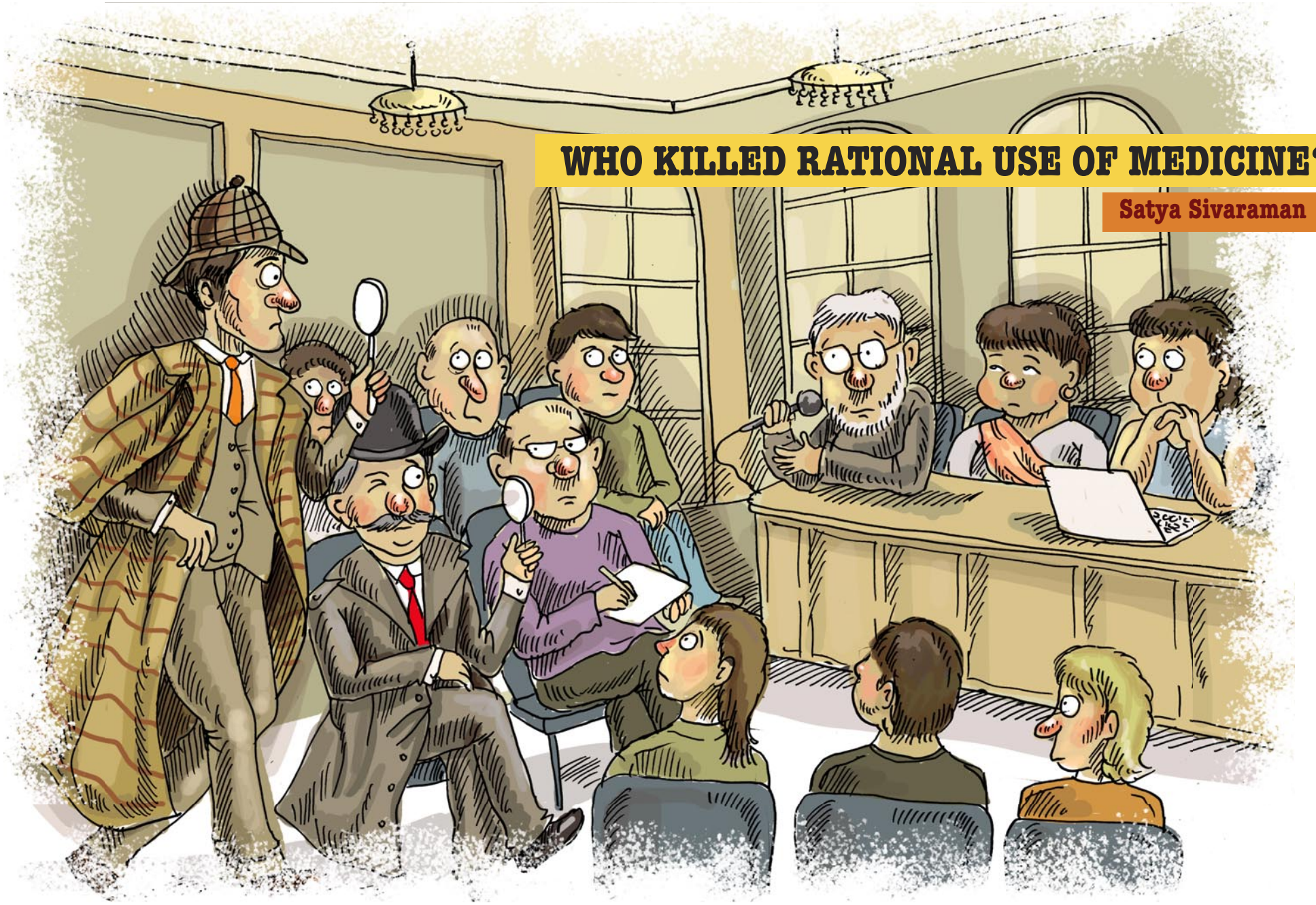
WHO KILLED RATIONAL USE OF MEDICINE?

Satya Sivaraman



ReAct
LATINOAMÉRICA

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ISIUM BANGKOK 2020

International Society to Improve the Use of Medicines (ISIUM)
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THE AUTHOR

Satya Sivaraman is a health communications specialist based in India but with work experience on projects in Southeast Asia and South America. He is currently a communication advisor with ReAct Asia-Pacific, which is part of a global network of universities and organisations that seeks to initiate public and policy action on antibiotic resistance. His work has involved explaining technical issues to wider audiences and understanding resistance in an anthropological and cultural context.

Satya has also produced a variety of educational material on antibiotic resistance including children's story books, reports and documentaries, including a short film titled 'Antibiotic Resistance for Idiots

DEDICATION

This report 'Who Killed Rational Use of Medicine?' is dedicated to the millions of communities around the world, who have struggled in various ways to preserve their health and well-being in the face of misinformation, misguided state policies and the onslaught from profit-hungry commercial interests. It is also dedicated to those brave health professionals, health workers and researchers who have worked with these communities to help them in this struggle by understanding the role of medicines and how to use them safely and effectively.

INTRODUCTION

In late January, 2020, just before the Covid-19 pandemic hit the world with catastrophic impact, the International Society for Improving the Use of Medicines (ISIUM) held it's first international meeting. The main objective was to reinvigorate a movement for rational use of medicines (RUM) and to look more seriously at the issue from people's points of view, hence the title of the meeting 'People Improving the Use of Medicines – What we know and don't know'.

Delegates from around the world gathered in Bangkok, Thailand, a country home to a robust universal health care system and long-standing efforts to improve public health for its entire population. In recent years, the Thai networks of academics, professionals, policy-makers and activists have also been seriously addressing the issue of RUM and the growing problem of antimicrobial resistance.

This was the first opportunity in many years, for people interested in and working towards better use of medicines, to come together and share their work. 175 people from all continents, 34 countries, participated. Resources were few – but ISIUM, the Drug System Monitoring and Development Program based at Chulalongkorn University, and the National Rational Drug Use Subcommittee of the Thai Food and Drug Administration, managed to combine efforts and resources to organize the conference. The focus of the deliberations was on efforts in low and middle income countries and the organizers ensured that a wide representation of RUM workers in Thailand could attend. A small grant from the Therapeutic Guidelines Foundation helped provide scholarships to 6 people from low and middle-income countries to attend.

The Organising Committee of the conference decided that there should be two different kinds of reports of the conference. The first was a technical report* for health professional, research, policy-making and institutional audiences.

The second is this publication, Who Killed Rational Use of Medicines?, a story of the conference written for a non-technical audience interested in health. Journalist and author, Satya Sivaraman, has written the report in the form of a detective story, based on two characters Herlock Sholmes and Dr. Whatsup. While using the device of fiction to engage the reader, the report itself is based entirely on the presentations, debates and discussions that took place at the conference and provides factual insights into why and how improving the use of medicines is an important challenge for society to take up.

ISIUM is delighted to join with ReAct Latin America (RLA) to publish this detective story version of the conference proceedings, that highlight the struggle to contain antimicrobial resistance, establish a scientific and equitable social basis for the prevention, management and treatment of illness, and establish policy and programs to support high quality professional practice for therapeutic decisions independent of commercial influence. It also highlights ways and means for participation of people in all levels of decision-making and knowledge of health and medicines. COVID-19 shows how much we need good systems to select and use needed medicines safely and effectively. We sincerely hope this story will compel more and more people to understand the place of medicines in an increasingly medicalised world and continually search for the answers to the questions, 'What is Health?' and 'What is Medicine?'.

Mary Murray
Chair ISIUM

Arturo Quizhpe
Director, RLA, Chair ISIUM
Conference Organising Committee

*** Available at https://www.isium.org/**

How it all started...

Once upon a time, a group of wise old men and women, who dreamt of a world where everyone got good healthcare and lived in harmony with the entire planet, decided to meet and do something about how people understood and used modern medicine.

What they really wanted to do was to unpack the subject, to make it easy for everyone to understand and improve the use of medicine. Given the complexity of the task though, where could they possibly begin?

"Let us find out what people really know or think about medicine. When in doubt go back to the people" said one of the women.

Another woman said, *"Great idea! We will find out how they live, what their problems are and what they want. And when we have understood all this, we can perhaps improve the way we have been trying to improve the use of medicines"*.

A wise man listening to them said *"Yes, we will walk together with the people, to recover and make visible the wisdom and hidden energy they have. We will recognize that health with dignity and freedom is only possible when people are empowered and participate in it."*

All the others in the group cheered loudly and agreed readily to these splendid ideas. And together they then plotted and plotted and plotted to bring as many people as possible to one place to meet, share ideas, experiences, insights and yes - even stories about how to change the way the world uses medicine.

It was a long and difficult journey. The funds were not enough, the logistics were daunting, prioritizing themes and sub-themes took a lot of discussion but, in the end, they finally made it. And that is how the International Society for Improving the Use of Medicines or ISIUM's Bangkok Conference was born.

Day One:
Setting the Scene

It was the morning of 26th of January 2020. The lobby of the Mandarin Hotel in Bangkok was buzzing with the chatter of old friends meeting after a long time, punctuated by loud laughter and the warmth of kindred souls swirling around in the same space*.

These were the folks who had come from all around the world – 175 people from 34 countries- to attend the ISIUM's first International conference. A board at the entrance of the hotel spelt out the title and theme of the conference: 'People Improving the Use of Medicines: What We Know & Don't Know'.

The local Bangkok organising committee, the staff of Thai Drug System Monitoring and Development Centre (DMDC) and members of the Faculty of Pharmaceutical Sciences, were visible everywhere making sure the world famous flag of Thai hospitality was flying high. Comfortable rooms, superb food, excellent internet access, background documents, stationery, great facilitators to conduct the sessions: they had everything covered.

Unnoticed by all the delegates though, there were two extra participants who had managed to slip into the conference. This was a pair of undercover agents - the famous detective Herlock Sholmes and his friend as well as deputy, Dr Whatsup. What were they doing here at a meeting of serious academics, health professionals, community mobilisers and researchers? What mysterious crime could they be possibly trying to solve?

Well, unknown to most members of the conference organising committee, a few ISIUM Board members (the most wicked amongst them) had recruited Sholmes and Whatsup to spy on the proceedings and send in a secret report.

***Social distancing was still a very distant concept in those days.**

More than half of all medicines are not prescribed properly, they said, and many more used wrongly, or when not needed, causing serious side effects and, in the case of antibiotic resistance, antibiotics were failing to cure infections. Their mandate was to find out who or what is responsible for irresponsible use of medicines, which was resulting in needless deaths, ailments and rising costs for both health systems and patients.

Rational use of drugs requires that doctors prescribe medicines only when very essential and in the right dosage to patients, who in turn are supposed to adhere to the instructions. Simple as it sounds, the matter was actually quite complex – with vast amounts of very critically important medicines being misused or abused routinely. There was enough research and evidence to show the benefits of rational use of medicine but no one fully understood why this was not used by health practitioners, managers or patients themselves.

In order to get to the answer Sholmes and Whatsup would have to attend every session of the conference, the plenaries, workshops, oral presentations, poster sessions, ... and even eavesdrop on delegates gossiping! It was a tough assignment but the detective duo had survived much worse in the past – like full day seminars with speeches so boring that even the speakers fell asleep mid-way!

This conference looked much more lively in contrast, thought Sholmes to himself, adjusting his hat, while observing the participants from a distance. Funnily enough, no sooner had this very comforting thought struck him, that he actually dozed off. The cool ambience of the hotel air conditioning had overwhelmed his normally alert senses.

It was Dr Whatsup who woke Sholmes up with a little nudge, *'Pssst, how on Earth are we going to find any answers if you keep snoozing like this?"*. The opening session of the conference was underway and they both snuck into the auditorium, trying not to be too conspicuous, which was difficult, especially because of Sholmes' insistence on wearing a hat and long cape all the time, even while in sultry Bangkok.

The agenda

There was a video message from the Chairman of the International Conference Organising Committee being played.

"Communities in many parts of the world are mobilizing in search of dignity, liberty, freedom and empowerment. Their participation is essential to solve the current crisis of health systems and for that to happen there is a need to redistribute power" said the Chairman, who was very wise and spoke like a poet.

"These are the clues we have been looking for", said Sholmes.

"How do you know?" asked the ever sceptical Whatsup.

"Elementary, my dear Whatsup. Listen to him carefully. What he is saying is that before you can get answers to the big questions, about why people use medicines the way they do, you have to find out what they really think is 'rational', how they perceive 'health' and what 'medicine' means to them".

Dr Whatsup became pensive. No one had taught him to ask very simple and basic questions while at medical school, which had instead been full of dry, detailed, technical stuff. This was the first time he was forced to think of the various assumptions (many of them wrong) made by members of his white-coated tribe, when they got upset with patients for not following instructions on taking their medicines properly.

The first assumption, to begin with, was that the doctor had indeed prescribed the right medicine at the right dosage. The second was that the patient had understood why that medicine was being prescribed and how to use it. A third one, in many low income contexts, was that the patient could actually afford to purchase the medicine. A fourth assumption was that, even if the medicine was the right one, the patient would be fine dealing with some of its nasty side-effects. This list could go on and on.

The chasm between what the medical world assumed and what patients really wanted was very wide and bridging it would be a tough job. *"And these folks at ISIUM are brave or crazy enough to even try"* Whatsup muttered to himself.

"Shhh! Listen carefully!" Sholmes said, pointing to the speaker on the stage. It was a former Minister of Health of Thailand and he was saying ...

"We want to change the world, but we do not know ourselves clearly"

Whatsup thought to himself, *"We medical professionals rarely reflect on what we do and we don't know our patients very well either'*. He suddenly realized that this conference was really special. It had hardly begun and was already forcing him to rethink many fundamental ideas he had held about what the world of medicine was all about.

Like the idea of 'rational' use of drugs for example. The term 'rational' sounds straightforward but like common sense it was not very common. The issue of rational use of medicines has been an international concern at least since the mid-eighties and was well publicised worldwide.

And yet, as a leading expert on the subject said in her address to the delegates in the opening session of the conference, the evidence was overwhelming, that even supposedly very rational, scientifically trained, experienced medical professionals, in large numbers, were flouting guidelines and even basic principles of prescribing medicines.

The reasons for such prescribing behaviour were diverse, she pointed out, quoting doctors from many countries who blamed it on everything from the lack of diagnostic equipment, logistical difficulties, concerns regarding various costs and so on. Self-medication too was explained by patients as being due to lack of access to good doctors and/or the healthcare system.

Winding up, she noted that many efforts have been made to improve medicines use, many of them through small projects for a limited time, but it has been difficult to sustain them in the long term. Medicines policies im-

plemented nationally can be very effective in promoting rational use but many governments are not implementing them.

"Hmm...one crime, many motives", said Sholmes shaking his head. *"This is not an ordinary mystery, there are too many culprits involved".*

"Doctors, hospital managements, pharma companies, regulators, policy makers and even patients themselves- all are complicit in this crime of irrational drug use," said Whatsup. Adding to the complexity was the problem of substandard or falsified medicines, which negated many of the benefits of modern health care.

However, as Sholmes and Whatsup were both about to find out, the situation was not completely bleak either. There were a number of countries adopting the required policies and trying their best to ensure medicines were used carefully, safely and only when really needed.

Some trailblazers

Thailand for example was systematically moving towards declaring itself a 'Rational Drug Use' country sometime in the near future. What that label meant was Thailand would, through various mechanisms, ensure pharma manufacturers, healthcare facilities, professionals and the general public followed World Health Organization guidelines.

Normally Sholmes would have been quite sceptical of such a claim, but in the case of Thailand – a middle-income country that had one of the best universal healthcare systems in Asia- he was willing to give it the benefit of doubt. Thailand had a very committed leadership when it came to public health, very dedicated health workers and a strong civil society movement, that enabled the public to have a say in both policy formulation and implementation.

In another part of the world, Cuba, renowned for its high investments in healthcare, was setting up a system of monitoring medicine prescriptions at every level and promoting rational use by involving both health professionals and the people.

Kazhakhstan had set up a National Medical Formulary to optimize the rational use of medicines and provide an educational resource for trainees and established practitioners. The role of pharmacists in implementing rational drug use, in particular, was being given a lot of emphasis.

Starting in the 1980s, thanks to activism by consumer groups, Australia had set up a robust system to ensure quality use of medicines, helped by the adoption of a National Medicines Policy in 2000. This had involved much hard work in preparing guidelines, lots of training work, involving consumers in decision-making, public education and regular monitoring with a process to learn from feedback. In the end it was all very worth it.

"It can't be all that easy. I mean, you announce some good policies in your capital city and everyone around the country obeys like sheep, to give good outcomes?", said Sholmes, a bit doubtful about how much could be achieved by working solely at the national level. The devil after all, (as the arch-villain Professor Moribund used to say), was in the details, which in turn are at the grassroots.

In Australia, for example, it turned out there were many challenges to translating their wonderful policies into practice. There was still a need to develop a culture of shared decision making in health care, improve individual and community health literacy, ensure information was provided to those from different ethnic backgrounds and provide health access to those without sufficient means.

As one speaker on the universal health care system in Indonesia explained, there was high political commitment to achieve universal health care, but at the provincial and local levels the system was plagued by many problems.

Among these were inefficiency of health care facilities, underuse of generic drugs, substandard and falsified medicine and an orientation towards more costly hospital based treatment.

In Moldova, the country had a universal medical insurance system to help citizens get access to low-cost healthcare. However, the list of medicines eligible for reimbursement to patients has been riddled with problems, including lack of availability, unsafe drugs and lack of transparency in their selection.

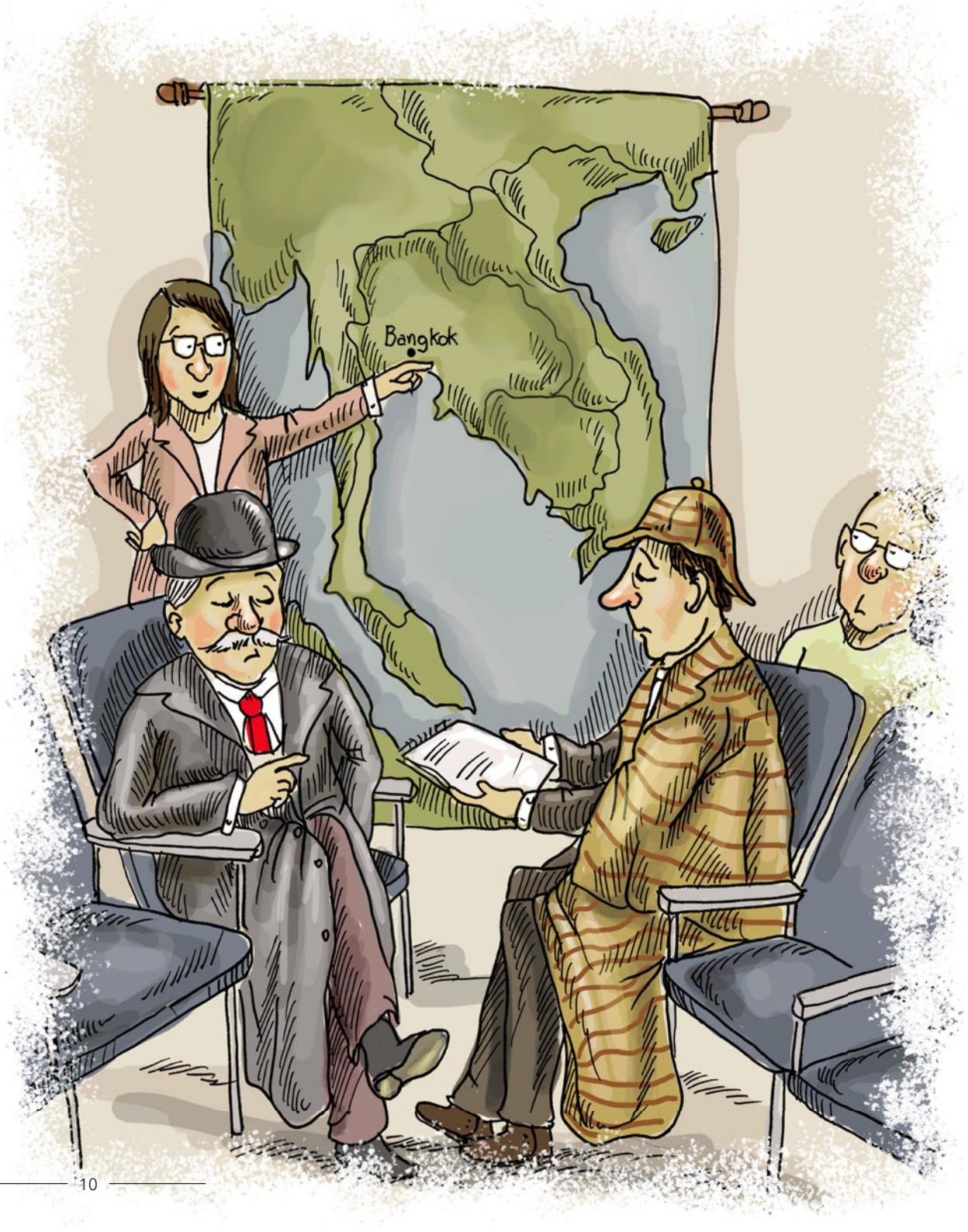
In sub-Saharan Africa, where between 40 – 60% of health care is provided by the faith-based sector, the Ecumenical Pharmaceutical Network was doing stellar work providing pharmaceutical services. Motivated by justice and compassion EPN not only helped keep costs of drugs low but had an extensive program for ensuring their rational use, especially to prevent antimicrobial resistance. Operating since 1981, EPN provided quality-assured medicines to communities in rural, hard to reach areas where government institutions are often lacking.

"Communities? Why are we not hearing more about the role of ordinary folk in dealing with wrong use of medicines? Wasn't that supposed to be one of the main themes?" said Whatsup suddenly.

"Next session, silly. Read the conference program carefully", said Sholmes.

Involving communities

Sure enough, there was a detailed presentation on Thailand's famous Antibiotic Smart Use project, which involved communities from the start to deal



with the problem of antimicrobial resistance (AMR) and had a deep impact on the country's policies.

AMR is about how the very use of antibiotics (and not just the abuse), leads to the selection of resistant bacteria which then become difficult to treat. It is often a complex issue to explain, even to medical professionals, as it involves the interplay of ecological, evolutionary, medical and social factors all at once.

The ASU project, launched in 2006 by a group of researchers with Thailand's Ministry of Public Health, simplified the complex story by focusing on three common ailments- upper respiratory tract infections, especially common cold with sore throat; acute diarrhea, and simple wounds– for which antibiotics are often prescribed, though they are not needed.

The project then mobilized a community in Saraburi province, north of Bangkok, to change social norms that allowed excessive use of antibiotics for these three diseases. Project volunteers, from the community itself, educated the public, provided alternative therapies for cases where antibiotics were not indicated and convinced health professionals in the area to moderate their use. The key to the success of the project, which has been replicated in several countries now, was the fact that the community was treated as an equal partner in campaign and not as a passive recipient of medical wisdom.

The money trail

As the first day of the ISIUM conference came to a close Herlock Sholmes was a bit pensive. The day's discussions had all been fine but there was still something missing – the answer to the first question any detective would ask at the scene of a crime – 'cui bono' or 'who benefits?'

To his amazement, no sooner had he thought of this than the answer was already being spelt out on stage. It was a presentation on 'Medicines and Vested Interests in Society'.

Whatsup was raring to get out of the hotel and go to some restaurant for a drink but Sholmes held him back. 'This is the most important thing you will hear today' he said.

"The opioid crisis was one of the most serious public health crises in recent memory in Canada, leaving 9000 people dead between January 2016 and June 2018. And it was fueled by drug makers flooding the market with opioids, purely for reasons of commercial profit" the speaker said. Commercial interests in medicine, she said was the proverbial elephant in the room that few wanted to recognize.

For achieving quality use of medicine, patients needed access to complete and unbiased evidence on their benefits and harms, avoidance of overdiagnosis and polypharmacy as well as access to affordable care.

The problem for doctors, while deciding which was the best medicine to use was that globally today there was greater funding, running into billions of dollars, for medical research from private than from public sources. The situation was so bad that even research papers published in peer reviewed journals were being ghost-written by the pharma industry.

"The pharma industry is truly disgusting. I have heard enough now. Let us go get something to drink!" said Whatsup.

"No wait! Get me a pen and piece of paper. I want to explain to you the picture emerging from today's discussions while the details are still fresh in my mind" said Sholmes picking up a conference folder with what he wanted inside it.

Soon he had doodled a mind map of the suspects and their likely motives in the slow murder of rational use of medicines:

Policy Makers

Policies driven by vested interests

Patients:

Driven by anxiety, want magical solutions, lack of knowledge

Prescribers:

Not adhering to 'Do no Harm' principle
lured by pharma industry incentives

Rational use of medicine

Pharma Industry

Puts profits above people
Monopolize the market

Pharmacists:

Sales more important than safety
Take on role of Prescribers

Academics:

Lured by pharma industry incentives
Boxed into narrow specialization

Journalists:

Lack of understanding
Feed people's desire for magical solutions
Media industry driven by commercial priorities

As the two walked off into the sunset, in search of the pier closest to the conference venue, Whatsup added, a bit worriedly *"Do you realize, from a strictly medical perspective, at our age, neither of us should be indulging in what we are about to?"*

"If everyone were to strictly follow the doctor's orders, there would be no joy left in the world", said Sholmes.

Day Two:
Bottom-up approaches from communities

"Walking on your own feet, building the well-being of everyone, promoting autonomy, health, and human dignity: these are the essence of social empowerment. People's health is determined much more by politics and the concentration of power than by medical care and prevention."

The ISIUM international conference chairman – the wise man who spoke like a poet - was back again on video with a keynote address to the conference delegates. This time his focus was the way all of life had been medicalized, with medicine invading all aspects of society. Normal situations, part of the natural cycles of life and ecology had become pathologies and healthy people were being designated as sick ones.

Whatsup's thoughts strayed to the previous evening, which had been very interesting – dinner at a restaurant on Bangkok's Chao Phraya river, serving the most delicious food they had tasted for a long, long time. (The culinary happiness was somewhat diminished by gastronomical consequences the next morning but overall the experience was exquisite.) The entire view of Bangkok by the river, the people gathered there, the evocation of the city's history, in which the river played an important role, even the little wet market close to the pier had given both of them much food for thought.

One simple realization was that almost everyone does what they do, because they have some kind of rationale for it in their minds. People do certain things for earning a livelihood, to help others or just for fun, acting as they do through tradition, training or independent thinking. There are as many rationalities as there are people perhaps and nobody had the right to tell them they are deficient in any way, sick or in need of 'treatment' unless they themselves choose to ask for help. The expectation of some experts, that 'non-experts' should just follow orders – 'for their own good' - is both humiliating and counterproductive.

A medicalized world

As the Chairman said in his address, medical professionals were nowadays involved in addressing 'problems' such as beauty, grief, adolescence, old age, menopause, sadness, hair loss, tiredness. Personal, family and existential problems, the poor school performance of children – all were now in the hands of health professionals, in the desire for technological solutions, or 'magic bullets'. Death itself had lost its human dimension.

Among the consequences of medicalization were an increasing demand for health services, costs of care, frustration of staff, hospital-induced illness, overdiagnosis, excessive medication, and deterioration in the quality of care.

Worst of all, people had lost control over their own lives, becoming dependent on technology and use of medicines, which in turn was linked to the power of the pharmaceutical industry. Professionals were being trained in medical colleges to become accomplices in this unjust power structure, taking them very far away from the first principle of medicine, which was 'Do No

Harm' - highlighting the ethical imperative of putting the interests of the patient above all other concerns.

Part of the reason why rational use of medicine had come into focus was simply because medicine itself has become so ubiquitous in people's lives. While in theory medicine is supposed to be curative and beneficial, it can turn into poison if given in the wrong dosage, combinations or to people who don't need it at all. There was no need really, to portray every human problem as something that needed treatment with these magic pills called medicines.

So what was the way out of this mess – where the world of health and medicine had been hijacked by powerful vested interests seeking profits from the day-to-day miseries of ordinary folks? Could communities – grandmothers, grandfathers, children, women - do something to take back the power over their lives?

Role of communities

As Sholmes and Whatsup pondered over these vexing questions, it turned out communities indeed could do a few things despite all the challenges. The morning session of the conference on the second day was dedicated to telling the stories of how ordinary people could be mobilized to take control over health problems in their midst in various ways.

First was a detailed presentation by a leading member of the community group in Saraburi, Thailand, which had helped pilot the Antibiotic Smart Use project, described also on the first day. She had been associated with the campaign right from the start and her patience, empathy and gentle wisdom were key reasons why members of her community were willing to participate in large numbers and make it a resounding success.

What the ASU project showed was that technical and professional knowledge about rational use of medicine, could make an impact only in collaboration with communities, which had the skills to communicate, motivate and mobilise their members. Understanding and winning the trust of people was essential to change health-related practices in local settings.

"At last a young person on the stage! About time the youth got into action", said Sholmes suddenly, pointing to the next speaker who was a pharmacist and former student mobiliser from Tanzania. He described how, starting with community engagement and small activities during his student days, he was able to initiate a national campaign on antimicrobial resistance in colleges all over the country.

This was a good example of how somebody passionate about the issue could inspire others too– in this case fellow pharmacy students. The young student leader had mobilized 122 of his fellow students to become volunteer 'Ambassadors for AMR', and visit secondary schools near their own homes during the University holidays.

They had prepared illustrations, pictures and fliers to help them talk with school children. They also managed to run programs in 20 radio stations and also some TV shows on AMR. They backed this up with articles in newspapers and on social media. When the opportunity arose they also were able to reach out to community gatherings.

Despite having no funds at all and using money from their own pockets, the student network had grown nationally and was very successful in involving 114 schools across 23 districts of Tanzania to understand the issue of antimicrobial resistance. In addition to the targeted students, teachers and community leaders, the network also used radio and TV programs to reach at least 6m people.

"That was an amazing story. I think not just the youth but children too should have a role to play in deciding how we all approach health and medicine" said Whatsup. "Children are far wiser than they are assumed to be and with some help can be powerful agents of change".

His wish came true almost instantly with a story by a schoolteacher-cum-health activist from Argentina about Thiago, a little boy, who was overjoyed when the carrot mayonnaise he learnt to make in her class was appreciated by his grandmother. He was part of a unique project she was running to teach school children about the microbial world through the practice of gardening.

"Maybe Thiago does not know about logical frameworks, the impact of a project, or the percentages and statistics that are sometimes pursued to measure the "success" of a project……but….this child summed up the whole concept of experiential, healthy and true learning that day" she told the audience, while showing them a video presentation of her project. The little boy had embodied the idea of learning, through the joy and flowering of his self-confidence, as he related how his family had responded to his sharing of his practical knowledge from the school project.

Food as medicine

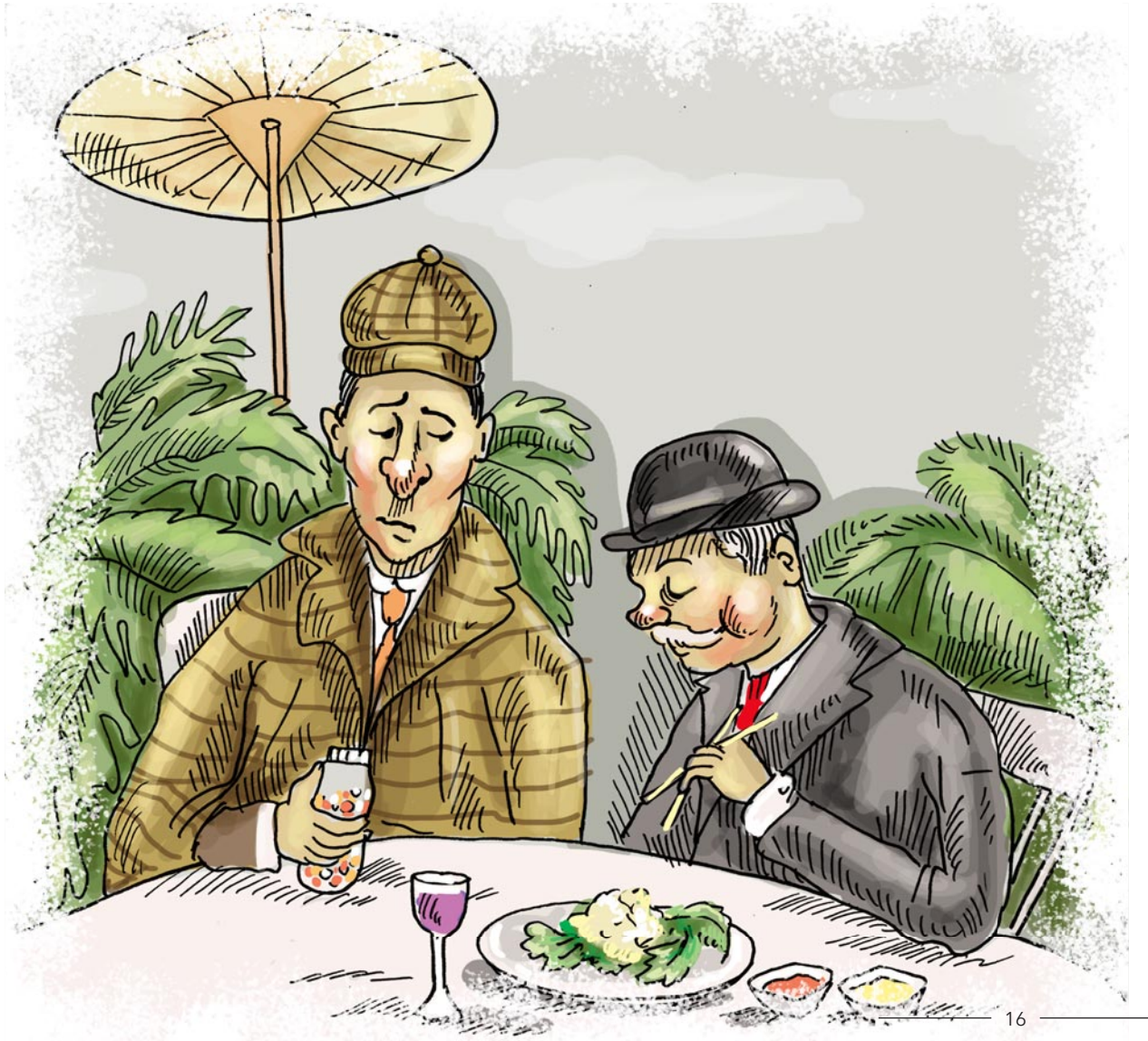
The "School Garden and Microbial World: Healthy nutrition" project that began in 2018 taught the children to sow, take care of gardens and harvest, as well as share healthy food recipes. As part of the project the children also learnt how to reduce the consumption of medications and antibiotics by understanding the concept of 'food as medicine'. They in turn influenced the health awareness of their parents and grandparents along with their friends.

"Yes, food has been the real medicine for most people around the world for centuries but whose role in health has been highly neglected in our times. These days it is pills and tablets that are consumed like food," said Whatsup, remembering the delicious dinner from the previous night.

Like in many cuisines around the world, the Thais used a wide range of herbs and spices in their cooking – ginger, turmeric, garlic, galangal, kaffir lime leaves, coriander, lime, pepper. Each one of these came with its own medicinal properties and had traditionally helped keep people healthy, much before the advent of modern medicine.

"Why do you think the concept of food as medicine, which used to be popular for centuries, has gone completely off the table?" Whatsup asked Sholmes.

"Again, follow the motives, Whatsup. There is a huge lobby that wants to push packaged pills, potions and procedures as the only solution to all health problems. There is a lot of money being made by them as people get dependent on their medicines", said Sholmes. The propaganda machinery of the modern pharma and medical industries makes it difficult for people to make informed choices about both modern and traditional approaches of medicine.



Consumer rights

An interesting story of how it was possible to successfully challenge the might of the pharma industry was recounted by the next speaker, based on her experience as a consumer health activist in Australia.

Asking questions in public about inappropriate medicine use, she said, had initially provoked a hostile reaction from powerful vested interests, that included not just the pharma industry but also health professionals, drug specialists and pharmacists. In other words, the entire medical establishment.

This convinced her that the questions she was asking were correct. By insisting consumers be part of any decisions taken regarding medicines, she then managed to turn the conversation with the authorities' upside down. Finally, when she and her colleagues produced a report that showed the research and data to support their case, they were invited to take a seat at the table and be a part of the process to create a policy that helped people improve the use of medicines. What this showed was that, if you put together detailed arguments with evidence and persisted long enough, you would succeed in achieving your goals.

Modern vs traditional

During the tea break Sholmes and Whatsup decided to circulate a bit among the delegates. This would give them a better insight into how different people approached the issue of rational use. The participants were from across the globe, from all five continents, representing a great diversity of health systems, national cultures, local settings and approaches to life itself.

A majority, however, were people trained in or working with modern medicine – general physicians, pediatricians, epidemiologists, pharmacists, health administrators. There were communicators, journalists, health and social activists too.

Sholmes joined a small group of delegates who were having an animated conversation comparing modern medicine with traditional medicine systems.

"Where the essence of modern medicine differs from the traditional systems is its greater ability to discard what cannot be proved to be beneficial and what can be proved harmful,. Traditional systems - while contributing historically to the development of medicine – have not been able to change in the light of new knowledge. They have hung on to assumptions about disease and treatment, many of which may be invalid today", the professor was saying.

"You mean, invalid from a primarily modern medicine point of view?" asked the young lady. "First of all, the methods of modern medicine cannot be used to judge the merits of traditional medicine because their worldviews are quite different. Secondly, modern processes like urbanisation and industrialization have destroyed traditional and indigeneous ways of living everywhere around the world today. So that is like breaking someone's legs deliberately and then accusing them of not being able to walk or run!"

"But modern medicine produces better results when it comes to treating sick patients, which is not true of traditional or alternative systems" said the doctor.

"Results depend on what you want to measure. While narrow individual outcomes are sometimes better with modern medical procedures, they impose a high cost on everyone else. Like in the case of antibiotics, which are very effective for individuals with infections but result in disturbing the overall microbial ecosystem, which is detrimental to everyone else" said the lady, passionately arguing her point.

Sholmes was impressed with the discussion, which despite being somewhat inconclusive went to the heart of the problem of ensuring rational use of medicine. It was ultimately somewhere linked to making a choice of approaches that either prioritised the health needs of individuals and small elite groups or that of the larger human collective.

In other words, it was a matter of whether the medical system was a truly democratic one or something run by small, special interest groups, such as pharmaceutical industry lobbies, medical professional bodies and funding agencies.

The Workshops

It was time for the conference workshops to begin. The overarching theme was 'Empowering People to Improve the Use of Medicines'. Sholmes and Whatsup decided to break up and weave in and out of the workshops to get a good idea of what was being said and debated.

The workshops were the real meat of the entire three-day conference, where presentations were designed to bring out learnings about empowerment and local contexts.

What Sholmes and Whatsup were impressed by was the very fact that there were so many highly motivated health researchers, activists, professionals who were trying their best to understand health and medicine differently, specifically from a bottom-up, people-focused perspective.

Despite having very few resources on hand, they were trying to engage with local communities to bring out their problems or figure out what kind of processes work best with them. And doing this, as much as possible, with methods or evidence acceptable to the larger community of professional researchers worldwide.

The usual demand of the scientific community was for evidence collected 'objectively', which was usually interpreted as 'standing at a distance' from what was being studied. Some researchers were pioneering methods that could match the new paradigm in knowledge production, which called for greater participation of the subject being studied in the final output of research.

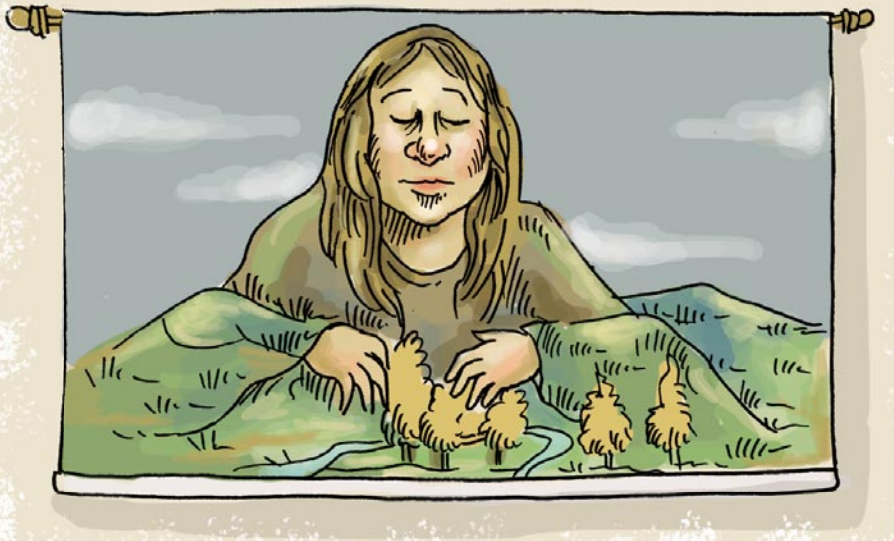
Whatsup found himself in a small conference room with a couple of dozen delegates. The air conditioning was freezing – a clear case of irrational use of energy. He wondered how in a world where nothing was particularly very reasonable everyone was expected to practice something called 'rational use of medicine'. Many things - the way we use energy, other resources, the inequities of power, gender, race, knowledge – everything had to change before the way we use medicine also improved, he thought.

The first presentation was on the theme of achieving quality use of medicines by focusing on the patient and not the medicines themselves. Discussing the experience of rising opioid use in Australia, resulting in the deaths of many such users, the talk highlighted the primacy of the consumer.

A complex set of factors were involved in driving patients with chronic non-cancer pain to use opioids. Social learning theory, which says that people learn by observing and imitating others, could help us understand both the complex drivers of pain and provide a way to respond.

What is medicine? What is health?

Speaking on the theme of 'what is medicine, what is health?', the next speaker said that the biomedical model is failing but an alternative model is yet to fully emerge. Health has to do with the condition of the human body



but also other things such as food, environment, our sense of well- being and our worldview.

And medicine is not just a substance used to repair the body but it is also about being in harmony with other living beings and the concept of healing. This implies that medicine has to be understood; not just applied to individuals but to the human collective also or even the planet as a whole. In this context it is important to consider the concept of planetary health and the idea of 'Mother Earth', professed by indigenous people, which emphasizes relation to health of the planet as a nurturing, care-giving mother.

"Mother Earth again!" muttered Whatsup to himself. ***What's with these people from Latin America going on and on about the health of the entire planet, when there were not enough resources to look after all human beings?*** Was worth following up on to understand this more closely, he thought.

Listening to the next speaker, Whatsup realized that indigenous folk all over the world thought quite similarly. The presentation on "Are we delivering

sickness care or health care?" pointed out how in the aboriginal languages of Australia there is no separate word for 'health'. Instead life and health is seen as interchangeable terms and the emphasis was more on health of the community than that of the individual. Health is not just the physical wellbeing of the individual but the social, emotional and cultural wellbeing of the entire community and the land around it. This is a whole-of-life view and it includes the cyclical concept of life-death-life.

Interestingly, in aboriginal culture asking questions was considered impolite and instead the story telling format was preferred.

***'Ya-Chud' is a non-prescribed poly-pharmaceutical pack containing several types of drugs, including antibiotics and steroids, which can be purchased over the counter in some parts of Thailand for self-medication.**

"I like that approach, storytelling, it is universally understood and appeals to the emotions. Certainly, more interesting way of engaging people than through boring power point presentations" thought Whatsup. "Even better if one could do this around a campfire somewhere!"

In the discussion that followed it was pointed out that health-seeking behavior and the different choices people made, varied according to local context. Mapping these choices using the ecological model of health was needed. A delegate asked as to how the current medical model could be de-intensified and the health system made to focus on making humans thrive, instead of emphasizing sickness. Could there be a process of dialogue between different concepts of health to figure out the next step forward?

The next speaker presented a research study on the problem of medicine and health products being smuggled along Thailand's borders, in particular corticosteroids. Non-labeled and non-registered drugs were brought in from neighboring countries, where restrictions were fewer, to create ya-chud , which is an assortment of various medicines put into single packets for simultaneous consumption by consumers. Many of these drugs, including herbal medicine, were contaminated with steroids and sold by hawkers and even at local clinics to the general public. This was a completely unscientific and even unethical thing to do of course but since medicines were considered to be a very profitable extension of 'magic', all kinds of crazy practices like this abounded in the real world.

An appeal to include the humanitarian sector in work to improve the use of medicines was made by the following speaker. With 26 million refugees and 41.3 million displaced people living mostly in cities and refugee's camps, establishing effective health services is challenging. Problems in procuring and using quality medicines make it harder to help people deal with the many health challenges they face. This deserves greater attention.

Another presentation on 'Opioid use among Australian nursing home residents from 2014-2019' found opioid prescribing and harm was increasing in Australia. Nursing home residents were high medication users and at high risk of medication related harm. So this showed how even within a health institution, despite guidelines and monitoring mechanisms, it was possible to easily slip into completely irrational use of medicines.

In the following discussion an issue was raised, that while overuse of medicine was a problem, the lack of access to medicine was also a problem in certain contexts. In Thailand for example there was poor access for cancer patients to pain management drugs, while in India- despite considerable domestic production of drugs, a large section of the population could not afford to buy them.

Learning how to learn

While Whatsup absorbed all this rich discussion and insights, Sholmes was in the other workshop titled 'Improving use at local level: Education and empowerment'. Here the presentations were all about using creative techniques and approaches to enable students or communities to learn concepts in medicine and health.

What all the teaching and learning strategies had in common was they were able to bridge the usual gap between instructors and their audience by using role play, games, problem-based learning. In other words, they were able to engage their students through a variety of activities that enabled effective learning.

The first presentation was about teaching rational use of medicine to medical college students using an educational card-based, role-playing game that had been used in the Caribbean, the Pacific Islands and the UK. On evaluation the technique was found to result in a significant increase in knowledge and gave students the feel of a real doctor-patient consultation.

A presentation from Ecuador challenged listeners to think about how to connect RUM to the community. The project empowered medical students to learn about the rational use of antibiotics by directly investigating the social and economic factors that drive antibiotic resistance. Students first verified which antibiotics were freely available for purchase for agribusiness. Next, they went to ask for and buy an antibiotic as a growth promoter in a local vet store – they were sold an antibiotic that is reserved for last resort use. They then documented and questioned the publicity in mass media that encourages the indiscriminate use of antibiotics. The entire teaching process about the pharmacology of antibiotics, using problem-based learning and playful participatory learning such as making games and making memes, awakened the imagination of students. The approach empowered students by putting them at the centre and by learning through doing, they became aware of RUM and were able to solve real world cases using comprehensive strategies.

Evaluation showed students got good grades for the module taught using this method, learning was sustained, and it stimulated a passion and imagination for good use of medicines. It is a low-cost strategy and adaptable – but does take a big-time investment by teachers.

Body = Soil

The next speaker was the same schoolteacher from Argentina who spoke earlier in the morning about how children really learn through their direct experiences. Now she gave a more detailed description of her gardening and microbes project.

Essentially, the project aimed to ensure that children and school teachers discover the microbial world that lives in the school garden, know the importance of its role in the fertility of the soil, its characteristics and diversity, and carry out a teaching and learning process that includes different activities that relate the garden with the care of one's own and community health. This in turn helped them all understand the importance of preventing infectious

diseases, reducing the use of antibiotics and taking a critical look at factors that affect health, such as water, pesticides, pollution and food.

"What a simple and straightforward way to learn about the human body, health and disease - by playing with soil, seeds, sunshine, water and fresh air" thought Sholmes to himself, clapping as the presentation ended. After all, the human body really was quite similar to soil, impacted as it was by the ecological cycles of nutrition, moisture, air, sunshine and lots of microbial activity.

For all their supposed intelligence, at the core, humans are basically made of the same material and have similar metabolism to that of plants and other animals. Like them, humans too are given life and nurtured by elements of our planet, Pachamama or Mother Earth as the indigenous people of the Andean region call it.

So why have these basic insights, about the most important factors determining everyone's health, been completely erased from public consciousness?

'Ah! I shouldn't have to tell myself my favourite line - follow the money trail! It's all about human greed!' said Sholmes to himself, amazed at how easy it was to fool people into believing exactly the opposite of what was true. With a look of disgust on his face, Sholmes left the room to check what was happening in the third workshop next door.

Of pills and profits

Illustrating the role of money in deciding how medicine is marketed and dispensed was a study from Indonesia, part of a project called PINTAR or Protecting Indonesia from the threat of antimicrobial resistance. The researchers, of different ages and genders, approached 166 private drug sellers – mostly community pharmacies and drug stores - in rural and urban Indonesia.

At these stores they pretended to be afflicted by suspected Tuberculosis (TB), Upper Respiratory Tract Infection (URTI), and child diarrhea – all clinical scenarios for which antibiotics are not recommended. Out of the 495 consultations, 342 or 69% resulted in the dispensing of antibiotics without a prescription.

While the researchers themselves did not impute any motives to the drug stores, it was clear to Sholmes that their primary motivation for pushing so much of antibiotics, when it was not medically indicated, must have been their search for income. These were small players of course; the really big guys were global pharma companies, which made far greater amounts of money by pushing drugs that were not required or came with dangerous side-effects, which nobody was properly informed about.

However, needless antibiotic prescriptions were not just always about money alone. Presenting a more complex picture of motives involved, was a study from India of informal providers, who lack formal training but are the main source of health advice in many low and middle-income countries.

To begin with, due to their limited understanding of antibiotics, they viewed these as the most effective therapeutic choice for most illnesses. Not prescribing antibiotics could result in loss of credibility with patients and with that their source of income also. For pharmaceutical companies and antibiotic supply chain stakeholders, informal providers constituted an expanding commercial segment, making them prime targets for aggressive drug marketing.

Ironically, formally trained and qualified doctors mentored informal providers, often in return for patient referrals and were also guilty of over prescribing antibiotics themselves. Finally, regulators fear that restraining informal providers could seriously compromise access to health services by rural populations and therefore tend to overlook their antibiotic use.

The antibiotic conundrum

Another study from Indonesia highlighted the problem of low level of knowledge among patients themselves. Out of 268 respondents, a cumulative 76% of them used antibiotics in last six months, but a majority of respondents, around 75%, incorrectly identified that cold and cough are treatable with antibiotics.

"The issue of antibiotic misuse seems to be at the heart of problems facing rational use of medicine!" Sholmes realized. In other words, if anyone found a solution to the former, a resolution of the latter was assured.

As the conference went into lunch-break, Whatsup rushed back to his room in a tearing hurry. Something from the dinner last night was wreaking havoc on his digestive system. Later in the hotel corridor he ran into one of the delegates from Latin America who, looking at his ashen-face, enquired if all was well. Whatsup put up a weak smile, which indicated things were not so good after all.

Where can I get some antibiotics at a pharmacy around here for an upset stomach?" asked Whatsup, a bit embarrassed about the entire thing. *"I suspect it may have been some bug I picked up when I went out for dinner last night"*

"There is no need to pop antibiotics in such haste. Given some time, your problem may resolve itself without any medicine" said the delegate, adding 'It is all about your microbiome'.

"Micro – what?" said a perplexed Whatsup.

"It's the local bacteria getting to know the foreign ones you have brought with you" came the reply. "They are having a drunken party in your stomach right now but will get it over with quite soon. Give them some rest and you will be fine by evening"

Whatsup decided to follow the advice, skip regular lunch and settle for a bowl of fruit and some probiotic yogurt instead. Perhaps there were many problems of the human body that could be settled only with time and patience, not with pills and medical interventions.

Know Thy Patient

In the post-lunch session Whatsup chose to go to a workshop on 'Communicating in the 2020s'. This was interesting to him simply because he was an amateur journalist himself, having contributed articles on forensic science and occasionally on crime to newspapers in London.

The first presentation was from an Indian journalist who called upon doctors to add 'Know Thy Patient', as one more dictum added to their existing credo of 'Do No Harm'. And since patients were a very diverse lot in terms of age, gender, race, culture and so on there was a need for the medical professionals to tailor their prescriptions accordingly or in some cases not prescribe anything at all.

Further, he argued for a closer examination of how different people interpreted what was health, disease and medicine. Quoting Rene Dubos, the well-known French-American pioneer of antibiotic discovery, he said health was "not necessarily a state of well-being, not even ... a long life. It is, instead the condition best suited to reach goals that each individual formulates for himself".

In other words, there was no standard set of parameters possible and being healthy was linked to the individual's ambitions or goals and his/her ability to take risks needed to achieve them. A mountaineer wishing to climb the Mount Everest would obviously need a different level of fitness than a chess grandmaster and their ideas of what good health means would diverge widely – both being equally valid. The journalist also gave the example of Jesus Christ, someone who willingly embraced crucifixion in his search for truth despite knowing the bodily dangers such pursuits often entail. He said every modern doctor (or even an ancient one) – clueless about the deeper motivations of Jesus - would have diagnosed his condition as 'suicidal ideation' and recommended treatment with mood elevating medicines or even extended quarantine!

Next was an interesting presentation on use of internet conferences to strengthen and empower networks of health activists, working on issues such as rational use of medicines, across continents. Even though nothing can completely replace face-to-face communication and the accompanying human interaction, collaboration using technology such as videoconferencing is extremely valuable as it enables sharing of ideas and experiences through personal interaction without the cost and time of travel.

Another presentation was about an initiative to improve the quality and reliability of content on medicine in the Russian edition of Wikipedia, used by thousands regularly, to make it more accurate and up to date with latest research. Helping to empower patients was the focus of yet another speaker who called for an emancipatory approach, greater involvement of patients in the health dialogue and creative efforts to improve their health literacy. This means a greater ability to get, process and understand health information so they can make decisions, act on health advice, access health services and navigate the health care system.

Children power

Sholmes in the meanwhile was busy taking notes at the workshop on 'Improving use at local level: Empowerment'. This session was all about how everyone can play a role in promoting rational use of medicine, e.g. youth, school children, community institutions, prescribers and pharmacists. The challenge was to find the right stakeholders and find ways to engage them through incentives and recognition.

Sholmes was delighted to learn that a powerful way of spreading the message about rational use of medicines or any health-related concepts among adults came by involving children. A presentation from Kazhakhstan described

the need to understand modern realities of pediatric use of medicines, from the point of view of school children and their parents.

The study documented how many kids have had colds or flu and who prescribed them antibiotics for their condition. In the vast majority of cases the prescriber was the doctor - so the project coordinators made a video of what questions to ask the doctor when the child and parent visits them. It was found that children in the 7th grade onwards were capable of not only learning about appropriate use of antibiotics but also educating their parents on this issue.

Another presentation described development of a drug management system in 36 child development centers in northern Thailand with community involvement. The project, which formed committees in each centre, undertook a process that involved the teachers, staff and local networks.

Following the training they received from the expert team, the committees took up responsibility to implement the ideas they themselves developed. Evaluation showed 33 centres had effectively planned and implemented a drug system in their schools, including information on the 8 basic medicines in the kit, emergency procedures and safe use. The project taught the personnel at the center the basics of prescribing, recording and inspecting quality of medicines also.

Doctor-patient dynamics

The third parallel workshop in the post-lunch session was on the theme of 'Methods and tools for generating knowledge'. The first presenter described an interesting experiment, where researchers were asked whether the patient's level of knowledge or voice makes any difference to the way medicines are prescribed. As part of the undercover study standardized patients (SPs) visited 227 private health facilities in Tanzania to seek care. The SPs were trained to present a case of uncomplicated upper respiratory tract infection, with symptoms of a cough, sore throat and headache lasting three days. SPs were randomized to 'informed' or 'uninformed' roles; informed SPs made a statement that they had heard antibiotics were not necessary for a simple cough, and uninformed patients made no statement.

The study found there was an extremely high rate of antibiotic over-prescription, with over 90% receiving an unnecessary prescription. Patients who signaled knowledge of correct antibiotic prescription practices were less likely to be prescribed an antibiotic – but very slightly (from 94% to 86%). However, signaling this knowledge did not reduce overall prescription rates of any drug, mean number of drugs prescribed or mean expenditure.

When Sholmes read about the results of this study an alarm bell rang in his head – ***patient awareness does not seem to help so much in curbing poor prescribing behavior of doctors!*** He wondered, was it because patients were too polite and hence their objections to being given antibiotics needlessly did not register at all?

Sholmes remembered a conversation the previous day during one of the tea breaks where a delegate from Argentina was arguing that doctors had too much power and were misusing it to make money by over prescribing medicine to their patients.

The others in the group were not so sure if blaming the doctors alone was really accurate and patients too bore responsibility.

"People think there are magic solutions to all of life's problems and there is a pill for every ill. It is true that some providers take advantage of this, but if people did not seek such solutions medicines would not be prescribed so frequently either", said a doctor from Thailand.

"*You cannot equate the one seeking medicine with the one providing it as the latter is far more empowered in society and hence expected to use this power with much greater responsibility. They should not take advantage of some anxious and ignorant patient seeking help or relief*" said the Argentinian emphatically.

Listening to them, Sholmes had wondered why was there such a big differential between the power of the doctor and their patients? Had this always been the case or had it increased due to the growing specialisation of knowledge and the world of medicine becoming far more complex than in ancient times? What really would be needed to change the supreme confidence with which physicians hand out pills like candies to their patients? Or prevent patients from accepting these pills meekly without questioning?

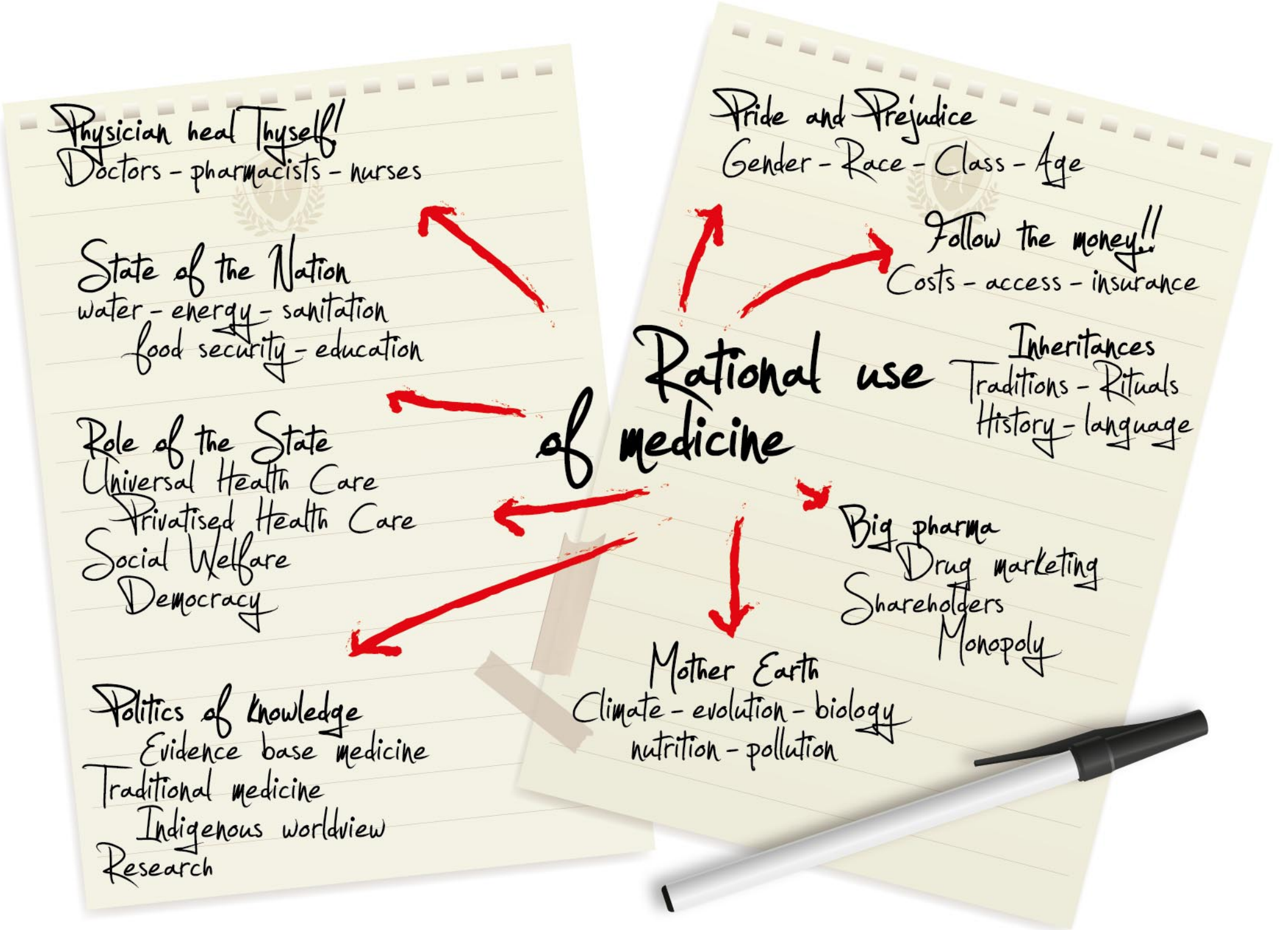
As he recollected all this Sholmes felt his blood pressure rising and had some quite violent thoughts brewing in his head. Spotting a painting of Lord Buddha, in a calm meditative pose in a corner of the room he calmed down but decided to get out for some fresh air.

He couldn't get the subject out of his mind though. Why was the patient's right to know and decide on the course of treatment so easily brushed aside by professionals in certain cultures and contexts? Was it even possible for individual patients to learn and decide on complex medical issues all on their own?

Was there some way by which these currently academic tools and methods could be simplified in a way that ordinary patients or communities could use them to improve usage of medicines? Was it possible to list out the broad principles that everyone should be aware of while prescribing medicines or being prescribed to?

It had been a tiring day and given the delicate condition of Whatsup's stomach the duo decided to go to bed early. They missed sitting alongside the Chao Phraya but the thought of another full dinner made both of them duck quickly beneath their quilts in the hotel beds.

Sholmes however tossed and turned constantly and could not sleep easily as the different themes mentioned during the presentations kept buzzing in his head. The day's proceedings had been wide-ranging and it was clear that, besides the various suspects involved, there were many systemic factors driving inappropriate use of medicine. Sholmes had to put all this information down somewhere just to get it out of his mind. Sholmes pulled out a sheet from a notebook provided by the hotel and began drawing another mind map.


Physician heal Thyself!
Doctors - pharmacists - nurses
State of the Nation
water - energy - sanitation
food security - education
Role of the State
Universal Health Care
Privatised Health Care
Social Welfare
Democracy
Politics of Knowledge
Evidence base medicine
Traditional medicine
Indigenous worldview
Research
Rational use of medicine
Pride and Prejudice
Gender - Race - Class - Age
Follow the money!!
Costs - access - insurance
Inheritances
Traditions - Rituals
History - language
Big pharma
Drug marketing
Shareholders
Monopoly
Mother Earth
Climate - evolution - biology
nutrition - pollution

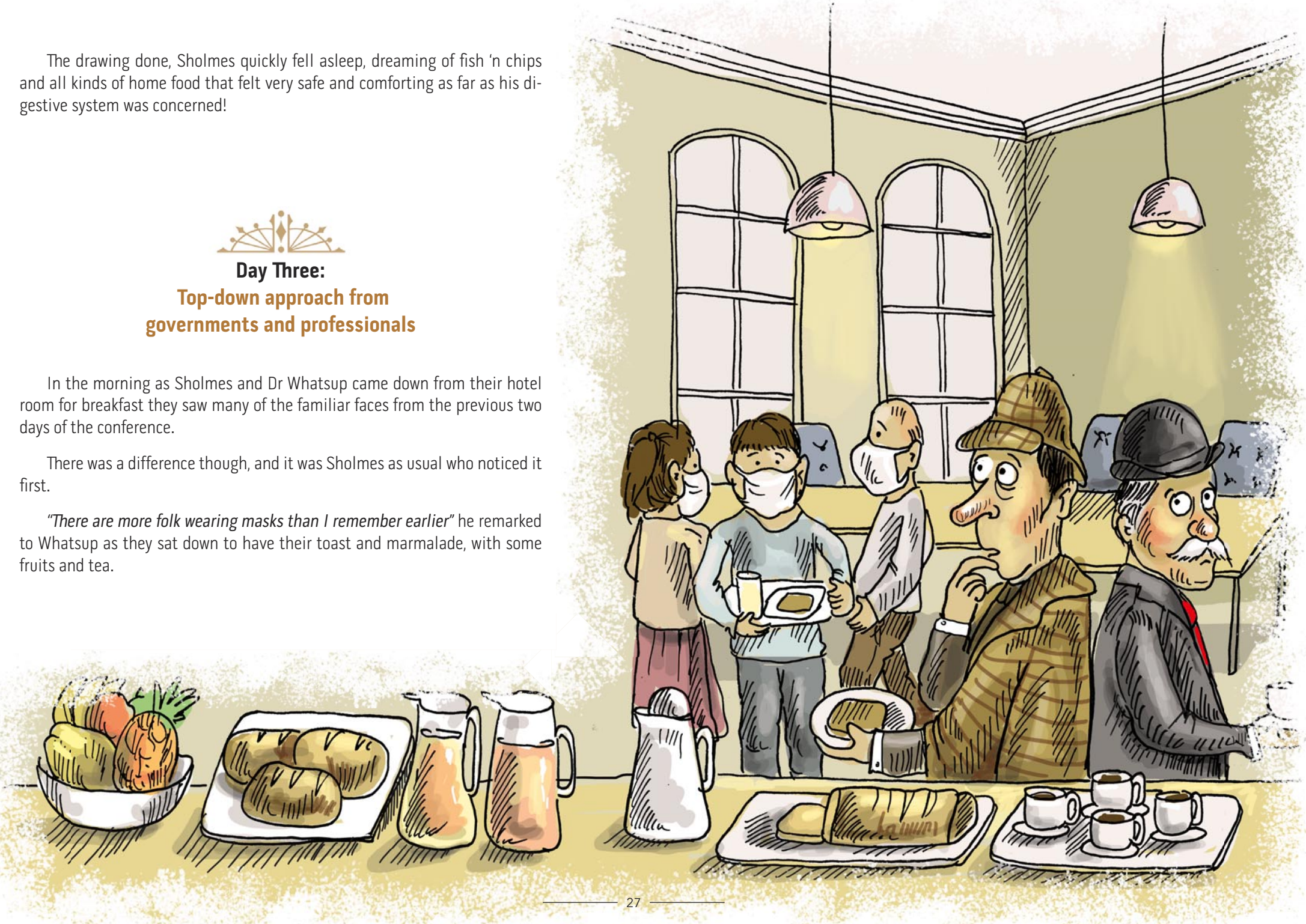
The drawing done, Sholmes quickly fell asleep, dreaming of fish 'n chips and all kinds of home food that felt very safe and comforting as far as his digestive system was concerned!

Day Three:
Top-down approach from governments and professionals

In the morning as Sholmes and Dr Whatsup came down from their hotel room for breakfast they saw many of the familiar faces from the previous two days of the conference.

There was a difference though, and it was Sholmes as usual who noticed it first.

"There are more folk wearing masks than I remember earlier" he remarked to Whatsup as they sat down to have their toast and marmalade, with some fruits and tea.



"Yes, you may be right. I thought it was a common habit in this part of the world for people to cover their faces because of urban pollution", said Whatsup.

"Could be because of the news of the novel coronavirus epidemic in China. I read the World Health Organization is about to declare it a pandemic. Scary stuff, but I wonder if the mask really protects the person wearing it or is it meant to prevent spread if you are already infected?" said Sholmes.

"How is a lay person supposed to decide whether wearing a mask is beneficial or not?", said Whatsup. *"Who is he or she to trust or believe? What constitutes evidence and what does not?"*

"That's a genuine problem. Well that is one of the main topics for discussion at the sessions later today," said Sholmes. *"Given the complexity of health, disease and medicine, navigating through the vast amounts of scientific or at least 'scientific sounding' literature, multiple claims and assertions is difficult for even practicing physicians, leave alone people from other backgrounds".*

It was a difficult theme indeed, but perhaps the most important one of all being discussed at the conference, thought Whatsup. For at the heart of medicine lay the power to define or certify one kind of knowledge as being superior to another. If you got the upper hand in the way you managed the definition you would dominate the entire field of medicine or health.

There was a process of peer review and consensus within the world of science that was supposed to take care of any flaws in evidence or methods used, but this was not always a transparent process, especially when there was so much money and prestige at stake for those who won the 'debate'. There were also genuine, unresolved differences of course within the world of science, on issues ranging from the how to measure health outcomes to deciding the best medical options when there was conflicting evidence.

Whatsup suddenly realized it was also time for them to get to the working sessions, which were about to begin. It was the final day of the conference and the last chance to find the clues they wanted, before all the delegates left the place.

Commercial versus Rational

Sholmes decided to go for the working session on 'Improving the use of antimicrobials to contain antimicrobial resistance'. Antimicrobial resistance or AMR was considered by the WHO among the top ten health problems of the globe in 2019. The problem in a nutshell was that antibiotics, critical to save lives and treat bacterial infections, were losing efficacy due to various pathogenic bacteria becoming resistant – i.e. basically bacteria were refusing to die easily. This was in fact part of a larger evolutionary phenomenon. Antibiotic use spurred artificial selection of some bacterial strains that had the ability to overcome the usual mechanisms by which antibiotics disabled or killed normal bacteria. The greater the amount of antibiotic use, the greater the chance of bacterial resistance developing.

The first presentation, which used antimicrobial sales data from India, indicated rapid increase in consumption of expensive antibiotics like cephalosporins, supposed to be used sparingly, compared to penicillin that was both cheaper and less restricted for use.

It was an *'aha!'* moment for Sholmes as he heard details of the Indian study. It was clear to him that the problem lay, not so much with physicians or patients themselves, but with medicine manufacturers and distributors for whom making and selling more expensive antibiotics was more profitable. Cheaper antibiotics were being deliberately phased out by manufacturers, forcing patients to use more expensive second-line antibiotics. It was a truly sick business strategy.

In other words, the real problem seemed to be between the Commercial Use of Medicine (CUM) and the Rational Use of Medicine (RUM) (though the term 'rational' came with its own hidden pitfalls). Sholmes started furiously doodling a broad diagram of this CUM versus RUM schema.

¡ajá!

Commercial Use of Medicines (CUM) V/S Rational Use of Medicine (RUM)

- medicalisation of life
- Warped pricing mechanisms
- Pharma industry influence
- Unethical medical practices
- Quantity over quality
- Individual oriented, not for collective benefit

- Effective, ethical, appropriate selection and use of medicines
- Bottom up approach
- Doctor-patient parity
- Transparency, accountability, participation
- Essential medicines lists
- Generic medicines over branded ones
- Common good over all other priorities
- Therapeutic guidelines
- Independent information

Medicine as magic

However, Sholmes also thought the problem of reckless antibiotic prescriptions may be a bit more complex, with purely commercial motives only one of the factors. Physicians may be overprescribing antibiotics due to lack of adequate diagnostics, demand from patients themselves or just out of sheer habit or even ignorance.

Using antibiotics for many medical conditions, even when not indicated, was part of a very ancient and deep rooted tradition – of how all medicine was viewed as 'magic' in the form of pills and potions, that could ward off diseases. For long, before the advent of antibiotics around 80 years ago, doctors had used all kinds of herbs, roots, rituals and even complete hocus-pocus as 'remedies'. Some of these medicines worked and some did not, for reasons that were not clearly understood till more modern scientific tools became available over the last couple of centuries.

However, within modern medicine also, especially in the direct interaction between physicians and patients, an element of the old 'magic' has lingered on. While antibiotics do work, if given in the right dosage and duration for certain bacterial infections, more often they were being used as a signal to the patient that he or she had received a very 'powerful' therapy.

Despite the fact that the human body – a very complex system- often responds better to subtle and even delicate, nuanced processes, the dominant idea was that a cure was possible only through 'strong' and 'muscular' interventions. This was also evident from the imagery of 'war' that was routinely deployed to claim how doctors were engaged in a 'battle' against deadly bacteria, with antibiotics their 'magic bullets' and the microbes presented as ugly, alien invaders or even 'terrorists' of some kind.

Sholmes was amazed at how the world of medicine loved to use images from warfare all the time. Why were medical professionals comparing their medicine to 'bullets' while treating patients, when the key processes needed in healthcare were nurture, care, compassion etc.?

Well, it must be something to do with how modern medicine evolved in Europe during a time of intense wars between different nations over the last two centuries, thought Sholmes as he exited the conference room. The microbe was the 'invader' trespassing on the territory of the human body, to be 'expelled' with force.

Many motives

One way by which rational use of medicines advocates have been trying to moderate use of antibiotics in particular has been by providing incentives at the hospital level. In Thailand for example the Ministry of Public Health introduced 'antibiotic use in vaginal delivery of normal term labour' – the less used the better- as an indicator of rational drug use (RDU). The target goal was not more than 10% use, with rewards to hospital staff linked to implementation of the RDU policy, through a 'pay for performance' scheme.

A study of how the policy worked in practice found that implementation of the RDU policy significantly reduced antibiotic use and expenditure and did not increase infection rates. So here was a successful example of improving rational use through a 'carrot and stick' approach, with the Ministry's directive being the stick and increased income for staff being the carrot.

Whether material incentives alone are enough to bring about rational use of medicine is a very moot question, thought Sholmes. People do whatever

they do for many diverse reasons, of which economic motives are only one of them.

As another study from Thailand showed, irrational antimicrobial use was driven by multi-level factors ranging from individual's values, beliefs, potentials, and past experiences. A family's socioeconomic contexts, relationship within the community, community resources in health and welfare, geographical setting, access to healthcare, and public policies were all affecting how people use drugs. In other words, there was no single reason for irrational use of medicine so as the researchers concluded, no one single approach could solve the problem either.

Essential medicines and therapeutic guidelines

In the next room Whatsup had been taking meticulous notes of presentations and discussions from a session on 'Methods to generate knowledge'. One important initiative to establish guidelines and bring some clarity into the world of medicine was the concept of 'essential medicines' that the World Health Organization introduced in 1977. Essential medicines are those that satisfy the priority health care needs of the population and to which people should have access at all times in sufficient amounts. Further, their prices should be at generally affordable levels.

Today, over 155 countries around the world have national lists of essential medicines, which are selected with due regard to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness. These have played a very important role in promoting access to affordable medicines and reducing needless expenditure on drugs across the globe.

The first presentation of the session was about measuring the quality of outpatient public sector primary care prescribing and implementation of essential medicines policies in South-East Asia. The information was collected quickly, accurately, and cheaply by government staff themselves, using a specially-designed workbook tool and supervised by WHO. The results showed that countries implementing more essential medicine policies indeed had better quality use of medicines so the researchers recommended that all countries should implement such policies.

Other speakers reported use of different methods for monitoring medicines use in Russia, investigating awareness about antimicrobial resistance in Timor-Leste, and the cost-effectiveness of medicines used for cardiovascular disease prevention in people living with HIV in Thailand. Also presented was the establishment of a global network to generate high quality evidence to inform medication management in dementia and the development of tools to assess medication safety in Australian nursing homes.

The working session on 'Improving the use of medicines for universal health coverage' also saw presentations on the way drugs are marketed, sold and used in a wide variety of ways, many of them quite inappropriate.

A study that looked at sales data to understand utilization of diabetes medicines in India, Indonesia, Sri Lanka and Thailand found wide variation in the appropriateness of diabetes medicines utilization between countries. For example, India had a very large number of diabetes medicines on the market, around 2346, compared with the other countries where it was less than 350.

Two presentations focused on insulin. Over 50 million diabetic patients needing insulin are not able to get this life-saving medicine, but that some programs to improve access using insulin donations, have shown that it is possible to undertake diagnosis, treatment and prevention of fatal complications in children with diabetes.

A study on quality use of insulin showed how half of patients needing insulin could not afford it, how the cost of insulin, syringes and glucose monitoring for one child with diabetes consumes 53% of the family income in Tanzania and how in Kyrgystan 12% of patients on high-cost newer insulins consumed half the insulin budget. The high costs were linked to the fact that just three pharmaceutical companies produce and sell around 95-97% of all insulin consumed in the world. This virtual monopoly leaves little room for meaningful competition.

A study on the comparison of costs of antibiotics in government sponsored pharmacy shops compared to other pharmacy shops in India found that the variation in costs for similar medicines ranged from -40% to +2115%, with prices being generally cheaper in government-supported pharmacies.

Other presentations showed the importance of countries continuing to develop effective Universal Health Care programs, with a sufficient budget, to ensure equitable access of people to essential medicines. The last presenter, noting the absence of global guidelines, presented a tool she had developed to enable countries to assess and develop Universal Health Care legislation, after comparing national legislation in 16 low and middle-income countries.

After the morning tea break Whatsup went off to attend a session on 'Essential medicines selection, formularies and guidelines'. This was a continuation of the discussions around the utility and need for essential medicine lists to help prioritize both spending on purchase of drugs as well as ensuring availability of medicines critical to public health.

The first presentation of the session discussed adapting 'point of care' prescribing guidelines for local use, i.e. prescribing by local practitioners according to agreed standard treatment guidelines (STGs). This was meant to ensure patients receive appropriate standards of care, and also facilitate local reliable drug availability. Most countries do not have the financial or human resources required to write 'point of care' guidelines that cover as many as possible of the myriad clinical situations likely to confront local practitioners. At the same time, international 'point of care' guidelines would never be able to provide advice relevant to all local situations, especially when local resources were limited. During the process, every effort should be made to ensure that

the medicines recommended in the Standard Treatment Guidelines are in the national essential medicines list and available locally. The researchers, based on their experience in assisting several Pacific Island countries to write their own STGs, proposed greater local involvement in the entire exercise to ensure the guidelines were accepted and used. To overcome the problem of distribution to practitioners, Fiji and the Solomon Islands were using Guidelines Host apps for smartphones, which could be downloaded and used by practitioners offline.

Next came a presentation on the problems found in developing standard treatment guidelines in Kazakhstan and Moldova, where it was concluded that there was low adherence to the guidelines because international evidence was often not used and local practitioners were often not involved in their development.

In 2015, in order to address the issues of quality, safety and availability of medications provided to the population, Kazakhstan collaborated with experts from the World Bank, Europe and Australia to develop the Kazakhstan National Medicines Formulary (KNF). The aim was to provide information on the rational use of medications to medical workers and patients and strengthen the entire formulary system, as well as to promote the use of evidence-based medications. Researchers found that the KNF enabled doctors, who had free access to its content, to obtain information on how to prescribe and use medications correctly.

Another presentation examined the current status of national drug formularies and advocated the case for a dynamic, open access global resource because few countries were able to sustain development of a national formulary. There was lack of open access to quality drug information, while the WHO model was out of date.

The initial analysis evaluated approximately 80 national formularies and found that most countries that initiate the publication of a national drug formulary do not sustain development and most are several years old. Most national drug formularies also do not provide the tools to promote rational medicines use. Hence, the study authors recommended an open access resource should be developed which is constantly updated to meet the needs of health professionals and consumers.

Some presentations highlighted the fact that some national formularies recommended medicines that were considered to be unsafe in other countries.

Role of pharmacists

The working session Sholmes went to focused on the role of pharmacists in promoting rational use of medicine. Like the nurse, the role of pharmacists in the medical or health systems of many countries is very undervalued. With their training in the science behind modern medicine, pharmacists are critical to ensure quality treatment, patient safety and good health outcomes.

In several countries the training and education of pharmacists also leaves much to be desired. Given their importance to implementing rational use of medicine, many presentations in the session dwelt on ways to improve quality of pharmacists and methods of monitoring their work to help them do a better job.

Ideally, while doctors prescribe medicine it is the job of pharmacists to dispense them after considering various issues related to the interactions between drugs, side effects, proper dosages and even costs involved. However, several countries allow doctors to both prescribe and dispense medicine as this means greater income for the practitioners, who are a powerful lobby influencing state policy.

Two studies were presented showing firstly that community pharmacists were willing to identify and report adverse drug reactions and could be

trained to do so. Secondly, counselling by pharmacists increased adherence to medicines and in an example from Sri Lanka showed evidence of slowing the progression of Chronic Kidney Disease of Unknown Origin among rural patients.

A study in Thailand on the curriculum used for training students of pharmacy found it heavily focused on manufacturing pharmaceutical products and providing pharmaceutical care for individual patients. Only a few courses are designed for introducing pharmacy students to practice rational use of medicine systematically i.e. manage the drug supply, monitor consumption, estimate future drug needs, monitor prescriptions, adverse drug reactions and events.

As part of an initiative to design a better course, a group of 7-8 students were assigned to promote rational drug use in an assigned village for three months. Students, faculty members and community leaders worked together to understand drug and health systems in the community before designing a relevant project and performing necessary services. They were guided through the following steps: understanding the community's needs and problems; prioritizing them; designing a response and then implementing it; evaluating the project; presenting the results to the community; and noting the lessons learnt.

Along the course, pharmacy students had learned that all drug use phenomena were complex as a result of many intercorrelated factors, and a single-linear intervention was not enough to solve the problem.

Sholmes found the project to be fascinating. Without putting your feet on the ground and soiling your hands, no change was possible, he thought. This 3-month project to spend time with the community and tailor a rational use of medicines to match their specific needs was the way forward indeed.

The researchers too concluded in their study that a community-based course with the aim to promote rational drug use in community is a win-win. Students learn various skills in working with real people in real problems to solve the problem systematically, while the community benefits from an intervention designed specifically for them.

However, given the way communities are impacted by decisions taken in faraway national capitals and even by global events or processes, working only at the grassroots will forever remain insufficient. Together with the bottom-up approach there was a need to work on top-down changes also to create the right environment for helping different sections of the population practise rational use of medicines.

Sholmes and Whatsup decided to go together to the next session, which was focused precisely on this theme – the role of governments, policies and systems in improving use of medicines.

The first presentation of the session was a study to understand which essential medicines policies were most effective in encouraging quality use of medicines in public-sector primary care. It identified a set of essential medicines policies that were consistently associated with better medicines use and recommended their adoption by all countries. These national policies included:

- Having a unit in the Ministry of Health dedicated to monitoring use and promoting rational use of medicines.
- Ensuring use of up-to-date evidence-based clinical guidelines, drug formularies and lists of essential medicines – by distributing them to all practitioners (in paper or electronic format), training all practitioners in their use (at undergraduate and postgraduate levels), and ensuring the drug supply follows the essential drug lists.
- Hospital drug and therapeutic committees that can monitor how medicines are used and take corrective actions for misuse.
- Generic substitution whereby cheaper generic drugs may be substituted for more expensive branded products,
- Regular public education on medicines use,
- Medicines free at the point of care in public facilities
- Disallowing prescribers to earn money from selling drugs (because this gives an incentive to prescribe more drugs and more expensive drugs)
- Disallowing over-the-counter availability of some antibiotics, particularly newer antibiotics reserved for serious infection.

Other presentations showed how individual policies were associated with better use of medicines and patient outcomes. In Russia early diagnosis, implementation of guidelines and protocols led to earlier diagnosis and better medical outcomes in the context of prevention of mother-to-child transmission of HIV. In Thailand the Ministry of Public Health launched the Rational Drug Use Hospital Program, covering education of healthcare professionals with monitoring and benchmarking of prescribing and which led to reduction in misuse of antibiotics. In Kazakhstan, development of a national formulary led to a reduction in the use of less effective and more costly medicines.

Sorting weed from chaff

Next was a presentation in which Sholmes had special interest, as it was about cannabis. Not that he was an active user. Not since his student days,

and even then he never inhaled. The fascinating thing about cannabis was the way governments around the globe had gone from treating it for very long as a dangerous narcotic – possession of which could mean even death penalties in some countries- to abruptly okaying it for medical use in recent years.

The funny thing about most narcotics was that many of them had medical uses too and even funnier was the fact that many modern medicines had plenty of very addictive, narcotic-like properties. The lines dividing medicine, narcotic, poison were quite thin indeed and very dependent on dosage, context, purpose of use.

The presentation was about the medicines regulation framework used to regulate importation, cultivation and manufacture of cannabinoids, used in the food industry or for medical purposes in Australia.

Given the limited and variable evidence, bias in media reports, and the lack of clinical guidelines or product information, there was a critical need for evidence-based advice for prescribers and consumers. An insufficient level of scientific literacy contributed to public distrust. Advocates, pre-clinical researchers and the emerging industry had complained of governments over regulating the supply of these products leading to poor access.

The study found that the existing scheme regulating use of cannabinoids was quite adequate and worked as intended. Tensions however remain, as prescriber and consumer knowledge and expectations in using these unregistered medicines with limited benefits continues to require further information resources and management of perceptions of access barriers.

For no particular reason as they left the room for the lunch break Sholmes felt a bit lighter in the head. All this discussion of weed and its extracts seemed to have had a placebo effect on him. He smiled to himself and thought, irrespective of doctors' advice about maintaining good health, most humans always prioritized happiness – the pursuit of which was not always good for one's health. And what better compromise was possible between the two than to get the doctor to prescribe weed as medicine?

The conference concludes

It was now time to wrap up the conference. The rapporteurs from various sessions, who had worked tirelessly, were about to share their findings and suggestions on what the organizers could do in future to take forward the cause of improving use of medicine.

Whatsup was a bit restless. It had been a long day and he was afraid there would be more PowerPoints to watch.

Almost as if sensing his mood Sholmes said *"Let us find one of the rapporteurs and ask him or her to explain them to us in plain English"*.

Scouting around the conference hall, they did find someone who fit the bill – a young doctor who had helped put together all the final recommendations.

"So, what have you decided? What are the next steps in the journey of ISIUM?" Sholmes asked her, as they stepped out into the hotel lobby for some coffee.

"The conclusions can be divided into two broad categories – what we know and what we don't know", said the doctor.

"I guess, it is always good to start with what you know" said Whatsup, with a very blank face.

"Ok. When we planned this wonderful gathering, the first objective we set ourselves was to find new knowledge and perspectives.

"We know that methods and evidence for effective interventions and policies for rational use of medicines exist. These work at national policy level, at

hospital and health centre level and we are beginning to see some effective approaches at community level. We also know that this information is not adequately available and certainly not used to any great extent. At the conference we heard many examples of poor medicines use, with serious consequences for people, from Mongolia to Moldova, Tanzania to Thailand, Bolivia to Russia, Australia to India…."

"So now we have decided that ISIUM should provide a platform to collect, make available and safeguard the 'RUM evidence base', as we call it. We will need, of course, to organize and annotate it and actively help people engage with it."

"That's a great idea!" said Sholmes. *"So what are the new perspectives that emerged?"*

"We heard some important reflections on the need to respond better to the deep medicalization of life, the adverse influence of commercialization on everything from creating the evidence of effectiveness to the selection and use of medicines. So we need to broaden our perspectives beyond a focus on sickness. We need a broader concept of health and medicine which is ecological and holistic. For example, there is no distinction between life and health in many indigenous concepts of health and harmony with the environment and all the ecosystems we depend on is central. So our frameworks for rational use of medicines need to evolve in this direction.

"If I remember correctly, your second aim was to find ways to empower people in improving use of medicines?" asked Whatsup.

"Well", said the doctor, pausing for a minute, *"the essence of empowerment seems to be walking on one's own feet, building the well-being of everyone, and promoting autonomy, health and human dignity. So the participation of people and communities is central in decisions that affect their lives and is needed to solve the current crisis of health systems. So we have to think about power and how it is distributed in the world of medicines."*

"We learnt that knowledge and education contribute to empowerment, but require creative processes of learning and engagement. So we are recommending that effective strategies, such as were shared here, are more widely used in all levels of training and education. Effective communication also contributes to empowerment, but requires more listening, respect and emancipatory approaches", said the doctor.

"Is that a challenge for the RUM movement itself?" asked WhatsUp.

"Yes, absolutely! We as a community of RUM researchers, health professionals, educators and activists need to internalize what we have learnt about empowerment. So we have made some recommendations for ourselves. We need a new language that reflects a contemporary culture for improving the use of medicines that is holistic, person and community centred. We need to listen more to people with respect. This will enable us to collaborate more truly and more broadly than we presently do. "

"Bravo! said Sholmes, *"reflection is at least as important as illumination, if not even more".*

"And what about your goal to find out what governments and other stakeholders should do to ensure the safe and effective use of medicines, and how they may be held to account" he asked.

"We will advocate that national governments develop programs suited to them using the 12 core policies for RUM that we know work. We will encourage them to use the rapid assessment tool that was presented here so that they can assess how they are going and we will ask WHO to assist with this. We will also support Thailand's idea of enabling countries who are seriously working to implement core RUM policies to be called an 'RDU Country'".

We have come to believe that it is critical for civil society to work with governments, and to hold them to account. Governments have a mandate to govern and protect populations from adverse situations. Policy, programs and monitoring are essential to provide a safe and conducive environment for medicines access and use."

"Very well. So what is there on the 'what we don't know' front?" asked Whatsup.

"Plenty. Let me rattle a few off in the form of questions", enthused the doctor.

Why is there so little political will and public resources for promoting RUM? What are the diverse ways to move when governments do not lead?

Existing tools are limited in helping us. So how do we create a base of reliable information and tools for decision-making by societies, governments, health professionals, patients, people and communities?

How do we stimulate true multidisciplinary collaboration? How do we learn to act collectively, with respect and with full awareness of power relations?

How do we overcome the limits of our methods to be able to, for example, design local solutions, understand sustainability and assess the impact on RUM of non-Ministry of Health policies such as finance, trade, education, agriculture, human resources.

How does new language emerge that reflects a contemporary culture for health and improving medicines use that is more holistic and people-centred?

All this and more needs figuring out, she laughed!

"That's a lot of hard work ahead!" exclaimed WhatsUp.

"Yes, of course. ISIUM will nurture a community of practice to support development of people's interests and capacities, sharing and collaboration. We will also organize a conference every 2- 3 years to continue the overwhelming enthusiasm and joy people found in coming together here these last few days. We will support the momentum form this meeting by establishing a secretariat and perhaps some other infrastructure to support the organic growth of ISIUM.

"Wishing you all the best with all this and the future of ISIUM" said Whatsup as he and Sholmes thanked the doctor for her time and help.

Rational use of medicine

What we don't know

Why is there so little political will/funding for RUM?
Why is the private sector so successful in undermining our efforts?
How can we interest governments in starting/continuing RUM programmes?
- How to better involve stakeholders and facilitate change best to build a community of practice in RUM
- How to develop non-resource intensive monitoring systems for RUM
- How to do a multi sectorial evaluation of RUM

What we know

Small people in small places doing small things change the world
Many effective RUM policy interventions are not implemented
Consumers can play a very active rol in developing the national medicine policy
Strong governments initiatives and follow-through can lead to improvement of medicine
UHC is not possible without equitable acsses to effective antibiotics
Legislation and regulations help with monitoring performance and accountability

What is empowerment?

Promoting autonomy, health and human dignity
Demystifying expert knowledge and power
Ensuring welbeing for everyone
Acquiring control over own lives trough social action
Many small people, in small places, doing small things, can change the world

What we can do

Allocate sustainable resources to a national RUM programme
Use existing evidence and implement WHO policies on EM an RUM
Involve communities and independent consumer organizations
Promote patiente involvement in joint therapeutic decision making
Promote patient knowledge on patient rights and insurance benefits
Develop better knowledge and expertise on people's and communities' perspectives
Safeguard and make easyly available all existing evidence
Host with partners and international conference once every 3 years
Provide a plataform for linking people

Finally nailing the culprits

That evening as Sholmes and Whatsup sat down at a table for dinner, they were joined by one of the conference organisers. It was the same lady who had hired them to come and figure out why it was so difficult to practice rational use of medicine.

"Well, how far are you with solving the mystery?" she said with a big smile.

"Just as far as you are all with implementing rational use" said Sholmes, with a wicked glint in his eyes. *"This is the toughest assignment I have taken up so far in my entire career".*

"*So, you are saying we are still clueless about who are the culprits behind the demise of rational use of medicine?"*, said the lady, as she ordered her dinner.

"Not at all. In fact, we have too many clues and culprits. It seems to be less the work of a lone assassin and more the work of a lynch mob" said Sholmes.

Before the lady could respond it was Whatsup who exclaimed, *"What exactly do you mean?"*

"Policy makers, the pharma industry, prescribers, pharmacists, academics and the patients themselves," said Sholmes. *"All of us have been responsible for the death of rational use of medicine by a thousand cuts".*

"*In other words, you are saying 'We Killed Rational Use of Medicine'?"*, said Whatsup.

"Exactly. That is the unfortunate conclusion I have come to. This is probably the only murder mystery I have tried to solve, where I too have blood on my hands" said Sholmes.

There was an uncomfortable silence on the table for a while, broken by the lady taking a deep breath.

"Well done Sholmes. You have indeed hit the nail on the head. It is not a conventional kind of answer, but this is what we suspected too for some time but were not sure. The culprits are not always out there somewhere, but very much in our own midst – even inside us perhaps" she said. "It is easy to blame others, but ultimately it is all of us who have to take responsibility for how medicines are used or abused".

"Medicine, health, disease, rational use are all complex subjects – as they are linked to almost all aspects of life. Many of us still think about it in very simplistic ways, as getting deeper into the subject demands too much expenditure of mental energy. The problem is compounded by some of us who are rigid about these things and can't believe there are any perspectives other than what we hold dear" said Sholmes.

"Everyone's point of view contains some truth, but knowing which bits or combination of bits to use in a specific situation seems to be very tough" said the lady.

"I get it now!" said Whatsup. *"Medicine is as much art as it is science, with some sociology and anthropology thrown in. That's where experience comes in. A good physician is like a master chef, who goes beyond the usual textbook recipes. By being around, observing and listening with empathy, the good chef learns how to adjust the dosage of ingredients to individual taste, get the timing right and understand the client's digestion system"* he said, tucking into his dinner. That his stomach was now back to normal was evident from the relish with which he ate.

"The problem is that not everyone can become a master chef, most don't have the time or opportunity to become one" said the lady.

"I agree not everyone can become a physician or needs to become one. They however do need to understand the basics of health and medicine, as these are too important to be left to the medical profession alone" said Sholmes.

"Apart from such individual, community or public awareness and initiatives – a key part of this - a major part of the challenge is also perhaps to build a suitable ecosystem of professional, ethical, transparent and accountable institutions, that together can prevent such abuse" said the lady.

"Yes! That's the way to go! We change ourselves but also change the world out there" said Whatsup, doing a high five with both Sholmes and the lady as they all beamed big smiles at each other for having accomplished the mission they had set out on,

That night as Sholmes and Whatsup went back to their favourite restaurant on the Chao Phaya river for their last round of beer before leaving Bangkok, they realized, in just three days they had learnt so much more than they ever expected. The experience had been exhausting but also very exhilarating.

"It was one hell of a complex mystery and the solution seems to be an equally complex one, but sometimes the truth is not so simple!", said Sholmes, going for his drink.

"So how did you finally figure it all out?" asked Whatsup.

"Elementary dear Whatsup. I just found myself looking into the mirror one evening and found the answer!" said Sholmes as he raised a toast to the ISIUM – especially the wicked ladies who had drawn them into this crazy, exciting story of how to improve the use of medicines.

The End

Who Killed Rational Use of Medicine?

What were world famous detectives Herlock Sholmes and Dr Whatsup doing at a conference in Bangkok on Improving the Use of Medicine? What exactly was the crime they were investigating and what clues were they searching for?

Read on to find out how the ace detectives discovered a complex and worrying plot to prevent medicines from being used in a rational and effective way. How medicines, that are supposed to be lifesaving and beneficial to humans, end up doing harm to patients both physically and financially. And how behind, such inappropriate use, is a deep rooted human tendency to search for 'magical solutions' for all problems, which is taken advantage of by vested interests willing to supply them for quick profits, without any scruples.

As they help uncover the plot Sholmes and Whatsup are aided by academics, health professionals, researchers and activists, who have studied factors driving the problem and possible responses too. Using new knowledge, perspectives, ideas that flowed freely among conference delegates the detectives finally figure out who the real culprits behind the murder of rational use of medicine are.

And when they do, they are as surprised as you will be too, when you find out the answer. (Hint: The butler had nothing to do with it!)

International Society to Improve the Use of Medicines

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