United Nations E/2009/106

Economic and Social Council

Distr.: General
7 July 2009

Original: English

Substantive session of 2009
Geneva, 6-31 July 2009
Agenda item 2 (b)
High-level segment: annual ministerial review

Letter dated 2 July 2009 from the Permanent Representative of Ghana to the United Nations addressed to the President of the Economic and Social Council

I have the honour to request that the report, transmitted herewith, of the African regional preparatory meeting on addressing eHealth for the annual ministerial review of the Economic and Social Council, held in Accra on 10 and 11 June 2009, be circulated as a document of the Council for consideration at its substantive session of 2009, under agenda item 2 (b) (see annex).

At the regional preparatory meeting, the subject of eHealth was examined from the perspective of the African countries as a contribution to the theme of the 2009 annual ministerial review, "Implementing the internationally agreed goals and commitments in regard to global public health". The Government of the Republic of Ghana believes that the report will constitute a valuable contribution to the discussions on the theme at the annual ministerial review of 2009.

(*Signed*) Leslie K. **Christian**
Ambassador
Permanent Representative

09-39494 (E) 200709

Annex

Report of the regional preparatory meeting on eHealth: use of information and communications technology in health for the annual ministerial review held by the Economic and Social Council

Summary

1. As part of the annual ministerial review process of the Economic and Social Council, an African regional meeting on the theme "eHealth: use of information and communications technology in health" was held in Accra on 10 and 11 June 2009. The meeting was hosted by the Government of the Republic of Ghana and was organized as a multi-stakeholder event, with the participation of health ministers and other high-level representatives. The meeting consisted of seven plenary panels in addition to the opening and closing sessions.

2. The opening ceremony was performed by John Dramani Mahama, Vice President of the Republic of Ghana, and was chaired by the Minister of Environment, Science and Technology of Ghana, Sherry Aryeetey. The Minister of Health of Ghana, Dr. George Sipa-Adjah Yankey, gave the welcoming address and also attended the final session and delivered the closing remarks.

3. The meeting was attended by 191 participants and delegates, including the Vice-President of the Comoros, representatives of Governments from the African region, and experts from the United Nations system and other international organizations, academia and the private sector. The delegates examined the challenges and sustainability of eHealth in Africa; eHealth governance, policies, strategies and quality measures; public-health informatics; eHealth and the people; economics, financing and partnerships in eHealth; mHealth: mobile communication for health; and a series of regional and national projects and best practices in eHealth.

4. Through the presentations and discussions, consensus was reached among the participants on a number of key issues on promoting, implementing and sustaining eHealth, especially in developing countries. In particular, the meeting agreed on the need to integrate eHealth into national health systems and services and develop governance structures to guide the mainstreaming of eHealth in various countries. The meeting called on countries to work towards national eHealth policies and strategies and the development of legal, ethical and regulatory frameworks to guide the adoption of eHealth solutions.

5. There was unanimous consensus on the need to develop human and institutional capacity for eHealth. This includes the development of information and communications technology (ICT) infrastructure and promoting use of modern ICT in health. In this regard, the meeting called on countries to scale up successful pilot projects and ensure timely involvement of end-users through proper needs assessment.

6. The development of sustainable eHealth interventions with proper financing models was highlighted and the meeting called for effective public-private partnerships to ensure sustainability. It was also agreed that countries should ensure

full compliance of eHealth solutions with open standards and interoperability protocols and develop culturally appropriate measures for reporting progress in the implementation of eHealth solutions.

7. The issue of the need to strengthen joint action within and beyond the health sectors was raised and countries were called upon to encourage the media to ensure information accuracy and to build community capacity through empowerment and institutional capacity for sustainable action, including the use by practitioners of the evidence-based approach.

8. There was also consensus among participants that these actions could be achieved through information-sharing on replicable examples of good practice within and between countries in the African region and beyond, and through development of repositories of eHealth projects, development of evaluation and assessment frameworks, and evidence-based studies. Participants also recognized that these actions and recommendations had to be undertaken in a planned, collaborative and coordinated manner. To this end, the development of a pan-African regional eHealth plan based on national plans, in partnership with the private sector and development community, was proposed.

9. The meeting adopted a set of recommendations emerging from the six panel discussions. These are listed under the summaries for each panel. A number of these recommendations revolve around core issues in eHealth and were echoed in many of the discussions. A total of 10 key recommendations, reflecting the key issues raised by the panellists, are set out at the end of the report.

10. The meeting provided a platform for networking and partnership-building. Based on the discussions and exchange of views and progress in projects, it became clear that Africa is ready for a new start in promoting eHealth as an enabler for achieving the health-related targets of the Millennium Development Goals. Participants put forward not only recommendations but also practical plans to go forward.

Introduction

11. The holding of the annual ministerial review by the Economic and Social Council was recommended by Heads of State and Government at the 2005 World Summit. It serves as instrument for tracking progress and stepping up efforts towards the realization of the internationally agreed development goals, including the Millennium Development Goals, by the 2015 target date. The theme for the 2009 annual ministerial review is “Implementing the internationally agreed goals and commitments in regard to global public health”.

12. To provide input into the 2009 annual ministerial review, on 10 and 11 June 2009, the Government of Ghana, under the leadership of Dr. Yankey, Minister for Health, with the support of the Department of Economic and Social Affairs of the United Nations Secretariat hosted a regional preparatory meeting in Africa on the theme “eHealth: use of information and communications technology in health”.

13. The meeting provided an opportunity for the countries in the African region to review progress and accelerate action on eHealth through the sharing of best practices which would lead to the strengthening of health systems towards achievement of the Millennium Development Goals.

14. The meeting provided the delegates with an opportunity to have an intensive and thorough discussion with a group of 22 internationally renowned eHealth experts representing the specialized agencies of the United Nations system, the private sector, academia and the non-governmental organizations active in the field. The quality of interventions and the in-depth analysis of the issues provided a platform for the formulation by delegates of a consensus on actions to be taken and a much better understanding of the issues revolving around eHealth in Africa.

15. A set of questions and issues were presented at each of the six panels, which the participants addressed based on their knowledge and experience, with a view to informing future eHealth policy directions in the African countries.

Opening remarks

16. The Minister of Health of Ghana welcomed the delegations on behalf of the Government and the people of Ghana. He affirmed the commitment to support the meeting and its follow-up so as to ensure its success and the attainment of objectives. The Minister of Environment, Science and Technology, who chaired the opening ceremony, also welcomed the delegations and made the link among health, environment and the use of ICT.

17. Mr. Mahama welcomed the delegates and wished them success in their meeting. He reminded the meeting of the huge leap that Africa had made in the area of telecommunications through a number of policies that had been adopted, and of how the information technology revolution had contributed to the transformation of the health sector. Mr. Mahama highlighted the inequality in terms of health services that still existed between rural and urban areas. He emphasized the need to focus effort in rural areas, as it was mainly those areas that were deprived of most services. He stated that, though most health specialists worked in teaching hospitals in urban areas, through the use of eHealth, services would be made available to people living in rural areas. He added that:

> Rural/urban differences in mortality rate are clear indications of the distributive inequalities in health services. Many people living outside urban areas in our various countries are living in extremely precarious conditions with higher risk of being affected by health problems and lower opportunities to address them.

18. He noted that a major contributor to this state of inequality was the deficit in the health workforce required to provide services to our people. This, he said, was estimated at about 4.5 million. Added to that, he said, was a shortfall in resources, infrastructure and the time needed to train and deploy such a huge number of health workers.

19. Mr. Mahama urged that there be a careful review of policy to enhance public-private partnerships that would create the resource flow needed to deploy modern ICT in the health sector.

20. eHealth, he said, when systematically implemented, would solve to some extent the problems of underdeveloped infrastructure and personnel, among others, and address the health and medical problems facing people by empowering them. It would also improve efficiency by improving both the management and technical

efficiency of the health workforce at all levels through reliable information dissemination systems and by supporting the decision-making process.

21. The Vice-President requested, on behalf of the leaders and people of Africa, that an eHealth framework be adopted that would be geared towards reviewing policies and strategies for the achievement of major health goals extending beyond the Millennium Development Goals. He requested that the framework also take into consideration the needs and resources of Africa and ensure that the continent deployed eHealth solutions for the sake of the people addressing the problems and challenges of African communities, rather than copy other systems in other environments or import solutions driven by technology vendors.

22. In her opening remarks, Sylvie Lucas, President of the Economic and Social Council, thanked the Vice-President, the Minister of Health and the Minister of Environment, Science and Technology and all the participants for their contributions and indicated that the annual ministerial review held by the Council in 2009 would focus on the theme of global public health, with the aim of advancing progress on global health and of spurring international actions towards reducing child mortality, improving maternal health and curtailing HIV/AIDS, malaria and other diseases. This Africa regional meeting, she said, constituted a key regional input for the 2009 annual ministerial review, to be held at the United Nations Office at Geneva. It offered an important opportunity for the African region to advance the health outcomes and the development needs of Africa through the Council, which promotes multisectoral action through the engagement of all relevant stakeholders. The meeting would complete a series of five consultations that had been scheduled for the preparation of the July session.

23. Ms. Lucas described eHealth in the context of the global development agenda as one of the most rapidly growing areas for advancing agreed development goals, in particular goals related to health. The emergence of this technology provided a huge opportunity for development in Africa and other continents. She believed that "proper use of ICT in health can help to reach not only health-related Millennium Development Goals, but all the Millennium Development Goals, by improving quality and efficiency in primary care and by enabling people in remote areas to access services and expertise". She added that a coordinated effort was needed among all stakeholders to reach that objective. Ms. Lucas emphasized the need for systematic evaluations of eHealth, cost-benefit analysis, impact assessment and performance measurement, which if conducted properly, would safeguard demand-driven sustainability and ensure less fragmentation, compliance with international and national standardization, and interoperability. She added that such a regional meeting would help to promote better understanding of the situation and lead the way to promoting eHealth approaches tailored to the needs and circumstance of countries, communities and the region.

24. Thomas Stelzer, Assistant Secretary-General, Department of Economic and Social Affairs of the United Nations Secretariat, congratulated the Government of Ghana for hosting the meeting and the Governments of Italy and Luxembourg for their support. He indicated that Africa was off-track in respect of meeting the Millennium Development Goals on reducing child mortality, improving maternal health and combating infectious disease, while experience had shown that these goals were achievable. He said that, in a changing world, managing the risks and rewards of both technological convergence and the convergence of health and

development was increasingly becoming the critical challenge facing all stakeholders.

25. Mr. Stelzer declared that an unparalleled opportunity existed for all stakeholders to act now and as one in crafting coherent and concerted health policies, and identified three major stresses on global public health: focus of health-care systems on acute care and late-stage disease; the fact that health care was prohibitively expensive and difficult to obtain in most developing economies; and the fact that the world's population was ageing significantly. For Africa, these challenges were further compounded by the lack of infrastructure, a heavy disease burden and the brain drain, manifested by the emigration of health workers.

26. He added that eHealth was one means of overcoming the shortcomings of the health sector and noted that it could drive improvement in the safety, quality and efficiency of the health-care system. It provides an effective tool for enabling people to access health services and at the same time for raising awareness. Mr. Stelzer announced that the Department of Economic and Social Affairs, in collaboration with the World Health Organization (WHO), had undertaken an initiative to demonstrate the potential of eHealth through two pilot "Texting4Health" campaigns.

27. Dr. Abdel Hay Mechbal, Director, Office of the Assistant, Director General, Information, Evidence and Research, WHO delivered the opening remarks on behalf of Dr. Margaret Chan, Director General of WHO. He thanked the Government of Ghana and the Economic and Social Council for this opportunity. Dr. Mechbal indicated that the meeting was timely and important, as the health sector was knowledge-intensive and required extensive data collection and information management. He reminded the meeting of what eHealth was and indicated that the recognition of the role of ICT in health by WHO had been highlighted by the adoption of World Health Assembly resolution A58.28 in 2005. That resolution, he noted, called on Governments to form national eHealth bodies to guide policy and strategy development in eHealth including data security, privacy, interoperability, cultural and linguistic issues, infrastructure, funding, monitoring and evaluation. WHO recommended that each Member State establish a national-level body for eHealth, formally supported by the ministry of health as a key instrument in its implementation.

28. Dr. Mechbal cited a few of the global eHealth initiatives being led by WHO, encompassing eHealth governance for building and promoting governance structures that address the rights of individuals and rules and responsibilities of national, regional and global organizations in the networked world; eLearning and access to health and biomedical research, with specific reference to the Access to Research Initiative (HINARI), which is a public-private partnership that enables low- and middle-income countries to access over 6,000 medical journals for free or at a very low cost; the Global Observatory for eHealth (GOe) which aims to improve health by providing Member States with information on effective practices, policies, standards and the implementation of eHealth in countries; ePORTUGUÊSe, which is a platform for promoting and strengthening collaboration among the eight Portuguese-speaking Member States, as part of the multilingualism programme; and the Open MRS (an electronic medical record system framework) which aims at fostering a standards-based approach to eHealth in member States; and the Africa Health Infoway, which through collaboration with relevant organizations, offers different eHealth solutions to health workers in Africa in a coordinated manner.

29. Dr. Mechbal then highlighted some of the eHealth challenges that required working together. These include absence of national strategies and policies, disconnection from people's needs, fragmentation, under-resourcing, lack of standardization and interoperability between and among solutions, lack of trained personnel, and difficulties created by the top-down approach to solution development. He then expressed the hope that, by the end of the meeting, member States represented thereat would have reached a consensus on the next steps for making eHealth a real contributor to health equity and to achievement of primary health-care objectives, with a strong commitment to considering seriously all these issues and reaching a consensus on working together to resolve them.

Panel 1: The challenges and sustainability of eHealth in Africa

30. The panel had the following main issues to address:

- Health systems challenges hampering eHealth mainstreaming in Africa
- Information and communications infrastructure in Africa and the uptake of eHealth
- People-centred approaches in eHealth polices and solutions
- eHealth pilots and initiatives: how to evaluate, what have we learned, when should they scale up, and how?

31. The consensus was that eHealth was a means to an end in tackling Africa's health challenges and that eHealth had not been integrated in health systems. eHealth activities are made up of a number of vertical and non-integrated initiatives. Many of these initiatives are very valuable on their own terms, but as national programmes, they lack overall vision and mission. There are challenges to be overcome in enabling eHealth to be integrated into health systems and to be mainstreamed.

32. The themes that emerged from the panel's presentations and the discussion fall under four areas of concern:

- **eHealth national policy**. There is a need to develop national and regional information and communications technology (ICT) policy of which eHealth is an integral part; there is a need to address issues of multiple pilot projects and assess their potential for scaling up at national level; eHealth capacity-building is required for Government officials and ministries; there is a need for a legal and regulatory framework for eHealth; health professional societies need to be engaged in eHealth policies, initiatives and implementation; national eHealth councils should be set up as the tool for multisectoral eHealth collaborations; there is a need to develop policies and capacity for adopting open source software technology that is sustainable and flexible; and standards need to be developed and there needs to be full adherence to them, including those that relate to medical devices and equipment, so as to ensure interoperability at national, regional and continental levels.
- **eHealth within health systems**. The health sector needs to provide leadership and show interest in eHealth; change management in health service provision is more important than technology as such; health workers' engagement in eHealth planning and implementation is a prerequisite for sustainable

adoption; there is an acute need for eHealth human resources development and capacity-building; improvement of health systems' institutional capacity to adopt eHealth is required; and, finally, people and processes are more important than technology when building eHealth systems.

- **Financial constraints**. Financial constraints represent a major barrier to eHealth sustainability; a potential source for financing eServices, including eHealth, could be universal service funds from telecom operators; cost of Internet and telecommunications is still high by any developing-country standard; government funding is important and public-private partnership is a model for viable and sustainable funding.
- **Infrastructure issues**. A prerequisite for eHealth sustainability is information and communications infrastructure, including broadband connection; mobile and wireless technologies are widely available for use in Africa and innovative approaches for their utilization are needed; broadband connectivity provided through satellite and fibre optics are becoming more available, while cost is still a barrier; and information and communications infrastructure is still not reaching most rural and remote areas, which makes universal access an objective still far from being achieved.

Recommendations

33. The meeting adopted the following recommendations:

1. Policy development at national level is the cornerstone of eHealth sustainability and must be developed with specific reference to national, regional and continental developmental agendas.

2. Appropriate infrastructure, including telecommunications, energy, medical and computer devices and software, is important for eHealth sustainability.

3. Health workers' engagement with integration of and alignment with health system priorities and needs are also important for eHealth sustainability.

4. Setting of standards for ensuring interoperability and integration of policy, technical systems and stakeholders in the health system, at national, regional and continental levels, are important for eHealth sustainability.

5. Identification of appropriate business or investment models and financial sources are important for medium- and long-term sustainability of eHealth beyond initial pilot funding.

Panel 2: eHealth governance, policies, strategies and quality measures

34. The panel had the following main issues to address:

- National policy and strategy development: stakeholders and priorities
- Standardization and interoperability
- Legal, ethical, legislative and regulatory frameworks for eHealth implementation
- Quality and safety of health information on the Internet

- Availability and the role of evidence for eHealth strategy development and planning

35. It was observed that most African countries had not developed national eHealth plans, policies, strategies and legal, ethical and legislative frameworks.

36. It was asserted that effective development of eHealth and its integration into mainstream health care were best achieved through the development of a national eHealth strategic plan/framework, the formulation of an eHealth strategy with the support of appropriate policies, and legal, ethical and legislative frameworks that provided an enabling environment. It was emphasized that eHealth solutions implemented in Africa, as anywhere else in the world, would have to be introduced in accordance with international standards and would have to be interoperable.

37. It was pointed out that national eHealth strategic plans/frameworks had to be integrated into national health strategic/development plans and should contribute to strengthening national health systems. A multisectoral and multidisciplinary consultative process involving all key stakeholders, including the users and beneficiaries, should be utilized in the development of national plans, policies, strategies and ethical and legal frameworks. The commitment and involvement of the national leadership in these processes were deemed critical.

38. The importance of standards and interoperability was underscored. It was emphasized that standards and interoperability play an important role in sustainable development and trade facilitation by promoting safety, quality and technical compatibility. Standardization contributes to the basic infrastructure underpinning society, including health and the environment, while promoting sustainability and good regulatory practice. In order to effectively deliver eHealth services, technical systems (computers, databases, network components, satellites) must communicate; the transmitted contents must have a common semantic (medical and non-medical content standards); organizations (health service providers, health-care workers, authorities, health insurances) must share responsibilities and workflows; and countries and regions must interoperate on a political level.

39. The meeting recalled that the World Health Organization (WHO) had established the eHealth Standardization Coordination Group (eHSCG) as a platform for promoting stronger coordination among the key players in all technical areas of eHealth standardization and called on countries to engage actively in this and other processes for setting international standards.

40. It was noted that access to appropriate information by health workers was critical. The quality of the information needed to be assured through approaches such as using seals, certification, consumer education, peer-to-peer approaches, etc. Currently, most people were accessing information on the Web in a second language. The information must also be available in the language that the users, including health workers and the targeted populations, could effectively utilize.

41. The meeting observed that financing eHealth infrastructure and services required collaboration and coordination among multiple partners from the private sector (health and technology) and the public sector represented by the government. Public-private partnerships in these efforts are critical. The availability of trained personnel to plan, implement and manage eHealth projects was seen as one key factor for success. There was therefore a need to explore ways of integrating training in ICT and health in the curricula of health training institutions. The

meeting called for the adoption of continental and regional approaches in the development of national eHealth policies and strategies and in mobilization of resources for eHealth.

Recommendations

42. The meeting adopted the following recommendations:

1. Countries should initiate steps to develop national strategic plans/frameworks, national policies, strategies, standards and norms for eHealth.

2. Countries should ensure that eHealth solutions that are planned and implemented conform to international and national standards and are interoperable.

3. Countries should engage actively in processes for setting international standards. Standard-setting organizations should make efforts to engage developing countries in the process of standards development.

4. Countries should adopt continental and regional codes of ethics and quality control mechanisms and tools for retrieving health information on the Internet.

5. Countries should develop legal, legislative and regulatory frameworks for personal health data protection, confidentiality, ownership and access for research purposes.

6. Countries should explore ways of integrating training in ICT and health in the curricula of health training institutions.

Panel 3: Public-health informatics

43. The panel had the following main issues to address:

- eHealth and the achievement of the Millennium Development Goals
- eHealth and the renewal of primary health care
- ICT for disease surveillance and epidemiology
- ICT for data management and reporting
- Electronic health records as a source of public-health data
- Pandemic alert and public awareness
- Health mapping and geographic information systems
- Networking and data mining

44. In addressing these issues, the panellists focused on the social impact of the introduction of mobile technologies for health, the approaches to be used to secure the commitment of decision makers which could be translated into allocation of required financial resources, the necessity of taking into account the needs, culture and traditions of end-users, and the need to agree on a project evaluation framework in order to facilitate comparison and knowledge-sharing. Child survival was regarded as an example of a health-related millennium development goal and it was

determined that eHealth could contribute to its achievement utilizing the experiences in Central and West Africa. Emphasis was put on the following:

- Ensuring online availability of key resources
- Making publications available for end-users
- Usage of other ICT media such as video clips and community radios

45. The fact that eHealth is not a substitute for addressing underlying problems such as under-funding of the health sector and lack of human resources was emphasized. Inter-operability of various eHealth platforms and devices emerged as a major issue in the panel discussion. There is a multiplicity of information systems, which are all collecting and managing data on the same person or community and are supposed to complement each other. The fact that many of these systems do not talk to each other results in a waste of time and, more important, a reduction in data quality and the absence of interchangeability. The situation as it stands shows that, though multiple versions of vertical software have been designed and are working very well, sharing information is impeded because of lack of interoperability among these software applications. To have a public-health informatics solution, the panel concluded, standards should be set to cover a data dictionary, a data model, a concept registry, and an indicator registry, among others. Inter-operability should be based on open standards and collaborative community practice. Taking into account the various levels from community to national, when designing information-sharing systems, including community needs and local culture, would help assure the sustainability of eHealth projects.

Recommendations

46. The meeting adopted the following recommendations:

1. Countries should mainstream the end-users and the key success factors when undertaking a large scale eHealth project.

2. In order for lessons learned to be shared from the many pilot projects that have been implemented, a common evaluation framework should be adopted.

3. As establishing eHealth in Africa requires a critical mass of trained health professionals and software developers, countries should therefore invest in the development of capacities for eHealth.

4. Sharing knowledge and information is a key factor for achieving progress on health-related Millennium Development Goals. The potential of ICT must be used systematically in a blended approach, including the use of other ICT-related media (for example, video clips and community radios), as appropriate, in each context.

5. Inter-operability of eHealth devices is key and should be based on open standards principles and collaborative community practice.

6. eHealth should constitute an integral part of a national and regional strategy to accelerate progress in achieving health-related Millennium Development Goals instead of a separate approach.

Panel 4: eHealth and the people

47. The panel had the following main issues to address:

- eLearning: building capacity of health workers (knowledge and skills)
- eLearning: health education, literacy and promotion
- Health informatics education: building a critical mass of eHealth experts
- eHealth awareness for managers, planners and decision makers
- Ethical considerations in man-machine interaction

48. People are the centrepiece in health systems and in eHealth solutions. eHealth is playing an increasingly important role in people's lives as time goes on. It is helping people capture time and distance in terms of access to health care, as it is enabling the delivery of quality health care when and where it is needed.

49. The panel highlighted the challenges in e-learning, and recognized the importance of eHealth in the academic arena. Creation of an environment for integration of multilingual e-learning tools into the academic programmes has become possible, without substituting it for the contact learning. The discussion highlighted the urgent need to scale up, at the global level, the capacity-building of eHealth professionals who are able to design, deploy and manage eHealth projects effectively so as to support public health and patient care. Some of the problems related to the high cost of health services within a limited resources setting with large urban/rural gaps could be addressed using eHealth. However, ethical and information quality issues need regulatory attention in order to ensure credibility and effectiveness of eHealth.

50. There is need for early introduction of the use of ICT facilitated learning in medical education programmes, as preparatory to the practice of eHealth. Students find e-learning programmes interesting, especially if it is visual, interactive and participatory, and not just an addition to the curriculum. e-learning can also facilitate the integration of knowledge from multiple disciplines.

51. Much e-learning material already exists in either English or French, and can be introduced into the existing programmes. eHealth could also address some of the problems associated with the high cost of health services within a limited resources setting, with large urban/rural gaps. Mobile health units using ICT have proved successful in providing teleconsultation and e-learning services in order to bring high-quality care where it is needed. They also serve to de-isolate care professionals remotely, by linking them to their colleagues globally through the Internet and providing them with opportunities for online training.

Recommendations

52. The meeting adopted the following recommendations:

1. eHealth should be introduced gradually and progressively as a part of medical education curricula, without substituting it for hospital-based training with patient contact.

2. eHealth training should be available to practising health-care professionals as continuing education programmes.

3. The implementation of eHealth should be built on true partnerships between the health sector and other sectors, especially telecommunications.

4. The introduction of eHealth should start small and gradually expand.

5. Countries should build centres of excellence in eHealth to train health professionals with a view to their reaching a critical mass of expertise, for training and research.

6. Sensitization programmes should be developed to establish quality control governance for health-related websites so as to ensure quality and ethical health information, including training programmes on appraisal of websites, thereby ensuring that they possess vision and values.

7. Ethical compliance should be guided by established ethical and quality assurance mechanisms (for example, committees) with possible linkage to a global organ.

Panel 5: Economics, financing and partnerships in eHealth

53. The panel had the following main issues to address:

- Moving eHealth from fragmentation to integration: is this a cost containment option?
- Budgeting and financing of eHealth as part of national health systems: what are the possibilities and options?
- Public-private partnerships in eHealth: the role of the private sector in building eHealth infrastructure and capacity
- Economic value of eHealth and impact on health (return-on-investment analysis)
- Funding opportunities for eHealth projects (United Nations organizations, European Commission, African Union Commission, foundations, trust and other philanthropies)

54. The presentations and the discussion that followed highlighted a number of issues of real concern. Placing value on or measuring the impact of eHealth was discussed, as the net benefit of eHealth often depends on the value that is placed on it by patients, clinicians and politicians. On balance, it was concluded that investments in eHealth are well worth the effort, even if the benefits accrue over a four-to-five-year, medium-term period. In the short term, low-cost intermediate solutions need to be considered but these intermediate solutions must be designed in such a way as to dovetail with the long-term plans. Governments must take the lead in establishing the long-term framework in which the various initiatives should be embedded. In this way, the current fragmented approach will lead to a more integrated vision for developing eHealth systems.

55. It was concluded that there are several opportunities for funding eHealth in countries, including from the United Nations system and the private sector. Several health-related information platforms have already been developed. The Access to Research Initiative (HINARI) is a significant health resource which illustrates how medical journals and publications can be gathered together through an e-platform

that has been authenticated and is not grant-dependent. WHO, Yale University and multiple providers from the private sector have partnered in this project which has been created around the timescale of the Millennium Development Goals. Greater efforts need to be made in disseminating information, particularly in Africa, on those e-platforms that are in the public domain and that can be easily accessed by individuals and health experts.

56. It was considered, however, that public-private partnerships in eHealth are not a panacea. Examples of modern public-private partnerships provide learning opportunities for others. Such learning will help African countries leapfrog many of the intermediate stages in developing an integrated system based on the experiences of such public-private partnerships, particularly those from the developed world.

57. The development of an eHealth integrated system needs basic infrastructure, services, content and training. In the long run, we need to move from the current silos to ICT systems that are affordable, with verified and authenticated content. The development of such systems offers the possibility of promising economies of scale and cost reduction. However, it is very important that African countries, when migrating or importing systems from developed countries, inject into them local contexts and specificities in order to promote localization and innovation.

58. Better information and better dissemination of health information, including on issues such as malnutrition, malaria, pneumonia and sepsis, can significantly bridge information gaps, leading to positive health outcomes. Information and health literacy in general have a very strong role to play in this regard. It was highlighted in the panel that cooperation between countries of the South at roughly similar levels of development and facing similar resource constraints is an important facet of cooperation in ICT and eHealth. Several large developing countries such as India are involved in important programmes in Africa designed to strengthen eHealth through the Pan African e-Network.

59. The overall conclusion is that partnerships and sharing of experiences are key to success in launching and establishing integrated systems that are tailored to country specificities. Regional cooperation and subregional cooperation in Africa are important policy elements for the development of eHealth systems.

Recommendations

60. The meeting adopted the following recommendations:

1. Evaluation of eHealth interventions should be an integral part of eHealth planning and implementation to allow for establishing and measuring the eHealth impact on health outcomes.

2. Public-private partnerships should be further strengthened and enhanced to achieve sustainability, taking into consideration local needs and cultural and health problems.

3. The economy of scale in planning and implementing eHealth interventions should aim at integrating separate eHealth interventions so as to prevent fragmentation, which entails longer costs and less impact.

4. Lessons learned from implementation of large-scale projects should be shared on a regular and systematic basis, using existing mechanisms, with international and regional organizations.

Panel 6: mHealth: mobile communication for health

61. The panel had the following main issues to address:

- What is the situation and where is the potential?
- Mobile communication technologies and health applications: experience from the field
- Convergence of mobile computing and mobile communication technologies
- mHealth for health-care professionals
- mHealth for the masses
- Texting for health
- Portable health and medical books
- Mobile versus low-bandwidth Internet: which can reach more people?

62. This panel was the only one that focused on a specific technology (mobile phone) which has emerged very significantly as an essential part of many eHealth solutions, with the potential to reach individuals regardless of time and place. The presentations and the discussion that followed highlighted the current trends of use of mobile phones in health. The unprecedented increase in the number of mobile phones used in Africa in general and in its rural areas in particular has been phenomenal. This rapid diffusion of mobile phones into rural areas and the leveraging of this platform for health purposes in many places around the world have caught the attention of both health professionals and telecommunications operators. The mobile phone is viewed as a new health delivery tool which has the potential to reach more people in a shorter timespan. The recently published report on 51 case studies in 26 countries on the use of mobile phones in health care highlighted the areas in which mHealth is implemented including education and awareness; diagnostic and treatment support; disease outbreaks; remote data collection; remote monitoring and home care; and communicating to patients regarding treatments.

63. Examples of projects from African countries and India were cited by the panellists, indicating that many of them were pilots: they introduce special partnerships, they are limited in terms of geographical coverage, and many of them have never been scaled up at national level. The potential power of the mobile phone was noted through its integration with other technologies and the fact of its being in the hands of people wherever they went and wherever they were. Africa needs to capitalize on its youth innovativeness by enhancing social entrepreneurship efforts and by leveraging new technologies. Mobile phones are useful, but “low-cost laptops”, or so-called netbooks, are becoming widely available and affordable. Together with wireless networks, they present opportunities for bringing bandwidth and Internet to widely distributed health workers in developing countries.

64. A number of issues and challenges were highlighted in the discussion. The existence of all these mHealth projects in the absence of a national eHealth strategy in general and an mHealth strategy in particular has been recognized as posing the major challenge. A national strategy will provide a framework for all activities and allow for better management of resources and better saleability and sustainability of mHealth projects. When and how countries can scale up projects at national level

and ensure their sustainability beyond the pilot phase will be contingent on whether different partners can work together for a common good. These partners are multiple donor agencies, telecom operators, national and international government agencies, non-governmental organizations and multinational private organizations. Participation from local private organizations and non-governmental organizations is limited, however, with implications detrimental to sustainability. This observed fragmentation and loss of focus are also hindering progress and deepening impacts.

65. Use of proprietary solutions has meant that data communication and integration of solutions are difficult and very costly at best. There is recognition of the fact that the use of software based on open standards for ensuring full inter-operability is the solution and a commitment to such use. The meeting noted that, despite that high penetration rate and the rapid expansion of mobile phone services, investment in networks in remote and less populated areas is still much smaller than that in urban areas. Consideration of the return on investment only in financial terms should not be used as an excuse to avoid expanding networks in rural areas. Moreover, in most African countries, data networks even in urban cities are still limited to basic General Packet Radio Services.

Recommendations

66. The meeting adopted the following recommendations:

1. Countries should develop comprehensive national eHealth strategies with an mHealth component, as part of their national health strategies.

2. Countries should identify the health system and health services challenges they face that might be amenable to solutions utilizing mobile phone platforms.

3. National Governments, partners from the private sector and the donor community should promote multisectoral use of mHealth platforms and solutions in an integrated manner.

4. United Nations organizations and the different mHealth partnerships should create a repository of information and knowledge on mHealth, implemented through a portal or some other platform, to provide information on who is doing what and to share best practices.

5. Countries should build and host partnerships only if they provide solutions that are based on open standards and respect inter-operability protocols.

Presentations on best practices and new initiatives on e-Health

67. There were a total of six presentations made by United Nations organizations, the private sector and the non-government organizations on projects, innovations and best practices. Their common theme was their work in African countries using different technologies and solutions. The conclusions from the session were that:

1. eHealth projects should think big and start small. Scalability and sustainability should be embedded in project planning, management and implementation.

2. Integration of projects into a national framework can be effected only if there is a national strategy/plan and if the technology is inter-operable.

3. Knowing who is doing what and where can help solve problems, reduce costs and lead to the achievement of better results.

4. eHealth solutions should aim at solving local health problems. If a technology works in a developed country, this does not mean it will work in developing countries requiring additional efforts to adapt and contextualize.

Closing session

68. The closing session was chaired by the Minister of Health of Ghana, Dr. George Yankey. In his closing remarks, he emphasized that the potential of eHealth is yet to be realized, as much work is still needed. That potential will be better achieved once eHealth benefits reach rural and remote areas. He stated that Governments needed to take a lead role in eHealth planning and implementation. He summarized the function of ICT in health in terms of its capacity to enhance the world's ability to generate, share and utilize knowledge. Dr. Yankey called for WHO to develop and maintain an inventory of eHealth projects in Africa to help prevent duplication of effort and facilitate sharing of experiences. He expressed hope that eHealth would help in avoiding the creation of another divide between the haves and the have-nots. He finally thanked all the delegations, the panellists and the organizers of the meeting.

69. Ms. Lucas expressed her gratitude to the Government of Ghana for the support provided, in convening the meeting. The meeting had succeeded in bringing up the relevant issues in preparation for the annual ministerial review in Geneva in July. She identified the need to build the information infrastructure required to support eHealth, the need to develop the human resources necessary for planning, implementing and maintaining eHealth systems, the need for regional integration and continental solutions to health and eHealth problems, and the need for sustained technical and financial support from the international community for the development of health systems and the achievement of the Millennium Development Goals.

70. Mr. Stelzer expressed his gratitude to the Government of Ghana for the support provided in convening the meeting, and commended highly the quality of the contributions of panellists, moderators and participants. The meeting had succeeded in raising and allowing for discussion of the relevant issues and in preparing for the annual ministerial review in Geneva in July. Mr. Stelzer stated that the meeting had sent an unequivocal message that health should be given the highest priority and that eHealth should be part of an overarching health and information technology policy framework. These two recommendations could and should be pursued simultaneously. Africa, he said, should take advantage of the convergence of Internet and mobile technology, should ensure inter-operability of systems implemented, and should conduct systematic evaluation of projects for maximum impact.

71. Mr. Stelzer identified a number of key messages that had emerged from the meeting. For example, eHealth had the potential to improve health services and health care; eHealth held the promise of making health services available in rural

and remote areas; Governments, in partnership with other stakeholders, must take the lead role in establishing long-term systems designed to tackle the basic problems of standardization, inter-operability and ad hoc current approaches; and the value of eHealth was tremendous, though sometimes difficult to quantify.

72. Dr. Mechbal praised the quality of the presentations and the discussions, which had shown understanding and deep commitment. They demonstrated that eHealth was seen as a central issue in respect of health systems development efforts and improving their response to the needs of people. eHealth, he stated, could contribute to the building of better health systems by ensuring universal access to health services; supporting equity among all parts of the community; reducing cost of services and making them more affordable through a widening of the user base with the same investment; ensuring access to and availability of educational opportunities for the health-care workforce and the public in general; and improving patient safety and public-health surveillance.

73. Dr. Mechbal identified the five overarching challenges of eHealth resulting from a combination of policy, organizational, human and technical issues, including lack of national policies, strategies and plans; lack of standardization and interoperability frameworks; shortage of human resources specialized in health and medical informatics; and multiplicity of pilots and demonstrations.

74. The future priority actions identified by the technical presentations and discussions included:

1. Development of guidelines and provision of assistance to countries in establishing national strategies, plans and ethical and legal frameworks;

2. Development of ethical and legal frameworks to govern global eHealth which would enforce open standards, inter-operability, recognition of local needs and situations, respect for patient rights, transfer of technology and shared responsibility;

3. Development of partnerships to support national eHealth projects and initiatives based on health needs of countries, including human resources development to ensure their sustainability;

4. Development of mechanisms for creating a global knowledge base on eHealth which could enhance learning, sharing of best practices, collaboration and joint venturing in an open and transparent manner;

5. Development of a global governing structure that would enable United Nations organizations, regional bodies, non-governmental organizations and the donor community, the private sector and national Governments to work together towards the development of proper and sustainable eHealth models.

75. Dr. Mechbal concluded by affirming the strong commitment of WHO to working with its member States and all partners to make eHealth an integral part of health systems, one that could contribute to the achievement of the goal of health for all.

Conclusion and recommendations

76. The meeting on "eHealth: use of information and communications technology in health" completed a series of consultations that the Economic and Social Council, in collaboration with WHO and national Governments, had held in preparation for the July 2009 annual ministerial review session in Geneva. The first regional ministerial meeting had been on the theme of "Financing strategies for health care"; the second, on "Promoting health literacy"; the third, on "Preventing and controlling non-communicable diseases and injuries"; and the fourth, on "HIV and development in Latin America and the Caribbean". eHealth was rightly described as a cross-cutting issue in respect of health programmes, as it was seen as contributing to reducing the cost of health services in the long run and as having a major role to play in improving health literacy, especially with the exponential increase in the use of the Internet and mobile phones. Moreover, its use in public-health surveillance and mapping contributed to the control of diseases; and it was a major factor contributing to improving access to information and enhancing human resources in health. eHealth implementation is not without its challenges and problems in Africa and many other parts of the world. The range of these challenges encompasses purely technical ones, in terms of standards, inter-operability and adaptability to needs; cultural barriers, including those associated with localization, languages and needs; governance, in terms of national policies, strategies, plans and legal frameworks; and financial and sustainability challenges, involving partnerships, infrastructure for both data processing and data communication, and human resources with respect to work in the field and use of facilities.

77. The meeting had discussed all the issues that had been put forward in the agenda. The high quality of the presentations by the panellists, the in-depth discussion of the challenges and solutions, the energy of the participants and their willingness to share experiences, the recommendations that were made, and the consensus on short- and long-term objectives with respect to institutionalizing eHealth as a building block in health systems had all made for a successful meeting. The very generous support provided by the Government of Ghana in the form of the high-level patronage of the meeting, the involvement of the Minister of Health and the dedication of the team providing the necessary logistic support all contributed to the success of the meeting.

78. It is clear that eHealth, including mobile health, digital health, health on the Internet and the use of ICT in health in general, is part and parcel of health systems and services. The link of eHealth with the achievement of the Millennium Development Goals and strengthening of health systems is a real one. Africa is still a long way from achieving to achieve its health-related Millennium Development Goals, but the promise of eHealth lies in the fact that it can contribute to speeding up the progress. Investment in eHealth is highly worthwhile.

79. A set of 32 recommendations was put forth by the six panels and were presented and discussed in the final plenary session. There were a number of central themes around which these recommendations revolved. A total of 10 key recommendations, reflecting the core issues raised by the panellists and delegates, were produced based on those prior recommendations and are presented below:

1. Countries should develop national policies, national strategic plans, legal and ethical frameworks, and standards and norms for eHealth and mHealth

with specific reference to national, regional and continental health and development agendas. Development of legal, legislative and regulatory frameworks for personal health data protection, confidentiality, ownership and access for research purposes should be part of the legal framework.

2. Countries should adopt continental and regional codes of ethics and quality control mechanisms and tools for handling health information on the Internet.

3. Countries should be encouraged to contribute to standards development and to ensure that the eHealth systems that they implement meet international inter-operability standards. Inter-operability of eHealth systems is key and should be based on open standards principles and collaborative community practice.

4. Countries should identify the health system and health services challenges that they face that might be amenable to solution using eHealth systems. Needs-based approaches should be used in the planning and implementation of eHealth systems.

5. Countries should ensure proper investment in building the requisite national health information infrastructure which would include connectivity, computing and human resources in health-care and medical institutions.

6. Countries should seek partnerships and forge collaborative relationships with United Nations organizations, the donor community, the private sector and other national stakeholders for the planning, implementation, sustaining and evaluation of eHealth systems and services.

7. Countries should aim at integrating eHealth training and capacity-building as part of formal public-health education. Creating a critical mass of eHealth experts, and increased awareness of eHealth issues among the public and decision makers, should be a priority.

8. Countries should establish, with support from the international community. platforms for collaboration, knowledge-sharing and learning, exchange of experience and joint projects in support of eHealth at the regional and international levels.

9. Countries should build capacity for eHealth project management, contracting, needs assessment and evaluation, in partnership with the international community.

10. United Nations organizations, the donor community, the private sector and the other eHealth partners should create a repository of eHealth projects; implement projects that are driven by country needs and responsive to local health problems; comply with ethical and legal frameworks; and invest in the building of eHealth local capacity.