Coronavirus never before seen in humans is the cause of SARS

The World Health Organization has announced that a new pathogen, a member of the coronavirus family never before seen in humans, is the cause of Severe Acute Respiratory Syndrome (SARS). The speed at which this virus was identified is the result of the close international collaboration of 13 laboratories from 10 countries.

‘The pace of SARS research has been astounding’, said Dr David Heymann, Executive Director, WHO Communicable Diseases programmes. ‘Because of an extraordinary collaboration among laboratories from countries around the world, we now know with certainty what causes SARS.’ The successful identification of the coronavirus means that scientists can now confidently turn to other SARS challenges. For example, various laboratories continue to work to unravel the genetic information of the SARS virus and compare the sequences obtained from viruses in different parts of the world. Experts are gathering at WHO this week to map future work on SARS.

The collaboration continues as top laboratory researchers have come to WHO to design the next steps, a strategy for transforming these basic research discoveries into diagnostic tools which will help us to successfully control this disease’, said David Heymann. ‘Now we can move away from methods like isolation and quarantines and move aggressively towards modern intervention strategies including specific treatments and eventually vaccination. With the establishment of the causative agent, we are a crucial step closer.’ This collaboration has brought together leading scientific expertise, and was established after WHO issued a global alert on SARS on 12 March 2003. The priority has been to find the cause and to develop diagnostic tests. Two laboratories in China recently joined this network of laboratories from Canada, France, Germany, Hong Kong Special Administrative Region of China, Japan, the Netherlands, Singapore, the United Kingdom, and the United States of America.

‘The first part of the mission of our network has been fulfilled, as researchers have both detected a hitherto unknown virus and established it as the cause of SARS. The new coronavirus has been named by WHO and member laboratories as SARS virus’, said Dr Albert Osterhaus, the Director of Virology at Erasmus Medical Center in Rotterdam. Erasmus completed the work to definitely prove that the new coronavirus causes SARS. The urgency surrounding the worldwide threat to health of SARS and early indications this was a new member of the coronavirus family, has meant that research has proceeded under the assumption that SARS was caused by a new coronavirus.

The 13 laboratories have been working on meeting Koch’s postulates, necessary to prove disease causation. These postulates stipulate that to be the causal agent, a pathogen must meet four conditions: it must be found in all cases of the disease, it must be isolated from the host and grown in pure culture, it must reproduce the original disease when introduced into a susceptible host, and it must be found in the experimental host so infected.

Credit for the coronavirus findings, which definitively pinpoints the cause of SARS, is attributed to the 13 laboratories, working in conjunction with WHO. ‘The people in this network have put aside profit and prestige to work together to find the cause of this new disease and to find way new ways of fighting it’, said Dr Klaus Stöhr, WHO virologist and the coordinator of the collaborative research network. ‘In this globalized world, such collaboration is the only way forward in tackling emerging diseases’. WHO and the network of laboratories dedicate their detection and characterization of the SARS virus to Dr Carlo Urbani, the WHO scientist who first alerted the world to the existence of SARS in Hanoi, Vietnam, and who died from the disease in Bangkok on 29 March 2003.

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Malaria is alive and well and killing more than 3000 African children every day

The Africa Malaria Report, released by the WHO and the United Nations Children’s Fund (UNICEF), says the death toll from malaria remains outrageously high – with more than 3000 African children dying daily. It also stresses that new effective antimalarial drugs are not yet accessible to the majority of those who need them and that only a small proportion of children at risk of malaria are protected by highly effective insecticide-treated nets (ITNs). The report, officially launched by President Mwai Kibaki of Kenya in commemoration of Africa Malaria Day, gives a continent-wide picture of the struggle against the disease and highlights the urgent need to make effective antimalarial treatment available to those most at risk.

‘The Roll Back Malaria Initiative has made considerable progress since it was launched in 1998, but we need to increase efforts to combat a devastating disease which is holding back the
development of many African countries', states Dr Gro Harlem Brundtland, at the time Director-General of WHO. ‘Malaria continues to tighten its grip on Africa. By scaling up our efforts, we can reverse this trend.’ An estimated 20% of the world’s population – mostly those living in the world’s poorest countries – is at risk of contracting malaria. Malaria causes more than 300 million acute illnesses and kills at least one million people every year. Ninety per cent of deaths due to malaria occur in Africa, south of the Sahara, and most deaths occur in children under the age of five.

‘Malaria kills an African child every 30 seconds, and remains one of the most important threats to the health of pregnant women and their newborns’, said Carol Bellamy, Executive Director of UNICEF. ‘We have the knowledge and the potential to achieve our target of reducing the global burden of malaria by half by 2010, but we need much greater investment and political commitment.’ The Africa Malaria Report challenges the global community to step up the momentum by:

- increasing global investment to support implementation of programmes to control malaria in endemic countries;
- according higher priority to malaria on the health agenda of endemic countries;
- encouraging greater private sector involvement in the national supply and distribution of quality antimalarial drugs, and ITNs;
- ensuring the availability of the new generation of highly effective antimalarial combination drug treatments to populations at risk.

The Africa Malaria Report acknowledges the contribution of global efforts to the substantial progress already made by a number of countries that have adopted cost effective strategies to fight the disease with greater focus on the most vulnerable – women and young children. The good news is that ITNs offer substantial protection against malaria. The proper use of ITNs combined with prompt treatment for malaria at community level can reduce malaria transmission by as much as 60% and the overall young child death rate by at least one fifth.

In Tanzania a three year community pilot project has seen the proportion of infants sleeping under ITNs rise from 10% to 50% and the child death rate fall by more than 25%. Similarly a community programme in Zambia achieved net coverage of more than 60% of individuals at risk.

Community health workers and mothers of young children in more than 10 districts in Uganda have been trained to recognize the symptoms of malaria and seek immediate treatment as part of a home-based approach to the management of malaria. This approach encourages the active participation of local medicine sellers and the pharmaceutical industry in malaria control efforts. Interim results suggest a definite decline in the number of out-patient malaria cases in children under five. Ghana and Nigeria have also introduced this home-based approach.

‘The Africa Malaria Report shows how the partnership established to roll back malaria is increasing support for endemic countries’ continued fight against this disease. The global partnership is at a crucial juncture; it needs to sustain and surpass the support galvanized to date. Our challenge is to live up to the commitments made five years ago and not fail yet another generation of African children. This would be unacceptable,’ stated Dr Nafo-Traoré, Executive Secretary, Roll Back Malaria Partnership Secretariat.

For further information visit http://www.rbm.who.int/

New survey shows that medicines can be less expensive

Better information on prices, price differences and the factors contributing to the final cost of a medicine are essential if governments and other medicine purchasers are to find ways of making medicines more affordable. For this reason, the WHO and Health Action International (HAI) release today Medicine Prices, a pricing manual outlining how to collect data for 30 widely used medicines to identify how prices for patients are determined.

Medicine prices vary between countries and regions and historically, relatively little has been known about how those prices are determined. In developing countries, where poverty places medicines out of reach of one-third of the population, people who do have some access sometimes pay more than in industrialized countries for the same medicine. Most of this money is paid out-of-pocket, as health insurance is often lacking.

The new manual will particularly benefit governments, consumer associations, non-governmental organizations (NGOs) and any other group purchasing medicines by providing information on price composition and price differences. It proposes a price survey methodology, suggests how to analyse price data, and identifies broad policy options to achieve more affordable prices. In short, it will allow buyers and procurers of medicines to make more informed, cost-effective choices, and will contribute to global knowledge on medicine pricing.

The manual offers a new approach to measuring the cost of medicines. Among other things, it encourages comparison of prices of innovator brand products with their generic equivalents. In field tests, 30 days of ulcer treatment with the innovator brand of ranitidine was found to cost the equivalent of 50 days’ wages in Cameroon and 20 days in Kenya, while the generic ranitidine cost 24 and 8 days’ wages, respectively.

The manual also brings to light the difference between procurement price and consumer prices. The latter include mark-ups, taxes, tariffs and other charges. Pilot-testing the manual in Peru, for example, showed that local cost add-ons raised the price of generic ranitidine from $2.90 for > 20 tablets (imported price) to $7.20 (retail price).

Even in Brazil, where most medicines are produced domestically, taxes and retail mark-ups typically add over 40% to factory prices. Analysis of price components allows greater clarity as to whether price differences originate with manufacturers, local distribution systems, dispensing fees, taxes and other local factors.

Field tests with the manual in a number of low- and middle-income countries show, for example, that the consumer price of nifedipine, a drug used for hyper-tension, is six times
higher in South Africa than in Brazil, with intermediate prices found in Ghana and the Philippines.

It is not unusual for people in developing countries to pay more for medicines than consumers in industrialized countries, both in relation to their income and even in absolute terms. For instance, in 2000, lamivudine, used in the management of HIV/AIDS, was found on average to be 20% more expensive in Africa than in 10 industrialized countries. Average income levels in Africa are about 2% of those in the high income industrialized countries, so the difference in affordability is severe.

As well as HIV and malaria medicines, the manual recommends surveying the price of drugs for chronic conditions, usually less associated with developing countries but which none the less affect growing numbers of their populations.

Prior to publication, the survey methodology was tested over two years in several case study countries: namely, Armenia, Brazil, Cameroon, Ghana, Kenya, Peru, Philippines, South Africa and Sri Lanka. Data from the pilot studies are available on HAI’s website at http://www.haiweb.org/medicineprices

RESEARCH AND DEVELOPMENT

Mentoring and nursing research

Mentoring is playing a growing role in the development of nurse researchers. Experienced nurse scientists serving as mentors may provide their students with career direction, in the form of coaching and sponsorship, and psychosocial support, in the form of counselling and role modelling. As a practice profession, nursing develops its knowledge base in both academic and clinical settings, allowing for a wide range of mentoring relationships. Within academic settings, mentoring is more likely to begin at the graduate level of education, where more emphasis is placed on research evaluation and use. Nursing faculty with access to mentoring relationships, research resources, and professional development produce more scholarly publications. Increased use of electronic communication technologies has opened opportunities for international mentoring and the development of partnerships between universities in different countries. Still, the close personal relationships characteristic of true mentoring should involve some face-to-face contact. For many women in the profession, peer mentoring plays an important role in their career adjustment, as they seek the advice of those who have managed to balance their professional and their family/personal roles. Mentoring provides a vital connection for older, more experienced nurse scientists to share their knowledge with developing scientists, and maintaining a sustained, supportive mentoring relationship is the most proven way to build research productivity.

Research training for undergraduate minority students

Minority populations in the United States of America tend to face a greater health burden, with higher rates of both mortality and morbidity. Reducing this health disparity is a top priority of the US Department of Health and Human Services Healthy People 2010 initiative. The National Institute of Nursing Research (NINR) is working to address minority health issues through the recruitment of more minority nurses into research careers. In 2001, NINR began to sponsor a partnership programme that worked to pair historically minority-serving nursing schools with research-intensive institutions. The partnership between North Carolina Central University and the University of North Carolina at Chapel Hill developed the Research Enrichment and Apprenticeship Program (REAP), a year-long research-intensive programme for nine undergraduate minority students from both schools. Over the summer, the REAP students attended seminars in research development and methodology and served as paid student assistants for their research mentors on different research projects. One student became involved with research to assess risk in premature infants, while another student, whose primary language was Spanish, worked on a project for HIV prevention among Mexican immigrants. Each student also developed a research project in conjunction with the mentor’s project, as part of the senior year research class. This hands-on research experience may interest students more than the traditional didactic instruction, inspiring them to pursue advanced education and research. Increasing the number of minority nurse researchers will help bring new ideas and culturally sensitive approaches to all areas of health research.

Source: Medscape Nurses, 2003, 5(1).

Reference

Leeman J., Goeppeinger J., Funk S. & Roland E.J. (2003) An enriched research experience for minority undergraduates – a step toward increasing the number of minority nurse researchers. Nursing Outlook 51, 20–24.

Source: Medscape Nurses 2003, 5(1).

Anger measurement scale for adolescents

Establishing good measures of anger among adolescents can help with early interventions for anger management. Differences in how adolescents experience and express anger can influence their long-term risk of cardiovascular disease, and control of anger is related to reductions in systolic and diastolic blood pressure. Researchers evaluated the State-Trait Anger Expression Inventory (STAXI), a 44-item self-report questionnaire, for its usefulness in measuring anger in 394 adolescents aged 11–16 years. The samples was 38% African American, 32% white, and 30% Hispanic, and roughly equal between boys and girls. The STAXI consists of two subscales: the experience-of-anger scale measures anger intensity and disposition toward an anger state, while the expression-of-anger scale measures how anger is suppressed or expressed toward others and how individuals attempt to control their anger. African American youths had the highest scores in both trait and state anger, while Hispanic youths had the lowest scores in anger expression. Anger control scores tended to be lower in younger adolescents. All scales of the STAXI tool except for the internalized anger scale showed good reliability and...
validity for the three ethnic groups in measuring levels of anger.

Reference
Reyes L.R., Meininger J.C., Liehr P., Chan W. & Mueller W.H. (2003). Anger in adolescents: sex, ethnicity, age differences, and psychometric properties. Nursing Research 52, 2–11.
Source: Medscape Nurses 2003, 5(1).

CONFERENCES

Hepatitis B and C, Greece
This conference will be held 23–25 January 2004 in Athens, Greece. For further information contact Tonia Epifani, tel.: +30 2 106 984 291, fax: +30 2 106 984 294, E-mail: tnt@tnt-executive.gr

The 1st Pan African and Pan Arab International Paediatric Epilepsy Conference, Egypt
This conference will be held 20–22 February 2004 in Cairo, Egypt. For further information contact Dr Ibrahim Shoukry, tel.: +20 23 922 585, fax: +20 23 922 585, E-mail: npc@link.net or visit http://www.enps-eg.com/Conference/Conferencehome.htm

The War on Pain, Hawaii, USA
This conference will be held 3–8 April 2004 in Kohala Coast, Hawaii, USA. For further information contact Vickie Hidalgo, tel.: +1 916 734 5390, fax: +1 916 736 0188, E-mail: vickie.hidalgo@ucdmc.ucdavis.edu or visit http://cme.ucdavis.edu/confrnce/confrnce.htm

13th International Symposium on HIV and Emerging Infectious Diseases, France
This symposium will be held 3–5 June 2004 in Toulon, France. For further information contact Stéphanie Lecolier, tel.: +33 0 141 920 120, fax: +33 0 146 410 521, E-mail: congress@overcome.fr or visit: http://www.avps.org/2003/