An unstable global environment can provide opportunities for pharmacy

Some 1,500 participants from 30 countries were attracted to the CPA conference. Its theme, “Managing threats and crises — the vital role of pharmacy in an unstable world”, was timely, given the influenza pandemic, global economic problems and climate change. Graeme Smith reports

A fluid and uncertain global environment, which includes the impact of pandemics, economic recession and climate change, presents public health challenges. However, these can be mitigated by responsive health systems — including pharmacy, which is well placed to play its traditional clinical role. But in international and national pharmacy organisations must build a more strategic advocacy role to assist policy makers to recognise the importance of pharmacists in national development.

So said Grace Allen Young, immediate past president of the Commonwealth Pharmacists Association, when she addressed the conference. Dr Allen Young was delivering the B.V. Patel Memorial Lecture.

Influenza pandemic
On the global influenza pandemic, Dr Allen Young said that the role of the pharmacist is particularly important. Community pharmacists are the first port of call when people begin to notice symptoms of minor illness, such as colds or flu, and increased purchase of over-the-counter medicines, particularly out of their usual season, should alert pharmacists that something is happening. However, unfortunately, over the years and more in some parts of the world than in others, pharmacy is viewed as a profit-making business rather than a clinical practice. Hence an increase in demand for products is often merely seen as sales instead of the outcome of a health trend that could become a threat to public health. “Pharmacy is a profession, not a shop,” she declared.

Here, she said, was an opportunity for community pharmacy practice to assume an epidemiological perspective. “Pharmacists can gather data that provide early warning signals useful to ministries of health. Pharmacists must observe and analyse trends in medicines use patterns. No other health profession has information on the use of OTC medicines that could signal the outbreak of flu, or any other illness, such as diarrhoeal diseases or skin infections. Pharmacies should therefore seize the opportunity to become sentinel sites for the collection of epidemiological data,” she said.

Furthermore, effective communication between pharmacists and patients, as well as the establishment of a patient database for people taking certain prescription drugs, could provide information that the desired response is not being achieved. This could be a signal of the emergence of drug resistance.

Grace Allen Young: pharmacy is a profession, not a shop

“Can community pharmacy seize the opportunity of undertaking even limited research on the effectiveness of the prescription drugs they dispense,” she wondered.

Turning to climate change, Dr Allen Young said that there are complex interconnections between human health and climate change, land degradation and desertification. Rising average temperatures have a direct effect on health. Apart from heat stroke, extreme temperatures particularly affect the elderly, the very young and people with cardiovascular and respiratory illnesses. Disruptions in ecosystems could impact on people’s ability to produce food and pharmaceuticals, and to purify soil, air and water. Land degeneration affects food availability and security, and ozone depletion increases exposure to ultraviolet radiation, which in turn increases the risk of developing cataracts and skin cancer.

Dr Allen Young told the conference that the Panel on Climate Change had concluded in 2007 that while effects of climate change on health are currently small, they could be expected to increase over time and that the negative climate-related health impacts would outweigh the positive ones. An increase in vector-borne diseases like malaria, yellow fever, dengue fever and encephalitis was expected. For example, it estimated that the number of people at risk of malaria would increase from 220 million to 400 million in the next century. On the other hand, survival of other vectors, such as the ticks that carry Lyme disease, might decrease in higher temperatures. The report also estimated that by 2020 up to 250 million people in Africa could experience water stress and that people in all developing nations could face complete inundation with the continued threat of tropical cyclones.

A May 2009 report by University College London and The Lancet had called for a public health movement and advocacy that would include stakeholders in academia, the private sector, government and international agencies and communities to address the effects of climate change on health. Other researchers had suggested that healthcare professionals should collaborate with public health officials to ensure there is adequate planning for disasters. This is relevant to pharmacists, said Dr Allen Young. “Herein is an opportunity for the profession to expand its horizons beyond immediate domestic issues and take an interest in the broader health agenda... Professional associations must inform themselves on the subject, engage in public education of people seeking pharmaceutical services and work across sectors, including non-health areas like public works and public transport.”

Economic recession
On the effects of the global economic recession, Dr Allen Young acknowledged that there was little in the literature concerning its impact on health. But a question had been raised about whether healthcare in Africa would be affected. It had been suggested that as gross domestic product falls and levels of development aid drop, spending on health is reduced. Also reductions in remittances from family members living in developed countries and increased pressures on non-governmental organisations could impact on those seeking health services. A solution, which could involve pharmacists, is the provision of greater health promotion services for those who are not yet ill while encouraging healthy lifestyles.

She added that it is well known that economic constraints cause patients to ask for
Health is one of the most crucial entitlements that ensure the dignity of humanity. It is one of the most fundamental human rights of everyone to enjoy the highest standard of health. So said Kenneth Attafuah, executive director of the Justice & Human Rights Institute in Accra, Ghana, when he addressed the conference during its opening session.

Global health has improved by quantum leaps since the discovery of penicillin, and there have been impressive and growing advances in medicine and medical technology. But the safety and well-being of much of humanity is endangered by numerous factors that are more social and political than biological and medical, said Professor Attafuah. "The scourge of yaws, and intercine conflicts kill, maim and dislocate more people than epidemics do."

The health of millions of people, particularly in growing democracies, is threatened every day more by the nefarious behaviour of evil people such as crooked politicians, corrupt public officials and common criminals than by viruses, germs and pathogens. "White collar crimes such as corruption, embezzlement of public funds and the award of sweetheart contracts worsen the poverty of the citizenry. Mass anxiety occasioned by politically induced ethnic strife and violence, rampant abuse of authority by public office holders, naked shows of power, and heinous predatory crimes such as armed robberies and rapes all violate fundamental human rights and make millions of us sick," he said.

In Professor Attafuah’s view, the greatest threats to health, safety and indeed the existence of humanity are inherent in such socio-political failings as human rights violations, including discriminatory treatment by individuals and states, social and administrative injustices and abuse of power, intergroup conflicts, corruption, bad leadership and poor governance.

Other primary threats to human health and well-being are environmental degradation, prescription drugs to be filled partially, in accordance with what they can afford. In these cases, the pharmacist has to ensure that the possibility of a failed therapeutic outcome is minimized. The most diplomatic way to do this is to devise ways of keeping in touch with patients and their care givers. "It may further be necessary to devise systems that will allow reminders to be communicated, especially in cases where full compliance is vital to life.”

Beyond ethics
The present day pharmacist is no longer only concerned with dispensing medicines, said Dr Allen Young. Today, they also manage the safety of patients who use the drugs, provide them with consultancy services and ensure the effective and proper use of medicines.

“It means, therefore, that we have a great responsibility to try as best we can to prevent the abuse and misuse of prescription drugs. We have to ensure that we do not give drugs to people simply because they are known to us or are prominent people in the community. . . . Everyone, no matter who, will have to be subject to the checks and balances that limit as much as possible the occurrence of prescription drug abuse and misuse. Pharmacists have to be vigilant, professional and ensure that practice goes beyond ethics,” Dr Allen Young declared.

Concluding her lecture, Dr Allen Young said that the changing world demands responses that are relevant, are flexible and have impact, and here are opportunities for pharmacy practice. Charting the course is not just for international bodies like the CPA. It is not just the function of national associations. It depends on everyone.

“Pharmacy practice opportunities must be defined by each of us in the way we offer services that benefit our patients, advance healthcare and bring honour to the noble profession of pharmacy,” she said.

Crime, corruption and conflict threats to public health come from sources other than pathogens

Kenneth Attafuah: health threatened by nefarious behaviour of evil people

The health of millions of people in Sudan, Congo, Rwanda, Angola and Mozambique have experienced far more suffering, misery and ill-health from political and social abuse and exploitation than the starvation, cholera and dysentery that eventually kill them, he said.

“Conflict drains more time, attention, blood, treasure and support from individuals and Governments than do disease and medical research. Lawlessness and failure of governance also make us sick, and kill us before our time is ripe.”

Professor Attafuah went on to say that many socio-cultural attitudes are inimical to the health of women and children. For example, the greatest threats to the health and safety of pregnant women and girls do not emanate from medical conditions and related complications but from ignorance, obnoxious cultural practices and social taboos affecting pregnancy in such critical areas as diet, nutrition and exercise. “Eat an egg, and your child will die; if you attend antenatal clinic, the witches will know too soon that you are pregnant, and they will eat up your fetus before you know. What sorcery, witchcraft and pre-medieval superstitions and religious injunctions do to women in developing countries, discrimination based on gender and pregnancy, sexual harassment and bullying boss syndrome do to women in Euro-American countries,” he said. Traditional world views threaten women’s well-being every day in much of the developing world, much as gender-based mistreatment adversely affects the health and well-being of many women and girls in the technologically advanced world.

Turning to the treatment of people with disability — both physical and mental — Professor Attafuah said this remained “one of the most shameful reflections of our inhumanity”. He invited conference delegates to take a stroll on the streets of Accra. There they would encounter the shocking conditions of many mentally impaired people who live subhuman
lives. Many women with mental disability had come to that situation in life as a direct result of acute domestic violence perpetrated by men and other women in the service of patriarchy and other traditional conceptions of appropriate gender roles. “Unfair domestic and workplace pressures make women sick. And the increasing rates of female suicide, female infanticide and female madness loudly announce the precarious status of many females in traditional societies,” he said.

To better ensure people’s health and well-being, it is imperative the living conditions of people are improved and health inequities reduced through action on the social determinants of health. “But above all, we must tackle the inequitable distribution of power, money and resources. The abuse of power, even in democratic societies, is a major site of ill-health for large numbers of people around the world,” he declared.

“Combating discrimination, fighting corruption and the abuse of power and ill-treatment, improving governance, reducing administrative injustices, building stronger families, reducing the stranglehold of patriarchy, expanding day-care facilities, supporting the education of girls, providing better pay to elementary school teachers, teaching interpersonal and group conflict resolution skills, and expanding access to justice hold stronger potentials to enhance the scale of human safety and well-being than any further advances in medicine and pharmacy can hope to achieve,” he concluded.

Malaria accounts for 44.5 per cent of all outpatient attendances and 12 per cent of deaths of children under five years of age in Ghana. Three and a half million people contract malaria every year. Approximately 20,000 children die from malaria every year (25 per cent of the deaths of children under the age of five).

Ghana spends approximately $77m on malaria annually.

These were some of the statistics given to the conference by Chris Hentschel, president and chief executive officer of the Medicines for Malaria Venture, a not-for-profit foundation based in Geneva, Switzerland, that aims to facilitate the discovery, development and delivery of affordable new drugs for the treatment of malaria.

He told the congress that the world’s malaria burden remains appallingly high, with over three billion people at risk and nearly one million mainly childhood deaths, 90 per cent of which occur in Africa.

He reminded the audience of MMV’s “Global malaria action plan”, which had been launched at a special session of the United Nations General Assembly in September 2008.

The plan had three core components: controlling malaria, eliminating malaria and research. “All major global bodies now endorse the plan as the best strategy for the eventual eradication of malaria,” he said.

The plan is having some success:

- The Asia Pacific Malaria Elimination Network is supporting malaria elimination efforts in China, Indonesia, Malaysia, North Korea, Philippines, the Solomon Islands, South Korea, Sri Lanka and Vanuatu
- The World Health Organization is currently supporting Iran, Iraq, Libya, Morocco, Oman, Saudi Arabia, Qatar, Sudan, United Arab Emirates and Yemen, with malaria elimination or prevention of malaria reintroduction programmes
- Malaria elimination in Africa is high on health and development agenda thanks to African Union, the Southern African Development Community, the Bill & Melinda Gates Foundation and the Ewold Health Organization
- Eight African countries in the southern African region are working together towards elimination

These developments are welcome, but there is a continuous need for innovation, concluded Dr Hentschel.

Effective team work is crucial to ensuring that the threats of hospital acquired infections are minimised or eliminated in the future, Alison Ewing, clinical director of pharmacy at the Royal Liverpool & Broadgreen University Hospitals NHS Trust, told the conference.

Speaking during a session on “Multiple threats to patient safety”, Miss Ewing discussed the different types of hospital infections that are prevalent in the UK and the role that pharmacists play in improving patient care.

In particular, she looked at the impact improved antimicrobial stewardship had had on the use of antimicrobial agents. Antibiotics were used for almost 25 per cent of patients at her trust every day, so these commonly used medicines had to be carefully prescribed and monitored to ensure positive patient outcomes. Pharmacy led audits had shown poor compliance with the trust formulary guidelines and even poorer compliance with the application of stop/review dates on prescriptions.

Miss Ewing went on to show the almost 50 per cent decrease in the cases of *Clostridium difficile* that had come about as a direct result of improvements in antimicrobial prescribing. A revised formulary and diagrammatic “quick reference” guides had been implemented by the two full-time antimicrobial pharmacists and the newly formed multidisciplinary antimicrobial management group. This group comprised people representing doctors, microbiologists, infectious diseases personnel and nurses, together with the antimicrobial pharmacists and Ms Ewing herself.

Together with an education package for medical, pharmacy and nursing staff, this had improved knowledge and increased awareness about appropriate prescribing and administration of these drugs.

Turning to the issue of meticillin-resistant *Staphylococcus aureus*, Miss Ewing explained that the rates of death from meticillin-sensitive *Staphylococcus aureus* (MSSA) had remained almost constant in the UK since 1995, unlike the death rates from MRSA, which had increased almost exponentially. It was, therefore, imperative that the problem was tackled aggressively.

Along with the infection control team (ICT) at her trust, pharmacists had worked to ensure good preoperative screening for MRSA and implemented updated decolonisation strategies. The ICT had also improved the education for all clinical staff on aseptic technique and intravenous line management to minimise MRSA bacteraemia.

This two-pronged approach of good infection control and antimicrobial stewardship had resulted in a decrease in the rates of MRSA bacteraemias in the Royal Liverpool & Broadgreen University Hospitals NHS Trust from around 70 cases per month to fewer than 30, with rates continuing to fall. This reflected the national trend, she said.

**Team-working is the key to eliminating hospital-acquired infections**

How the Medicines for Malaria Venture plans to eliminate malaria in Ghana and beyond

Malaria is one of the most deadly diseases affecting humans. It is caused by Plasmodium falciparum, a protozoan that is transmitted to humans by the bite of the female *Anopheles* mosquito. The disease affects nearly half of the world’s population and is responsible for millions of deaths each year. In 2008, there were an estimated 247 million cases and 811,000 deaths worldwide, most of which were in sub-Saharan Africa. Malaria accounts for 44.5 per cent of all outpatient attendances and 12 per cent of deaths of children under five years of age in Ghana. Three and a half million people contract malaria every year. Approximately 20,000 children die from malaria every year (25 per cent of the deaths of children under the age of five). Ghana spends approximately $77m on malaria annually.

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These developments are welcome, but there is a continuous need for innovation, concluded Dr Hentschel.
Dosages recommended in standard texts for some medicines are not appropriate for African children, said Bamenla Goka, associate professor of paediatrics at the University of Ghana Medical School. Professor Goka was speaking at session on “Better medicines for children”.

For example, she told the audience, African children generally need higher than usual doses of midazolam but can only tolerate lower doses of 6-mercaptopurine. She called for pharmacokinetic studies to be carried out in African children in order to determine the most appropriate doses for them.

Professor Goka outlined the practical challenges faced with respect to the provision and safe use of medicines for children in Africa. These related to quality, availability, affordability, formulation, dose and adherence. Expectations do not often match the reality, she said.

For example, it might be expected that a prescriber would make a diagnosis and prescribe appropriate treatment for a child. But what often happens is that symptoms are treated, resulting in too many medicines being prescribed for a child. Dose should take weight and other factors into account, but in reality this is often based on the child’s age.

Other problems for children include low literacy among their caregivers, meaning that instructions cannot be read. They therefore have to be memorised, which results in mistakes with the medicine’s administration.

Poverty, of course, is a huge problem that affects people’s ability to buy and store medicines safely. Professor Goka said that access to medicines for children should be improved and suggested that a health insurance scheme that is independent from parents’ health insurance should be considered as a possible solution to the problem.

Turning to pharmacy, Professor Goka said that here, too, expectations do not match reality. There is an expectation that pharmacies should have efficient logistic management information systems to avoid medicines shortages. Likewise, it is expected that pharmacies should stock all medicines on the Essential Medicines List in strengths suitable for children. But the reality is that medicines shortages are common, not all EML medicines are available, and some pharmacies dispense date-expired medicines.

Professor Goka said that progress is being made and this could be accelerated through enforcement of existing regulations by regulatory bodies. Pressure from consumer associations and the media also has a role. A crucial element of any solution, she said, is the instigation of a system of continuing professional development for all healthcare workers who prescribe or administer medicines for children.

Ghana as a centre of excellence

The vice-president of Ghana, John Dramani Mahama, has pledged that the Ghanaian government will provide the protection and investments required to ensure that Ghana becomes a centre of excellence in drug discovery research and an active hub of pharmaceutical manufacturing in Africa.

He told the conference that, since local industries in Ghana create employment and contribute to the country’s gross domestic product, they are pivotal to the Ghanaian economy. “I encourage you in your deliberations to find ways of making them competitive so that they can grow globally,” he said. “In Ghana and, I believe, in some other Commonwealth countries, locally manufactured drugs compare favourably with imported ones in terms of international standards of safety, efficacy and quality.”

Mr Mahama also touched on the issue of “brain drain”. He told the audience that the developed world attracts highly qualified health professionals while poor countries suffer. “This is made worse by the fact that several of these professionals are poached from countries like ours after we have invested our scarce resources in training them.”

He pointed out that Ghana had 1,400 pharmacists serving a population of 22 million people. “This is woefully inadequate and renders the population vulnerable and exposed to the activities and schemes of untrained ‘health professionals’ thereby denying them the excellent services that your profession provides,” he told assembled pharmacists.

The situation, he said, lacks equity and is unacceptable. His government wants to work with the Commonwealth Pharmacists Association, the International Pharmaceutical Federation and the Pharmaceutical Society of Ghana to find innovative ways of addressing the imbalance. “For how can patients and doctors make the best use of their medicines if pharmacists, the experts in medicines, are absent,” he asked.

Counterfeiting is a public menace

Counterfeiting medicines remain a public menace and are widespread, according to Patrick Lukulay, director of the US Pharmacopeia drug quality and information programme. They are a serious threat to health and economic development and contribute to the poverty of nations.

Dr Lukulay outlined the causes of the proliferation of counterfeit and substandard drugs. These include an undue focus on price over quality, weak or absent medicines regulatory control, and weak law enforcement and penal sanctions.

A further cause in some countries is a weak system of checks and balances in the form of a free press, robust courts and an informed public. Furthermore, high taxes and import duties sometimes make legitimate trade prohibitive, he said.

He told the conference that effective regulation requires a system wherein the law, an effective judiciary and the medicines regulator act together with input from a vigilant press, consumer advocacy groups and a well informed public. “People need to understand that a bad drug is a useless drug and exert pressure on regulators and the judiciary,” he said.

Earlier, the vice-president of Ghana, John Dramani Mahama, also addressed the issue of counterfeit medicines. He said that the influx of counterfeit medicines has been of great concern across the developing world. “While it is still a problem within manageable proportions in Ghana, the government is concerned about the phenomenon,” he said.

In a global world where the tenets of free trade are being promoted, it is easy for international criminal groups to take advantage of easy movement of goods and people to move fake drugs across borders, he said, adding: “The government is willing to partner with your association to eradicate this criminal activity.”