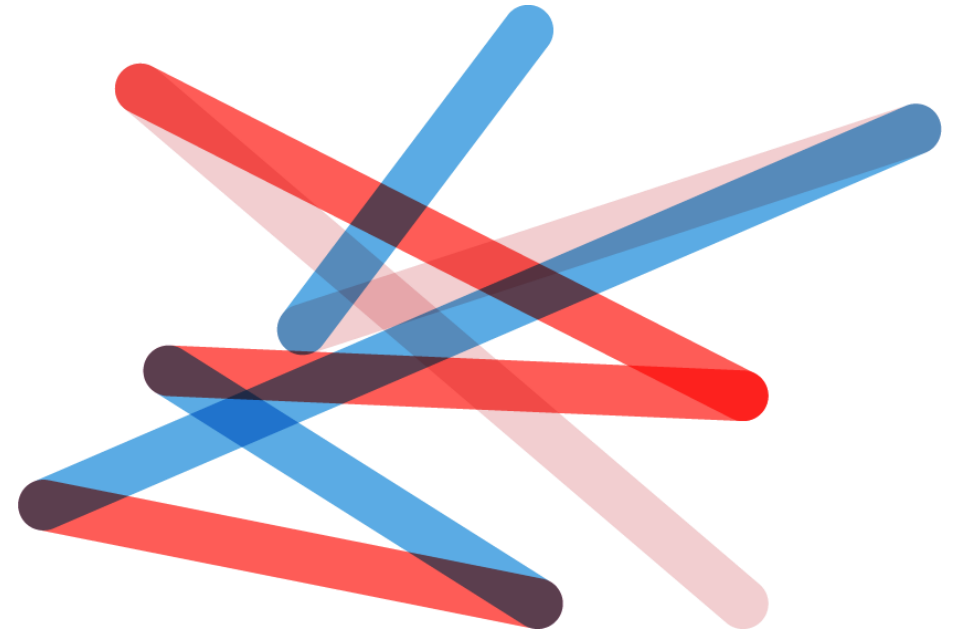


# International Society to Improve the Use of Medicines

Improving the Use of Medicines:  
Connecting, Learning, Moving Forward

Kantary Hills Hotel, Chiang Mai, Thailand  
28-30 October 2023



**CONFERENCE PROCEEDINGS**

# Proceedings for ISIUM International Conference 2023

## Day 1 – Saturday 28<sup>th</sup> October 2023

- [Welcome and introduction](#)
- [Keynote](#): Learning from patients and communities to improve the use of medicines
- [Video](#): Thai grocery stores
- [Panel](#): Learning from patients and communities to improve the use of medicines
- [Working session 1](#): Working with practitioners, patients and communities to design rational medicine use programs
- [Working session 2](#): Diverse challenges, innovative solutions
- [Working session 3](#): Educating health professionals to practise rational use of medicines
- [Working session 4](#): Integrating guidelines with essential medicines lists
- [Working session 5](#): Understanding and improving medicines literacy
- [Working session 6](#): Excess or access: innovative approaches to improve use of antimicrobials

## Day 2 – Sunday 29<sup>th</sup> October 2023

- [Keynote](#): Using routine data to identify medicines problems at local and national levels
- [Video](#): Tuk tuks and AMR in Tanzania
- [ISIUM voices](#): Diverse challenges, innovative solutions
- [Panel](#): Policy, system and financial approaches for rational use of medicines
- [Working session 7](#): Using routine data: innovative methods and measures
- [Working session 8](#): Deprescribing and other chronic disease management issues
- [Working session 9](#): Learning from each other

## Day 3 – Monday 30<sup>th</sup> October

- [Keynote](#): Medicalisation of society and how it influences medicines use by patients
- [Video](#): Thai RDU indicators
- [ISIUM voices](#): Diverse challenges, innovative solutions
- [Summing up](#): Conference outcomes and messages
- [Vote of thanks](#)

## Other information

- Refer to the Conference Program for the following information
  - About the conference
  - Conference program
  - Poster sessions
  - Abstracts
- The terms rational drug use (RDU) and rational use of medicines (RUM) have been used interchangeably in these proceedings.

## Welcome

*Lynn Weekes, Chair, International Society to Improve the Use of Medicines*

Welcome to ISIUM 2023 and what a joy it is to be here with all of you. The world and all of us have experienced so much since we came together for our first international conference in Bangkok at the end of January 2020. Lockdowns were isolating, the pandemic overshadowed everything and yet we saw new collaborations flourish and sharing in the best traditions of our field. And so, we have new problems, we have old problems, we have successes to celebrate and new ideas to explore—together we must grasp the opportunities that all of this brings over the coming days.

In his welcome to the 2020 conference, Arturo Quizhpe said: 'This conference is an act of generosity, of planting seeds, a silent work... Now so that these seeds can flourish and multiply in new projects in each of their scientific, social and work associations, it requires your decision, enthusiasm and commitment'. This conference sees many of those seeds germinated and thriving and we ask you again in 2023 to bring those same attributes to your presentations and deliberations because the rational use of medicines is important work that can make a difference to people's lives.

Many people have contributed to making this conference a reality: our Chiang Mai hosts; the indefatigable Local Organizing Committee, led by Dean Supat Jiranusomkul and supported by Penkarn Kanjanarat and her amazing team; the wise and well-connected International Program Committee; and our sponsors. The energy and time these people gave have been amply rewarded by the outstanding quality of work that has been submitted for presentation at the conference.

Strap yourself in for a rollercoaster of new perspectives, innovative solutions and inspiring collaborations. Your contribution will be someone else's inspiration and we thank each of you for the richness we can anticipate from the deliberations at the conference.



***“Don't escape when you have a problem because there always is a way to solve it.”  
And I would add, a whole cohort of colleagues who want to help you do so.***

## Where do we begin?

*Lynn Weekes, Chair, International Society to Improve the Use of Medicines*

May lives in apartment behind my house, she is old now, has worked hard all her life and now her body is slowing her down. Aches and pains, high blood pressure, the doctor said she should watch her diet, not too many salty or sweet snacks. Why are all the tasty foods bad for you, she wonders. She takes down the small plastic basket from the cupboard that holds her medicines: some herbal remedies that her friends at Mahjong recommended for arthritis and the new blood pressure tablets from the doctor. She has read the patient information leaflet and is worried about the side effects of the new tablets, the pamphlet says she could feel dizzy, and she fears falling because she lives alone. She opens the packet but can't decide if she will take them. She could talk to the doctor again or maybe she will try a herbal tea instead.

Next door there is a young family. The eldest boy has been diagnosed with asthma which makes his

mother, Nita, anxious. The last time he had an attack, they had to rush to the hospital, it was so frightening when he could not breathe. Thank goodness the new puffers are making a big difference. But since then Nita has had trouble sleeping and a friend offered her some sleeping tablets to help out. The friend was prescribed the sleeping tablets ages ago when she worked nightshift and still uses them most nights although she knows she shouldn't. Nita's youngest daughter came home from school yesterday with diarrhoea, it's been going around the school. Nita has some antibiotics from a previous infection that she is thinking of giving her daughter.

Two households, so many simple, everyday medicines issues. Issues that have an impact on the health of people and communities every day. Issues that bring us together to find answers that work.



***Two households, so many simple, everyday medicines issues. Issues that have an impact on the health of people and communities every day. Issues that bring us together to find answers that work.***



## Welcome from local host

### *Pongruk Sribanditmongkol, President, Chiang Mai University*

Good morning, ladies and gentlemen, I am delighted to welcome you to the 2023 ISIUM conference, hosted by Chiang Mai University. This gathering represents a coming together of minds and experiences from around the world, united by a common goal: to improve the use of medicines for the betterment of global health.

Throughout the years, many of you have dedicated your lives to advancing the responsible and rational use of medicines. Your experience, expertise, and dedication are the driving force behind the progress we continue to make the conference such a powerful platform for learning, collaboration, and progress.

Throughout history, informed decision-making and the availability of unbiased information have been the cornerstones of progress in the realm of medicine. Engaging with diverse communities, including healthcare facilities, professionals, patients, governments, and local communities, has proven to be indispensable in creating processes and tools that resonate with the people we aim to serve.

In addition to our planned sessions, workshops, and presentations, it is important to emphasize that the most critical aspect of this conference is the conversations, questions, debates, and ideas that each of you brings to the table. We are all lifelong learners, and the quality of our discussions will shape the future of medicine use for the better.

I encourage you all to actively engage in the sharing of knowledge and experiences. It is through our collaborative efforts that we can create a healthier and more sustainable future for all.

Thank you for joining us at the 2023 ISIUM conference and let us embark on this collective journey of discovery and progress. Together, we can drive meaningful change in the rational use of medicines, positively impacting the lives of people worldwide. Welcome to the conference!



*We are all lifelong learners, and the quality of our discussions will shape the future of medicine use for the better.*

# Learning from patients & communities to improve the use of medicines

## Learning from stakeholders including patients and communities (1 of 2)

### *Phaik Yeong Cheah, Thailand (162)*

- Antimicrobial resistance (AMR) is a super-wicked, complex and systemic problem.
- AMR is inescapable, almost invisible and difficult to understand.
- The impact of AMR is uneven, affecting the poorest and most disadvantaged communities the most.
- Solutions can be most burdensome to the most vulnerable and exacerbate existing inequalities.
- Tension between access vs excess – more deaths due to lack of antimicrobials than from AMR.
- Tensions between personal and shared interests – individuals seeking care, health professionals improving health and satisfaction of patients, and competing goals from those whose livelihood are affected (eg farmers, pharmacists) and those who profit (eg pharmaceutical industry, pharmacies, illegal market, corporations).
- AMR is a technical term – difficult for communities to understand, unlike a disease like tuberculosis. WHO is working hard globally to find a meaningful definition.
- How to describe AMR in a meaningful way for communities? Marketing can help, but consider who do you trust, and identify convenient communication channels.
- Translation of messages can be difficult – often the direct translation is very technical and is not accurate, eg in Thailand, antibiotics and anti-inflammatories are often confused in translation.



***AMR is inescapable, almost invisible and difficult to understand.***

***The impact of AMR is uneven, affecting the poorest and most disadvantaged communities the most.***

# Learning from patients & communities to improve the use of medicines

## Learning from stakeholders including patients and communities (2 of 2)

*Phaik Yeong Cheah, Thailand (162)*

### Opportunities

- Set up community consultation via local community advisory boards – review materials, meeting timing, content and other research procedures.
- Ideally go back to present feedback, if not at least provide a booklet in language to feedback post workshop.
- Interventions to mitigate AMR need to be context specific, locally driven, and include the voices of patients and the most vulnerable communities.
- Listening constructively and deeply to community and understanding consequences – both positive and negative. Ensure the right people are involved from the start, including policy makers. Others might include historians, economists, microbiologists, veterinarians.
- Linking research outcomes to policy makers and funders.
- We need an 'elevator pitch' to effectively communicate AMR – asking communities how to communicate this.
- Intergenerational justice:
  - Right to health for future generations.
  - Notion of just transition – prioritising justice, sustainability, inclusivity and equity in planning for a future with AMR.
  - We need to understand where are we transitioning to.



*Listen deeply to community and understand both positive and negative consequences.  
Ensure the right people are involved from the start.*





*Improving the Use of Medicines: Connecting, Learning, Moving Forward*



## Development of a healthcare product surveillance model in grocery store in Sisaket Province

*Munlika Suphon, Thailand (137)*

- The study was designed to evaluate the inappropriate distribution of healthcare products via grocery stores in Sisaket Province, Thailand.
- 9,305 stores in 22 districts were included in the surveys, conducted by health volunteers, health network and health officials.
- A survey tool developed for the project enabled data to be collected and prioritised into 3 classes – green (safe), yellow (unsafe but not critical) and red (unsafe).
- 58.5% were classified as green, 24.15% as yellow and 17.36% as red.
- The majority issues of unsafe healthcare products identified were unsafe drugs (14.53%), followed by the knowledge of alcohol and tobacco products (2.55%) and food products (1.07%).

### Opportunity

- The results of the surveys will be fed back to local authorities in each district to develop a plan to resolve the problems.



*Identifying healthcare product safety issues at a local level and working with communities to find solutions is more likely to be effective.*

# Learning from patients & communities to improve the use of medicines

## Session summary

**Chair:** Penkarn Kanjanarat, Thailand; **Discussant:** Yong Kwok, USA

### Lessons

- Marketing, media, investigative journalism and social movements can be powerful tools to progress RUM.
- Investigative journalism can play a pivotal role in uncovering issues like antibiotic misuse and driving policy change.
- Involving communities and patients in the decision-making process is vital for shaping effective policies and successful implementation of RUM initiatives.
- Games and workshops can be used to educate children about RUM.
- It is important to recognise the nature and impact of pharmaceutical marketing and to counterbalance these tactics when designing RUM campaigns.
- Pharmacist-led patient education can be a valuable tool for improving medication literacy and adherence.

### Opportunities

- Encourage use of investigative journalism to raise awareness of RUM issues.
- Develop a working group to deliver workshops and educational programs that utilise some of the tactics and learnings from pharmaceutical marketing.
- Foster community engagement and feedback mechanisms by establishing appropriate platforms and ensuring engagement is genuine and early.
- Crises (e.g. pandemics) provide an opportunity to explore alternative mechanisms for healthcare delivery.
- Collaboration, education, regulatory oversight and community involvement are needed to promote RUM.



*Community engagement, empowerment and action can be a catalyst for transformative change.*

# Learning from patients & communities to improve the use of medicines

## What can we learn from the illegal use of colistin at Thailand pig farms?

*Punnee Amornviputpanich, Thailand (160)*

- Investigative journalism has been able to expose the link between AMR and antibiotic use in pig farming and positively influence industry practices.
- Antibiotics are used as growth promoters to keep animals disease-free in substandard conditions.
- The investigation highlighted that colistin, as well as the cheaper banned product of colistin + amoxicillin, are widely used. Such use is a major driver of multidrug resistant infections in human health.
- The public attention led regulators to reschedule colistin as a controlled medicine for use only under a veterinarian and increased surveillance of pig farms.
- The alternative practice of using natural/organic farming systems requires government support to encourage change.

### Opportunity

- Working with the media can be a powerful mechanism to raise awareness and influence consumers, farmers, government and regulators.



*Routine and relentless overuse of antibiotics in pig farming threatens human health.*



# Learning from patients & communities to improve the use of medicines

## Providing information in accessible ways

*Maria Fernanda Barros de Oliveira Brandão, Brazil (via Zoom) (161)*

- School children are an important audience for education about rational use of medicines.
- Playfulness was proposed as a strategy to engage school children in raising awareness, promoting health and increasing knowledge about the rational use of medicines in the context of storage and disposal of expired medicines.
- The lack of information on correct disposal of expired medicines was gamified and a board game was developed and tested with 250 children and 10 teachers.
- The use of gamification and games was well accepted and thinking as a player supported the educational process. Language was adapted for working with the public.
- The game materials (board, cards and rules) are available on the web for printing and there have been almost 2000 interactions.

### Opportunity

- Playfulness and games are an important and effective way to engage children in education about medicines.



*How do we make our messages and information engaging and educational for different audiences?*

# Learning from patients & communities to improve the use of medicines

## Can we learn from pharmaceutical companies?

*Lydia Green, USA (164)*

- Pharmaceutical industry (pharma) is skilled at marketing communication, blending science and emotion to communicate favourable health care information to health care practitioners and consumers.
- Pharma has extensive resources devoted to increasing sales and profits. Medicines misuse can be an unintended consequence from the pursuit of profit from medicines.
- Public health cannot compete with level of pharma funding but can adopt a competitive marketing mindset to improve communication.
- Effective communication requires a disciplined approach using rigorous processes.
- Keep messages simple, use the art of persuasion, repetition, understand market research and the attitudes, beliefs and behaviours of doctors and patients.

### Opportunity

- Learn from pharma's successful marketing techniques, eg careful message framing and how best to communicate it.



*The ISIUM network could share messaging, content and campaign strategies.*

# Learning from patients & communities to improve the use of medicines

## Evaluating effectiveness of drug delivery system implemented by village health volunteers for diabetic patients during the COVID-19 pandemic

*Atittaya Parkpicharoen, Thailand (94)*

- COVID-19 transformed how medicines were delivered for diabetic patients to reduce the need for hospital visits, reduce overcrowding and risk of spread.
- Village health volunteers were trained to deliver medicines rather than using mail or visiting hospital. Pharmacists dispensed medicines, public health officers distributed to volunteers, and volunteers delivered to patients.
- To evaluate the service, 30 patients with diabetes were interviewed.
- Patient satisfaction was very high and medicine knowledge and behaviours were high.
- Comparison of blood sugar levels documented before and after the implementation of the delivery system showed no difference.
- Delivering medicines locally via village health volunteers was effective, safe and satisfactory for diabetes patients.
- Involving local communities in designing and delivering alternate medicine delivery systems was successful and sustainable.
- Further research is needed regarding how adverse drug reaction monitoring and the provision of additional counselling needs could be improved.

### Opportunity

- Consider other drug delivery models to enable improved patient access and reduce risk of overcrowding.



*Using alternate models of medicines delivery can improve patient access and alleviate overcrowding issues.*



# Working with practitioners, patients and communities to design RUM programs

## Session summary

**Chair:** Debra Rowett; **Discussant:** Phaik Yeong Cheah

### Lessons

- It is important to look at problems from different perspectives, engaging with practitioners, patients and communities to understand and address problems.
- There are different ways to listen to communities, eg surveys, interviews, participatory research.
- 'Rational use of medicines' terminology is limiting – can we identify a better way to describe and communicate about our work?

### Opportunities

- Engage continuously with audiences and community, from framing the problem, researching designing, interpreting results and implementing solutions.
- Communities, patients and practitioners are heterogenous – segment audiences and stakeholders (ie the market) to better understand and address problems.
- Consult with WHO on 'rational use' terminology – what should be used at a global and local level?



*We all see things a little bit differently.  
It is important to listen and there are many ways to listen to communities.*

# Working with practitioners, patients and communities to design RUM programs

## Unused medication among monks with non-communicable diseases: A case study in temples within the Bangkok metropolitan area

*Boonyawat Kaewpinta, Thailand (36)*

- Unused medicines is an issue in Thailand, with approximately 60% of patients with leftover medicines.
- There are >239,000 male Buddhist monks and the majority are elderly with chronic diseases. There is no data on unused medicines in this group.
- 198 monks were interviewed. The most common conditions were hypertension, hyperlipidaemia and diabetes, and 90% looked after their own medicines.
- Half of the group had leftover medicines; most frequently metformin, simvastatin, paracetamol and enalapril. Monks reported this was because of adherence issues, receiving more than needed and from visiting multiple hospitals.
- Half the leftover medicines were returned, about one-third kept and 13% thrown away.
- Monks who had caregivers or a pharmacy managing their medicines had less unused medicines than those who self-managed.

### Opportunity

- Pharmacies and pharmacists have a role in supporting patients with medicine reconciliation, education about left-over medicines and medicine disposal.



*There are many different groups in the community that need our support to improve the use of medicines.*

# Working with practitioners, patients and communities to design RUM programs

## The management of inappropriate drug distribution problem in grocery with RDU community mechanism by participation of community

*Aree Pimdee, Thailand (97)*

- In many rural areas in Thailand (e.g. (Sai Mun Subdistrict, Namphong District, Khon Kaen), inappropriate medicines are available from grocery stores and sold by peddlers in villages. This poses a health risk for the people in these communities.
- Action research methodology was used with 5 RDU community strategies: hospital and community-based surveillance, community participation, private sector engagement, and RDU literacy. Community leaders, village health volunteers, local government officials, teachers, monks and medical personnel were engaged.
- Surveys of 29 grocery stores and interviews with 181 people with chronic disease were presented to the community and led to formally establishing a community health network.
- A memorandum of understanding was signed by 44 grocery stores about distributing appropriate medicines and raising awareness through media about prohibited drugs and penalties. Community rules were made forbidding drug peddling in 13 villages.
- Inappropriate drug sales reduced by 30%.

### Opportunity

- Collaboration in local communities is needed to develop and support RDU strategies.



*People living in rural and remote communities have greater challenges in accessing affordable and appropriate medicines.*



# Working with practitioners, patients and communities to design RUM programs

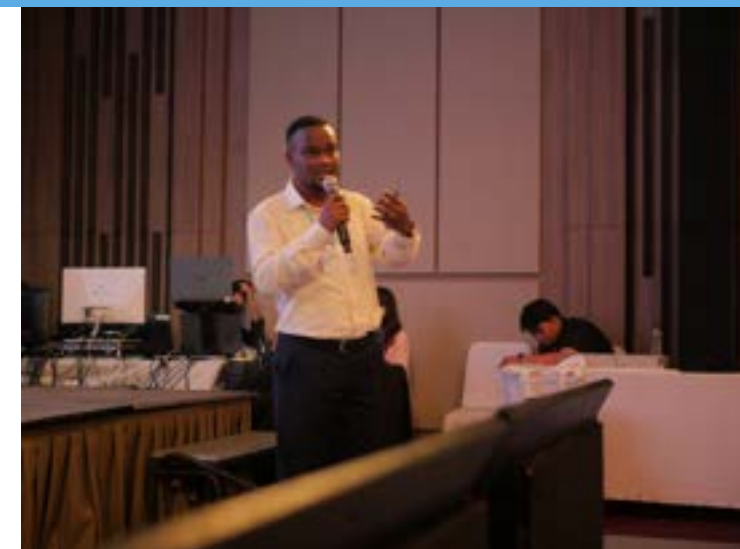
## Community pharmacy dispensers' views on the antibiotics' poor dispensing practices and misuse: A Dodoma city qualitative study

*Michael Mosha, Tanzania (72)*

- The misuse of antibiotics is a critical public health problem, but little is understood from the perspective of community pharmacy dispensers in Tanzania. In-depth semi-structured interviews were conducted with 44 dispensers in Dodoma city from February 2021 to May 2021.
- Most community pharmacies / drug outlets are not owned by pharmacists and most are more than 5 km from health facilities.
- The majority the community pharmacy dispensers dispensed antibiotics without a prescription.
- Themes included the increasing number of drug community outlets driving competition, high consultation costs at hospital, customer and pharmacy owner pressures and an increasing knowledge of community members.

### Opportunity

- A stronger and more professional relationship is needed between customers/patients, prescribers and community pharmacy dispensers to improve antibiotic use.



*Financial incentives for community pharmacies are a crucial factor influencing access and use of antibiotics.*

# Diverse challenges, innovative solutions

## Session summary

**Chair:** Charles Ayran; **Discussant:** Alice Siuna Waneoroa

### Lessons

- Diverse strategies exist to tackle medication issues, emphasising the need for a multifaceted approach to healthcare solutions.
- Educational programs and interventions can improve prescribing practice and patient knowledge, contributing to enhanced healthcare outcomes.
- Technology driven alert systems demonstrate potential for identifying medication-related issues and improving patient safety.

### Opportunities

- Use a multifaceted approach in designing and implementing policies for sustainable healthcare change, drawing insights from antimicrobial resistance initiatives.
- Explore technological advancements to drive innovative solutions enhancing participation and efficacy.
- Tailor interventions and encourage policy adoption across diverse healthcare systems, potentially mitigating the global challenge of antibiotic misuse in resource-limited settings.



*Evidence-based policies, tried and tested strategies and innovative solutions are needed to address ever evolving healthcare issues.*

# Diverse challenges, innovative solutions

## Identifying the most effective policies for minimising inappropriate use of antibiotics: A replicability study using three WHO datasets

*Kathleen Holloway, United Kingdom (25)*

- WHO data shows overuse of antibiotics and poor implementation of policies to encourage rational use of antibiotics in low- and middle-income countries (LMIC).
- An analysis was conducted using WHO and independent survey data from 44 countries to identify policies that are consistently associated with lower inappropriate overuse of antibiotics in LMIC public primary care.
- The study highlighted essential policies linked to countries with less inappropriate antibiotic use included:
  - national antimicrobial strategies
  - national taskforces
  - drug and therapeutics committees
  - public education
  - undergraduate doctor training on treatment guidelines and essential medicine lists
  - restricting over-the-counter antibiotic sales
  - legislation for drug promotion
  - updated formularies, and
  - free medicines at point of care.
- The study did not evaluate the implementation or quality of the policies; implementation is likely to vary.

### Opportunities

- Leverage identified essential policies for designing and implementing more effective antibiotic stewardship programs in LMICs.
- Future work can explore how different policies are implemented and how to derive sustainable change.



*The more policies countries are implementing,  
the less upper respiratory tract infection cases are treated with antibiotics.*



# Diverse challenges, innovative solutions

## Are more expensive medicines better quality? Evidence from Indonesia

Vinky Maria, Indonesia (61)

- Indonesia implemented a National Health Insurance system in 2014 to reduce medicine costs. This led to medicine shortages across the country and questions from the public about the quality of 'cheap' or free medicines.
- There is an extensive price disparity between branded and unbranded generic medicines across different regions of Indonesia.
- Despite significant price variations (up to 7 times higher for branded medicines), no discernible difference in quality was found between branded and unbranded generic medicines, challenging assumptions about cost-quality correlations.
- Medication pricing complexities persisted, with identical brands varying in cost based on geographical location and outlet, impacting patients' access to affordable medicines.
- Falsified medicines were primarily associated with branded products highlighting the need for stringent quality control measures throughout the supply chain to combat counterfeit drug.

### Opportunity

- Implementation strategies, regulatory reforms and educational initiatives go hand in hand when implementing policies to enhance medicine affordability, accessibility and safety of the public.



*Despite significant price variations, no discernible difference in quality was found between branded and unbranded generic medicines.*

# Diverse challenges, innovative solutions

## Impact of educational intervention on use of medicines in public primary health care centres of Puducherry, India: A WHO indicator-based study

*Jayanthi Mathaiyan, India (63)*

- A pre- and post-intervention study design was used across nine primary health care centres to evaluate the impact of educational interventions on prescribing practices, dispensing and patient knowledge.
- The educational interventions involved lectures, discussions and poster displays near the consultation rooms and pharmacies.
- Results pre- and post-intervention were compared based WHO indicators for rational use of medicines.
- Positive outcomes included a reduction in the average number of medicines prescribed, a decline in antibiotic prescribing, an increase in adequate labelling and improved patient knowledge on prescribed medicines.

### Opportunity

- Broader implementation and tailoring of educational programs, involving various health professionals, leveraging technology for wider dissemination, and continual monitoring for sustained improvement in rational medicine use.



*Educational interventions for health professionals and patients can help improve rational use of medicines.*

# Diverse challenges, innovative solutions

## Utility of laboratory alert system for detecting adverse drug events: Prolonged INR

*Benjaporn Silaruks, Thailand (128)*

- The study evaluated a laboratory alert system detecting adverse drug events related to prolonged International Normalised Ratio (INR) of more than 6.0 in Khon Kaen Hospital in Thailand, a tertiary teaching hospital.
- The retrospective study analysed alerts to pharmacists triggered by high INR levels and bleeding signs.
- Over 70% of alerts were adverse drug reactions associated with anticoagulants, with 18 cases assessed as active bleeding.
- The positive predictive value of the initial and extended triggers was 50% and 100% respectively and clinical outcomes were improved for more than 70% of those having an adverse drug event.

### Opportunity

- Implementing and refining alert systems similar to the laboratory INR alert system could significantly enhance pharmacovigilance efforts, improving the timely detection of adverse drug events and improve patient safety outcomes.



*Safety is not expensive, it's priceless!*



# Education of health professionals to practise rational use of medicines

## Session summary (1 of 3)

**Chair:** Ravi Shankar; **Discussants:** Subish Palaian, Arnuparp Lekhakula, Nisha Jha, Sajala Kafle (169)

### Lessons

- Opportunities for health science students to be involved with the community through public campaigns on RUM can deepen their practical understanding of what will be expected of them in the future and provide real-world experience.
- Students need to learn how to help patients improve their health literacy and numeracy skills.
- Interprofessional education can improve future collaboration and communication to influence better patient-centred care. Starting RUM discussions in the classroom will make it easier at the bedside.
- Interprofessional learning can include a broad range of health professions, but also non-health professions such as architecture (housing) and IT faculties (digital literacy).
- Educating community pharmacists as stewards for AMR is important as they are available and accessible. Significant competitive challenges of inappropriate supply channels exist, and consumers also need to be educated about the risks of AMR.

### Opportunities

- Interprofessional learning on RUM is best practice and recommended.
- Consumers and the general public education about the risks of AMR.
- Agreements between different professional agencies to promote RUM.
- Activity-based teaching should be mandated by universities and accreditation agencies.
- Knowledge and education for RUM needs to be supported by regulation, particularly antimicrobials.



*Best practice teaching about RUM in the classroom will make it easier at the bedside.*

# Education of health professionals to practise rational use of medicines

## Session summary (2 of 3)

**Chair:** Ravi Shankar; **Discussants:** Subish Palaian, Arnuparp Lekhakula, Nisha Jha, Sajala Kafle (169)

Educators working in Thailand, Nepal and the United Arab Emirates discussed their experiences and perspectives on educating health professionals to practice RUM.

### United Arab Emirates (Subish Palaian)

- Actively involving pharmacy students in public health and community engagement campaigns provides real-world opportunities for students.
- Interprofessional education involves patients interviewed by pharmacy, medicine and dentistry students, learning together and understanding each other strengths and limitations.
- Hospital and community pharmacist continuing education focus includes pharmacovigilance, drug information, communication skills.

### Thailand (Arnuparp Lekhakula)

- Since 2013, with support from the Thai FDA, RDU teaching modules have been developed for undergraduate education of medical, pharmacy, nursing, dentistry and veterinarian students and used in several university consortia.
- These have been integrated into the RDU Country framework and will be revised and extended to a total of 9 disciplines including radiology, physical therapy, physiotherapy and medical technology.
- With ongoing support from the FDA, the next steps will be to extend interprofessional learning, incorporate into exams and competency frameworks.



*Interprofessional learning about RDU is rational.*

# Education of health professionals to practise rational use of medicines

## Session summary (3 of 3)

**Chair:** Ravi Shankar; **Discussants:** Subish Palaian, Arnuparp Lekhakula, Nisha Jha, Sajala Kafle (169)

Educators working in Thailand, Nepal and the United Arab Emirates discussed their experiences and perspectives on educating health professionals to practice RUM.

### Nepal (Subish Palaian, Sajala Kafle, Nisha Jha)

- Role play scenarios used to educate community pharmacists around AMR were successful in improving knowledge, but strategies need a multidisciplinary approach and should involve public awareness of AMR issues.
- Significant challenges remain as pharmacies are numerous and financially competitive, and patients can source antibiotics without prescription.
- Hospital Medicines and Therapeutics Committee have challenges providing feedback of audit results to prescribers, the influence of pharmaceutical industry on formulary and prescribing choice, and pharmacology education limited to the early years of training.
- During COVID-19, there has been reduced focus on RUM and antimicrobial awareness and this needs to be reclaimed.



*RUM and antimicrobial awareness need to be reclaimed since COVID-19.*



# Integrating guidelines with essential medicines lists

## Session summary

**Co-Chairs:** *Mieke Hutchinson-Kern, Robert Moulds*

### Lessons

- Guidelines are generally disease-based and Essential Medicines Lists (EML) are drug-based, and these are not necessarily linked and not always aligned. Every country will approach this differently and this can be complicated depending on which takes precedence.
- Practical implementation of EML impacts access to essential medicines.
- For some conditions, national EMLs are not aligned to current best practice guidelines nor take into account local population needs.
- Consistency of national EMLs with WHO EML is variable – monitoring this and understanding the reasons why they vary may highlight local health needs including those of sub-populations.
- Countries need processes to link Standard Treatment Guidelines (STG) with EML – this takes time, resources and communication.
- Transparent (or non-transparent) pricing of medicines and costs are barriers.

### Opportunities

- Share strategies for linking STGs and EMLs in less well-resourced countries.
- Monitor use of drugs listed on EMLs to ensure appropriate access.
- Share strategies to support transparent medicine pricing.



*Integrating guidelines and EMLs is never perfect – make a start, record the assumptions and improve as you go.*

# Integrating guidelines with essential medicines lists

## A quantitative comparison of essential cardiovascular medicines from countries in the Southern African Development Community to the WHO model essential medicines list

*Ian Naicker, South Africa (78)*

- The 2021 WHO Model list of medicines for cardiovascular disease was compared to latest available national essential medicines lists (EML) for South Africa and 15 South African Development Community (SADC) countries to assess consistency in medicine listings. The consistency of national EMLs was calculated as a percentage of CVD medicines listed in the 2021 WHO list.
- Consistency scores ranged from 86% (Tanzania) to 25% (Eswatini), with the mean score for SADCs of 66%.
- The study was descriptive and did not take into account differences in health expenditure or demographics.
- In general, SADC countries scored well in consistency with the WHO EML 2021.
- Improvements could be made by the inclusion of paediatric formulations, angiotensin receptor blockers and single pill combinations for hypertension, which may improve patient adherence and cardiovascular outcomes.

### Opportunity

- Countries adopting the EML strategy should consider a minimum consistency threshold to the WHO EML to improve access and availability of CVD medicines.



*Comparing national EMLs with the WHO model EML provides a baseline to improve access and availability to essential medicines.*

# Integrating guidelines with essential medicines lists

## Approval of chronic medication entitlements based on the Malta National Formulary and Protocols

*Charles Mandy Ayrán, Philippines (165)*

- A review of non-approvals of medicine entitlements due to non-compliance to government protocols and the national formulary (Jan 2012 – Oct 2020) was undertaken to identify opportunities to improve the efficiency of the approval system through pharmacist interventions.
- The top medicines contributing to non-approvals were clopidogrel, levothyroxine and omeprazole. Reasons for non-approvals were medicines not corresponding to condition, application not according to protocol or medicine not available on the formulary.
- Interventions identified to improve the process included: development of an orientation manual for prescribers and pharmacists, review of IT systems to improve online applications, regular protocol and formulary review, regular feedback system on non-approvals, and linkage to other government databases.

### Opportunity

- Regular review of drug approval processes can identify interventions to improve efficiencies, ensure protocols are up to date and enhance a patient-centred approach.



*Regular review of medicines approval processes improves efficiencies and patient care.*



# Understanding and improving medicines literacy

## Session summary

**Chair:** *Chanuantong Tanasugarn*; **Discussant:** *Natalia Cebotarenco*

### Lessons

- Consumers, health professionals and organisations working in partnership, towards a collective impact, can achieve effective and enduring change.
- Counterfeit drug problems are related to border controls and weak governmental regulation.
- Pharmacy, dental and medical students provide useful insights into problems with unused and expired medicines.
- Interventions that are patient-centred are needed for resolving complex medicine use problems.

### Opportunities

- Collect feedback from audiences about interventions to improve medicine use should be routine. There are many ways to do it.
- Base interventions to improve medicine on an in-depth understanding of problems as well as needs of target groups.
- We need to do more work to define and explain what we mean by health and medicine literacy.



*Rational use of medicines – has this term passed its expiry date?*

# Understanding and improving medicines literacy

## Collectively improving the use of medicines through a consumer-centred and multidisciplinary collaboration

*Jonathan Dartnell, Australia (19)*

- Achieving long-term improvements in healthcare requires all stakeholders working together. A partnership of consumer, health professional, research and healthcare improvement organisations collaborated on a program to improve outcomes for people with inflammatory arthritis, inflammatory bowel disease and psoriasis.
- The partners were brought together as a consortium with an agreed common agenda. The consortium shared governance and responsibilities for all steps: research, design, development, promotion and implementation.
- Over 3 years, 70 activities and resources were implemented across specialist practices, primary care, private and public hospitals, hospital and community pharmacies, consumers in these settings.
- Positive impacts on knowledge, confidence and practice were seen across all therapeutic areas.

### Opportunity

- Consumers should be represented at every stage. A consortium model with a shared agenda, governance, budget and responsibilities provides a strong framework to achieve collective impacts on improving the use of medicines.



*Achieving long term improvements in healthcare requires all stakeholders working together.*

# Understanding and improving medicines literacy

## Counterfeit medicines awareness among community pharmacists of Kathmandu Valley: A descriptive cross-sectional study

*Sajala Kafle, Nepal (39)*

- Counterfeit medicines are a significant problem globally including in Nepal. Community pharmacists play a key role in addressing the problem.
- Community pharmacists were surveyed in 3 districts in the Kathmandu valley about their awareness and attitudes.
- Of 348 community pharmacists surveyed, the vast majority believed that pharmacists who dispensed counterfeit medicines are unethical, and actions should be taken against them.
- Only <2.8% were aware of community pharmacists dispensing counterfeit drugs. Very few responded that they had been offered counterfeit medicines but almost half were unsure.
- Respondents believed that counterfeit medicines could be identified if quality and price parameters were used.

### Opportunities

- Strengthening laws to assist addressing the problem of counterfeit medicines.
- Engaging all stakeholders in increasing awareness of the problem.



*All stakeholders have a role in increasing awareness of the problem of counterfeit medicines.*



# Understanding and improving medicines literacy

## Knowledge, attitude and practice of disposal of unused or expired medication

*Pathiyil Ravi Shankar, Malaysia (125)*

- Healthcare professionals play an important role in safeguarding and promoting the proper disposal of medicinal waste. Students will have an important role.
- 419 medical, dental and pharmacy students at a private university in Malaysia were surveyed.
- About half of all respondents kept unused medicines and 12% kept expired medicines, but only 2% used expired ones.
- Most students (75%) disposed of unused medicines in the garbage.
- The knowledge of pharmacy students was slightly better than other students.

### Opportunity

- Student curricula should be strengthened to support health professional awareness of proper disposal of medicines.



*Health professional students are a key target audience for rational use of medicines activities.*

# Understanding and improving medicines literacy

## Perceptions of health care providers and patients on factors influencing medication adherence of type 2 diabetes mellitus patients in Labasa, Fiji

*Namrata Singh, Fiji (130)*

- In patients with type 2 diabetes mellitus, good medication adherence is crucial in slowing down progress towards irreversible complications. However, there are many factors that contribute to non-adherence.
- No studies of this sort had been conducted in Fiji.
- In-depth interviews were conducted with 20 patients and 6 health professionals to explore factors that contribute to diabetes medicine adherence in the context of Fiji.
- Seven major themes about factors were identified relating to:
  - patients (eg literacy, herbal medicines)
  - diabetes (eg perceptions of disease)
  - medicines (eg access, side effects, pill burden)
  - health care facility (eg travel distance)
  - health professionals (eg access to doctors)
  - cultural beliefs (eg religious fasting)
  - socioeconomics (eg costs).

### Opportunities

- Patients require ongoing support to understand diabetes and the role of medicines. Pharmacists and pharmacy assistants need training and support.
- Improve access to facilities and appropriate medicines.



*“The medication is so expensive...I only buy some tablets just to keep me going til I get the supply from the hospital. I can’t keep buying them since I don’t have money all the time.”*

# Excess or access: Innovative approaches to improve use of antimicrobials

## Session summary

**Chair:** Niyada Kiatying-Angsulee; **Discussant:** Verica Ivanovska

### Lessons

- Effective solutions to complex issues like antibiotic resistance require collaboration among healthcare professionals, policymakers, researchers, and agricultural experts.
- Promoting awareness and educating stakeholders at all levels, including healthcare providers, farmers, and the general public, is crucial.
- Engaging communities, including farmers and pharmacists, through training programs, networks, and awareness campaigns, can foster a culture of responsible antibiotic use and promote behavioural change.
- Addressing antibiotic resistance requires a coordinated global effort, involving governments, international organizations, and civil society, to develop and implement strategies for antimicrobial stewardship and surveillance.

### Opportunity

- Encourage collaboration among all levels including healthcare providers, policymakers, agricultural sector and consumers at all level, to address the multifaceted challenges of antimicrobial resistance comprehensively.



*From healthcare to farm care, collaboration of cross sector stewards will be required to safeguard antimicrobials.*



# Excess or access: Innovative approaches to improve use of antimicrobials

## Improving antimicrobial use in secondary and primary public healthcare facilities in India

*Anita Kotwani, India (47)*

- India, like most of the world, faces significant challenges with high antibiotic use and AMR prevalence.
- This study was based in a district hospital and used qualitative interviews with key stakeholders as well as observation in secondary and primary public healthcare facilities to identify existing federal and state-level policies, systems and resources related to implementation of AMS programs.
- Two main monitoring programs were highlighted: National Quality Assurance Program (NQAP) and Kayakalp program.
- Both programs incorporate measurable elements such as infection control, standard treatment guidelines, prescription audits, essential medicines lists and incentives for quality standards compliance.
- NQAP and Kayakalp programs appear to be effective and have potential to integrate AMS-related activities.

### Opportunities

- Adoption of WHO AMS toolkit can strengthen AMS activities.



*Collaboration between federal and state-level policy makers can help harmonise policies and regulations.*

# Excess or Access: Innovative approaches to improve use of antimicrobials

## Antibiotic use among pregnant women attended antenatal care clinic at Kilimanjaro Christian Medical Centre in Northern Tanzania

*Victor Mosha, Tanzania (68)*

- Globally, 80% of prescribed medications during pregnancy are antibiotics, posing risks to maternal and child health.
- Limited data available regarding antibiotic use during pregnancy in Tanzania, where antibiotic-resistant infections and non-infectious diseases are prevalent.
- Data was collected from the medical records of pregnant women who attended the antenatal care clinic at Kilimanjaro Christian Medical Centre Hospital in Northern Tanzania.
- The records for 380 pregnant women with at least three antenatal care clinic visits were reviewed.
- 52.9% received at least one antibiotic prescription, predominantly a penicillin, nitroimidazole or cephalosporin.
- The majority of antibiotics (83.7%) were prescribed for urinary tract infections based on urinalysis
- 79.7% of prescriptions issued without culture and sensitivity testing.
- Strategies are needed to improve antibiotic prescribing practices and access to diagnostic microbiological services during antenatal care clinics in Tanzania.

### Opportunities

- Implementing cost-effective strategies to enhance access to culture and sensitivity testing during antenatal care visits can improve the appropriateness of antibiotic prescriptions and mitigate risks of antibiotic resistance.



*More work is required to ensure appropriate use of medicine by vulnerable populations.*

# Excess or Access: Innovative approaches to improve use of antimicrobials

## Youth as agents of change in raising antimicrobial resistance awareness in the community in Dodoma region

*Michael Mosha, Tanzania (75)*

- Roll Back Antimicrobial Resistance (RBA) Initiative utilised schoolchildren as change agents to increase awareness of antimicrobial resistance (AMR) and promote positive behavioural change.
- Training sessions were conducted in school, supplemented with interactive activities like arts and crafts, songs, skits, and storytelling.
- Initiative started in 2020 and in the 2 years trained 322 students through the AMR school club project.
- High motivation and engagement was observed among students, facilitated by the use of creative and interactive learning methods.
- Trained students disseminated key AMR messages to over 11,000 fellow students, 83 school teachers and over 3000 community members.
- Additionally, in response to challenges with inadequate Water, Sanitation And Hygiene (WASH) infrastructures in schools, the RBA Initiative provided essential equipment to competition winners.

### Opportunities

- Young people should be thought of as part of the solution for implementing healthcare initiatives.
- Youth are effective agents of change and can be a driving force in the fight against antimicrobial resistance.



*Engaged and empowered young people can be change agents in curbing antimicrobial resistance.*



# Excess or access: Innovative approaches to improve use of antimicrobials

## Surgical antibiotic prescription patterns and trends in two private hospitals in Madhya Pradesh, India: A 10-year observational study

*Kristina Skender, Sweden (133)*

- Surgical site infections (SSI) are a significant concern in lower and middle-income countries like India, with incidence rates varying widely.
- Perioperative antibiotic prophylaxis reduces SSI risk but increases risk of antibiotic resistance.
- In India, for perioperative antibiotic prescribing, there is a lack of prescribing guidelines, national SSI surveillance and long-term studies analysing prescribing.
- A prospective study spanning 10 years examined antibiotic prescribing trends in a teaching hospital (TH) and a non-teaching hospital (NTH) in Central India.
- Findings revealed that fluoroquinolones and third-generation cephalosporins were the most commonly prescribed antibiotics, with higher adherence to WHO Model List of Essential Medicines in TH compared to NTH.
- Total antibiotic use and consumption of 'watch' antibiotics (WHO AWaRe classification) increased significantly over the study period, with prescribing mostly empirical.

### Opportunity

- There is a need for localised antibiotic prescribing guidelines and implementation of wider antimicrobial stewardship programs.



*Surveillance of surgical antimicrobial prophylaxis is key to ensure appropriate use and drive the implementation of localised guidelines and stewardship programs.*

# Excess or access: Innovative approaches to improve use of antimicrobials

## Dispensing practices of antibiotic among community pharmacies in Bharatpur metropolitan-city Chitwan, Nepal: A simulated patient cross-sectional study

*Anil Kumar Sah, Nepal (120)*

- The study evaluated antibiotic dispensing practices with a 'simulated patient' presenting to 101 community pharmacies.
- The patient presented with symptoms of diarrhoea and requested an antibiotic (1<sup>st</sup> level). If antibiotics were not dispensed, the patient requested 'hard and fast action' (level 2).
- 93% of pharmacies dispensed antibiotics at level 1, and 12% at level 2.
- The most commonly dispensed antimicrobials were metronidazole, diloxanide furoate and fluoroquinolones.
- Both pharmacy qualified and non-pharmacy personnel dispensed antibiotics.
- The study highlighted that while there are guidelines and laws for dispensing antibiotics, strict implementation is lacking.

### Opportunity

- Develop and implement drug policies and guidelines for antibiotic use in the community coupled with a regular and strict monitoring system.



*Each antibiotic dispensed without prescription contributes to antibiotic resistance.*

# Excess or access: Innovative approaches to improve use of antimicrobials

## Situation of antibiotic use in livestock farms and veterinary drug distribution in Thung Khao Luang District, Roi-Et Province

*Supawadee Plengchai, Thailand (100)*

- The study assessed antibiotic use, distribution practices, and farmer behaviour regarding antibiotics in livestock farming.
- A face-to-face questionnaire survey conducted among 32 farmers and 5 drug distributors revealed that 94% of farms utilised antibiotics, primarily from agricultural product stores and the internet.
- Enrofloxacin was the most commonly used antibiotic in pig farms (71%), while erythromycin with vitamin B12 was prevalent in chicken/duck/bird farms (42%).
- A survey of agricultural product stores uncovered 38 medicines, with 47% being unregistered, highlighting concerning practices in veterinary medicine distribution.
- Lack of knowledge and awareness about antibiotic use and antimicrobial resistance among farmers underscores the urgent need for policy formulation and intervention strategies to address antibiotic misuse in livestock farming.

### Opportunities

- Establish education programs and a strong network among farmers, aimed at promoting rational use of antibiotics in livestock farming.
- Advocate for policy-level initiatives to enforce standardised drug distribution measures in strict accordance with national drug laws.

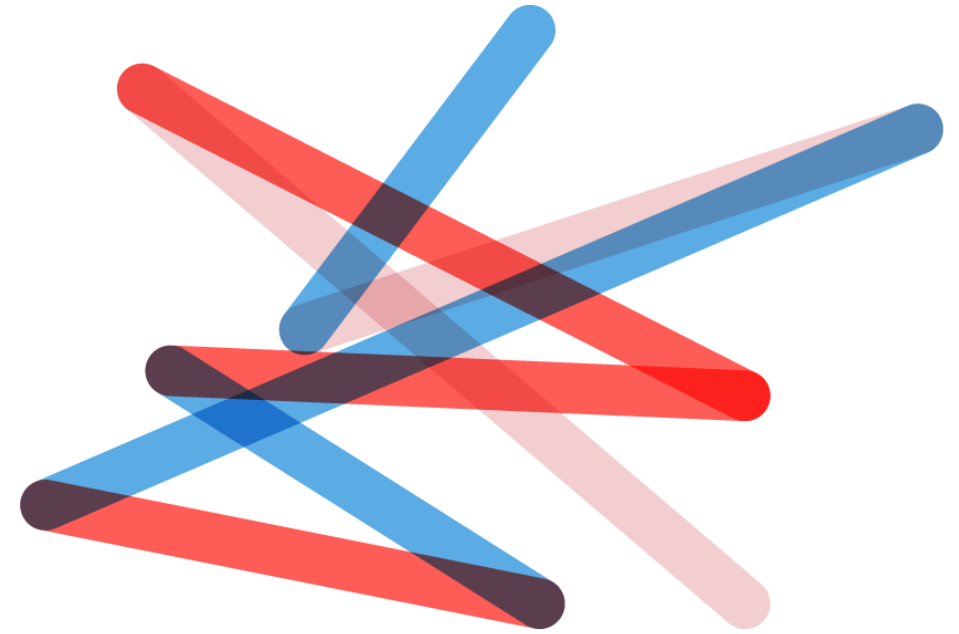


*Responsible antibiotic use in agriculture is critical for a sustainable future for all.*



DAY 2  
Sunday 29 October 2023

Identifying medicines  
problems and  
innovating for  
solutions



**CONFERENCE PROCEEDINGS**

# Identifying medicines problems and innovating for solutions

## Using routine data to identify medicines problems at local and national levels (1 of 2)

*Libby Roughead, Australia (159)*

### Data sources and utilisation

- Australia has a range of data sources, ranging from procurement and sales records to comprehensive electronic medication records, that offer valuable insights into medication trends, prescribing patterns and patient outcomes.
- Important to harness data sources to identify quality use of medicine issues both at local and national levels, including by analysing aggregated data to identify potential medication safety issues.
- Diverse analytical approaches can help us understand the data better. Methods such as comparisons between regions and settings, longitudinal and time series analyses, can be effective tools for evaluating policy effectiveness and assessing medication use and consumer behaviours.

### Future opportunities and role of AI and machine learning

- Numerous opportunities exist for leveraging data from wearable devices and mobile apps to gain insights into consumer behaviors and address medicine use issues. However, it is imperative, to establish robust ethical frameworks and procedures that safeguard consumer privacy and uphold principles of informed consent.
- While artificial intelligence and machine learning hold promise in analysing large datasets and identifying patterns, there are limitations and more work is needed.



*Artificial intelligence cannot take into account love and care.*

# Identifying medicines problems and innovating for solutions

## Using routine data to identify medicines problems at local and national levels (2 of 2)

*Libby Roughead, Australia (159)*

### Collaboration and support

- Collaboration and information sharing helps foster a culture of shared learnings and knowledge exchange, leading to improved healthcare outcomes on a global scale.
- Government support is important in enabling robust data systems and promoting data-driven decision making in healthcare.
- WHO has a role in providing guidelines and support for data systems, particularly in responding to significant healthcare challenges such as antimicrobial resistance.

### Opportunities

- Data collected from wearable devices and mobile apps can contribute to evidence-based decision making. Analysing this data can improve understanding of consumer behaviours and assist design and delivery of tailored healthcare solutions, including medicines.
- Cross-country collaboration and data sharing can facilitate multi-country comparisons, the exploration of regional trends and the development of targeted interventions to address specific shared healthcare challenges.



*Start with what you can do. Start with a simple analysis to answer questions.*

## The use of public transport (bajaji, tuk tuk) in communicating antimicrobial resistance

*Michael Mosha, Tanzania (71)*

- 40 tuk tuk or bajaji drivers were designated as antimicrobial resistance (AMR) ambassadors during World AMR Awareness Week in 2022 and participated in an organised cavalcade around the city of Dodoma as part of Tanzania's Roll Back AMR initiative.
- Drivers and journalists were trained about the general concept of AMR so they could understand and disseminate the messages.
- The drivers conveyed AMR messages to the community via advertisements on the back of the vehicles in Kiswahili language and distributed AMR flyers to their passengers and general public.
- A pre- and post-survey indicated an increase in AMR awareness among community members from 42% to 88%.

### Opportunity

- The use of public transport in AMR campaigns is effective, efficient and adaptive to the general community.



*Awareness campaigns using public transport advertising are a novel and practical way to spread messages to the community.*



# ISIUM voices: Diverse challenges, innovative solutions

## Session summary

**Chair:** Anita Kotwani, India; **Discussant:** Nisha Jha, Nepal

### Lessons

- Industry sponsorship of consumer health groups is widespread and requires transparency to ensure the patient and consumer voices are safeguarded.
- Availability of medicines in low-middle income countries depends on pharmaceutical companies' willingness to enter the market.
- Pharmacies and drug sellers require regulation to ensure consumer safety and support RUM.
- Home visits by trained volunteers can improve the health and quality of life of patients in the community.
- National Action Plans for AMR need support to be implemented.

### Opportunities

- Operationalise core principles to ensure industry sponsorship of consumer health groups is transparent, accountable and protects independence.
- Understand the framework for pharmaceutical companies to market medicines in a country.
- Regulate and monitor the on-line and bricks and mortar pharmacy supply of medicines requiring prescriptions, particularly antibiotics.
- Supporting home visits by health volunteers to elderly patients in the community improves medicines use.
- A One Health approach is required to help contain AMR.



*The challenges from RUM are diverse. Do we need to broaden our approach across the whole ecosystem and bring in new disciplines, as is the case for One Health and AMR?*

# ISIUM voices: Diverse challenges, innovative solutions

## Safeguarding an independent voice for patients and health consumers in health policy

*Barbara Mintzes, Australia (via Zoom) (66)*

- Pharmaceutical industry funding of consumer groups is widespread – a systematic review indicated 43 -83% of patient groups have industry funding.
- Industry and patient interests are not always aligned. In common might be access to new and better therapy, similar clinical focus, and awareness raising. Key differences are price versus affordability, medicine safety, over-diagnosis and -treatment, development of 'me-too' medicines and emphasis on non-drug options.
- Industry priorities rather than health priorities, shape funding for the sector. Analysis of UK patient group funding showed 90% linked to portfolio and pipeline drugs and 97% linked to associated disease groups, with funding for rare disease groups over-represented. Key vulnerabilities for patient groups include lack of transparency on funding and few organisational policies governing sponsorship. Funded vs non-funded groups have closer alignment with sponsor interests.
- An Australian national workshop held in 2020, with funded and non-funded patient groups, developed principles to guide engagement with industry: (1) Consumer-centred – asking members what they think via surveys, social media feedback; (2) Honesty and transparency – public reporting, contracts in the public, conflicts of interest, etc; (3) Fairness – use a 3rd party to disburse funds; (4) Independence – patient group plans activities, then seeks funding, limited funding types; (5) Values alignment – social accountability league tables; (6) Governance and accountability – Board standards, independent policies and practices, contract templates, board membership, external independent audits.

### Opportunity

- Trust and transparency initiatives are a first step towards solutions to increase oversight of sponsorship arrangements.



*Core principles guiding industry sponsorship of patient groups may safeguard their independent voice.*

# ISIUM voices: Diverse challenges, innovative solutions

## A framework for new medicine launch in low- and middle-income countries

*Katrina Perehudoff, Netherlands (via Zoom) (157)*

- Most new medicines are marketed in high income countries before low-and middle-income countries (LMICs). There is limited evidence for why companies choose to market medicines in LMICs and no systemic framework describing the determinants of a LMIC launch.
- An exploratory qualitative study examining which factors influence companies to market their medicines in LMICs used a literature review and stakeholder interviews to determine the following:
  - Does this fit the company's overall strategy?
  - What is the market potential: patent, prevalence of disease, national priorities.
  - Pre-market aspects: experience with the drug regulation authority, regulation requirements for the product.
  - Post-marketing factors: understanding local relationships
  - Accountability to public interest: how active civil society and patient voices are considered, social corporate responsibility and entrepreneurial culture.

### Opportunity

- Understanding the determinants of availability of medicines on domestic markets in LMIC countries is an important first step towards RUM.



*Specific local market, company and product factors determine why medicines are available in LMIC markets.*



# ISIUM voices: Diverse challenges, innovative solutions

## Comparing prescription compliance practices: A study of online and bricks-and-mortar pharmacies in Indonesia

*Mawaddati Rahmi, Indonesia (113)*

- Indonesia has a very high rate of on-line pharmaceutical purchases compared to other countries. It is assumed that on-line purchases are higher because of lower cost, convenience, and not needing a prescription.
- A study was conducted as part of a broader study (STARmeds) to evaluate on-line medicine purchases – checking prescription compliance, price, product quality, and convenience.
- On-line sellers were classified as either approved by the Ministry of Health, semi-regulated or unregulated and compared to bricks and mortar pharmacies. Prescriptions for antibiotics (amoxicillin, cefixime) were compared to other prescription medicines (dexamethasone, amlodipine, allopurinol).
- Unregulated on-line sellers had the lowest prescription compliance compared to other on-line sellers but were more compliant than the bricks and mortar pharmacies. On-line platforms can be designed to require a prescription to be uploaded.
- On-line medicines were not always cheaper.
- Risk of substandard or false medicines was higher from unregulated on-line sellers.
- Buying on-line, especially from unregulated sellers was not more convenient, and is probably limited to people buying medicines for recreational use.

### Opportunity

- Regulate and discourage the public from accessing medicines from unregulated sellers and recommend extending on-line approval to bricks and mortar pharmacies in the future.
- Improve compliance with prescriptions for bricks and mortar pharmacies, especially for antibiotics.



*Do not buy medicines on-line from unregulated sellers!*



# ISIUM voices: Diverse challenges, innovative solutions

## Management of drugs and health product-related problems in communities via home visit approach by the network of Bawal-Ral (home, temple, school and hospital)

*Sopit Sittiphan, Thailand (132)*

- Home visits were provided to elderly patients with chronic illnesses from a network of trained consumer protection students, health volunteers, community and religious leaders (the Bawal-Ral network).
- Visitors measured blood pressure, provided healthcare services and reviewed for potential drug and health product related problems (DHRPs). They also provided knowledge on health products, advice on physical health and mental and spiritual support.
- A purposive sample of 120 people (aged 60 or over), who had problems with drug and health product use, polypharmacy or adherence issues received visits. Data were collected by face-to-face questionnaires (pre- and post-home visits) to determine the percentage of DHRPs solved, knowledge and behaviour change, safety and satisfaction with the home visits.
- The results showed improvement in DHRPs including adherence, missed doses, misunderstanding instructions with foods, steroid-containing herbal and combination drugs, expired or deteriorated drugs. Satisfaction with the service was 98.4%.
- Reflections from the visitors were extremely positive, with the home visits having as much of an impact on them as those who received them. The flow on effect has been a long-lasting impact on the community support dynamics.

### Opportunity

- Home visits by trained volunteers are an effective way to improve the health and quality of life of elderly people in the community.



*Home visits by trained volunteers can make a real difference to the health and wellbeing of a community.*

# ISIUM voices: Diverse challenges, innovative solutions

## African measures and strategies for antimicrobial resistance preparedness

*Othniel Nimbabazi, Rwanda (82)*

- Africa carries over 20% of the global burden of disease and has the highest deaths from antimicrobial resistance (AMR) with 27 deaths per 100,000. Gaps in medicines regulation and health systems are contributing to this.
- A systematic review was conducted of African progress towards limiting the risk of AMR. Publications between 2016-2022 on AMR prevalence, strategies and measures to address AMR in sub-Saharan Africa were reviewed.
- Progress has been made through:
  - Integration of One Health Approach – bringing together more than 145 initiatives across human, agricultural and environmental health sectors.
  - Set up of the African Union Framework for Antimicrobial Resistance Control 2020-2025.
  - 35 out of 54 countries have National Action Plans for AMR.
  - 43% of countries have prescription-only rules for clinical use of antimicrobials.
  - Multisectoral collaboration in AMR awareness, control and surveillance.
- Challenges include:
  - Lack of funding for implementation of National Action Plans, data collection and quality.
  - Inadequate research to make evidence-based decisions on AMR.
  - 95% of countries don't have functional WASH standards.
  - Ineffective Infection and Prevention Control in health facilities.
  - Lack of regulations in some countries.

### Opportunity

- Improved medicine regulations and implementation, good practice sharing, implementation of the Global Action Plan for AMR, investment in R&D and continuous integration of the One Health approach.



*National Action Plans for AMR need to be implemented to have an effect.*

# Policy, system and financial approaches for rational use of medicines

## Session summary

**Chair:** Kathleen Holloway, United Kingdom; **Discussant:** Charan Singh Verma, India

### Lessons

- RDU Country – a new concept supported by policy, social movement and knowledge creation – the triangle that moves the mountain. From community to district, provincial and national levels. Bottom-up approach is not possible without top-down support.
- There is an increasing need to balance the uptake of expensive innovations in health care with available funds, while aiming to optimise health outcomes.
- National level drug use evaluations (DUEs) ensure medicines schemes are meeting goals and inform the development of policy.
- Support is needed from all stakeholders to support better legislation and sustainably improve RUM.
- A national volume-based procurement policy can improve access to quality-assured medicines at lower cost.

### Opportunities

- Programs to promote RUM should be multidisciplinary and involve all stakeholders at all levels of healthcare.
- Develop an RDU country assessment tool to measure, report and compare between countries and stimulate improvements.
- Health technology assessment is an important tool to ensure we achieve value-based care.
- National drug use evaluations are needed to monitor the performance of the medicine system.
- Governments need to develop and maintain policies and regulations to address RUM.
- Pooled procurement should be triggered by market size and importance of drugs, particularly essential drugs.
- Time to review and improve the terminology of RUM.



*Can we now define what we mean by an RDU country and assess and compare the performance of countries in meeting the needs of populations?*



# Policy, system and financial approaches for rational use of medicines

## Thailand rational drug use country: An update

Prasit Wattanapa, Thailand (166)

- A pathway is articulated, Awareness, Administration, Act, for Thailand moving towards an RDU country:
  - Upstream (pharma industry) – RDU ethics and regulation
  - Midstream (healthcare professionals, providers & institutions) – RDU awareness and standards
  - Downstream (patients and people) – RDU awareness and literacy, RDU in self-medication.
- ‘Cyclones of change’ between 2020 and 2023 include emerging infectious disease, disruptive technology, climate change, ageing, disease complexity, One Health, government decentralisation and primary care.
- RDU policy is implemented at both national and local levels (across 77 provinces) supported by the National RDU Subcommittee and RDU coordinators at provincial and district levels.
- Model development framework for ‘RDU Province’ focuses on medicine safety and health literacy in medicine use and self-care based on 6 building blocks: leadership and governance, services delivery, health system financing, health workforce, medical products, vaccines and technologies, and health information systems.
- RDU Country – a new concept supported by national policy, social movement (eg health professional networks through universities, health networks in provinces and district community initiatives) and knowledge creation (eg RDU literacy in communities, monitoring and evaluation systems) – the ‘triangle that moves the mountain’.
- Results of policy implementation are measured and monitored with an indicator dashboard: quality of health services, medicine safety, medicine use and expenditure, RDU literacy – with positive impacts now being demonstrated.

### Opportunity

- Proposal to WHO – develop an assessment tool for RDU country outcomes, to measure, report and compare between countries and stimulate improvements.



*Thailand is moving towards being an RDU country where ‘RDU has become a social norm, a fundamental right, and an essential aspect of quality healthcare services for the Thai people’*



# Policy, system and financial approaches for rational use of medicines

## Policy to practice: Appropriate use of medicines in Singapore through health technology assessment

*Kwong Ng, Singapore (167)*

- Singapore achieves good outcomes for healthcare spending with high life expectancy, while spending relatively less GDP on healthcare compared with other countries.
- Healthcare spending tripled in the last decade, continues to grow rapidly and may become unsustainable.
- The ageing population and new high-cost medicines are important factors driving increasing expenditure.
- There is an increasing need to balance the uptake of expensive innovations in health care, with available funds, while aiming to optimise health outcomes.
- In this context, a multistakeholder workgroup developed the National Medicines Policy with 4 objectives: access (affordability and availability); quality, safety and efficacy; rational use; and sustainability. Ten components underpinned the objectives.
- The key component of improving affordability addressed very high-cost medicines, rare diseases and cancer.
- After market entry, the Agency for Care Effectiveness (ACE) undertakes health technology assessment (HTA) evaluation to inform government funding decisions and formulary listing. This has reduced the price Singapore pays for medicines.
- The National Pharmacy & Therapeutics Committee promotes RUM through formulary listing, adherence to maximum selling price for value-based pricing medicines, monitoring utilisation of subsidised medicines.
- ACE develops clinical guidance on priority topics for health professionals, supports implementation through educational interventions, and develops resources for consumers supporting shared decision making.

### Opportunity

- Health technology assessment is an important tool to ensure we achieve value-based care.



*There is an increasing need to balance the uptake of expensive health innovations with available funds, while aiming to optimise health outcomes.*

# Policy, system and financial approaches for rational use of medicines

## Drug use evaluations by Australia's national reimbursement agency: A tool to support rational medicines use

*Judith Mackson, Australia (56)*

- Australia's Pharmaceutical Benefits Scheme (PBS) is a national subsidised medicines formulary providing access to affordable medicines.
- Drug use evaluations (DUEs) are conducted by the Drug Utilisation Sub-Committee of the Pharmaceutical Benefits Advisory Committee (PBAC), assessing estimates of projected use and costs, actual use and post-market reviews.
- These DUEs examined the range of medicines reviewed, methodologies, patterns of use, policy responses and how they were used to assist in management of PBS.
- 119 DUEs focused on many classes of medicines with most on antineoplastic agents.
- A range of quality use of medicine issues were identified including under-, over- and mis-prescribing.
- Most reviews were referred to PBAC. Most often findings were noted only, although many had specific recommendations to change restrictions or clinical criteria for eligibility, sponsor attention, ongoing monitoring and for education.
- Pregabalin for neuropathic pain underwent DUEs identifying high rates of use and quality use of medicine issues, leading to national education conducted by NPS MedicineWise.
- DUEs require coordination with expert clinical groups, patient groups, education providers, medicines regulator and researchers.

### Opportunity

- National level DUEs are essential to ensure medicines schemes are meeting goals and to inform policy.



*National drug use evaluations are a valuable tool to monitor the performance of the medicine system.*

# Policy, system and financial approaches for rational use of medicines

## Impact of drug policy and regulation on rational use of medicines of India

*Subhash Mandal, India (58)*

- India is almost self-sufficient in medicines manufacturing. India produces and exports a high volume of pharmaceuticals, especially generics and vaccines.
- Policies and regulations have the potential to address RUM such as irrational prescribing, non-adherence to standard treatment guidelines, unethical promotion, self-medication practices and high out-of-pocket expenditure.
- Registered Medical Practitioner Professional Conduct, Etiquette and Ethics Regulations, 2002, supports generic name prescribing. A proposed revision in 2023, with provision for avoiding irrational fixed-dose combination, was put on hold due to pressures from manufacturers and the Indian Medical Association.
- The Drugs (Price Control) Order 2013 (DCPO) includes 376 medicines including those in the Essential Medicines List under price control. The ceiling price is calculated by taking the simple average of prices of all brands of a medicine with a market share of 1% or more. It does not include high-priced medicines and has not ensured that medicines are affordable.
- The Uniform Code of Pharmaceuticals Marketing Practice 2014 is voluntary and includes guidelines on marketing, promotion, gifts and payments to health professionals; and penalty provisions.

### Opportunity

- Government of India has adopted Universal Health Coverage (UHC) mission and several positive steps have been taken but needs to take RUM as a serious agenda.



*Support is needed from all stakeholders to support better legislation and improve RUM.*

# Policy, system and financial approaches for rational use of medicines

## Improving access to medicines and beyond: The national volume-based procurement policy in China

Quan Wang, China (168)

- The Open and Reform policy in the late 1970s led to fiscal neglect of public hospitals, in particular with revenue dependent on overprescribing and selling expensive medicines.
- The first pooled drug procurement was in 1993, when a provincial government centralised the purchasing power of several affiliated hospitals. The level of centralisation has evolved from the municipal to the provincial and national level.
- In 2018, with strong political commitment and key leadership, China's central government announced a national volume-based drug procurement (NVBP) policy.
- Features of NVBP include standardisation (generics meeting quality standards), guaranteed market (winning bidders have 60%-70% of market) and supporting policies (patients who opt for NVBP medicines pay only small portion of cost).
- By end of 2021, NVBP included 294 drugs, reduced average price by >50%, increased volume of quality-assured medicines, reduced corruption, increased competition and saved over 260 billion CNY (approximately 36.3 billion USD).
- Challenges from the NVBP include reduced local government authority, some resistance to use of bid-winning drugs at local level by physicians and patients and too much focus on price reduction.

### Opportunity

- Pooled procurement should be triggered by market size and the importance of specific drugs, e.g. essential drugs.



*A national volume-based procurement policy has improved access to quality-assured medicines at lower cost.*



# Using routine data: innovative methods and measures

## Session summary

**Chair:** Supasit Pannarunothai; **Discussant:** Piyameth Dilokthornsakul

### Lessons

- Use of data, whether from open sources or a surveillance system, is essential to understanding RUM issues, inform planning and implement interventions, policies and strategies.
- Establishing standardised methodologies, such as those developed by WHO, improves data analysis, comparison and information sharing between countries.
- Collaboration with international bodies and stakeholders enables exchange of knowledge, best practices and resources and drives more coordinated responses to global challenges like antimicrobial resistance.
- Continuous monitoring of healthcare indicators allows identification of trends and early warnings as well as evaluation of existing policies and interventions.

### Opportunities

- Work towards making healthcare data more accessible to stakeholders, policymakers and researchers.
- Foster collaboration among stakeholders, health professionals, researchers, policymakers and international organisations to share best practices, exchange knowledge and coordinate efforts in addressing evolving global healthcare challenges.
- Establish mechanisms for continuous evaluation and adaptation of healthcare interventions and policies that is informed by appropriate data.



*Innovations in data collection are needed to support RUM at policy, program and patient level.*

# Using routine data: innovative methods and measures

## Informing clinical pharmacy governance using electronic data

*Huri Balikubiri, Australia (9)*

- Medications play a crucial role in modern medicine, but medication errors are prevalent and costly to the healthcare system.
- Studies show high rates of medication errors in Australian hospitals, with significant financial and health implications.
- The study reviewed national guidelines to identify goals, domains, and activities of clinical pharmacists in Australian hospitals.
- Common goals across frameworks include patient-centred, safe, effective, and integrated healthcare delivery.
- Clinical pharmacy activities identified that support these domains include conducting medication histories, reconciliations and reviews, developing medication management plans, participating in medication prescribing, monitoring and administration, and ensuring continuity of pharmaceutical care at discharge.

### Opportunity

- Utilising electronic data systems in hospitals to monitor the delivery, impact, and outcomes of pharmacy services may offer valuable insights into the quality of care and potential areas for improvement.



*Utilising electronic data to measure and monitor the impact of clinical services on medication safety can help improve patient care.*

# Using routine data: innovative methods and measures

## Eight-year experience of conducting annual point prevalence antibiotic prescribing surveys in Solomon Islands

*Samantha Diamana, Solomon Islands (20)*

- Annual point prevalence surveys (PPS) of antibiotics prescribing were conducted at the National Referral Hospital in Solomon Islands from 2016 to 2023 to assess the appropriateness of antibiotic prescribing.
- Prevalence of antibiotic prescribing ranged from 58% to 79%, which is higher than international averages.
- Appropriateness of prescribing varied widely, with fully appropriate prescriptions ranging from 21% to 58%.
- Challenges noted included medicine and staffing shortages, inter-assessor variability, and limitations in diagnostic support.

### Opportunity

- The PPS results will be presented to the recently formed Antimicrobial Stewardship Committee to inform the development of targeted interventions to address knowledge and skills gaps and implementation of effective antimicrobial stewardship in the hospital.



*Routine monitoring of antibiotic prescribing is a powerful tool to inform and support effective antimicrobial stewardship.*

# Using routine data: innovative methods and measures

## Use of open data for monitoring rational drug use in hospital at national level in Thailand

*Traithep Fongthong, Thailand (23) (presented by Penkarn Kanjanarat)*

- Rational Drug Use Country Indicators (RDUCIs) have been developed as an approach to monitor and evaluate the Thailand RDU Country policy implementation.
- Ministry of Public Health (MOPH) open data was used to test the feasibility of using 7 of the 22 RDUCIs to measure RDU prescribing in Thai hospitals.
- The indicators selected for analysis included antibiotic prescribing rates in 4 conditions, use of NSAIDs in chronic kidney disease, inhaled corticosteroids in asthma and prescribing of medicines in the national list of essential drugs in outpatients.
- Data from the RDU Service Plan in 2022, encompassing 901 hospitals and 10,422 primary care units, was utilised for the study. Target goals were set for each indicator.
- Analysis revealed variations in prescribing rates across different conditions, with only antibiotic prescribing in one condition (upper respiratory tract infection) and essential drugs list prescribing met the target goals.

### Opportunity

- Potential to leverage MOPH open data to enhance monitoring of RDU to facilitate targeted policies and quality improvement initiatives.
- Artificial intelligence may provide opportunities for more advanced data analysis.
- Collaborations with international bodies could facilitate the exchange of valuable data and knowledge.



*National data sets and indicators can help guide the pathway for better patient outcomes.*



# Using routine data: innovative methods and measures

## Measuring medicines use and implementation of policies to improve use

*Kathleen Holloway, United Kingdom (26)*

- There is a lack of standardised, low-cost, streamlined methods for cohesively measuring medicine use and RUM policy implementation.
- A review was presented of existing methods of measuring medicine use and assessing RUM program implementation.
- WHO methodologies for measuring medicines use and policy implementation exist, along with local studies and databases identifying global trends.
- Past studies have shown poor implementation of RUM policy was influenced by health system and societal factors.
- Although policy implementation may be poor, evidence shows that implementation of policy is consistently associated with better RUM; countries implementing more than 12 policies associated with better use had significantly better medicines use than those implementing less than 4 policies.
- A new tool for evaluating medicines management, which involves rapid data collection through record review, observation and interviews at central and local level, was successfully piloted in Southeast Asian countries.
- The presentation underscored the need for standardised methodology that supports continuous monitoring and evaluation to stimulate health system changes and promote RUM globally.

### Opportunity

- An assessment tool provides an opportunity to evaluate national programs and foster improvements in medicine use policies locally and globally.



*There is a need for standardised, low-cost, streamlined methods for cohesively measuring medicine use and RUM policy implementation.*

# Using routine data: innovative methods and measures

## Use of AMC surveillance data for action

*Verica Ivanovska, Switzerland (28)*

- Antimicrobial consumption data (AMC) serves as a crucial proxy for actual antimicrobial use, aiding in the identification of trends and patterns in usage.
- The Global Antimicrobial Resistance and Use of Surveillance System (GLASS) uses data from formal market providers and covers all healthcare levels and sectors.
- Currently there are 82 countries enrolled in GLASS-AMC.
- The analysis of AMC data is multifaceted, aiming to generate insights for health professionals and stakeholders, identify signals of inappropriate use, and support the planning and implementation of interventions to combat antimicrobial resistance (AMR).
- GLASS-AMC indicators use ATC/DDD classification system and provide data at a national level and by geographic region, settings, AWaRe categories (Access, Watch and Reserve), and pharmacological sub-group.
- Utilising AMC data enables the detection of early warnings, assessment of prescribing practices, monitoring and evaluation of national procurement and supply systems, monitoring of intervention impacts, and development of evidence-based strategies to optimise antimicrobial use and combat AMR.

### Opportunity

- Use AMC data for benchmarking and evaluating the effectiveness of national interventions. Over time this could also include comparison across different regions and sectors.



*Antimicrobial consumption data can be used to signal inappropriate practices, trigger research, inform and assess impact of interventions.*

# Deprescribing and other chronic disease management issues

## Session summary

**Chair:** Natalia Cebotarenco; **Discussant:** Jonathan Dartnell

### Lessons

- Deprescribing in palliative care can prevent unwanted adverse effects and improve quality of life.
- Nurses are key health providers in palliative care and can facilitate deprescribing discussions.
- Deprescribing needs adequate explanatory information, shared decision-making, follow-up planning.
- Polypharmacy with NSAIDs and steroids are common problem in Thailand. Ya chud is a problem for community health care.
- Pharmacists have an important role in providing hospital- and community-based surveillance systems for adverse medicine events.
- The more medicines used the greater the possibility of adverse drug reactions and drug interactions. Older patients on multiple medicines need special attention in the context of COVID-19.

### Opportunities

- The deprescribing concept should be introduced at an earlier stage to health professionals, patients, carers, families.
- A partnership approach with prescribers, nurses and pharmacists is needed to support deprescribing.
- Ya chud and Jaimu need ongoing investigation to understand the benefits and harms, incentives and disincentives, and health literacy needs to address the problem.
- Consumer health literacy, especially for the elderly, is needed for better self-management decisions.



*Starting medicines is easier than stopping them.*

# Deprescribing and other chronic disease management issues

## Deprescribing for patients nearing end-of-life: Views, barriers and facilitators of palliative care patients, their carers and healthcare providers

*Aidah Abdul Chin, Malaysia (3)*

- Patients nearing end-of-life often continue to be prescribed preventive medications for chronic diseases and medications for symptom control. Deprescribing can prevent unwanted adverse effects and improve quality of life.
- Palliative care patients, carers and community palliative care nurses were interviewed to explore views, barriers and facilitators nearing end-of-life with regards to deprescribing approaches at the end-of-life.
- Themes identified included: needs such as reducing treatment burden and improved quality of life; concerns such as implied loss of hope, lack of care and relapse; social influences such as relationships between patients and health professionals; and factors such as patient-centred approach and confidence to deprescribe.
- Deprescribing needs adequate explanatory information, shared decision-making, follow-up planning.

### Opportunities

- Nurses, with adequate support and continuing education opportunities are in an ideal position to facilitate deprescribing discussions.
- Guidelines could standardise the deprescribing process.
- The deprescribing concept should be introduced at an earlier stage to health professionals, patients, carers, families.



*Deprescribing in palliative care can prevent unwanted adverse effects and improve quality of life.*



# Deprescribing and other chronic disease management issues

## Promoting rational use of NSAIDs and steroids through proactive hospital-based and community-based surveillance systems in Chiang Mai, Thailand

*Chunyanut Chompukeaw, Thailand (18)*

- 402 patients hospitalised with gastrointestinal bleeding, Cushing's syndrome, and acute kidney injury were investigated and 14 were taking NSAIDs and/or steroids.
- The hospital pharmacist recorded current medications on the first day of admission and sent the data to ADR-monitoring pharmacist for patients taking NSAIDs or steroids. The ADR-monitoring pharmacist reported the adverse events to Health Product Vigilance Center.
- Primary care pharmacists conducted home visits or telephone consults (telepharmacy) for patients who lived in Mae Rim and Mueang District, and sent data to TaWai For Health, consumer protection network.

### Opportunity

- Hospital-based and community-based surveillance systems help to identify problems, increase awareness and prevent NSAIDs and steroids use problems.



*Pharmacists have an important role in providing hospital- and community-based surveillance systems for adverse medicine events.*

# Deprescribing and other chronic disease management issues

## Development and feasibility of the physician-pharmacist partnership intervention to deprescribe medications (PPPi-DM) among older people in primary care

*Pauline Lai, Malaysia (54)*

- A physician-pharmacist partnership intervention to deprescribe medications (PPPi-DM) was developed drawing on qualitative research and systematic review.
- The 5-step patient-centred deprescribing process included: (1) patient selection; (2) identifying potentially inappropriate medication (PIM); (3) determining if medication can be ceased, and prioritising; (4) planning and initiating withdrawal; and (5) monitoring, support and documentation.
- Feasibility in a primary care clinic was assessed. Out of 1232 screened prescriptions, 50 potential patients were identified, 28 were reviewed by pharmacist, 20 PIM cases completed and 14 PIMs deprescribed. Most were antiplatelet agents.
- Doctors were receptive to deprescribing, however some trainees were hesitant if the medication was prescribed by another specialist and with time pressures.
- Patients agreed to deprescribe their medication when suggested by the doctor.

### Opportunity

- A physician-pharmacist deprescribing process is feasible in primary care clinic in a tertiary medical centre.



*A partnership approach with prescribers and pharmacists is need to support deprescribing.*

# Deprescribing and other chronic disease management issues

## Polypharmacy and the occurrence of potential drug interactions in geriatric patients with COVID-19 in Karawang General Regional Hospital, Indonesia

*Reise Manninda, Indonesia (60)*

- Geriatric patients with COVID-19 infection and comorbid conditions may be on multiple medicines with high potential for drug interactions. The more medicines used the greater the possibility of adverse drug reactions and drug interactions.
- A cross-sectional retrospective prescription chart review of 182 geriatric patients at an outpatient pharmacy department of a regional hospital found a significant relationship between the level of polypharmacy and the incidence of potential drug interactions.
- 764 potential drug interactions were experienced by 148 (81%) patients.

### Opportunity

- Patients with COVID-19 infection require review of their medicines to avoid unnecessary potential drug interactions.



*The more medicines used the greater the possibility of adverse drug reactions and drug interactions.*

# Learning from each other

## Session summary

**Chair:** Frances Lois Ucab Ngo; **Discussant:** Subhash Mandal

### Lessons

- Reporting adverse events for the use of cannabis is essential to support patient and community safety.
- Encouraging regular drug utilisation review studies across a range of medicines in a range of healthcare settings is important to improve medicine use.
- Pharmacists have an important role in providing counselling and ongoing support for patients using topical corticosteroids.

### Opportunities

- Promote the importance of monitoring and reporting adverse events via national surveillance tools.
- Reviewing drug utilisation review studies can help improve methods and intervention strategies.
- Pharmacists with adequate training and counselling resources can support patients use topical corticosteroids effectively.



*RDU requires ongoing monitoring, review and re-evaluation of the systems and processes that underpin it.*



# Learning from each other

## Analyses of adverse cannabis-related events reported in the TaWai for health web application

*Pitchaya Nualdaisri, Thailand (111)*

- The TaWai for Health web application has been developed as a proactive surveillance tool to report safety information related to the use of medicine and healthcare products. It is used to record adverse drug reactions, misleading advertisements and suspect health products.
- Cannabis (*Cannabis sativa* L.) can legally be used as herbal medicine and health products in Thailand. However, data on cannabis-related adverse events in Thailand are relatively limited. The Ministry of Public Health, therefore, still requires spontaneous reports regularly via various tools.
- Reports between September 2021 and February 2023 were analysed and identified 26 adverse event reports for cannabis.
- Seven cases reported unconsciousness, dizziness, and anxiety. Cannabis-mixed in herbal medicines were intended to be used to reduce pain, promote sleep, and increase appetite.
- 15 reports were adverse events caused by unregistered products such as fresh or dry leaves or brownies, intended to be consumed for fun, euphoria or accidentally.

### Opportunity

- Promote the continuous and regular adverse event monitoring and highlight that reporting is important for patients and the community.



*Adverse event reporting is an essential part of rational drug use.*

# Learning from each other

## Studies on drug utilisation and rational drug use during the last decade in Nepal

*Nisha Jha, Nepal (31)*

- Ensuring rational drug use requires ongoing evaluation of drug prescribing, dispensing, and use by patients. A literature review of drug utilisation studies published in Nepal between 2013-2023 identified 45 studies.
- The results indicated that studies were concentrated in particular provinces, and facilities from the medical college and teaching hospitals were the most common authors, followed by clinicians and pharmacists.
- Prescription audits were conducted in medical, gynaecology/obstetrics, orthopaedic, ophthalmology and ENT departments.
- Primary health care centres and private hospitals were included in study sites and WHO core drug use indicators were used. Studies varied from 1 month to 1 year.
- No studies described interventions used and very few mentioned strengths and challenges of the studies.

### Opportunity

- There is a need to extend the range and quality of drug utilisation studies and implement them in different healthcare settings.
- Generic prescribing and national essential medicines lists should be encouraged while discouraging overuse of antibiotics and polypharmacy.



*Measuring and monitoring drug use is a foundation for rational drug use.*

# Learning from each other

## Topical corticosteroid counselling among Malaysian community pharmacists: A qualitative cross-sectional study

*Pathiyil Ravi Shankar, Malaysia (126)*

- Topical corticosteroids (TCS) are commonly available in community pharmacies and used in skin conditions like atopic dermatitis and psoriasis among others. Problems including overuse, use of potent steroids and steroid phobia have been identified.
- A study was conducted to understand community pharmacists' views regarding factors that influenced their counselling about TCS, challenges, problems, the counselling process and shared care with other health professionals.
- Seven pharmacists were interviewed following a questionnaire study.
- Challenges for counselling included lack of privacy in the pharmacy and time, limited counselling resources and language barriers. Steroid phobia was a problem and seen more commonly in parents of young children and young patients.
- Pharmacists indicated they lacked knowledge about some skin conditions and suggested training courses to strengthen the quality of counselling.

### Opportunity

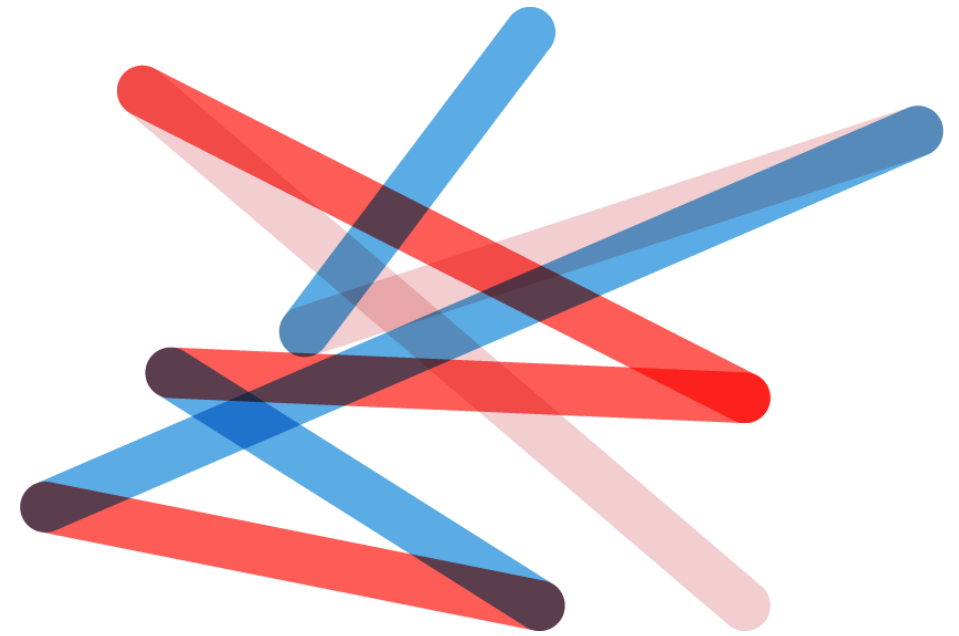
- Additional training and counselling resources will enable pharmacists to better support patients using TCS.



*Well trained pharmacists are in a good position to support patients use topical corticosteroids effectively.*

DAY 3  
Monday 30 October 2023

To the future



**CONFERENCE PROCEEDINGS**



# Identifying medicines problems and innovating for solutions

## Medicalisation of society and how it influences medicines use by patients

*Luechai Sringernyuang, Thailand (163)*

- Medicalisation is the process in which 'nonmedical problems' become defined and treated as 'medical problems'.
- Medicines used for self-care are making people's lives enormously 'pharmaceuticalised', especially where formal health services and access to essential medicines are poor.
- The abnormalising of normal life events results in an increase in false health demand, and a decrease in thresholds of daily discomforts. Medicines become the centre of healthcare endeavors. The demands of work and life are creating pressure on individuals to cope in challenging circumstances and reaching for a medical fix. For example:
  - People working at night, using stimulants to keep working and sleeping pills to sleep during the day. Depression follows.
  - Staff working in a busy and demanding hospital clinic using antidepressants to help cope.
  - Older grandparents looking after grandchildren taking health supplements or medicines given to them by the parents as a token of gratitude – ya luk ka tan yoo – an expression of filial piety with medicine a medium of care and thankfulness.
  - Farmers having to work harder and faster to compete and make ends meet, looking for a boost through medicines.
  - Commodification of health drives medicalisation. Can we commodify non-medicine alternatives?

### Opportunities

- ISiUM can play a role improving understanding and awareness about medicalisation.
- Social prescribing provides an alternative approach to prescribing medicines.



*What is life? What is health? What needs to be fixed?*

## Thai RDU: A tool designed for processing indicators of rational drug use from a hospital information system

Verayuth Lertnattee, Thailand (55)

- Centralised data sources are not always available in a timely or accessible manner. Developing a tool that can process indicators for RDU hospital needs in a timely manner required utilising data from local hospitals as the primary data source.
- A study of the database structure of hospital systems commonly used in Thai hospitals was followed by the development of a tool to directly connect to hospital databases.
- The 'ThaiRDU' tool has the capability to calculate RDU hospital indicators in real time. It produces comparable data to the centralised data source with the advantage of less error due to data conversion.

### Opportunity

- The use of local data from the hospital information system allows health care providers to continuously adjust and optimise medication use and ultimately improve rational drug use in a timely manner.



*Local data sources can provide accurate and timely information to adjust and optimise medication usage.*

# ISIUM voices: Diverse challenges, innovative solutions

## Session summary

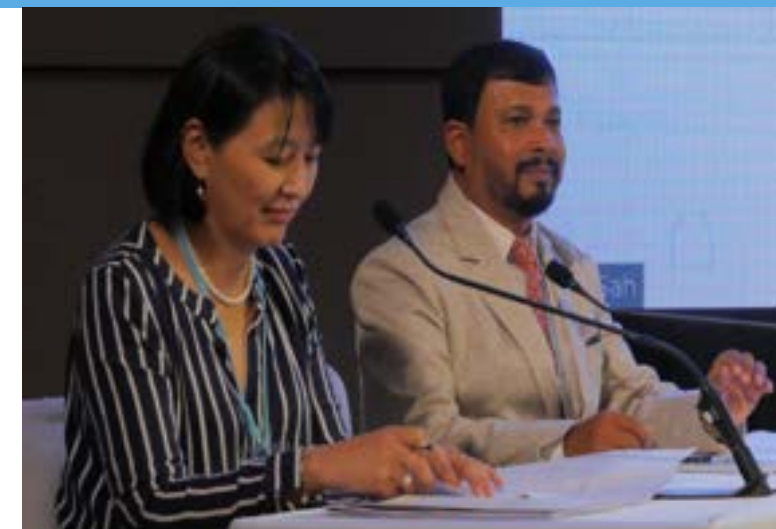
**Chair:** *Kadir Alam, Nepal*; **Discussant:** *Zuzaan Zulzaga, Mongolia*

### Lessons

- There is evidence and consensus supporting the 12 core components for RDU advocated by WHO.
- The more core RDU components implemented in a country, the better the use of medicines.
- A multidisciplinary approach is important for successful management of complex infections and could be effectively applied to the management of non-communicable diseases.
- Online expert support is an effective and sustainable way to for mentoring and supporting local champions.
- There is a challenge in developing indicators that are good at monitoring specific practices.
- Antimicrobials account for a high proportion of all ADRs including serious ADRs.
- Preventable medication errors are common in hospital patients and an important cause of patient harm.
- National policies, such as China's National Reimbursement Drug Price Negotiation (NRDPN) can reduce prices and patient financial burden and improve the accessibility of innovative medicines.

### Opportunities

- A follow-up to the WHA resolution 60.16 (2007) urging Member States to set up national programs, monitor use, and implement policies.
- RDU clinical indicators be used to determine a national performance baseline and monitor and evaluate strategies and policies at the national level.
- Policymakers should use collaborative approaches to develop and improve policyi to improve financial protection and equal opportunities in access to medicine.



*ISIUM provides the opportunity to learn and build from others to develop successful RDU initiatives.*

# ISIUM voices: Diverse challenges, innovative solutions

## Twenty years of promoting rational use of medicines: From expert opinion to evidence

*Kathleen Holloway, United Kingdom (27)*

- In 2002, 12 core RDU components were advocated based on global expert opinion and remain WHO recommendations. What is the evidence for these components?
- Efforts to promote RUM in LMIC were reviewed: outcomes of conferences, key research, WHO documents, publications, and reviews over the past 25 years.
- All components were associated with better RUM: (1) dedicated national RUM body; (2) standard treatment guidelines; (3) essential medicines lists; (4) drugs and therapeutics committees in districts and hospitals; (5) health worker training; (6) supervision, audit and feedback; (7) training and supervision; (8) continuing in-service medical education; (9) public education about medicines; (10) avoidance of perverse financial incentives; (11) appropriate and enforced regulation; (12) adequate resourcing to ensure availability of medicines and staff.
- There was a demonstrated relationship between the number of core RDU components implemented in a country and the better the use of medicines.
- Despite the evidence to support policy, little action is happening and evidence is not being shared.
- Tools are available to monitor medicines use and policy implementation, but a standard methodology, indicators and process needs agreement.

### Opportunities

- Based on the evidence, a follow-up is needed to the WHA resolution 60.16 (2007) which urges Member States to set up national programs, monitor use, and implement policies.
- Countries could be classified as “RDU Countries” or not, depending on whether they are monitoring medicines use and implementing the 12 core strategies to promote RUM.



*The more core RDU strategies are implemented in a country, the better the use of medicines.*



# ISIUM voices: Diverse challenges, innovative solutions

## Successful establishment of hybrid multidisciplinary bloodstream infection management group in Solomon Islands

*Alice Siuna Waneoroa, Solomon Islands (152)*

- Bloodstream infections (BSIs) are a significant cause of mortality but challenging to manage across small island countries without an infectious disease physician. This is compounded by delays in notification, non-standardised approaches to patient care and limited access to appropriate antibiotics.
- A multidisciplinary group was established to improve management of patients with BSIs, build capacity and address AMR.
- The group included physicians, surgeons, infection prevention and control (IPC) nurses, microbiology scientists and pharmacists at the National Referral Hospital with online support from international counterparts.
- Since March 2022, weekly meetings review cases with positive blood cultures and multi-resistant organisms (MROs) and provide advice including on infection prevention control, antimicrobial stewardship and microbiology. There is strong mentoring and focus on information sharing.
- The group has led to better dissemination of information and improved collaboration between teams, with early identification and containment of two MRO outbreaks.
- Audits, policies, and training have been developed and implemented from gaps identified during meetings.

### Opportunities

- A multidisciplinary approach is important for successful management of complex infections and could be effectively applied to the management of non-communicable diseases.
- Online expert support is an effective and sustainable way to provide mentoring and support development of local champions.



*Online expert support can provide mentoring and support development of local AMR champions.*

# ISIUM voices: Diverse challenges, innovative solutions

## Rational drug use country indicators as an approach to monitor and evaluate RDU at the national level

*Penkarn Kanjanarat, Thailand (40)*

- Thailand has Universal Health Coverage however there are ongoing medicine use issues such as illegal drugs sold in groceries and preventable harm from these and other medicines.
- In 2019, the Rational Drug Use Country Policy was implemented nationwide across Thailand.
- Potential Rational Drug Use Country Indicators (RDUCI) were identified, reviewed, selected, rated, validated and tested.
- 24 RDUCIs selected and categorised into: (1) structure/process; (2) output; (3) health outcomes; and (4) impact.
- Specific issues addressed included: antibiotic prescribing; access to drugs for non-communicable diseases; essential drugs list prescribing, high risk drugs and RDU literacy and behaviour.
- RDUCI conceptual framework linked 3 sectors: hospital, community and private.
- Outputs are presented on a dashboard with standardised reports produced from hospital systems.

### Opportunities

- RDUCIs can be used to determine a national performance baseline and monitor and evaluate strategies and policies at the national level.
- There is a challenge in developing indicators that are good at monitoring specific practices.



*RDU country indicators can measure policy performance at the national level and potentially provide international comparisons.*

# ISIUM voices: Diverse challenges, innovative solutions

## Antimicrobial surveillance, pharmacoeconomics and adverse drug reaction monitoring of antimicrobials used in patients in a tertiary care teaching hospital in New Delhi (India): Assessing need for policy formulation

*Vandana Roy, India (118)*

- Inappropriate antimicrobial use contributes to AMR, adverse drug reactions (ADRs) and wastes resources.
- Using inpatient and outpatient records, antimicrobial use in a tertiary care teaching hospital was assessed over several years.
- For inpatients, there was an increase in volume, combinations and patients prescribed antimicrobials. However, the use of parenteral antimicrobials and expenditure decreased.
- For outpatients, antimicrobial encounters decreased for both medicine and surgery departments.
- Antimicrobials accounted for almost half of all ADRs including serious ADRs.

### Opportunity

- The positive changes may reflect awareness raising initiatives. An antimicrobial stewardship program could further improve antimicrobial use.



*Measurement is essential to demonstrate changes and improvements in RDU.*

# ISIUM voices: Diverse challenges, innovative solutions

## Medication error in general medicine department of tertiary care Koshi Zonal Hospital in Nepal

*Anil Kumar Sah, Nepal (121)*

- Around one third of ADRs are preventable and linked to medication errors.
- Out of 188 patients in medical wards, 985 medication errors were found for 650 (38%) drugs prescribed in 177 (94%) patients. Approximately 73% of the errors reached the patients and 32% of the errors were harmful.
- The most common observed errors were administration errors (42%) followed by prescribing errors (37%), transcription error (14%) and monitoring error (7%). Omission of prescribing information (64%) and wrong dosing schedule (34%) were the most common type of prescribing and transcription errors, respectively.
- Omission of dosages administration (57%) to patients was the most common type of administration error.
- Medication errors were highest for alimentary tract drugs (pantoprazole).

### Opportunity

- Medication errors are common in hospital patients and an important cause of patient harm. A high proportion are preventable.



*Preventable medication errors are a significant cause of harm in hospitalised patients.*



# ISIUM voices: Diverse challenges, innovative solutions

## The impact of national volume-based procurement on healthcare expenditure for hypertensive patients in Guangzhou, China

*Zheng Zhu, China (155)*

- Since 2016, the Chinese government has implemented seven rounds of the National Reimbursement Drug Price Negotiation (NRDPN) to improve the accessibility of innovative drugs.
- A systematic review identified 18 studies between 2018 and 2022 (14 interrupted time-series studies and 4 controlled before-after studies).
- The studies indicated the implementation of the NRDPN policy decreased drug prices and improved drug availability and affordability.
- The NRDPN was conducive to narrowing disparities in availability and affordability across regions, hospital levels, and types of health insurance. It was associated with the increased use of successful negotiated drugs and decreased out-of-pocket expenditures.
- Health outcome changes attributed to NRDPN policy were not found.
- NRDPN policy is an effective way to reduce prices and patient financial burden, and improve the accessibility of innovative medicines.
- The policy protects vulnerable populations from inequity in access to medicines. However, there are still challenges to benefiting patients sufficiently and equally.

### Opportunity

- Policymakers should develop a more collaborative policy combination to coordinate with the NRDPN policy, as well as improve financial protection and equal opportunities in access to medicine.



*National purchasing policies can reduce prices and patient financial burden and improve the access to innovative medicines.*

# Conference outcomes and messages

## Key themes emerging through the conference

*Lynn Weekes, International Society to Improve the Use of Medicines*

- Listening to consumers and stakeholders and understanding the interests of all actors.
- Valuing diversity – multiple perspectives, multiple skill sets, multiple disciplines.
- The notion of a just transition of AMR – acknowledging the right to health for future generations, prioritising justice, sustainability, inclusivity and equity in planning for a future with AMR.
- Complex problems and unequal burdens born by different populations and peoples.
- Market segmentation and the power of grass roots engagement.
- RUM makes a difference to people's lives – it is a privilege and a responsibility.
- Recognising the power of language – we need to consider new use of language and concepts.
- Understanding the power of a holistic approach to health literacy – medicines are only a small part.
- Having flexibility to create long term change programs ('cyclones of change').
- An inspiring exemplar, the Thai RDU Country pathway, articulated by Awareness – Administration – Act.
- Medicalisation of life disguising true societal needs and ignores social inequality.



*Rational use of medicines makes a difference to people's lives – it is a privilege and a responsibility.*

# Conference outcomes and messages

## Learnings from each other

*Lynn Weekes, International Society to Improve the Use of Medicines*

- Adopting a competitive marketing mindset and communication methodologies.
- Collaborating – sharing budget, decision making, design, implementation, evaluation.
- Forming coalitions for greater impact.
- Data is never perfect but start with what you have.
- People want tangible and clear messages in language that is meaningful to them.
- Literacy needs not only words, but pictures, infographics, video, and social media.
- Essential medicines lists and treatment guidelines are not always well linked or monitored, but we need ways to make it happen.
- Society often is wanting a quick fix, like instant noodles instead of a healthy meal – satisfying, fast, convenient but not good for you.
- We need to return to the fundamentals of RDU which promote non-drug options first.
- Involving the right people and taking the time to plan.
- Preparation and planning is important.
- Sending results of work to policy and decision makers.



*We need to return to the fundamentals of RDU and promote non-drug options first.*

# Conference outcomes and messages

## Challenges to consider

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### Challenging each other

- Where is AMR transitioning to? How can we ensure a just transition?
- Should we rethink the 'R' in RDU and RUM?
- Complex topics need clear messaging.
- Work in a savvy way with media and make better use of contemporary media channels.
- Should we take a short or long-term view, i.e. 18 months or 18 years?
- Governments and systems change, be flexible to create long term change programs – be fluid, like water.
- Data usability is critical.

### Challenges

- Changing the mindset of society and expectation of what medicines should and can do.
- Commodifying good health.
- Learning from the lessons of history, from other parts of the world and sectors.
- Re-engaging WHO in RDU.

## THE FUTURE TOGETHER



## IMPROVING THE USE OF MEDICINES

#ISIUM2023 #RDU #RDU COUNTRY  
#RDU COMMUNITY #CHIANGMAI #THAILAND

*Be flexible to create long term change programs – be fluid, like water.*



# Conference outcomes and messages

## Opportunities to work together

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- Develop AMR transition targets and steps.
- Explore models for community collaboration including agricultural sectors.
- Use media stories and investigative journalism to highlight issues and raise awareness.
- Increase RUM awareness through tools and campaigns.
- Share data for country comparisons.
- Promote RUM as a global priority with WHO and donors.
- Intercountry collaborations, e.g. on Ya-chud type products.
- Bring together disparate parts of the health system, governments and academia for greater effect.
- Broaden the health professional base in RDU education, especially nurses.
- Develop process and tools to link EML and STGs; ensure access to EML is good.
- Coalition to address the medicalization of society, use the social prescribing movement, call out disease mongering.
- Collaborate across groups and countries to support the global work.
- Develop a process for capturing RDU work in an ongoing way, both successes and failures, to maximise future efforts.



*Develop a process for capturing RDU work – both successes and failures, to maximise future efforts.*

*Lynn Weekes, International Society to Improve the Use of Medicines  
Supat Jiranosornkul, Dean, Faculty of Pharmacy, Chiang Mai University*

Many people contributed to making this conference a reality: the Chiang Mai hosts; the Local Organising Committee, led by Dean Supat Jiranosornkul and supported by Penkarn Kanjanarat and her dedicated team; the well-connected International Program Committee; and our generous sponsors.

The energy, time and support these people gave has been rewarded by the outstanding quality of work that was presented at the conference.

We express our gratitude to the presenters and participants for making this event fun, engaging and inspiring for improving the use of medicines. Special thanks to Nataree Darongsuwan and Janelle Taylor for the many hours of meticulous work and patience that ensured everyone was well supported at all times.

We hope your time in Chiang Mai was enriching and memorable. We look forward to seeing you at the next ISIUM conference.



## International Program Committee

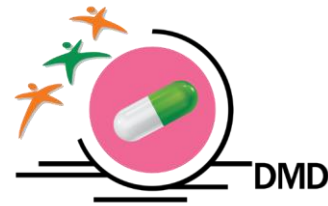
<i>Lynn Weekes</i>	<i>Board member and chair of ISIUM; former CEO of NPS MedicineWise, Australia</i>
<i>Mary Hemming</i>	<i>Board member and company secretary of ISIUM; former CEO of Therapeutic Guidelines Limited, Australia</i>
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<i>Siritree Suttajit and Puckwipa Suwannaprom (Faculty of Pharmacy, Chiang Mai University) were observers on this committee.</i>	

## Local Organising Committee (Thailand)

<i>Supat Jiranusornkul</i>	<i>Dean, Faculty of Pharmacy, Chiang Mai University (Chair)</i>
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## Conference Secretariat

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<i>Mary Hemming</i>
<i>Penkarn Kanjanarat</i>
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# Reflections



*To the future*

# Reflections



*To the future*



# Reflections



*To the future*

# Reflections



*To the future*



# Reflections



*To the future*

# Reflections



*To the future*



# Reflections



*To the future*

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