) were transferred to MMI under Ops Branch. This enables HQMC to focus on policy making while MMI raises, trains and sustains its sub-units to provide medical, dental and environmental public health services to the SAF.

Lastly, Medical Centres were categorised into three tiers with corresponding estab structures that commensurate with workload and responsibilities.

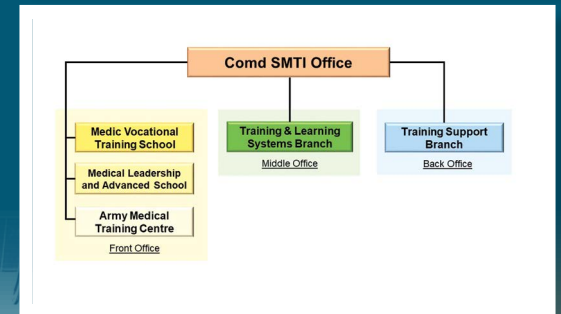
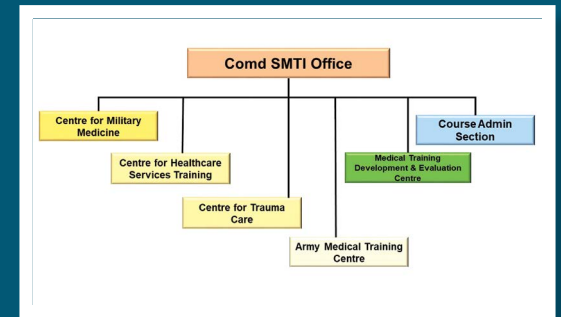


SMTI REORGANISATION

SMTI went through a reorganisation in 2019 to support the institute's dual role in developing and conducting high quality and comprehensive medical training to strengthen medical support within ground units and medical centres.

As a leader in shaping paramedic standards in Singapore, SMTI created the Professional Standards and Healthcare Education Section (PSHES) to expand its reach towards national healthcare agencies and academic institutions to spearhead new educational courses in paramedicine. Keeping abreast with latest education technology, Life Support Training Wing implemented simulation and technology-enabled learning to bridge the divide between classroom and actual casualty care.

Based on Army Training and Doctrine Command (TRADOC) Training Transformation Master Plan (T2MP), the reorganisation reallocated the front office units to focus on training delivery, the middle office on developmental work and the back office on administration and resources support. The revised structure ensures a sustainable training workload for the trainers with sufficient protected time to upkeep their professional specialty currency. On top of that, the improved trainer-to-trainee ratio also enhances trainees' engagement, resulting in better training outcomes and higher competency levels.





INTRODUCTION OF ENHANCED FITNESS PROGRAMME AND EQUIPMENT

With the introduction of the Unit Training System (UTS), trainees in SMTI can better build up their physical fitness for the rigour of being SAF combat medics. Vocation-related exercises give trainees functional training highly representative of operational demands, as well as combat training which is combat task performance-based. These better equip the

trainees so they can meet the demands of their vocation.

Since the courses in SMTI are mainly academic, trainees are required to set aside time to build their physical fitness through Self-Regulated Training (SRT) after lessons. This also builds camaraderie among them and promotes healthy

habits to make physical fitness a positive lifestyle that lasts even after National Service.

With the implementation of the Enhanced Fitness Programme in 2018, training has been further enhanced to give them challenging exercises that improve their fitness capability.



ENHANCING THE SAF HEALTHCARE SERVICE

SAF AMBULANCE SERVICE

Phase One - Launch and Implementation

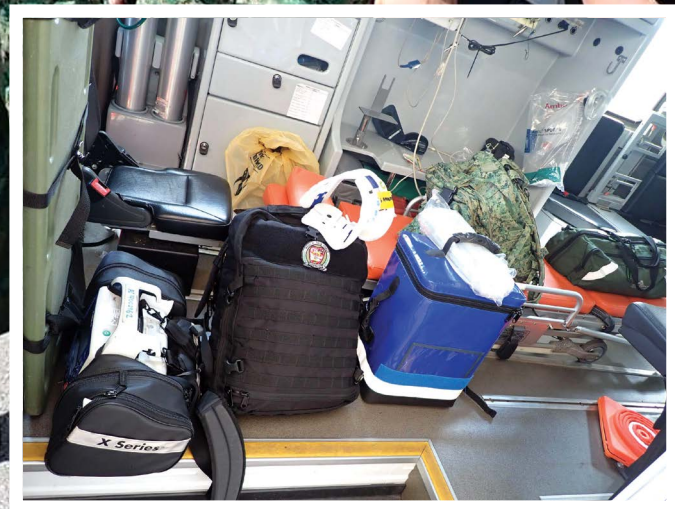
The SAF Ambulance Service (SAS) was launched in 2019 to enhance the SAF's peacetime emergency medical care to bring a higher level of care to casualties. In 2012, the SAF's Emergency Ambulance Service (EAS) was launched as part of the drive to enhance the level of care provided to casualties sustained in training areas. SAS and EAS ambulances are equipped with a paramedic, an EMT and a driver – able to provide on-site, on-demand Advanced Life Support (ALS) to casualties and expedite casualty conveyance to the nearest medical facility or hospital.

While conceptually similar, the SAS has the potential to achieve much more. With the launch of the SAS in 2019, the area covered was expanded to include in-camp locations.

Furthermore, unlike the EAS which is operated by Private Ambulance Operators (PAO), the SAS is an organic SAF capability manned by SAF medical personnel. When fully operational, the SAS will be able to respond to a wide range of medical emergencies across the SAF. This revolutionises the way the SAF is able to provide care in military operations by bringing much needed casualty care deeper into the field.

The popularity of the SAS has increased since its launch in 2019. In the first half of 2021, the SAS responded to 66 activations, almost 1.5 times the number of activations across the entire year in 2020.

The potential for the SAS is immense, and will provide a higher level of medical care for our servicemen as it continues to evolve.



Equipment brought along by the SAS crew.

Phase Two - The Way Forward

Data analytics and technology were incorporated to identify locations with the greatest needs for the SAS, such as camps and training areas. Additional SAS ambulances were deployed to support the higher training load in these locations.

The Forward Deployment Concept was also trialed in Phase One, where a SAS team was

forward-deployed to the Casualty Collection Point (CCP), providing medical cover for the entire Area of Operations (AO). This reduced the need for on-site medical officers or multiple cover medics throughout the exercise.

Phase two will see the SAF taking over the operations of six SAS bases currently run by PAOs. These bases will be staffed by Military Medical Expert (MME) paramedics and NSF medics, supported by external contractors. This is a major step towards developing our own in-

house ambulance service and providing our paramedic-trained MMEs with the opportunity to develop and maintain these life-saving skills. This will give us an added advantage when providing medical care for both peacetime and war.

The SAS will continue to revolutionise the standard of medical care available and work towards providing peacetime medical cover in the SAF.

The Diploma in Paramedicine – a collaboration between Nanyang Polytechnic, SCDF, SAF and the Unit for Pre-hospital Emergency Care (UPEC) – was launched in 2021, giving us a platform to train and sustain a pool of paramedics who will help to operate the SAS.



ENHANCING OPERATIONAL MEDICAL SUPPORT FOR THE RSN - SAVING LIVES OUT AT SEA

Enhancing the capabilities of the Shipboard Medical Team

All RSN ships are equipped with organic Level One medical support provided by organic ship crew who form the First Aid Party (FAP) and are trained as Advanced First Aiders (AFA). These ship crew may be augmented by deployed Navy Medical Service (NMS) Shipboard Medical Teams (SMT) comprising Medics, Medical Officers as well as Independent Duty Corpsmen (IDC) for longer and more complex deployments. Given the challenges presented by the RSN's vast maritime Area of Operations (AO), the unique and oftentimes austere shipboard environment, as well as the limited access to higher levels of shore-based medical facilities, the ability of the RSN's SMTs to provide robust

and effective medical support afloat is therefore critical to safeguard the health and safety of our deployed naval combatants.

To enhance the capabilities of the SMT, NMS has introduced a myriad of new technologies and innovations to sharpen patient assessment and enhance decision-making for casualty evacuation at sea. Point of care tests such as the Portable Ultrasound Machine (PUM) and handheld portable blood analyser (iSTAT) have been incorporated to provide the SMT with rapid bedside diagnostic capability. The inaugural PUM training course for Regular and NSF Naval Medical Officers was conducted in early 2022 in collaboration with public healthcare partners, equipping our healthcare professionals with fundamentals in the use of ultrasound as an adjunctive modality in the assessment of

casualties with severe traumatic injuries.

In the recent years, NMS has also continued to refresh its existing medical and surgical scales. These efforts are critical to ensure that deployed medical equipment meet the latest international standards of care in Advanced Cardiac Life Support (ACLS) and Advanced Trauma Life Support (ATLS), and enable deployed medical personnel to deliver end-to-end emergency medical care, thereby increasing the survivability of casualties afloat. The replacement of shipboard oxygen tanks with oxygen concentrators, capable of providing a continuous supply of oxygen for longer durations of time while awaiting patient evacuation, is but an example of such enhancements.



Medical Officer explaining test results on the handheld portable blood analyser.



NMS Medical Officers undergoing the PUM course conducted by Alexandria Academy.

Enhancing the cross-deployability of RSN medical stores

In addition to ongoing efforts to refresh and enhance medical and surgical stores, the RSN's organic shipboard medical stores have recently undergone comprehensive reviews to standardise medical equipment across various RSN platforms. The enhanced modularity of these organic shipboard stores allows for cross-deployability and scalability of critical medical equipment to meet various RSN mission profiles, while streamlining and simplifying medical training for SMTs.

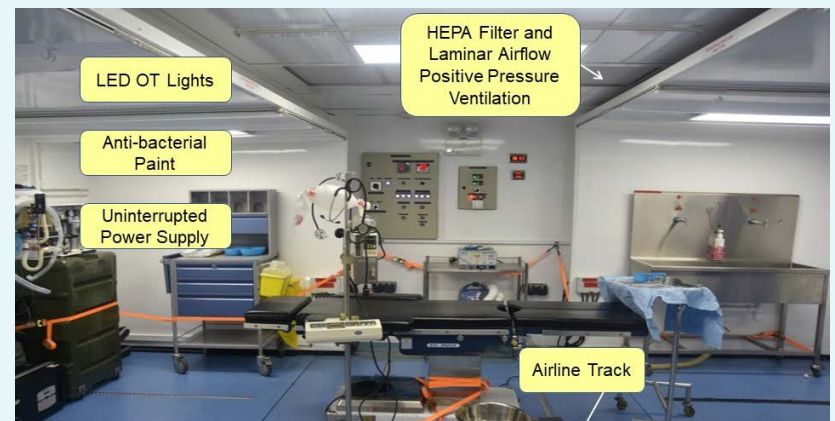


Modularised medical stores to allow cross-deployability and scalability to meet operational needs.



Layout of the Operating Theatre configuration within the RDMC.

Operationalised in 2015, the Rapidly Deployable Maritime Container (RDMC) is a unique and bespoke RSN capability allowing NMS to deploy its Level Two surgical capability at sea. The RDMC is designed to weather the harsh maritime environment, and is easily transported by land, air or sea. It is operated with minimal manpower required and can be deployed in its expanded configuration with a touch of a button. Its modular nature further allows it to be deployed for different purposes, including an Operating Theatre (OT) set-up capable of accommodating up to two operating tables, and an Intensive Care Unit (ICU) to provide post-operative care and monitoring.



The many unique and state-of-the-art capabilities of the RDMC to enable comprehensive deployed medical support.



RDMC Deployment on board LST



RDMC Deployment on board MV AVATAR



RDMC Deployment on board LMV



RDMC Deployment on board USNS Millinocket

Cross deployability of the RDMC across a wide spectrum of different platforms.

Designed for flexible cross-deployability and scalability to satisfy a myriad of RSN mission profiles, these expandable containers have the potential to be deployed on any RSN platform with an ISO-compatible container mission deck. It has been deployed across a wide range of platforms including Civil Resource (CR) vessels as part of medical NSmen In-Camp Training (ICT), RSN Landing Ships Tank (LST) as part of socio-civic missions such as Surya Bhaskara Jaya (SBJ), RSN Littoral Mission Vessels (LMV) and even foreign Naval platforms such as the USNS Millinocket as part of professional medical exchanges and interactions with foreign Navies.

SERVING THE RSN THROUGH PREVENTIVE HEALTH

As a small Navy, force preservation through preventive health reduces attrition and maintains an optimal level of operational readiness. Navy Medical Service (NMS) traditionally focused on reducing risk of preventable chronic diseases, as well as musculoskeletal injuries. More recently, initiatives to enhance servicemen performance have expanded to include addressing mental health issues, fatigue management and smoking.

Safeguarding the Mental Health of Servicemen

Over the years, there has been an increased awareness and focus on mental health issues in the SAF. A robust mental health framework plays a critical role in optimising the operational readiness of RSN naval combatants, and NMS is a key contributor through three lines of effort. Firstly, NMS provides acute medical care for distressed service members and adopts a multidisciplinary approach through close collaboration with unit Paracounsellors, Defence Psychologists and Psychologists from the SAF Counselling Centre (SCC). Where indicated, psychiatric inputs would be sought from the Psychological Care Centre (PCC). Secondly, mental health trends in the Navy

are monitored through the RSN Mental Health Dashboard. The dashboard also highlights potential threats to force health that may require early intervention. Thirdly, NMS works closely with the Naval Personnel Department and the Defence Psychology Department (DPD), as part of the RSN Mental Resilience Committee, to develop programmes targeted at optimising mental health in the Navy. Moving forward, DPD and RSN Defence Psychologists, together with the support of NMS and PCC will articulate the RSN Mental Health Strategy to guide various efforts in building mental resilience amongst, and enhancing the mental well-being of RSN's naval combatants.

| | | | | | |
|-----------------------|---|--|---|---|--|
| Vision | A workplace environment and climate that promotes positive mental health. Sailors are at a state of wellbeing in which they can cope with normal stressors of life and work productively. [Draft; need for NSM to discuss] | | | | |
| Populations Supported | All Regulars, NSFs and DXOs across the entire spectrum of mental health (i.e. from well to ill) | | | | |
| Foci | Prevention | | TOS5 Detection | TOS3 Intervention | Research & Policy |
| Thrusts | TOS2 Mental Health and Resilience Competency Roadmap <ul style="list-style-type: none"> Equip every sailor with robust baseline Resilience [MTDC/Ops Units, Psys] and MH Literacy in ab initio courses [SCC/DPD] Equip supervisors and commanders to promote MH and build resilience in advanced ROA courses. [SCC/Psvs] | | Self Identification & Help <ul style="list-style-type: none"> Identify signs of distress, self-assess and seek help (e.g. Mindline – chatbot, self-help resources) [Individuals] | Closed Loop MH Support System <ul style="list-style-type: none"> Commanders, Base MOs, DPPHs, PMCs in conversation Active case mgmt by DPPHs Paracounsellors for benign cases, SCC, PCC for severe one. | <ul style="list-style-type: none"> Improve understanding of current state of mental health Establish evidence for effectiveness of MH programmes |
| | TOS1 MH as part of our everyday <ul style="list-style-type: none"> Embed HLS in our everyday routine (exercise, diet, sleep/fatigue management) [MTDC/Ops Units – execution, NMS - policy] Embed Work Life Boundaries, Burnout Prevention in planning [MTDC/Ops Units – execution, NPD - policy] Advocate MH [Paracounsellors] Deploy. Psy support [Ops Units, Psys] | | Peer Identification & Support <ul style="list-style-type: none"> Look out for others, Listen empathetically, support others, Link to MH support system (Psy First Aid) [Individuals] | External Channel <ul style="list-style-type: none"> Private Counselling Service [SCC] | |
| | Family Support <ul style="list-style-type: none"> Support for family, and family support for personnel [F1s, Units] | | Fight Stigma <ul style="list-style-type: none"> Change perspective on MH, with emphasis from top brass [NPD, NMS, Psys, NIC] Encourage Volunteering (e.g., Pathlight, MINDS) to increase understanding / empathy [Units] | Critical Incident Support <ul style="list-style-type: none"> Psy Restoration for critical incidents [Psys] | |
| | TOS4 Addressing emerging trends/issues <ul style="list-style-type: none"> Sense-making of trends (w PCC, SCC) | | Commander Identification & Support <ul style="list-style-type: none"> Build positive MH work environment [Units] Regular Engagement/DO interviews [Units] | | |
| Stakeholders | Policy - NPD, NMS, MTDC, Navy Br DPD; Comms - NIC, Execution – Units, Schools, F1s, Master Chiefs, Paracounsellors, Navy Psys, MOs; Specialist Support – SCC, PCC | | | | DPD, PCC, SCC 12/27 |



Fatigue Management Modules to Enhance Soldier Performance

Fatigue can negatively influence a soldier's situational awareness and ability to respond to perceived emergencies. Soldiers are predisposed to chronic fatigue due to shift work and protracted sailing deployments.

Fatigue has perennially been highlighted as a safety concern and widely recognised to be a significant causal factor of human-related accidents. In 2016, NMS studied the use of the Fatigue Avoidance Scheduling Tool (FAST) to improve the RSN's Work-Rest Cycle. In 2018,

NMS promulgated a fatigue management policy for shipboard personnel in the RSN, which included recommendations for optimal watch systems based on FAST and Fatigue Risk Control Measures (FRCM) for Fatigue Prevention, Detection and Intervention.

| MANAGING FATIGUE DURING SURGE PERIODS | |
|--|--|
| <p>OPTION 1: Rest to Recover</p> <ul style="list-style-type: none"> Take power naps (~30 mins each) when the opportunity arises e.g. during your next short rest period Aim to achieve at least 7 hours of uninterrupted rest at the next available opportunity | <p>OPTION 2: Stimulants to Maintain Alertness</p> <ul style="list-style-type: none"> 1st line: Caffeine Products (non-prescription) 2nd line: Modafinil (prescription only) Continue until you are able to get at least 7 hours of uninterrupted rest (avoid taking stimulants prior to sleep) |
| <p>Supervisors / Chiefs can try to rotate personnel more frequently where possible to enable more opportunities to rest; ship Cos can enforce 8-4-4-8 watch cycle to facilitate 7 hours of uninterrupted rest</p> | |
| <p>Both Options 1 and 2 can be utilised together</p> | |

| STRATEGY | FATIGUE RISK CONTROL MEASURES (FRCM) | |
|---|---|--|
| PREVENT | Adopt 1-in-3 as optimal | Abort 6-6-6-6 Adopt 8-4-4-8 |
| | FAST to optimise shift schedules | |
| | Educate Optimise sleep and work environments | |
| DETECT | Fatigue Time Out Peer Look Out | |
| INTERVENE | Non-Pharmacological | Pharmacological: Caffeine / Modafinil |
| Recovery Period after Surge Periods: Minimum 48h for a 1-in-3 watch cycle or minimum 2 weeks if keeping to a 1-in-2 watch cycle | | |

Infographics of the FRCM – Prevention, Detection and Intervention.

To ensure that all soldiers are equipped with the necessary knowledge and skills to prevent, detect and manage fatigue, NMS worked with Naval Training Department (NTD) to develop three Fatigue Management (FM) modules: Basic FM Module, Intermediate FM Module and Advanced FM Module tailored for the individual, supervisors and commanders respectively. These modules are planned to be implemented at

the various schoolhouses and training institutes. Some of the fundamental core competencies include having a basic understanding of fatigue and its effects, recognising the importance of good sleep hygiene and knowing how to apply fatigue prevention, detection and management measures. Supervisors and commanders will be further exposed to advanced topics such as fatigue countermeasure medications and

supplements, including natural and prescription stimulants such as caffeine pills, as well as optimal watch cycle planning. Through propagating these operationally-critical fatigue management practices, NMS endeavours to further enhance the performance of RSN's naval combatants and reinforce RSN's safety culture.





NEWLY OPERATIONAL RSAF HYPOBARIC CHAMBER

On 12 February 2018, the Aviation Medicine fraternity of RSAF, as well as our partners, ST Healthcare and Defence Science Technology Agency (DSTA), gathered for the opening ceremony of the newly operational RSAF Hypobaric Chamber. The event was graced by Chief Air Force Medical Officer (CAMO) SLTC(DR) Benjamin Tan as the Guest-of-Honour, and the commemorative plaque was unveiled by him.

The operationalisation of the Hypobaric Chamber marked a significant milestone in the Aviation Physiology Training (APT) equipment transformation journey. Earlier, on 18 January 2018, Aeromedical Centre (ARMC) together with key stakeholders in Air Operation Department (AOD) and ST Healthcare successfully rolled out the first Dynamic Flight Simulator (DFS) centrifuge training for operational fighter aircrew. The implementation of DFS heralds the next leap forward in centrifuge training

by incorporating dynamic operational flight profiles that couple in-flight realism with G-exposure. The Aviation Medicine fraternity of RSAF will continue to work with our partners to enhance our equipment and training to meet the operational needs of the RSAF and serve the SAF.



RSAF 50 @ HEARTLANDS

In 2018, the RSAF celebrated 50 years of safeguarding the skies of our home, Singapore. To celebrate the Golden Jubilee and show appreciation to all Singaporeans, the RSAF commemorated this symbolic milestone through a series of public events. Aviation Medical Officers (AVMO) and MMEs from the Air Force Medical Service (AFMS), 1 Medical Squadron (1 MS), and various Medical Flight personnel participated in these public events, showcasing RSAF's Search and Rescue (SAR) capabilities at the SAR medical static display booths setup.

The RSAF kickstarted the RSAF50 public events with the RSAF50 @ Singapore Airshow 2018. During this event, we hosted various Guests-of-Honour (GOH) at our display booths, including the Indonesian National Defence Forces Air Chief Marshal, together with the Chief of Air Force (CAF) at the time, MG Mervyn Tan, and the then Education Minister, Mr Ng Chee Meng.

From March to May 2018, the RSAF brought its Air Force to the Heartlands. Known as the RSAF50 @ Heartlands, the roving exhibition travelled to five heartland locations across Singapore starting from Toa Payoh, Sembawang, Punggol, Bedok and lastly ending in Jurong East. The SAR display booths were a great hit with Singaporeans; as they had the chance to come up close and personal to try and intubate an Airway Manikin using a Video Laryngoscope and perform ventilation using a Bag-Valve-Mask (BVM). The AVMOs and MMEs interacted with members of the public, sharing with them first-hand experiences of the various Aeromedical Evacuation (AME) and SAR operations.

Through these public events, appreciation is shown to fellow Singaporeans for their strong support through the years. It also serves to pay tribute to all servicemen and women for their dedication and contributions in Singapore's defence. RSAF's AVMOs and MMEs will continue to serve Singapore, the SAF and RSAF, the Medical Corps and its community with complete dedication and commitment.



SMOKING CESSATION EFFORTS ON WORLD NO TOBACCO DAY

In 2018, the SAF organised its first World No Tobacco Day (WNTD) to discourage the use of tobacco among its soldiers by increasing public awareness on the harmful effects of tobacco use and second-hand smoke exposure. This also serves as a call for increased emphasis on smoking cessation within the SAF.

Coordinated by a small team from the SAF Medical Corps, WNTD was marked by a series of voluntary, self-organised and independent events held in various military units and camps across Singapore. It was also anchored by the cadre of Smoking Cessation OutREach (SCORE) Ambassadors and unit-level healthy lifestyle advocates, with support from their Unit Commanders. Commanders and staff showed their commitment by signing pledges on a poster. Within the SAF Medical Corps, the effort was supported by then-Chief of Medical Corps (CMC), RADM(DR) Tang Kong Choong, along with then-Formation Sergeant Major (FSM), ME5 Chan Siew Learn Daniel. In addition, ME5 Chan shared his personal story on how he gave up smoking.



CMC RADM(DR) Tang Kong Choong delivering his opening speech for WNTD 2018



WNTD 2018 with COL(DR) Chow Weien; MAJ(DR) Clive Tan, and FSM ME5 Daniel Chan



As part of WNTD, soldiers made an online pledge to be smoke-free. Unique WNTD memorabilia were given out to personnel who took the pledge. In 2018, it was a finger band that would restrict the wearer's ability to hold a cigarette, acting as a symbolic reminder to stay smoke-free. In 2019, fridge magnets with the theme "Don't Light Up", bearing the uniform colours of the Army, Navy and Air Force, were given out to smokers. In 2020, during the COVID-19 pandemic, specially designed reusable face masks were given to servicemen who made an online pledge to be smoke-free.



Personnel trying out the Smokerlyser at the WNTD 2019 roadshow event



WNTD 2018 HQ Medical Corps Leadership Pledge to be smoke-free

Media platforms across the board were engaged for outreach and information campaigns, diversifying the audience to raise awareness for the notion. This sent a strong signal to the public regarding our focus on smoking cessation within the SAF.

During the COVID-19 pandemic in 2020 and 2021, WNTD expanded from a day to a week (WNTW) to allow for a longer period of engagement; and leveraged strongly on social media for publicity, taking visible measures such as closing designated smoking points.



Fingerbands given out for inaugural WNTD 2018, featured in Newspaper Media



Mindef reviewing therapies to help personnel stub out

Aw Cheng Wei

A review of nicotine replacement therapies is under way to help military personnel stub out cigarettes once and for all.

The review is part of a framework that the Singapore Armed Forces launched earlier this year to help its personnel stop smoking, said the Ministry of Defence (Mindef) in an announcement timed to coincide with World No Tobacco Day, which falls today.

The review will involve military medical specialists assessing therapies recommended by the Health Promotion Board such as nicotine gum, inhalers and lozenges.

These methods try to control the urge to smoke and may be better suited for military personnel than nicotine patches, which Mindef now uses. The eventual choice will factor in soldiers' training and operational environments, a ministry spokesman said.

The new framework pulls to-

gether and strengthens existing initiatives such as counselling, punishments and medical aids to help full-time national servicemen (NSF) and regular personnel quit.

It will also ensure that Mindef is ready to help the growing number of underage smokers it will have under new laws, said the spokesman.

The Enlistment Act requires that all male Singaporeans and permanent residents be enlisted for national service at the earliest opportunity when they turn 18.

That is a year shy of the new minimum age for smoking - 19 years - that kicks in at the start of next year. This will be raised progressively every January until 2021, when smokers have to be 21 before they can light up.

People who provide cigarettes and tobacco products to underage servicemen will be dealt with firmly, said the Ministry spokesman, adding that service personnel caught violating its smoking prohibition policy will face disciplinary actions under military law.



An SAF personnel pledges to abstain from tobacco for 24 hours on World No Tobacco Day. It is part of an initiative under the SAF Smoking Cessation Framework. PHOTO: MINISTRY OF DEFENCE

A study found that 14 per cent of 2016 smokers, while 6.6 per cent said they quit because they were too busy to smoke and it was troublesome to find a place to light up.

Some also feared smoking would affect their physical performance.

To further drive down the number of smokers, the ministry wants to expand an outreach programme that started in 2011 and enlists the help of their colleagues.

So far, more than 200 people have been trained to talk to their colleagues about smoking's adverse effects and Mindef wants to double that number by 2021.

Retired Chief Warrant Officer Peter Estrop, 58, who quit smoking in 2011 after attending a talk by a colleague, said: "I was touched by the stories of ex-smokers. At that point, I woke up, and I decided to quit smoking for good."

He said quitting had not been easy, but advice to stay away from smokers and to focus on activities such as sports and reading had helped.

"The temptations stayed strong for months before I was able to quit and never ever light up."

awcw@sph.com.sg

SAF World No Tobacco Week

#WNTW

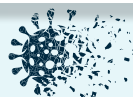
25 - 31 May 2020

SCAN ME

WNTW Pledge

<https://go.gov.sg/wntw>

For all SAF Personnel, Family and Friends!



Anti-Smoking Strategy to safeguard the health of our RSN Servicemen

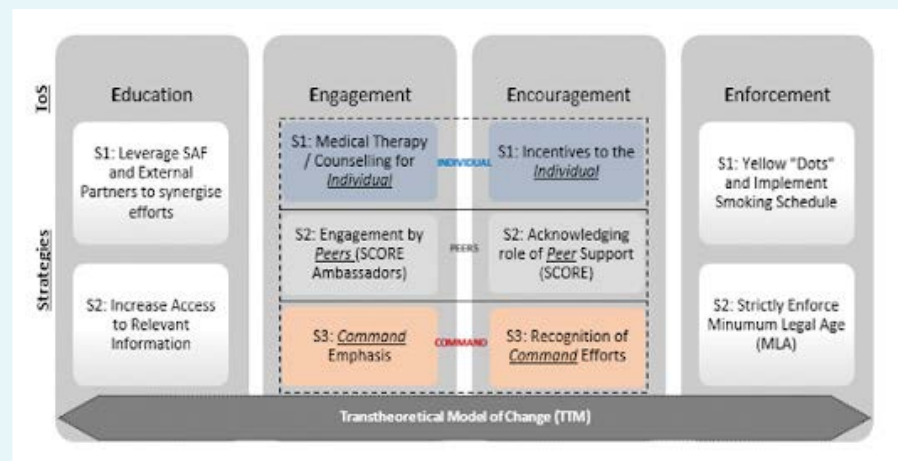
Smoking is associated with a myriad of serious health effects and complications. These range from cardiovascular diseases such as coronary heart disease and high blood pressure, to lung conditions such as asthma, lung cancer, and Chronic Obstructive Pulmonary Disease (COPD). These illnesses have an adverse impact on sea deployability of RSN's naval combatants. Subtask studies also suggest that smoking has a direct negative impact on workplace productivity and increases the medical burden on both the individual and the employer.

In September 2020, NMS since implemented the RSN Smoking Cessation Strategy, which references the Transtheoretical Model (TTM) of Behaviour Change and is premised on four key pillars – Education, Engagement, Encouragement and Enforcement. The strategy includes initiatives such as increasing RSN personnel awareness to available internal (NMS Smoking Cessation Clinics) and external (I QUIT Programme) resources to quit

smoking, observance of World No Tobacco Week (WNTW) and reduction of Designated Smoking Points (DSP) within RSN bases. A bi-annual RSN Smoking Declaration has also been implemented to track smokers and trend the outcomes of smoking cessation intervention programmes. RSN SCORE Ambassadors, comprising ex-smokers and non-smokers, play an essential role in counselling and have made significant strides in raising awareness on the importance of smoking cessation in the RSN. NMS has also embarked on efforts to explore leverage on the expertise of Public Healthcare Institutions (PHI) through the outsourcing of Smoking Cessation Clinics. This will facilitate multidisciplinary and multi-modal management of smoking. With a systematic and robust approach to smoking cessation, NMS will continue to strive towards safeguarding the health of our servicemen, thereby minimising medical attrition and optimising RSN's operational readiness.



The Transtheoretical Model (TTM) of Behaviour Change.



Infographic on the RSN Anti-Smoking Strategy depicting the 4 key pillars of Education, Engagement, Encouragement and Enforcement.



RSN smoking cessation video – one of the many resources to engage and encourage our servicemen.



RSN WNTW Seminar 2022 Discussion Panel (from left to right: ME6 Richard Goh, MCN; RADM Aaron Beng, CNV; COL(DR) David Law, CNMO; then-MAJ(DR) David Pflug, then-HD NHCB)



Thanking our RSN SCORE Ambassadors who are promoting smoking cessation and healthier lifestyles in the Navy.

STANDING STRONG THROUGH THE STORM





Every time we wake up to things that work, clean water from the tap, the toilet flushes, the trains move, we should realise that they are not the result of happenstance. Similarly, when the medical centres open shop to treat flu patients and swab them; the medics and MOs who were not infected by COVID-19 themselves, the dispensary that was restocked every day, the SMS notifications of swab results, the vaccines that go into our arms. These are not by accident. At the peak of the pandemic, medics and MOs adopted a stay-in posture to reduce their infection risk from the community. Healthcare workers donned full Personal Protective Equipment in sweltering two-hour shifts. Laboratory staff manning their stations, doing PCR tests. IT colleagues working on the electronic medical records to send out the swab results to our mobile phones. Logisticians working overdrive to procure and deliver essentials to the ground. Manpower staff managing allowances and other tokens of appreciation to prop up morale. And NSmen made personal sacrifices showing that they could be counted on in times of need.

COL(NS)(DR) LO HONG YEE



Read COL(NS)(DR) Lo's thoughts here!





There are four noble truths in Buddhism, five pillars in Islam and ten commandments in Christianity. These religious edicts have a deep resonance with mankind and have remained relatively constant over time.

The laws of physics and mathematics are universal. The law of gravity on an apple is arguably the same whether it is on earth, or any celestial body with a defined mass. The Pythagorean theorem is also irrefutable whether you are in one galaxy or another.

In contrast, one cannot say the same for “leadership”. There is a vast amount of knowledge on leadership — theories, mantras, heuristics, models and creeds. These are neither constant nor universal. Some may be applicable to one culture, but become irrelevant or irreverent in another. Some may be useful for one circumstance, but become counter-productive or destructive when the situation changes. It is against this backdrop, and with trepidation, that I humbly offer a few observations about leadership, gleaned from my personal journey during the COVID-19 pandemic.

In preparing this essay, my research took me to an earlier work entitled “The SAF SARS Diary” published 17 years ago. That diary chronicled the SAF SARS experience scientifically with charts, statistics and flow diagrams. Fast forward to the present day, the information terrain has changed significantly, with much of the science and data freely available in open source literature. What is left then, perhaps, is for me to capture some of the less codifiable but no less important aspects of the crisis, the thoughts and dilemmas, the fears and triumphs, the texture, touch and feel of key decisions. And I shall borrow a few fairy tales to aid me in this delicate endeavour. Unlike scriptures and scientific expositions, fairy tales are often relegated to the children’s section, passed over as frivolous material, something to be grown out of. Yet, they are often translated into numerous languages, and enjoyed across cultures and ages. There is clearly more than meets the eye with old, wrinkly story tellers. The telling and retelling of these seemingly innocuous tales actually transmits gems, tacit and otherwise, across the generations. Much later in my adult life, I was finally able to appreciate the many leadership lessons hiding in plain sight. Perhaps, as the saying goes, “when the student is ready, the teacher will appear”.

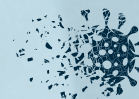
THE THREE LITTLE PIGS

This fable is about how the straw and wooden huts were no match for the big bad wolf, and the little pigs were saved only by the brick house. First appearing in a nursery rhyme by James Halliwell-Phillipps, published in 1886, the moral of the story found its way into many aphorisms, including one by Mr Warren Buffet — “Only when the tide goes out do you discover who has been swimming naked”. Metaphorically, this “brick house” was usually painstakingly erected by a previous generation. One example is the culture of cleanliness, handed down as the practices of “standby bed” and “area cleaning”. While countries have varying success dealing with the virus, large COVID-19 outbreaks within military installations were less common, despite our communal living conditions. We have to thank our sergeant majors for the hygiene standards indoctrinated at basic military training.

Specific to medical policies that put us in a good stead, the SAF started its annual influenza vaccination exercise in 2009, ten years before COVID-19 struck. Every year, we achieve around 85-90% vaccination rate with little fanfare. Hence, when the mission came for the SAF to vaccinate its people against COVID-19, it felt almost like we had already rehearsed for it.

Similarly for logistics. Our quick response in pushing out the surgical masks to Singaporeans during a time of global shortage was made possible by methodical stockpiling over the years, turning over expired stock, replenishing, and quality control, to make sure that when the tide goes out, we are not found naked.

At a time when people around the world were struggling to keep ICU patients alive with improvised ventilators, we were quietly confident because during good times, we had squirrelled away a few hundred transport ventilators. While these do not have the full suite of functions, they will do the job of keeping patients alive if their situation worsens. At the request of the Ministry of Health, we delivered them to the public hospitals. Thankfully, the situation stabilised and the transport ventilators did not see action, but our clinician colleagues were relieved that they need not carry the ethical burden of deciding who lived and who didn’t.



The leadership lesson is the preparedness mentality. The man on the street will not worry about black swan events. It is the leader's unpopular job to be paranoid, to save for rainy days, and to delay gratification. Such a mentality is behind many of the things we take for granted. An example is Lim Chu Kang road which is designed as an emergency runway. Why plan for an emergency runway when Singapore already has so many operational civilian and military runways? Why stockpile surgical masks and hundreds of transport ventilators, when there are so many other pressing demands? Why bother with the annual influenza vaccination when the flu is just a mild disease? Why demand hygiene standards in barracks, when we could outsource this "non-core" function to migrant worker cleaners? These measures were put in place by leaders before us, and it behoves us to do the same, so that whether it is to fend against the big bad wolf, the outgoing tide or the next pandemic, we are prepared.

THE EMPEROR'S NEW CLOTHES

This quintessential cautionary tale against hubris speaks of a swindler hoodwinking not just the king, but his entire populace into believing that they had beheld the world's finest robe on parade, when their eyes were clearly showing them just an old man in his birthday suit. Written in 1837 by Hans Christian Andersen, children over the ages enjoyed the spectacle when the lies were finally exposed and the stark naked king was roundly humiliated.

In leadership parlance, this tale warns against "groupthink", where people avoided conflict, despite knowing better, especially in a setting with an overbearing boss. Vanity and pride are major components, where everybody, the king included, claimed that they could see the invisible woven fabric. One error perpetuates the next, until a full blown disaster is imminent.

An example of averting disaster during COVID-19 was how leaders were agile and humble enough to examine the latest evidence, instead of holding on to previously held positions, fearing embarrassment. At the national level, when new findings on viral transmission surfaced, we changed our position to mandate mask wearing. Another episode was the decisive statements and actions surrounding the TraceTogether contact tracing app debate. These were examples of leaders acknowledging that they indeed could not see the invisible fabric.

I sat in numerous meetings held by JTF(A), which was tasked to look after migrant workers. Seldom was consensus reached without a good dose of disagreement. Examples included the methods for testing, whether it was nasopharyngeal swabs, or oropharyngeal mid-turbinate swabs, or saliva, the indications for using pooled samples to conserve the scarce reagents, the mechanisms and durations for quarantine. The secret sauce is the quality of conversations with people playing the roles of the proponent and the opponent; the former speaks with honesty, and the latter, counters with respect.

At a personal level, I also had to deal with vanity. To prepare for the Pfizer BioNTech vaccine, I directed my team to procure a few ultra low temperature (ULT) freezers, so that the SAF could store our own frozen vaccines, giving us operational flexibility. I had under-estimated the efficiency of the cold chain capabilities in the country, which turned out to be so robust that all vaccines could be held centrally, thawed and delivered to vaccination centres every day. The SAF need not deploy our own ULT freezers. Embarrassed by my earlier decision to buy these freezers, which looked increasingly like white elephants, I continued to try and deploy them at SAF medical centres. After coaxing from my team, I conceded that the ULT freezers would not see much action, and returned them to the main warehouse as back ups. This episode reminded me of the vanity in the fairy tale, except that my team, sensing something amiss, was willing to alert me. All I needed to do was to put aside my pride.

While parading naked in front of his subjects, it took a young child to see past the lies and shout the truth, "The Emperor has no clothes!". This "young child" is a metaphor for the "ground", people who know what is going on. Unlike courtiers, young children are not beholden to kings.

Throughout the pandemic, I have witnessed how leaders kept themselves close to the ground. One particular leader at JTF(A) kept copious handwritten field notes, detailing his observations as he spoke with the "young children" on his ground visits. This translated into clarity of thought and good decisions that eventually turned the tide. The lesson is for leaders to be unafraid to re-visit and reverse dated decisions, and listen deeply to the ground in search of the truth.



THE BRAVE LITTLE TAILOR

Many fairy tales paint a distinction between good and evil, catered to young readers who are naive to the varying shades of grey. In real life, such a binary separation rarely exists, and protagonists are often multidimensional, such as in the case of this brave little tailor. Published in the Brothers Grimm collection in 1812, the story tells of how a lowly tailor overcomes numerous obstacles, including attempts on his life, to eventually become king. The tailor boasts of killing “seven with one blow”, conveniently omitting that his foes were mere flies. With an inflated reputation and a confidence to match, the tailor attracted giants in many duels who, despite an obvious strength overmatch, were outwitted and outclassed. It tells a story of gumption, confidence, resourcefulness, but also trickery, manipulation, cunning and ambition.

At the start of the pandemic, fear was rampant throughout Singapore. Such an environment prompted leaders at all echelons, despite their own uncertainty, to step up with messages of confidence. It was a statement of defiance, that we too, could defeat “seven with one blow”. The SAF set up task forces to help — JTF(A), MOTF, CSSTF, EHTF, and HSTF. Apart from the task force commanders, ground commanders also stepped up. They had to fight many “giants” — woes and problems which seemed insurmountable. Contact tracing when the R-naught was shooting upwards, food provision for thousands with varied dietary needs, re-housing migrant workers in barracks, and to look after dormitories when they were falling like dominoes to the spread of the virus.

On the medical front, to deploy thousands of pulse oximeters to pick up hypoxia before patients deteriorated, to coordinate the transport and isolation facilities for positive cases, to curate the “single source of truth” for swab and serology results, to set up a “field hospital” in the form of a Community Care Facility, to vaccinate at speed MINDEF/ SAF personnel who were required for essential ops. These were the “giants” that we needed to outwit and outclass. Like all grey zone threats, this foe wouldn’t be cowed by a force-on-force method, but must be subdued with operational cunning, nimbleness and more brains than brawn.

One interesting phenomenon was how at the beginning of the pandemic, Singapore was rated as the country with the highest infection count in the whole Southeast Asia. We soon realised that we were extremely efficient at testing. In the face of a laboratory test reagent scarcity, we adopted a different tack. We were careful not to become an ostrich, and dial down the testing, but rather, we used area testing methods like pool testing and sewage testing to help us identify high risk clusters, before zooming in to isolate the individual cases.

Operational cunning carries a slippery slope risk when the ends justified the means, but I observed a high degree of integrity in the decision-making process, preserving the trust and social compact between the leader and those being led. At every stage, the well-being and health of the people were the primary focus, overriding other political, defence relations and economic calculus. This was evident in another anecdote related to the transport ventilators mentioned earlier. We had enough in the SAF, and shared the excess with the public hospitals in Singapore. But the global shortage also presented an opportunity to strengthen our relations with key foreign partners facing their own ventilator shortages. In the end, it was decided that we would keep all the transport ventilators in Singapore, given the uncertainty of the situation, placing our people’s well-being above all else. As a fly on the wall, I understood acutely the dilemma involved in such a decision and was heartened by the well-placed trust.

THE ELVES AND THE SHOEMAKER

The final fairy tale in this essay is also part of the Brothers Grimm collection published in 1812. The story is about little elves helping an old and impoverished shoemaker who is about to wind up his ailing business. While the shoemaker and his wife sleep at night, the elves busy themselves at the workshop, making beautiful leather shoes, which they leave behind every morning as they disappear to rest. This mysterious night affair makes the old couple a comfortable fortune and they decide to stakeout at the workshop to identify their benefactors. The couple see the elves hard at work but also notice that they aren’t wearing any clothes. So the couple makes elf-sized shirts and pants, leave them at the workshop, and see how the elves happily put them on.





Ostensibly a whimsical tale of an unexpected windfall for the shoemaker, the fable is actually a tribute to the many little elves who toil while we sleep. And it reminds leaders to always look out for the unsung and unnoticed. Every time we wake up to things that work, clean water from the tap, the toilet flushes, the trains move, we should realise that they are not the result of happenstance. Similarly, when the medical centres open shop to treat flu patients and swab them; the medics and MOs who were not infected by COVID-19 themselves, the dispensary that was restocked every day, the SMS notifications of swab results, the vaccines that go into our arms. These are not by accident. At the peak of the pandemic, medics and MOs adopted a stay-in posture to reduce their infection risk from the community. Healthcare workers donned full Personal Protective Equipment in sweltering two-hour shifts. Laboratory staff manning their stations, doing PCR tests. IT colleagues working on the electronic medical records to send out the swab results to our mobile phones. Logisticians working overdrive to procure and deliver essentials to the ground. Manpower staff managing allowances and other tokens of appreciation to prop up morale. And NSmen made personal sacrifices showing that they could be counted on in times of need.

Like the old couple who hid at night for a peek, leaders too, will do well to see for ourselves the industry and commitment of those who toil. For not only does it strengthen our conviction to lead, it also affirms those whose labour is often unnoticed, and accords them the recognition they so richly deserve.

CONCLUSION

I return to the “SAF SARS Diary” published in 2004. That article was co-authored by Chief of Medical Corps, the late BG (DR) Wong Yue Sie, and the Head of the Preventive Medicine Branch, LTC (DR) Gregory Chan. The authors gave us a glimpse of their world and it was apparent how similar were the challenges. It was also apparent how the Medical Corps, the SAF and the country ultimately overcame the odds and the seemingly insurmountable. What the authors and their team had bequeathed wasn’t just those pages of writing. The essay was a mere summary the actual treasure trove left behind — the mindset of preparedness, the humility of leadership, the spirit of resilience and optimism, the culture of gratitude, the wisdom of mentorship, the vast stockpiles, the repository of know-hows, the practices of pandemic drills, rehearsals and vaccinations.

Unlike the “SAF SARS Diary”, this essay is devoid of statistics and charts, but I hope it has captured the less measurable aspects of our current fight. When we opened the treasure box left by BG (DR) Wong and LTC (DR) Chan, we were heartened to find many tools that helped us tremendously. On behalf of the current team at the Medical Corps, I hope to pass on the same treasure box, replenished and stocked with new tools and insights, to the next team, so that when they open it, they too will find a useful nugget or two.



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Sungei Gedong

Kranji

Nee Soon

Lim Chu Kang

Jurong

Westlite Toh Guan

Pasir Laba

Big Box

Tanjong Gul

NTFGH

TTSH CTF @ R Community Hos





S11 @ Punggol



Cherry Loft

Loyang

Amoy Quee

CRF

Singapore Air Force Museum

Selarang

Tekong

NTUC Health Nursing Home @ Tampines Woodlands Health CTF



Bedok

CCF@EXPO



Changi Naval Base

Guillemard

CRF

City Hospital

Community Recovery Facility



Singapore Armed Forces Camp



Dorm Ops



Community Care Facility/Covid Treatment Facility



Vaccination Centre (SAF)



Swab Station (SAF)



SAF EFFORTS DURING THE PANDEMIC

COVID BATTLE

“As in a war, the virus disrupted nearly all forms of normal activity and curtailed individual liberties. Lives and livelihoods were at stake if that country was overwhelmed. The global toll has been as great as any previous World Wars – at latest count, over 2 million people have died from the disease.”

Dr Ng Eng Hen
Minister For Defence
Total Defence Day Message 2021

MEDICAL LOGISTICS
SUPPORT



>2020
DORMITORY
OPERATIONS



>2021

REGIONAL
SWAB CENTRE

>2020



>2020

EMERGENCY HOUSING
TASK FORCE



HOMI
VACC

>2021

>2021

VACCINATION
OPERATIONS



SWAB OPERATIONS
@ CHERRY LOFT



>2020

>2020

COMMUNITY CARE
FACILITIES @ EXPO



>2020

FEVER SCREENING
@ NG TENG FONG

IMMUNIZATION



2021

>2021

COVID TREATMENT
FACILITIES



SUPPORTING
PHIS



>2022



DORMITORY OPERATIONS

The first case of COVID-19 infection was reported in Singapore on 23 January 2020. In April 2020, the number of cases in Purpose-Built Dormitories (PBD) steadily increased, leading to the introduction of control measures to look after migrant workers residing in these PBDs.

On 5 April 2020, the PBDs were declared an isolation area under the Infectious Disease Act (IDA). However, most PBDs do not have on-site medical clinics to provide primary healthcare or treatment for residents. Thus, from 7 to 28 April 2020, the SAF deployed Forward Medical Posts (FMP) at one of the largest PBDs, serving approximately 13,000 migrant workers. This was part of a Whole-of-Government (WoG) public health effort, in support of the Ministry of Manpower (MOM), and the Ministry of Health (MOH)



*Preparation for Operation
Upon activation, AMS personnel worked through the night to prepare the medical supplies and equipment needed for the operation.*





Just-In-Time Training

Personal Protective Equipment (PPE) refresher training was conducted before the deployment as all personnel were required to don full PPE (e.g. N95 mask, gown, gloves) throughout the operation.

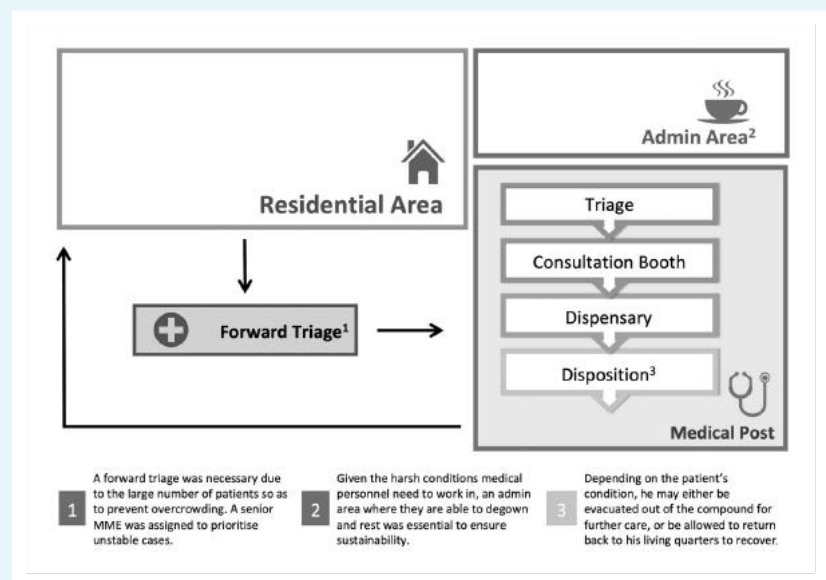


Deployment of Forward Medical Posts

Approximately 70 medical personnel from HQ Army Medical Services (HQ AMS), Navy Medical Service (NMS), Medical Response Force (MRF), SAF Medical Training Institute (SMTI), Navy Medical Services and Army units were deployed at Forward Medical Posts (FMP). Medical professionals from the NMS swiftly stepped up to join the fray, forming the Joint Task Force to develop the medical support for the PBDs.

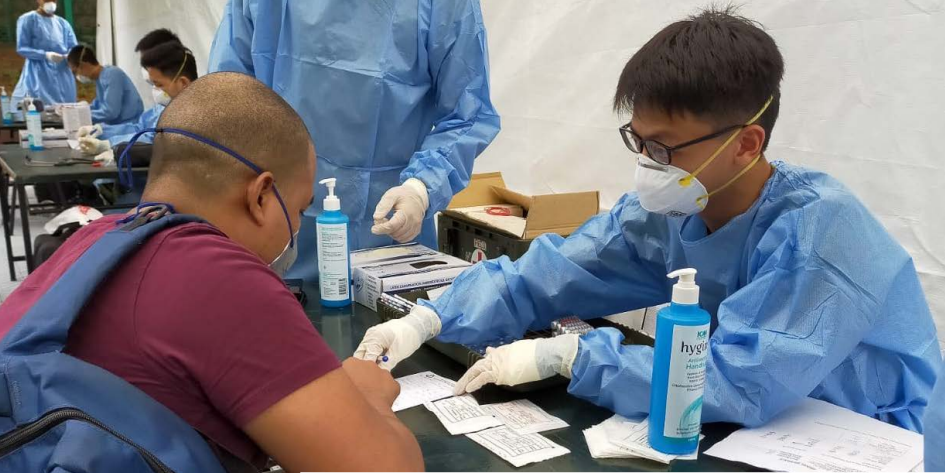
Each FMP had a medical team comprising a Medical Officer, a Military Medical Expert, and five Medics. The FMPs had to care for up to 5,000 dormitory residents each, and were equipped with medical supplies for acute medical supplies, with surge capacity for Acute Respiratory Infections (ARI).

A parallel effort was also undertaken to swab all the close contacts of COVID-19 cases within the dormitory.



The FMPs were deployed to mirror a primary healthcare clinic, which included a triage area, consultation, and dispensary.





TRIAGE (BENGALI)

Name: _____ Block Number: _____
EIN/Work Permit Number: _____ Floor Number: _____
Nationality: _____ Room Number: _____
Date: _____ DOB: _____

Do you have any of the following (Circle accordingly)?

Drug allergies Yes No
Fever Yes No
Cough Yes No
Runny Nose Yes No
Sore Throat Yes No
Breathlessness Yes No
Others: _____

ভেদ্যৰ আৰু কি...?

জ্বৰ **হ্যাঁ** না
কোৰ **হ্যাঁ** না
কান্ধি **হ্যাঁ** না
সর্দি **হ্যাঁ** না
গলা ব্যথা **হ্যাঁ** না
কক্কৰাস **হ্যাঁ** না

Vitals @ _____h
Temp°C
HR / min
Blood Pressure/mmHg
SpO2 / % RA
RR / min

Disposition (for Triage Medic): ARI Consult / Non-ARI Consult / Resus

Daily reviews were conducted to refine the operational processes required to meet the needs of the FMPs. One example was the development of a standardised clerking sheet in various languages to overcome the language barrier.



Medical Personnel from Navy Medical Service gowned-up and ready to respond to the COVID-19 situation in PBDs.



Ops Room at Roy Paul Room

Back in Nee Soon Camp, the Medical Ops Centre was stood up and it was supported by SMTI and HQ AMS staff branches. The personnel worked behind the scenes to ensure the smooth operation of the FMP, such as organising and coordinating conveyance services for the migrant workers.



Summary

The FMPs served a total of about 13,000 migrant workers. A total of 1,942 patients with acute complaints were seen during the deployment, with an average of 88 patients per day. Active surveillance was also performed to identify patients with severe disease early and to prevent deterioration.

A total of 2,386 COVID-19 cases were diagnosed. Patients who needed more urgent care or displayed ARI symptoms were prioritised for evacuation to appropriate facilities.

Stringent precautionary measures such as daily health surveillance, declaration, and adherence to strict infection control processes such as proper donning of PPE were taken to ensure the safety of the medical personnel. These strict infection control protocols ensured that no medical personnel were infected throughout the duration of the deployment.

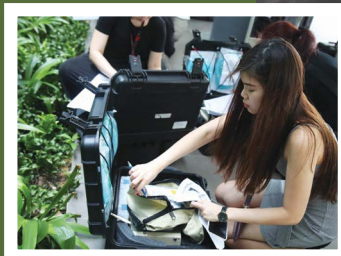
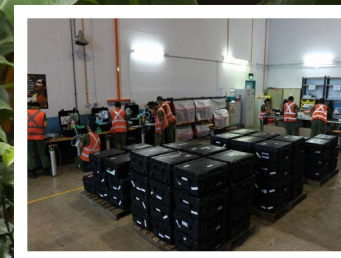
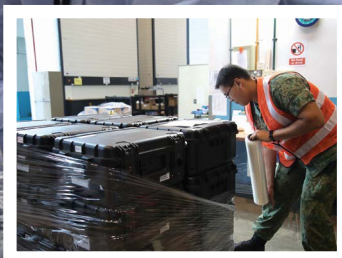


MEDICAL LOGISTICS SUPPORT TO THE MINISTRY OF HEALTH

Joint Medical Logistics Branch (JMLB) handles the crucial task of transporting medical equipment such as ventilators to and from key destinations as required by the Ministry of Health (MOH).

Consequences would be dire if deliveries were to be delayed or if equipment were damaged en route. Hence, emphasis was placed on ensuring the safety of the equipment and the timeliness of the deliveries. JMLB had consistently gone above and beyond; transporting time-critical shipments within required transit times.

Besides deliveries, medical equipment maintenance was another area in which large amounts of effort have been invested in. Maintenance services, which consist of periodic inspection, preventive maintenance and corrective maintenance, had been constantly conducted to ensure the ventilators remain in optimal working condition.

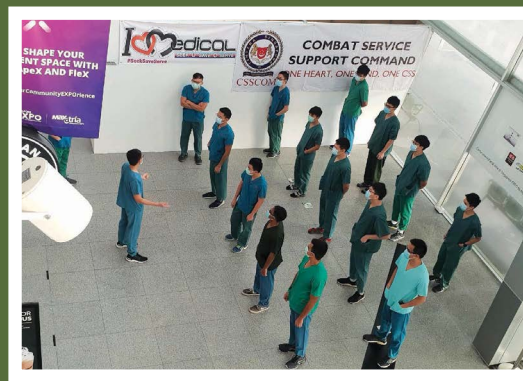


CCF @ EXPO

Singapore EXPO & MAX Atria Community Care Facilities (CCF) were set up to house mildly symptomatic or recovering patients who did not require intensive medical intervention, hence freeing up hospital resources.

As part of the WoG effort in the fight against COVID-19, the SAF was deployed to the Singapore EXPO from 17 April to 6 July 2020, providing medical support for up to 1,800 patients in Halls 5 and 6.

Since 17 April 2020, personnel from the Singapore Armed Forces (SAF) have worked round the clock at the Singapore EXPO Community Care Facility (CCF) to provide care for recovering COVID-19 patients. On 6 July 2020, the SAF handed the CCF's operations in Halls 5 and 6 over to Woodlands Health Campus, which continued to care for the COVID-19 patients.



| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 1 | 2 | 3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| mon | tue | wed | thu | fri | sat | sun | mon | tue | wed |
| D | D | N | N | O | QRT | O | D | D | N |
| D | N | N | O | QRT | O | D | D | N | QRT |
| D | N | O | QRT | O | D | D | D | QRT | O |
| N | O | QRT | O | D | D | D | QRT | O | QRT |
| O | QRT | O | D | D | N | QRT | O | QRT | O |
| QRT | O | D | D | N | QRT | O | QRT | O | D |
| O | D | D | D | N | O | QRT | O | D | D |
| D | D | D | N | O | QRT | O | QRT | D | D |
| N | O | QRT | O | D | D | N | N | O | QRT |

Pre-Shift Roll Calls



Strict infection control to ensure our safety.



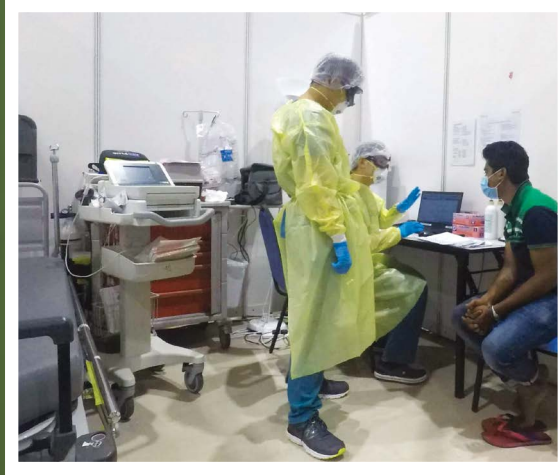
NMS Personnel including then-MAJ(DR) Matthew Yeo (pictures second from the left) from NSH 2 providing medical care at CCF@Expb.



Row 07 Bed 01-06

Throughout the 75 days of deployment, a total of 373 SAF personnel were deployed, without a single COVID-19 infection. Working closely with counterparts from Certis CISCO, Marina Bay Sands, Woodlands Health Campus and Parkway Pantai, the SAF cared for a total of 5,173 patients.

Of 373 personnel deployed, the SAF Medical Corps contributed appropriately 100 medical personnel to this stupendous effort. HQ AMS and NMS are proud to have contributed significantly to this effort, with the involvement of both Active and NS Units.



RSN Medical NSmen helping the screening station at the CCF to ensure that patients receive the appropriate care that they require.



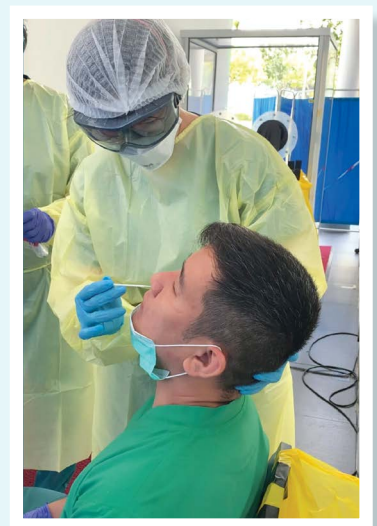
Conduct of Regular Drills and Training



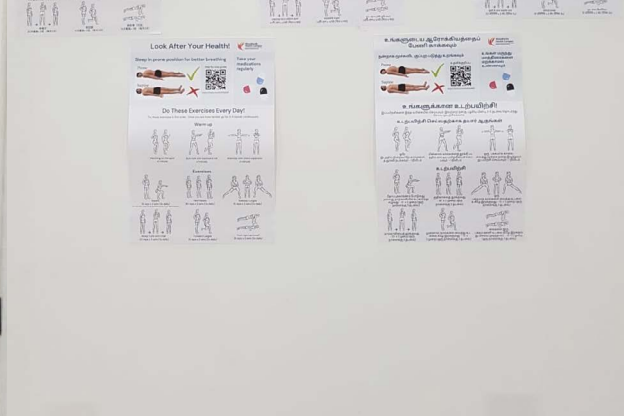
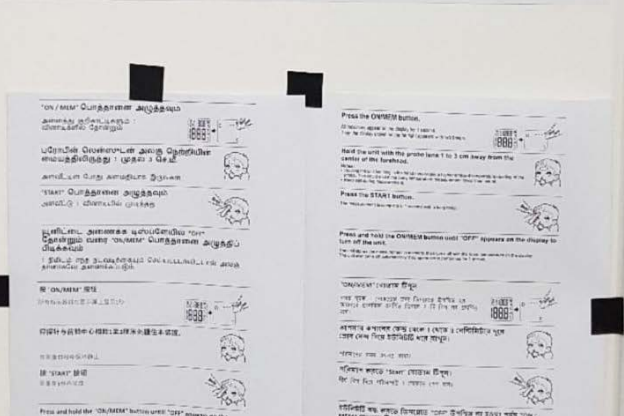
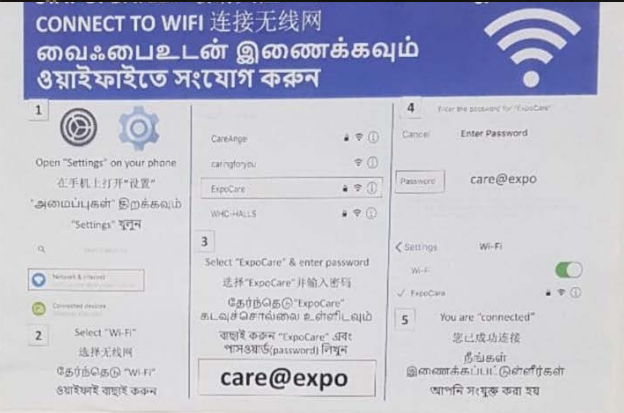
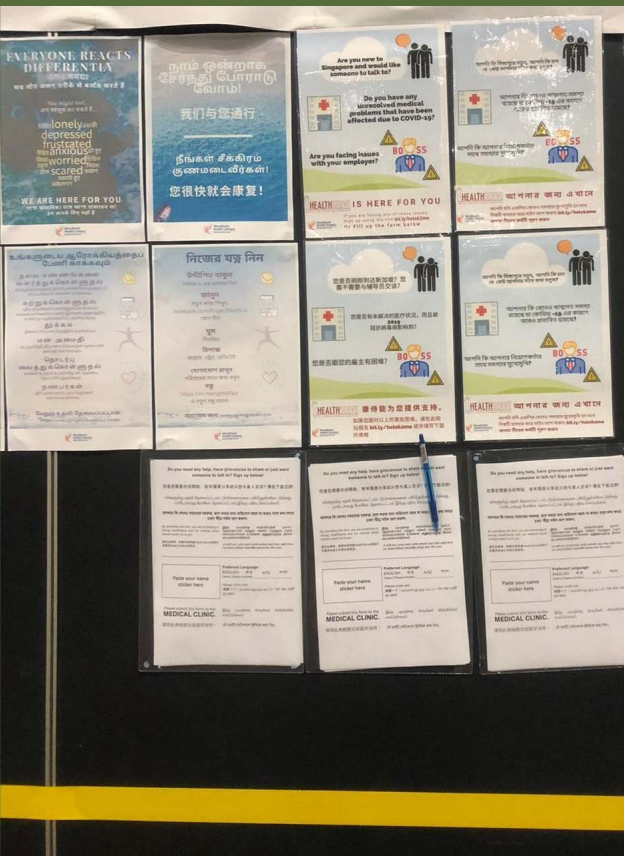
Empowering our Patients – Personal Grooming



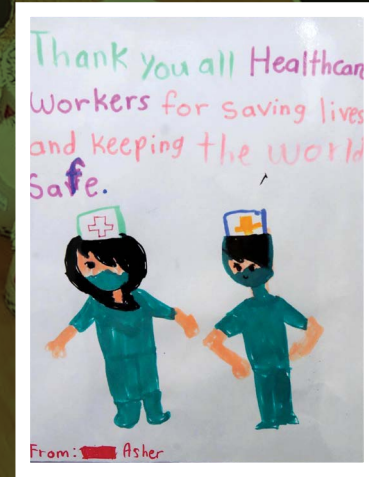
Routine Testing to Ensure our Safety



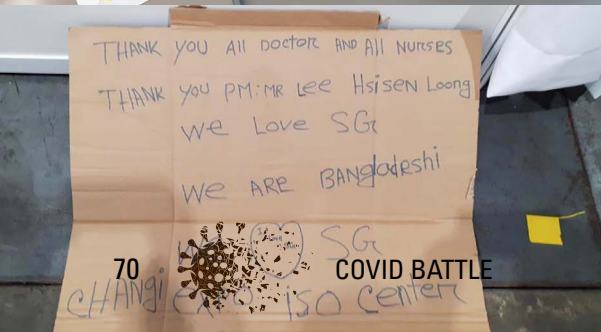
Activities to Help the Patients Rest and Relax



Show of Appreciation for Personnel at EXPO



We thank our NSmen for their continued contributions and commitment to National Service and the national effort against COVID-19 during these challenging times.



Our NSmen at CCF@Expo

ORNS members (NSmen) from 2 Combat Support Hospital Combat Support Hospital (CSH) and 8 CSH, Naval Ship Hospital (NSH) 1, NSH 2 and Naval Base Medical Team (NBMT) from NMS were deployed to the CCF as part of their In-Camp Training (ICT), providing care for patients in the two Expo halls.

When the NSmen were called upon to support the battle against COVID-19, they were ready and prepared. This was made possible because of their trainings during their previous ICTs, which ensured that they were current with their medical knowledge and skills. In addition, pre-deployment training was conducted to refresh their knowledge and currency.



Dear SAF medics,
thank you so much for
your hard work and
effort during this trying
period! Please know that
the students and staff of
Maris Stella High School
are thinking of you
and keeping you in our
prayers. Your efforts
are appreciated!
~ Ms Kimberly Teh
(Sec 3D, Form Teacher)



Sec 3D



SAF medics work both in and out
of SAF camps.



Thank you
medics for
helping and supporting
those in need during this
difficult time. I am thankful for
the effort and care you put into
helping government agencies
and SAF servicemen.
~ Kedric Ng (Sec 1G)

Thank you SAF medics
for all the work you have
done. You are the unsung
heroes who have put
your lives on the line to
treat our SAF. So here's
a sincere thank you
for all your
hard work!
~ Ian Lim Weiqi
(Sec 2H)



Thank you for your
contributions! It is not easy to
be in full personal protection
equipment every day! (I can't
even wear a mask for that long!)
~ Joel Lee (Sec 2A)



Dear SAF Medics,
Thank you for being in the frontline
for us when we are in times of crisis.
Thank you!
~ Zenith Tan (Sec 1H)



Gabriel Oher (Pri 4G)



Pri 4G

Thank you for working around the
clock and serving on the frontline.
Thank you and we appreciate you.
~ Pri 4G



SAF's healthcare workers
don full Personal Protective
Equipment for long hours
each day to do their jobs.

Thank you
SAF medics for
working so hard despite
being generally unnoticed.
Please continue to work
hard to protect Singapore
from this pandemic.
~ Raphael Teo (Sec 2H)



The medics from
SAF are very brave.
They are keeping
Singapore safe.
While we are safe
at home and in
school, they are
risking themselves
to protect the
country. They show
the Marist motto
of Determination.
We would like to
thank them for
their service.
~ Pri 5D



Pri 5D



Dear Medics,
Thank you for your
service in the battle
against COVID-19.
I wish you good health
and strength, both
mentally and
physically,
to carry on.
~ Jay Soh
(Sec 2A)



To the SAF medics, thank
you for helping out during
this tough times. I know that
you have to wear Personal
Protective Equipment
every day and you are not
frequently acknowledged.
I would like to tell you that
my class and I are extremely
supportive of you all! I
hope that you would stay
safe. Thank you for your
efforts that continue to
keep Singapore safe!
~ Sec 4F



Sec 4F

SAF STANDING DOWN FROM CCF

SPEECH BY COL DARYL TAM, COMMANDER SAF CCF@EXPO



“It has been 80 days since I received a Whatsapp text from CARMO to meet him at MOH on 17 April afternoon. We were then given just over four days to equip, set up, set in place systems and processes, understudy and take over Woodlands Health Campus to provide medical support to the 1,800 patients in Hall 5 and 6.

During that period, the main challenge faced by the team in Expo was dealing with a situation that we had not trained for, a situation that we had to quickly adapt to. As the Defence Minister highlighted in his SAF Day speech on 1 July, supporting a Community Care Facility and caring for COVID-19 patients was not a task that we had trained for. We had not trained for this. We were not trained to manage and treat thousands of patients infected with a very contagious disease. We were not trained to manage a bed capacity in two Halls that was higher than the entire bed capacity of Singapore General Hospital.

But on the same 1 July, as we do every year, we pledge to preserve and protect our country with our lives. This was an unprecedented crisis of a generation, even beyond SARS. It required a paradigm shift in our roles. For us here at CCF@Expo, we were no longer in our traditional Combat Service Support roles, in support of forces in the frontline. We were now the tip of the spear, on the frontline, on the ground, in the Halls, facing potentially fatal consequences.

But because of our imbued professionalism, strict discipline and an embedded culture of safety, to quote our Defence Minister again, our men and women, together with our partners, rose to the occasion and successfully completed every task assigned safely, without any member of the team getting infected and without any patient fatality. Mission Success, Safety Always.

To our Chief of Army, on behalf of all 373 members of the task force at CCF @ Expo, I thank you for your trust and confidence.

To WHC, as we make a graceful exit from Expo as a trusted partner, we thank you for your camaraderie, trust and support. I am certain that this is not the end of our journey together but just the end of the beginning.

To the members of the task force, thank you for walking through the storm with me. We have held our heads up high, we have not walked alone and as we see the end of the storm, we look forward to a golden sky for Singapore. We have shared many 感动流泪 (touching) moments. We have come together as One SAF, from Army, Navy and Air Force, to Seek out those who need help, to Save lives and to Serve the Nation.”

COL DARYL TAM



Read the front-liners' thoughts here!





INTERVIEWS

“We help to free up so much more resources in the hospitals. It is a very good thing for the medical fraternity as a whole, and the medical resources for the country as a whole, that we are able to do this.”

“We are using our expertise to help in this fight against COVID-19. This is a whole-of-society effort. The fact that we are able to deploy NSmen to help in this period shows that the National Service (NS) system is very important. It gives Singapore an option to bring people in (to help) in times of crisis”

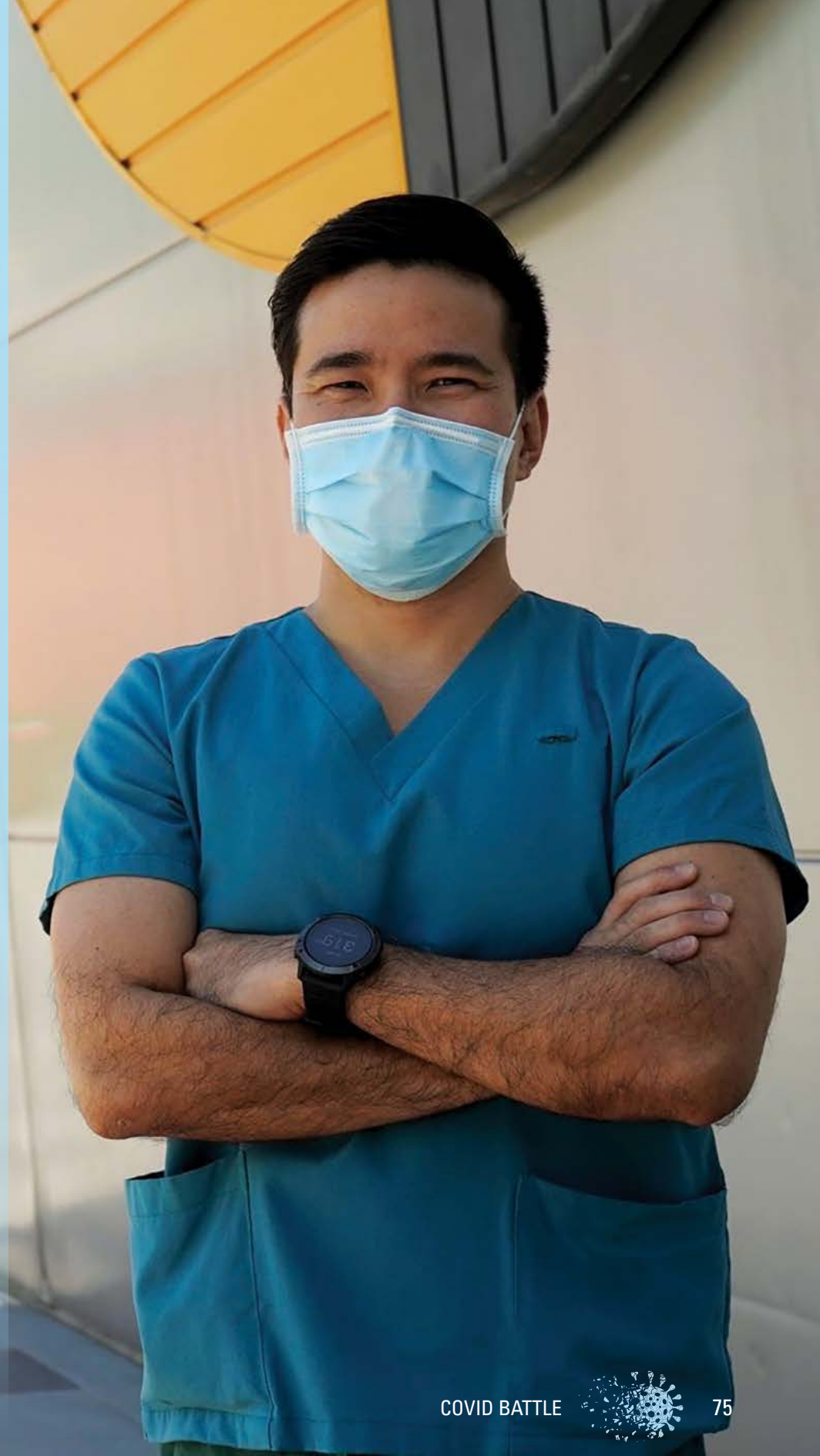
**- LTC(NS)(DR) GABRIEL CHEONG,
COMMANDING OFFICER, 2 CSH**



“Some of the medics are not healthcare workers in their civilian life, and hence may not be attuned to the intricacies of the medical nuances in patient care and safety. However, we managed to overcome this with good pre-deployment training, coupled with guidance and supervision by experienced Senior Medics and Nursing Officers. In addition, with the presence of familiar faces of their Medical Officers and Officers Commanding (OC), they are well supported to carry out their roles professionally and safely.

At times of crisis, our robust NS training has proven to be instrumental in staying operationally ready. The discipline and camaraderie built up through years of NS have also enabled us to mobilise rapidly and rise to the occasion. For the medics, the yearly refreshers and drills have also equipped them with professionalism and confidence in carrying out their roles now. A strong SAF and Medical Corps has enabled us to respond robustly in this whole of nation effort.”

**- LTC(NS)(DR) BERNARD LIM YON KUEI,
COMMANDING OFFICER 8 CSH.**



“We always start our shift with a briefing by the Operations Team and Medical Team. The brief will include reminders on the importance of wearing our PPE properly and looking out for each other. It will also include the important issues or things that require follow up by the Medical Team. Once the briefing is over, we will put on our PPE and enter the hall to take over from the previous team.

Once inside the hall, we help out in the medical post by triaging patients who are unwell or need to be reviewed. We also help in the medical check-ups for newly admitted patients. Usually, we will stay in the hall for three hours before the next team takes over so that we can take a rest. This cycle will repeat at least twice before we end our shift.

Every time we are back for ICT, we will refresh our medical skills and work together as a CSH battalion during deployments. I can firmly say that even though we only come back as a unit once a year, the training that we received at each ICT makes it relevant so that when the time comes for us to be deployed as a unit, we are confident and ever ready to do our job professionally.”

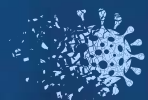
- 2WO(NS) DESI M AMIN, 8 CSH.



“There was a particular patient inside the hall that I was treating at the sickbay because his condition was more complicated. At the end of the day, the patient was confiding in us about all his worries and issues at home. That was memorable for me because I could feel that during our time here at the CCF, we were able to make a small positive difference for these migrant workers.

My parents are both very supportive. My mum is still currently in service, and she understands the role that SAF has to play in our fight against COVID. My eldest daughter was initially always crying when I left the house for work. But recently she would say that “daddy is going to fight the virus” when I leave for work. That is highly motivational for me to know that even my three-year-old daughter acknowledges our fight against COVID.”

- CPT(NS)(DR) JONATHAN TAN, 8 CSH



“As a non-medical personnel in my civilian life, the yearly ICT has always been a chance for me to refresh on the different medical procedures and tasks for a Medic. This year, our ICT is an actual deployment instead of just training. We are adequately trained and guided by the Senior Medics during the shifts. My challenge during this operation lay in handling the patients with confidence, but with the guidance by the Senior Medics, we were able to handle all the tasks as a team successfully.

To our fellow soldiers in this fight, our actions matter. The migrant worker patients at Expo built our country directly and indirectly. Now is our chance to take care of them during their recovery process.”

- CPL(NS) MUHAMMAD ASIF BIN MUSTAZA



SWAB AND ISOLATIONS FACILITIES AT CHERRYLOFT RESORTS

"It is always humbling retracing the steps to the beginning of all great endeavours, and HQ SIF was no different.

I still recall receiving a call from then CARMO, COL(DR) Lee Wei Ting, on a Sunday afternoon (No good things ever begin with a call from the Chief on a weekend). When I reached camp, I was tasked to raise the first Swab and Isolation Facility (SIF), as part of the national effort to stem the outbreak of COVID-19 in the dormitories. So began a 3-month long mission, one that everyone can look back on with pride.

The scope of the initial mission was to establish a facility that would help with the swabbing and holding of patients, thus helping to relieve the load on the hospitals. With a platoon from Medical Response Force (MRF), we took over

control of CherryLoft Resorts and quickly linked up with the teams from facility management and security. Within a day, the location was operationalised and ready to receive patients.

For the ground team, the mission was to swab all incoming patients and to ensure that they are housed and fed. Infection control had never been more important, and the MRF platoon was the perfect team for this mission. For the command team, it was important to ensure the entire facility and its external stakeholders worked harmoniously, while ensuring that the ground team's conditions were optimised for their role.

This was during the initial days of the outbreak, when there was no vaccine, when the fog of war was all around us. No one knew how long

this deployment would be, or how it would evolve. Everyone was nervous, but at the same time focused and disciplined. It was heartening to see how the army leaned forward to support our mission. We were augmented by officers from the HQ Ammunition Command, who quickly adjusted to the tempo and mission. CSSCOM also worked its magic, ensuring all manner of supply and infrastructure were made available to ensure mission success.



The scope of the mission rapidly ballooned with the case-count, and our small team had to take over the neighbouring Civil Service Club @ Loyang to make more space for patients. Similarly, once the task was given, it was operationalised rapidly and ready to receive.

Within a few weeks, MOH reached out and sought our assistance in establishing more SIFs, citing our efficiency and professionalism as key reasons for this request. There were also competing demands, as the CIF also required the Army's support. The decision was made for the ground team to be transferred to the CIF while the command team stayed to ensure proper handover to the restructured hospital/polyclinic medical teams.

As a result, the command team pivoted and formed HQ SIF, which served as a nerve centre above all SIFs. The HQ helped to interface with all the other Army-led elements of the JTF, freeing the SIFs to focus on their ground tasking.

We assisted MOH in the setup of new SIFs, serving as consultants to help the ground team with their processes and ultimately their HQ that they report to. At the end of the 3 months, HQ SIF helped to operationalise 13 SIFs, all of them operating with the same protocols that were crafted by our team. It was a great experience to see civilian hotel operators, restructured medical or operational staff and the Army team working in unison for a common mission.

As all the SIFs stabilised, emphasis was required elsewhere in the fight against COVID-19. HQ SIF officially handed over its function to JTF and did its best to ensure all processes were transitioned smoothly. We look back today, with pride at what we have achieved, satisfied that we have done our part in the fight against COVID-19."

-MAJ(DR) ZHANG HAO TIAN



HQ SIF

HQ SIF comprises of the Ops Monitoring cell, Transportation cell, Results Retrieval cell, Conveyance cell and the Forward Support cell.

Ops Monitoring cell consists of ME3 Azmi, ME2 Muhd Zulhimi Bin Lukmanuddin, ME2 Judah Tan Jung Hong and 3SG Daniel Robert Pillai. The function of this cell includes the daily tracking of: (1) bus movement between SIFs and dormitories, (2) medical teams operating in their respective SIFs and (3) logistics status of SIF Ops room. The objective is to ensure smooth transportation of all the patients from their respective dorms to various SIF facilities and other decant facilities.



The daily routine of the cell involves getting the forecasted bus schedule and details from HQ SIF Transportation cell. From there, we monitor the progress of the bus movement and relay critical information that the SIFs require.

A standard template is to be sent to various SIFs in the morning about the number of patients they are expected to receive. This will allow the SIFs to be well prepared and organised for the day.

The template consists of the following:

Driver details

Name:

IC/FIN No:

HP:

Bus No.:

We provide live updates to the SIFs to keep them in the loop on the buses' locations and if there are any changes on the estimated time of arrival.

Bus arrive Dorm: xxxx hrs

Bus departs Dorm to SIF: xxxx hrs

Total No. of Pick up: xx Pax

ETA to SIF: xxxx hrs

Once the bus departs, patient details are submitted to SIF immediately, allowing them time to prepare. This facilitates the admission process at SIF thereafter.

ME2 ZULHIMI
MEMBER OF HQ SIF OPS MONITORING CELL



SAR OPERATION DURING COVID

“On 8 June 2020, I took part in my first SAR mission. It was during the Circuit Breaker and as part of the RSAF’s COVID measures, I was serving my isolation with the aircrew in base when the scramble call came in. Together with the RSAF Rescue 10’s (R10) six-person crew, we helped to heli-evacuate a severely ill patient from a cargo ship to Singapore General Hospital. As I was being winched down, I was nervous but kept my mind on how I was going to treat the casualty. Carrying out treatment in the air is definitely challenging and more difficult, especially because of the area constraints.

We had to squeeze in to try to get into a good position so that we could put in the intravenous (IV) plug. There were a lot of vibrations, but we stabilised ourselves as best as we could to perform the procedures properly.

The COVID-19 pandemic added more complexity and challenges to this SAR mission. For the medical crew, apart from the heli-related gear such as the helmet, harness and life preserver unit, we had to wear the full Personal Protective Equipment (PPE) which include air-tight goggles, an N95 mask, gloves

and a gown. Before the patient was winched up, we had to ensure that the patient wears the full PPE as well. After the SAR mission, the aircraft had to undergo a cleaning procedure and we had to take a shower using special disinfectant soap. This SAR mission will always remain memorable to me as it reminds me of why I chose to become a doctor in the military, to serve the nation and to do something different from what I would do in a hospital, such as humanitarian aid or Search & Rescue.”

- CPT(DR) TABITHA ANG



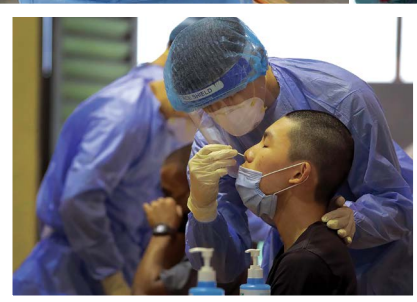
THE COVID SURVEILLANCE UNIT

The COVID Surveillance Unit (CSU) was set up in October 2020 as part of the SAF's efforts to safely resume In-Camp Training (ICT) for NSmen during the COVID-19 pandemic, with routine Polymerase Chain Reaction (PCR) testing. They initially comprised newly minted Medical Officers and Medics from the SAF Medical Training Institute (SMTI). This allowed CSU sufficient time to recruit and train COVID Surveillance Officers (CSO) to safely and proficiently handle the swab operations, involving approximately 14,000 swabs monthly. Since then, CSU has doubled its manpower with NSmen signing on after their ORD. The CSU proved to be a key enabler for the SAF to continue training and operating safely amidst the COVID-19 pandemic, both locally as well as overseas.

A year on, the CSU has completed over 1,800 swabbing operations. The CSU has also expanded its job scope to provide swabs for SAF personnel identified as close contacts of COVID-19 cases, allowing rapid contact tracing to protect the health of soldiers and to enable the operational

readiness of the SAF. In the second half of 2021, the CSU was performing an average of 1,000 daily swabs, increasing in tandem with the rising number of community COVID-19 cases. Without the CSU, many of our ICTs would not have been possible.

The training and adherence to infection control processes had also kept our CSOs safe with no recorded cases of COVID-19 infections among them.



IISS SHANGRI-LA DIALOGUE SHERPA MEETING

The Sherpa Meeting is a precursor to the annual Shangri-La Dialogue; Asia-Pacific's foremost defence and security meeting which is a summit attended by ministers and state officials from dozens of countries. Although the Shangri-La Dialogue was cancelled late in the planning stages due to a sudden rise in national COVID cases, the organisation of the medical support for the Sherpa Meeting and the planning for the conference was indeed an unprecedented challenge in view of the rapidly changing pandemic situation.

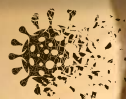
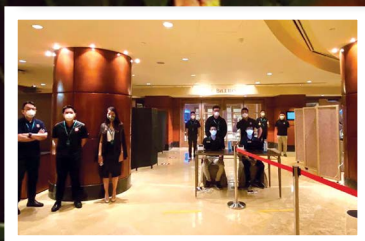
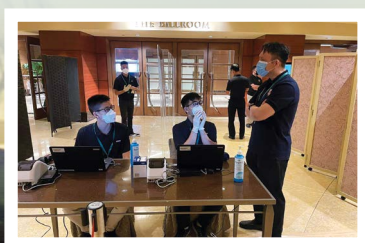
Initial plans were for a full in-person conference with 80 foreign and 20 local delegates at both the Fullerton and the Fullerton Bay Hotel. Delegates were expected from 26 countries, including the European Union. However, as many delegates' travel plans were hindered by the pandemic,

a week before the conference, the COVID-19 Multi-Ministry Task Force directed the team to convert Sherpa 2021 into a hybrid event, with local delegates physically attending the meeting at the Fullerton Hotel, and international delegates attending virtually.

The medical planning team led by LTC(DR) Goh Jit Khong and SLTC(DR) Adrian Tan, which comprised members from the CSU and MMI, took charge of the coordination, training and force preparation prior to the event. Pre-event Antigen Rapid Testing (ART) was conducted daily before delegates were allowed into the conference venue. A centralised ART station was dedicated to test local delegates. Stringent precautionary measures such as safe distancing, mask-wearing, temperature-taking, cohorting and regular disinfection of common

areas were enforced. These measures went a long way in ensuring participants remained safe.

While reflecting on the team's journey in the lead-up to the meeting, SLTC(DR) Adrian Tan felt it was unfortunate that the event was down-scaled at the latest possible juncture. However, with every change of concept, the team displayed adaptability and fortitude, never allowing the twists and turns experienced with COVID-19 developments to derail them from their goal of ensuring the continuation of Sherpa 2021. This culminated in a successful hybrid conference held from 18 to 19 January, a good experience despite the challenge.



SAF VACCINATION OPERATIONS

ARMY

The SAF played an important role early on in Singapore's COVID-19 vaccination effort. Shortly after the government's announcement of plans for national COVID-19 vaccination, the SAF started a vaccination programme for our SAF personnel. SAF's vaccination operations initially targeted healthcare workers and front-line personnel, and subsequently expanded to include all medically eligible active personnel in the SAF. The aim was to protect our servicemen

and women who were ensuring SAF's operational readiness and to enable the wider resumption of training and force generation activities.

The Army established its first vaccination centre at Sungei Gedong Camp on 2 March 2021. Subsequently, five other vaccination centres were set up in various camps around the island, namely Selarang, Kranji, Pasir Laba, Nee Soon,

and Pulau Tekong.

The vaccination operations involved a total of 235 servicemen, including Medical and Logistics personnel from their respective Divisions. The operation ended successfully on 27 August 2021, with a total of over 80,000 doses administered and zero vaccination errors.



AIR FORCE

In 2020, the RSAF was involved in various vaccination operations. Firstly, AFMS successfully provided COVID-19 vaccinations to more than 10,000 eligible personnel over a span of eight months. This ensured the force health protection of our airmen and airwomen, and facilitated uninterrupted training and force generation activities.

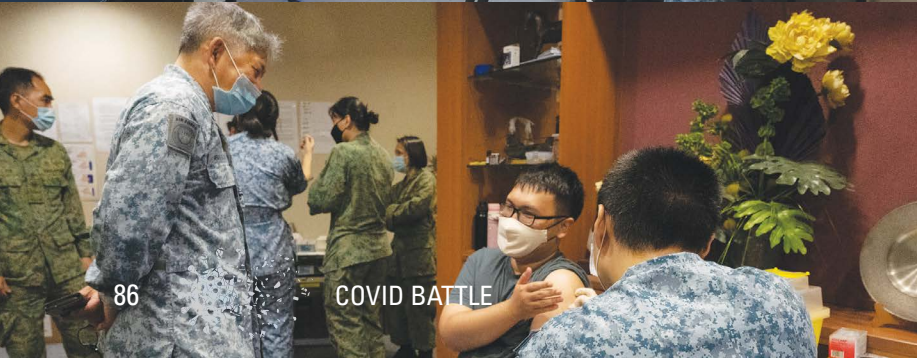
Secondly, AFMS deployed Medical Officers and Military Medical Experts to support WoG home vaccination operations, administering vaccine doses to hundreds of vulnerable homebound individuals and nursing home residents.



NAVY

The shipboard environment poses higher risk of COVID-19 transmission attributed to pooled ventilation systems as well as enclosed living spaces and working quarters. As part of the RSN's COVID-19 management strategy to "Deploy Clean", "Remain Clean" and "Return Clean", Navy Medical Service (NMS) promptly stood up in-house vaccination centres to provide primary series vaccinations for up to 7,000 servicemen over a short span of six months from January 21 – June 21. This was later followed by up to 1,000 booster vaccination doses between October 21 – December 21. After the vaccination operations, more than 98% of servicemen have met their vaccination requirements.

Similarly, NMS also deployed Medical Officers and Military Medical Experts to support the Whole-of-Government home vaccination operations, administering vaccine doses to hundreds of vulnerable homebound individuals and nursing home residents.



EMERGENCY HOUSING TASK FORCE



The Emergency Housing Task Force (EHTF), which began operations on April 2021, provided needed housing to COVID-19 positive migrant workers who were well but could not be discharged to their place of residence for risk of community spread. Resources were dedicated to ensure their well-being during the recovery phase.

The Division Medical Group (DMG) contributed to the planning at EHTF HQ, coordinating closely with ground medical elements provided by MMI.

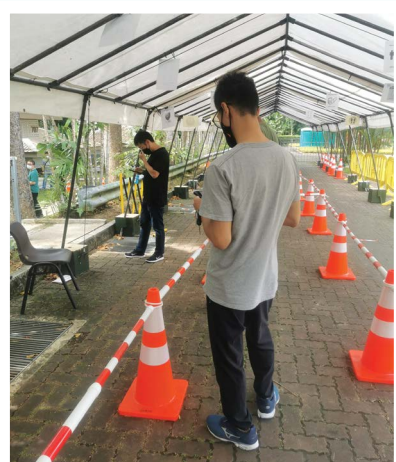
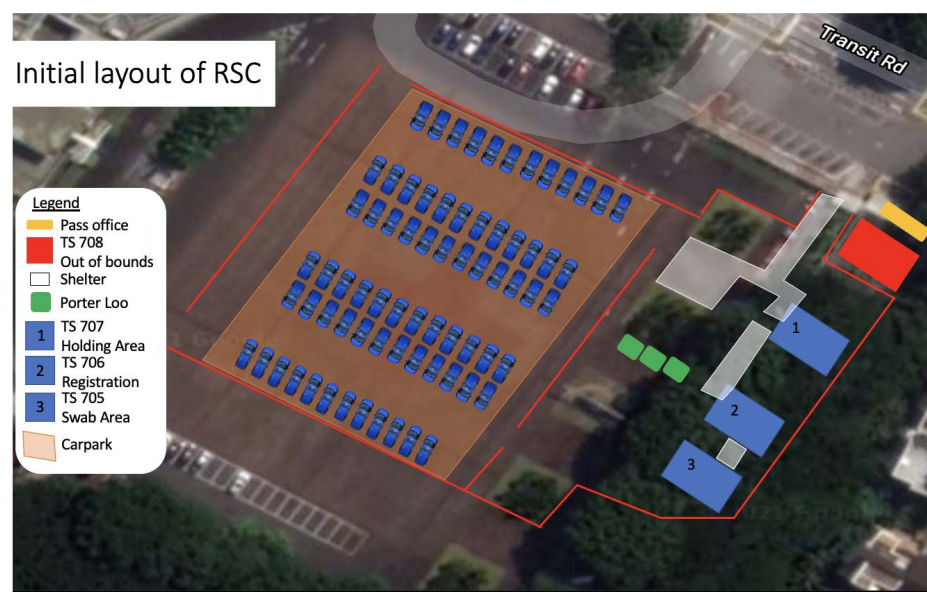
The SAF's involvement in the EHTF provided assurance to the nation that the migrant population's needs would be taken care of during the pandemic. It served to offload the burden of public healthcare institutions dealing

with an already overwhelming load of patients flooding the emergency departments. This allowed precious medical resources to be directed to those in dire need.



REGIONAL SWAB CENTRE

Following the outbreak of COVID-19 infections at Tan Tock Seng Hospital (TTSH) in end-April 2021, SAF mounted a swab operation on 2 May 2021 for all SAF personnel who visited TTSH within a two week window. This was the first mass swab operation within SAF. In anticipation of future outbreaks, the SAF Regional Swab Centre (RSC) was set up within Nee Soon Camp by HQ AMS the following week. The RSC was managed by the CSU. This enabled the SAF to conduct testing for SAF personnel, contractors, as well as members of the public. Subsequently, the RSC also catered to rostered routine testing for all critical and high risk populations within the SAF.



SWAB OPERATIONS @ BIG BOX

In May 2021, Western Singapore was not spared with soaring COVID numbers nationally. MOH noticed a spike of COVID positive cases for personnel who had visited JEM and Westgate Shopping Centre. The Health Promotion Board (HPB) contacted HQ Medical Corps (HQMC), and HQ Army Medical Services (HQ AMS) was tasked to assist in the swab operations at Big Box.

On 17 May 2021, HQ AMS sprang into action by forming a task force led by MAJ(DR) Zhang Hao Tian, comprising ME4 Daniel Choo (Medical Ops Officer), ME2 Karthigayan (Med Ops WO) and LTA Lim Wen Wei (CSS Log Officer). A walk of the ground with HPB commenced on the day itself. Concurrently, a swab support team was established with members from the CSU, joined by MMEs of various medical services. Admin Support Assistants (ASA) were part of the 30 swab-trained personnel involved in the swab effort.

HPB oversaw area setup, queue management and logistics (food and PPE). HQ AMS was tasked to perform approximately 5,400 swabs to support HPB. This amounted to around 1,500 swabs a day over four days from 19 May 2021 to 22 May 2021. The key consideration was to achieve zero safety incidents in patient care, sample management and PPE posture.

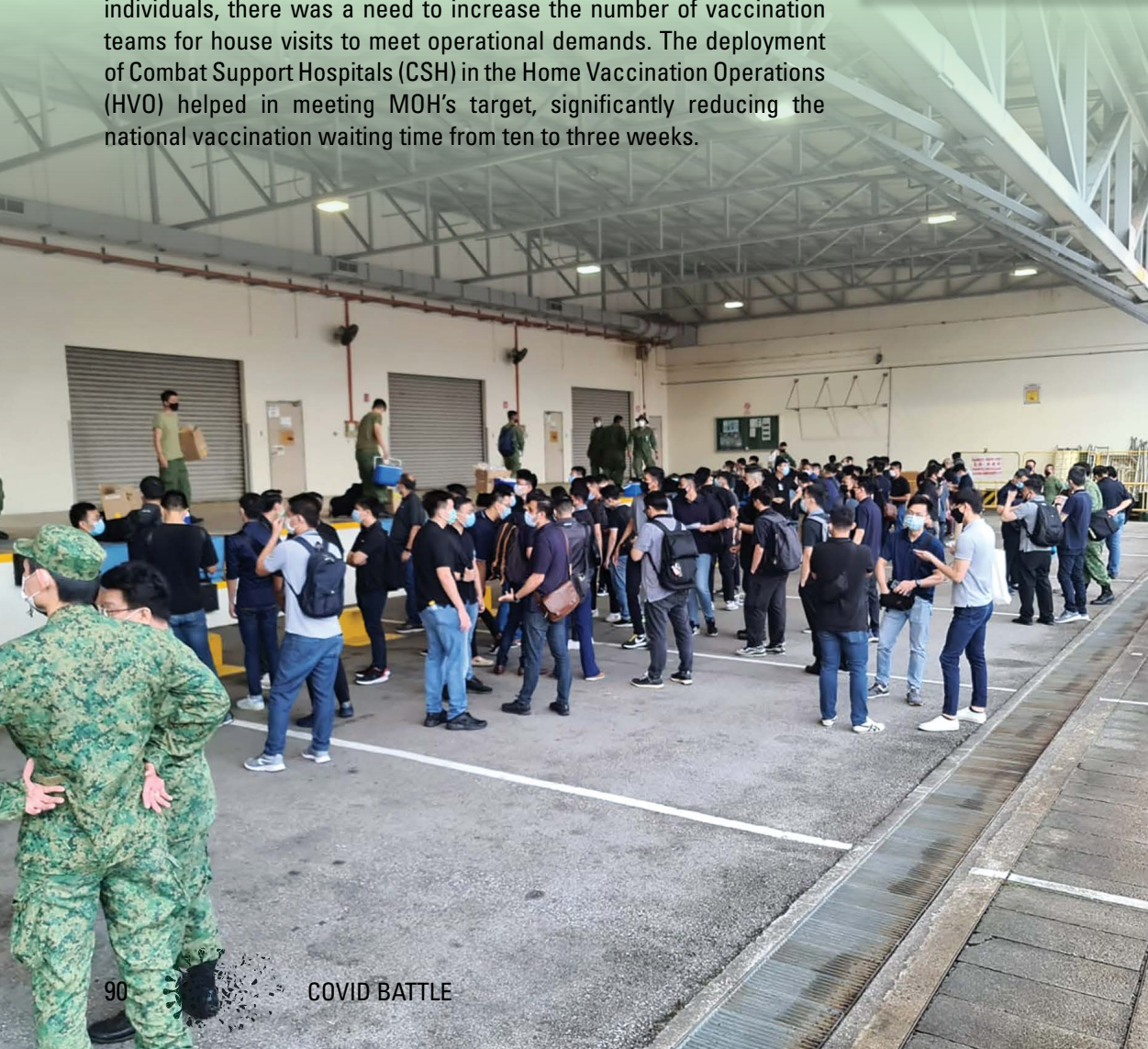
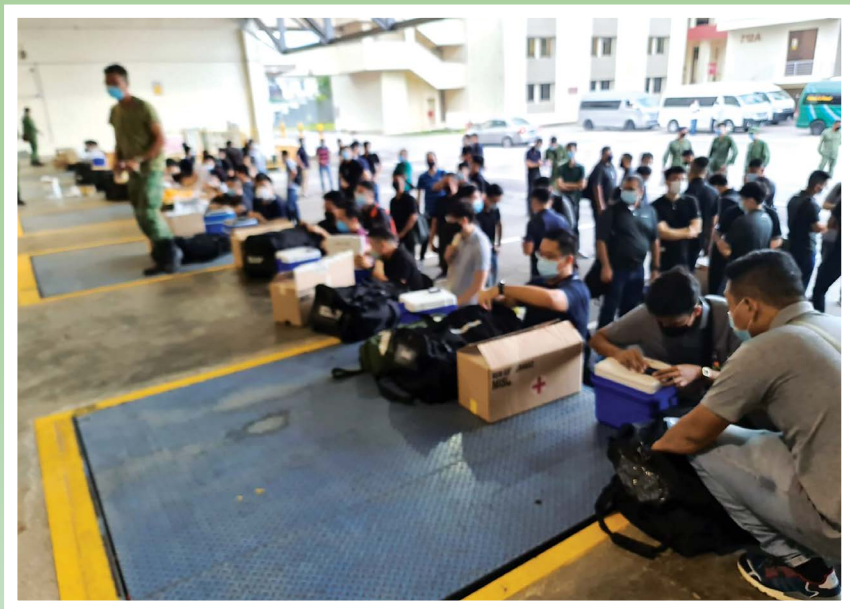
The operation was carefully planned, communicated and well executed, with HPB sorting out the nominal roll and registration. HQ AMS oversaw the swabbing of personnel, and the packing of swab samples to be sent to the lab for processing. The swab team found the operation very meaningful and were proud to contribute to the national swab effort. The swift set-up and successful operation without any safety incident once again displayed the capability of the SAF and strengthened partnership with national agencies.



HOME VACCINATION OPERATIONS

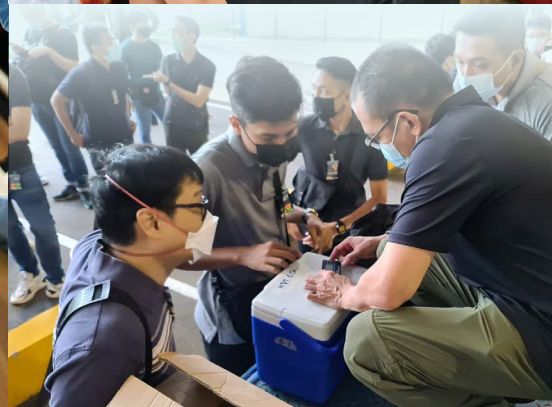
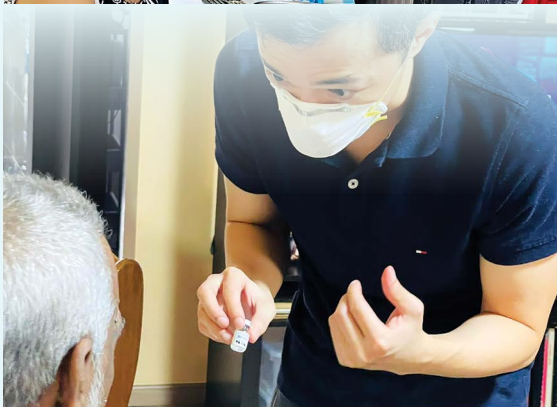
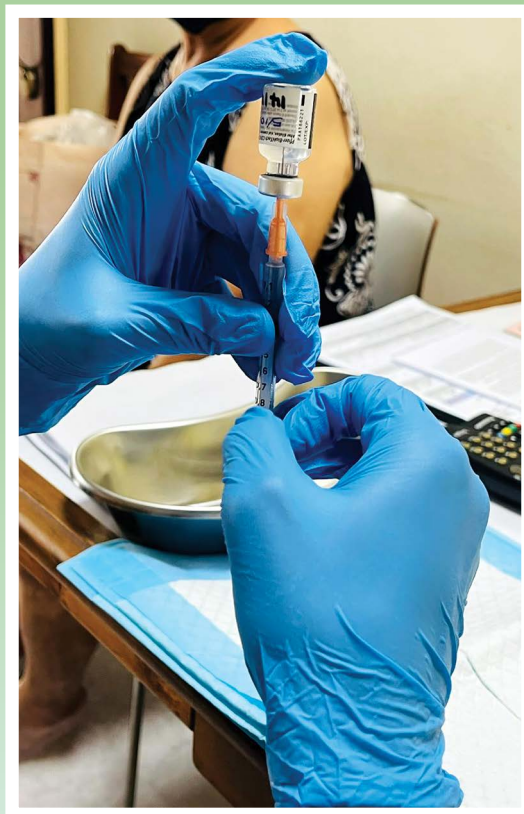
As of 31 August 2021, 80% of Singapore's population had received two doses of the COVID-19 vaccine, while 83% had received at least one dose. Among the unvaccinated population, those of concern were the pool of approximately 110,000 seniors aged 60 and above; as well as around 5,000 housebound individuals who were either immobile or have special care needs. These two groups were more likely to suffer severe COVID-19 disease from the Delta variant - the dominant circulating strain at the time. Vaccination efforts through vaccination centres, polyclinics, public health preparedness clinics, and mobile vaccination teams then were inadequate to reach these two high risk groups.

With the shift in vaccination focus by MOH towards housebound individuals, there was a need to increase the number of vaccination teams for house visits to meet operational demands. The deployment of Combat Support Hospitals (CSH) in the Home Vaccination Operations (HVO) helped in meeting MOH's target, significantly reducing the national vaccination waiting time from ten to three weeks.



HQ AMS tasked 1 and 3 CSH to support the HVO during their ICT. They were sent to households during Singapore's safe re-opening phase to administer booster shots. A total of 374 NSmen from 1 CSH, 3 CSH and attachments from 1 MS were committed to support the HVO. The relevant medical training received by the units during their ICT were crucial in this operation.

Many NSmen found it especially meaningful to contribute to the national vaccination effort. At the national level, this operation allowed the SAF to demonstrate its value in peace. The significant reduction of waiting time and the ability to reach out to the vulnerable were well received by the public.



COVID TREATMENT FACILITY

What started as an epidemic, evolved into a global pandemic and changed the world as we knew it. In the face of a sudden and swiftly emerging health crisis, COVID-19 unveiled the fragility and vulnerability of life, placing a significant strain on our healthcare systems. In October 2021, with the surge in COVID-19 community cases, SAF NSFs and Regulars comprising medics and nurses were called upon for assistance, to support COVID-19 Community Treatment Facilities (CTF) at Ren Ci Community Hospital and NTUC Health Nursing Home at Tampines. The CTFs were set up to conserve beds for those requiring acute and critical care.

I was part of the SAF team deployed to the CTF operating at TTSH Sub-acute Wards based at Ren Ci Community Hospital. We provided nursing care and rehabilitation support for patients who were discharged from NCID but still required medical care such as oxygen supplementation and medications administered intravenously. Prior to our deployment, we underwent an onboarding training programme by TTSH on infection control and nursing care required for patients, followed by a week's attachment to a normal ward under the supervision of nurse preceptors.



When I answered the call for nursing volunteers at CTF, I knew that I would be taking a blind step in the dark. I was thrilled and thankful that I could finally contribute when my nursing counterparts needed assistance. However, I soon found myself in a dilemma of managing conflicting emotions when I also realised that I had a duty to my family; my elderly parents, my young son, and my immunocompromised sibling, with the potential risk of transmission of the virus. With strict compliance to infection control measures, I convinced myself that I would be adequately protected within the facility. Thankfully, my husband stood by my desire to serve and assured me that it would all be okay.

Volunteering at CTF was not all about attending to the medical needs of patients, we had to understand their emotional needs as well. The elderly patients were unable to have visitors while in isolation and we played a key role in allaying their anxiety and fear. Needless to say, it was gratifying to forge therapeutic relationships with the patients. While I have developed clinically and professionally as a nurse, this CTF journey has been an overwhelmingly personal one. I've witnessed resilience in patients, unconditional love by some of the patients' relatives who relentlessly cheered them on via video calls, and camaraderie amongst medical, nursing and allied health workers. No amount of training would have prepared any of us for the unforeseen battles of a pandemic, both emotionally and physically. There is a simple philosophy of life that I live by, "If I feel good, I do it". I am glad that I embarked on this journey. Otherwise, I would have only lived to regret not having taken that bold step forward.



-MS RADHIKA D/O GOPALAN, ASSISTANT MANAGER, MMI



SUPPORTING OUR COVID-19 FRONT-LINE FIGHTERS

NMS DEPLOYMENT TO KHOO TECK PUAT HOSPITAL ACCIDENT & EMERGENCY

It was a Sunday evening on 20 February 2022 when Navy Medical Service (NMS) received the call to support the Primary Healthcare Institutions (PHI) due to the surge in Omicron cases. Within two days, a team of 14 medical personnel including two Medical Officers (MO), three Military Medical Experts (MME) and one NSF Medic from NMS were deployed to Khoo Teck Puat Hospital (KTPH) A&E from 22 February 2022 to 11 March 2022 as part of the medical task force to support our PHI. We traded our grey Navy uniforms for purple and green KTPH scrubs, and our team reported for duty with a mix of excitement and uncertainty as we entered a new working environment.

The A&E was crowded with more than hundreds of patients on beds lining every hallway as the nurses and doctors moved around tirelessly to provide care. Our medics and MMEs assisted the nurses with providing care and serving meals to the patients while the MOs helped to review the patients. One of the patients remarked that she has been waiting for hours for a consult and was very relieved to have a MO attend to her. We were rewarded with the smiles from the patients that we served and the gratitude of the frontline workers as we strived to alleviate their workload. At the end of three gruelling but meaningful weeks, we have agreed to extend our deployment for another two weeks and I believe this is a testament to the great work and support that we have provided in the hospitals.

- CPT(DR) CHIEW WENQI

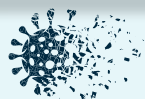


CPT(DR) Chiew Wenqi (NMS MO) reviewing a patient in KTPH.



ME2 Soh Kian Keong (NMS MME) assisting a patient to walk from the toilet back to his bed as the nurses tended to other patients in the busy KTPH A&E.

LCP Eugene Tan (NMS Medic, far left) assisting a nurse to measure the blood pressure for patients in the tentage area of the KTPH A&E.



AMBULANCE CRAFT MEDICAL TEAM DEPLOYMENT TO TTSH AND NCID

The Ambulance Craft Medical Team's (ACMT) In-Camp Training (ICT) was planned as per our usual annual schedule on 28 February 2022. However, when we received the call to deploy on 25 February 2022, the team scrambled over the weekend to prepare and engage the NSmen for the task ahead. In total, 30 personnel volunteered to be deployed to help in Tan Tock Seng Hospital (TTSH) Pharmacy, TTSH A&E and National Centre for Infectious Diseases (NCID) COVID wards. The personnel comprised 24 NSmen (three MOs and 21 Medics) and the active teams (two Regular MOs, two MMEs, two NSF MOs).

We were initially apprehensive if the team could match the high operations tempo in TTSH/NCID.

However, everyone stepped up quickly. By the third day, our team was well integrated within the hospital, and we saw the tangible effects of our assistance. Daily outpatient prescription backlogs dropped from hundreds to zero. One NS medic even commented that the initial long snaking queues around TTSH has disappeared, and the patients seemed happier due to the short waiting times.

It was heartening to see so many of our NSmen, Regulars and NSFs rising to the occasion and stepping out of their comfort zones to work closely with the hospital staff.

In order to achieve zero COVID-19 infections amongst the team, they had to be vigilant

with their infection control measures, such as donning of PPE. The team also came up with a sustainable work-rest cycle to combat the discomfort and fatigue from prolonged PPE posture.

While this deployment was completely different from the standard ACMT ICT, the strong sense of purpose and camaraderie was palpable within the teams, seen through the mutual support the NSMen provided to each other amidst the fear of COVID-19.



CPL(NS) Lee taking a COVID-19 patient's vital readings at TTSH's A&E.

CPL(NS) Jaipal (front) and CPL (NS) Benjamin Kang Yue Sheng preparing medication for the patients at TTSH's pharmacy.



Our time spent in KTPH and TTSH has been an overwhelmingly humbling experience. It felt especially meaningful that NMS had the opportunity to help our friends in the public healthcare space during the Omicron wave. This was also a good opportunity for our ACMT NSmen to gain operational exposure as they have also discussed how to improve patient care for the RSN! Dare to Excel!

*The need arose and there came a plea
Please help us in the A&E!
The prolonged battle against COVID
Has made everyone tired and wearied*

*NMS rallied to this call
To support all our frontline workers
To give them the respite that they deserve
As they journey on to seek, to save, to serve*

ANONYMOUS MAR 09, 2022 04:00PM

Thank you for being a living testimony of your SAF medical pledge. You've saved [our] lives and reduce [our] sufferings; show[n] care, concern and compassion to all. It has been an honor and privilege 'serving and battling' alongside with all of you! PS: if you need tiger balm to soothe those achy legs, we can get you staff discount. Don't shy :)

ANONYMOUS MAR 09, 2022 03:53PM

THANK YOU

Thank You SAFmen!! Even though I did not interact much with you guys, the impact was still felt by the entire pharmacy :) Thank you for lightening the workload in the pharmacy and lifting the burden from our shoulders, it really means alot to us amidst this challenging period!! All the best in your future endeavors!!

ANONYMOUS MAR 09, 2022 03:56PM

our manpower load has been really bad since idk when (probably forever) and it has been placing stress on us. thank you for volunteering and landing those hands because we really can make do with ANY form of help now. thank you for initiating help, albeit some of y'all are hesitant and shy to do so in the beginning but we could sense the gung-ho spirit in you guys as time progresses! as my favourite artist once quote "life isn't about how to survive the storm; it's about how to dance in the rain", we will make the best out of anything, as infuriating as things get. thank you once again!! :)

ANONYMOUS MAR 09, 2022 02:50PM

Thank you too!

Thanks for helping us negotiate the learning curve at the start, and tolerating our mistakes along the way. We hope our small contribution have been of help to you guys. This short stint have made us appreciate healthcare work more, having seen the sheer amount of behind-the-scenes work. We will help to spread the word to those around us that healthcare is tough work esp in the current climate, and for the patients out there to be more understanding when waiting for their meds!

- CC

ANONYMOUS MAR 09, 2022 03:48PM

A Big Thank you! 😊

Hey SAF peeps thank you for all the endless efforts you all have put in helping us with the packing of medications. It has not only helped to lighten our workload but it has also helped shorten the entire wait for the patients out there! My heartfelt appreciation and thanks!

ANONYMOUS MAR 09, 2022 01:53PM

SAF SAVED US!

Our pharmacy manpower has been really bad in the past few weeks and you guys have been such a GREAT help in OP and we are super grateful for that! It really made a difference in clearing the high patient load. While it may have been hard to adjust to the fast-paced environment, we really appreciate your joyful attitude and how you guys never hesitate to lend a hand!

Hope that this short stint gave you a peek behind what goes on in the pharmacy :) Thanks for fighting the daily fires with us. We will definitely miss you guys!

- Suzanne :)

Thanks Suzanne 🙏 appreciate the effort from the Pharmacists for the past few years. Hang on we will make it 🙏 - Alex Goh (ACMT) - ANONYMOUS

ANONYMOUS MAR 08, 2022 01:00PM

Shoutout to TTSH Outpatient Pharmacy

Thanks for taking the time and patience to teach and guide us during our 2 weeks here. This mobilisation allow us to learn the day to day in the pharmacy and appreciate the hardship suffered by healthcare personnel. Hope we didn't make a mess here.

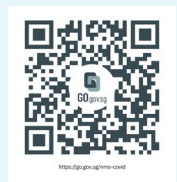
Take care
Lin Jing

ANONYMOUS MAR 08, 2022 10:40AM

Thank you for serving with us in the trenches and taking up the challenge. We are thankful for each of you - Shawn Vasoo

Thanks Shaizun 🙏 - Alex Goh (ACMT) - ANONYMOUS

Snippet of the many heartwarming thank-you notes from TTSH Staff.



Learn about NMS during the COVID-19 era!



SAF DAY 2021 MESSAGE



"NSmen from 2nd and 8th Combat Support Hospital were activated as part of their ICTs to take care of over 5,000 COVID-positive patients at the Community Care Facility in Singapore EXPO. For more than two months, they exposed themselves to the risks of infection but held strong. In the end, they completed their mission successfully. They took care of recovering COVID-19 patients and not one soldier in the unit got infected. I visited them and found their commitment and professionalism exemplary."

-DR NG ENG HEN



[WATCH THE FULL VIDEO HERE](#)

MESSAGES FROM JOINT MEDICAL CONFERENCE ALUMNI



NG HOCK SING'S COVID JOURNEY

"I am a retired SAF soldier, having served more than 30 years in the SAF, with six of those years with the SAF Medical Corps as a Senior Medical Staff Officer. I joined the Ministry of Health as Director Emergency Preparedness and Response (EPR) Division in January 2019, and I would like to share about our journey in the COVID-19 battle."

-COL(NS) NG HOCK SING



[Read about COL\(NS\) Ng's journey!](#)



RADM(NS)(DR) TANG KONG CHOONG'S EXPERIENCE DURING COVID

"I had the privilege of being part of the team in TTSH and had a front row seat to witness how everyone rallied together in this fight. Everyone, from senior management, to medical, nursing allied health and also the supporting staff such as the security and housekeeping personnel, gave their best in this fight."

-RADM(NS)(DR) TANG KONG CHOONG



[Read about RADM\(NS\)\(DR\) Tang's experience!](#)



NAVAL MEDICAL SUPPORT IN THE COVID-19 ERA

Alarm bells first rang when a cluster of highly transmissible upper respiratory tract illness cases attributed to COVID-19, arose from a marketplace in Wuhan, China in December 2019. The first case of COVID-19 in Singapore was soon reported on 23 January 2020. It quickly developed into a worldwide pandemic with strict social distancing measures, vaccination regulations and repeated shutdowns of major cities to assuage the surge in cases. Even after two years, it continues to influence the way we live, work and interact with one another. As a maritime nation, Singapore relies heavily on the sea to bring in essential items such as food, energy and supplies. Any disruptions to our critical sea lines of communication (SLOC) could easily derail our economy. It was hence critical that RSN ships maintained a high level of operational readiness and continued deploying to secure our SLOCs throughout the pandemic.

The shipboard environment poses a high risk for COVID-19 transmission attributed to pooled ventilation systems as well as enclosed living spaces and working quarters. RSN drew important lessons from the experiences of USS Theodore Roosevelt and French ship Charles de Gaulle, two aircraft carriers affected by a COVID-19 outbreak on board, to develop the FLEET COVID-19 Management Framework – “Deploy Clean”, “Remain Clean” and “Return Clean”. This strategy was built on the principles of disease prevention, mitigation and containment, and was validated during Exercise RIMPAC 2020, RSN’s first overseas deployment amidst the pandemic, which set the precedence for RSN’s shipboard COVID-19 medical measures to guide subsequent deployments.

DEPLOY CLEAN

“Deploy Clean” focused primarily on COVID-19 prevention, surveillance and early detection to mitigate downstream effects. Concerted efforts were made to ensure that servicemen adhered to COVID-19 vaccination and booster programmes. Navy Medical Service (NMS) promptly stood up in-house vaccination centres to provide primary series vaccinations for up to 7,000 servicemen over a short span of six months from January 2021 to June 2021. In line with national guidelines, this was later followed by up to 1,000 booster vaccination doses between October 2021 to December 2021. After the vaccination operations, more than 98% of Navy servicemen have met their vaccination requirements. Apart from a robust vaccination programme, the RSN also enforced pre-deployment isolation and testing regimes in order to minimise the risk of bringing COVID-19 onto ships. While these regimes were restrictive, they nevertheless allowed the RSN to remain COVID-free during the pre-Omicron period, despite its continued participation in various bilateral and multilateral exercises.



Providing COVID-19 Vaccination and Booster for RSN servicemen.

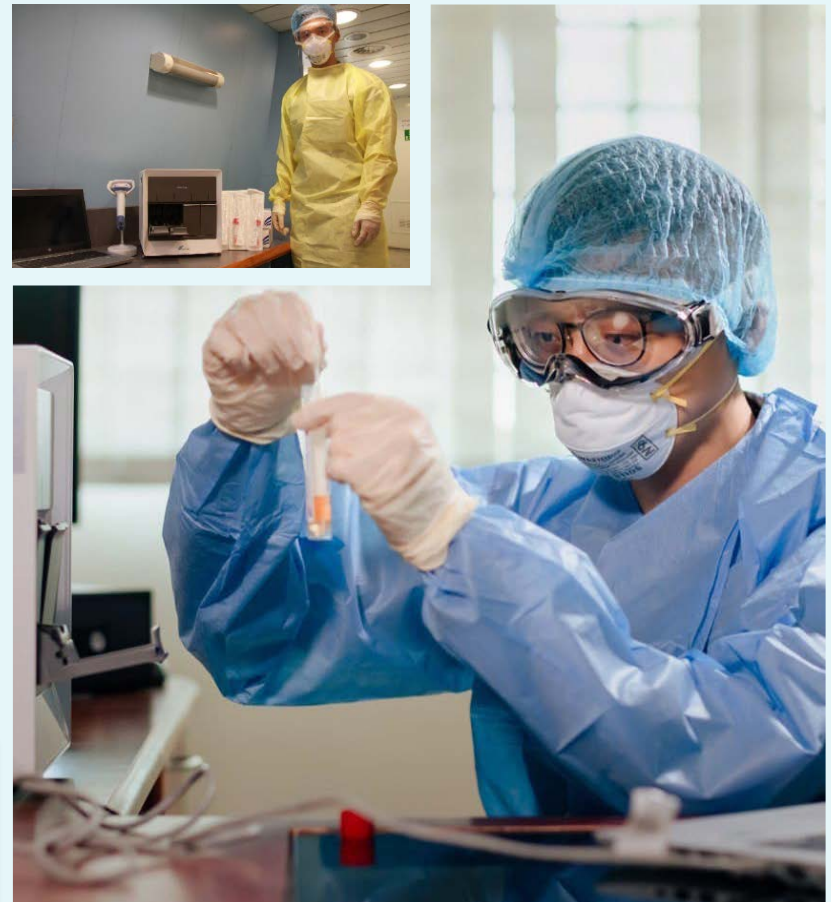


NMS personnel performing PCR Swab Operations for Pre-Departure Testing to prevent bringing COVID-19 on board our platforms.

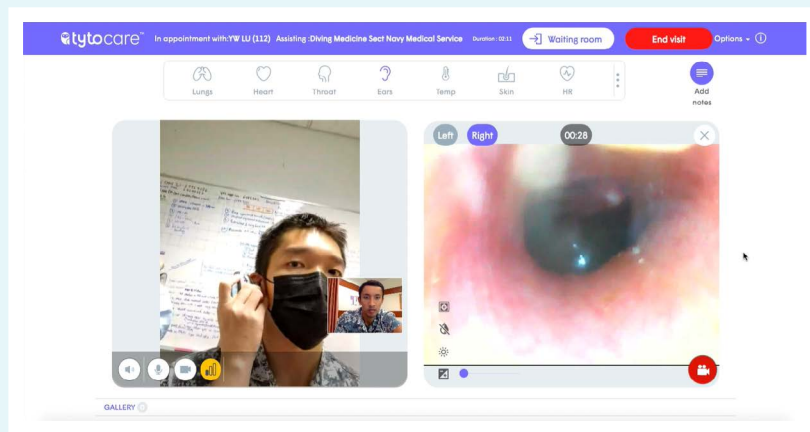


REMAIN CLEAN

The next step of the strategy was to “Remain Clean”. Aside from baseline Safe Management Measures (SMM) that were put in place such as mask wearing, enhanced hygiene and disinfection, cohorting via different watches on ship, and use of enhanced Personal Protective Equipment (PPE), the RSN also adopted other mitigation and containment measures to prevent transmission of COVID-19 on ships at sea. Firstly, rapid testing capabilities including Antigen Rapid Test (ART) kits and point-of-care PCR testing were embarked on RSN ships to enhance early detection, isolation and management of COVID-19 cases at sea. These capabilities provided commanders with an additional level of safeguard to make informed decisions and enable the safe conduct of RSN exercises and deployments. Secondly, the RSN also made airflow adjustments and adopted air-cleaning technologies (such as HEPA filters and air purifiers) to mitigate the risk of COVID-19 transmission at sea. Suitable isolation and quarantine facilities on board were also identified to house confirmed and suspected cases to minimise the risk of spread to the rest of the crew.



The Antigen Rapid Test kits and point-of-care PCR testing capabilities deployed on RSN vessels.



Novel use of Telemedicine to enhance medical care in a shipboard environment (Left) and the otoscopic view of the tympanic membrane in real-time (Right).

The NMS’ COVID-19 strategy ashore and afloat has enabled the RSN to keep its naval combatants safe and healthy, maintain a high level of operational readiness and adapt to new maritime operating norms in the post-COVID world, thereby ensuring the RSN’s continued mission success.

RETURN CLEAN

The final step of the strategy was to “Return Clean”. NMS adopted the use of telemedicine to augment medical care for servicemen with COVID-19 on board deployed RSN platforms. NMS also contextualised and adapted the MOH Home Recovery Programme to the maritime environment, implementing the RSN’s Shipboard Recovery Programme (or Recovery@ Ship), allowing shipboard operations to continue while safely monitoring and caring for mildly symptomatic servicemen who recover in isolation facilities on board ship.

The “Deploy Clean”, “Remain Clean”, “Return Clean” strategy was successfully implemented for all long-duration RSN ship deployments, including Ex Wallaby 2021, Ex Pacific Griffin 2021, Singapore-India Maritime Bilateral Exercise 2021, and Exercise RIMPAC in 2020 and 2022.



MESSAGES FROM JOINT MEDICAL CONFERENCE ALUMNI



NG HOCK SING'S COVID JOURNEY

We called an urgent Crises Management Group (Health) meeting on the eve of Chinese New Year 2020 for relevant Ministries and agencies. This was followed by a brief to the Homefront Crises Executive Group meeting two days later. Little did we know, that would signal the start of one of the most significant challenges to Singapore and our healthcare system – COVID-19.

I am a retired SAF soldier, having served more than 30 years in the SAF, with six of those years with the SAF Medical Corps as a Senior Medical Staff Officer. I joined the Ministry of Health as Director Emergency Preparedness and Response (EPR) Division in January 2019, and I would like to share about our journey in the COVID-19 battle.

At the beginning, the EPR Division was responsible for the quarantine operations and to establish border health controls with the border agencies. Concurrent Appointment Holders (CAH) from MOH and multiple government agencies were activated to man the Quarantine Ops Centres, and border agencies were reinforced with healthcare workers to tighten border health screening.

There were many significant memories. We supported the evacuation operation to bring back Singaporeans from Wuhan with on-arrival health screening and quarantine, and involved almost all accredited ambulance service providers to support the transport of suspected and positive COVID cases. Just as we hit the third month of operation, we had an indication of an emerging cluster at S11 dormitory. It started small, with several rooms infected, but quickly escalated to levels, and blocks. We had to implement “quarantine in-situ” (QIS) when it became clear it was not feasible to move the migrant workers to Government Quarantine Facilities. We worked hard with MOM and with the SAF Medical Corps to provide on-site medical services. Their presence helped assure our migrant workers that we were there to take care of them.

Fast forward to the end of 2021, and we have re-organised to better fight COVID-19. We have achieved one of the highest vaccination rates in the world, overcame the Delta variant wave, and are now poised for future waves from Omicron and future variants. Throughout this journey, it was heartening to see many past and present members of the SAF Medical Corps stepping forward to contribute. I see many fine examples in operations, in setting up Community Care Facilities, formulating public health policies and protocols, as well as contributing in public hospitals and vaccination. This experience will strengthen the bond among past and present members of our SAF Medical Corps and we hope it will inspire future generations to step forward to seek, save and serve.

-COL(NS) NG HOCK SING





RADM(NS)(DR) TANG KONG CHOONG'S EXPERIENCE DURING COVID

I joined Tan Tock Seng Hospital on 2 January 2020. Shortly after that, COVID arrived at our shores and my hospital was the epicentre of the nation's response to this pandemic. Initially, as part of the hospital's Emergency Preparedness team, I had to map out the COVID patient transfer routes in the whole hospital, manage the MOH equipment stockpile and also run the Outbreak ICU HQ. As Assistant CEO in 2021, I had to oversee the ramping up of the hospital's capacity to respond to the surge of cases arising from the Delta variant.

I had the privilege of being part of the team in TTSH and had a front row seat to witness how everyone rallied together in this fight. Everyone, from senior management, to medical, nursing allied health and also the supporting staff such as the security and housekeeping personnel, gave their best in this fight.

The darkest period was when the daily number of cases surged to the thousands and there were very few beds left in my hospital. I was deeply concerned that patients who needed care would not get a bed. And on top of that, the morale of staff on the ground had dipped to an all-time low after this prolonged fight. There seemed to be no end in sight.

The Medical Corps has lived up to her motto. You have saved lives, not just of servicemen and women, but also Singaporeans and the foreign workers who came down with COVID. You have served not just the SAF, but the whole nation. For that, I salute all of you!

-RADM(NS)(DR) TANG KONG CHOONG



THE NEW NORM

EMERGING FROM THE STORM



RSAF INNOVATION EFFORTS

The COVID-19 pandemic has brought about challenges to all and there is a need to improve the healthcare processes in the RSAF Medical Centres and deliver technological solutions against COVID-19. A dynamic team of medical innovation champions was brought together to form Team SiGMA, (Sustaining Innovation Ground-up through Methodical Action). Through close collaboration with patients, medical centre personnel and technology teams within and external to the SAF, the team developed several products that helped to transform healthcare experiences in the Medical Centres, as well as new healthcare solutions to tackle the challenges brought about by COVID. Some of these solutions include:

- (1) The RSAF Digital Swab Management System.
- (2) Telemedicine for healthcare appointments via a secure mobile healthcare application, reducing the need to attend appointments in person.
- (3) Mobile app with features including a repository of health information, quick access to contact number of the nearest medical centre, and pin-drop location options that enable a swifter and more efficient in-base medical response to the casualty.
- (4) RSAF's in-house Safe-Entry system for digital declaration and triaging of all patients visiting the Medical Centres to ensure that patients are accurately assessed for their risks before they are allowed entry. This is accompanied by a contactless infrared thermometer for temperature-taking, which reduces the medical manpower required for patient triaging.



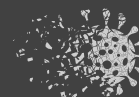
When COVID-19 first surfaced in early 2020, a telemedicine platform that enabled SAF Healthcare Workers to conduct telemedicine consultations for frontline healthcare workers in the Community Recovery Facilities was deployed. This solution was developed to maximise efficiency and ensure the safety of healthcare personnel by reducing in-person consultations, especially with patients who are already in a stable condition. Telemedicine has proven to be a viable, safe, and efficient healthcare delivery tool in crises such as the COVID-19 pandemic. It also reduces waiting and commuting time, as patients are not required to be physically present during the consultation.

Another innovative project was the digital swab management system used in the Air Bases' Medical Centres. This was a digital identity verification and labelling mobile application that aimed to digitalise the swab administration



process to increase efficiency and reduce human error. With the telemedicine platform implemented, a total of approximately 500 clinical consultations via telemedicine were conducted, with zero safety incidents reported. This also led to a reduction in the time spent for our medical personnel to don PPE and a 30% reduction in manpower required for medical officers.

The implementation of the digital declaration and triaging processes across RSAF Medical Centres also reduced triaging personnel requirements by 50% at each centre. It is estimated that an AI-enabled tele-triaging system (currently in a Proof-of-Concept phase) could generate year-on-year savings of up to 29,700 man-hours or approximately \$1 million savings in cost for the SAF.



TENGAH AIR BASE MEDICAL CENTRE

The new Tengah Airbase Medical Centre (TABMC) was officially opened on 4 November 2020 by Senior Minister of State for Defence, Mr. Heng Chee How. It was a significant milestone for the Medical Corps as it was the SAF's first pandemic-ready medical centre.

The TABMC is vital in the medical support of the operations in Tengah Air Base and its people. It is also a key medical centre in the western area of Singapore as it provides 24/7 emergency medical care for SAF units training in the vicinity. With previous lessons learnt from the Severe Acute Respiratory Syndrome (SARS) and H1N1 influenza, TABMC integrated several infrastructural and technological advancements in the design of a pandemic-ready medical centre. TABMC benefited greatly from this forward thinking and careful planning by AFMS. The COVID-19 outbreak began in Singapore just as TABMC completed construction and operationalised in February 2020. Some of the pandemic-ready features include:

- (1) A sheltered outdoor foyer providing a sturdy and conducive area to hold and treat patients with higher risk of COVID-19. The natural ventilation and high airflow provide a safe environment for both patients and healthcare workers alike.
- (2) The separate areas and direct routes designated for patients requiring isolation can minimise contact between the high-risk patients and other patients in the medical centre. This also improves operational readiness as it reduces the downtime needed to decontaminate the critical areas of the medical centre.
- (3) Isolation rooms equipped with ventilation systems separated from other parts of the medical centre. This segregation of airflow can prevent contaminated air from mixing with the air of other parts of the medical centre.
- (4) A well-designed external facing window of the dispensary which allows high-risk patients to collect their medication without stepping foot into the medical centre. This design also reduces the logistical workload as the medical centre no longer has to maintain separate sets of medications for high-risk and low-risk patients.

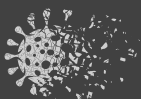
The design of TABMC allows the medical team to quickly adapt for other requirements. For example, in mid-2020, the second floor of



the medical centre was reconfigured to conduct COVID-19 vaccinations for large numbers of RSAF personnel.

Besides infrastructural advancements, TABMC is also involved in technological advancements such as telemedicine, Remote Photo-Plethysmography (RPPG) and other digital initiatives by being a testbed for medical innovation by AFMS.

TABMC will continue to strive to improve healthcare services and standards, providing the highest level of medical care and support to the SAF.



INTRODUCTION OF XR IN MEDICAL TRAINING

LEARNING ARMY, THINKING SOLDIERS, COMMITTED WARRIORS

SMTI launched an innovative minimal viable product to test the concept of using Extended Reality (XR) for paramedical training in 2021. The XR for Crisis Management is a multi-sensory XR simulation system meant to educate EMT trainees on the Simple Triage and Rapid Treatment (START) Triage procedure in a guided virtual mass casualty environment. The trainee interacts with a physical manikin, represented with a precise one-to-one mapping in virtual space, so the trainee can feel a tangible sensation matching what they see and operate in the virtual world.

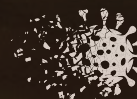
This concept represents an improvement in structured learning processes compared to

the traditional teaching approaches currently being used. It immerses the trainees in a hyper-realistic situation from the get-go, having them move quickly through the scene, physically triaging casualties as quickly as possible. This makes the simulated mass casualty situation life-like and believable. The system also provides a means to capture training data which can be used to augment assessment of learning and act as a feedback tool for reflection for the trainees. On a systems level, it helps the institution analyse the efficacy of learning.

The innovation project team was greatly encouraged and supported by the command team and members of SMTI during the swift

development of the XR Crisis Management System. The results from the operational evaluation of the system showed tremendous potential of XR in improving training effectiveness, efficiency and engagement for paramedical training in SMTI. This improves the SAF's operational readiness and healthcare system.

The XR for Crisis Management project won the Army Learning Innovation Award 2021. Plans are underway for XR to be further explored and developed upon for core paramedical skills, as well as for specific service use cases.



DIGITALISATION OF MEDIC PROFICIENCY LOGBOOK


The project to digitalise Medical Currency involves the creation of an internet and mobile device accessible application. The aim of this project is to digitalise certain processes within the SAF. For instance, it will replace the need for a medic card – acting as a medic’s qualification to provide medical coverage. In addition, it provides swift and convenient access to the user’s records; and speed dials to emergency numbers such as the Duty Medical Staff Officer. The application aims to function as a one stop solution for a soldier’s needs - being integrated with other systems like aTMS and eHR. With the integration, further functions may be provided such as facilitating the booking of resources e.g. AMPT slots/ Medical Coverage and sending notifications when the user’s BCLS/ Medical Currency is nearing expiry.

DIGITALISATION OF ASSESSMENTS & PROPRIETARY PERFORMANCE DASHBOARD FOR SMTI

The digitalisation of assessments in SMTI is a digital transformation currently ongoing in tandem with the development of the Next Gen Learning System. This transformation has spearheaded the progress for process automation and reduction of administrative overheads; and will bring about enhancements in operational efficiency for assessment administration, consolidation of results, etc. This is extremely crucial in current times following the COVID-19 pandemic.

Additionally, inputs from these digitalised assessments allowed for the development of a proprietary performance dashboard for SMTI. While currently in its initial release, future releases are planned down the road. This Proprietary Performance Dashboard for SMTI empowers each training wing in SMTI to undertake targeted intervention measures which would ineluctably lead to increased situational awareness on the ground during the course of training, improving performance outcomes.

13/22



Safety ‘Did You Know’


Medic-Link App

Medic-Link (App) enables monitoring of Medical Currency and Qualification at the convenience of Personal Electronic Devices. It will replace the use of physical Medic Proficiency Logbook, Medic Card, Basic Cardiac Life Support Card and Mask Fitting Card.

Implementation


Starting 1st April 22, Medic-Link will be implemented for Military Medical Experts, selected DXOs and Medics from Batch P045 onwards.

Non-Medical vocationalist are not included. They will continue to use hardcopy Medic Proficiency logbook and cards



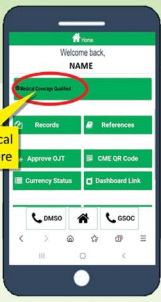
SAF MEDICAL CORPS

Medical Qualification Checks

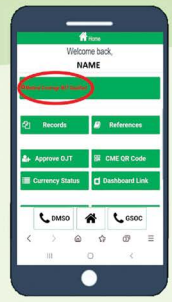


SAF MEDICAL TRAINING INSTITUTE
NAME
COURSE
EXPIRY DATE

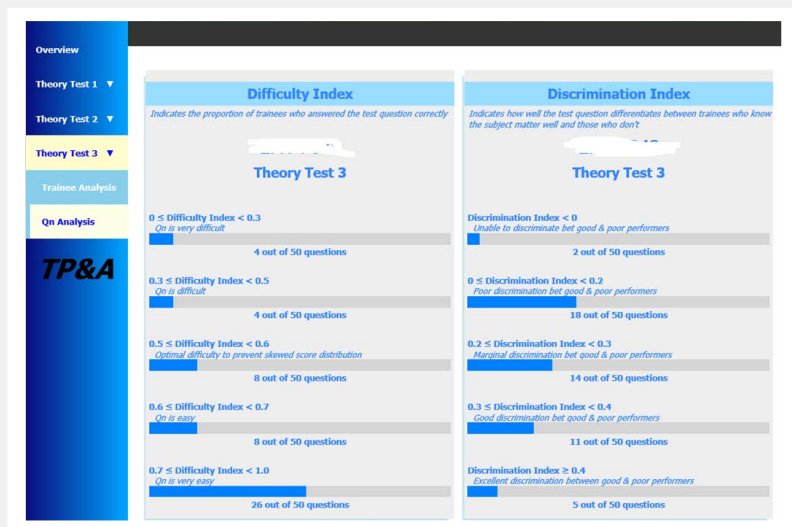
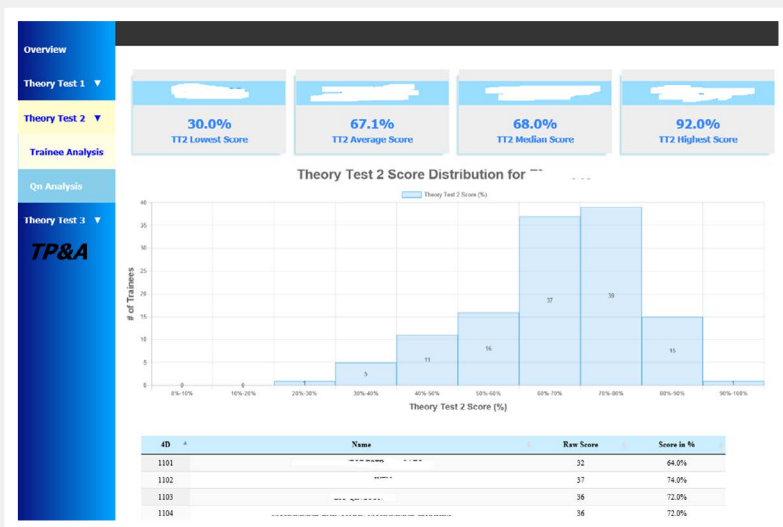
Training units can verify the medical qualification of covering medics, through either the physical Medic Card or Medic-Link app (for applicable personnel).



Check for medical qualification here



#6 Every Soldier Must Take Ownership of Safety
"I am responsible for my own safety and the safety of my buddies and my team"

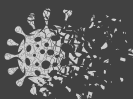


ANNUAL MEDIC PROFICIENCY TEST

Medics in the SAF play a crucial role in ensuring the safety and health of our people and, should the need arise, saving lives. SMTI trains approximately 1,200 medics a year. To ensure that all medics remain current, competent and operational at all times, the Annual Medic Proficiency Test (AMPT) was introduced.

The AMPT is a milestone assessment within the Continuing Medical Education (CMT) framework. It serves to evaluate medics' retention of individual competency, one year after they qualify as Emergency Medical Technicians (EMT). The medics undergo a scenario-based assessment, which assesses them in their core skills, and their ability to make sound clinical decisions.

The AMPT has recently undergone a revamp in 2021, to make the test more realistic and to allow better data collation to improve the training and standards of the SAF medics. To ensure the reliability and validity of the test, AMPT assessors are only qualified after they attend and pass an assessor qualifying package.

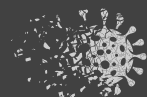


DEPLOYMENT OF SAF MEDICS TO SCDF AMBULANCES AND RESTRUCTURED HOSPITAL

Inaugurated in September 2017, a pilot project to deploy SAF medics to SCDF ambulances was set in motion. The three - month project involved twelve SAF medics made up of both NSFs and Regular servicemen, who were attached to SCDF civilian emergencies to help ease the growing burden on emergency medical services. The project allowed the SAF to inter-operate with the SCDF, enhancing medical response during both homeland security and civil contingency operations.

Seeing the value of clinical exposure, a second initiative was launched to provide more opportunities to SAF medics. In this project, medics were attached to Restructured Hospital Emergency Departments, such as Ng Teng Fong General Hospital. This provided medics with more opportunities to improve their clinical acumen through clinical exposure, as well as consolidating their training with constant application of their skills and knowledge. The daily interaction with patients from all walks of life also showed them the value of empathy and good communication skills.

The medics' experiences from the attachments enhanced their techniques and gave them practice interacting with and treating patients. This would further improve the standard of the SAF healthcare as they bring their knowledge back to their respective units and medical centres. Their involvements in the projects also helped the medics gain confidence and resilience, applicable as well to their lives beyond the SAF.



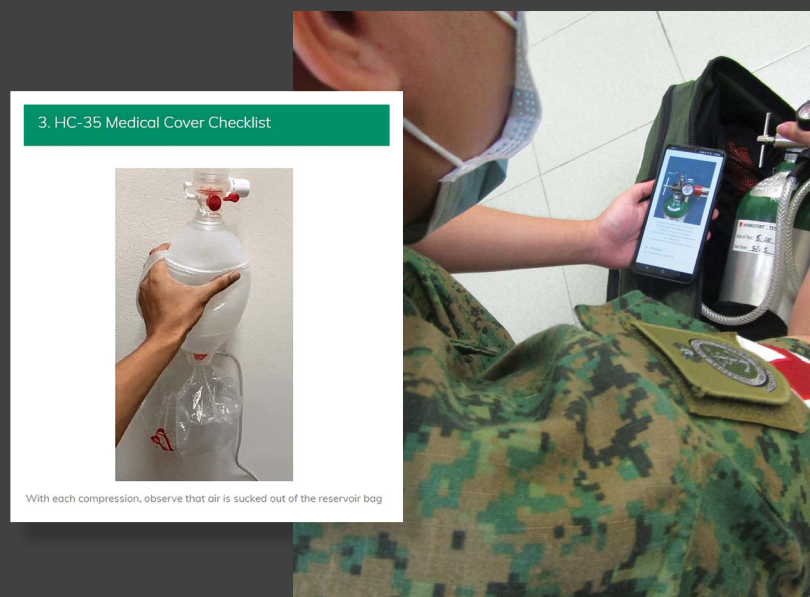
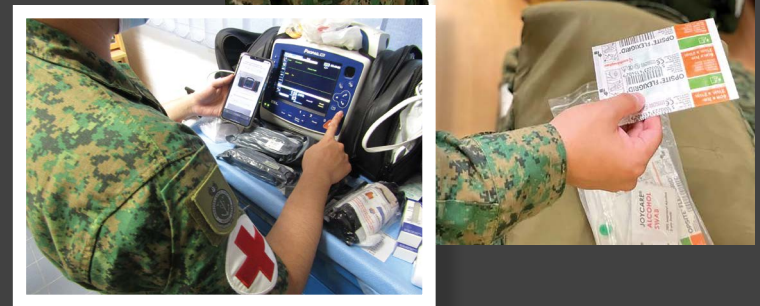
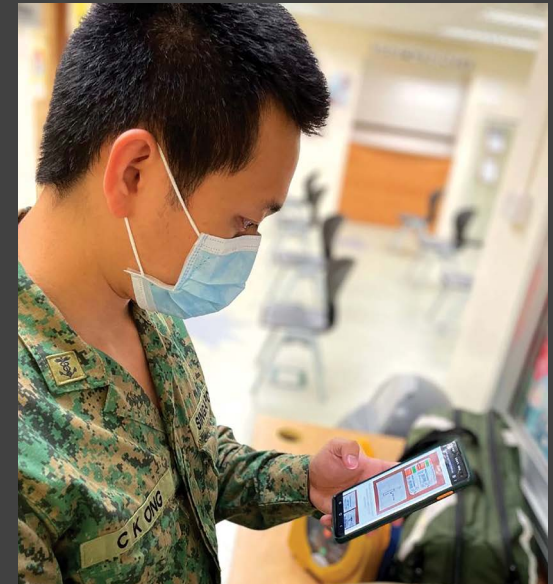
MMI DIGITALISATION JOURNEY

As the world moves towards digitalisation, the SAF Medical Corps has similarly kept abreast with global developments, integrating healthcare provision with digital technology. Around 2017, hardcopy medical centre patient feedback was converted to online survey forms, led by then Dy Comd MMI (PHS) LTC(DR) Tan Nan Guang.

The main impetus for change came in 2019 with frustrations experienced by service personnel with managing hardcopies of vaccination nominal rolls. Information on the multiple copies of these documents had to be separately transcribed and uploaded onto SAF electronic medical records, a process that was inefficient and error prone. Then Comd MMI, COL(DR) Timothy Teoh, proposed the Digitisation of Vaccination Nominal Rolls to address the issue. This resulted in a more efficient process with far lower transcription errors.

The success of this initial endeavour galvanised the Medical Corps into exploring other digitisation efforts, such as informed consent signatures, patient feedback and digital checklists. LTC(DR) Jake Goh, CPT(DR) Tan Yeow Boon, Mr Yan Cheng, Ms Neo Jen Ga, and ME2 Khor Chong Xiang formed a MMI volunteer team to digitise all medical centre checklists and processes, including checklists for SAF Ambulances, Sickbay Orientation and Emergency Trolley preparation and function. The checklists were found to be user-friendly and accessible across personal mobile devices. In addition, audit findings of non-compliance and safety near-miss incidents were reduced drastically after the introduction of digital checklists.

LTC(DR) Jake Goh weighed in on the importance of digitisation, stating that the time saved could then be reinvested into clinical care and improving patient experience. He hopes that the SAF Medical Corps will remain a front-runner in bolstering digitisation efforts for healthcare on a national level.



“The digital checklist is effective as it prevents issues like losing the physical paper checklist. If amendments need to be made, it will look neater than cancelling and countersigning on the hardcopies previously.”

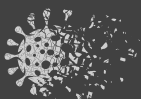
- PTE WILSON LUAH, MEDIC

“A digital checklist does what a physical one struggles with, providing visual guides to the various equipment for the benefit of less experienced medics. This ensures everyone knows what they are checking for instead of simply “large dressing”, etc.”

- LCP TAN ZHI ZHONG, MEDIC

“While these checklists are a lot safer, especially for new medics, having digital checklists isn't without its pains, as it can be overly repetitive to fill up the same thing day after day. Still, this is a very much needed and necessary tool which could be further streamlined for the benefit for those on the ground & the SAF.”

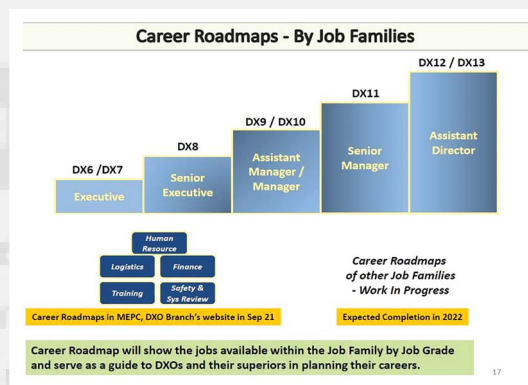
- LCP ODELL JEREMIAH DASS, MEDIC



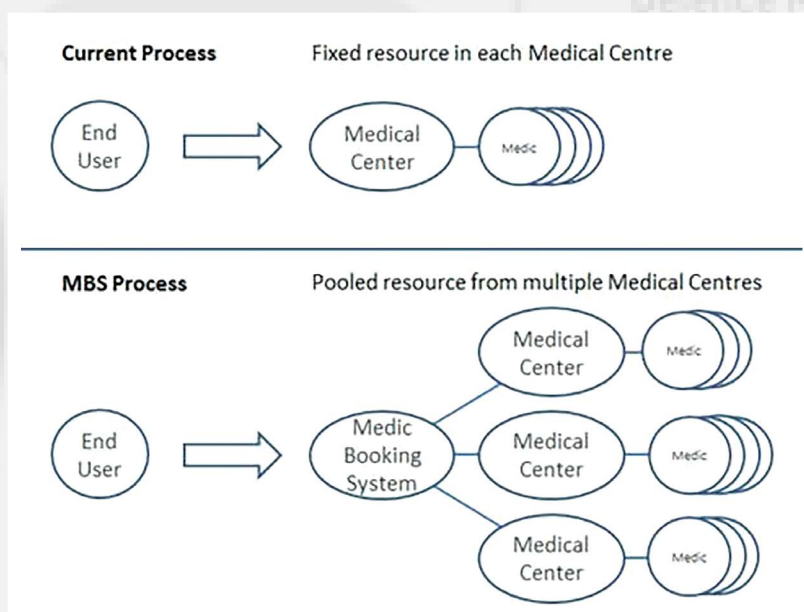
DEFENCE EXECUTIVE OFFICERS CAREER ROAD MAP

The Defence Executive Officer (DXO) community forms an integral part of the SAF Medical Corps. In collaboration with MINDEF Human Resource Department's (MHRD) initiative of creating Route Of Advancement (ROA) within different DXO job families, Senior Medical Staff Officer, HQMC led the effort to look into the ROA for DXOs in the medical job family. ROA and training roadmaps were developed for DXOs in the Medical Job Family to enhance professionalism, identity and sense of career progression among the DXOs. As SLTC(DR) Mark Tan, Head Ops MMI articulated, having proper ROAs and training roadmaps is necessary as DXOs are a core talent pool.

Optional and mandatory courses will be incorporated within DXOs' career track to create a clear pathway for up-skilling and maintaining currency. It is our hope that these efforts will create greater job satisfaction within our DXO community.



MEDIC CENTRALISATION TRIAL



The Medic Centralisation trial started in January 2021 at Healthcare Cluster North (HCC North). The impetus for this project was to optimise the medic manpower within MMI, against the background of declining NSF medic manpower. The project involved establishing a centralised scheduling team for medic allocation within HCC North. This allowed training units requiring medic cover to put forth their requests to a central team. It became a far more efficient and flexible method of medic manpower utilisation and reduced the burden on Clinic Managers and Senior Medics when coordinating between various units.

The implementation of Medic Centralisation was successful in optimising manpower. This was evident not only from positive feedback all round, but also in the increase in the number of trainings that units were now able to conduct.

Moving forward, the project has plans to expand to the remaining Healthcare Clusters East and West, eventually encompassing the entire MMI.

SERVING THE RSN THROUGH TECHNOLOGY IN HEALTHCARE DELIVERY

Navy Medical Service (NMS) is committed to maintaining a high standard of service delivery and healthcare to RSN servicemen. One area that NMS has leveraged upon to enhance healthcare provision is through the pursuit of Digital Health efforts, and leverage on advances in various technologies. This includes procuring technologically-advanced medical equipment to aid in diagnosis and treatment, and adopting data analytics to provide more targeted and tailored health programmes for RSN's naval combatants.

Providing insight into sailors' health and performance through data analytics

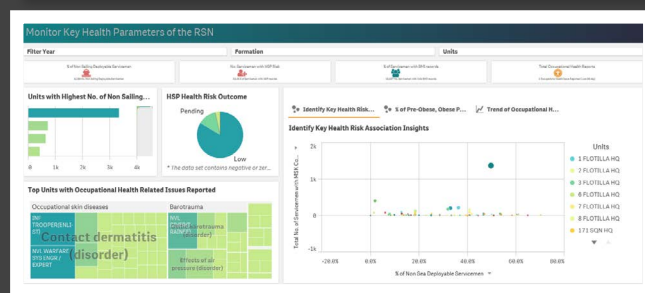
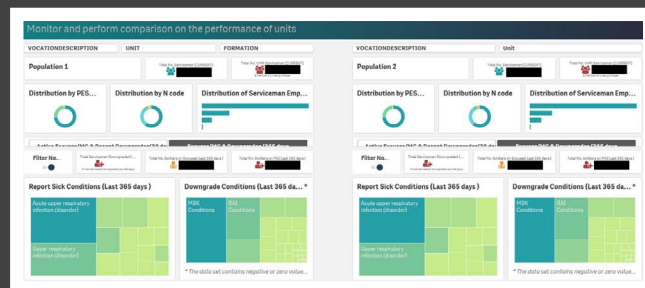
The expanding field of data analytics has created an avenue for the SAF to trend and analyse health indices of service personnel. NMS has partnered with DSTA and Medical Informatics Branch (MIB) to conceptualise and implement the RSN Operational Dashboard, which serves as a data aggregator that collates and presents various health-related metrics. The dashboard provides commanders with an overview of their servicemen's health statuses, enabling them to (1) identify health trends of concern which may adversely impact individual safety or Unit operational readiness, and (2) put in place interventions to mitigate potential injury and downstream effects of both acute and chronic medical conditions. The dashboard captures, but is not limited to, the combat status / PES status of personnel, the types of conditions leading to Medical Board reviews, and the proportion of sea-deployable servicemen.



The Automated Naval Medical Booth (ANMB) capable of registration, triage and medication dispensary.



NMS Medic taking stock of the medications in the ANMB inventory/dispensary booth.



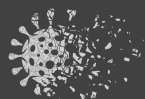
Screenshots of the RSN Operational Dashboard displaying various health metrics.

Leveraging on automation to optimise medical centre workflows

With advances in technology and Digital Health, and given the reduction in Medic manpower resources in the foreseeable future, automation is gradually being introduced to streamline and strengthen work processes in NMS. To this end, Naval Base Medical Centres have explored leveraging automation to enhance the patient journey. The multi-function Automated Naval Medical Booth (ANMB) minimum viable product (MVP) is an example of this effort which has been trialed at Changi Naval Medical Centre (CNMC) to enhance the 'reporting sick' processes, with the aim to reduce patient waiting times, improve Medic utilisation and efficiency, and enhance patient and medication safety, while improving the overall patient user experience.

Instead of being attended to by Medics, patients will have the option to undergo automated self-registration, triage and collection of medications following their consultation with the Medical Officer, with adequate safeguards built in to ensure the safety of patients.

Future iterations of the ANMB MVP are expected to incorporate direct data linkage with PACES, gather symptoms from servicemen, guide vital signs measurement and dispense medications prescribed in a quick and error-free manner. The success of the ANMB is expected to improve the overall quality of healthcare delivery in the RSN, and has the potential to be scaled up for use in other SAF Medical Centres.





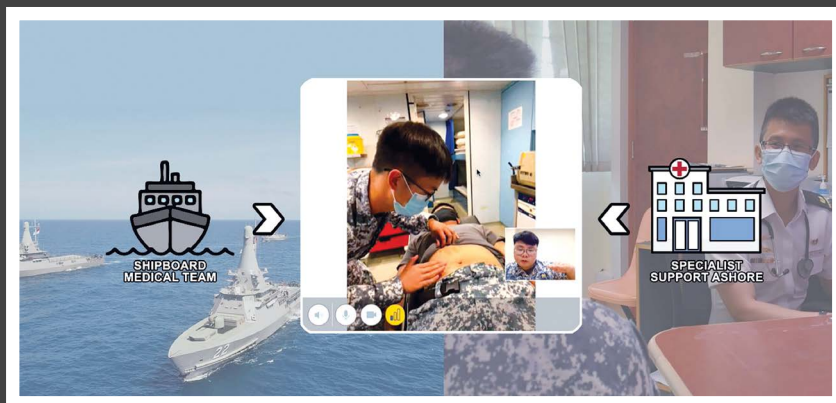
CPT(NS)(DR) Apoorva teaching Medical Officers on how to use the Ultrasound Machine during a recent NSH ICT in 2022.

Enhancing frontline medical support

To enhance the medical support for RSN Fighting Formations, NMS has introduced advanced medical equipment as part of its deployed operational medical scales for Shipboard Medical Teams (SMT). These new capabilities include the Portable Ultrasound Machine (PUM) and the Handheld Portable Blood Analyser, which will equip Medical Officers and Independent Duty Corpsmen (IDC) with additional adjuncts to facilitate clinical assessment and diagnosis of severe casualties afloat, and aid decision-making for casualty medical evacuation.

Efforts are also underway to enhance telemedicine reach-back capabilities. Telemedicine provides SMTs access to shore-based specialist advice, aiding them in clinical assessment and patient management while deployed at sea. Telemedicine has also enabled NMS to conduct medical boards virtually, streamlining provision of primary and specialist healthcare within RSN Medical Centres. This allows NMS to expand the boundaries of medical care in the RSN to ensure the best possible outcomes for our naval combatants.

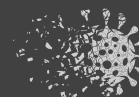
From leveraging data analytics to improve insight into health trends, to automation of Naval Base Medical Centre processes, and finally to enhancing operational medical support and reach-back at sea, NMS will continue to pursue its Digital Health efforts and push current boundaries in healthcare delivery for the RSN through leverage on automation, innovation and technology.



Enabling specialist support from ashore through the use of telemedicine.



Learn about NMS' redesign!



REDESIGN OF THE NAVY MEDICAL SERVICE

It was 3 December 2018 when the Republic of Singapore Navy's Littoral Mission Vessel (LMV), RSS Independence, and two Singapore Police Coast Guard (PCG) boats first took notice of Malaysian intrusion into our territorial waters. That day, two Malaysian government vessels dropped their anchors illegally off the coast of Tuas for the first time since Malaysia unilaterally extended its Johor Bahru Port limits into those waters. For the months to come, the RSN adopted a posture of utmost vigilance as the Republic of Singapore Navy (RSN) ships and PCG boats were deployed to keep watch round the clock over the waters off Tuas, to deter further provocations. The exacerbation of this maritime dispute not only tested the bilateral ties between the two nations, but also served as a reminder of the need to strengthen our capabilities in responding to maritime disputes.

An evolving maritime operating environment

Demands on navies have grown in scale and complexity. Navies today are envisaged to deploy further and for longer. They are also tasked with a wide spectrum of operations, ranging from security operations to search and rescue missions, and humanitarian and assistance relief efforts. In addition to these mission-related challenges, the unique operating environment of the RSN also poses significant stressors to the health of our servicemen. Our sailors, divers, and submariners operate in austere environments, undertake risky operations, and can be deployed for prolonged durations away from home in a vast and remote maritime AO.

The implications on the health of the Navy are clear. Firstly, traumatic and musculoskeletal injuries are further complicated by the limited evacuation modalities to advanced medical care in the vast maritime AO mandating comprehensive and responsive medical support afloat. Secondly, addressing force health concerns including occupational health, mental health, infectious diseases and fatigue management among the sailors is paramount. Thirdly, our divers and submariners

are also at additional risk of underwater-related health conditions such as barotrauma and decompression illness which need to be adequately managed on a timely basis. Lastly, the increasing prevalence of chronic medical conditions also adds an additional level of complexity in safeguarding the health of the RSN, demanding the institution of robust preventive health measures. Therefore, the function of the Navy Medical Service is essential to navigate this complex tapestry of challenges in order to support the RSN and preserve the force health of our naval combatants.

Against this geopolitical and maritime operational backdrop, NMS must therefore continue to redesign its structures and processes to achieve its mission of providing the RSN with excellent medical support and comprehensive healthcare, amidst the evolving operational landscape. NMS supports the RSN in ensuring that our personnel are able to carry out the full spectrum of RSN operations to safeguard the sovereignty of Singapore and to protect our critical sea lines of communication. Such operations spans from peacetime exercises and socio-civic missions, to period-of-tension and hot war. Examples over the past decade include the Singapore Port Limits (Tuas

Incident in 2018, and Search and Rescue (SAR)/ Search and Locate (SAL) operations such as the Indonesian Submarine KRI Nanggala in 2021, as well as MH370 and QZ8501 Aircraft Crashes in 2014.

In addition to supporting the full spectrum of RSN operations, NMS also specialises in a myriad of medical functions to support the RSN in the maritime domain including primary healthcare, specialist services in Underwater Medicine (e.g Diving, Hyperbaric and Submarine medicine), occupational health, public health such as force health and infectious disease management, and the provision of operational medical support. NMS also contributes towards Whole-of-Government (WoG) efforts during national medical emergencies such as the COVID-19 pandemic, resulting in a surge demand on its baseline medical support capabilities and resources.

Given the unique challenges faced by the maritime environment, it is critical that the provision of medical support by Navy Medical Service (NMS) continue to evolve to minimise attrition and maximise the operational deployability of our RSN servicemen and servicewomen.



Unlocking RSN's Medical Manpower Potential

The cornerstone of deployed medical support lies in the provision of Level I medical support capability (emergency and primary care) on board our naval platforms for operations. To this end, NMS deploys both our active personnel and NSmen to serve as Shipboard Medical Teams (SMT). With the evolving operational landscape, NMS had to re-examine its structure and processes to ensure that the provision of medical support remains sustainable across the full spectrum of RSN operations, and across the peace to war continuum. Our solution to this challenge is through the unlocking of the RSN's medical manpower potential.

The strength of RSN's medical support lies in our NSF's and NSmen. Our medical NSF's form the bedrock of our active manpower pool, supporting our small Regular Corps in providing day-to-day medical care for our naval combatants. Our medical NSmen are also an integral part of NMS, providing both afloat and ashore medical support.

Medical NSmen of the Ambulance Craft Medical Team deployed to TTSH and NCID to augment the manpower of PHIs during the Omicron wave.

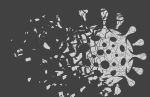


Over the past few years, our Medical NSmen have also been increasingly deployed for real time operations including WoG efforts at various phases of the COVID-19 pandemic. These include deployment of our NS men from our surgical teams (e.g. Naval Ship Hospital (NSH) and Surgical Shipboard Section (SSS) to SAF Community Care Facility (CCF) @ EXPO during the circuit breaker period in 2020 and augmenting our Public Healthcare Institutions (PHI) to respond to the Omicron wave in 2022 (e.g. deployment of Ambulance Craft Medical Team (ACMT) NSmen to Tan Tock Seng Hospital (TTSH) and National Centre for Infectious Diseases (NCID)).

With the bulk of RSN's medical manpower comprising NSmen, it is therefore crucial for NMS to leverage this critical manpower resource to unlock the RSN's Medical Manpower Potential. This will provide the RSN with the requisite capacity, flexibility and capabilities for deployed medical support in the ashore, afloat and underwater domains, and will be achieved through a comprehensive NMS Redesign effort.



The NSmen of the Surgical Shipboard Section undergoing In-Camp Training on board the Frigates.





NSmen of the Ambulance Craft Medical Team (Right) and Naval Base Medical Team (Left) undergoing In-Camp Training to provide comprehensive Medical Support to the RSN.

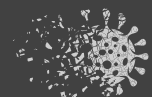
Redesigning NMS to better support the RSN

NMS was re-structured in 2006 as a HQ Department placing its weight on healthcare, with a lean operational setup to meet RSN's peacetime needs. To meet the medical support demands of the RSN's unique operating environment across its full spectrum of operations, NMS is redesigning itself to generate capacity and develop enhanced capabilities to strengthen the RSN's ability to RTS its medical manpower. This will also entail a significant structural redesign of the current NMS with concurrent efforts to redesign critical processes such as the establishment of key linkages with Naval Logistics and Training communities to better support RSN Fighting Formations. Today, the majority of NMS personnel undertake concurrent policy and operations functions on a day-to-day basis. The need to consistently prioritise ops demands has led to significant disruptions to NMS' ability to develop, advocate and implement medical related policies for the RSN. Hence, this NMS redesign effort also aims to enhance NMS' resource capabilities and streamline critical processes to meet operational medical support demands while strengthening medical policy functions.

The redesigned NMS aims to underpin a clear structural delineation of RTS function from the medical policy-making role of HQ NMS. Aligning

with the wider RSN's Flotilla-type setup will also maximise NMS' ability to leverage the wider RSN for support. HQ NMS will thus be able to focus its efforts on the provision of medical policymaking functions, and the development of future-facing plans and policies for Operational Medical Doctrine, Medical Training, Medical Capability Development (CAPDEV), Force Health, and Underwater Medicine across the RSN. The consolidation of RSN Medical NSmen will provide NMS with the capacity and operational flexibility to meet the RSN's evolving needs for deployed operational medical support, and to Raise-Train-Sustain (RTS) its medical manpower.

NMS is continuously tested in its ability to ensure that the RSN is always operationally ready, and it has always risen to this challenge. As the demands of the RSN grows in scale and complexity, and as our Fighting Formations deploy longer and further, the redesigned NMS will also strengthen its medical functions and capabilities in tandem to ensure that it is able to better support the RSN's full spectrum of operations, enabling it to achieve mission success. Dare to Excel!





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