

Provisional Conference Program

**Mount Hood Asia Diabetes Challenge and
Society for Medical Decision Making Asia
Conference 2023**

**Connexion Conference & Event Center
Kuala Lumpur,
Malaysia.**

3-5 December 2023



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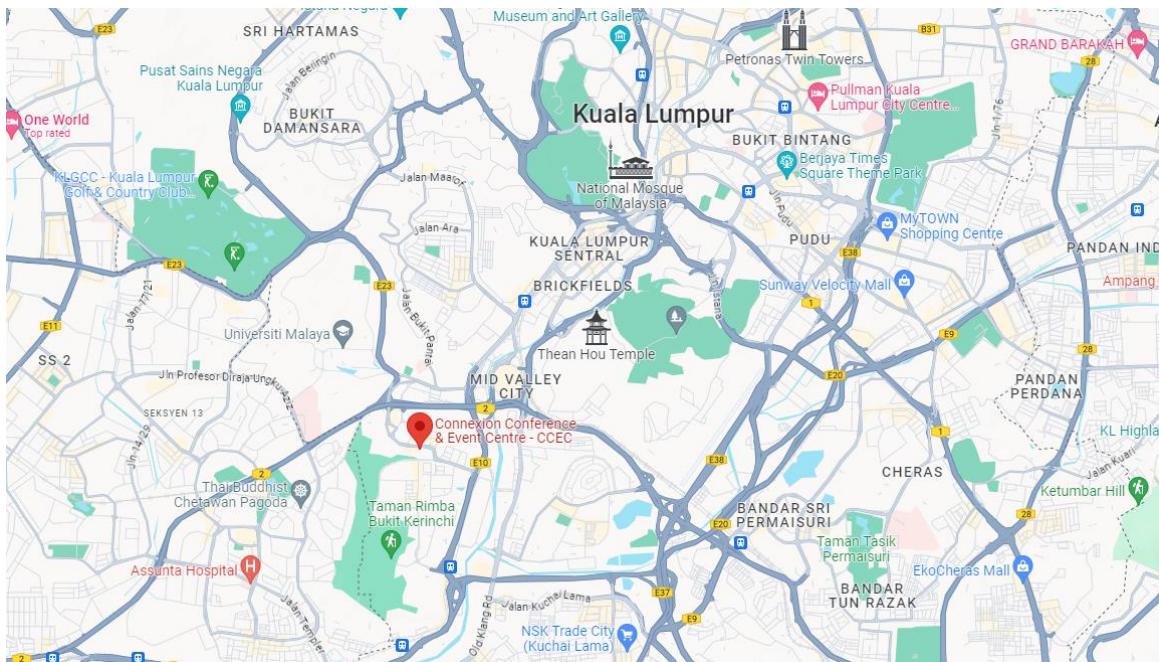
Economics, Simulation Modelling and Diabetes:

Mount Hood Asia Diabetes Challenge and Society for Medical Decision Making Asia Conference, Kuala Lumpur, Malaysia 2023

Conference Center Map and General Information

Location

The conference will be held at the Connexion Conference & Event Center in Kuala Lumpur, Malaysia.



Registration

Registration for the conference will be held on the 4th and 5th of December. Registration will begin at 8am on the 4th. The conference will include a Mount Hood Business meeting on the 4th of December between 5-6pm.

Conference registration includes lunches/refreshments and a conference dinner on the evening of 4th of December.

Conference Dinner

The conference dinner will be held at the Khan's Indian Cuisine, No.8, Level 1, The Sphere No.1, Avenue 1, Jalan Kerinchi, Bangsar South, 59000 Kuala Lumpur.

The restaurant is a short walk from the conference venue. Further details will be provided on the day.

Mount Hood Asia/SMDM Organising Committee 2023

James Altunkaya, University of Oxford, UK

Philip Clarke, University of Oxford, UK & University of Melbourne, Australia

Talitha Feenstra, the University of Groningen

Jeremy Goldhaber, Stanford University, USA

Josh Knight, Statistically Speaking, Australia

Jose Leal, University of Oxford, UK

Lee-Ling Lim, University of Malaya, Malaysia

Phil McEwan, Health Economics and Outcomes Research Ltd

Andrew Palmer, University of Tasmania, Australia

An Tran-Duy, University of Melbourne, Australia

Michael Willis, The Swedish Institute for Health Economics

The organising committee is chaired by Professor Philip Clarke, University of Oxford. This year's conference is being hosted by Department of Medicine, University of Malaya. Assoc Prof. An Tran-Duy was responsible for arranging the scientific programme.

List of Participants

First name	Family name	Affiliation
Fernando	Alarid-Escudero	Stanford University
James	Altunkaya	HERC, University of Oxford
Muhammed	Anis Bin Abd Wahab	Ministry of Health, Malaysia
Adele	Au	
Douglas	Barthold	University of Washington
Yen Yu	Chen	Roche Diabetes Care
Suet Mei	Chew	Ministry of Health Singapore
Kah Suan	Chong	National Cheng Kung University
Philip	Clarke	Nuffield Department of Population Health, University of Oxford
Maria	De Iorio	National University of Singapore
Volker	Foos	HEOR Ltd
Izzuna Mudla Mohamed	Ghazali	Ministry of Health, Malaysia
Jeremy	Goldhaber-Fiebert	Stanford University
Ida	Hilmi	University of Malaya
Jia Xin	Hoo	University of Malaya
Luqman	Ibrahim	University of Malaya
Jesinda P.	Kerishnan	University of Malaya
David	Kim	University of Chicago
Wan	Kim Sui	University of Malaya
Olli	Kurkela	Tampere University
Sara	Larsen	Novo Nordisk
Eric Siu Him	Lau	The Chinese University of Hong Kong
Shaun	Lee	Monash University Malaysia
Samuel	Lee	University of Malaya
Qiaoyi	Li	The Chinese University of Hong Kong
Piaopiao	Li	University of Florida
Xinyu	Li	University of Groningen
Fang	Li	University of Groningen
Keyu	Li	University of Oxford
Lee Ling	Lim	University of Malaya
Christopher	Lübker	Novo Nordisk A/S & University of York
Nga Man Juliana	Lui	The Chinese University of Hong Kong
Phil	McEwan	HEOR Ltd
Yan Cheng	Ng	Agency for Care Effectiveness, Ministry of Health, Singapore
Abdul Jabbar	Omar Alsaleh	Sanofi

Ying Guat	Ooi	University of Malaya
Huang-tz	Ou	National Cheng Kung University
Zi-Yang	Peng	Institute of Clinical Pharmacy and Pharmaceutical Sciences, College of Medicine, National Cheng Kung University, Tainan, Taiwan
Jianchao	Quan	University of Hong Kong
Anis Syazwani Abd	Raof	University of Malaya
Krinath	Renganadan	University of Malaya
Surasak	Saokaew	School of Pharmaceutical Sciences, University of Phayao, Thailand
Vidhu	Sethi	Haleon Singapore
Baiju	Shah	University of Toronto
Izzati Syahirah	Shaharuddin	University of Malaya
Hui	Shao	Emory University, Hubert Department of Global Health
Yumeng	Shao	School of Public Health, LKS Faculty of Medicine, The University of Hong Kong
Lizheng	Shi	Tulane University
Ruth	Sim	Monash University Malaysia
Sarkaaj	Singh	University of Malaya
Annabelle	Slingerland	OCDEM
Harry	Smolen	Medical Decision Modeling Inc.
Ian	Sobotka	Sunnybrook Research Institute and Ivey Business School
Hsuan Yu	Su	National Cheng Kung University
Anis Syazwani Abd	Raof	University of Malaya
Kelvin Bryan	Tan	Ministry of Health, Singapore
Shichao	Tang	Centers for Disease Control and Prevention
An	Tran-Duy	University of Melbourne
Junfeng	Wang	
Hwee Lin	Wee	National University of Singapore
Michael	Willis	The Swedish Institute for Health Economics
Aaron	Winn	University of Illinois at Chicago
Fang Yan	Wong	Ministry of Health, Singapore
Melvin	Wong	Ministry of Health, Singapore
Joey	Wong	Singapore
Chou-Chun	Wu	University of Southern California
Shinyi	Wu	University of Southern California
Aimin	Yang	The Chinese University of Hong Kong
Chen-Yi	Yang	
Ping	Zhang	Centers for Disease Control and Prevention

Yikun	Zhang	School of Public Health, LKS Faculty of Medicine, The University of Hong Kong
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Pre-conference workshops

Workshop 1: Introduction to Building and Calibrating Simulation Models in R

Date: 3rd December from 10am to 1pm

The workshop covers the main aspect of constructing and calibrating decision models using R. The workshop assumes some familiarity with concepts of decision-analytic simulation models but is aimed at researchers interested in learning to implement simulation models using R software and fitting them via calibration to data.

Reasons for modeling in R: Availability of excellent, high performance free tools like R and RStudio. Excellent packages for statistical and data manipulation tasks, frameworks like DARTH for decision modeling, and other packages for optimization and calibration. Easy to distribute and reproduce models transparently which is increasingly becoming the standard for submissions to health technology assessment organizations as well as for publication and dissemination.

Outline

- Brief review of the reasons for modelling in R
- Brief review of basic R functions that are commonly used in decision modelling (import/export data, data handling, basic distributions, “if” and “for” loops etc.) will be provided.
- A simple decision tree will be constructed using R. A base-case analysis, as well as one-way deterministic and probabilistic analyses will be conducted.
- A Markov model will be designed using R. A base case, as well as multi-way sensitivity analysis will be conducted.
- Results of both models will be presented in tabular and graphical form.
- Several examples of calibrating the Markov model to data to inform unknown/uncertain inputs will be shown.
- Advanced functions of R in decision modelling will be discussed. Examples include building microsimulation models or integrating network meta-analyses and decision models using R.
- Principles of good modelling practices using R (e.g. consistency, proper documentation etc) will be outlined.
- All R programming templates for decision modelling will be provided to participants after the course for future use along with a list of citations of the papers used in the examples and course. How simulation models work
- Constructing risk equations using individual data
- Developing risk-factor equations

Speakers



Jeremy Goldhaber-Fiebert is a Professor of Health Policy at Stanford University where he is a member of the Department of Health Policy in the School of Medicine and a Core Faculty Member of the Center for Health Policy in the Freeman Spogli Institute.

His research focuses on complex policy decisions surrounding the prevention and management of increasingly common, chronic diseases and the life course impact of exposure to their risk factors



Fernando Alarid-Escudero Ph.D., is an Assistant Professor of Health Policy, affiliated with the Department of Health Policy in the School of Medicine and the Center for Health Policy at the Freeman Spogli Institute.

His research focuses on developing statistical and decision-analytic models to identify optimal prevention, control, and treatment policies to address a wide range of public health problems and develops novel methods to quantify the value of future research.

He has contributed theoretically and methodologically to the fields of decision sciences, disease modeling, cost-effectiveness analysis (CEA), and value of information analysis (VOI).

Dr. Alarid-Escudero is part of the Cancer Intervention and Surveillance Modeling Network (CISNET), a consortium of NCI-sponsored investigators that includes modeling to improve our understanding of the impact of cancer control interventions (e.g., prevention, screening, and treatment) on population trends in incidence and mortality.

Workshop 2: An overview of health economic diabetes simulation models

Date: 3rd December from 2pm to 5pm

Outline

Introduction to diabetes modelling

- Brief History
- How simulation models work
- Constructing risk equations using individual data
- Developing risk-factor equations

Quality of life and complications

- Collection of Quality of life data: Case studies from UKPDS and ADVANCE studies
- How often and what do we need to collect?
- Heterogeneity in responses across regions
- Should be using levels or changes in Quality of life
- Relationship between utility and mortality
- Quality Adjusted Survival Models
- Role of meta-analysis

Costs of treatments and complications

- Changes in the price and expenditure of diabetes therapies: recent evidence
- Options for collecting resource use information
- Sources of costing data in other countries – Sweden, Australia, ADVANCE.

Future directions in modelling

- Adapting models across settings
- Calibration risk equations
- Developing new equations – mortality following events - WA UKPDS example
- LE calculators (Sweden & WA)
- What can we learn from meta-models?

New Developments in Type 1 diabetes

- Burden of the disease: Life expectancy gap in Sweden & Australia
- How a hypo can impact on your life expectancy
- Overview of a new Type 1 diabetes model

The future of diabetes simulation modelling

- Capturing new treatments and interventions
- Can we develop a universal model?
- Software for simulation modelling

Speaker



Professor Philip Clarke was instrumental in the development of both versions of the UKPDS Outcomes Model. More recently he has been involved in the development of a comparable Type 1 diabetes simulation model using data from a large diabetes registry in Sweden. He has also been involved with the economic analyses of the major diabetes clinical trials including the UKPDS, FIELD and ADVANCE studies.

Conference Overview

The Mount Hood Challenge conference focuses on economic aspects of diabetes and its complications. The challenges are developed collectively by an international group of researchers engaged in development of diabetes simulation models for health economic evaluation.

The conference will primarily focus on comparing diabetes models that are used for health-economic purposes. These models will be evaluated based on their structure and performance in populations from Asia. Furthermore, the aim is to develop a health-economic diabetes modelling community in the broader Asian region, which reflects the importance of these techniques in the health systems and populations of the area.

This conference is a continuation of ten previous diabetes simulation modelling conferences, and a replication of the recent 10th Mount Hood Challenge in Malmö, Sweden but with a focus on modelling diabetes in the Asian setting.

This year's conference will focus on the economic aspects of diabetes and its complications and there will be two challenges that involve structured comparisons of predefined simulations undertaken by groups that have developed health economic models involving diabetes.

Participation in publications arising from the meeting

In the past several groups participating in the conference have collaborated on a subsequent publication. Involvement in the publication process is on a voluntary basis and involves acceptance of the following principles:

- i. A lead author for the paper will be nominated and agreed on whose role will be to a) take the lead on the analysis and writing and b) to co-ordinate and manage the contributions of the groups contributing data ("Team/Teams").
- ii. No team can block publication of the paper except because of concerns related to scientific soundness — e.g., the data collection, analyses and presentation were done incorrectly. Concerns related to policy, management, scientific implications or publishing venue are not grounds for a co-author to block publication. If a majority of teams believe the paper should be published based on sound science, the paper will move forward. Every reasonable effort should be made by the lead author and others to reach a consensus on moving forward with a publication.
- iii. Teams may voluntarily remove themselves from the project, and from co-authorship, at any point if they no longer have time for the project or they disagree with some aspect of the project or paper. If a team voluntarily leaves the project or is asked to leave because they are opposed to the paper being published, the team and Chair of Mt Hood Steering Committee will need to discuss with the dissenting member if his/her contributions can

still be used, and perhaps described in the Acknowledgements, or if their contribution will have to be removed from the paper.

Plenary Speakers



Professor Jeremy Goldhaber-Fiebert

Jeremy Goldhaber-Fiebert, PhD, is a Professor of Health Policy at Stanford University where he is a member of the Department of Health Policy in the School of Medicine and a Core Faculty Member of the Center for Health Policy in the Freeman Spogli Institute.

His research focuses on complex policy decisions surrounding the prevention and management of increasingly common, chronic diseases and the life course impact of exposure to their risk factors. In the context of both developing and developed countries including the US, India, China, and South Africa, he has examined chronic infectious and non-infectious conditions including type 2 diabetes and cardiovascular diseases, human papillomavirus and cervical cancer, tuberculosis, COVID-19, and hepatitis C and on risk factors including smoking, physical activity, obesity, alcohol use, drug use, malnutrition, and other diseases themselves. He combines simulation modeling methods and cost-effectiveness analyses with econometric approaches and behavioral economic studies to address these issues.

Dr. Goldhaber-Fiebert graduated magna cum laude from Harvard College in 1997, with an A.B. in the History and Literature of America. After working as a software engineer and consultant, he conducted a year-long public health research program in Costa Rica with his wife in 2001. Winner of the Lee B. Lusted Prize for Outstanding Student Research from the Society for Medical Decision Making in 2006 and in 2008, he completed his PhD in Health Policy concentrating in Decision Science at Harvard University in 2008. He was elected as a Trustee of the Society for Medical Decision Making in 2011 and Secretary/Treasurer in 2021. In 2023, he was confirmed by the Board of Governors as a member of the Patient-Centered Outcomes Research Institute Methodology Committee.

Dr. Goldhaber-Fiebert will be presenting a course, 'Introduction to Building and Calibrating Simulation Models in R', on the 3rd of December as a complement to the conference.



Assoc Professor Dr. Lee-Ling Lim

Dr. Lim is a Senior Consultant Endocrinologist and Head of the Diabetes Care Unit, University of Malaya Medical Centre, Kuala Lumpur, Malaysia. As a clinician-scientist, Dr. Lim's major areas of interest are cardiometabolic medicine with translational and implementation science components.

She sits on the Scientific Work Groups of the American Diabetes Association/European Association for the Study of Diabetes (ADA/EASD) Precision Medicine in Diabetes

Initiative, the WHO Global Diabetes Compact and The Lancet Commission on Diabetes, who provide authoritative resources in tackling the global diabetes epidemic. She has published ~80 peer-reviewed articles including high-impact journals such as The Lancet, Nature, Diabetes Care, and PLoS Medicine.

Dr. Lim has received several awards including the World's Top 2% Scientists 2022 by Stanford University and the EFSD Albert Renold Fellowship. She is the Editorial Board Members of BMC Medicine and Diabetes/Metabolism Research & Reviews. She is also the Vice President of the Malaysian Osteoporosis Society and Honorary Asst Secretary of the Malaysian Endocrine and Metabolic Society (MEMS).

Conference Program

Day 1 – 4th December 2023

Venue *Connexion Conference & Event Center in Kuala Lumpur, Malaysia*
Room: **Zennith**

8:00-8:45am

REGISTRATION

Welcome and opening remarks

8:45-9:00am **Prof Philip Clarke**
*International organizing committee
Director, Health Economics Research Centre (HERC), University of
Oxford*

Prof Ida Hilmi
*Local organizing committee
Head, Dept of Medicine, University of Malaya*

Opening plenary session

9:00-9:40 am **“Diabetes in Asia”**
*Assoc Prof. Dr. Lee-Ling Lim,
Senior Consultant Endocrinologist and Head of the Diabetes Care Unit,
University of Malaya Medical Centre*

“National Healthcare Financing”
*Dr. Muhammed Anis Bin Abd Wahab
Deputy Director,
National Health Financing Section (NHF),
Planning Division,
Ministry of Health Malaysia*

Abstract session 1: MODEL VALIDATION

Chair: Assoc Prof. An Tran-Duy, University of Melbourne

	Presentation	Presenter
9:40-10:40 am	External validation of cardiovascular risk models in 23,685 adults with diabetes	Jianchao Quan
	Cross-validation of a de novo microsimulation model in obesity	Phil McEwan
	Validate and update diabetic kidney disease risk equations in Taiwanese patients	Hsuan-Yu Su
	Development & Validation of the Diabetes Outcomes Model for the US (DOMUS)	Aaron Winn
	Validation of HKU-SG risk equation on stroke among the Taiwanese T2D population	Kah Suan Chong

10:40-11:00 am	Morning Break
11:00-12:30 pm	<p>Challenge 1 : Revisiting the reference simulation with a new challenge design for type 1 diabetes</p> <p>Chair: Prof Michael Willis, Swedish Institute for Health Economics & Assoc Prof. An Tran-Duy, University of Melbourne</p> <p>-----</p> <p>All modelling groups present a brief overview of their model</p> <p>-----</p>
12:30-2:00 pm	Lunch
2:00-3:30 pm	<p>Challenge 2: Simulating costs and cost-effectiveness</p> <p>Chair: Prof Phil McEwan, Health Economics and Outcomes Research Ltd</p>
3:30-4:00 pm	Afternoon Break

Abstract session 2: Cost Analysis and Economic Evaluation

Chair: Dr David Kim, University of Chicago

	Presentations	Presenter
4:00-5:00 pm	Healthcare Costs of Type 1 Diabetes Complications: A Nationwide Analysis	Kah Suan Chong
	BMI and the costs of COVID-19 hospitalisation: A population-based cohort study	James Altunkaya
	Post-partum diabetes screening of GDM mothers: a cost-effectiveness analysis in Singapore	Maria De Iorio
	Evolving treatment practices and the effect on the treatment cost-effectiveness	Harry J. Smolen
	Long-term cost-effectiveness of JADE Program through public-private partnership	Juliana Nga Man Lui

5:00-6:00 pm

Mount Hood Network Business Meeting

**6:30 pm
onwards**

Conference Dinner

Day 2 – 5th December 2023

Venue *Connexion Conference & Event Center in Kuala Lumpur, Malaysia
Rooms: Zennith and Pinnacle 10*

8:00-9:00 am

REGISTRATION

Panel session

“How can we strengthen Health Economics/ HTA in Asia?”

Dr. Izzuna Mudla Mohamed Ghazali,
*Public Health Physician/Deputy Director,
Malaysian Health Technology Assessment Section (MaHTAS), Ministry
of Health Malaysia*

9:00-10:00 am

Dr Kelvin Bryan Tan
*Principal Health Economist,
Chief Health Economist Office, Ministry of Health, Singapore*

Dr Chao Quan
*Clinical Assistant Professor,
School of Public Health & HKU Business School*

Assoc Prof. Wee Hwee Lin
*Saw Swee Hock School of Public Health, National University of
Singapore, Republic of Singapore*

Abstract session 3a: Modelling Health Outcomes and Health Care Expenditure

Chair: James Altunkaya, University of Oxford

Presentations	Presenter
Declines in health-related quality of life of patients with chronic kidney disease: Results from the CKD-FIX trial	An Tran-Duy
Self-rated health and EQ-5D variation in responses across 15 countries	Philip Clarke
Forecasting model for pharmaceutical expenditures with introduction of new drugs	Huang-Tz Ou
Forecasting US Health Disparity and Costs Burden of Cardiometabolic Diseases	David Kim

10:00-11:00 am

Abstract session 3b: Risk Prediction and Modelling Methodologies (run in parallel with session 3a in Pinnacle 10)

Chair: Prof Maria De Iorio, National University of Singapore

Presentations	Presenter
Can We Use Machine Learning to Predict Uncontrolled Risk among Diabetics?	Shinyi Wu
The Role of Treatment Intensity and Duration in Predicting Depression Relapse	Fang Li
The value of being in target: the Canadian Multi Morbidity Model for Diabetes	Ian Sobotka
Value of Improved Lipid Control in Patients with Diabetes in Malaysia (CLIP-T2D) - A model-based analysis	Anis Syazwani Abd Raof

11:00-11:30 am

Morning Break

Panel session

"The Pivotal Role of Social Determinants of Health in Diabetes Prevention & Care"

Presentation title: Simulation Strategies to Evaluate the Impact of SDOH Interventions on Health Outcomes: A Comprehensive Review

Hui Shao, MD PhD

Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA

Presentation title: Building a web-based simulation model to evaluate the health and economic impact of policies/programs related to social determinants of health to reduce disparities in diabetes: CDC experience.

Ping Zhang, PhD

Senior economist, Centers for Disease Control and Prevention

Presentation title: Exploring the Link: Extended Life Expectancy and Treatment Goal Achievement Across Various SDOH Subgroups

Piaopiao Li, MS

11:30-12:30 pm

Center for Drug Evaluation and Safety, Department of Pharmaceutical Outcomes and Policy, University of Florida College of Pharmacy, Gainesville, FL

Panel presentations will be approx. 15 min each, followed by a moderated discussion.

and (run in parallel in Pinnacle 10)

Abstract session 4: Developing and Updating Simulation Models

Chair: Assoc Prof Aaron Winn, University of Illinois at Chicago

Presentations	Presenter
SIREHEA model: a microsimulation health economics model related to T2DM Late withdrawal	Junfeng Wang
Updating the Cardiff model to incorporate contemporary clinical guidelines	Phil McEwan
Improving and updating the Real-World Progression in Diabetes (RAPIDS) Model	Douglas Barthold

Demonstrating the value of generalizable disease-specific reference models: A case study in prediabetes

James Altunkaya

12:30-2:00pm

Lunch

Abstract session 5a: Use of Real-World Data and Models in Decision Making

Chair: Dr Kim Sui Wan, Ministry of Health Malaysia

Presentations	Presenter
Do Higher-Tier Drugs Control A1c Level Better than Lower-Tier Drugs?	Chou-Chun Wu
Importance of Price Metrics and Market Dynamics in US Economic Evaluations	Michael Willis
Is Annual Screening for Chronic Kidney Disease among Diabetics Optimal?	Chou-Chun Wu
Do measures of luminosity have valuable informational content for predicting health outcomes? Evidence from Malaysia.	Keyu Li

Abstract session 5b: Epidemiological, Clinical and Modelling Studies (run in parallel with session 5a in Pinnacle 10)

2:00-3:00 pm Chair: Dr Juliana Nga Man Lui, The Chinese University of Hong Kong

Presentations	Presenter
Global variation in case-fatality in people with diabetes	Philip Clarke
Parameterization of influenza-related costs among 2 million elderly individuals	Zi-Yang Peng
Value of Diabetes Subgroups for Reimbursement: Revisiting Cluster Identification	Xinyu Li
Productivity costs due to type 2 diabetes with and without co-occurring substance use disorders and depression	Olli Kurkela

3:00- 3:30 pm Afternoon Coffee

Closing Plenary

3:30-4:20 pm “COVID modelling; with vs for policymakers”

Prof. Jeremy Goldhaber-Fiebert,
Professor of Health Policy at Stanford University

4:20 pm Closing remarks

Instructions for presenters in abstract sessions

- The time allocated for each speaker:
 - Day one (joint sessions)
 - 10 minutes for presentation and 2 minutes for Q&A.
 - Day two (parallel sessions)
 - 12 minutes for presentation and 3 minutes for Q&A.
 - For clarity please allow a minimum of one minute per slide, preferably 2–3 minutes per slide- 10 slides absolute max.
- A laptop computer and projector will be provided for your presentation, using Microsoft PowerPoint software. Both slides formats, 4:3 or 16:9, can be accommodated.
- Arrive at the meeting room before the session begins and contact the session convener for last-minute instructions or changes in the schedule.
- Please email your completed presentation to mthood2016@gmail.com no later than 2nd of December 2023 for compilation and loading onto the venue IT system.
- As a backup please bring along your slides on a USB stick.
- During your presentation, state the purpose and objectives of the paper, the main concepts and results, and the conclusions. Avoid too much detail.
- Do not exceed the allocated time for your presentation.
- Presenters will be given an opportunity to make a pdf of a paper or slides available on the conference website.