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PAPRSB Institute of Health Sciences, Universiti Brunei Darussalam
Quarterly Newsletter



Academic and administrative staff members of PAPRSB Institute of Health Sciences participated in UBD Open Day in February. Read more on Page 7.

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DR. DEENI RUDITA REPRESENTED UBD AS AN OATH READER AT THE NATIONAL DAY CELEBRATIONS

Dr. Deeni Rudita Idris (Assistant Professor)

Brunei celebrated its 38th National Day on 23rd February 2022, despite being in the midst of the third COVID-19 pandemic wave. The event showcased the National patriotic spirit in a parade to mark the Sultanate's independence at the Taman Haji Sir Muda Omar 'Ali Saifuddin (SOAS). The annual celebrations were themed on 'Menjayakan Wawasan Negara' or 'Accomplishing the National Vision' and graced by His Majesty Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah, Sultan and Yang Di-Pertuan of Brunei Darussalam. Over 3000 participants including employees from various government agencies, community groups, and sporting associations took part in the march-past. This year's parade also featured COVID-19 frontliners to highlight their efforts in combating the pandemic.

Assistant Professor Dr. Deeni Rudita Bin Idris was one of the Oath Reading Team members or 'Pasukan Ikrar Kebangsaan' for this year's National Day celebration. Dr. Deeni was nominated by UBD to represent the university after which he went through a selection process conducted by the Ministry of Culture, Youth and Sport. Personal achievements and contributions to the country were amongst the criteria considered by the selection committee. Dr Deeni was nominated because of his active involvement in voluntary work and Community Outreach projects, and being the lead in clinical operations for the UBD Vaccination Centre. Once applicants were shortlisted, they were invited to an audition to read the oath in front of a panel of judges who scrutinised all aspects of presentation including pronunciation. Ultimately, 38 people, including Dr. Deeni, were selected to join the oath reading team from over a hundred nominees. These people were employees from various ministries including the Ministry of Health, Ministry of Education, Ministry of Defence, and private organisations such as Brunei Shell Petroleum (BSP) plus NGOs such as the Red Crescent Association, and people who are differently abled. The Oath Reading Team underwent a series of oath reading training which Dr. Deeni found rather difficult but enjoyable at the same time. The team members also had to undergo marching training for the field performance. Despite the challenges imposed by the COVID-19 pandemic and the SOPs put in place, the training went smoothly and successfully with everyone's commitment and dedication.

Dr. Deeni commented on his experience: *"I am honoured to be part of the Oath Reading team - it is something that I have always wanted to do! I believe as Bruneians it is our responsibility to show our patriotism, passion, commitment, and loyalty to the Sultan and our country. Furthermore, as a lecturer, I believe I play a big part by becoming a role model to my students, to lead by example - inspire them to be patriotic - to love our country and work together to develop Brunei Darussalam and to make 'Vision 2035' a reality. Also, by being part of the Ikrar team, I was able to meet many young, inspiring, and patriotic Bruneians who are devoted to the country! The 38th National Day celebration is a wonderful memory and my greatest personal achievement for 2022. Alhamdulillah!"*



Top right: Dr. Deeni Rudita Idris at one of his rehearsals for oath reading practice at Taman SOAS. **Bottom left:** The Oath Reading Team performing the march past the Royal Dias at the 38th National Day celebration. **Bottom right:** Dr. Deeni (middle) taking a commemorative photo with fellow oath readers.

FROM THE DOCTOR'S STATION AT THE UNIVERSITI BRUNEI DARUSSALAM VACCINATION CENTRE

Professor Dr. Kenneth Yuh Yen Kok (Professor of Clinical Academia)

The COVID-19 outbreak caused by SARS-CoV-2 coronavirus was declared a pandemic by the World Health Organization on 11th March 2020. Since the detection of the first case of COVID-19 in Brunei Darussalam on 9th March 2020, the country has gone through the second wave of the pandemic on 7th August 2021 after the detection of the first community spread of SARS-CoV-2 after 457 days without community infection, and is currently in the third wave of the pandemic when the Omicron variant of coronavirus was detected in local cases on 7th February 2022. Vaccines to prevent SARS-CoV-2 infection are considered the most promising approach for curbing the pandemic. COVID-19 vaccines provide strong protection against serious illness, hospitalization and death. There is also evidence that being vaccinated will make it less likely for that person to pass the virus on to others. Vaccinated individuals must continue taking steps to protect themselves and others. This includes frequent hand washing, mask wearing and physical distancing, as well as adherence to national and local rules on contact-tracing, quarantining and other public health measures.

The Brunei National COVID-19 Vaccination Programme was rolled out on 3 April 2021. The vaccine distribution strategy was divided into 3 phases, with Phase 1 vaccination for frontliners, senior citizens, and students intending to study abroad, phase 2 for child care centre staff, teachers and adults with comorbidities, and phase 3 for the general public. On 8th November 2021, the country rolled out its COVID-19 vaccination programme for school children and adolescents of 12 – 17 year age group. Booster shots or third dose vaccines for individuals aged 18 and above were started on 17th December 2021. On 21st August 2021, in response to the government's demand in ramping up the National COVID-19 Vaccination Programme in order to achieve 80% vaccination coverage in the population during second wave of the pandemic in the country, a satellite vaccination centre at the PAPRSB Institute of Health Sciences, UBD was opened. The UBD Vaccination Centre (UBD VC) was staffed by about 200 staff and student volunteers. The centre had been delivering up to 1,800 doses of vaccines a day.

A group of doctors volunteered to man the Doctor's Stations at the UBD VC. This group of 9 doctors comprised of the teaching faculty members of the BHSc Medicine programme, an Assistant Vice Chancellor of the university and the current and past Deans of PAPRSB Institute of Health Sciences. This group of doctors all possessed vast clinical experience and some were practicing physicians. The roles and responsibilities of the doctors on duty at the UBD VC were to provide advice on vaccine related matters and to decide on whether individuals can proceed with the COVID-19 vaccination based on their clinical status and the Ministry of Health's Health Care Practitioner Guidelines and vaccine protocols for the specific vaccines. Other responsibilities included the management of individuals who required medical attention on site after vaccination, referral of individuals to health clinics or Emergency Department at RIPAS Hospital depending on the urgency of case, and the referral of individuals with a history of anaphylaxis and severe allergies to RIPAS Hospital for vaccination.

UBD VC was operational during working days from 21st August 2021 to 30th December 2021 and on 6th January 2022. During the period, a total of 79,355 doses of vaccines were administered. Table 1 (see below) shows the distribution of types of vaccines and whether the vaccines were given as first dose, second dose or third/booster dose.

The majority of the public received Moderna vaccine in UBD VC, comprising of 36.7% of the doses administered. This was followed by Pfizer-BioNTech vaccine (34.0%), Oxford-AstraZeneca vaccine (19.0%) and Sinopharm BBIBP vaccine (10.3%). Of the total number of doses administered, 33,025 doses (41.7%) were given as first doses, 32,968 doses (41.5%) as second doses and 13,362 doses (16.8%) as third/booster doses.

Doses	First	Second	Third / Booster	TOTAL
Type of Vaccine				
AstraZeneca	8,280	6,783	0	15,063
Moderna	13,410	15,205	479	29,094
Sinopharm	3,821	3,668	733	8,222
Pfizer	7,514	7,312	12,150	26,976
Number of doses	33,025	32,968	13,362	79,355

Table 1. The types, timing, and number of COVID-19 vaccines administered by UBD Vaccination Centre.

A total of 1,295 consultations were recorded at the Doctor's Station during the period when UBD VC was operational. The consultations were related to individuals' clinical conditions and whether they could proceed with the COVID-19 vaccination based on the Health Care Professional Guidelines for the relevant vaccines. The most common reason for the consultation were individuals on anticoagulants and antiplatelet medications. Some of the individuals' vaccination had to be deferred because of their existing medical condition that required more urgent attention and management. These individuals were referred to their nearest health clinics or Emergency Department of RIPAS Hospital depending on the urgency of the individuals' conditions. Individuals with history of severe allergic reactions or anaphylaxis were referred to RIPAS Hospital, as per Ministry of Health's guidelines that stated that individuals with previous anaphylaxis should be referred for vaccination in a hospital setting.

All the doctors volunteering in UBD VC were given access to the Ministry of Health electronic patient record system, Brunei Darussalam Healthcare Information and Management System (BruHIMS). This easy access to BruHIMS allowed the doctors on duty to refer to the individuals' electronic records for their clinical status and current medications. The doctors on duty were also able to consult directly with members of the Ministry of Health's COVID-19 Vaccine Technical Committee and hospital Specialists with whom the patients were under, in order to seek advice and to obtain authorisation for the patients to receive the relevant COVID-19 vaccines. Examples of these were patients with cancer and severe autoimmune conditions receiving chemotherapy and immunosuppressants.

A total of 129 individuals were referred from UBD VC to RIPAS Hospital for vaccination. These individuals were referred because they had history of anaphylaxis and severe allergic reactions and were recommended to have their COVID-19 vaccinations in a hospital setting. Individuals with a history of anaphylaxis to any other substance have an increased risk of an anaphylactic response to COVID-19 vaccines. Prevention of anaphylaxis is therefore critically important, hence the doctors on duty at UBD VC had the responsibility to screen the patients for a history of anaphylaxis and identify potential risk factors. The management of anaphylaxis includes intravenous access for fluid resuscitation, endotracheal intubation and other advanced life-support interventions. These interventions are best performed by competent and trained staff in safe and appropriate hospital settings.

Out of 129 individuals, 111 (86.0%) were referred because of their previous history of anaphylaxis and severe allergic reactions to food or medications. In 20 of these cases, the nature of the food or medications were not identified or documented. Three individuals (2.3%) with history of Guillain-Barré Syndrome, 1 (0.8%) with Steven-Johnson Syndrome and 1 (0.8%) who had seizures following Pertussis vaccine as a child were also referred. Table 2 (see below) shows the types of allergies and the number of patients referred to RIPAS Hospital for vaccination. A further 17 individuals (13.2%) were referred to RIPAS Hospital for vaccination because of their history of complications after receiving first or second doses of COVID-19 vaccines. The doctors on duty felt that because of the history of possible allergic reactions to COVID-19 vaccines these individuals were recommended to have their subsequent doses to be administered in a hospital setting (Table 3, see below). One individual (0.8%) who was hypertensive and found to be in atrial fibrillation before his vaccination was also referred to RIPAS Hospital for vaccination.

	Allergies	Number of cases
Food	Seafood	36
	Nuts	15
	Banana	1
	MSG	1
	Egg	1
	Yam	1
Medicine	NSAIDS	15
	Antibiotics	5
	Intravenous contrast	4
	Paracetamol	2
	Loperamide	1
	Chlorhexidine	1
	Metoclopramide	1
	Nifedipine	1
	Depo-Provera	1
	Unknown	20
Guillain-Barré Syndrome	3	
Steven-Johnson Syndrome	1	
Seizures after Pertussis vaccine as a child	1	
TOTAL	111	

Vaccines	Complications	Number of cases
Moderna	Rash on body / face	3
	Facial swelling	3
	Chest pain	2
	Giddiness and shortness of breath	2
	Hypertension	1
	Body stiffness	1
AstraZeneca	Shortness of breath	2
Pfizer	Shortness of breath	3
TOTAL		17

Table 2 (left): Individuals with history of anaphylaxis and severe allergic reactions referred to RIPAS Hospital. (MSG = monosodium glutamate; NSAIDS = non-steroidal anti-inflammatory drugs).

Table 3 (top): Patients with history of possible reactions after first or second dose of COVID-19 vaccinations referred to RIPAS Hospital for subsequent vaccination.

All individuals who received COVID-19 vaccinations had to undergo routine post-vaccination observation. It is recommended that all individuals undergo observation for 15 minutes. Individuals with history of atopy (asthma, atopic dermatitis, etc.) and non-severe allergic reactions to food or medications were required to be observed for 30 minutes. Individuals may be observed for longer based on clinical concern. With the help of the paramedic students and nursing students with paramedic qualifications, the doctors on duty at UBD VC monitored all individuals post-vaccination in the Observation Area.

Individuals with clinical concerns were observed and managed in the designated Treatment Room. During the operational period, a total of 87 individuals were managed in the Treatment Room. There were 53 females and 34 males presenting with symptoms during the post-vaccination observation period. Table 4 (see next page) shows the symptoms and the number of patients treated in the Treatment Room.

Sex	F : M = 53 : 34
Age (mean, range) years	25 (12 - 74)
Symptoms post-vaccination	
Dizziness	56
Shortness of breath	4
Syncope	4
Headache	3
Nausea and vomiting	3
Shivering, arm trembling	3
Rash on neck, arm, shoulder	2
Tingling arm, hand	2
Body itchiness	2
Panic or anxiety attack	2
Chest pain	1
Neck pain	1
Low back pain	1
Dizziness and blurred vision	1
Body weakness	1
Sensation in throat	1
TOTAL	87

Table 4 (top): the type of symptoms and the number of individuals who developed symptoms and were treated in Treatment Room at UBD Vaccination centre post-vaccination.

Right photo: Professor Kenneth at the Doctor's Station in UBD Vaccination Centre.



Out of 87 individuals presented to the Treatment Room, 79 (90.8%) were discharged home after treatment with medications where indicated and after close monitoring. All their symptoms settled or improved on discharge. Two individuals (2.3%) were referred to the Emergency Department at RIPAS Hospital; one was a 26 year-old male with chest pain and the other was a 29 year-old female with dizziness, both of their symptoms persisted after 3 hours in the Treatment Room. Six individuals (6.9%) were discharged home with referrals to their General Practitioners; 4 of them because of persistent high blood pressure, one with low back pain due to suspected urinary tract infection and one because of persistent hand trembling.

If the doctors on duty were of the opinion that the post-vaccination symptoms were directly related to the vaccines administered, they would report the symptoms in the Adverse Events Following Immunization (AEFI) to the Ministry of Health. All the complications reported herein were symptoms the individuals experienced within the first 15 - 30 minutes post-vaccination, any complications which individuals developed after leaving UBD VC were not captured in this report.

All the doctors felt that it was their duty to volunteer to support the country's response to the pandemic when called upon. It was also their professional obligation to assist others in times of a national crisis and they all reflected on the enormous value of working to support other healthcare professionals. All the doctors in UBD VC have also found the experience rewarding. Their contributions were often recognized and appreciated by other healthcare staff and the general public.

UBD Vaccination Centre Doctor Team:

Professor Mohd Ayub Sadiq @ Lin Naing

Dr. Zaw Wint

Professor David Koh Soo Quee

Professor Kenneth Yuh Yen Kok

Datin Paduka Dr. Hajah Maslina Binti Hj Mohsin

Associate Professor Dr. Lie Chen

Senior Assistant Professor Dr. Hajah Fazean Irdyati Binti Haji Idris

Senior Assistant Professor Dr. Erkin Erdal

Assistant Professor Dr. Faiza Alam

PAPRSB IHS GRADUATES CELEBRATED AT UBD'S 33RD CONVOCATION CEREMONY

Universiti Brunei Darussalam (UBD) held its 33rd Convocation event on the 29th of January this year at the Chancellor's Hall to celebrate successful graduates who have completed their programmes with the university. This delayed ceremony went ahead despite the nation still battling its third wave of COVID-19 pandemic at the time, with adherence to public health measures currently in place by the Ministry of Health, Brunei. A series of mandatory requirements was requested from attendees prior to the event which includes performing COVID-19 PCR swab test days before and antigen rapid test on the day of the event.

A total of 1060 graduating students were celebrated, which included 8 PhDs, 282 Master's degree, 747 Bachelor's degree, 19 Graduate Diploma, and 4 Diploma recipients. The event was graced by His Majesty the Sultan and Yang Di-Pertuan of Brunei Darussalam, Chancellor of UBD who conferred the PhD and Bachelor's degrees in the morning session. Accompanying His Majesty was His Royal Highness Prince Doctor Haji Al-Muhtadee Billah, the Crown Prince and Senior Minister at the Prime Minister's Office, as Pro-Chancellor of UBD who graced the afternoon session for the remaining graduates.

In her welcoming speech, the Vice Chancellor of UBD Datin Dr. Hajah Anita Binurul Zahrina binti Pehin Orang Kaya Laila Wijaya Dato Seri Setia Haji Abdul Aziz highlighted various achievements UBD has accomplished in the past year via collaborative efforts on both national and international levels. UBD lent its support to the Ministry of Health in its National Vaccination Programme effort by establishing the UBD Vaccination Centre (VC) at PAPRSB Institute of Health Sciences. The UBD VC began its operating soon after the second wave of pandemic started in August 2021 and administered close to 80,000 vaccinations until the end of 2021. It was powered by over 300 volunteers made of both UBD and Politeknik Brunei staff and students. UBD, particularly academic researchers from PAPRSB Institute of Health Sciences, together with members of the Ministry of Health have also established a new international research collaboration with Duke-NUS Medical School Singapore which aims to investigate the efficacy of current COVID-19 vaccines that are being rolled out to the Bruneian population as part of the Brunei National Vaccination Programme.

A total of 130 students of PAPRSB Institute of Health Sciences graduated in this ceremony which included 32 postgraduates and 98 undergraduates. The ceremony witnessed the graduation of 1, 2, 18, and 2 students who were conferred with PhD in Biomedical Sciences, Master in Public Health, Master in Medicine, and Master of Health Science by Research (Nursing), respectively. Additionally, the faculty is proud to celebrate the success of a total of 9 full-time nurses who are our first cohort graduates from Master in Nursing. Twenty five and 28 students of BHSc in Biomedical Sciences and in Nursing & Midwifery were also celebrated during the ceremony. 7 of our students who graduated with BHSc in Pharmacy are currently undergoing their professional training at the Ministry of Health Brunei. Thirteen students who completed their BHSc in Dentistry programme are also currently pursuing their training at two of our partner dental schools - University of Dundee and Newcastle University. All 25 of our graduates in BHSc Medicine are also currently continuing their medical training at our partner medical schools which include University of Aberdeen, University of Adelaide, Australia National University, Chinese University of Hong Kong, University College Cork, University of Glasgow, University of Dundee, National University of Ireland Galway, University of New South Wales, University of Southampton, and Trinity College Dublin.

A big appreciation goes out to all of our faculty staff members for their contribution and to our students for their perseverance and hard work. Congratulations to all!



Left photo: His Majesty addressing the ceremony with his titah for UBD's 33rd Convocation. **Right photo:** Datin Dr. Hajah Anita (fourth from left), UBD Vice Chancellor, in a commemorative photo with PAPRSB Institute of Health Sciences 2021 graduates and academic staff.

PAPRSB IHS WELCOMED PROSPECTIVE STUDENTS AT HIGHER EDUCATION EXPO AND UBD OPEN DAY

Pengiran Anak Puteri Rashidah Sa'adatul Bolkiah Institute of Health Sciences (PAPRSB IHS) welcomed prospective students who are interested in pursuing their tertiary education with the Faculty via a virtual Higher Education Expo and a physical UBD Open Day, despite the resurgence of the third COVID-19 pandemic wave. The Higher Education Expo which was hosted by the Ministry of Education on a Zoom platform was held from 5th to 11th February and was attended by all programmes in the Faculty. The one-week event organised faculty programmes in a timetable which allowed the general public to join a virtual meeting room according to the schedule and their interest. UBD Open Day followed right after this expo which ran from the 10th to 12th February. Physical booths and electronic posters were set up at the Sunken Courtyard of PAPRSB IHS. A series of public health guidelines were adhered to during the Open Day which included the requirement for a prior booking for the event via QueUP application, the scanning of body temperature and BruHealth application on entry, and the mandatory self-administered ART COVID-19 test at the entrance. Numerous students and UBD staff facilitated the event and helped to ensure that everyone had a smooth experience and abided by the public health measures.

At the physical UBD Open Day, visitors had the opportunity to gain insights on the programmes offered by Universiti Brunei Darussalam. PAPRSB IHS received a great interest from the public and prospective students through the direct interaction with faculty representatives at the booths. Faculty members, who were available to receive enquiries and give advice during the Open Day, represented all 6 disciplines offered at PAPRSB IHS: Undergraduate programmes – Medicine, Dentistry, Biomedical Science, Pharmacy and Nursing & Midwifery; and Postgraduate programmes – Master of Nursing, Master of Public Health, and Masters and PhD by Research.

In addition, administrative and admission staff offered prospective students advice on programme admission and application processes.

More information on entry requirements and opportunities for life-long education at PAPRSB Institute of Health Sciences can be found on IHS website: <http://ihs.ubd.edu.bn/>



PAPRSB Institute of Health Sciences (IHS) participated in UBD Open Day from 10th to 12th February where faculty members (**top photos**) offered prospective students and their parents their advice on programme choices that offered at PAPRSB IHS (**bottom photos**).

UBD-GIGI KIT BY DENTISTRY STUDENTS WON A GOLD MEDAL AT AN INTERNATIONAL AWARD

Chu Sae Chiau, Nur Afifah Syafiqah Muhd Safwan & Valen Ong Jia Cin (BHSc Dentistry, Cohort 3)

A team of third-year dental students and faculty members from PAPRSB Institute of Health Sciences – Chu Sae Chiau, Nur Afifah Syafiqah Muhd Safwan, and Valen Ong Jia Cin, Dr Jagjit Singh Dhaliwal, Dr Long Chiau Ming, Dr Joe Knights, Dr Mary Chong Poh Hua – were awarded the gold medal in the 3rd International Intervention & Innovation in Dentistry Exhibition 2021 (IIDentEx2021). This was a virtual event organised by the Faculty of Dentistry, University Teknologi MARA, Malaysia on 5th October 2021. The exhibition was designed to serve as an arena where creative ideas, inventions and innovations were presented and where the industry's keenest minds could discuss and deliberate on the evolution in the dental and healthcare fields. This year's theme, 'Bridging Societies in a VUCA* World through Innovation' (*Volatile, Uncertain, Complex, and Ambiguous), encouraged the invention of revolutionary and adaptive projects aimed at developing new solutions which offer significant and valuable contribution to oral healthcare focusing on best research, innovative clinical practice, and community impact. The theme fell in line with the three third-year 3 dental students' SSM3 community event project "Healthy Mouth Healthy Life", which they then put together to produce the "UBD-GIGI Kit".

The UBD-GIGI Kit is an all-in-one oral health educational package that teaches about oral hygiene and care, that is easy to utilize and suitable for teachers, parents or health care professionals. The kit includes a validated worksheet for pre- and post-assessment of knowledge, a G-rated educational video regarding oral health care and diseases, and a dentist-reviewed handbook which contains instructions and guides for hands-on learning and fun activities. In addition to manufacturing the kit, participants were also required to make a video and poster explaining the rationale of the products, its potential for commercialisation as well as its novelty. These materials, together with the project poster were displayed in the virtual exhibition booth for judges and other participants viewing (see photo on the right). For more details of the kit, please scan the QR code below to view the promotional video which is also posted on the official IHS website (<https://ihs.ubd.edu.bn/ubd-gigi-kit-video/>).

Furthermore, the event hosted several interesting plenary talks that were held live on the IIDENTEX YouTube channel. The topics covered included "Technologies That will Shape the Future of Dentistry", "From Idea to Prototype: The F-DentEst Lab@ Experience", and Blockchain programming workshops to demonstrate the role of smart contracts in facilitating patient medical records, drug production and supply chains; and the performance of Sensodyne in deep targeted repair of dentine hypersensitivity.



Top: The award-winning product, UBD-GIGI Kit – a validated edu-kit and assessment tool for oral health education. **Middle:** The virtual booth setup during the exhibition. **Bottom:** Healthy Mouth Healthy Life / UBD-GIGI Kit team members (in order starting from fourth person on the left – Valen, Chu & Syafiqah) taking a group photo with a volunteer and school staff members after holding a talk and booth exhibition at Sekolah Rendah Dato Basir during their SSM3 project.

IHS ASSISTANT PROFESSOR DISCUSSES THE CHALLENGES OF PALLIATIVE CARE DURING THE COVID-19 PANDEMIC

Dr. Hajah Asmah Haji Husaini (Assistant Professor)

The COVID-19 pandemic is impacting many essential healthcare services including palliative care which is a medical and health services that aims to improve the life quality of patients who are suffering from advanced diseases. In this article, Dr. Hajah Asmah, an Assistant Professor in Nursing who has a special interest in palliative care shared with us how the palliative care team at the Raja Isteri Pengiran Anak Saleha (RIPAS) Hospital maintains the fluidity of their services while still complying with the strict public health regulations set by the Ministry of Health (MOH), Brunei Darussalam.

Palliative care services in Brunei are offered both in the hospital and community care settings. Palliative care is offered at hospital wards to admitted patients who are unable to manage their symptoms at home. Those who are well enough and are living at home are supported through regular follow up appointments at palliative care clinics. For those who are not well enough to travel to the hospital, they would receive regular home visits from the palliative care and homebased nurses.

During the surge of the COVID-19 pandemic, unwell palliative patients who have to come to the hospital for support are strictly triaged for the necessity of their ward admissions. This often leaves the palliative care team in a dilemma as they would prefer the patients to be managed at home to reduce unnecessary exposure to COVID-19. For others, patients and families are supported with regular video calls or home visits which are strategically managed by the palliative care nurses. However, a bigger challenge posed by the COVID-19 pandemic is on palliative care services for patients requiring ward admissions. Although there has been a designated ward for palliative care services in RIPAS hospital, admission is often not an ideal option due to the strict public health protocols implemented by the MOH for the management of patients in hospital settings that prevent cross-infection within the hospital ground itself. Therefore, one of the strategies to reduce potential COVID-19 cross-infection between community and hospital settings is to mix and divide healthcare workers from various medical specialties into two teams: the 'Dirty team' and the 'Clean team'.

The 'Dirty team' focuses on the care of admitted patients in wards who are managed under their care. The 'Clean team' attends patients within the community and functions as a 'stand-by' team in case the 'Dirty team' is compromised by COVID-19. These measures therefore help to minimise movements and risk of close social contacts between healthcare professionals and COVID-19-infected patients. Inevitably, this team division also means that the palliative care team are supporting both palliative and non-palliative patients in the hospital, and that the palliative patients may also be managed by non-palliative care specialists. To overcome these gaps in care and treatment, the palliative care team has embraced telehealth technology which organises regular teleconferencing with medical teams of other specialties who manage palliative patients in their wards.

Another significant impact from the pandemic was on personal communication with patients and families. No amount of technology can replace the value of human engagement when discussing with patients and their families about their diagnosis, expected health trajectory, treatment plan, and end-of-life matters. Palliative care practitioners are concerned that empathic communication cannot be achieved through this telehealth approach because it limits the expression of appropriate body languages or facial expression. These gestures are undoubtedly important for the expression of support and understanding to both the patients and families. Nonetheless, these adaptations need to be carried out to ensure the continuity of palliative care for patients so that they can receive health support at every stage of their illness journey. Following this experience, the team foresees the utilisation of technology in palliative care as the 'new norm' in the near future which will allow avenues for exploration in palliative communication during these unprecedented times.



Dr. Hajah Asmah and co-author Dr. Zulkhairi Mohamad advocate for the importance of palliative care for critically ill patients in Brunei in an article published in biG (Borneo Insider's Guide) magazine, Issue Jan/March 2022, page 10-13. Please scan the QR code to read the article.

POWER BOOSTING GENOMICS RESEARCH AT UBD WITH ILLUMINA NEXTSEQ 2000 MACHINE

Siti Nur Idayu Haji Matussin (Research Assistant), Aklimah Haji Mustapa (Research Assistant), Dr. Zen H Lu (Senior Assistant Professor) & Dr. Mas Rina Wati Haji Abdul Hamid (Associate Professor)



Photos showing an on-site training, both theory (left) and practical (right), on the use of NextSeq 2000 (middle photo) which was conducted at the Biomedical Genomics Core Lab in January 2022

The Precision Genomic Medicine (PGM) Research Group at IHS has started to push back the genomics frontier of the country since the inception of the Biomedical Genomics Core (BGC) Laboratory (https://twitter.com/BGC_lab) in mid-2020. A number of projects in the areas of population, cancer and pharmaco-genomics are underway at the Institute using the various facilities at the BGC Lab. The sequencing capacity of the lab has recently received a significant boost with the addition of one of Illumina's latest state-of-the-art next generation sequencing (NGS) platforms, the NextSeq 2000. Brunei was the second (after Singapore) among other ASEAN nations to have acquired this machine.

The new machine was successfully delivered to and installed at the BGC Lab in January 2022 by ScienceVision (Malaysia), an Illumina authorised service provider covering Malaysia, Brunei and Myanmar, despite the various challenges posted by the ongoing COVID-19 restrictions. A three-day user training session attended by members of PGM, academics and graduate students from the Institute was also conducted during this time. In addition to a theoretical overview of the workflow for the NextSeq 2000 sequencing system, a trial run was also carried out to provide participants with hands-on experience in library preparation and sequencing runs. Furthermore, both the on-board DRAGEN Bio-IT Platform and Illumina's cloud biocomputing system, known as the BaseSpace Sequence Hub were also introduced. The latter enables researchers with minimal bioinformatics background to perform NGS data analysis in a far less intimidating web tool environment.

In comparison to the NextSeq 500, which is also available in the BGC Lab, this latest machine is capable of producing three times as much high-quality data output, but at a much reduced cost to put the sequencing of the entire human genome economically within reach (see Table on the right). Additional features of NextSeq 2000 include a more comprehensive workflow with a user-friendly run setup, broader range of compatible library preparation kits, an easy load and run operation, and an integrated bioinformatics analysis taking full advantage of the on-board high performance computing resources. Together, the two machines can now provide services such as whole exome and genome sequencing, RNA-seq, epigenomics, metagenomics, etc., using samples ranging from blood, saliva to FFPE tissues.



	NextSeq 500	NextSeq 2000
Run time	12 - 30 hours	24 - 48 hours
Output: - DNA bp (billion) - Reads (million)	120 400	360 1200
Key Applications	<ul style="list-style-type: none"> - Whole Exome Sequencing (WES) - Transcriptome (RNA-seq) - Whole Genome Sequencing (WGS) 	
Estimated cost (BND\$/human sample)	<ul style="list-style-type: none"> -WES: \$770 -RNA-seq: \$970 -WGS: >\$12,000 	<ul style="list-style-type: none"> - WES: \$520 - RNA-seq: \$730 - WGS: \$3,000

Table: Difference in the main features of Illumina NextSeq 500 and NextSeq 2000

Queries on research projects or potential collaboration are welcomed and can be directed to the following email: bgclab.ihs@ubd.edu.bn

THIRD-YEAR MEDICAL STUDENTS ENCOURAGED BLOOD DONATION THROUGH PINTOFHOPE.BN

Aisyah Farhanah binti Nizam Sumurdani, Aelly Rashidah Boey binti Muhammad Aeizlan Boey, Muhammad Syakir bin Haji Yakub, Nor'ain binti Awang Haji Adi & Noor Amer Zharfan bin Noor'ash (BHSc Medicine, Cohort 15)

Pint of Hope is a community awareness project managed by Aisyah Farhanah binti Nizam Sumurdani, Aelly Rashidah Boey binti Muhammad Aeizlan Boey, Muhammad Syakir bin Haji Yakub, Nor'ain binti Awang Haji Adi and Noor Amer Zharfan bin Noor'ash. This group of third-year medical students from PAPRSB Institute of Health Sciences (IHS) aimed to raise awareness of the importance of maintaining sufficient blood supply in Brunei Darussalam and its implications towards patients with haematological disorders by advocating the act as well as instilling the habit of regular and voluntary blood donations to the youth and general public in this country. The team evaluated the awareness level of the general public regarding the blood donation via a Google Form questionnaire titled "Public perception of blood donation". The majority of the 92 responses collected claimed to be moderately to extremely knowledgeable about blood donation despite more than half of them never donating blood citing "busy schedule" as the main reason. Nonetheless, most expressed interest in donating blood in the future. Furthermore, Pint of Hope advocated for thalassaemia patients who rely on donated blood supplies. The project organised a "Virtual afternoon with thalassaemia patients" to provide a platform for these patients to educate the implications of the current issue of low blood supply on their treatments and everyday lives.

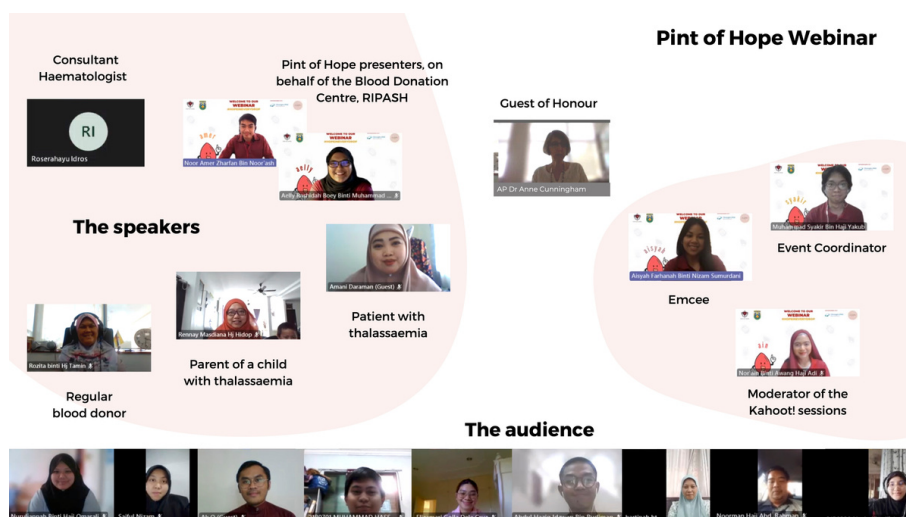
The highlight of this project was the Pint of Hope Webinar which was conducted on the 22nd September 2021 and attended by the public plus invited guests from UBD, Universiti Islam Sultan Sharif Ali, Brunei Darussalam AIDS Council, Brunei Youth Council, and Football Association Brunei Darussalam. Aelly Boey and Amer Zharfan from Pint of Hope were acting on behalf of the Raja Isteri Pengiran Anak Saleha (RIPAS) Hospital Blood Donation Centre to initiate the session by emphasising the importance of blood and its daily demand in Brunei. This was followed by talks by Dr. Pg Roserahayu from the Haematology Unit from RIPAS Hospital, Dayang Nurulamani and Rennay Masdiana, a thalassaemia patient and a parent of a thalassaemia patient respectively; and IHS's very frequent blood donor, Cikgu Rozita Haji Tamin. The event concluded with an interactive session and a set of questionnaires which showed the success of the webinar in improving the knowledge of blood donation in participants. Reflecting on this success, Syakir and Ain expressed: "As Pint of Hope members, it was gratifying for us when some participants mentioned that they were inspired to donate blood because of our cause".

Pint of Hope still managed to execute all events successfully despite the COVID-19 pandemic. According to Aelly: "The Pint of Hope Virtual Run managed to accumulate \$805 in profits. This money will be donated to the Medical Social Work Unit, RIPAS Hospital to provide monetary support for underprivileged haematological disorder patients as it was noted that some patients do not have transportation for their regular blood transfusions". Amer added, "Our virtual exhibition via Instagram attracted almost 300 followers with each post reaching almost twice as many accounts. If you are interested to view our posts and learn more about blood donation and its importance towards patients with haematological disorders, you can follow us at @pintofhope.bn." The project team leader, Aisyah, expressed: "We are truly thankful for the support from everyone. We hope through this project, more citizens would be aware of the importance of maintaining sufficient blood supply in the country and be more inclined to be regular blood donors in the future."



PINT OF HOPE

Pint of Hope Webinar



Top: Logo that represents the advocacy of @pintofhope. **Bottom:** Five third-year medical students organised a public webinar to educate and promote the importance of blood donation and maintaining its supply in Brunei. The webinar hosted multiple speakers that highlight various aspects of blood donation and supply.

The Pengiran Anak Puteri Rashidah Sa'adatul Bolkiah (PAPRSB) Institute of Health Sciences

UBD's PAP Rashidah Sa'adatul Bolkiah Institute of Health Sciences (PAPRSB IHS) has expanded beyond solely providing medical training. Graduate programmes such as Master of Medicine, Master of Nursing, Master of Public Health, and Masters and PhD by Research as well as undergraduate programmes across six main disciplines – Medicine, Biomedical Sciences, Nursing, Midwifery, Pharmacy and Dentistry are now offered. We ensure the Institute remains relevant and sensitive to the rapidly changing needs of the country. Our programmes are products of a continuous review of our curricula, and all our undergraduate programmes have undergone major enhancements and are now also designed to encourage innovation and entrepreneurship, and for students to assume leadership roles, tempered with a keen awareness of the environment.



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UBD has been ranked 68th in THE World University rankings in February. Congratulations to all staff and students of UBD for this achievement!



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