



APOA Asia Pacific
Orthopaedic Association

CONNECTION

e-Newsletter

MARCH 2022



THERE IS NO LIMIT TO
WHAT WE CAN ACCOMPLISH
Together



INTERNATIONAL
WOMEN'S DAY
Edition

Table of Contents

President’s Message	3
Gender Equality Today for a Sustainable Tomorrow <i>Shoichi Kokubun</i>	
Editorial	4
Expand Your Mind; Change Your World <i>Azeta Arif</i>	
Setting in Motion: WAVES - Women of APOA Advocate, Educate & Support	5
<i>Tanya Burgess</i>	
Unity in Diversity: A Resonating Sound	8
<i>Rujuta Mehta</i>	
Embracing Our Differences to Change the World	10
<i>Jamal Ashraf</i>	
Every Step Counts	12
<i>Kenneth Cheung and Paul Koljonen</i>	
Osteoporosis and Fragility Fractures: Are We Doing Enough?	15
<i>Joon Klong Lee</i>	
Orthopaedic Heritage: A Legacy of Excellence	19
<i>Raja Bhaskara Rajasekaran</i>	
APOA Congress News	21
22 nd APOA Congress: Manila, Philippines	
APOA Federation News	22
Annual Congresses 2022	

President's Message

Shoichi Kokubun



Dear APOA members,

This issue of our Newsletter highlights International Women's Day (IWD), celebrated annually on March 8. It started in New York on February 28, 1909 as National Women's Day, organized by the Socialist Party of America. The first IWD was marked on March 19, 1911 with a demand for the right to vote and to protest against employment sex discrimination in Austria, Denmark, Germany and Switzerland. In 1914, it was held on March 8 in Germany. This day has remained the global date for IWD ever since. It however, had predominantly been a holiday in socialist countries until the late 1960s when it was taken up by the feminist movement. The United Nations began celebrating it in 1975 and proclaimed IWD as its official holiday for women's rights and world peace in 1977. The official United Nations theme for the day this year is "*Gender equality today for a sustainable tomorrow*".

Currently these talented female orthopaedic surgeons are part of the APOA Council: Tanya Burgess: Chair APOA WAVES, Joyce Koh Suang Bee: Chair APORS, Azeta Arif: Chair Newsletter Comm, Annette Holian: Chair Disaster Response Comm, Susan Liew: Chief Delegate Australia, Roohi Ahmad: National Delegate Malaysia and Julyn Aguilar: Chief Delegate Philippines. I hope that these numbers will gradually increase and one of them will be elected to the Presidential Line in the not-so-distant future.

The 22nd APOA Scientific Congress, where we will celebrate the 60th anniversary of the Association, is scheduled to be held from November 24 - 26 this year in Manila. The Organizing Committee has decided to run it via a full virtual platform. This Congress will provide you with 9 plenary lectures by outstanding clinicians or researchers beyond the boundaries of orthopaedic subspecialties. The other sessions are shared by subspecialty sections of the APOA and the Philippine OA.

Nowadays, scientific papers published are easily accessed through the journals' websites without hindrance from the pandemic. Simply reading papers, however, does not provide feedback or give you the opportunity to ask questions. I would like you to participate in the forthcoming Congress and listen to the lectures of your choice, and discuss them with the lecturers. After the Congress, you may be able to contact them through the websites of their institutions, and further strengthen your relationship. For example, if you contact me, a plenary lecturer, I will provide you with videos of my lectures and spinal surgeries. I am confident that your participation in the Congress would be both pleasant and rewarding.

Yours Sincerely,

Shoichi Kokubun, MD, PhD
Professor Emeritus, Tohoku University
Sendai, Japan
APOA President 2021-2022

Expand Your Mind; Change Your World

Editorial

Azeta Arif



Dear APOA Members,

This International Women's Day is bringing new calls to #pressforprogress on gender parity. Giving women and girls the opportunity to succeed is not only the right thing to do - it can also transform societies and economies.

Unlocking this transformative potential means pushing for more equal opportunities: for example, equality in legal rights for men and women, and equality in access to education, health, and finance. Just as important is the fundamental issue of ensuring a safe environment for all, including protection against harassment.

The APOA's message is clear: Providing & promoting gender equality creates an environment in which female orthopaedic surgeons of our region are more likely to be academically and professionally active and thus fulfil their vast potential.

But the benefits don't stop there. Promoting equality in opportunities can be an academic game changer. Increased opportunities will translate into better results & patient care.

Together with our Federation member countries, the APOA is committed to working with women groups around the Asia Pacific region to identify policies that help lady orthopaedic surgeons realize their true potential.

It is not enough to talk about gender equality on International Women's Day. We need to continue to work to address this issue and keep it at the top of the policy agenda throughout the year. We promise we will keep playing our part.

Special thanks to Dr Jamal Ashraf, APOA 2nd Vice President, for all his help and guidance. Finally, I would like to thank our diverse & inclusive "Connection Team" for all their hard work in putting together this special issue.

Azeta Arif

Chair – Newsletter Committee
Indonesia



Asep Santoso
Indonesia



Baris Can Kuzuca
Turkey



Maria Shelynn Wong
Malaysia



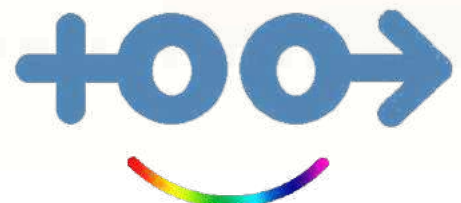
Ruba Jamal
Saudi Arabia



Raja Bhaskar
India



Sarah O'Reilly
Australia



Woman of APOA Advocate, Educate, Support



Setting In Motion: WAVES

Tanya Burgess



During the APOA Council meeting of July 2021, the formation of a Women's advocacy section was proposed. It was the initiative of Annette Holian (Australian National Delegate and at the time, First Vice President, Australian Orthopaedic Association). With the support of Jamal Ashraf (then Secretary General, APOA), Ted Mah (Chair APOA Hand and Upper Limb Section), Onder Aydingoz and 56 Council Members, the vote was passed and the Section was formed.

The baton was then handed to me to form a Section from scratch. While I had experience in governance, my corporate knowledge of the APOA and the leaders in the orthopaedic field in the Asia Pacific region was lacking and I relied heavily on recommendations and advice from Jamal Ashraf and Annette Holian to link in with the prominent women in the region. I managed to form a group of extremely talented, experienced and enthusiastic women who have become the inaugural executive committee of APOA WAVES. They have worked tirelessly for the past 6 months to write a constitution, create a mission statement and form the foundations of a section that we hope will have a significant influence not only for women in the field, but also across the entire field of orthopaedic surgery with the aim of improving the quality of care for all our orthopaedic patients.

Finally, the APOA WAVES Section was launched in early 2022.

Our Mission is to support and advocate for women in orthopaedics as well as increasing the awareness and improving the management of orthopaedic conditions affecting women in the community.

We aim to create a supportive network of female orthopaedic surgeons and male change champions to advocate for and empower each other to improve diversity, inclusivity and working conditions of female orthopaedic surgeons in Asia Pacific countries. We aim to improve the numbers of female orthopaedic Surgeons in positions of leadership, education and governance to improve the quality of care for all our patients.

We look forward to working collaboratively with the Council, the sub-specialty sections and individual country societies to achieve this. We welcome everyone to become a member of APOA WAVES.

Introducing the executive committee of APOA WAVES.

Tanya Burgess - Chair

She is an orthopaedic surgeon specializing in hand and wrist surgery. She is currently Director of training for orthopaedic surgery at the John Hunter Hospital, a Level 1 Trauma Centre in New South Wales, Australia. In addition to being a member of the APOA Education Committee she is also a member of the SICOT Advocacy Committee.



Rujuta Mehta
India



Annette Holian
Australia



Emel Gonen
Turkey



Erica Kholinne
Indonesia



Tunku Sara Ahmad
Malaysia

Rujuta Mehta - Secretary

She is an established paediatric orthopaedic surgeon and runs a hand practice specializing in paediatric hand and upper limb disorders and obstetrical brachial plexus lesions. She is the head of the department of paediatric orthopaedics at the Bai Jerbai Wadia Hospital for Children in Mumbai, India. She was the first lady to become the Secretary of BOS and is the current VP of BOS. She is also the chairperson of the IOA Women Orthopaedic Surgeons' Forum.

Annette Holian - Treasurer

She is a consultant orthopaedic and trauma surgeon and President of the Australian Orthopaedic Association, the first female to hold this position. She is the Chair of the APOA Disaster Committee and Clinical Director for Surgery and Perioperative Services for RAAF where she holds the rank of Group Captain.

She has undertaken five deployments to war zones including three tours in Afghanistan and a first responder in several humanitarian disaster responses both as a civilian and in uniform.

Emel Gönen - Member

She is a paediatric orthopaedic and trauma

surgeon and also the President of the Coordinating Board of Medical Specialties in Turkish Medical Association. She was the first woman in the executive council of Turkish Association of Orthopaedics and Traumatology (TOTBID), and is the founder and director of Women Orthopedists Study Group of TOTBID.

Erica Kholinne - Member

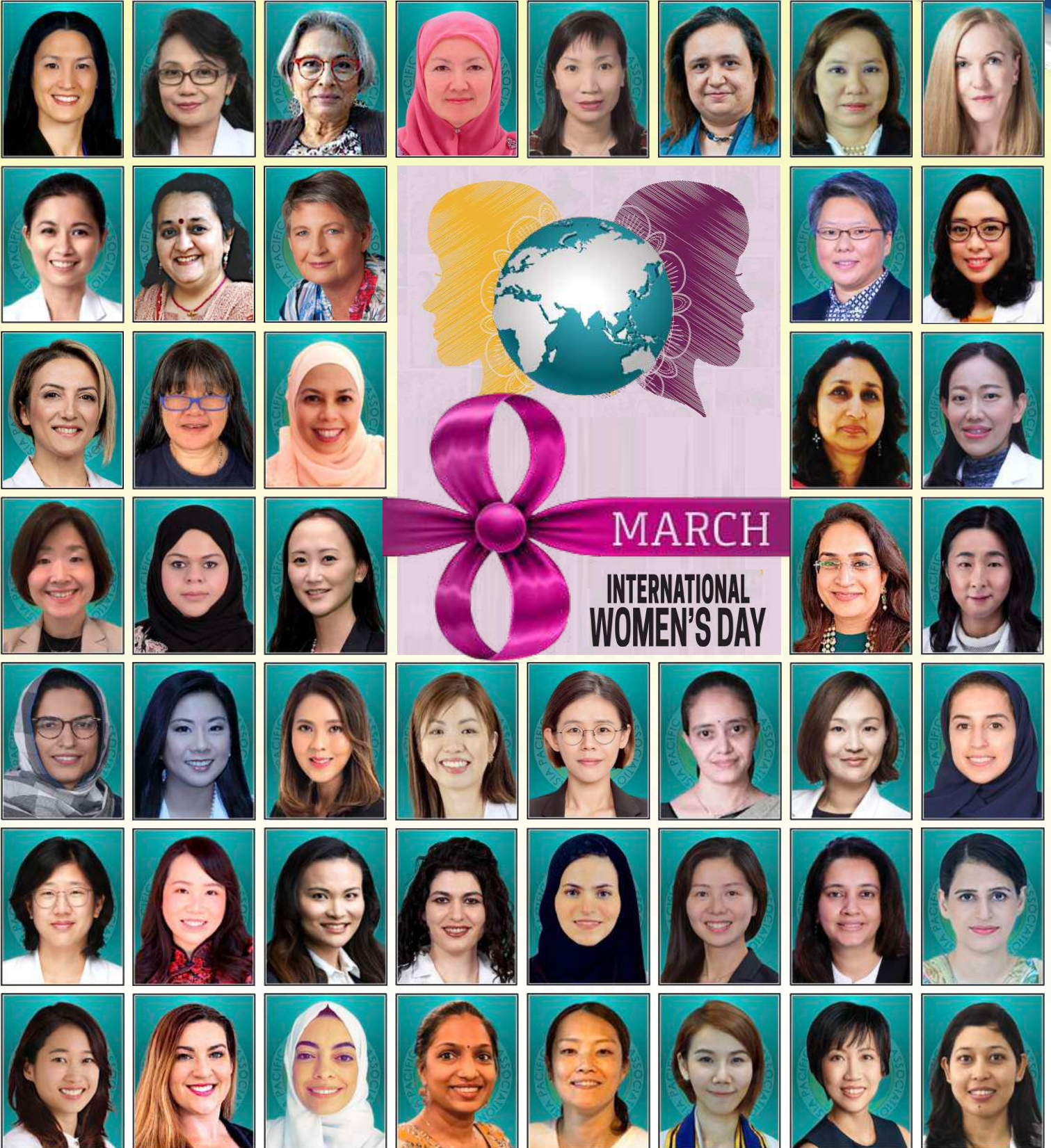
She is a shoulder and elbow surgeon from Indonesia. Despite being under-represented as a female orthopaedic surgeon in Indonesia (5.3%), she graduated first place in orthopaedic residency training. She is a reviewer in many international journals such as The American Journal of Sports Medicine and The Lancet Rheumatology.

Tunku Sara Ahmad - Member

She is a hand and microsurgeon. She was the first woman President of the Malaysian Orthopaedic Association and is also the Past President of the Malaysian Society for Surgery of the Hand. She chaired the orthopaedic department at the University of Malaya, Malaysia's first Medical School, for more than 10 years. She is a reviewer for two international journals and an editor for the Malaysian Orthopaedic Journal. She is now retired but continues to occasionally practice and is involved in research and teaching.



Join the Women's Advocacy Section: WAVES



Unity in Diversity

Rujuta Mehta



India is a country of ancient women scholars and achievers. Indian women have been trailblazers whether it is politics, the civil services, cinema, music, literature, beauty pageants, entrepreneurship, mountaineering, sports, business and so forth. Women first forayed into medicine as a specialty back in the late 18th century, however we are all aware that the larger section of society still perceives orthopaedics as a 'brawn' driven speciality. Recognition has only been fairly recent with regards to the sizeable number of women pursuing and practicing orthopaedics in India, however the pioneering work of the late Dr P K Mullafiroze dates back to 1940's in the pre independence era.

There have been several inspiring women excelling in orthopaedics in subsequent generations taking leadership positions of acclaim at national levels. In fact, seven outstanding Indian women have won the Marcela Uribe Zamudio Triennial award for Women Orthopaedics at the SICOT meetings

over the years. Three have been Presidents of National Societies or in the Presidential line. Initially all these achievements were viewed in isolation, it is only several decades later that seeds of bringing together all women in this speciality were sown in 2005 at the Golden Jubilee IOACON in Mumbai. The eventual formation of WOICE (Women Orthopaedic Surgeons of India Collective Empowerment) as a formal sub-set of IOA in 2016-17 occurred providentially at a time when the idea of diversity is gaining momentum all across the globe. Diversity has been championed by groups such as the APOA where there have been several countries with female presidents of their national orthopaedic societies .

The charters that guide WOICE are many and various. We have created a dedicated session for female Orthopods and an award paper session for younger residents dedicated to the late Dr P K Mullafiroze at the annual national conference. National cerebral palsy day is celebrated every year on 3rd October Madam's birth anniversary every year.

A CME is always held around International Women's Day in March. There is a counselling cell to aid in addressing any issues the are related to the experience of diversifying the professional sphere and addressing microaggressions as well as coping up with a demanding branch. Every year we participate in community drives for bone and joint health concerns of women.



**TO BE LIBERATED,
WOMAN MUST FEEL
FREE TO BE HERSELF,
NOT IN RIVALRY TO
MAN BUT IN THE
CONTEXT OF HER
OWN CAPACITY AND
HER PERSONALITY.**

INDIRA GANDHI
GEKOZEN TOT 'WOMAN OF THE MILLENIUM'
WOMEN
INC



There are fifty mentoring scholarships under the YUVA scheme and IOA fellowships are available for post graduate studies.



Women in Orthopaedics have traditionally gravitated towards paediatrics or hand surgery not as much by choice but more as per convention. Our focus will be to encourage women to pursue their areas of interests with support into less frequently chosen subspecialties like spine, arthroplasty and pelvic trauma, as well as encourage women at the undergraduate level in the far-off regions and under-represented states to which will eventually increase the participation at senior level in all regional and national associations virtual or physical CME's and governing bodies.

The state of Andhra and Telangana have a 30 percent reservation for PGs and Maharashtra



has been holding dedicated symposia and presidential theme center stage activities in BOS as well as other cities and districts. Many west zone associations are following suit. I have personally co-hermled a dedicated issue as guest editor on DDH; a condition still very highly prevalent and neglected in the female paediatric population and have been invited as associate editor on two peer reviewed indexed journals. With the creation of APOA -WAVES I have the honour of being nominated the founder secretary and create similar opportunities for other women in the coming years.

The membership of WOICE stands at 320 women in orthopaedics and counting. It is the largest group in the world of women Orthopaedic surgeons, but as compared to a total of 13,000 orthopaedic surgeons in IOA the ratio needs to improve significantly. We are well accepted, celebrated and encouraged at every level now. There are issues and there will always be a dynamic flux, but the need of the hour is to focus on solutions and create a positive upbeat environment for women in orthopaedics to blossom and thrive and achieve to their maximum potential.



Rujuta Mehta
Secretary General - WAVES
India

#pressforprogress

Embracing Our Differences



Jamal Ashraf



The Asia Pacific Orthopaedic Association is an alliance of twenty six countries with over 65000 fellows, which in itself make it as diverse an association as can be. So is there nothing for us to aim for with regards to embracing our differences?

The secret of getting ahead is getting started. The secret of getting started is to recognise that biases are prevalent and that they need to be shattered. We at the APOA are committed to removing all biases and prejudices and thrive to promote inclusion and diversity in orthopaedics across the vast Asia Pacific region. But what exactly do these terms really mean to us?

Traditionally, you would say that diversity is the acceptance of co-workers of different races, ethnicities, nationalities, ages, religions, disabilities, genders and sexual orientations. In current years, the Millennial / Gen-Z perspective would take an even broader definition and also incorporate diversity in educational background, personalities, skill sets, experiences, and knowledge base.

Inclusion can be defined as a situation where every member of the APOA feels valued, while also acknowledging everyone's differences and how these differences contribute to our organisation's culture and our academic outcomes. So looking at an inclusive organisation, you would say it's a family where all members are respected, feel that they

belong, are encouraged to contribute to academic processes, so all will have a chance to thrive.

Many of us can argue that being spread over 34% of the global landscape, we are already diverse in many aspects; but we also have to realise that diversity alone is not enough. We have to be inclusive. It's important that all APOA members feel that they can be themselves; that they are all included and that we have a culture that makes people feel like they belong to one big family. To get there, we all need to educate ourselves, focus on inclusive thinking and partake decisions that foster an association which is productive and healthy for everyone.

Diverse and inclusive academic organisations drive innovative results. Initially the change can be challenging, but eventually it is immensely rewarding. Multiple researches have shown that organisations and academic associations with more diverse teams outperform those with a more homogeneous membership. And it is my firm belief that cultural inclusion starts from the top down. It is imperative that the APOA Leadership and the Governing Council members display inclusive behaviour. Although we has been gradually moving towards a more inclusive and diverse leadership structure, the formation of the APOA Woman's Advocacy Section being a prime example, yet there is still much progress to be made.

Is it really that simple? No....it's actually quite complex, because there's no quick fix. It takes an inclusive mindset from all of us. We need to be mindful when we communicate; be open and curious when meeting others. Be aware of your own bias; yes we all have them. We all have a lot of unconscious bias about various social groups, religions, nationalities, etc that we need to become aware of. By becoming aware of them, we can become more mindful and respect each other's differences, and also speak out when we notice bias.

To re-emphasise: even though progress has been breathtakingly slow, it is our firm belief that a more diverse and inclusive membership will drive innovative results. Nonetheless, the fight for gender equality appears to be gaining momentum, spurred on not only by the extremely talented female orthopaedic surgeons of the region, but also by an increasing body of evidence showing that it delivers immensely rewarding results.

Finally, the most important thing I would say to all of 'us' is simply to start our journey. We can adjust the road map along the way, but we need to get started even if it is in small steps.

DIVERSITY
is having a seat at the table

INCLUSION
is having a voice, and

BELONGING
is having that voice be heard

LIZ FOSSLIE

Diversity is a fact; Equality a Choice; Inclusion an Action; and we at the APOA strive at Belonging, which is an outcome.

A Happy International Women's Day to all.

Jamal Ashraf
2nd Vice President
India



Every Step Counts

Kenneth Cheung & Paul A. Koljonen



The University of Hong Kong Department of Orthopaedics & Traumatology: 2021 Exoskeleton Paraplegic Walkathon

What are powered robotic exoskeletons?

It is every paraplegic's dream to walk again. The powered robotic exoskeleton is an established technology which is used in the medical setting as a rehabilitation tool for various movement disorders, including spinal cord injury and other causes of paraplegia. Exoskeletons are devices comprising an external, powered, motorized orthosis that is placed over a person's paralyzed or weakened limbs for the purpose of facilitating standing, walking, and performing activities of daily living. Exoskeletons can allow individuals with paraplegia both to rehabilitate in hospital settings, and / or ambulate in home and community settings. Practically, medically used powered robotic exoskeletons can be broadly divided into two categories:

therapeutic exoskeletons and assistive exoskeletons.

Therapeutic exoskeletons are designated for use in hospital / institutional settings, where a targeted training regimen is usually prescribed by the attending physician for rehabilitation of a specific neurological condition. Patients who are indicated to use this category of exoskeleton are generally those with potential for improvement in their neurological condition or gait pattern, and can benefit from the various therapeutic functions of these devices.



Assistive exoskeletons are designed for personal use in home or community settings. Patients who are indicated to use this category of exoskeleton are typically chronic paraplegic patients who desire to increase their over-ground walking capacity, but are not expected to gain neurological recovery from the exercise. Due to safety reasons, patients and their carers are usually required to undergo a period of training and certification, before they can use the device outside of an institution setting.



Exoskeleton walking rehabilitation has been shown in studies to be safe and efficacious in improving the quality of life and reducing complications arising from paraplegia. The clinical benefits of exoskeleton use for chronic paraplegics include improved upper body muscular fitness, improved cardiovascular function, counteracted health risks associated with prolonged sitting such as joint contractures and pressure sore formation, reduced spasticity and neuropathic pain, and improve bowel movement regularity.

Hong Kong's first Exoskeleton Paraplegic Walkathon

For the 60th Anniversary Celebration of the Department of Orthopaedics and Traumatology at The University of Hong Kong, our Spinal Cord Injury Rehabilitation team hosted Hong Kong's first Exoskeleton Paraplegic Walkathon. The event aimed not only at fund-raising for spinal cord injury research and clinical services in Hong Kong, but also aspired to bring the SCI community together. Researchers, clinicians, medical students, non-governmental organizations and territory-wide patient groups all participated in this marvelous event. The Exoskeleton Walkathon also raised awareness on the



physical and social needs for spinal cord injury individuals living in Hong Kong.

The 60-minute relay race featured four paraplegic individuals completing a live-broadcasted virtual relay across four sites in different parts of Hong Kong. The thoughtful choice of relay locations reflected not only our patients' long journey towards recovery, but also highlighted the journey of robotic exoskeleton development over the past decade.

In the spirit of academia and innovation, the first leg of the relay took place at The University of Hong Kong Centennial Campus, followed by the second leg at the at Maclehos Medical Rehabilitation Centre where the SCI patients spent their early post-injury days undergoing rigorous physical and functional training. The third leg of the relay was taken to the outpatient rehabilitation facility of Hospital Authority's Community Rehabilitation Support Services Centre – an important bridge between the patients' hospitalization and community reintegration, and then finally concluded at the HKU Sports Ground, a destination symbolizing patients' final return to independence and gainful living.

For the first time we were able to compare the wide range of technical capabilities of different



For the first time, we were able to compare the wide range of technical capabilities of different robotic exoskeletons, as shown here in the setting of their everyday applications. During the relay, four unique brands of robots were utilized for this event – The University Campus leg showcasing the novel, lightweight personal-use *SuitX Phoenix*, the Rehabilitation hospital using the robust therapeutic *EksoNR* from Eksobionics, the community rehabilitation center featuring the reliable *FreeWalk* from FreeBionics, and finally the sports center using the agile and modular-designed *Indego*. This real life demonstration of the functionalities of various exoskeletons highlights the expertise required of the rehabilitation trainers, as well as the paramount importance of good case selection.

The HKU Get Up and Walk Campaign

Since 2018, the HKU team has launched the *Get up and Walk Campaign*, a multidisciplinary platform providing direct services and also

fund-raising opportunities to support individuals with spinal cord injury. The campaign has so far raised over HKD\$10M to introduce exoskeleton paraplegic training into public hospitals, provide diaphragmatic pacing surgeries for high cord injury patients, as well as support basic and clinical research for adjuvant treatments for SCI recovery. The HKU team hopes that through breaking frontiers in treatment, and raising awareness in society, we can empower individuals with spinal cord injury to live their lives to the fullest, and at the same time improve the support we can collectively provide. Learn more about this campaign at www.sci.ortho.hku.hk.

Kenneth Cheung

Editor – Journal of Orthopaedic Surgery

Paul A. Koljonen

APOA Member

Hong Kong





Are We Doing Enough?

Joon Klong Lee



Osteoporosis is defined as a systemic skeletal disorder, characterised by low bone mass and micro-architectural deterioration of bone tissue, with the consequence increase in bone fragility leading on to increase risk of fracture.¹ Osteoporosis and fracture are two non-separable conditions in which reduction in bone density and quality increase the risk of fracture. Fracture occurs following fall from standing height, with minimal trauma or even absence of significant trauma is defined as fragility fracture. It is commonly seen in older persons above fifty years of age, especially in those with propensity of fall due to underlying frailty. Vertebral fractures can occur spontaneously without any significant injury. Vertebral fractures can occur even with forward bending or following a sneeze or cough. The common sites of fragility fracture include distal radius, vertebrae, hip and proximal humerus.

International Osteoporosis Foundation (IOF) Asia Pacific Regional Audit Report 2013 reported marked increase in the projections of population aged ≥ 50 years of age by country (2013, 2025, 2050) as percentage of population among sixteen countries in Asia Pacific region.² The ratio of the population aged 65 years or over to the population aged 15–64 years, who are considered to be of working age is defined as Dependency Ratio. These ratios are presented as the number of dependents per 100 people of working age. There is a marked inflection in the aging

population from the year 2020 onwards in all continents including Asia Pacific.³ The increase in ageing population represents an increase in the number of older persons and therefore higher number of fragility fracture. Asian Federation of Osteoporosis Societies (AFOS) showed that the number of hip fractures will increase from 1,124,060 in 2018 to 2,563,488 in 2050, a 2.28-fold increase. The direct cost of hip fracture will increase from 9.5 billion United State dollar (USD) in 2018 to 15 billion USD in 2050, resulting a 1.59-fold increase. A 2%-3% decrease in incidence rate of hip fracture annually is required to keep the total number of hip fracture constant over time.⁴

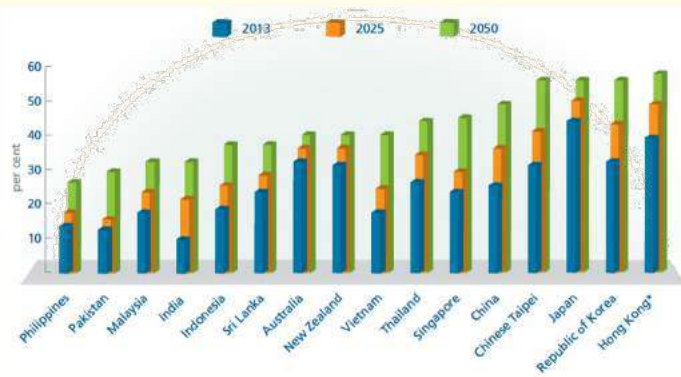
In our daily clinical practice, many older patients presenting to us with hip fracture do give us a past history of distal radius fracture when they were fifties, vertebral fractures with hunch back when they are around sixties. However, they received treatment for their fractures with no further skeletal assessment to determine whether they suffered from osteoporosis or osteopenia. US Medicare data indicate that 65% of women between 65 and 85 years of age who sustain a fracture are neither worked up nor treated for osteoporosis within 6 months of this fracture.⁵ Similarly, no further assessment on their fall risk was performed following their initial fractures. “Fracture begets fracture”, when the underlying osteoporosis or osteopenia are not being treated and with repeated fall, patients

suffer from repeated fractures and even hip fractures when they are in the seventies. We have missed the opportunity to capture them and to intervene when they presented to us with their first fracture.

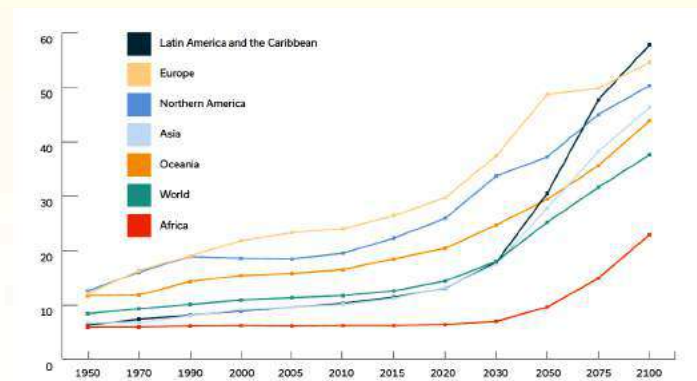
Orthopaedic surgeons are often the first contact point for patients presenting to us with fragility fracture. Therefore, it is the golden opportunity for orthopaedic surgeon to not only treating their fractures, but treating the underlying osteoporosis or osteopenia to improve their bone density and quality in order to reduce the risk of future fractures. The traditional approach of treating the fragility fractures alone without further assessment of their skeletal health and fall risk assessment, without proper intervention to improve the density and quality is not acceptable. A multidisciplinary approach is required to provide the most complete care for patients with fragility fracture. This requires a team of members from different specialities.

Multidisciplinary approach involving emergency medicine physician, orthopaedic surgeon, geriatrician, rehabilitation physician, anaesthetist, physiotherapist, occupational

therapist, dietitian, pharmacist and primary care physician is the way to go to provide the best care. In particular, patients with hip fracture should be seen by emergency medicine physician to provide post fracture acute care, geriatrician and anaesthetist to provide preoperative assessment and optimisation for surgery, surgery within twenty four to forty eight hours of presentation, preoperative and postoperative rehabilitation and functional training to provide the best functional outcome, dietitian and pharmacist consultations for appropriate dietary intervention and safe consumption of medicine as well as prevention of postoperative delirium, pressure sore and complications related to immobilization with orthogeriatric care. Fracture Liaison Service (FLS), also called Secondary Fracture Prevention Program together with the Orthogeriatric care model provide the most comprehensive care model for patients with fragility fracture. A perfect internal fixation or surgery alone is not adequate if patients do not regain their best functional status possible after surgery.



Projections of population aged >= 50 years of age by country (2013, 2025, 2050) as percentage of population¹



Old age dependency ratios for the world and world regions for 1950-2100

Key Elements Necessary for Implementing Comprehensive Multidisciplinary Fracture Liaison Service (FLS)

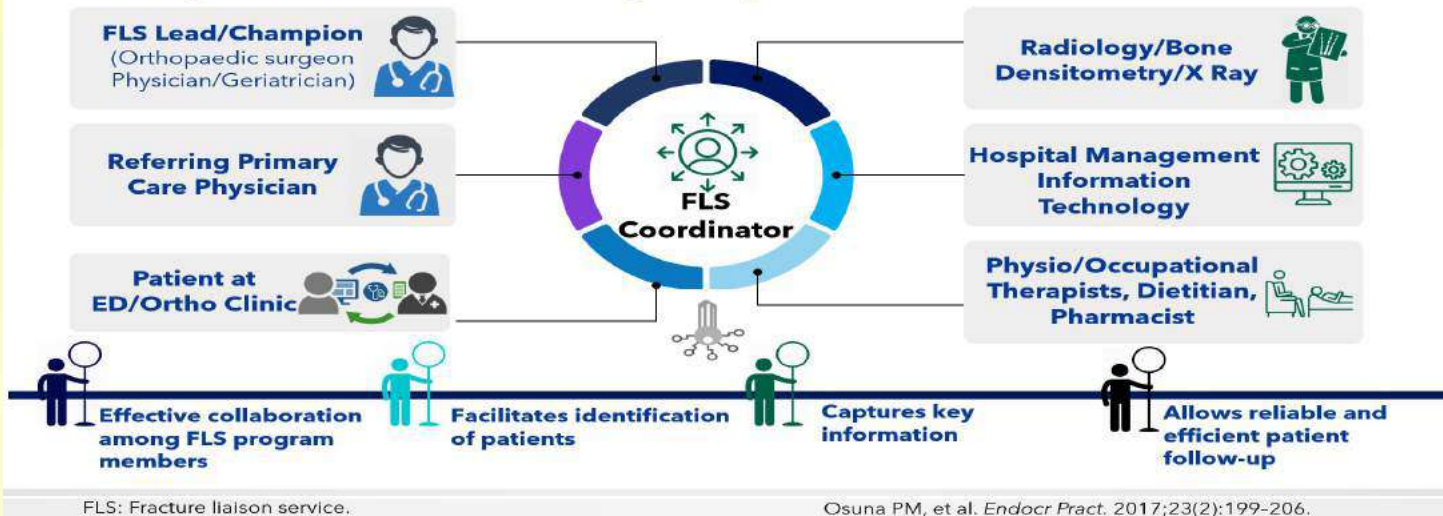


Photo Source: Fragility Fracture Network, Malaysia

Many orthopaedic surgeons recognize the existence of a care gap whereby patients presenting with fragility fractures are often not evaluated or treated for osteoporosis. However, many express reservations in initiating pharmacological treatment for the underlying osteoporosis. In view of their daily clinical practice, they are also concerned about taking the responsibility to monitor the effectiveness of pharmacological treatment as well as monitoring patient's compliance and adherence to anti-osteoporosis medicines. Therefore, it is very common to see the "Touch and Go" approach in which orthopaedic surgeon fix the fracture and patients disappear from further assessment. Many orthopaedic surgeons prefer to pass their patients to the physician to treat the underlying osteoporosis. As the first contact point of patients presenting with fragility fracture, orthopaedic surgeon plays the most important role in managing the fracture. However, it does not stop at the time

when fracture is fixed or patient is being discharged from in-patient care. Orthopaedic surgeon should be equipped and confident to initiate anti-osteoporosis medicine before patient is being discharged from hospital. Orthopaedic surgeons should also participate actively to ensure good compliance and adherence to the anti-osteoporosis medicine. As the surgeon managing the fracture, patient and family members are more attached and confident too in their surgeon's advice and decision on initiating the necessary long term pharmacological treatment for their osteoporosis.

Orthopaedic surgeon's role is not limited to fracture fixation. Our roles include patient education on osteoporosis and fragility fracture, appropriate and early diagnosis, fracture risk assessment, proactively initiating pharmacological treatment of the underlying osteoporosis and monitoring the compliance

Table 2
Projected direct medical cost of hip fracture in 2018 and 2050 by country.

AFOS members [reference]	Direct cost of each hip fracture (in USD)	Projected numbers of hip fractures		Projected direct cost of hip fractures (in million USD)	
		2018	2050	2018	2050
China [25]	3485.6	484,941	1,165,728	1690.3	4063.2
Hong Kong [26]	8831.9	9590	27,468	84.7	242.6
India [27]	772.0	331,898	792,334	256.2	611.7
Japan [28]	27,599.0	179,202	242,990	4945.8	6706.3
Korea [13]	3088.1	20,892	59,466	64.5	183.6
Malaysia [27]	6000.0	5880	20,893	35.3	125.4
Singapore [29]	6917.2	4477	15,806	31.0	109.3
Taiwan [30]	5776.0	45,063	121,131	260.3	699.7
Thailand [31]	2018.6	42,118	117,670	85.0	237.5
Total		1,124,060	2,563,488	9471.1	15,029.3

USD, United States dollar.

and adherence to treatment, to promote a multidisciplinary care model, fall risk assessment and secondary fracture prevention. Orthopaedic surgeon is in the best position to lead or champion Fracture Liaison Service (FLS).

It has been too long that fragility fracture care stops when a patient is discharged from the acute hospital. As the population continues to age, the shortcomings of the traditional care approach is unacceptable, especially when a patient returns with another fracture. Fracture Liaison Service (FLS) is a coordinated program that serves to ensure that fragility fracture sufferers receive appropriate assessment and management of osteoporosis and falls risk, therefore to prevent subsequent fracture.

Joon Klong Lee

Chair
Osteoporosis & Fragility Fracture Section
Malaysia

1. Consensus development conference: Diagnosis, prophylaxis and treatment of osteoporosis. American Journal of Medicine, 1991, 90:107–110.

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Orthopaedic Heritage

Raja Bhaskara Rajasekaran



1. Discovery of Insulin – The Orthopaedic Connection !

In 1923, Fredrick Banting and Charles Best demonstrated the efficacy of insulin to treat diabetes mellitus, a significant milestone in the history of medicine. The discovery of insulin represents a medical breakthrough, characterized, at the same time, by contrasts, controversies, and disputes among scholars, as well as by great disappointments, failures, and hopes. On January 11, 1922, the first-ever injection of insulin was given to 14-year-old Canadian Leonard Thompson, who recovered remarkably from long episodes of hyperglycemia.



Sir Fredrick Banting was featured on the cover of Time magazine in August

Sir Fredrick Banting – who was conferred knighthood later and also awarded the Nobel Prize for Medicine – was a qualified **Orthopaedic Surgeon** who worked at The Hospital for Sick Children, Toronto, Canada. Sir Banting also continued orthopaedic teaching even after etching his name for eternity. Something every Orthoped can be proud of!

2. Bohler-Braun frame: Tribute to two Fathers!

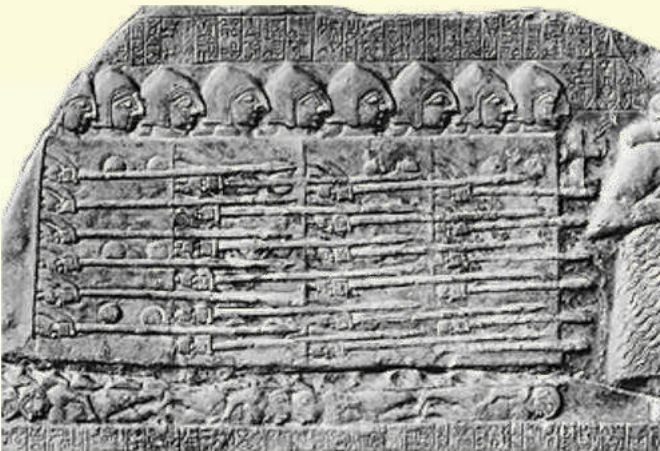


Bohler-Braun frame or B-B frame – the commonly used splint for immobilization/traction for injuries or fractures of the lower limb – is one of the first learning points for any orthopaedic resident in the emergency department. This four pulley iron device was devised by **Lorenz Böhler**, the 'father of traumatology,' and **Heinrich Braun**, the 'father of regional anaesthesia.' Even with advances in treatment methods, the B-B frame remains a standard treatment mode for stabilizing lower limb injuries even today. Credit to two prolific 'Fathers'!

Bohler is also well known for his contributions with Bohler angle in calcaneal fractures and his treatment principles in emergency medicine!

3. Army of 'Phalanges': Thanks to Aristotle!

Many bones were named for familiar items they resembled. The phalanges were thought to resemble **'Soldiers'**. Aristotle – the famous Greek philosopher - thought the bones of the fingers resembled a row of Greek warriors ready for battle, so he called them “phalanges” (Greek for “closely knit row”). Later the term was also used for the bones of the toes. In Greek military terminology, phalanx described a mass military formation of infantry troops moving as one unit.



'Sumerian' phalanx like formation – an 'army' of soldiers!

4. 'FUNCLE': Illustrious Uncle-Nephew Combination

Learning from your Uncle can only be cooler – especially if you are Sir Robert Jones. Learning from his renowned Uncle, the

legendary Sir Hugh Owen Thomas, the duo re-defined orthopaedic practice describing numerous time-tested inventions. Shipwrecked in 1975, Thomas established a family tradition of bone-setting. Known for his eccentric behaviour, his contribution to Orthopaedics is manifold. Advocating rest in the treatment of fractures or tuberculosis in his 'Thomas splint', use of 'Thomas collar' to treat cervical spine infection, 'Thomas test', 'Thomas wrench' and 'Thomas heel' are well known named contributions highlighting his legacy.

His work was never fully appreciated in his lifetime, but when his nephew, Sir Robert Jones, applied his splint during the First World War, this reduced mortality of compound fractures of the femur from 87% to less than 8% in the period from 1916 to 1918. When we injured his foot while dancing, his thought process and clinical decision-making led to the 'Jones fracture' description. The Robert Jones and Agnes Hunt Orthopaedic Hospital in Oswestry, UK, was named after him.

How much we owe today to this Welsh uncle-nephew duo!



Sir HG Thomas, with his famous cigar portrayed with his illustrious nephew – Sir Robert Jones

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