

CPCE Health Conference 2022 Programme Book

Long-term Care: Financing and Service Delivery in Asia-Pacific 長期護理：在亞太區的融資及服務

Date: 10 January 2022, Monday

Time: 9:30 am to 3:30 pm

Venue: ▶ UG06, PolyU Hung Hom Bay Campus, 8 Hung Lok Road, Hung Hom, Kowloon (Face-to-Face)
▶ Zoom Meeting (Online)

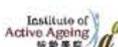
Co-organisers:



Sponsors:



Supporting Organisations (in alphabetical order):



CONTENTS

I. INTRODUCTION	1
II. ORGANISATION OF CONFERENCE	3
Conference Chair	3
Conference Co-Chairs	3
Conference Organiser.....	3
Conference Advisors	3
Organising Committee.....	4
Co-organisers and Supporting Organisations.....	5
Co-organisers.....	5
Supporting Organisations (in alphabetical order).....	5
Sponsors	6
III. PROGRAMME	7
Speakers	7
Dr the Honourable LAM Ching-choi, SBS, JP	7
<i>Chairman, Elderly Commission; Member of Executive Council, The Government of the Hong Kong Special Administrative Region; Chief Executive Officer, Haven of Hope Christian Service</i>	<i>7</i>
Professor Peter P. YUEN	7
<i>Dean, College of Professional and Continuing Education (CPCE); Professor, Department of Management and Marketing, The Hong Kong Polytechnic University.....</i>	<i>7</i>
Dr ZHANG Hui.....	8
<i>Associate Professor, Department of Health Policy and Management, School of Public Health, Sun Yat-sen University, China.....</i>	<i>8</i>
Dr Sabrina Ching Yuen LUK.....	9
<i>Assistant Professor, School of Social Sciences, Nanyang Technological University, Singapore.....</i>	<i>9</i>
Professor Toshihiko HASEGAWA.....	9
<i>President, Future Health Research Institute, Japan.....</i>	<i>9</i>
Mr Sunil MEHRA	10
<i>Founder Director, NICHIKO, Japan.....</i>	<i>10</i>
Dr PHUA Kai Hong	11
<i>Adjunct Senior Research Fellow, Lee Kuan Yew School of Public Policy, National University of Singapore and Visiting Professor, Graduate School of Public Policy, Nazarbayev University, Kazakhstan.....</i>	<i>11</i>

Moderators of Keynote and Plenary Presentations.....	13
Dr S. H. LIU	13
<i>President, Hong Kong College of Health Service Executives.....</i>	<i>13</i>
Dr W. K. POON	13
<i>President, Hong Kong College of Nursing and Health Care Management</i>	<i>13</i>
Professor Warren C. K. CHIU.....	13
<i>Professor and Associate Dean (Quality Assurance), College of Professional and Continuing Education (CPCE), The Hong Kong Polytechnic University.....</i>	<i>13</i>
Professor CW LEUNG	13
<i>Professor and Associate Dean (Research), College of Professional and Continuing Education (CPCE), The Hong Kong Polytechnic University.....</i>	<i>13</i>
Dr Jack M. K. LO	13
<i>Director, School of Professional Education and Executive Development (SPEED), The Hong Kong Polytechnic University.....</i>	<i>13</i>
Dr Jason CHAN, MH, JP	13
<i>Assistant Dean (Innovation and Entrepreneurship), College of Professional and Continuing Education (CPCE), The Hong Kong Polytechnic University.....</i>	<i>13</i>
Dr Ben Y. F. FONG	14
<i>Associate Division Head and Professor of Practice (Health Studies), Division of Science, Engineering and Health Studies, PolyU CPCE; Director, Centre for Ageing and Healthcare Management Research (CAHMR), PolyU SPEED.....</i>	<i>14</i>
Moderators of Parallel Sessions.....	15
Dr Carrie H. S. WONG	15
Dr Wilson K. S. LEUNG.....	15
Dr Pimtong TAVITIYAMAN	15
Dr Vincent T. S. LAW	15
Dr Karly O. W. CHAN.....	15
Dr Anthony K. LUI	15
Dr Adam K. L. WONG	15
Dr Oscar W. K. CHIU	15
Programme Rundown	16
IV. KEYNOTE PRESENTATIONS	19
Keynote I: Ensuring sustainability and affordability of long-term care in Hong Kong	19
Dr The Honourable LAM Ching-choi, SBS, JP.....	19
<i>Chairman, Elderly Commission, HKSAR.....</i>	<i>19</i>
Keynote II: Long-term care provision and financing in China: The context and recent developments in financing	19

Professor Peter P. YUEN	19
<i>Dean, College of Professional and Continuing Education, The Hong Kong Polytechnic University, Hong Kong</i>	19
Keynote III: Evaluating the financial sustainability of the different long-term care insurance schemes in the 15 pilot cities	20
Dr ZHANG Hui	20
<i>Associate Professor, Department of Health Policy and Management, Sun Yat-sen University, China</i>	20
Keynote IV: A comparative analysis on long-term care models in Qingdao, Nantong, and Shanghai	20
Dr Sabrina Ching Yuen LUK	20
<i>Assistant Professor, School of Social Sciences, Nanyang Technological University, Singapore</i>	20
V. PLENARY SESSIONS	22
Plenary I: New paradigm for the future of super-aging societies – a prospective analysis from Japan	22
Professor Toshihiko HASEGAWA.....	22
<i>President, Future Health Research Institute, Japan</i>	22
Plenary II: Conducive factors that shaped and maintained ‘universal’ long-term care & services in Japan and their relevance in Asia Pacific: An inside-out perspective	22
Mr Sunil MEHRA	22
<i>Founder Director, NICHIKO, Japan</i>	22
Plenary III: Long-term care in Singapore: Balancing healthcare delivery and financing	23
Dr PHUA Kai Hong	23
<i>Adjunct Senior Research Fellow, Lee Kuan Yew School of Public Policy, National University of Singapore and Visiting Professor, Graduate School of Public Policy, Nazarbayev University, Kazakhstan</i>	23
VI. PARALLEL SESSIONS	24
Parallel Session A: Community Care	24
A1. Caring for the elderly in the COVID-19 pandemic: Experiences from residential care workers in Hong Kong.....	24
<i>Veronica S. K. LAI*, Linda Y. K. LEE, Ivy S. Y. YAU, S. HUANG, Janet L. C. LEE, Susan S. P. LAW, Becky S. Y. LI</i>	24
<i>School of Nursing and Health Studies, Hong Kong Metropolitan University, Hong Kong</i>	24
A2. The community outreach program on medication management (COPMM).....	24
<i>CHIANG Sau Chu, CHOW Chun Yin, Eric*, YU Timothy</i>	24
<i>Hong Kong Pharmaceutical Care Foundation, Hong Kong</i>	25

A3. Learning from the literature on community-based yoga intervention for older adults: Practical implications for community health practitioner	25
<i>Janet Lok Chun LEE^{1*}, Jianli XING², Rainbow Tin Hung HO³</i>	25
<i>¹School of Nursing and Health Studies, Hong Kong Metropolitan University</i>	25
<i>²Department of Applied Social Science, Hong Kong Polytechnic University</i>	25
<i>³Centre on Behavioral Health, The University of Hong Kong</i>	25
A4. The evaluation of community care services in Hong Kong	27
<i>Gigi LAM</i>	27
<i>Department of Sociology, Hong Kong Shue Yan University, Hong Kong</i>	27
A5. Institutional exploitation on village health volunteers, Thailand	27
<i>Patcharin SIRASOONTHORN</i>	27
<i>Department of Sociology and Anthropology Faculty of Social Sciences, Naresuan University, Thailand</i>	27
A6. The local community as a point of departure: Is the district health board an answer for long-term health promotion?	28
<i>Watcharabon BUDDHARAKSA^{1*}, Jonathan S. DAVIES², and Phudit TEJATIVADDHANA³</i>	28
<i>¹Department of Political Science and Public Administration, Naresuan University, Phitsanulok, Thailand</i>	28
<i>²Centre for Urban Research on Austerity, De Montfort University, Leicester, United Kingdom</i>	29
<i>³ASEAN Institute for Health Development, Mahidol University, Bangkok, Thailand</i>	29
Parallel Session B: Physical and Psychological Health	29
B1. Effectiveness of home-based family caregiver-delivered aromatherapy programme for older persons with behavioural and psychological symptoms of dementia: Study protocol of randomized controlled trial	29
<i>Becky S. Y. LI^{1,2*}, Carmen W. H. CHAN¹</i>	29
<i>¹The Nethersole School of Nursing, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong</i>	29
<i>²School of Nursing and Health Studies, Hong Kong Metropolitan University, Hong Kong</i>	29
B2. The impact of public health intervention policies on locals' mobility patterns	30
<i>Pimtong TAVITIYAMAN^{1*}, Bill XU¹, Chloe FUNG²</i>	30
<i>¹College of Professional and Continuing Education, The Hong Kong Polytechnic University, Hong Kong</i>	30
<i>²School of Professional Education and Executive Development, The Hong Kong Polytechnic University, Hong Kong</i>	30
B3. Healthcare management for drug abuse: The potentials of incorporating desistance to anti-drug healthcare services in Hong Kong.....	32
<i>Louis W. Y. MOK, Yannick Y. K. CHEUNG</i>	32
<i>College of Professional and Continuing Education, The Hong Kong Polytechnic University</i>	32
B4. A discussion on the depression of older adults and its social factors influencing it.....	32

<i>LIU Zhongqi</i>	32
<i>School of Professional Education and Executive Development, The Hong Kong Polytechnic University, Hong Kong</i>	
	32
B5. A study of the relationship between anxiety and depression during the transition to adulthood from freshman to senior year in Naresuan University health science students	34
<i>Kantabhat ANUSAKSATHIEN¹*, Niran NYERNYAMB¹, Suradate PRAYOONSAK¹, Jiraporn SEANTAWEEESUK¹, Tawalyarat INSOONTORM², Nattaporn JEAMJARAT², Apinya JITRASRI², Adisara CHAITHAWATWIBOON², Paweena SRIMUANG², Parinya SAENSAK²</i>	
	34
¹ <i>Psychology Department, Faculty of Social Sciences, Naresuan University, Thailand</i>	
	34
² <i>Students of Psychology Department, Faculty of Social Sciences, Naresuan University, Thailand</i>	
	34
Parallel Session C: Clinical and Service Management	34
C1. Tongue thickness of older individuals with sarcopenia and sight loss : A pilot study	34
<i>Calvin YIP Chi Kong¹, Tony WONG Ka Keung², CHAN Cheuk Tung², CHAN Sum Yin², CHEUNG Kwan Yee², SHU Yin Wai², TAM Shun Hing², TSE Pui Shan², Wilson LAM Wai Shun³, Armstrong CHIU Tat San³*, Winsy WONG Wing Sze⁴</i>	
	34
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	35
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	35
³ <i>The Hong Kong Society for the Blind, Hong Kong</i>	
	35
⁴ <i>Faculty of Education, The University of Hong Kong, Hong Kong</i>	
	35
C2. Prevalence of undiagnosed pre-diabetes and diabetes among Chinese residing in sub-divided flats: Preliminary results from a community-based screening programme	36
<i>Crystal Ying CHAN, Becky HOI, Maggie Ying-yee LI, Joyce Ho-yi CHAN, Edwin Shun-kit CHUNG, Henry Ho-fai SIN, Eliza Lai-yi WONG*</i>	
	36
<i>Center for Health Systems and Policy Research, Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong</i>	
	36
C3. Safety of surgical interventions in the elderly: The weekend effect. A cross-sectional study	37
<i>Dinara YESSIMOVA*, Antonio SARRIA-SANTAMERA, MD, PhD, Dmitriy VIDERMAN, MD</i>	
	37
<i>School of Medicine, Nazarbayev University, Nur-Sultan, Kazakhstan</i>	
	37
C4. Patients with end-stage kidney disease on haemodialysis benefit from an innovative multidisciplinary clinic	38
<i>B. STAVERT^{a,b}, S. MONARO^{a, d}, V. NAGANATHAN^{a, c}, S. AITKEN^{a,b}</i>	
	38
^a <i>Concord Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, Australia</i>	
	38
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	38
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	38
^d <i>School of Nursing, Faculty of Medicine and Health, University of Sydney, Sydney, Australia</i>	
	38

C5. Understanding of patient experiences of point of care ultrasound for the management of permanent haemodialysis access in Sydney Australia	39
<i>B. STAVERT^{*a,b}, S. MONARO^{a,d}, V. NAGANATHAN^{fa,c}, S. AITKEN^{a,b}</i>	39
<i>^aConcord Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, Australia.....</i>	39
<i>^bVascular Surgery Department, Concord General Repatriation Hospital, Sydney, Australia.....</i>	39
<i>^cCentre for Education and Research on Ageing, Department of Geriatric Medicine, Concord General Repatriation Hospital, Sydney, Australia</i>	39
<i>^dSchool of Nursing, Faculty of Medicine and Health, University of Sydney, Sydney, Australia.....</i>	39
C6. Severe mental illness contributes to adverse patient experiences and poor public health outcomes when caring for patients on haemodialysis for end-stage renal failure	40
<i>B. STAVERT^{*a,b}, S. MONARO^{a,d}, V. NAGANATHAN^{fa,c}, S. AITKEN^{a,b}</i>	40
<i>^aConcord Clinical School, Faculty of Medicine and Health, University of Sydney, Sydney, Australia.....</i>	40
<i>^bVascular Surgery Department, Concord General Repatriation Hospital, Sydney, Australia.....</i>	40
<i>^cCentre for Education and Research on Ageing, Department of Geriatric Medicine, Concord General Repatriation Hospital, Sydney, Australia</i>	40
<i>^dSchool of Nursing, Faculty of Medicine and Health, University of Sydney, Sydney, Australia.....</i>	40
C7. Current management of myopia	41
<i>M. Y. LAM.....</i>	41
<i>School of Medical and Health Sciences, Tung Wah College, Hong Kong.....</i>	41
Parallel Session D: Innovation and Technology	42
D1. Effects of brief virtual nature experience on psycho-physiological health during COVID-19 Pandemic.....	42
<i>Sam S. S. LAU^{abcd*}, Sharron LEUNG^{ae}, Jonathan WONG^{df}, Terence LEE^{ag}, Stephen CARTWRIGHT^{ab}, Janet WONG^{ac}, Jackie MAN^{ac}, Ethan CHEUNG^{ac}</i>	42
<i>^aResearch Centre for Environment and Human Health, School of Continuing Education, Hong Kong Baptist University, Hong Kong.....</i>	42
<i>^bCollege of International Education, School of Continuing Education, Hong Kong Baptist University, Hong Kong.....</i>	43
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<i>^dInstitute of Bioresources and Agriculture, School of Continuing Education, Hong Kong Baptist University, Hong Kong.....</i>	43
<i>^eDivision of Nursing Education, School of Continuing Education, Hong Kong Baptist University, Hong Kong</i>	43
<i>^fDepartment of Biology, Hong Kong Baptist University, Hong Kong</i>	43
<i>^gPsychology Unit, Faculty of Social Science, Hong Kong Baptist University, Hong Kong.....</i>	43
D2. Photo-elicitation for capacity building and promoting professional interest in working with older adults – Piloting a novel “humanism in ageing” workshop in medical curriculum.....	43
<i>Samson K. S. WONG^{1*}, Pauline P. L. LUK², Karina H. Y. CHAN³</i>	44
<i>¹Medical Ethics and Humanities Unit, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong SAR.....</i>	44

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³ <i>Department of Family Medicine and Primary Care, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong SAR.....</i>	44
D3. Modification work of nursing care home bathing facilities - Contemporary design and assistive devices	45
<i>A. T. S. CHIU¹*, K. YEUNG¹, J. Y. C. WONG²</i>	45
¹ <i>The Hong Kong Society for the Blind, Kowloon Home for the Aged Blind.....</i>	45
² <i>Senior Homes Safety Specialists</i>	45
D4. Blockchain-based digital health certificates: Technical architecture and use cases.....	46
<i>Adam WONG.....</i>	46
<i>College of Professional and Continuing Education, The Hong Kong Polytechnic University.....</i>	46
D5. The importance of environmental sustainability for healthy ageing and the incorporation of systems thinking in education for a sustainable environment.....	47
<i>Wang-Kin CHIU, Ben Y. F. FONG</i>	47
<i>College of Professional and Continuing Education, The Hong Kong Polytechnic University.....</i>	47
V. POSTER PRESENTATIONS.....	48
P1. Innovative ideas for the aging trend	48
YUE Linxuan.....	48
<i>School of Professional Education and Executive Development, The Hong Kong Polytechnic University.....</i>	48
P2. Mental health of healthcare workers – A proposed study design	51
Carmen K. M. AU, Jocelyn W. S. TONG*	51
<i>School of Professional Education and Executive Development, The Hong Kong Polytechnic University.....</i>	51
P3. Blockchain-based electronic healthcare record	53
Daniel K. W. YIP*, Sierra K. W. MOK.....	53
<i>School of Professional Education and Executive Development, The Hong Kong Polytechnic University.....</i>	53
P4. Review on social isolation and related conditions among elderly	56
Tsz Yiu Adam CHENG, Manahal WAHEED, WONG Ching Yung Toby, Man Hei AU, Shutong CHEN	56
<i>School of Professional Education and Executive Development, The Hong Kong Polytechnic University.....</i>	56
P5. Effectiveness of facial masks - A review	59
Alfred P. H. YIP*, Derrick K. W. LAW & Alan K. T. LEUNG	59
<i>School of Professional Education and Executive Development, The Hong Kong Polytechnic University.....</i>	59
P6. Pedagogic innovations of teaching and learning materials in chemical	

education for sustainable health	62
Wing Yi HO ¹ , Ben Y. F. FONG ² , Wang-Kin CHIU ²	62
<i>¹School of Professional Education and Executive Development, The Hong Kong Polytechnic University.....</i>	<i>62</i>
<i>²College of Professional and Continuing Education, The Hong Kong Polytechnic University.....</i>	<i>62</i>
ACKNOWLEDGEMENT	64

I. INTRODUCTION

The College of Professional and Continuing Education (CPCE) of The Hong Kong Polytechnic University (PolyU), incorporating the School of Professional Education and Executive Development (SPEED) and the Hong Kong Community College (HKCC), is currently the largest self-financing tertiary education provider in Hong Kong. It has around 10,000 full time students. It offers a range of programmes in many different disciplines including health related programmes at Associate Degree, and Honours Bachelor's Degree levels.

This Conference is the seventh CPCE Health Conference since 2016 and it has the theme of “**Long-term care: Financing and service delivery in Asia-Pacific**”. Ageing population is a worldwide issue and an increase in the number of older people is associated with an increasing need for long-term care. Financing long-term care and the associated service delivery are critical issues to the community and the health professionals.

The conference is partially supported by a funding of HKD2.45 million under the Institutional Development Scheme (IDS) of the Competitive Research Funding Schemes for the Local Self-Financing Degree Sector in 2018/19 of the Research Grants Council (RGC) to establish the **Centre for Ageing and Healthcare Management Research (CAHMR)** [Ref. no.: UGC/IDS24/18].

CAHMR will leverage the expertise and interest among faculty members, connecting them from a diverse array of disciplines and cultivating their scholarship in the realms of health care, health services management, finance, information technology, data science, public policy, marketing and hospitality management. The goal is to develop CAHMR into a centre of excellence with four fundamental objectives:

1. Generating novel and useful knowledge;
2. Developing research capabilities of faculty members;
3. Sharing insights with stakeholders; and
4. Informing curriculum development across related academic programmes.

Speakers for the Keynote Presentations include: (1) **Dr The Honourable LAM Ching-choi, SBS, JP**, Chairman, Elderly Commission; Member of Executive Council, The Government of the Hong Kong Special Administrative Region, “*Ensuring sustainability and affordability of long-term care in Hong Kong*”, (2) **Professor Peter P. YUEN**, Dean, College of Professional and Continuing Education, The Hong Kong Polytechnic University, to speak on “*Long-term care provision and financing in China: The context and recent developments in financing*”, (3) **Dr ZHANG Hui**, Associate Professor, Department of Health Policy and Management, School of Public Health, Sun Yat-sen University, China, to speak on “*Evaluating the financial sustainability of the different long-term care insurance schemes in the 15 pilot cities*”, and (4) **Dr Sabrina Ching Yuen LUK**, Assistant Professor, School of Social Sciences, Nanyang Technological University, Singapore, to speak on “*A comparative analysis on long-term care models in Qingdao, Nantong, and Shanghai*”.

Speakers for the plenary sessions include: (1) **Professor Toshihiko HASEGAWA**, President, Future Health Research Institute, Japan, to speak on “*New paradigm for the future of super-aging societies – a prospective analysis from Japan*”, (2) **Mr Sunil MEHRA**, Founder Director, NICHIKO, Japan, to speak on “*Conducive factors that shaped and maintained ‘universal’ long-term care & services in Japan and their relevance in Asia Pacific: An inside-out perspective*”, and (3) **Dr PHUA Kai Hong**, Adjunct Senior Research Fellow, Lee Kuan Yew School of Public Policy, National University of Singapore and Visiting Professor, Graduate School of Public Policy, Nazarbayev University, Kazakhstan, to speak on “*Long-term care in Singapore: Balancing healthcare delivery and financing*”.

There are four parallel sessions containing a wide range of important topics pertinent to community care, clinical and service management, physical and psychological health, as well as innovation and technology that are not only crucial to Hong Kong and also to other international communities. We are delighted to report that contributors to these parallel sessions include scholars, practitioners and students from Australia, Hong Kong, Kazakhstan, Thailand, and the United Kingdom.

II. ORGANISATION OF CONFERENCE

Conference Chair

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Professor, Department of Management and Marketing, The Hong Kong Polytechnic University

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Associate Professor, College of Public Health, National Taiwan University

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Professor and Associate Dean (Quality Assurance), College of Professional and Continuing Education (CPCE), The Hong Kong Polytechnic University

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Dr Simon T. Y. CHEUNG, Head, Continuing Education Office,
PolyU SPEED

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Dr Oscar W. K. CHIU, Senior Lecturer, Division of Science,
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Dr Anthony K. LUI, Lecturer, Division of Science, Engineering and
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Secretariat

Mr Tommy K. C. NG, Project Associate, Centre for Ageing and
Healthcare Management Research (CAHMR), PolyU SPEED

Ms Hilary H. L. YEE, Research Assistant, Centre for Ageing and
Healthcare Management Research (CAHMR), PolyU SPEED

Co-organisers and Supporting Organisations

Co-organisers

- Hong Kong College of Community Health Practitioners (HKCCHP)
- Hong Kong College of Health Service Executives (HKCHSE)
- The Hong Kong College of Nursing and Health Care Management (HKCNHCM)

Supporting Organisations (in alphabetical order)

- ASEAN Institute for Health Development (AIHD), Mahidol University, Thailand
- Asia Pacific Journal of Health Management (APJHM)
- Association of Doctors for Social Responsibility
- Australasian College of Health Service Management (ACHSM), Australia
- Centre for Health Education and Health Promotion, The Chinese University of Hong Kong
- College of Pharmacy Practice
- Department of Applied Science, Hong Kong Institute of Vocational Education (Kwai Chung)
- DoctorNow NEEDS
- Hong Kong Association of Family Medicine and Primary Health Care Nurses
- HKMA Institute of Healthcare Management
- Hong Kong Public Administration Association (HKPAA)
- Hong Kong Society for Rehabilitation (HKSR)

- Hong Kong Telemedicine Association
- Institute of Active Aging (IAA), The Hong Kong Polytechnic University
- Rare Disease Hong Kong
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- Sik Sik Yuen
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III. PROGRAMME

Speakers



Dr the Honourable LAM Ching-choi, SBS, JP

Chairman, Elderly Commission; Member of Executive Council, The Government of the Hong Kong Special Administrative Region; Chief Executive Officer, Haven of Hope Christian Service

Ensuring sustainability and affordability of long-term care in Hong Kong

Dr Lam Ching-choi is a specialist in paediatric and community medicine and is currently the Chief Executive Officer of Haven of Hope Christian Service. Under his leadership, Haven of Hope Christian Service is one of the pioneers in the provision of holistic care for the elderly in Hong Kong.

Dr Lam is a non-official member of the Executive Council of the Government of the Hong Kong Special Administrative Region. He also serves as the Chairman of the Elderly Commission and the Council for Sustainable Development to advise the Government on the related policies. He is also the Supervisory Board Member of the Hong Kong Housing Society.

Dr Lam was awarded the Silver Bauhinia Star in 2019. Apart from receiving Honorary Fellowship from Lingnan University in 2018, he was also given the Ageing Asia Global Ageing Influencer Award (Special Recognitions) for his devotion to public services and his influence on policy-making for the global ageing trend.



Professor Peter P. YUEN

Dean, College of Professional and Continuing Education (CPCE); Professor, Department of Management and Marketing, The Hong Kong Polytechnic University

BA, MBA [S.U.N.Y. (Buffalo)]; PhD (Birm.); FCHSM (Aust.)

Long-term care provision and financing in China: The context and recent developments in financing

Prof. Peter P. Yuen is Dean of the College of Professional and Continuing Education (PolyU CPCE) of The Hong Kong Polytechnic University (PolyU). He is also Professor of PolyU's Department of Management and Marketing. He received his Bachelor of Arts degree in Cellular and Molecular Biology and Master in Business Administration degree from the State University of New York at Buffalo, USA, and his Doctor of Philosophy degree in Health

Economics from the University of Birmingham, UK.

Prior to his appointment as Dean of CPCE, Prof. Yuen held a number of management positions at PolyU, including Associate Vice-President (Management), Director of the Public Policy Research Institute, and Head of the Department of Management. He was also the Founding Director of the Doctor of Business Administration programme in the Faculty of Business.

Prof. Yuen's research mainly focuses on public policy formulation and evaluation, and health services management. He is the Co-Editor-in-Chief of Public Administration and Policy and an Editorial Committee member of Asia Pacific Journal of Health Management. He was also a consultant for the Hong Kong Special Administrative Region (HKSAR) Government and the Bauhinia Foundation on a number of public policy related projects including the West Kowloon Cultural District, Sustainable Built Environment, Subsidised Homeownership, Managed Care in Hong Kong, and Health Systems Reform.

Prof. Yuen is currently the immediate Past Chairman of the Federation for Self-financing Tertiary Education (Hong Kong). He has served as a member of the HKSAR Government Manpower Development Committee, Health and Medical Development Advisory Committee, and the Committee on Self-financing Post-secondary Education. He is a Founding Fellow of the Hong Kong College of Health Services Executives, and an Honorary Fellow of the Australian College of Health Services Management. He once served as Vice-President of the Chinese National Institute of Health Care Management Education, and President of the Hong Kong Public Administration Association.

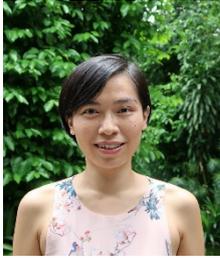


Dr ZHANG Hui

*Associate Professor, Department of Health Policy and Management,
School of Public Health, Sun Yat-sen University, China*

Evaluating the financial sustainability of the different long-term care insurance schemes in the 15 pilot cities

Dr Zhang Hui (Vivienne) is Associate Professor in the Department of Health Policy and Management, School of Public Health, Sun Yat-sen University of China. She received her Ph.D in health economics from The Hong Kong Polytechnic University, her M.Sc in economics from The Hong Kong University of Science and Technology. Her research interests are health insurance reform, health care financing, and cost-effectiveness analysis.



Dr Sabrina Ching Yuen LUK

Assistant Professor, School of Social Sciences, Nanyang Technological University, Singapore

A comparative analysis on long-term care models in Qingdao, Nantong, and Shanghai

Dr Sabrina Ching Yuen Luk joined School of Social Sciences of Nanyang Technological University, Singapore in July 2017. Prior to this, she was Adjunct Associate Professor at the Open University of Hong Kong (January-June 2017), Visiting Lecturer at School of Professional Education and Executive Development of PolyU (January-June 2017), and Associate Professor at Kunming University of Science and Technology, China (2013-2016). She holds both Bachelor of Social Science (First Class Honours) and M.Phil from the Chinese University of Hong Kong and Ph.D. from the University of Birmingham, the United Kingdom.

Dr Luk was a recipient of the 2012 Michael O'Rourke PhD Publication Award at the University of Birmingham for her research contributions and publication record. She was also the Highly Commended Award Winner of the 2013 Emerald/EFMD Outstanding Doctoral Research Awards in the Healthcare Management Category.



Professor Toshihiko HASEGAWA

President, Future Health Research Institute, Japan

New paradigm for the future of super-aging societies – a prospective analysis from Japan

Professor Toshihiko Hasegawa, M.D., MPH., Ph.D. is President of Future Health Research Institute since 2014, and retired Professor of Nippon Medical School after a long career in Japanese government including development of elderly care policy and management of Japanese national hospitals. He graduated from Harvard School of Public Health for MPH in 1981, from Osaka University Medical School for MD in 1972, and finished General Surgical Residency in Milwaukee, Wisconsin. He taught at many medical schools in Japan as visiting professor for health policy and hospital management. He did research on health policy, health sector reform, planning and evaluation of disease management program, hospital strategic management, international health and integrated community care system. He started the legendary network of health policy researchers in Asia “Dragon Net” in 1998 and is currently involved in a project on “Health for next 120 years” by Japanese Association of Medical Sciences. Dr. Hasegawa published many papers and books about ageing society, international health, health policy, hospital management, health care delivery system and safety and

quality of care including the Hospital Strategic Management in 2002 that was translated in Korean, Thai, Russian and Chinese and the International Symposium on Health Transition and Health Sector Reform in Asia in 1998, and Health Care System Reform and Health Policy Research in Japan : Health Care Policy in East Asia Volume 2, a World Scientific Reference in 2020.



Mr Sunil MEHRA

Founder Director, NICHIKO, Japan

Conducive factors that shaped and maintained ‘universal’ long-term care & services in Japan and their relevance in Asia Pacific: An inside-out perspective

Sunil Mehra has over 40 years of diverse and multi-disciplinary career in global health that includes leading and working with cross-cultural teams at local, national and international levels. Currently based in Thailand, he is engaged in international courses and seminars on Universal Health Coverage, governance and health systems; and facilitating international research collaborations. Previously he worked with senior policy researchers to publish experiences from health reform efforts in Japan, culminating in publication of an academic reference. His ambition is to share global learning and experience with the new generation of development professionals to tackle the old and new development challenges.

Prior to moving to Japan, he was a Director and Partner at Health Partners International, Technical Lead for DAI Global Health in UK, where he led governance and systems solutions for development priorities such as elimination of diseases internationally. As Executive Director of the Malaria Consortium, which he founded as a UK non-profit organisation, he has led its development and growth into a leader in its field. Sunil Mehra has worked in over 35 countries in East and South Asia, Middle East, Africa, Europe, based in UK, Japan and USA. He is recognised for developing and overseeing successful implementation of both challenging and innovative projects and scaling up of public health innovations with collaborative teams of implementers and researchers.

He has had experience working with national ministries, international NGOs and agencies like World Bank, WHO, DFID, JICA and foundations, private sector; and academic institutions such as London School of Hygiene & Tropical Medicine, National Institute of Public Health, Japan; and collaboration with other academic institutions.



Dr PHUA Kai Hong

Adjunct Senior Research Fellow, Lee Kuan Yew School of Public Policy, National University of Singapore and Visiting Professor, Graduate School of Public Policy, Nazarbayev University, Kazakhstan

Long-term care in Singapore: Balancing healthcare delivery and financing

Dr Phua is Adjunct Senior Research Fellow at the Institute of Policy Studies and held a previous professorship at the Lee Kuan Yew School of Public Policy, National University of Singapore. He is currently Visiting Professor, Graduate School of Public Policy, Nazarbayev University. He has taught health management and social policy, health economics and global health in the various programmes in public policy. He was Associate Professor and Head, Health Services Research at the NUS Department of Community, Occupational & Family Medicine, Faculty of Medicine. He graduated with honors cum laude at Harvard University and received graduate degrees from the Harvard School of Public Health (Master in Health Services Administration & Population Sciences) and the London School of Economics and Political Science (PhD in Social Administration, specializing in Health Economics). He was the recipient of a Harvard College Scholarship, the Sigma Scholarship from the Faculty of Arts and Sciences, Harvard University, and the National University of Singapore Overseas Graduate Scholarship. He delivered the 2012 ST Lee Lecture at Menzies Centre for Health Policy, University of Sydney and the Australian National University.

Dr Phua has produced over 200 publications and papers in the field of health policy & management and related areas, including the history of health services, population ageing, health economics & financing. He is author of *Singapore Chronicles: Healthcare* (2018) and principal co-editor of *Ageing Asia: Contemporary Trends and Policy Issues* (2019). He is lead editor of the *Social Science & Medicine* special issue on *Health Systems in Asia* (2017), led the Rockefeller Foundation-funded project on *Trends Monitoring in Asia*, from 1999-2014 as Principal Investigator, and is co-lead author of the overview for the *Lancet Series on Health in Southeast Asia* (2011). He is a Founding Member of the Asian Health Systems Reform Network (DRAGONET); was a past Chair, Executive Board of Asia-Pacific Health Economics Network; and past Associate Editor of *Asia-Pacific Journal of Public Health* and *Singapore Economic Review*.

He has undertaken numerous international consulting assignments for governments, multi-national corporations and non-governmental organisations. He was a member of the WHO Expert Committee on the Economics of Healthy Ageing (2018-2019), Experts' Forum on NCDs in Emerging Countries (2019), and the International Think-Tank on Health Insurance, Executive Council, Government of Dubai (2007-2008). In the region, he has served as Chairman, Technical Advisory Group on Health Sector Development of the World Health Organization Western Pacific Regional Office (2000-2005) and moderated the Ministerial

Roundtable on Health and Poverty at the WHO Regional Meeting in 2000 and the WHO Bi-Regional Meeting on Health Care Financing in 2005. He has consulted to organisations like the Asia-Pacific Academic Consortium for Public Health, the International Red Cross, Asian Development Bank, United Nations Economic & Social Commission for the Asia-Pacific, World Bank and World Health Organization.

Moderators of Keynote and Plenary Presentations



Dr S. H. LIU

President, Hong Kong College of Health Service Executives



Dr W. K. POON

President, Hong Kong College of Nursing and Health Care Management



Professor Warren C. K. CHIU

Professor and Associate Dean (Quality Assurance), College of Professional and Continuing Education (CPCE), The Hong Kong Polytechnic University



Professor CW LEUNG

Professor and Associate Dean (Research), College of Professional and Continuing Education (CPCE), The Hong Kong Polytechnic University



Dr Jack M. K. LO

Director, School of Professional Education and Executive Development (SPEED), The Hong Kong Polytechnic University



Dr Jason CHAN, MH, JP

Assistant Dean (Innovation and Entrepreneurship), College of Professional and Continuing Education (CPCE), The Hong Kong Polytechnic University

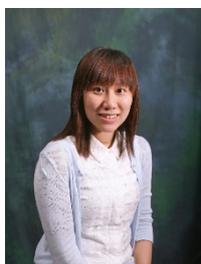


Dr Ben Y. F. FONG

*Associate Division Head and Professor of Practice (Health Studies),
Division of Science, Engineering and Health Studies, PolyU CPCE;
Director, Centre for Ageing and Healthcare Management Research
(CAHMR), PolyU SPEED*

Moderators of Parallel Sessions

Session A: Community Care



Dr Carrie H. S. WONG

Senior Lecturer, Division of Science, Engineering and Health Studies, PolyU CPCE



Dr Wilson K. S. LEUNG

Lecturer, Division of Science, Engineering and Health Studies, PolyU CPCE

Session B: Physical and Psychological Health



Dr Pimtong TAVITIYAMAN

Principal Lecturer and Associate Division Head, Division of Business and Hospitality Management, PolyU CPCE



Dr Vincent T. S. LAW

Senior Lecturer, Division of Social Sciences, Humanities and Design, PolyU CPCE

Session C: Clinical and Service Management



Dr Karly O. W. CHAN

Lecturer, Division of Science, Engineering and Health Studies, PolyU CPCE



Dr Anthony K. LUI

Lecturer, Division of Science, Engineering and Health Studies, PolyU CPCE

Session D: Innovation and Technology



Dr Adam K. L. WONG

Senior Lecturer, Division of Science, Engineering and Health Studies, PolyU CPCE



Dr Oscar W. K. CHIU

Senior Lecturer, Division of Science, Engineering and Health Studies, PolyU CPCE

Programme Rundown

Time	Event
9:00 am – 9:30 am	Registration and Coffee
9:30 am – 10:00 am	Welcoming Speech Professor Peter P. YUEN (<i>Dean, PolyU CPCE</i>)
OPENING & KEYNOTE PRESENTATION I	
10:00 am – 10:30 am	<i>Ensuring sustainability and affordability of long-term care in Hong Kong</i> Dr The Honourable LAM Ching-choi, SBS, JP (<i>Chairman, Elderly Commission, HKSAR</i>)
	<u>Moderator:</u> Dr S. H. LIU (President, HKCHSE)
KEYNOTE PRESENTATIONS II - IV	
<u>AGEING AND EFFECTING LONG-TERM CARE IN CHINA</u>	
10:30 am – 10:50 am	<i>Long-term care provision and financing in China: The context and recent developments in financing</i> Professor Peter P. YUEN (<i>Dean, PolyU CPCE</i>)
	<u>Moderator:</u> Dr W. K. POON (President, HKCNHCM)
10:50 am – 11:10 am	<i>Evaluating the financial sustainability of the different long-term care insurance schemes in the 15 pilot cities</i> Dr ZHANG Hui (<i>Associate Professor, Department of Health Policy and Management, Sun Yat-sen University, China</i>)
	<u>Moderator:</u> Professor Warren C. K. CHIU (Professor and Associate Dean (Quality Assurance), PolyU CPCE)
11:10 am – 11:30 am	<i>A comparative analysis on long-term care models in Qingdao, Nantong, and Shanghai</i> Dr Sabrina Ching Yuen LUK (<i>Assistant Professor, School of Social Sciences, Nanyang Technological University, Singapore</i>)
	<u>Moderator:</u> Professor CW LEUNG (Professor and Associate Dean (Research), PolyU CPCE)
PLENARY PRESENTATIONS I - III	
11:30 am – 12:00 pm	<i>New paradigm for the future of super-aging societies – a prospective analysis from Japan</i> Professor Toshihiko HASEGAWA (<i>President, Future Health Research Institute, Japan</i>)
	<u>Moderator:</u> Dr Jack M. K. LO (<i>Director, PolyU SPEED</i>)
12:00 pm – 12:30 pm	<i>Conducive factors that shaped and maintained ‘universal’ long-term care & services in Japan and their relevance in Asia Pacific: An inside-out perspective</i> Mr Sunil MEHRA (<i>Founder Director, NICHIKO, Japan</i>)
	<u>Moderator:</u> Dr Jason CHAN, MH, JP (Assistant Dean (Innovation and Entrepreneurship), PolyU CPCE)
12:30 pm – 1:00 pm	<i>Long-term care in Singapore: Balancing healthcare delivery and financing</i> Dr PHUA Kai Hong (<i>Adjunct Senior Research Fellow, National University of</i>

Singapore & Visiting Professor, Nazarbayev University, Kazakhstan)

Moderator:

Dr Ben Y. F. FONG (Associate Division Head and Professor of Practice (Health Studies), PolyU CPCE)

1:00 pm – **Lunch**

2:30 pm

PARALLEL SESSIONS

2:30 pm – **Session A: Community Care**

3:30 pm Moderators: **Dr Carrie H. S. WONG** (Senior Lecturer, PolyU CPCE) & **Dr Wilson K. S. LEUNG** (Lecturer, PolyU CPCE)

(A1) **Caring for the elderly in the COVID-19 pandemic: Experiences from residential care workers in Hong Kong** (Veronica S. K. LAI, Linda Y. K. LEE, Ivy S. Y. YAU, S. HUANG, Janet L. C. LEE, Susan S. P. LAW, Becky S. Y. LI, *Hong Kong Metropolitan University*)

(A2) **The community outreach program on medication management (COPMM)** (CHIANG Sau Chu, CHOW Chun Yin, Eric, YU Timothy, *Hong Kong Pharmaceutical Care Foundation*)

(A3) **Learning from the literature on community-based yoga intervention for older adults: Practical implications for community health practitioner** (Janet Lok Chun LEE, *Hong Kong Metropolitan University*; Jianli XING, *Hong Kong Polytechnic University*; Rainbow Tin Hung HO, *The University of Hong Kong*)

(A4) **The evaluation of community care services in Hong Kong** (Gigi LAM, *Hong Kong Shue Yan University*)

(A5) **Institutional exploitation on village health volunteers, Thailand** (Patcharin SIRASOONTHORN, *Naresuan University*)

(A6) **The local community as a point of departure: Is the district health board an answer for long-term health promotion?** (Watcharabon BUDDHARAKSA, *Naresuan University*; Jonathan S. DAVIES, *De Montfort University*; Phudit TEJATIVADDHANA, *Mahidol University*)

Session B: Physical and Psychological Health

Moderators: **Dr Pimtong Tavitiyaman** (Associate Division Head, PolyU CPCE) & **Dr Vincent T. S. LAW** (Senior Lecturer, PolyU CPCE)

(B1) **Effectiveness of home-based family caregiver-delivered aromatherapy programme for older persons with behavioural and psychological symptoms of dementia: Study protocol of randomized controlled trial** (Becky S. Y. LI, *The Chinese University of Hong Kong, Hong Kong Metropolitan University*; Carmen W. H. CHAN, *The Chinese University of Hong Kong*)

(B2) **The impact of public health intervention policies on locals' mobility patterns** (Pimtong TAVITIYAMAN, Bill XU, *PolyU CPCE*; Chloe FUNG, *PolyU SPEED*)

(B3) **Healthcare management for drug abuse: The potentials of incorporating desistance to anti-drug healthcare services in Hong Kong** (Louis W. Y. MOK, Yannick Y. K. CHEUNG, *PolyU CPCE*)

(B4) **A discussion on the depression of older adults and its social factors influencing it** (LIU Zhongqi, *PolyU SPEED*)

(B5) **A study of the relationship between anxiety and depression during the transition to adulthood from freshman to senior year in Naresuan University health science students** (Kantabhat ANUSAKSATHIEN, Niran NYERNYAMB, Suradate PRAYOONSAK, Jiraporn SEANTAWEEESUK, Tawalyarat INSOONTORM, Nattaporn JEAMJARAT, Apinya JITRASRI, Adisara CHAITHAWATWIBOON, Paweena SRIMUANG, Parinya SAENSAK, *Naresuan*)

University)

Session C: Clinical and Service Management

Moderators: **Dr Karly O. W. CHAN** (Lecturer, PolyU CPCE) & **Dr Anthony K. LUI** (Lecturer, PolyU CPCE)

(C1) **Tongue thickness of older individuals with sarcopenia and sight loss : A pilot study** (Calvin YIP Chi Kong, *Tung Wah College*; Tony WONG Ka Keung, CHAN Cheuk Tung, CHAN Sum Yin, CHEUNG Kwan Yee, SHU Yin Wai, TAM Shun Hing, TSE Pui Shan, *The Hong Kong Polytechnic University*; Wilson LAM Wai Shun, Armstrong CHIU Tat San, *The Hong Kong Society for the Blind*; Winsy WONG Wing Sze, *The University of Hong Kong*)

(C2) **Prevalence of undiagnosed pre-diabetes and diabetes among Chinese residing in sub-divided flats: Preliminary results from a community-based screening programme** (Crystal Ying CHAN, Becky HOI, Maggie Ying-yee LI, Joyce Ho-yi CHAN, Edwin Shun-kit CHUNG, Henry Ho-fai SIN, Eliza Lai-yi WONG, *The Chinese University of Hong Kong*)

(C3) **Safety of surgical interventions in the elderly: The weekend effect. A cross-sectional study** (Dinara YESSIMOVA, Antonio SARRIA-SANTAMERA, Dmitriy VIDERMAN, *Nazarbayev University*)

(C4) **Patients with end-stage kidney disease on haemodialysis benefit from an innovative multidisciplinary clinic** (B. STAVERT, S. MONARO, V. NAGANATHAN, S. AITKEN, *University of Sydney*)

(C5) **Understanding of patient experiences of point of care ultrasound for the management of permanent haemodialysis access in Sydney Australia** (B. STAVERT, S. MONARO, V. NAGANATHAN, S. AITKEN, *University of Sydney*)

(C6) **Severe mental illness contributes to adverse patient experiences and poor public health outcomes when caring for patients on haemodialysis for end-stage renal failure** (B. STAVERT, S. MONARO, V. NAGANATHAN, S. AITKEN, *University of Sydney*)

(C7) **Current management of myopia** (M. Y. LAM, *Tung Wah College*)

Session D: Innovation and Technology

Moderators: **Dr Adam K. L. WONG** (Senior Lecturer, PolyU CPCE) & **Dr Oscar W. K. CHIU** (Senior Lecturer, PolyU CPCE)

(D1) **Effects of brief virtual nature experience on psycho-physiological health during COVID-19 pandemic** (Sam S. S. LAU, Sharron LEUNG, Jonathan WONG, Terence LEE, Stephen CARTWRIGHT, Janet WONG, Jackie MAN, Ethan CHEUNG, *Hong Kong Baptist University*)

(D2) **Photo-elicitation for capacity building and promoting professional interest in working with older adults – Piloting a novel “humanism in ageing” workshop in medical curriculum** (Samson K. S. WONG, Pauline P. L. LUK, Karina H. Y. CHAN, *The University of Hong Kong*)

(D3) **Modification work of nursing care home bathing facilities - Contemporary design and assistive devices** (A. T. S. CHIU, K. YEUNG, *The Hong Kong Society for the Blind*; J. Y. C. WONG, *Senior Homes Safety Specialists*)

(D4) **Blockchain-based digital health certificates: Technical architecture and use cases** (Adam WONG, *PolyU CPCE*)

(D5) **The importance of environmental sustainability for healthy ageing and the incorporation of systems thinking in education for a sustainable environment** (Wang-Kin CHIU, Ben Y. F. FONG, *PolyU CPCE*)

IV. KEYNOTE PRESENTATIONS

Keynote I: Ensuring sustainability and affordability of long-term care in Hong Kong

Dr The Honourable LAM Ching-choi, SBS, JP

Chairman, Elderly Commission, HKSAR

Correspondence: Dr The Honourable LAM Ching-choi, SBS, JP (drcclam@hohcs.org.hk)

Abstract

As population ageing continues to accelerate in Hong Kong, the demand for long-term care is expected to surge further. The existing LTC service model may become unsustainable over time if it continues to rely heavily on public funding. There is thus a need to explore viable financing models in responding to the changing socio-economic profile of the elderly population.

Building on the recommendations in the Elderly Services Programme Plan, co-payment arrangements, as a feasible financing model, would be discussed with reference to the effectiveness of Residential Care Service Voucher (RCSV) and Community Care Service Voucher (CCSV) in providing additional choices to elderly persons in need. On the other hand, strategies need to be formulated to improve the overall population health, such that the percentage of elderly persons from each cohort in need of LTC services need will drop by 1% each year to reduce the ever-increasing service demand.

Keynote II: Long-term care provision and financing in China: The context and recent developments in financing

Professor Peter P. YUEN

Dean, College of Professional and Continuing Education, The Hong Kong Polytechnic University, Hong Kong

Correspondence: Professor Peter P. YUEN (peter.yuen@cpce-polyu.edu.hk)

Abstract

This study examines the significance of long-term care (LTC) developments in China. The challenges of LTC provision and financing in China are outlined. It then describes and analyzes developments in LTC financing in different parts of the country towards the second half of this decade, in the light of the directives issued by the central government on LTC financing schemes. It summarizes the government directives which provide the framework for a more uniform development of LTC financing, while allowing a certain degree of discretion on the part of local governments. The LTC insurance schemes of the first 15 pilot cities are analyzed in terms the target population, the financing sources, and the contribution requirements.

Keynote III: Evaluating the financial sustainability of the different long-term care insurance schemes in the 15 pilot cities

Dr ZHANG Hui

Associate Professor, Department of Health Policy and Management, Sun Yat-sen University, China

Correspondence: Dr ZHANG Hui (zhanghui3@mail.sysu.edu.cn)

Abstract

This study examines key features of long-term care insurance (LTCI) schemes in the first 15 pilot cities based on the relevant policy documents issued by government agencies from these pilot cities. It then evaluates the financial sustainability of the different types of long-term care insurance schemes among the 15 pilot cities. The results show that most of the schemes in pilot cities can meet the LTC expenses of their severely disabled persons within the guidelines laid down in the central directives at the present moment.

Keynote IV: A comparative analysis on long-term care models in Qingdao, Nantong, and Shanghai

Dr Sabrina Ching Yuen LUK

Assistant Professor, School of Social Sciences, Nanyang Technological University, Singapore

Correspondence: Dr Sabrina Ching Yuen LUK (slukcy@ntu.edu.sg)

Abstract

In 2016, the Chinese government implemented a pilot long-term care insurance (LTCI) reform in the country. A total of 15 cities were selected to implement the LTCI scheme. Local governments were given discretion to determine the source of finance, contribution rate, the insured population and insurance benefits in accordance with their socioeconomic conditions. This study examines long-term care (LTC) models in three pilot cities – Qingdao, Nantong, and Shanghai – representing three different models of financing and delivering LTC in China. Qingdao, which is an aged society, finances LTC for employees by money transferred from the social pooling fund (SPF) of Basic Medical Insurance (BMI) schemes, additional individual contributions, government subsidies, a one-time transfer of the accumulated surplus of the employee BMI fund and social donation. Meanwhile, it finances LTC for residents by money transferred from the resident's medical insurance fund. Nantong, which is a super-aged city and known as the first 'Capital of Longevity of the World', finances LTC by money transferred from the SPF of BMI, individual contribution and government subsidies. Shanghai, which is a super-aged city, finances LTC by money transferred from the SPF of BMI. But its ultimate goal is to finance LTC by money contributed by employees, employers and residents. This study uses five criteria, including utilization of medical resources, cost, equity, quality of care and sustainability, to evaluate the performance of the LTC models in these three cities. It also examines ways to improve the financing and delivery of LTC in these three cities.

V. PLENARY SESSIONS

Plenary I: New paradigm for the future of super-aging societies – a prospective analysis from Japan

[Professor Toshihiko HASEGAWA](#)

President, Future Health Research Institute, Japan

Correspondence: Professor Toshihiko HASEGAWA (pxn14573@nifty.com)

Abstract

The lecture presentation will cover prospective analysis of major transitions and adaptability of Japanese financing and delivery of LTC and services to postulate the future paradigm, for the next 50 years or more, of care and well-being in fast ageing societies; the foundations of which need to be built now. This future model is also epitomized by the care cycle theory that reflects interfaces various aspects of lives of older adults in ageing to super-ageing societies in Asia Pacific.

- Major transitions and adaptability of Japanese financing and delivery of LTC and services
- Prospective analysis
- Sustainability of current model of LTC and more broadly, care in super-aged societies
- Beyond clinical care and medical/social provision to well-being of older adult communities
- Future model of care and well-being and Care Cycle
- Integration of aspects of living – interfaces between medical and social services & care; between institutions and community; between facility & home; through renewed trust amongst stakeholders.

Plenary II: Conducive factors that shaped and maintained ‘universal’ long-term care & services in Japan and their relevance in Asia Pacific: An inside-out perspective

[Mr Sunil MEHRA](#)

Founder Director, NICHIKO, Japan

Correspondence: Mr Sunil MEHRA (sumehra25@gmail.com)

Abstract

The presentation will highlight conducive factors from an outsider’s perspective that have contributed to establishment and maintenance of ‘universal’ LTC in Japan including some of the social, cultural or political factors. The presentation will also cover benefits, private provision underpinning ‘universal’ access and availability, learning and challenges of relevance to other countries in Asia Pacific.

- Conducive factors for delivery of ‘universal’ services of aged population

- Historical precedents/antecedents
- Core principles
- Political dividend
- Cultural, social and economic changes and adaptation
- Coverage and Benefits
- Public Financing and private provision of ‘universal’ care and services
- Lessons, Challenges and Future Directions of relevance to Asia Pacific

Plenary III: Long-term care in Singapore: Balancing healthcare delivery and financing

Dr PHUA Kai Hong

Adjunct Senior Research Fellow, Lee Kuan Yew School of Public Policy, National University of Singapore and Visiting Professor, Graduate School of Public Policy, Nazarbayev University, Kazakhstan

Correspondence: Dr PHUA Kai Hong (spppkh@nus.edu.sg)

Abstract

All over the world, governments face the challenge of integrating elements of delivering and financing needs for ageing populations. The Singapore model shows how long-term care can be delivered and financed through a mix of public and private sources comprising tiered and means-tested public subsidies and grants that target collaboration with voluntary and other private resources from the family. While the goal is to achieve a balance through an optimal mix of private and public options, it is worth noting that Singapore’s hybrid system requires balancing between the public, private and non-profit sectors with a mix of financing through taxation (means-tested targeted subsidies for distribution), insurance (compulsory universal coverage with voluntary supplementary risk-pooling of risks) and savings (personal accounts with incentives for long-term sustainability).

VI. PARALLEL SESSIONS

Parallel Session A: Community Care

A1. Caring for the elderly in the COVID-19 pandemic: Experiences from residential care workers in Hong Kong

Veronica S. K. LAI*, Linda Y. K. LEE, Ivy S. Y. YAU, S. HUANG, Janet L. C. LEE, Susan S. P. LAW, Becky S. Y. LI

School of Nursing and Health Studies, Hong Kong Metropolitan University, Hong Kong

* Corresponding author: Ms. Veronica S.K. LAI (sklai@hkmu.edu.hk)

Abstract

Introduction: Hong Kong has had a relatively small number of confirmed COVID-19 cases and deaths per million people compared to other developed economies, especially in the nursing home setting. Although frontline care workers such as nurses and personal care workers have played a significant role in caring for the elderly in the pandemic, their work experiences and perspectives have rarely been examined.

Methods: A qualitative study was conducted to explore the experiences of nursing home care workers who provided frontline care service to the elderly during the COVID-19 pandemic in Hong Kong. Strictly following the infection control guidelines of the government and the institutions, face-to-face, semi-structured interviews with 27 nursing home care workers were conducted from March to November 2021.

Results: Thematic analysis was adopted to analyze the interview data. Four themes were drawn: (1) stress and resilience; (2) substantially increased workloads; (3) increased emotional and relational bonding; (4) frustrations with dehumanizing infection prevention and control measures. Nursing home care workers experienced a high level of psychological stresses at the onset of the pandemic regarding the risk of infection and the responsibility to care for a vulnerable population. They have built psychological resilience and improvised new modes of caring over time. In the face of lock-down measures that have kept most residents away from family for over a year, health care workers see themselves not only as caregivers but also family members who provide companionship and emotional support. They are frustrated with ineffective testing and infection control measures, lack of resources and administrative support, and the psychological and physical loss caused to the elder residents by lock-down measures.

Conclusion: Nursing homes care workers have experienced challenging situations in carrying out their caregiving roles in the COVID-19 pandemic. Implications and discussion are drawn.

A2. The community outreach program on medication management (COPMM)

CHIANG Sau Chu, CHOW Chun Yin, Eric*, YU Timothy

Abstract

Purpose: The Community Outreach Program on Medication Management (COPMM) is a program which aimed to improve community elderlies' health outcomes through the services provided by pharmacists in collaboration with Community Day Care Centres (CDCCs). Through multidisciplinary approach, professional pharmaceutical care service can be delivered with improvement in elderlies' medication adherence, with reduced misunderstanding about the medications enhancing the quality of elderly care.

Method: (1) Service protocol with standardized workflow, consent forms, referral forms, and objective eligibility criteria were defined and set up. (2) Introductory discussion meetings were arranged with CDCCs to explain the purpose, scope and execution of the program. (3) Training was provided to pharmacist team consisting 3-4 pharmacists with registered access to electronic Health Record System Service (eHRSS). (4) Necessary support with computer with eHRSS access, portable printer, paper, remote wifi, medication boxes was prepared. (5) Pharmacists went to CDCCs to provide medication management service to the elderlies at scheduled times. (6) With medications available from the elderlies and their consent, pharmacist would login eHRSS and pharmacists would review and identify possible medication related issues. (7) Pharmacists would compile and print a comprehensive medication list with drug names, drug images, the dosage instructions to provide to the elderlies and their family members who would be taught the correct way of pillbox packing as well as basic drug knowledge to improve medication adherence, avoid medication errors, prevent repeated hospitalization and maintain one's well-being. (8) Telepharmacy service was provided to those who need further follow up with assistance from CDCC for technical set up and logistics arrangement of the elderlies.

Sample size and Program duration: This was a 9-month project from September in 2020 to June 2021. 475 elderlies were served and altogether 504 pill boxes were packed for this group.

Results: Satisfaction surveys and program evaluations were also conducted to measure the effectiveness of the program. HKPCF has achieved 92.6% satisfaction from the questionnaire collected from the community elderly. The evaluation has proven to be most welcomed to meet community needs and would continue at more CDCC with funding support from donors.

A3. Learning from the literature on community-based yoga intervention for older adults: Practical implications for community health practitioner

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Abstract

Background: “Yoga” is recognized as a type of mind-body exercise in contemporary exercise science discipline. It involves the combination of physical bodily movements/postures, breathing awareness, relaxation and meditation. Although cross-sectional prevalence study showed that individuals who practice yoga tends to be younger in age, recent cross-sectional survey showed that yoga or gardening is the most common type of PA practiced by older adults, and recent scoping review found that yoga intervention is one of the key PA interventions for older adults in the last ten years. With the rise in popularity, there is an increasing demand of yoga classes to be offered to community-dwelling older adults in community settings. There is a need to have better understanding of yoga intervention for older adults in community settings.

Objective: This review aims to investigate what is known from the published literature, about the yoga intervention delivered in community settings for older adults. Specific research questions are: 1) How are interventions tailored for the physical capacity of older adults? 2) What are the outcomes associated with community-based yoga intervention for older adults? 3) How feasible is yoga intervention among community-dwelling older adults as reflected in attrition and adherence rates? 4) What are the reasons for dropping out? 5) What are the safety screening measures adopted in community-based yoga intervention?

Methods: A systematic scoping review of the literature from CINALHL Complete, SPORTDiscus, Scopus, EBSCO, and Web of Science was conducted in November 2021.

Results: After searching for databases and registers, we identified 323 records. After removing duplicates and screening, forty-three records are included in this review. Over half of the intervention (54.5%) tailored yoga interventions to the physical capacity of older adults by providing modifications of postures with the help of yoga props (i.e., chair/belt/blocks/wall). Clinical indicators, physical, physiological, psychological, social, cognitive, biomechanical, biochemical, lifestyle, quality of life and exercise behaviour-related psychological constructs are outcomes associated with community-based yoga intervention for older adults. Overall attrition was 6.89% across a total of 30 intervention groups. The overall median adherence to the scheduled number of intervention sessions was 83% across 22 yoga interventions. The top three reasons for dropping out during intervention were health conditions, family obligations, and time conflicts. Thirteen (29.5%) of the studies applied screening measures safety to determine the eligibility of intervention participation.

Conclusion: The information gathered from the review gives practical considerations and implications to community health practitioners when they consider providing yoga intervention for community-dwelling older adults.

A4. The evaluation of community care services in Hong Kong

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Abstract

Hong Kong has long embraced ‘ageing in place’ and the ‘continuum of care’ as two golden principles for providing long-term care (LTC) services to the elderly. Ageing in place runs in tandem with the continuum of care, such that the provision of community care services (CCS) encourages the elderly to stay at home (i.e., remain community-dwelling), while the continuum of care encourages them to stay at the same residential care homes even if their health deteriorates. Ageing in place can be decomposed into two major components, namely centre-based services and home-based services. This article analyses CCS in terms of availability, awareness, accessibility and acceptance (i.e., the 4As approach), untangles the deep-seated factors underlying the CCS and provides sound short-term, medium-term and long-term recommendations.

The 4As approach shows that applicants to both centre-based services and home-based services endure lengthy waiting times, as a result of a limited amount of CCS. Furthermore, the awareness of day respite services is approximately 50%, which lags behind other CCS. Accessibility is contingent on a cross-district day respite service system and a lack of consistency between the quota and the proportion of older adults in the districts. Finally, the level of service provided by CCS is unsatisfactory due to inflexible service provision. Reviewing the brief history of LTC services reveals the deep-seated factors at the core of their heavy reliance on the subvention model, in contrast to the adoption of the ‘mixed economy of care’ by residential care services (RCS). An imbalance in budget allocation to RCS and CCS is also revealed.

The recommendation to enforce ageing in place will depend on refining the existing CCS in the short run. It can be supplemented by introducing a diversified financing system by encouraging individuals, the government, nongovernmental organisations and the private sector to share responsibility for CCS in the medium term. Cultivating a positive elder care culture and introducing an LTC insurance system constitute another long-term solution for supporting financial sustainability.

A5. Institutional exploitation on village health volunteers, Thailand

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Abstract

During the 1970s and 1980s, several developing countries started extending health coverage services to remote areas. To overcome a scarcity of resources, village health volunteers (VHVs) became one of the most economical strategies, which globally played a crucial part at the primary health care level. In Thailand, the VHVs are nationwide working to support the prevention, detection, and reporting of all diseases. At least one million VHVs have devoted themselves in four major health care activities. These include health promotion, health prevention, health rehabilitation and general health care at the community level. Apart from assisting in the four major areas of routine work, these front-line health volunteers also help the government gather daily health information, watch for flare-ups in infections and participate in socio-political activities as well as other forms of the state ritual ceremonies.

Since 1977 the VHVs were set up as a part of government efforts to deliver basic health care to rural communities at the time when communist insurgents roamed through many parts of Thailand. With basic health training, these volunteers help providing rudimentary care and initial diagnoses in areas that are often far away from health services. Acting as health care gatekeepers, these VHVs help vulnerable villagers to receive further additional medical treatment through effective referral systems, face-to-face home visits, and mental support. Since then, the state's lack of fulltime primary health care workers has been replaced by the VHVs. These volunteers have helped bridge the gap of state primary health care. They helped creating greater people engagement in the primary care systems in subsequent decades. Although VHVs are active, having strong motivation in volunteering, well-trained, and effective human resources they have received low payment with approximately US \$20 per month, few social welfare benefits, insufficient social support and given little recognition.

This research aims to 1) highlight institutional exploitation of the state government on village health volunteers (VHVs) in Thailand; and 2) offer an alternative model, "community health coaching," as a solution. Data was collected from 40 VHVs and 160 diabetes and hypertension risk groups in a district in Kamphaengphet province, Thailand. A thematic analysis of 200 volunteer interviews using participatory action research was applied to determine if VHVs have become victims of institutional exploitation while performing extensive work for their community. The volunteers were subjected to a low quality of work life based on destructive locally organized politics and exploited in terms of social, cultural, and economic perspectives. By applying "community health coaching", more social development actors have been systematically included. The diverse socio-cultural backgrounds of the coaches increased significant transferability, strong social support, and creative learning environment. By taking part of health coaching team, VHVs have stronger social network and better work life balance.

Keywords: Institutional Exploitation, Village Health Volunteers

A6. The local community as a point of departure: Is the district health board an answer for long-term health promotion?

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Abstract

The District Health Board (DHB) was established in 2017 as one of numerous national development policies in Thailand following the 2014 military coup. The DHB was established to advance primary care through community-based, holistic care that is integrated and continuous. The DHB's methods, this study contends, are paradoxical in that they claim 'local community' as a starting point for sustainable health promotion. We claim that the DHB's structure and nature preclude them from accomplishing their objectives. The Administrative Organization of the State Act of Thailand establishes three levels of administrative authority: central, provincial, and local. Since the late 1990s, Thailand's political reforms have heavily favored decentralization of authority to local governments. Nonetheless, the authors claim that the two military coups in 2006 and 2014 restored central and provincial government authorities. The establishment of the DHB and its structure demonstrates unequivocally that healthcare management is subordinate to 'provincial' authorities headed by the District Chief, rather than to local leaders such as the Mayor of the Municipality or the Chief Executive of the Subdistrict Administrative Organization (SAO). Additionally, healthcare and health literacy promotion activities are mostly managed by District Public Health Office workers, rather than by civil society and other sectors. Although the DHB asserted a community-based and collaborative governance approach to healthcare promotion, the study concludes that these claims are purely rhetorical. To enhance health and health literacy in a sustainable manner, this study believes that district health systems should return to the 'real' local community as a point of reference. Decentralization of power and empowerment of local communities are necessary for long-term healthcare and health literacy promotion.

Parallel Session B: Physical and Psychological Health

B1. Effectiveness of home-based family caregiver-delivered aromatherapy programme for older persons with behavioural and psychological symptoms of dementia: Study protocol of randomized controlled trial

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Abstract

Background: Behavioral and psychological symptoms of dementia (BPSD) is the most prominent and distressing manifestation for older persons with dementia (PWD) and caregivers. Aromatherapy is a potentially safe and effective non-pharmacological strategy in BPSD management with benefits to PWD and caregivers, and have been provided to the service recipients of some Residential Care Homes for the Elderly and day care centers in Hong Kong. However, no such therapy is provided in home-based setting for the community-dwelling PWD living at home which constitute a larger proportion of dementia population in Hong Kong, nor clear implementation protocol or formal training to family caregivers to deliver aromatherapy in home-based setting. This study will develop and evaluate the effectiveness of an evidence-based home-based family caregiver-delivered aromatherapy programme for PWD with BPSD.

Methods: A two-armed single-blinded randomized controlled trial (RCT) will be conducted. A total of 88 PWD-family caregiver dyads will be recruited and randomly divided into intervention or control group in 1:1 ratio. The home-based family caregiver-delivered aromatherapy will be conducted in the intervention group, in which the family caregivers will receive individualized aromatherapy training from the registered nurse with aromatherapist certificates, and perform 3-week twice-daily inhalation aromatherapy of Lavender essential oil on PWD. For control group, the family caregivers will receive aromatherapy training after 3-week no intervention control period. The primary outcome will be the PWD's severity of BPSD symptoms measured by Chinese version of Neuropsychiatric Inventory (CNPI). The secondary outcomes will include the PWD's quality of life (QoL) measured by Chinese version of Dementia QoL-Proxy (C-DEMQoL-Proxy), caregivers' distress measured by CNPI, and caregivers' burden measured by Chinese version of Zarit Burden Interview (CZBI). Assessments will be conducted at baseline and after 3-week intervention/control period.

Discussion: This study is ongoing at the stage of consecutive participant recruitment and intervention delivery. It will be the first RCT to evaluate the effectiveness of a home-based family caregiver-delivered aromatherapy programme. The findings of this study could serve as a basis for recommendations on home-based aromatherapy intervention, and contribute to future research and practice related to aromatherapy for BPSD management.

Ethics Approval and Trial Registration: Ethics approval has been obtained from the Joint Chinese University of Hong Kong–New Territories East Cluster Clinical Research Ethics Committee, and this study protocol is registered in ClinicalTrials.gov: NCT05032664 (First Posted: 2 September 2021).

B2. The impact of public health intervention policies on locals' mobility patterns

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Abstract

Introduction: A novel coronavirus, now known as COVID-19, emerged at the end of 2019 and has spread to the world at the beginning of 2020. Millions of people have fallen ill, and businesses have struggled to survive with strict measures such as city lockdowns. It has suffered significantly because of travel restrictions and control. Restrictions on travel and mobility influence locals' behaviors and international tourist arrivals, thereby affecting the survival of businesses in retail, tourism, and hospitality sectors. The objectives of this study are to: 1) investigate the impact of the government's public health intervention policies and reported COVID-19 cases on locals' mobility patterns, and 2) explore locals' mobility behaviors and reported COVID-19 cases. The study contributes to the effectiveness of government policies and public gathering initiatives in the implementation of social distancing and prevention of disease transmission.

Discussion and implications: The results indicate obvious evidence for the relationship between public health intervention policies and mobility patterns. Hong Kong residents become to be increasingly alert of the social distancing norm (Badr et al., 2020; Zhang et al., 2020). Their daily activities and behaviors have been changed accordingly. For instance, wearing masks and having hand sanitizer become a normal practice. Further, it is evident that facial mask policy reduces significantly the mobility of locals to the groceries and pharmacies. This might reflect the situation by which additional drugs and dispensaries are not highly needed since locals control their safety by wearing marks in both indoor and outdoor areas. Policy over LCSD places is another highlight, which deserves particular attention.

The closures of LCSD venues, such as public libraries and museums, enhance greatly the mobility toward the retails, groceries and pharmacies, and transit. Shopping activities, as a leisure choice of Hong Kong locals, are common for all age groups. Residents may possibly be inclined to head toward retail outlets more than before given the sudden closure of LCSD venues as a normal leisure destination choice. Many people may not have great risk concern since wearing marks and other health protection mechanism (such as temperature checking) is applied in retail stores (Parady et al., 2020). Also, the increase of transit mobility is explained since locals need to take the means of transportation for shopping and transporting the necessary goods and supply. Lastly, limiting social gatherings in a stringent manner (i.e. 2-4 people) seemed to have no significant impacts over the mobility patterns across various areas. However, relaxation to 50 people in the gathering restriction positively stimulates the retail and transport mobilities.

The reported cases of COVID-19 also significantly affect mobility patterns. Higher incidences of reported cases reduce mobility patterns in retail, parks, and transit but increase mobility in groceries and pharmacies and residential areas. These patterns largely reflect the reduced time spent in outdoor spaces and increased time spent at home as well as stockpiling goods in response to crisis.

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B3. Healthcare management for drug abuse: The potentials of incorporating desistance to anti-drug healthcare services in Hong Kong

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Abstract

Drug abuse is an alarming issue that draws public attention as well as policy implications across the health care, criminal justice, and social rehabilitation sectors in Hong Kong throughout the past decades. A more serious hidden drug abuse which might bring huge amount of socioeconomic cost was further observed among the younger age group. The concept of drug desistance has been employed in western medical and social rehabilitation model for assisting abusers to abstain from taking dangerous drugs. With reference to overseas and local studies, this paper is going to explore the potentials for developing similar scope of services in Hong Kong. The paper will first provide an overview on the socioeconomic cost of drug abuse and the local healthcare services for drug abusers. The linkage between healthcare and other sectors and the uniqueness of healthcare services for drug abusers will then be highlighted. Lastly, the possibilities of incorporating desistance into the current health care services including out-patient services and methadone clinics will be discussed.

Remarks: This research project — Pathway to Desistance: A Qualitative Study of young ex-drug users in Hong Kong is subsidized by the Beat Drugs Fund 2020 Regular Funding Scheme.

B4. A discussion on the depression of older adults and its social factors influencing it

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Abstract

Older adults, according to the definition of World Health Organization (2017), refers to those who are aged 60 or above. Although various research projects in recent decades have concluded that psychological illness among older adults' cohort is rare (Reed, 1989), it predictably becomes a noticeable issue as the aging population surges and most importantly, the current social-economic environment is reshaping the older adult's lifestyle and hence may result in negative effect on their mental health development. The latter aspect may become more prevalent within the context of post-covid era and the impact of economic recession, which in many ways are responsible for deteriorating mental depression among older adults due to less care and isolation from mainstream society. Therefore, this paper shall discuss to what extent do the current social factors influence developmental mental health for older adults and its possible way of solution.

Depression is recognized as the one of major public health issues on global scale (WHO, 2017). According to the statistics, 7% of population worldwide diagnosed the symptoms of depression in 2017 (WHO, 2017), among which 5.7% of diagnosed were age 60 or above. For older adults, however, such symptoms tend to be neglected at the preliminary stage in which it can be easier cured with medical intervention than the later stage. Traditionally, medical professions advocate society should devote predominant medical resources on tackling chronic diseases that are believed to haunt older adults such as lung disease, hypertension, and diabetes. For very long time, the viewpoint has also been shared by nursing industry and many younger adults. However, recent studies demonstrated depression leads greater suffering and impaired function of daily life to older adults compared to chronic diseases (WHO, 2017). Moreover, depression can ultimately lead to suicide if it is not properly addressed. Over 700000 people die of suicide every year, and the number is expected to grow in near future (WHO, 2021).

The demographic structure around the world has considerably raised the severity of the issue of depression among older adults. Between 2015-2050, the percentage of older adults worldwide is estimated to increase from 12% to 22%. With the enlarging percentage of older adults, the depression of older adults will expect to be a major threat to the world. Apart from the incremental older population, the social-economic factors also impose a great threat to the psychological health of older adults. Several research regarding the causal factors to depression have demonstrated isolation from mainstream society and drop in social-economic status are significantly associated with depression among older adults (WHO, 2021). Inadequate social security fund in some countries or regions whose governments favor right-wing, small spending policy may cause financial difficulty to elderly, thus leading to depression (Knott, 2020). The developmental gap between different region in a country may lead the young workforce from less developed region to metropolis, causing abandon of care to elderly and thus deepening their isolation from society (Sun, 2021).

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B5. A study of the relationship between anxiety and depression during the transition to adulthood from freshman to senior year in Naresuan University health science students

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Abstract

The purposes of this study are to: 1.) Evaluate anxiety and depression during the transition from freshmen year to senior year. 2.) Study the relationship between anxiety and depression during the transition to adulthood. 3.) Compare anxiety and depression during the transition to adulthood. The study was quantitative using the Anxiety Assessment into Adulthood tool (AAA-NU) and Patient Health Questionnaire (PHQ-9) to assess 415 participants. Data was analyzed using descriptive statistics, Quantitative Data Correlation, T-test statistical method and One-way ANOVA. The findings showed the overall level of anxiety was relatively low and depression was mild. The factors of gender and faculty students studied in were statistically significant at the 0.05 level. Age, year at the university, and monthly income were not statistically significant at the 0.05 level. The level of anxiety from transition to adulthood and depression was significant and positively correlated at the .05 level.

Keywords: Student, Anxiety, Depression, Transition to adulthood

Parallel Session C: Clinical and Service Management

C1. Tongue thickness of older individuals with sarcopenia and sight loss : A pilot study

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Abstract

Background: Sarcopenia is a progressive muscle disorder characterized by progressive and generalized loss of skeletal muscle mass and functions and it is strictly correlated with physical disability and functional decline. When sarcopenia presents itself as the atrophy of tongue muscles which is further manifested by a reduction of tongue thickness, the reduction of suprahyoid muscle strength may result in difficulties in swallowing and increased risks of aspiration, which can be fatal. Common screening approaches at sarcopenia include questionnaires, diagnostic grids, or prediction equations which comprise of “rule-out” tests that identify those who are not at risk of sarcopenia by comparing different parameters. SMM and bodyweight are regarded as the most reliable and common parameters and could be obtained by a bioelectrical impedance analysis (BIA) machine. The Iowa Oral Performance Instrument (IOPI) used as an intervention tool in measuring strength and endurance of tongue in healthy populations or disordered populations. Owing to the adverse impacts of sarcopenia on swallowing, there is a need for using a more cost-effective and universal method to measure tongue thickness for the screening of sarcopenia. This study aimed at measuring the tongue thickness using ultrasound, examining the correlation between sarcopenia and tongue thickness and generalizing the use of ultrasound in the screening of sarcopenia.

Objectives: The study aimed at comparing the tongue thickness between healthy subjects and older individuals with sarcopenia.

Methods: A population-based sample of 35 male and female were recruited by convenience sampling. The sample met the selection criteria and was comprised of the sarcopenia group (n=15) who were recruited from the Kowloon Home for the Aged Blind and the healthy subject group (n=25) who were recruited in the community. The tongue thickness of the subjects was examined by the MIRUKO ® Portable Ultrasound (Nippon Sigmax Co. Ltd, Tokyo, Japan). The mean value of the distance between the midpoint of the lower end of the geniohyoid muscle to the tongue dorsum obtained from the three trials was considered to be the tongue thickness. Muscle mass, Skeletal Muscle Mass(SMM) and skeletal muscle index (SMI) were measured by bioelectrical impedance analysis (BIA) using InBody S10 (InBody Co. Ltd, Seoul, Korea). This study adopted the EWGS cut-off thresholds for skeletal muscle index (SMI) hand grip strength was 7.4 kg/m² and 22 kg for females with sarcopenia (Bahat G et al., 2016).

Results: Receiver operating characteristic curve on the tongue thickness revealed that the tongue thickness at 4.145cm displayed the sensitivity and specificity to classify the sarcopenia at 80% and 70% respectively. The area under the curve at 0.737 with p = 0.018. In people with

sarcopenia (N= 15), there were significant correlation between tongue thickness, the skeletal muscle mass ($r = 0.643$, $p = 0.01$) and skeletal muscle index ($r = 0.564$, $p = 0.028$). Regression model on the prediction of the SMM by the tongue thickness showed that the tongue thickness explained 35.7% of the SMM ($F = 7.223$, $df = 1$, $p = 0.019$). We incorporated Height, Weight, Tongue thickness, Tongue strength and Lip strength into the regression model, which explained 95.1% of the SMM ($F=19.367$, $df = 7$, $p < 0.001$). However, only the coefficient of height and weight were significant in the model.

Conclusion and Future Implications: Our findings suggested that tongue thickness had a positive and significant correlation with skeletal muscle mass and body weight. The results revealed that tongue thickness might be an indicator of sarcopenia, and hence ultrasound could be used in the screening of sarcopenia. Early screening may help to minimize the health consequences of dysphagia and aspiration that could otherwise be avoided and the economic burden sarcopenia has exerted on the healthcare system. In addition, the use of ultrasound in measuring tongue thickness has the potential to monitor the progress of oral-motor training and rehabilitation process of older individuals with sarcopenia.

C2. Prevalence of undiagnosed pre-diabetes and diabetes among Chinese residing in sub-divided flats: Preliminary results from a community-based screening programme

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Abstract

Background: People with lower socio-economic status, including those living in sub-divided houses (SDUs), are more prone to develop pre-diabetes and diabetes. In Hong Kong, burden of metabolic syndrome in population residing in SDUs is unknown. This cross-sectional study therefore aims to serve as a preliminary attempt to estimate the size of population with pre-diabetes or diabetes among Chinese SDUs residents in Hong Kong.

Methods: In a community-based screening programme, major family caregivers of Chinese households residing in sub-divided flats units in Hong Kong were recruited in this study through convenient sampling with non-profit organizations. Demographic information of the participants (age, sex, education level) and glycated hemoglobin (HbA1c) were collected through face-to-face interviews and point-of-care rapid test after informed consent was collected. We adopted the HbA1c definitions from the American Diabetes Association for pre-diabetes (5.7 - 6.4 %; 39 – 47 mmol/mol) and diabetes ($\geq 6.5\%$; 48 mmol/mol) in this study. Non-Chinese, and people who are mentally incapable to give consent were excluded. This methodology was approved by the Joint Chinese University of Hong Kong - New Territories East Cluster Clinical Research Ethics Committee of the Chinese University of Hong Kong

(2021.313) and was conducted in compliance to the Declaration of Helsinki.

Results: Between November and December 2021, 201 family caregivers from household residing in SDUs were recruited and screened through a community screening programme in Kwai Tsing and Kowloon City district. Among all the respondents, 21 (10%) were classified as pre-diabetic, and 5 (2.4%) were diabetic according to the aforementioned HbA1c definitions. Of the 26 people identified to be pre-diabetic or diabetic, 22 (85%) did not have a prior medical diagnosis of diabetes mellitus.

Discussion: This is an initial attempt to capture the size of undiagnosed pre-diabetes and diabetes Chinese patients who are living in sub-divided flat units in Hong Kong. Study results shed lights on the needs of undiagnosed metabolic syndromes in Hong Kong SDU residents, where there is scarce evidence available. Future investigations could be done to understand potential social-economic and environmental risk factors contributing to the incidence of pre-diabetes and diabetes in this population, and to guide future healthcare service delivery in community landscapes.

C3. Safety of surgical interventions in the elderly: The weekend effect. A cross-sectional study

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Abstract

Background: Growing aging of our societies implies that an increasing number of clinical procedures will have to be provided to the elderly. This work explores safety and quality of care associated with surgical interventions in the elderly examining whether risks among geriatric patients differ by day of the intervention, weekdays versus weekends.

Methods: Using data from 2016-2018 from the Spanish Minimum Basic Data Set compiled by the Ministry of Health that includes data from all hospitalizations in the country, we have included admissions from patients aged 76 and older who underwent a surgical procedure of any kind for the analysis. Comorbidities were accounted for using the Elixhauser method employing secondary diagnostic codes¹ (ICD-10-CM). Sepsis and deep vein thrombosis variables have been constructed using AHRQ Patient Safety Indicators². Firstly, a between-group comparison of individual patient characteristics has been performed, using t-test and chi-squared test. Secondly, we have used a multivariate logistic regression model to assess excess weekend mortality, adjusting for sex, age, ICU admission, Elixhauser comorbidities, length of stay, and two major complications (sepsis and DVT).

Results: A total of 273,914 patients were included in the analysis. Of those 80.92% underwent a surgical intervention on weekdays and 19.08% on weekends. Patients going through surgical

interventions on weekends were older and had significantly higher cases of ICU admission and longer stay period, as well as greater rates of sepsis and DVT. Weekend intervention is positively associated with mortality risks (adjusted OR 1.22; 95% CI [1.16, 1.29]) and sepsis (adjusted OR 1.19; 95% CI [1.09, 1.32]).

Conclusions: Geriatric patients undergoing surgical intervention on weekends are at greater risk of mortality, as well as of perioperative complications, raising significant implications for safety and quality of care. Further research on the “weekend effect” is needed to assess the causal factors of such excess risk.

C4. Patients with end-stage kidney disease on haemodialysis benefit from an innovative multidisciplinary clinic

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Abstract

Background: Patients on haemodialysis have long-term complex health needs, with multiple care providers, and spend considerable time in hospital. Caring for dialysis access fistulas occurs in the context of multimorbidity and potentially fragmented care. At our university hospital in Sydney, Australia, 135 patients dialyse either at home or in hospital dialysis units. Over 70% of haemodialysis patients are from Culturally and Linguistically Diverse (CALD) backgrounds, speaking a language other than English at home. We identified a significant gap in the care of haemodialysis patients, with high rates of dialysis access thrombosis and poor follow-up.

Methods: An integrated multidisciplinary clinic was established as a dialysis access model of care aimed at providing point-of-care ultrasound, and combined vascular surgical and renal medicine review by rationalising an existing vascular outpatient clinic for this dedicated purpose. The clinic aimed to improve communication between the dialysis unit and the vascular team, to rationalise investigations and interventions, and integrate patient education with clinical care. Patients attending the clinic are reviewed at 3-6 monthly intervals according to dialysis access risk. Arteriovenous fistula ultrasound results are communicated to patients and team members via a standardised reporting protocol. Clinic efficacy was assessed by mixed methods with outcomes of patient engagement and satisfaction, attendance and clinical outcomes.

Results: Since 2019, 76 patients have regularly engaged in the integrated multidisciplinary

clinic. Clinic outcomes include increased attendance rates and decreased duplicate investigations. Patient reported outcomes included greater satisfaction with dialysis cannulation and education, opportunity for shared decision-making with their surgeons, and more efficient scheduling of fistula investigations and interventions. Significant improvement in communication between renal and vascular staff was observed. No additional hospital resources or outpatient clinic time was required due to rationalising and rescheduling of existing services to this dedicated purpose.

Discussion: Integration of vascular access for dialysis patients was achieved with limited resources and point of care ultrasound. Ongoing evaluation of this quality improvement initiative is occurring.

C5. Understanding of patient experiences of point of care ultrasound for the management of permanent haemodialysis access in Sydney Australia

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Abstract

Introduction: Patients on permanent haemodialysis (HD) access experience a significant reduction in their quality of life after commencing HD. Patients report considerable anxiety and fear during HD in relation to their haemodialysis access, ongoing management, and disease progression. There has been little research of the Australasian experience of HD, especially regarding the maintenance of permanent haemodialysis access. Increasingly, clinician performed point of care ultrasound (POCUS) is a non-invasive method of monitoring the function of haemodialysis access. There is conflicting evidence that routine ultrasound surveillance improves dialysis access patency, with some studies reporting surveillance is associated with high patient costs and illness burden. This qualitative study explores patient experiences and understanding of ultrasound for ongoing dialysis access surveillance and management. Improving clinician understanding of patient experiences can enhance shared decision-making, and assist the development of more nuanced, patient-focused management strategies.

Methods: A qualitative study using semi-structured interviews was designed. Interviews were recorded and transcribed, with data de-identified for privacy. Content analysis methodology was used to identify key themes, mapped using an iterative process. Themes were filtered and interpreted through a patient-centred framework focused on the relational and functional aspects of healthcare.

Results: We recruited 12 patients who were interviewed for 40-60 minutes. Key themes related to ultrasound included feeling of security, knowledge and understanding, and shared-decision making. Patients described feeling secure and cared for when their dialysis access was reviewed with ultrasound. They felt more engaged in their care, with each patient showing a high health literacy around the purpose of ultrasound monitoring. Shared decision-making was enhanced, with many patients describing how the ultrasound examination was an opportunity to learn and understand the decision making about their haemodialysis access. Compared to the many other invasive procedures patients endured, such as angiography, ultrasound viewed a slight nuisance in the most negative report, with many patients associated positive anticipation and reassurance with the confirmation of a well-functioning, well cared for haemodialysis access.

Conclusion: Patients with on HD have high ongoing clinical needs to maintain their haemodialysis access. Understanding their experiences, expectations and values regarding point of care ultrasound can enhance the patient-focused experience and communication about their medical management, improving shared-decision making and health literacy. Negative aspects of ultrasound surveillance were minimal from patient perspectives with most patients reporting surveillance decreased anxiety and improved patient-engagement in their care.

C6. Severe mental illness contributes to adverse patient experiences and poor public health outcomes when caring for patients on haemodialysis for end-stage renal failure

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Abstract

Introduction: For patients with high health care needs, such as end-stage renal disease on haemodialysis, severe mental illness (SMI) adds an additional complexity to their healthcare burden. It is unknown to whether patients on haemodialysis with a SMI have different experiences related to their healthcare when compared to patients without mental illness.

Methods: In this mixed methods study of patients on haemodialysis, we aimed to identify clinical outcomes important to patients with SMI and subsequently evaluate these outcomes in a large population-based cohort study in New South Wales, Australia. Patient-centred outcomes were identified from content-based qualitative analysis of patient interview transcripts. Routinely-collected health administrative data for all patients who had new arteriovenous fistula formation for haemodialysis were collated and linked to government-maintained death records between 2010-2014. Patients with SMI, requiring hospital management, were

identified using ICD-10 codes in their current and previous hospital admission records, and outcomes were compared to patients without mental illness. Statistical analysis was performed including Kaplan Meir survival and multivariate analysis with Cox proportional hazard ratios.

Results: Semi-structured interviews were conducted for 12 patients, with four patients having a diagnosis of SMI. Themes related to patient-centred outcomes included i. dialysis needs override mental health needs, ii. hospital stays are prolonged and complex, and iii. cascading complications trigger anxiety. Patient-centred outcomes derived from this analysis included hospital length of stay (LOS), perioperative complications, and reintervention for dialysis access. Patient: “[Dialysis is] not like what would happen with someone without my psychiatric problems. It’s not just dialysis, its everything... What more do I have to put up with next?”

During the study period, 2032 patients had a new arteriovenous fistula or graft created for haemodialysis. SMI was diagnosed in 262 (11%) of patients. Patients with SMI were younger but were more comorbid and frailer compared to patients without SMI. Whilst the median LOS at the time of fistula creation was similar, by two years follow up, patients with SMI had a median hospital LOS 23.5 days longer than those without mental illness. Complications after fistula creation were also higher for patients with SMI compared to those without, after adjusting for age and gender (Odds Ratio 1.77; 95% Confidence Interval 1.23-2.54). No significant differences in reintervention rates occurred between patients with and without SMI (adjusted OR 1.17; 0.92-1.49). Survival at two-years was reduced in patients with SMI. Over one quarter of patients with SMI had died by two years (67, 25.6%) compared to those without (327, 16%).

Conclusion: This mixed methods study highlighted that there are significant barriers to care experienced by patients with SMI on haemodialysis, both from the patient’s own qualitative perspective, and from a population-health evaluation. Patients desire holistic care that recognises their mental health needs alongside their haemodialysis requirements. Patient: “I can’t go to the [psychiatric] hospital at all. They have no dialysis. They just don’t have the facility for it.” An emphasis on holistic care in hospital, with increased use of team-based care, may assist in decreasing perioperative complications and hospital length of stay.

C7. Current management of myopia

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Abstract

Myopia is a refractive error which has defect on distance vision. High prevalence of myopia is found in East Asia. The prevalence of myopia in Hong Kong children by the age 12 is 61.5%. High myopia (with spherical equivalent of -6 dioptres or more or axial length more than 26mm) is associated with complications, such as glaucoma and retinal detachment. It is predicted that myopia will become the leading cause of blindness in 2050. Currently, the intervention includes

pharmacological, optical intervention, lifestyle adjustment and Chinese medicine.

Pharmacological intervention includes the use of atropine and pirenzepine. Both are anticholinergic agent which inhibit the acetylcholine acting on muscarinic receptors. It is believed that it can retard the eye growth. Atropine eye drops is by far the most effective intervention on slowing the myopia progression (8%-75% with variation of concentration). Daily use of atropine showed a dose-dependent manner in slowing myopia progression. The concentration ranges from 0.01% to 1%. High concentration of atropine (0.5%-1.0%) are found to be more effective in reducing axial length. But it may have adverse effects of photophobia (incidence rate up to 100%) and blurred vision caused by pupil dilation, allergic conjunctivitis, and rebound effect.

Optical intervention includes orthokeratology (Ortho-K), contact lenses and spectacles. Ortho-K is applied at night-time that it is a specially shaped contact lens to reshape or change the curvature of the cornea temporarily. It has moderate effects on retardation of myopia progression (32-55%). Unfortunately, adverse effect of corneal infection was reported which was not recommended for young junior school students. Soft dual contact lens has a moderate efficacy (29-59%), but the drop-out rate was high in studies, mainly because of discomfort and difficult to put in and out. Controversial results were found in applying progressive addition spectacle lenses and bifocal glasses. Monofocal glasses is used for correction of vision, the effect of treating myopia progression is not significant.

Increase in outdoor activities or physical activities, reduction of near-work during childhood (close reading distance less than 30 cm and continuous reading more than 30 minutes) reduced the incidence and progression of myopia. The underlying mechanism may be because light exposure is associated with a reduction in axial eye growth.

Acupuncture has a long history of myopia treatment in China. Auricular acupressure and needle insertion acupuncture are common. But the meta-analysis showed that the evidence of efficacy was unclear. Chinese eye exercise has been adopted as a vision care policy in China. It involves a set of self-administered acupressure mainly applying around the orbit. The high seriousness of applying the eye exercise showed significant effect on reduction of eye progression. Acupressure is a safe and low-cost intervention which has potential to be a stand-alone or adjunctive intervention in myopia progression.

It is suggested that clinical efficacy may be higher in combined interventions. The future of vision care plan should consider the combined intervention, especially with lifestyle adjustment.

Parallel Session D: Innovation and Technology

D1. Effects of brief virtual nature experience on psycho-physiological health during COVID-19 Pandemic

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Abstract

The prevalence of stress, depression and anxiety amongst individuals as a result of the COVID-19 pandemic is increasingly a global health problem. Previous studies show that spending time in natural environment promote individuals' mental health and well-being, especially when we are stressed or upset. There is, however, a limited understanding of the psycho-physiological effect of virtual nature experience via watching a computer screen in indoor environments during the COVID-19 pandemic. This pilot study aimed to examine the effects of brief 15-min virtual nature experience on the psychological and physiological health of university students during the COVID-19 pandemic. The student participants were randomly assigned to individual virtual nature and non-nature experience interventions; each participant was given the same intervention for 3 times a week, 15-min each, for 3 consecutive weeks. The results showed that compared with the participants in the control group (i.e. non-nature experience), a significant reduction ($p < .05$) in negative emotions (i.e. tension, depression, fatigue, confusion, anger, and vigor) was found in three virtual nature experience interventions, including urban park, coral reef, and forest. The same effect was observed 2 weeks after the intervention ($p < .01$). The participants also reported a significant increase ($p < .05$) in Happiness in Week 1, Week 2, and Week 3 during the interventions and 2 weeks after the interventions. Apart from psychological aspects, the virtual nature experience interventions also led to significant changes in various physiological aspects, including the average peripheral oxygen saturation (SpO₂) and the average pulse rate and a significant decrease in stress level ($p < .05$). The present study revealed the restorative benefit of brief virtual nature experience which could be adopted as an effective measure in promoting psychological and physiological health, including reducing stress and anxiety, and enhancing well-being during the COVID-19 pandemic, where stress and anxiety levels rise globally. The results would be useful for public health professionals and policy makers to consider promoting virtual nature experience in indoor settings to alleviate individuals' stress and anxiety, particularly at times of social distancing and lockdown.

D2. Photo-elicitation for capacity building and promoting professional interest in working with older adults – Piloting a novel “humanism in ageing” workshop in medical curriculum

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Abstract

With the increased exposure to frail and vulnerable older patients coupled with recent advances in anti-ageing and regenerative medicine, medical students may develop the tendency to view the ageing negatively. Age-related biases in medical students might include seeing ageing as a frustrating process of decline, infirmity and decay. A recent cross-sectional survey in China reported that first-year medical students had more favourable attitudes toward older adults than senior students, suggesting that attitudes on ageing might have been affected by knowledge in the medical school.¹ Another study has found medical students to have moderately negative attitudes toward older adults, and little expressed desire to pursue a specialty in geriatrics.² This phenomenon is perhaps even more worrisome at a time that the COVID pandemic has exacerbated intergenerational tension, and has exposed us to the fact that society's rationing of healthcare resources on some occasions have been based arbitrarily on chronological age. Most recently, the United Nations has declared the next Decade of Healthy Ageing (2021-2030) and has called for international, concerted action to "change how we think, feel and act towards age and ageing".

Visual images evoke emotions, abstract ideas, and the shared human experience. It can also be used to tell stories and, in narrative pedagogy, illustrate themes to be taught. For instance, photographs of older adults could elicit learners' apprehension of geriatric care, and images of senile and frail older adults could elicit anxiety about growing old, thereby enabling dialogue about stereotypes and prejudices, and in turn potentially facilitating sensitivity, perception, empathy and insight, perspective-taking.³ Research also reports that socializing medical students with healthy older adults through visual art could foster positive attitudes to

At Li Ka Shing Faculty of Medicine of The University of Hong Kong, our team has sought to harness the potential of photo-elicitation as a teaching & learning tool to foster medical students' awareness of, and insight into their own age-related assumptions on health. In the MBBS curriculum, we held intergenerational workshops for medical students to jointly explore visual narratives on healthy ageing with a silver age volunteers in the community, and to reflect upon person-centered healthcare for the ageing population. ward the other age group, and enhance a sense of commonality.⁴

The project is funded by the Teaching Development Grant (TDG) at The University of Hong Kong.

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D3. Modification work of nursing care home bathing facilities - Contemporary design and assistive devices

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Abstract

Background: The aim of this study was to determine whether nursing home bathing facilities modification (areas 27.89 sq. meter) was associated with subsequent progression of frailty and quality of life in older adults.

Method: We conducted a prospective cohort study in 48 females adults 65 and older who required a low to moderate level of assistance on the two residents' floors of aged blind nursing home. Of these, nursing home modified the bathing facilities grooming, toileting and bathing areas with design (i.e. drainage system, wet dry zone, infection control, non-slip and wet floor etc.) and assistive devices (i.e. wheelchair accessible areas, height adjustable facilities, movable handrails, illumination). It created an accessible environment for all level of assistance to enjoy their self-care activities It clearly reflects that our goal is to create a daily life with self-esteem, quality, and the low fall risk bathing facilities environment freedom to safely look after themselves.

Result: The quality of life (HKQoLVIES), elderlies mobility scale (EMS), modified Barthel index (MBI) and fall rate (bathroom) was significantly improved among older adults with nursing home bathing facilities modifications than in those without home modifications at 1 year. The results of the present study differed from those of previous studies. This could be because the experts panel redesign and reconstructed the whole bathroom (areas 27.89 sq meter) and suggested better compartment, water drainages, illumination, installation of universal concept assistive devices), this significant changes to the bathing area that accounted for the improvement of elderlies physical abilities and quality of life.

Conclusion: The results of the present study revealed that the appropriate application of design and assistive Devices based on these initiatives, which were well-suited to the visual impaired elderly 'physical abilities resulted in the prevention of falls.

D4. Blockchain-based digital health certificates: Technical architecture and use cases

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Abstract

The COVID-19 pandemic has disrupted not just the Hong Kong and global economy, it also has negatively affected our social lives. For those people who have been forced to be separated from their loved ones, the loss of close, personal and physical contact can even cause mental health problems. Before the availability of a highly effective vaccine and medication for all COVID-19 variants, there needs to be a way for people to return to their normal ways of living. That means re-opening borders between countries, opening workplaces and public venues, but with measures to minimize the possibility of another outbreak of the pandemic. Therefore, there is an urgent need to develop solutions that can ensure safe travels and gradual resumption of normal lives.

One such solution is the blockchain-based digital health certificate. Just like a paper certificate, a digital health certificate contains the essential health information about a person, including COVID-19 vaccine / test data. The blockchain platform provides supports COVID-19 test / vaccine certificates issuing and verifying. Due to the distributed nature of the blockchain, the platform is immune to hacking because it is virtually impossible for hackers to successfully attack enough nodes to alter data without proper authorization. The privacy of data stored in the blockchain is also ensured because of the use of cryptography and private / public keys. Users will have complete control over their data. They can decide which parties can access only certain parts of their data. They can also choose to selectively disclose selected pieces of information to trusted parties.

Smart contracts can automate the transactions between the different parties involved in the use of the health certificate. A smart contract is a small program written in a Javascript-like language called Solidity. The smart contract is stored in a blockchain and it will be executed when the conditions specified by the contract are met.

The health certificate is stored in a digital wallet, which is a mobile phone application. It contains the wallet address, which is unique to each user, and a private which is known only to the user but has a matching public key that can be disclosed to the public for verification. Service providers such as hospitals, schools, and airports can easily verify the health certificate of the bearer by scanning the QR code which contains the hash of the health certificate.

D5. The importance of environmental sustainability for healthy ageing and the incorporation of systems thinking in education for a sustainable environment

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Abstract

The sustainability of a healthy environment is a top priority among major global health issues. In the past years, there have been increasing urgent calls for the need of a sustainable green environment, which is critical to the promotion of healthy lives and well-being. This is of particular importance considering the substantial growth of worldwide ageing population. However, the extensive use of chemicals and development of chemical technologies pose global challenges to environmental sustainability, although their vast applications have contributed to the enhancement of life quality and brought a significantly added level of convenience to the public. Concerns over the use of chemicals arise from possible chemical pollution and the impact of hazardous chemicals on human health. Chemical pollution is a serious risk to health, especially to the elderly group which is more vulnerable to chemical attack due to weakened body functions and degenerating organs, resulting in a higher susceptibility. Under this circumstance, it is therefore not surprised to see the recent development of various strategies to reduce the use of hazardous chemicals. In recent years, there has been a significant amount of research investigating the advancement and applications of green chemistry and emerging technologies in the transformation of the chemical industry. In the meantime, there are also growing research studies investigating sustainable chemistry and its development for achieving the Sustainable Development Goals (SDGs) and moving the society towards a sustainable future. While these research investigations are valuable contributions, it is noteworthy that health promotion and education also plays an important role in the achievement of a sustainable environment. Recent studies have also reported the importance of nurturing future global citizens and called for more educational research in the promotion of environmental sustainability through education. In the educational context, increasing studies have identified the promising prospects of incorporating systems thinking in the teaching of core science subjects, especially in chemical education. In this study, we will discuss the key issues in environmental sustainability and healthy ageing, as well as the pedagogic design and incorporation of systems thinking in education. The theoretical framework of systems thinking is adopted, and examples of relevant tools and diagrams will be developed to illustrate the potential applications of systems thinking in education for moving towards a more healthy environment and a sustainable future.

V. POSTER PRESENTATIONS

P1. Innovative ideas for the aging trend

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Abstract

According to a survey conducted by the Hong Kong Bureau of Statistics, it is expected that by 2022, the elderly population in Hong Kong will reach 2.83 million, accounting for 23% of the total population in Hong Kong. I observed that most elderly people in Hong Kong are independent and have strong hands-on skills, so we thought of building a work platform for the elderly.

In order to cope with the aging population, there are already a lot of welfare homes for the elderly, which provide a place for the elderly to live. However, there are many healthy elderly people who do not want to just stay in a nursing home, they want to find something to do. For some seniors who love to work and have worked all their lives, it's not fun to have nothing to do every day. The senior work platform can provide them with opportunities. The following is a detailed analysis of this work platform.

First, the elderly can't physically support them to do some complicated and tiring work, but they can do relatively easy work, such as simple weaving, packaging, etc.. The platform can provide the elderly with space and needle and thread to make simple clothes, and the produced clothes can be sold at low prices or donated to the needy. Can also provide sewing machines, recycling or low-cost acquisition of damaged clothing, given to the elderly for sewing, so that not only let the clothes new life, patches and natural wear and tear instead of adding an air of age to the clothes. Nowadays, more and more young people love to wear vintage clothes because of the sense of use and the uniqueness of hand-made clothes. This not only helps the elderly, but also caters to the market demand, and is also in line with the concept of green.

Secondly, the platform can carry out lectures and sharing sessions on the experience of the elderly. Older people have accumulated a lot of experience in society, interpersonal communication and workplace life, which is worth learning for young people. Listening to the old people's sharing can make their life and work direction clearer. Experience never goes out of style. The experience of the elderly is valuable, whether it is successful experience or failed twists and turns, it can make young people take less detours.

Finally the platform can form a singing or dancing group for the elderly. Some old people who used to be art workers can shine in this team and make their contribution in the new team. Also they can find some friends in the team and get to know each other. These activities also allow them to exercise and keep the elderly physically and mentally healthy. For example, many alumni singing groups on the mainland have an average age of over 70, and they often perform on TV shows and at many colleges.

The work platform for the elderly can be used to give retired seniors the opportunity to live a more fulfilling and happy life by giving them the opportunity to work at home. In the future, we can also develop more diversified activities to enrich the content of this platform and meet the needs of as many elderly people as possible. All this is to enrich the life of the elderly in their old age and to reduce the negative impact of the aging population on society as much as possible.

Poster P1 by YUE Linxuan:



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老齡化和醫療管理研究中心

Innovative Ideas for The Aging Trend

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- **Objective:** To enrich the life of the elderly in their old age and to reduce the negative impact of the aging population on society as much as possible.
- **Design:** Elderly People Work Platform
- **Background:** According to a survey conducted by the Hong Kong Bureau of Statistics, it is expected that by 2022, the elderly population in Hong Kong will reach 2.83 million, accounting for 23% of the total population in Hong Kong.
- **Introduction:** There are already welfare homes for the elderly, which provide a place for them to live. However, many healthy elderly people want to find something to do. The senior work platform can provide them with opportunities.
- **Details:** 3 basic function of this platform



The elderly can do relatively easy work, such as simple *weaving, packaging* and so on. Many young people love to wear vintage clothes because of the sense of use and the uniqueness of hand-made clothes.

The platform can carry out lectures and sharing sessions on the experience or individual stories of the elderly. *Experience never goes old.*



The platform can form a *singing or dancing group* for the elderly. Old people who used to be art workers can make their contribution in the new team.



P2. Mental health of healthcare workers – A proposed study design

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Abstract

Background: Stress levels of health care workers (HCW) in Hong Kong are greater than before because of the extended pandemics of COVID-19. In a situation where they are working with infectious disease, insufficient hospital beds and manpower shortages can lead to a lot of mental stressors, anxiety, and possibly depression. It is important to look into the mental wellbeing of HCWs to ensure they can provide high standard of professional care and avoid medical incidents.

Objective: To evaluate the stress level of health care worker, to identify the main factors that caused stress levels, to compare the situation with other countries and studies, and to recommend ways for possible improvements.

Design: Cross-sectional study by a questionnaire and in-depth interviews.

Setting: A teaching hospital in Hong Kong.

Participants: 3,800 staff. It is expected a quarter of them will return the completed questionnaires. 50 participants will be invited to attend in-depth focus group interviews.

Expected outcome: The public healthcare system of Hong Kong has always attained high rankings as the best healthcare system around the globe. However, the general medical system has faced a lot of critical challenges over the past ten years. With the rapid growth of the ageing population, this issue is a surge in public healthcare services. With the long-term excessive workload, the quality of healthcare services is expected to deteriorate, and the HCW are getting over-stressed. This is a vicious cycle for the entire system. The proposed study would help to demonstrate that most HCW are suffering from heavy workload. This may lead to a disturbed mental state. Factors causing mental stress would be identified from the survey and further verified by the focus group discussion. Recommendations of improvement of work environment and mental well-being of staff would then be drafted and submitted to the Hospital Governing Committee for consideration.

Limitation: The sample size may be smaller than expected as the staff are too busy. Likewise, difficulties in securing 20 participants for the interview are expected, especially when most of the staff are on shift.

Acknowledgment: The authors wish to express appreciation to fellow classmates, Bonnie Chung, Gurung Tsiring, Lai Ming Wai and Pang Hoi Ki for their contribution in the group project.

Poster P2 by Carmen K. M. AU, Jocelyn W. S. TONG:



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Mental Health of Healthcare workers – A Proposed Study Design

Carmen K.M. Au, Jocelyn W.S. Tong*



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Objectives:

- To evaluate the stress level of health care worker and to identify the main factors.
- To compare the situation with other countries and studies.
- To recommend practical ways for possible improvements.

Design:

- Cross-sectional study by a questionnaire & in-depth interviews

Setting:

- A public hospital in Hong Kong

Participants:

- Approximately 3,800 Staff
- Expected at least a quarter of the participants will return the completed questionnaires
- Invite those participants (around 50 targeted) with high stress level to attend a further in-depth focus group interviews

Expected outcome:

The proposed study will demonstrate that most health care workers are suffering from heavy workload, and this will lead to an extremely worsening mental state. The main reasons for the problem will be shown from the results of the survey and follow up group discussion with the particulars.

Recommendations for improvement of working environment and mental well-being of staff will be proposed to the Hospital Governing Committee for consideration.

Limitations:

The sample size may be smaller than expected as the staff are too busy to participate.

Expected to encounter difficulties in securing participants for the interview especially when most of the health care workers are on shift working hours.

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World Health Organization. (2021). *WHO guidance on research methods for health emergency and disaster risk management*. <https://apps.who.int/iris/handle/10665/345591>

Acknowledgment

The authors wish to express appreciation to fellow classmates, Bonnie Chung, Gurung Tsiring, Lai Ming Wai and Pang Hoi Ki for their contribution in the group project.

P3. Blockchain-based electronic healthcare record

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Abstract

Blockchain is a digital distributed ledger for recording transactions across a network of computers. Blockchain is a decentralized, immutable, secured technology that shapes the future world as well. There are two types of blockchains, the permissionless and the permissioned one. A public blockchain is permissionless, it does not have a central authority to manage the nodes, which enjoy the maximum of security but is less effective. On the contrary, private and consortium blockchains are permissioned blockchains that have a single or group organizer, they are lower in transparency while having faster speed. And the hybrid blockchain is the combination of these two types.

In the traditional health industry, the patient's health record is paper-based, it is stored from multiple different parties, including private clinics, hospitals, labs, pharmacist, insurance companies. The pain points are these records could be fragmented and error-prone. The blockchain-based electronic health record advocates a different paradigm. It suggests that a patient's health record should be placed in blockchain by different institutions to construct an ecosystem cooperatively. Therefore, the long-standing problem of interoperability and security in health record management can be solved.

In the past, sharing of patient health data between different medical services providers was cumbersome. Patients needed to sign a paper consent form to authorize institutions for accessing their health records, and data transport like passing an X-ray film from one hospital to another could take weeks. Now, blockchain serves as a unified digital platform. A patient can utilize the smart contract (an automated, conditional agreement) to approve eligible parties accessing their health record in a real-time manner. Therefore, the time cost is significantly reduced. Moreover, the record stored in the blockchain is tamper-resistant. It is because every change in blockchain must reach a consensus with the majority of distributed nodes. So, the patient health record is safe from illegal modification in some medical malpractice cases.

The blockchain-based Electronic Health Record is also the game-changer in the field of insurance. Before the blockchain, an insurance claim can be tiresome work for a patient who needs to fill in lots of documentations and collect medical certificates from place to place. Now, the patient is relieved from this burden because insurers themselves can get the health record in blockchain easily. That record is authentic for no single party can alter it. As a result, the insurance company doesn't need to put lots of time to investigate whether the claim is fraud. Thus, the claim process can be greatly simplified. By using smart contracts together, the insurer can reimburse patients in a very quick way.

One of the real-life examples of the blockchain-based electronic health record is the phrOS (Personal Health Record OS), which was launched by the Hospital of Taipei Medical

University (TMUH) in 2017 and is based on private Ethereum blockchain. The phrOS are the world's first blockchain project that aims to integrate health data sharing between hospitals while ensuring data privacy.

Poster P3 by Daniel K. W. YIP, Sierra K. W. MOK:



Blockchain-based electronic healthcare record

Daniel K. W. YIP, Sierra K. W. MOK

School of Professional Education and Executive Development, The Hong Kong Polytechnic University

What is blockchain

- A digital distributed ledger for recording transactions across a network of computers.
- Permissioned: private and consortium blockchains, have a single or group organizer, lower in transparency while having faster speed.

Type of blockchains

- Permissionless: public blockchain, no central authority, more secure but less effective
- Hybrid blockchain: combination of permissionless and permissioned patterns

Traditional management on patient's health record

- paper-based
- stored from multiple parties

↓

Blockchain approach
Patient's health record is placed in the blockchain to construct a unified digital platform

```

    graph TD
      Hospital <--> Blockchain
      Clinic --> Blockchain
      Lab --> Blockchain
      Pharmacist --> Blockchain
      Insurer --> Blockchain
    
```

Benefits For patients

- Authorize medical service provider for accessing their health record in advance
- Data transport between institutions in real-time manner
- Avoid illegal modification to their own health record

Benefits For insurers

- Patients don't need to fill in lots of documents
- Avoid insurance fraud
- Simplify and automate the claim process

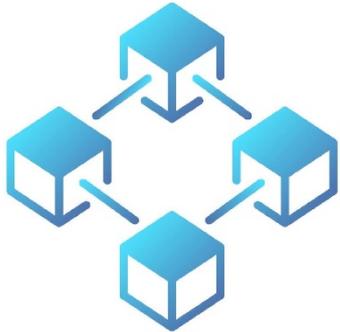
Real-life case

phROS (Personal Health Record OS), which was launched by the Hospital of Taipei Medical University (TMUH) in 2017, is based on private Ethereum blockchain.

The phROS is the world's first blockchain project that aims to integrate health data sharing between hospitals while ensuring data privacy.

Why blockchain for health record?

- Increase interoperability
- Data is cryptographically secured
- Achieve automation by using smart contract



P4. Review on social isolation and related conditions among elderly

Tsz Yiu Adam CHENG, Manahal WAHEED, WONG Ching Yung Toby, Man Hei AU, Shutong CHEN

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Abstract

Social isolation is a behaviour adopted by most of the elderly these days due to lack of family interaction among the families, economic difficulties but most importantly emotional tendencies or judged being worthless by the society which further advances to various diseases. However, the topic social isolation itself is an underemphasized term which has caused acute morbidity rates into the society. In Hong Kong the number of solitary elderly according to the census 2016 is around 152,000 of elderly. The recent sources has shown once an elderly isolates themselves they start to face several loopholes in their lives which inhibits their connection with others as they become physical and mental become fragile to the atmosphere. The illnesses associated with social isolation are severe to the extent of eliminating the lifespan of an individual. The severity of morbidity of social isolation is as hazardous as smoking 15 cigarettes in a day. The illness corresponding to isolation is both physically and mentally sophisticated to longevity of an elderly which causes depression, anxiety, decreased mobility of bone, endurance and flexibility of muscles is weakened which leads to non-communicable diseases known as chronic diseases which hinders the quality of life. The risk of illness developing in elderly is increasing, facing diseases like heart diseases, cardiovascular disease and other health related illnesses. According to the Centre for Diseases, the risk of heart diseases is about 29% whereas 32% risk of stroke respectively. In a case of a patient with persistent heart failure togetherly being socially isolated the risk of mortality is to be around 68%. The knowledge of social isolation is still under-accessed in Hong Kong as the prevalence rate of isolated elderly marks at its peak. It is understood that some people isolate themselves for a short period to give themselves time to overcome pressure. However, socially isolating is a long term behaviour which an elderly person chooses to eliminate interaction with others. As individuals we can lower the rates as we take initiative in expanding the knowledge of social isolation. It should be greatly understood that medicines are just not the cure for elderly. All they need is care, interaction with people, and a good listener which simultaneously improves their psychological and physical health. The more moral support, assisted care they have, the prevalence of chronic diseases would significantly reduce. There should be public awareness on social isolation and able to distinguish between healthy lone time and social isolation. The poster shares the aim to promote the importance of social isolation and highlight the illness correlation to it.

Acknowledgments: This is to acknowledge my fellow classmates Adam, Toby, Owen for contribution in research of related resources.

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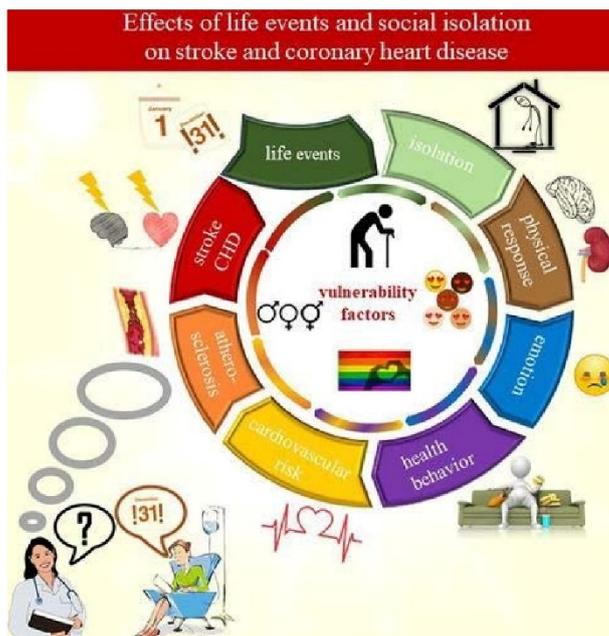
Poster P4 by Tsz Yiu Adam CHENG, Manahal WAHEED, WONG Ching Yung Toby, Man Hei AU, Shutong CHEN:



Review of Social Isolation and Related Conditions Among Elderly

Tsz Yiu Adam Cheng, Manahal Waheed, Wong Ching Yung Toby, Man Hei Au, Shutong Chen
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Social isolation is a behavior adopted by most of the elderly these days due to lack of family interaction among the families, economic difficulties but most importantly emotional tendencies or judged being worthless by the society which further advances to various diseases. However, the topic of social isolation itself is an underemphasized term that has caused acute morbidity rates and mortality rate in society. In Hong Kong, the number of solitary elderly according to the census 2016 is around 152,000 elderly. Base on a large number of elderly are suffering, this investigation is going to identify how social isolation causes serious health condition.



Gronewold, J., Engels, M., Velde, S. van de, Cudjoe, T. K. M., Duman, E.-E., Jokisch, M., Kleinschnitz, C., Lauterbach, K., Erbel, R., Jöckel, K.-H., & Hermann, D. M. (2021, January 15). *Effects of life events and social isolation on stroke and coronary heart disease*. *ahajournals*. Retrieved January 4, 2022, from <https://www.ahajournals.org/doi/full/10.1161/STROKEAHA.120.032070>

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P5. Effectiveness of facial masks - A review

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Abstract

The Coronavirus Disease 2019 (COVID-19) is widely recognized as a droplet-borne disease, which can stay with the air particles. A study in the Elsevier Public Health Emergency Collection (2021) demonstrated that the respiratory droplets of the COVID is 5-10um in size. This size enables the viral particles to spread from one person to another person through the sneezes. Therefore, a surgical mask plays a very important role in protecting people from contacting viral particles directly. In the early stage of the outbreak, there is a shortage of face masks worldwide. With a view to coping with the shortage, many people produced cloth masks by themselves. A small group chose to use high particulate respirators (KF94, N95) when going out. Nevertheless, most of the general public do not have any ideas about how to distinguish the masks regarding their effectiveness. The mask with low efficacy greatly reduces the coverage and effectiveness. There is a heated debate about whether the cloth mask passes the test and protects people from getting COVID. The materials of the filters of N95 and surgical masks are commonly used of non-woven fiber. It is highly efficient in disposable mask production as the materials of masks like non-woven fabrics are relatively easy and cheap in the manufacturing processes. Certain polymeric materials like polyacrylonitrile and polypropylene (PP) are commonly used in the process of mask manufacturing because these materials have high electrical resistance and stability. These materials can act as filters that resist both large particles which are larger than 0.3 micrometer and small particles which are smaller than 0.2 micrometer through sedimentation, impaction, diffusion and electrostatic attraction. Most facial masks are composed of multilayers, commonly three, of non-woven fibres. It should be hydrophobic on the outer layer because viruses or other pathogens may be attached on it. Non-woven polypropylene resists the attachment of moisture or droplets from the air. The innermost layer should absorb moisture from exhalation and maintain the dry environment inside the mask that prevents the growth of the viruses. Furthermore, the meltblown polypropylene fiber diameter in N95 and surgical masks is around one to ten micrometers, and the pore size is around twenty micrometers, giving the particles filtration rate (PFE) of 95% and 19% to 33% from N95 masks and surgical masks respectively. Hence, meltblown polypropylene may not be suitable for surgical masks. There are a good variety of facial masks in the market. Many are designed with icons, attractive patterns and identity of organisations. The public should choose masks that are effective in protection from air-born infections rather than the appearance, and they should follow the official instructions regarding precautionous public health measures when staying in public venues.

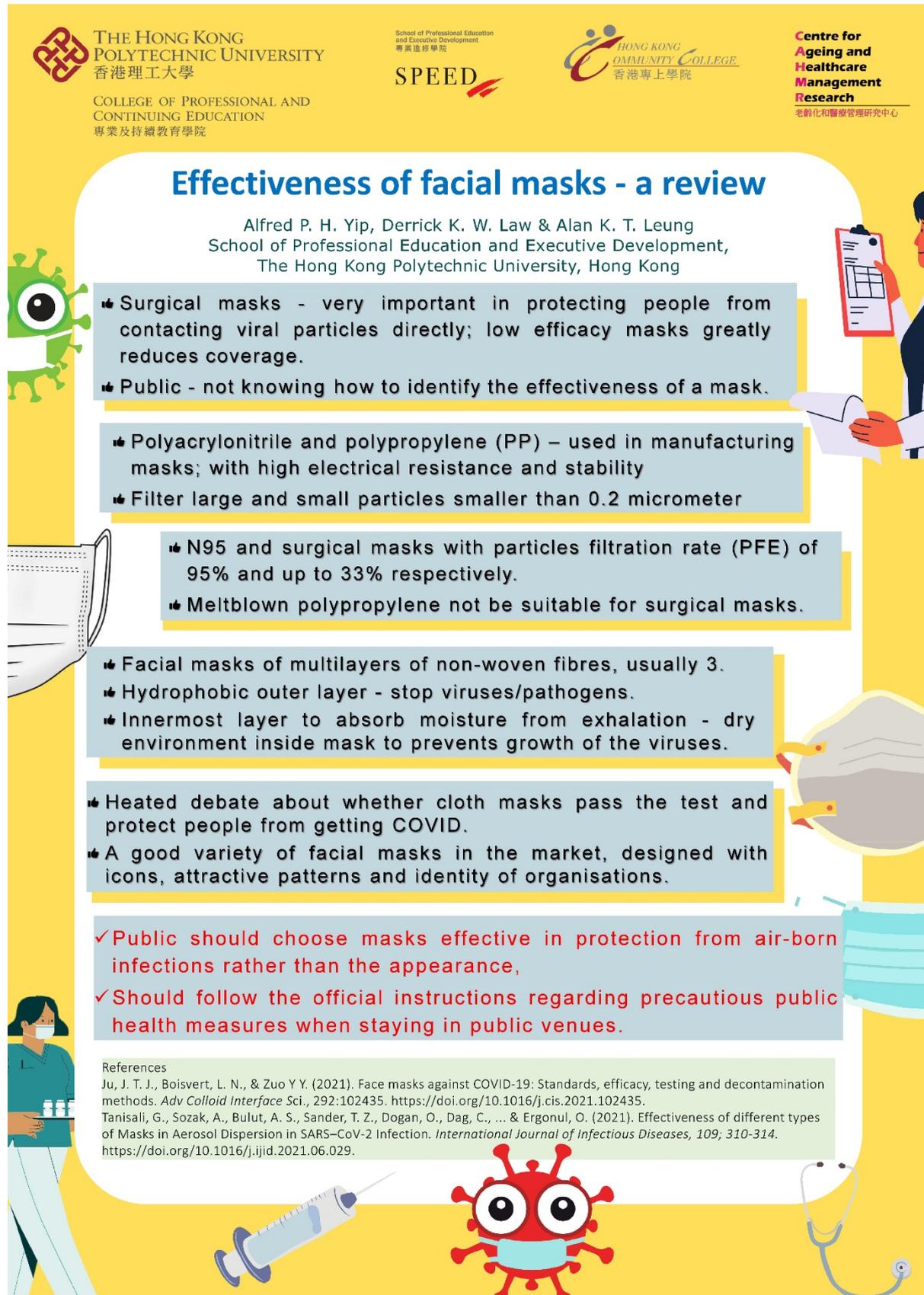
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efficacy, testing and decontamination methods. *Adv Colloid Interface Sci.*, 292:102435. <https://doi.org/10.1016/j.cis.2021.102435>.

Tanisali, G., Sozak, A., Bulut, A. S., Sander, T. Z., Dogan, O., Dag, C., ... & Ergonul, O. (2021). Effectiveness of different types of Masks in Aerosol Dispersion in SARS–CoV-2 Infection. *International Journal of Infectious Diseases*, 109; 310-314. <https://doi.org/10.1016/j.ijid.2021.06.029>.

Poster P5 by Alfred P. H. YIP, Derrick K. W. LAW & Alan K. T. LEUNG:



The poster features a yellow background with several logos at the top: The Hong Kong Polytechnic University (with its logo), School of Professional Education and Executive Development (SPEED), Hong Kong Community College, and Centre for Ageing and Healthcare Management Research. The title 'Effectiveness of facial masks - a review' is in blue. The authors' names and affiliation are listed below. The main content consists of several bullet points in grey boxes, with some key points highlighted in red. There are illustrations of a green virus, a person with a clipboard, a white surgical mask, a grey cloth mask, a person in a blue uniform with a white mask, a syringe, a red virus character wearing a blue mask, and a stethoscope.

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老齡化和醫療管理研究中心

Effectiveness of facial masks - a review

Alfred P. H. Yip, Derrick K. W. Law & Alan K. T. Leung
School of Professional Education and Executive Development,
The Hong Kong Polytechnic University, Hong Kong

- ✦ Surgical masks - very important in protecting people from contacting viral particles directly; low efficacy masks greatly reduces coverage.
- ✦ Public - not knowing how to identify the effectiveness of a mask.
- ✦ Polyacrylonitrile and polypropylene (PP) – used in manufacturing masks; with high electrical resistance and stability
- ✦ Filter large and small particles smaller than 0.2 micrometer
- ✦ N95 and surgical masks with particles filtration rate (PFE) of 95% and up to 33% respectively.
- ✦ Meltblown polypropylene not be suitable for surgical masks.
- ✦ Facial masks of multilayers of non-woven fibres, usually 3.
- ✦ Hydrophobic outer layer - stop viruses/pathogens.
- ✦ Innermost layer to absorb moisture from exhalation - dry environment inside mask to prevents growth of the viruses.
- ✦ Heated debate about whether cloth masks pass the test and protect people from getting COVID.
- ✦ A good variety of facial masks in the market, designed with icons, attractive patterns and identity of organisations.
- ✓ Public should choose masks effective in protection from air-born infections rather than the appearance,
- ✓ Should follow the official instructions regarding precautious public health measures when staying in public venues.

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Ju, J. T. J., Boisvert, L. N., & Zuo Y Y. (2021). Face masks against COVID-19: Standards, efficacy, testing and decontamination methods. *Adv Colloid Interface Sci.*, 292:102435. <https://doi.org/10.1016/j.cis.2021.102435>.
Tanisali, G., Sozak, A., Bulut, A. S., Sander, T. Z., Dogan, O., Dag, C., ... & Ergonul, O. (2021). Effectiveness of different types of Masks in Aerosol Dispersion in SARS-CoV-2 Infection. *International Journal of Infectious Diseases*, 109, 310-314. <https://doi.org/10.1016/j.ijid.2021.06.029>.

P6. Pedagogic innovations of teaching and learning materials in chemical education for sustainable health

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Abstract

Systems thinking is a method of making sense of complex concepts or objects by looking at them in terms of wholes and relationships rather than via splitting them down into different parts. More and more studies deal with the development of system thinking skills which helps students to investigate an object from a different perspective at secondary schools and universities. Meanwhile, plastic pollution has become one of the most pressing environmental problems in the twenty-first century. There were 448 million tons of plastic waste produced in 2015 and approximately 8 million tons of it escaped into the ocean, resulting in a huge amount of the death of marine life, the collapse of the marine ecosystem and decreased fishery resources. However, these are not only due to the marine life ingesting the plastic waste but also because plastic can release methane (CH₄) which is one of greenhouse gases, causing global warming and many other environmental problems. Therefore, it is crucial to teach students to protect the environment. For developing teaching materials and simplicity in chemical education, this paper will use methane as an example to students via system thinking, exploring the impacts of CH₄ from different perspectives such as the impact on the ocean, food and weather, and increasing their environmental awareness, and figuring out the interconnective relationship of all the factors. In the design of pedagogic tools, the interconnections of chemical systems with components in dynamic systems of human and environmental health will be focused on. It is one of the useful teaching tools for students to understand the concepts via interconnecting all the relevant factors and impacts. The developed materials will be used for the teaching and learning of chemicals in general-education chemistry courses. In this presentation, relevant examples of developed tools will be discussed.

Acknowledgement: The work described in this presentation was supported by a grant from the College of Professional and Continuing Education, an affiliate of The Hong Kong Polytechnic University.

Poster P6 by Wing Yi HO, Ben Y. F. FONG, Wang-Kin CHIU:



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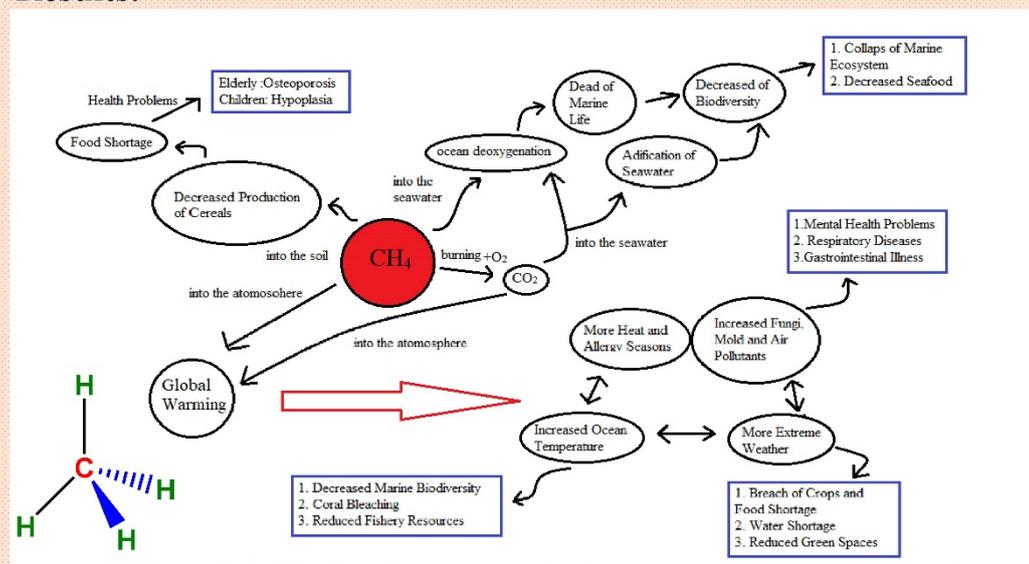
Pedagogic innovations of teaching and learning materials in chemical education for sustainable health

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¹School of Professional Education and Executive Development, The Hong Kong Polytechnic University

²College of Professional and Continuing Education, The Hong Kong Polytechnic University

- **Objective:** To develop teaching materials for adopting systems thinking in chemical education.
- **Design:** In the design of pedagogic tools, the interconnections of chemical systems with components in dynamic systems of human and environmental health will be focused. The developed materials will be used for the teaching and learning of chemicals in general-education chemistry course. In this presentation, a case study on plastic pollution will be described. Relevant examples of developed tools will be discussed.
- **Results:**



Di, P., Feng, D., & Chen, D. (2019). The distribution of dissolved methane and its air-sea flux in the plume of a seep field, Lingtou Promontory, South China Sea. *Geofluids*, vol. 2019, Article ID 3240697. <https://doi.org/10.1155/2019/3240697>

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Acknowledgement: The work described in this presentation was supported by a grant from the College of Professional and Continuing Education, an affiliate of The Hong Kong Polytechnic University.

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Thanks and gratitude should also be conveyed to the Conference Advisors, who are prominent academics from local and overseas institutes in Australia, Japan, South Korea, Malaysia, Singapore, Taiwan, and Thailand, Co-organisers, Sponsors, Supporting Organisations and Moderators of all the presentations, colleagues and students of HKCC, SPEED, CPCE and The University, for the great support to this important annual event.

We are honoured to have the blessings of the Dean of CPCE, Professor Peter P. Yuen, to deliver the welcoming remarks. Moreover, the presence of academics from Chinese Mainland, Hong Kong, Japan, and Singapore as speakers at the Conference has granted the programme a great learning opportunity for our students, our academic colleagues, as well as participating academics and professionals in health care and other disciplines.

The enthusiastic submissions by authors and presenters of papers in the Parallel Sessions reflect the importance of the themes under discussion at the Conference. We would like to express our sincere thanks for their contributions to the knowledge and ideas on the topics of concern in ageing and health with dignity.

We wish to thank all participants, from both local and overseas, for their time and support dedicated to the Conference and hope to meet them again in future seminars and events.

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