URBAN HEALTH IN A TROPICAL ENVIRONMENT
RESEARCH AND CURRENT ISSUES
You will read it throughout this edition of MT: one in two world citizens lives in an urban environment. Globalisation has taken industries and technologies to all corners of the world, a process which took place in a rapid speed. Whereas it took London roughly some 130 years to grow from 1 to 8 million people, in Seoul it happened in only 25 years, as the WHO describes in the ‘Hidden cities’ report 1.

Startling statistics. Even more startling is the fact that in between skyscrapers and flyovers, one third of the urban population lives in urban slums and shantytowns. Close to 1 billion people. The trend is not likely to slow down. It is estimated that in 2050 seventy per cent of the world population will live in an urban environment. (WHO, 2010) While urban life offers plenty of opportunities, to many urban life equals sheer survival in facing a long list of potential hazards and health risks, such as food and water problems, crowded housing situations, air pollution and not to forget congested traffic.

In this edition of MT, the lens is placed on urban health. It is a prelude to the upcoming annual symposium of the NVTG, this year organised in conjunction with Public Health Service Amsterdam (GGD) and the Royal Tropical Institute (KIT), taking place on the 16th of October in Amsterdam. Maarten Dekker interviewed Arnoud Verhoeff, professor of Urban Health and Health Care, who in his keynote will focus on the differences in urbanisation in high- and low-income countries and the effects of urbanisation on public health and health care. The importance of a multi-sectoral approach in improving urban health is presented in Yme van den Berg’s report on the KIT short courses on Urban Health, where masters students visited slum environment in Nairobi and for the first time encountered the phenomenon of ‘flying toilets’.

Specific data on what actually happens within a slum are difficult to obtain. In this edition of MT, George Kimathi and colleagues intend to fill this gap by presenting the results of a quasi-experimental study on the effect of an intervention programme in the urban slum Kibera. Children can become ‘agents of change’ as this programme on improving the health and hygiene situation of children in one of the world’s ‘famous’ slums illustrates.

Consult Online in this edition deals with complications of an ulcerating head wound being treated at a clinic in Sierra Leone. Previous treatment with native herbs proved only a temporary measure. The Tanzanian doctor Chirangi explores in his PhD research the interface between traditional and modern medical practitioners. Seen from an African perspective he portrays traditional remedies amidst present-day realities in health care.

Visser’s medical historical note takes us to the Second World War where Indonesian doctors in remote areas and Dutch doctors in the Japanese camps used coconut water for intravenous therapy. Clearly not an ideal solution, but may serve its use in urgent situations when no other supplies are available. Borgstein takes us to the future, portraying a bleak picture of ‘health for nobody’ by the year 2050; a time in which the urban dwellers may no longer be able to admire the sunset. The column inspires to address the triple threat of ‘infectious diseases, non-communicable diseases and injuries and violence’, or according to Borgstein the real triple threat of ‘insufficient food, water and clean air’. Threats that already spoil the daily sunset of many urban dwellers today, and unless we act now, these threats are not likely to dissolve into (polluted) air.

ESTHER JURGENS
Interview with Arnoud Verhoeff, keynote lecturer at the coming symposium ‘Sick Cities or Healthy Habitats’, by the Netherlands Society for Tropical Medicine and International Health and the Royal Tropical Institute

On the 16th of October you will hold a keynote lecture at the symposium ‘Sick Cities or Healthy Habitats’. The title of your lecture is ‘Global Health Issues in an Urbanizing Century’. What are you going to discuss?

At this moment, half of humanity lives in urban areas and this proportion will only grow. I will talk about the differences in urbanization in high- and low-income countries and the effects of urbanization on public health and health care.

How did you become interested in urban health?

After finishing my Master’s in Biology/Biomedical Sciences I was placed with the Public Health Service in Amsterdam as a substitute for the compulsory military service of that moment. There I became interested in the city as an epicentre of public health and the interface of research, practice and policy within the Public Health Department.

How does it feel for you to speak for an audience that is mainly interested in international health and tropical medicine?

I have also been in low-income countries for my work, so I am looking forward to talk for a different, internationally orientated audience.

What experiences do you have with urban health in developing countries?

The Public Health Service Amsterdam has various international exchange programmes. For example, a few years ago...
there was a request from the Public Health service of Accra, Ghana. They were specifically interested in our experience with reaching difficult target populations, like men having sex with men and sex workers, for prevention programmes for HIV/AIDS.

Another example is our exchange programme with Paramaribo, Suriname. Together with the local Surinam community leaders in Amsterdam and Paramaribo, we thought of a way to equalize our specific prevention programmes for infectious diseases and mental health, and to make them applicable for both the local situation in Paramaribo and Amsterdam.

What recent accomplishments of the Public Health Service Amsterdam are you most proud of?

Personally, I am most proud when outcomes of observational data and research into important health trends within the city are being translated into policy. For example, since a few years we have been very busy with understanding and finding solutions for the complex epidemic of overweight. Recently, in cooperation with the City Council, we were able to realize a long-term strategy for the next 20 years. This was an important and innovative achievement, because until now most of the local public health policy focussed on a few years only. However, for a complex public health threat like overweight, a much longer-lasting strategy is needed.

In the report ‘Hidden Cities’ published in the year 2010, the World Health Organization (WHO) and United Nations (UN) predict that in the next decennia most of the urban population growth will occur in developing countries. Can we compare these big and growing cities in developing countries with Amsterdam?

To be able to answer that question, we first need to make a distinction between different types of cities. The basic factors that influence urban health are divided in natural and physical environment, socioeconomic environment, food and hygiene and accessible health care. The biggest health threats in big cities in developing countries, with many people living in slums, are caused by problems with these basic conditions. This makes it difficult to compare cities in Western countries with cities in developing countries.

As mentioned before, we do work together with cities in both developing and Western countries. I have already mentioned the exchange programmes with Accra and Paramaribo, but we also share knowledge and expertise about mental health care and addiction programmes with the New York Public Health department.

Last year the Public Health Service Amsterdam participated in a project with 25 other European cities. Will there be more of these international studies in the future?

Yes, population data from Western cities with similar populations are often very suitable for comparison of data, because the main urban health problems are pretty much the same. However, these data cannot always be compared directly, because of differences in urban political governance and health care structure. Projects like these will remain important to measure differences in health between European cities.

What can the Public Health Service Amsterdam learn from developing countries?

A good example of a method that is used widely in developing countries is the community-based approach. With this method, interventions are designed and introduced in cooperation with the local community. An example of such a community-based approach is the HIV/AIDS prevention programme in Amsterdam. Decennia ago we sensed that particular ethnic minorities were less easily reached with our existing prevention programmes of that moment. In order to enlarge our influence we organized a meeting with the (religious) leaders and spokesmen of the biggest ethnic communities in Amsterdam. Together with these community leaders and our educational and financial support we enabled the local organizations to develop their own public health care activities.

These methods sometimes caused interesting discussions. For example, some religious leaders who preached no sex before marriage, were difficult to convince of the importance of preventative and contraceptive measures. This makes our work in the city environment with different cultural backgrounds very interesting.

In the ‘Hidden Cities’ report a triple threat to health is described. How big is this threat of infectious diseases, noncommunicable diseases and injuries and violence in Amsterdam?

All these threats are also present in Amsterdam. Most chronic, noncommunicable diseases are overrepresented in the city, compared to the rest of the country. But also within the city there is a big difference in socioeconomic status, resulting in differences in health between particular populations and neighbourhoods. The city is attractive because of its opportunities, particularly for its wealthy inhabitants, but it concentrates many risks for health too.

Also infectious diseases and sexually transmitted diseases in particular, are more frequently seen in Amsterdam than in the rest of the Netherlands. So, the triple threat is also applicable to Amsterdam, however on a totally different scale than to the cities in developing countries.

You mentioned differences in health between wealthy and poorer populations within the cities. How do you unmask these inequities?

One of the most important tools we use and which is also used in developing countries with the help of organizations like the WHO, is epidemiological research among the urban populations. In Amsterdam we use a combination of the periodically held Amsterdam Health Monitor and health statistics like mortality rates and hospital discharge diagnoses to monitor health. All these data can be divided and categorized by different demographic characteristics to make specific comparisons between particular groups. The Amsterdam Health Monitor has a pretty good response and therefore gives a good reflection of health in our city.

However, particular populations, like people living in slums, are not
reached with this instrument and therefore require specific measurement tools. In those areas, public health workers visit different representative parts of the slums to obtain an impression of the circumstances and to do interviews on the spot.

The last part of the ‘Hidden Cities’ report is about the different ways for intervention in health inequities. Should we approach disadvantaged population groups only or reduce health threats for every citizen?

General public health prevention programmes for the general population, like child health care, will always be needed. Depending on the local urban situation, there are specific interventions for disadvantaged population groups. Both in Western and developing countries these worst-off urban residents are the primary focus of intervention programmes. Often, also more wealthy residents benefit from these interventions in some way.

The WHO and UN predict that in developed countries immigration will account for the biggest proportion of urban population growth in the next few decades. What are your experiences with immigration in Amsterdam?

Every migrating population offers specific urban health challenges. A good example for Amsterdam was the first generation of Turkish and Moroccan immigrants a few decennia ago. We found out that they lacked basic knowledge about their bodies and health and we started intervention programmes to deal with this problem. In The Hague and Rotterdam there are far more immigrants from Eastern Europe. Within these populations some people are infected with tuberculosis. This causes a relatively new challenge for urban health in these cities.

What will be the biggest urban health challenge for Amsterdam in the years to come?

For Amsterdam, the two most important themes for the next years will be healthy weight and mental health. The current opinion in our society seems to be that everything can be fixed, but that is certainly not the case in urban health. Therefore, the present tendency in public health is to limit health risks and prevent disease as early in life as possible. These relatively cheap interventions will improve quality of life and will prevent disease and subsequent health care costs in the future. On the other hand, we also need to keep discussing whether we should screen populations for every risk factor.

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REFERENCE EDITORIAL

Achieving Sustainable Health in Urban Informal Settlements; Are Children Partners or Passive Recipients?

According to the International Institute for Environment and Development, half the world’s populations live in urban areas of which a third, almost 1 billion, are desperately poor and live in slums without access to adequate water and sanitation. Additionally, as many as 150 million urban residents representing up to 50 per cent of the African urban population do not have adequate water supplies, while 180 million, or roughly 60 per cent of people in urban areas lack adequate sanitation. Kenya is a rapidly urbanizing country, with an estimated one-third of its population residing in cities and towns. While it is still amongst the least urbanized countries in the world, projections indicate that half of the population will be urban by 2030 (National Urban Development Policy, 2011). The urbanization process in Kenya has been accompanied by increasing levels of urban poverty, the growth of informal settlements, and rising inequalities between the rich and the poor. While reliable and current data on the size of the urban poor population is difficult to come by, it can be assumed that, with continued rapid urbanization, levels of urban poverty will continue to rise.

KIBERA SETTLEMENT

The Kibera settlement is the biggest slum in Africa and one of the biggest in the world. It houses almost half a million of these people and is characterized by high population density, unplanned and crowded settlement with inadequate and unreliable water supply, poor sanitation infrastructure and unsafe hygiene practices. Sanitation coverage is only 15% whereby one pit latrine is shared by approximately 200 people; these toilets are largely unclean, unaffordable, built of unsafe dilapidated materials, do not offer privacy to users, and most are located at distances considered unsafe to household users, particularly women and children. These factors render such toilets largely inaccessible leading to the use of “flying toilets” whereby fecal matter is deposited in polythene paper bags and flung under cover of darkness onto the rooftops of neighbouring households and into open alleys for disposal which in effect compromises human dignity and health.

SEXUAL HEALTH

In Kibera slums, adolescent girls are prone to early unwanted pregnancies, septic abortions, sexual abuse, HIV and AIDS, alcohol and substance use and abuse and vulnerability to risks associated with early sexual activity. Adjusting to sexual development and protecting their reproductive health are major challenges for adolescents. They are also vulnerable because they lack knowledge and skills to avoid risky behaviour and lack access to acceptable, affordable and appropriate reproductive health information and services. This is often compounded with multi-pronged disadvantages such as poverty and unemployment. Adolescent girls face more challenges in terms of menstrual hygiene management because of lack of sanitary pads, awareness and proper sanitation facilities. This leads to girls missing school during their monthly periods, with negative implications on their education outcomes.

INTEGRATED SCHOOL HEALTH PROGRAMME

An issue that is unique to urban areas is the high number of non-formal schools based primarily in the urban informal settlements like Kibera, characterized by poor physical facili-
ties, a poor learning environment and with few qualified teachers. Data for Nairobi shows that around 25% of enrolment is in non-formal schools, demonstrating the significant contribution of these schools to providing education in the city. Evidence indicates that comprehensive and integrated school health programmes that focus on academic curriculum, the environment and community development, are more likely to improve the health of school children and the community at large. The existence of school health policy and guidelines, 2009, has helped reinforce the integrated school health in the country. A 3-year partnership focussing on promoting the role of children as agents of health behaviour change was initiated by the Government of Kenya, AMREF and the Kibera community, the Kibera Integrated School Health (KISH) project. The project site formed the Mashimoni and Laini Saba villages within the Kibera informal settlement, which included 38 non-formal and 2 public schools. The project goal was to improve the health of Kibera residents through an integrated school health programme. This was achieved by focussing on reduction of hygiene and sanitation related diseases, reduction of sexual reproductive health illness, improved nutrition status among pupils and within their community in the 40 intervention schools which were not the case in the comparison schools. WHO asserts that initiating water, sanitation and hygiene promotion activities in schools can have a positive impact on the ability of school-going children to learn and the behaviour learnt at school can lead to life-long positive habits. Children have also been found to influence the behaviour of family members and the community as a whole. It has also been noted that school hygiene and sanitation initiatives are more cost-effective when children play a central role. The evidence suggests that these interventions are most effective if they focus on capacity building, behaviour change, the institutionalization of the programme and establishment of partnerships.

OBJECTIVE OF THE STUDY
The objective of the study was to assess the effectiveness of children as health change agents in the improvement health status of communities living in urban informal settlements.

METHODOLOGY
A quasi-experimental study design was used with comparison being made between the intervention and non-intervention schools in Kibera. The specific aspects of the project that were focussed on for comparison were school attendance, access to water, personal hygiene, sanitation promotion, reproductive health and STIs and capacity building. Structured questionnaires were administered to 404 pupils in intervention schools and 202 pupils in non-intervention schools while key informant interviews were conducted with teachers, parents, project staff, project partners and local administration and focus group discussions conducted with the community members.

KEY ACHIEVEMENTS
School Attendance
The study revealed that absenteeism reduced to 25% from 33.9% during baseline compared to 29.5% in non-intervention sites. Performance and enrolments have shown an increasing trend in many of the schools. Study data indicates that there is increased enrolment of over 10% in sample intervention schools. These developments are an indication of existence of child friendly environments in the schools which enable learning.

Access to Safe Water
The percentage of pupils in intervention schools with access to safe drinking water increased to 68% from 50% at baseline compared to 39.3% of non-intervention schools. Water availability was also influenced by ability of schools to pay for water supply even when they have storage facilities. In addition 69.7% of intervention and 54.3% of comparison schools got water from water tanks installed within the school compounds. Piped water connected directly to the school compound in a tap was reported by 62.4% of intervention schools compared to a mere 9.5% reported by comparison schools.

Personal Hygiene
Various critical hygienic behaviours were noted among pupils in intervention schools. The results showed a significant improvement on the knowledge of disease prevention. At baseline, 71.7% of pupils in control schools and 65% in intervention sites washed their hands after visiting the toilet. The end-term indicated commendable improvement with the intervention schools having higher respondents (93%) than control schools (81.3%) who washed their hands. 94% of the schools have hand-washing facilities compared with 48% in non-intervention schools, a statistically significant difference at p<0.05. Other appropriate behaviour changes adapted by pupils in intervention schools include regular trimming of nails of at least once every 2 weeks (81.2%) compared with control sites (56%). This is an important public health practice promoted among children towards prevention of various water and sanitation related diseases. Other personal hygiene practices that have greatly improved include dental health, minimizing risky behaviour and attitude related to waste disposal.

Sanitation Promotion
Most intervention schools have improved toilets (83%) compared to the baseline of 58% while the comparison schools on the other hand mostly have ordinary pit latrines (66%). The uptake of improved sanitation facilities is evident in intervention schools and this could be attributed to proj-
ect interventions as it has supported development of hygiene and sanitation facilities within intervention area.

**REPRODUCTIVE HEALTH AND STIs**
All respondents identified with reproductive health topics taught in school. However, more intervention schools are taught reproductive health than the comparison schools. The uptake of reproductive health activities is higher compared to the baseline findings which reported 59.5% uptake in schools. This could be attributed to integration of reproductive health (RH) activities into the Personal Hygiene and Sanitation Education (PHASE) activities. The teachers have thus taken the lead in ensuring streamlining of RH interventions within the schools.

**CAPACITY BUILDING**
During focus group discussion with focal teachers from schools and key informant interview with the chair of the PHASE/KISH Forum, it was confirmed that during the KISH project teachers were trained as trainers. The training content was expanded to include First Aid, sexual and reproductive health, children as change agents, child rights, hygiene and sanitation. Learning materials and training manuals – customized to local situations with which the children can easily identify – were provided to facilitate training. Focus group discussions (FGDs) with parents confirmed that they have been given orientation by teachers on being open and friendly to their daughters in discussing reproductive health issues. FGDs with community health workers and health workers at the Kibera health centre, indicated that this initiative contributed to enhancing staffing and drug availability, helped the health workers to better understand the integrated school health approach and the role of children as vehicles for conveying health messages to peers and parents.

**RELEVANCE OF THE INTERVENTION**
The initiative is in line with current policies and strategies of the Ministries of Health and Education in Kenya. Specifically, the interventions closely link with the community health strategy and the school Water Sanitation and Hygiene (WASH) programme of the Ministry of Health. This ensures sustainability of the initiatives even after the project terminates. It addresses national as well as local level priorities. The WASH component contributes to the goals of the Nairobi Water and Sewerage Company as well as those of the school WASH programme of the Ministry of Health. The implementation was within the community health strategy. Further, it clearly complements the goals of the Community-led Total Sanitation programme of the Ministry of Health which are geared to ensuring understanding, acceptance and ownership by communities of their water and sanitation needs.

*“We received pads from Amref and it has contributed to reduction of absenteeism among girls who could not afford sanitary pads. It also helped us identify the challenges that the girls go through during the menstrual periods and also helped in addressing adolescent issues.” (Headteacher, Mbagathi Primary School)*

*“Amref programme has helped us greatly in sanitation. Our waste disposal has improved greatly, our pit latrines have been upgraded into VIP; and pupils and teachers are dewormed regularly. One positive effect of the project is that it has helped learners and even teachers to discuss health concerns freely.” (Soweto, Primary School Headteacher)*

*“Through peer education, children have developed the courage and confidence to talk freely and even on matters of reproductive health which were previously avoided. Peer training has therefore helped in two ways; improving pupils’ awareness of health issues and increasing the assertiveness of pupils.” (Headteacher, Kibera Soweto)*
CONCLUSION
The project demonstrated that children are effective change agents, not only for health promotion but also for continued attainment of child rights. Children have infinite capacity to influence positive health behaviours among their peers, parents and general community. School health clubs play a pivotal role in facilitating this as fora for children-moderated discourse on relevant health issues in their schools, reflecting on progress achieved and planning for continued awareness sessions. The school management committee (consisting of representatives of parents and teachers) is therefore obligated to provide requisite leadership at school level including availng resources, time and mentorship. However, sustainability in such initiatives can only be realized if a well-empowered civil group exists to create the required social capital particularly in the informal settlement. In this case, Kibera PHASE Forum is aptly playing this role. Ultimately though, the government has the overall responsibility to ensure populations residing in informal settlements have access to basic health care services. In this regard, such initiatives have to closely collaborate with existing government structures and systematically lobby for increased financial and human resource allocation and social welfare investments. This model certainly presents immense potential towards improving health outcomes in urban informal settlements through a cost-effective and sustainable manner.

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Since 2007, more than half of the world population has lived in an urban environment. Urban citizens live in environments that offer both opportunities and threats for health. The poor in expanding urban slums often suffer from worse health indicators than the rural poor, with ‘urban averages’ hiding considerable inequalities between the poor and rich city dwellers.

BACKGROUND
In February 2005 the late Dr. Lee Jong-Wook, Director-General of the WHO, created the Commission on Social Determinants of Health, in order to analyse and propose solutions to address the fundamental causes of poor health, especially those of the ‘bottom billion’ of this globe. The commission recognized the importance of urban health problems: one of the 9 working groups (knowledge networks) that advised the Commission was the Knowledge Network on Urban Settings (KNUS). The final report of this KNUS working group was entitled: ‘Our cities, our health, our future: Acting on social determinants for health equity in urban settings’ (WHO, 2008).

It is this background and the complexity of the pathways and causal chains through which social determinants impact on health that make urban health a particularly challenging topic for public health professionals. In response to urban health becoming more and more important on the policy agenda internationally, KIT organized a refresher course for her alumni...
Courses in 2009 on urban health challenges, with participants from Ghana, Kenya, Nepal, Indonesia, Yemen, Egypt, Malawi, Uganda and Zambia. The course was held in Nairobi, and during the second week, a short 2 day field visit was made to a few of the less ‘famous’ slums of Nairobi, namely Dagoretti, Mukuru and Kawangware. (Kibera is the best known slum, having become almost a touristic place.)

Field Visit
Armed with boots, cameras, interview guides and issue lists, that were elaborated with the help of an urban health conceptual framework, participants mapped the slums that they visited, held interviews with multiple stakeholders, and visited some of the homes of the slum dwellers.

Participants learned new vocabularies, like ‘flying toilets’, and at the end of the field visits, they were literally shocked by what they had heard, seen, smelled and experienced: even the Kenyan participants were so impressed by the visit, that one of them sighed: ‘We just know the names of the slums.’

A year later, KIT organized another course related field visit to urban health, this time in Jinja, Uganda. The course had as its title: ‘Health needs more than health care.’

Diagnosed Public Health Problems
In the follow-up of the first course, participants felt a need for public health officials to improve their communication skills in order to advocate for this broader and multi-sectoral approach related to the social determinants of health, developing contacts with politicians, press, opinion leaders and population networks; using media, message design strategies and other technologies. The course in Jinja therefore was aimed particularly at improving communication, advocacy and leadership skills, in order to enable public health alumni to play a more ‘passionate’ role in advocacy, and engaging with a diversity of stakeholders on a range of health issues.

Participants inventoried problems related to the following clusters of public health problems in Jinja:

1. Traffic injuries and other injuries
2. Unhealthy lifestyles - problems of overweight, diabetes, cardiovascular disease, related to unhealthy food, lack of physical exercise, smoking etc.
3. Sanitary/environmental and water problems
4. Mental and social problems – including drug and alcohol abuse, STIs/HIV, mental distress, related to social support networks, churches and religion, mobility and migration.

They discussed these problems with various stakeholders relevant for each cluster: municipality, schools, police, health office, hospital, shop keepers, etc. to look at their awareness and involvement around that particular problem. The quick group assessments around the above four themes resulted in journal articles on each of the topics, meant for advocacy to the general public on the importance of social determinants of health. At the end of the course, participants made feedback presentation to the stakeholders whom they had contacted earlier.

Since these two short courses were held, KIT has integrated sessions on urban health in its regular Masters Programmes, and since 2013 a short online course on Urban Health in low-income countries is offered. Some highlights of this short course are given below. (More information on the KIT website: http://bit.ly/XeHEvp)

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Urbanization is one of the leading global trends of the 21st Century that has a significant impact on health. By 2050, over 70% of the world’s population will live in cities. The factors influencing urban health include urban governance, population characteristics, the natural and built environment, social and economic development, services and health emergency management, and food security. While cities can bring opportunities, they can also bring challenges for better health. Today’s cities and those of tomorrow are facing a triple threat: infectious diseases like HIV/AIDS, TB, pneumonia, diarrhoeal diseases; noncommunicable diseases like asthma, heart disease, cancer and diabetes, and violence and injuries, including road traffic injuries (www.who.int/topics/urban_health).

Sombre News
In a sweeping statement placed on its website, the World Health Organization (WHO) estimates that by the year 2050, 70% of the world population will live in cities, where there will by then be so much disease that it is difficult to envisage anyone being able to remain healthy. The ‘triple threat’ (infectious diseases, noncommunicable diseases, violence and injuries) that we will be exposed to hardly comes as a surprise for it effectively includes all diseases known to man conveniently grouped under three main headings. This is either very sombre news (for both the 70% city dwellers and the receding rural population), or exceedingly good news if you happen to be involved in the health care industry.
Commercially the future has never looked so good. The health care industry has, during the past decades, gone through a piranha-like feeding frenzy to become one of the world’s leading industries, second only to warfare. Increasingly large proportions of the GNP of most countries are directly or indirectly channelled towards health care, underlining the schizophrenic reality of the global free market economies we have built up. It seems likely that by the year 2050 only the CEOs of the large health and weapons industries would be able to afford to live outside the cities in relative illness-free bliss, if they were not too busy making money.

The WHO meanwhile has completely reversed its outlook in the last quarter decade. From the somewhat supercilious ‘Health for all by the year 2000’ that was its ill-advised slogan of the 1970s, the WHO now predicts that there will be no health for anybody by the year 2050.

MISGUIDED BELIEF
Health for all by 2000 had to be quietly and unceremoniously dropped as the end of the century drew closer and it became clear that not only was the ‘battle’ with nature not going very well, but it was a battle that we would inevitably lose even if we won. There was, and still is, a firm and misguided belief in WHO circles that all illness was preventable, so the focus has traditionally excluded almost all aspects of health care that did not involve prevention. Riding the coattails of the end of the smallpox epidemic, prevention promised to lead us into a better and healthier world, making the WHO at once successful and redundant. Much of the current drive to send some astronauts to Mars is a relic of the idea that we can control and even improve on nature, and if we could only start from scratch we should be able to set up a better and more manageable (more logical) environment. All you really need for that, apparently, is a bit of water in some rocks on an uninhabitable airless desert...

The WHO, however, continues here on earth and having failed to make itself redundant by the year 2000, must soldier on, adopting along the way many of the methods and techniques used by large corporations. It is very likely that highly paid committees spent much time debating the exact wording of this unwieldy but all-inclusive ‘mission statement’ (or am I confusing it with a vision statement?) that we may condense into the simple marketing and T-shirt slogan ‘health for nobody by the year 2050’.

THE REAL TRIPLE THREAT
The ‘triple threat’ used to justify this depressing position neatly includes practically all illness know to man, including those rebranded ‘diseases’ the pharmaceutical industry has become so fond of, but inexplicably does not take into account, the real triple threat of: insufficient food, water and clean air. Perhaps by definition those do not count as real health problems and anyway they would be problems for the FAO and the various environmental organisations and not something the WHO should be concerning itself with.

The drive towards urbanization is closely linked with the trend of globalized commerce and the current economic model of infinite growth. You need a large urban population to not only manufacture the goods but also buy them, and an urban setting effectively provides both.

PEANUT BUTTER
The WHO, instead of maintaining a general supervision and control of the health industry is increasingly pressurized to aligning itself behind the large health industries. Declaring a pandemic at the drop of a hat to ensure healthy vaccine sales, or buying vast quantities of the expensive commercially produced fortified peanut butter that was developed with the help of starving African children but may not be produced by the countries where it was developed because of patent restrictions.

FUTURE OF RURAL POPULATION
It has become clear that there may be no real solution if we continue our current model of obligatory economic growth, for a restricted population as it ages will inevitably make the entire structure top heavy. This has now been discovered in China, where the only large scale experiment with population restriction (one child per family) is about to be abandoned. The problem is how we will maintain the supply of food to the increasing masses who cannot fend for themselves any longer by growing their own food, when the usable stretches of land for industrial food production have been exhausted and ultimately prove insufficient. Small-scale subsistence farming is only possible with a rural population. But perhaps the colonists on Mars will by then have discovered a solution for the food problem that we can use...if they are still alive...and if we are still alive.

The combination of democracy and capitalism has been predicted to be terminally destructive. The environment will probably survive, but there may be no one to admire the sunset.

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Case report from Sierra Leone: a man with an ulcerating head wound

SETTING
We present a second case from The Lion Heart Medical Centre in Yele, Sierra Leone. This new small rural hospital has a capacity of thirty-four beds. It has a functioning operation theatre, a small laboratory and digital radiography equipment. The nearest specialist hospitals are six hours away by car.

CASE REPORT
A forty-five year old man presented at the outpatient ward with an ulcerating swelling on the occipital side of his head. Three years before, the lesion had appeared as a small nodule that erupted spontaneously with evacuation of pus. Since two years the nodule gradually increased in size and became ulcerated. The ulcer had been treated with native herbs, without effect. Because of the growing discomfort, the patient decided to consult a doctor. He had always been in good health. Besides discomfort caused by the ulcer and headache, there were no complaints. There were no history of trauma, no systemic signs of infection, no loss of weight, nor signs of neurological impairment. There were no other relatives with similar complaints. On examination, there were no abnormalities besides the lesion on the skull. There was a circular ulcerating wound of seven by seven centimetres on the frontoparietal side of the skull. The lesion looked infected and showed partial healing. The edges of the wound were raised and were firm on palpation. The base of the lesion was soft and there was a depression of the underlying skull. (Figure 1) There was no lymphadenopathy. An X-ray of the skull showed destruction and infiltration of the frontoparietal cortex. (Figure 2)

A malignancy such as a squamous cell carcinoma or a basal cell carcinoma was suspected. To treat possible secondary osteomyelitis an oral course of cloxacillin was started. To exclude any other possible underlying diseases Consult Online was asked for advice about differential diagnosis and further treatment.

ADVICE FROM THE SPECIALISTS
Two dermatologists and three surgeons replied within two days.

The suggestion of a malignancy was supported. It was mentioned that both squamous cell carcinoma (SCC) and basal cell carcinoma (BCC) are less frequently seen in dark skinned individuals. Of both forms, SCC occurs more frequently in this population. However, it was also felt that after three years of disease, SCC would probably have shown more progression and might have disseminated.

Further suggested differential diagnoses were tuberculosis and other slowly destructive fungal, bacterial or parasitic infections. A chronic osteomyelitis starting from a superficial infection was also mentioned as an option. In addition, as an alternative option, it was proposed there could also have been a not mentioned trauma with a skull fracture and a meningeal tear, through which oedematose brain tissue could protrude.

To demonstrate fungal infection, it was advised to perform a potassium hydroxide (KOH) smear.
One of the specialists mentioned personal experience with using pulp from leaves of the periwinkle Catharanthus roseus (old name Vinca rosea) for palliative local treatment of non-resectable ulcerating breast carcinoma in Ghana. Vinca alkaloids such as vinblastine, vincristine, vindesine, vinorelbine, vinflunine and anhydrovinblastine, inhibit tubulin assembly and therefore have an anti-mitotic effect. These compounds are used as chemotherapy for various forms of cancer. [1]

Palliative treatment with Vinca leaves or empirical treatment with anti-tuberculous drugs could be considered. Because surgery in these situations is very difficult, wearing of a protective helmet was advised.

COURSE

Following the advice, a chest X-ray was done, which showed no signs of tuberculosis. Empirical treatment with anti-tuberculous drugs could not be given due to a shortage of drugs at the time of consultation. A course of oral griseofulvin was started to treat a possible fungal infection.

A biopsy of the lesion was taken and sent to the Netherlands for pathological examination. After two weeks the results of the histology confirmed a squamous cell carcinoma. The case was discussed with a dermatologist member of a Dutch head and neck oncology team. The advice in a Dutch situation would have been to resect the lesion with a margin of 2 cm. If the tumour is restricted to the tabula externa of the skull bone, the tabula interna would not have to be resected. However, if the tabula interna is also affected, the tumour should be completely removed. To close the wound a reconstruction with prosthetic material would be necessary. Postoperative radiotherapy would also be required. If the tumour has invaded the brain, neurosurgery or palliative chemoradiotherapy should be considered.

In Sierra Leone, chemotherapy or radiotherapy is hardly available and neurosurgery is not available at all. On X-ray both tabula interna and externa seemed to be affected. Therefore, it would be necessary to perform a complicated surgical procedure with the risk of meningal tear and secondary infection. In addition, there is no prosthetic material available in the hospital. The patient was counselled with regard to all these issues and he was advised to start palliative treatment with painkillers, treatment of secondary infection and wearing a protective helmet.

DISCUSSION

Primary cutaneous SCC is a malignant epithelial tumour. Worldwide incidence rates of SCC vary depending on whether SCC is counted together with premalignant conditions. SCC and BCC are both among the most common forms of human cancer. [2]

The key factor for developing SCC is exposure to ultraviolet radiation (UVR). People with a poor capacity for tanning are more at risk. Chronic inflammation, chronic wounds and immunosuppression are additional risk factors for developing SCC. [3-5]

Actinic Keratosis and Bowen’s disease are premalignant conditions of SCC. [6]

In dark skinned individuals, SCC is more frequent than BCC and may be unrelated to UVR, as it is also found in covered parts of the skin. In addition, in black populations SCC frequently arises in parts of the skin with chronic inflammation. [7]

There is a wide range of treatment options and the decision depends on prognostic classification of primary SCC (‘low risk’ or ‘high risk’) and metastatic stage. Clearly, prevention is of the utmost importance. [8]

CONCLUSION

In this case report we presented a patient with an invasive cutaneous SCC of the skull with unknown metastatic stage. This is the first published case report of Consult Online in which biopsy material was analysed in the Netherlands, which could lead to very specific treatment recommendations. Unfortunately, due to the restrictions of the low-resource setting and the complexity of the case, operation and chemoradiotherapy are not possible.

Palliative treatment is the only available option. Nonetheless, a firm diagnosis was made and that enabled the specialists to adequately counsel the patient. Therefore, other empirical and potentially harmful treatment was avoided.

This case illustrates the risk of chronic exposure to UVR, even in dark skinned populations. However, preventative measures other than wearing a hat and clothes while working in the sun, are probably not practical in developing countries. Because SCC is also found in covered parts of the skin and tends to start in sites with chronic infection, there is also the need for early diagnosis and treatment of chronic skin infections.

COURSES


REFERENCES

In 1967 I was invited to attend the first national congress of the Indonesian Pediatric Society in Semarang. There I was told that during the Second World War Indonesian doctors in remote areas and Dutch doctors in the Japanese camps, where no other supplies were available, used coconut water for intravenous therapy. Indonesian doctors educated at the Nederlands Indische Artsen School (NIAS) in Surabaya learned about this before the war. I was intrigued and brought one young coconut home and got two other ones through the Indonesian Embassy in The Hague. We analysed the chemical composition of the coconut water in our research laboratory and compared it with blood plasma, Oral Rehydration Solution (ORS) and sodium chloride intravenous fluid (NaCl) (Table 1, II). We did not publish the results, but hereby we would like to report on it as a historical note.

**DISCUSSION**

At that time we were only aware of the first international publication on the use of coconut water for intravenous therapy, of 1942 by a Cuban group, treating 12 children [6]. In 1954 Eiseman et al. reported their clinical experience with intravenous administration of coconut water in 157 patients in surgical wards in Bangkok, Honduras and St Louis (USA) [8]. Campbell-Falck et al. described the successful use of coconut water as a short-term intravenous hydration fluid for a patient in a distant Solomon Island where no standard intravenous fluids were available [6]. A few other reports on this subject were published in African and Asian Medical Journals [9] [10] [11] [12]. Coconut water contains a number of vitamins, trace elements, essential aminoacids, fatty acids and sugars [9] [11]. Young coconut juice is now advertised as a sports drink and health food [11]. The composition of coconut water changes during the development of the fruit. Young (green) coconuts contain 500-1000 ml of fluid. The electrolyte composition of coconut water differs considerably from blood plasma and better resembles intracellular fluid. Sodium and chloride concentrations are low, concentrations of calcium, magnesium and particularly potassium are high. The solution is hypotonic and the pH is low, compared with blood plasma. The osmolarity is high because of the sugars, glucose, fructose, sucrose and others. Only minor adverse reactions have been reported in the clinical studies [8] [10] [12].

Coconut water has also been used as an oral rehydration fluid in children with gastroenteritis, but there is no consensus about its effectivity for this indication [13] [14] [15]. The conventional ORS developed by the World Health Organization (WHO) has a much higher sodium, chloride and glucose content. Kaperski et al. think that coconut water with the addition of table salt can be used for the oral rehydration of patients with severe gastroenteritis when conventional fluids are not available [12]. Msenge et al. stopped a controlled clinical trial and found coconut fluid not suitable for rehydration in patients with diarrhea [12]. Adams and Bratt studied twenty young children with acute gastroenteritis and no clinical evidence of dehydration. The children were randomly selected to receive young green coconut water and the WHO ORS solution. There were no significant differences in outcome between the two groups. The authors suggest that coconut water can be used in well-nourished children with mild acute diarrhea without signs of dehydration [14]. It should not be used in patients with dehydration, as in severe cholera. Fagundes Neto et al. found the sodium and glucose concentrations too low for an oral rehydration solution [15].

**CONCLUSIONS**

It is obvious that coconut water is not an ideal solution for intravenous use, but it can be used in urgent situations when no other supplies are available. In such situations it can also be used as an oral rehydration fluid, but only in children with mild acute diarrhea without signs of dehydration.
### Table 1

Chemical composition of young (green) coconut water (Cocos nucifera L.), compared with data for blood plasma, Oral Rehydration Solution (ORS) developed by the World Health Organisation (WHO) and 0.3% NaCl infusion fluid. I,II,III author’s analyses in 1967; (1),(3),(5),(7),(9),(14) see references. meq/L: milli equivalent per liter, µeq/L: micro equivalent per liter, g/L: gram per liter, mosm/L: milli osmol per liter

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#### Acknowledgment

I thank Dr HJ Degenhart, professor emeritus of chemical paediatric endocrinology for the analyses in 1967.

#### References

10. Yong JWH, Ge L, Ng Yan Fei et al. The chemical composition and biological properties of coconut (Cocos nucifera L.) water. Molecules 2009; 14:5144-64.
This thesis is a brave attempt to address a very important problem in African Health: the separation between traditional perceptions of health of ordinary people, their healers and their communities and the modern, biology-based health system introduced by the western world. An introduction with an in-built separation, as, at that time, colonial powers and missionaries were convinced that they should bring ‘progress’ to that continent and regarded African traditions in health as hampering progress and/or being ‘unChristian’.

FROM AN AFRICAN PERSPECTIVE
Until this day health services suffer from this legacy of near complete separation. Often there is no contact at all between traditional healers and medical staff in hospitals, and medical staff tend to condemn traditional practice. As a result patients, who often use both systems, tend not to report this in their contacts with doctors in the hospital for fear of being scorned. The author of this thesis, Musuto Chirangi, a former hospital administrator of the Nyerere Designated District Hospital in Mugumu, experienced the attitude of his –Tanzanian–medical staff as unproductive and not very helpful towards improving hospital care. It led him to embark on more research into this topic and finally to writing this thesis.

The thesis merits attention because of the wealth of knowledge it contains about traditional remedies and the presentation of present-day realities in health care in their historical context, as seen from an open African perspective. But, above all, it does so because of the compelling plea it makes for a more patient-oriented, holistic approach that includes an understanding of the importance for health of the African cultural background and environment. Clearly at present such an approach cannot be provided by ‘modern’ health care alone.

SCIENTIFIC APPROACH
The author has done research in his home Mara region, but most descriptions are valid for most parts of Africa. However, it is not an easily accessible thesis and questions remain, whether such a complex subject, with many emotional and political aspects, gains from the kind of scientific approach needed for a PhD thesis in the Netherlands. In this thesis, scores of health staff in both modern and the various traditional services were questioned, in order to define the factors either supporting or hampering collaboration. But the large number of concepts, variables, indicators and categories and the very extensive statistical methods used to process these, make this a rather difficult thesis to read. At the same time the outcomes raise the question whether scientific proof, as delivered here, really helps to convince policymakers and all the other stakeholders in African health care, of the need to include traditional healers in a more integrated approach to health and health services.

Time and again the author refers to a large number of official declarations and resolutions, to achieve reform in the Tanzanian or African health services from national as well as international organizations but then has to state that all these official recommendations were actually never really implemented.

COLLABORATION IN PREVENTIVE CARE
The recommendations in this thesis would have gained from a sharper distinction between curative and preventive services, when defining possibilities for more collaboration. The author does mention various experiments involving traditional healers in prevention activities against HIV infections but in the opinion of this reviewer more attention should be given to the possibilities of collaboration in preventive care, as this is the subject where behaviour of ordinary people plays such an important role. Here the moral authority of traditional healers (much greater than that of the modern ones) could be successfully mobilized for the well-being of people and communities. It is also this area where no fears exist on either (but mostly among the ‘modern’) side that patients will not receive the ‘correct’ treatment with all the associated risks of –even fatal–outcomes. Improving prevention is therefore the area where the two sides could get to know each other better and build up the trust that is now so obviously lacking.
In that context the author should clarify his views on what he introduced as: ‘Complementary and Alternative Medicine (CAM)’. CAM covers all the other wide-ranging remedies and their providers. These providers/practitioners are often very different from the truly traditional ones in their approaches and motives. As traditional knowledge is passed on from parents to children for generations, it gives these practitioners their moral authority among their communities that CAM practitioners often lack.

ORDINARY PEOPLE
This African view on many issues in African health of a modern open-minded African, avoids the pitfall of becoming a mainly political statement. The author sees the interests of ordinary people as his highest priority.

It is not easy to do justice to this thesis in this short space available, but hopefully it will strongly assist the promotion of its title: integrated holistic health care in Africa that takes into account the importance of cultural backgrounds and environments.

Key messages of the 'Hidden cities. Unmasking and overcoming health inequities in urban settings' report (WHO, 2010)

For the first time in human history, the majority of the world’s population is living in urban areas, and this proportion continues to grow.

Cities concentrate opportunities, jobs and services, but they also concentrate risks and hazards for health.

The rapid increase of people living in cities will be among the most important global health issues of the 21st century.

Urban growth has outpaced the ability of governments to build essential infrastructures, and one in three urban dwellers lives in slums or informal settlements.

In all countries, certain city dwellers suffer disproportionately from poor health, and these inequities can be traced back to differences in their social and living conditions.

To unmask the full extent of urban health inequities, it is important to disaggregate health and health determinants data within cities.

Unless urgent action is taken to address urban health inequities, countries will not achieve the health-related Millennium Development Goal targets.

Acting on urban health inequities requires the involvement of organized communities and all levels of government – local, provincial and national.

Solutions often lie beyond the health sector, and require the engagement of many different sectors of government and society.

Local leaders and governments can and should play a key role in promoting urban health equity.