Division Health, Education, Social Protection

Radiating knowledge

How a core of experts based in Croatia is boosting HIV surveillance across Eastern Europe, Central Asia and beyond

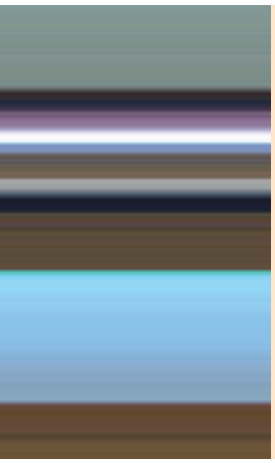
WHO Collaborating Centre
Knowledge Hub for Capacity Development in HIV Surveillance

gtz German BACKUP Initiative

On behalf of
Federal Ministry
for Economic Cooperation
and Development

HIV AIDS
Knowledge Hub for Capacity
Development in HIV Surveillance

Content



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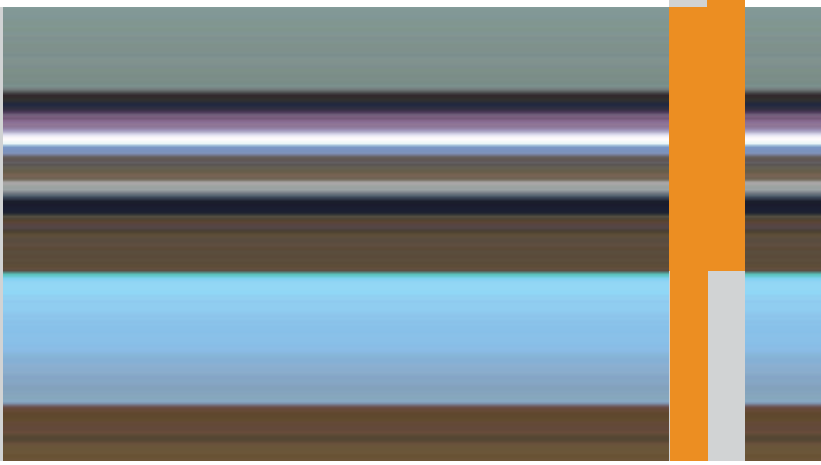


2. Executive summary

As HIV epidemics in Eastern Europe have evolved, so too has our understanding that this long-term threat to health and development is best tackled by fostering local institutions within region-wide networks committed to continuous learning, improvement and the strengthening of technical skills. Underpinning this approach is the premise that regional advocacy and capacity development are necessary to ensure the introduction and scaling up of comprehensive HIV services across whole regions. It is also widely believed that regional advocacy and capacity development is the best guarantee that resulting services will be well-suited to various socio-political, cultural and epidemiological contexts- and, ultimately, sustainable.

The need for fresh capacity to address HIV is urgent. By the end of 2007, 1.5 million people [1.1-1.9 million] in Eastern Europe and Central Asia were living with HIV, with an estimated adult prevalence of 0.9% [0.7%-1.2%]. Epidemics of HIV are now well-established throughout both regions, and growing at alarming rates in some countries, particularly among injecting drug users, a fast-growing sub-population. Of those living with HIV, 66% are in the Russian Federation and 21% are in Ukraine. Increasing numbers of infections due to unsafe sex practices among heterosexual partners also indicate that growth of the HIV epidemic could continue in all sectors of the population.

This publication summarizes recent evaluations of the achievements and lessons learnt by an innovative institution at the forefront of a cooperative, regional approach to addressing HIV: the Knowledge Hub for Capacity Development in HIV Surveillance based at the Andrija Štampar School of Public Health in Zagreb, Croatia.

This is one of three HIV Knowledge Hubs serving Eastern Europe and Central Asia that were established in 2003-2004 with the support of the German BACKUP Initiative, a programme of German Technical Cooperation (GTZ), the World Health Organization Regional Office for Europe, WHO Headquarters (Geneva) and the European Commission (grant for Second Generation Surveillance of HIV/AIDS). The other two Hubs support harm reduction (the Eurasian Harm Reduction Network (EHRN) based in Vilnius, Lithuania) and HIV care and treatment (AIDS Training and Education Center in St Petersburg, Russian Federation). The St. Petersburg Hub, which was based until recently in Kiev, Ukraine, is also supported by the American International Health Alliance (AIHA).

All Knowledge Hubs have four key tasks: to facilitate the rapid increase in capacity by providing direct technical assistance; to organize training for health-care providers, epidemiologists and managers of health systems; to facilitate networking among regional consultants (and people living with HIV); and to adapt generic WHO tools and

Knowledge hubs aim to fill important gaps in health services by providing a regional pool of expertise, creating a regional community of professionals facing a common epidemic; and providing a basis for training programs that are outside of the usual national programmes.

guidelines to the needs of countries and regions. In this manner, they aim to fill important gaps in health services by providing a regional pool of expertise, creating a regional community of professionals facing a common epidemic; and providing a basis for training programs that are outside of the usual national programmes or sources that might be available.

In 2008, GTZ commissioned an assessment of the performance of the three Hubs, which focuses primarily on their outputs (advocacy work, number of people trained, technical assistance provided, etc.) and organizational structures. It found, for example, that since 2004, the Hub had offered 38 training courses, attracting 829 participants from 60 countries of Eastern Europe, Central Asia and beyond: Africa, Middle East and south-east Asia. Seven training modules were translated into Russian and the first courses in Russian, presented in Russian-speaking countries, were organized in 2009.

Another evaluation done in 2009, also summarized in this document, focuses on (more general) outcomes in an attempt to assess how work of the Knowledge Hub in Zagreb effected the quality of HIV surveillance in countries that used its services.

The Hub's regional approach has allowed for comprehensive capacity development specific to each region's needs. Training (in workshops, mentorship and follow-up sessions) is combined with ad hoc and longer-term technical assistance to countries. High-level cooperation and knowledge sharing among countries with similar HIV epidemics and health-care systems expedites the adaptation of policies and guidelines. Standardized, regionally adapted tools that have proven their value in pilot studies have been developed along with training modules to help health managers and service providers use them in their own countries. This is backed up with technical assistance from regional experts.

Policy-makers in countries that have received training and technical assistance see a direct link between the Knowledge Hub's capacity development and the subsequent improvement of HIV surveillance. Case studies and structured interviews with these policy-makers also point to a substantial transfer of knowledge in HIV surveillance. To sustain this and build on these concrete achievements, international donors will now need to invest in the Zagreb Knowledge Hub over the long-term. There a variety of ways to do this, but without investment in such HIV capacity development mechanisms, countries in Eastern Europe, Central Asia and elsewhere may simply not know enough about their growing epidemics to address them in timely and effective ways.

Since 2004, the Hub has offered 38 training courses, attracting 829 participants from 60 countries of Eastern Europe, Central Asia and beyond: Africa, Middle East and south-east Asia.

6. Introduction

Aims of report

Since its establishment in 2003, the Knowledge Hub for Capacity Development in HIV Surveillance in Zagreb, Croatia has helped countries throughout Eastern Europe, Central Asia and other regions develop their capacity – human and institutional – for HIV surveillance. This publication provides a summary of the experience of the Knowledge Hub from 2003-2009, drawing on a recent evaluation of the Hub's performance and lessons learnt. The aims of this report are to:

- document evidence of the development of human and institutional capacities in HIV surveillance provided by the Knowledge Hub;
- describe the outputs of capacity development activities and evaluate their outcomes; and
- inform discussion about approaches to strengthening public-health capacity generally.

Severe epidemics harming region

By the end of 2007, 1.5 million people (1.1-1.9 million) in the countries of Eastern Europe and Central Asia were living with HIV, with an estimated adult prevalence of 0.9% (0.7%-1.2%).[1] That year, 110 000 people in the region became infected with HIV, while 58 000 died of AIDS. Of those living with HIV, no less than 66% are in the Russian Federation and 21% are in Ukraine. In Ukraine, adult prevalence is greater than in the rest of Eastern Europe and Central Asia, at 1.4% (0.8%-4.3%). The Russian Federation has the highest population living with HIV, which was estimated to be 940 000 (560 000-1.6 million) people at the end of 2005.[2]

The HIV epidemic in Eastern Europe and Central Asia is concentrated primarily among injecting drug users (IDUs), although there is increasing sexual and mother-to-child transmission. An estimated 62% of newly reported HIV cases in 2006 (for which there was information on the mode of transmission) were attributed to injecting drug use, while 37% were attributed to unprotected heterosexual intercourse. The number of IDUs in Eastern Europe is estimated to be 2.5-4.5 million,[3] yet only a small minority receive HIV prevention services, notably opioid substitution therapy and harm reduction measures such as the provision of clean needles and syringes. IDUs are also at risk for hepatitis B and C, tuberculosis and sexually transmitted infections.

Progression of the epidemic is reflected in the increased number of HIV cases among women, with women comprising nearly 40% of newly registered HIV cases in 2006. HIV prevalence in Ukraine among pregnant women in 2006 exceeded 1% in three oblasts: Odessa, Kiev and Mykolaev. The total number of people living with HIV in Ukraine at the end of 2005 was estimated to be 377 600 (50 000-680 000).

Trend data from HIV-case reporting indicate the epidemic in Central Europe remains at low and stable levels although there is evidence of increasing sexual transmission. Since 2001, Estonia and Latvia have reported declines in the rates of newly diagnosed cases.[4] The number of newly diagnosed cases has more than doubled in Kazakhstan and Kyrgyzstan since 2002, while increasing

five-fold in Azerbaijan and ten-fold in Tajikistan. In other countries, steady increases in rates since 2000 have been reported (Armenia, Georgia, Republic of Moldova, Ukraine and Uzbekistan).

While the HIV epidemic is spreading unevenly through Eastern Europe and Central Asia, with alarming growth in some countries, it is most advanced among IDUs, a growing population. In certain countries, evidence of increasing numbers of infections, due to unsafe sexual practices among heterosexual partners, indicates that HIV could continue to spread into all sectors of the population.

Weak surveillance undermines response

Surveillance is a prime responsibility of public health authorities, enabling them to set priorities for health services.[5] The purpose of HIV surveillance is to generate solid evidence for the development of prevention and control programmes and the most effective use of health resources. In the late 1990s a framework known as second generation HIV surveillance was created by WHO and UNAIDS with the purpose of tailoring surveillance systems to the needs of specific epidemiological conditions.[6]

HIV and AIDS case reporting, HIV surveillance, STI surveillance, population-size estimates and behavioural surveillance are all indispensable for monitoring epidemic trends and evaluating the effects of prevention initiatives. Each component of an HIV-surveillance system must be context-specific and focused on those populations most likely to acquire and transmit the infection. It must also be affordable, sustainable and closely linked to public health interventions.

To understand the changing and heterogeneous nature of HIV epidemics, data collection efforts should concentrate on populations most at risk of becoming newly infected. This is achieved by integrating information on HIV and STI prevalence and the behaviours that spread them. Surveillance must be flexible and timely enough to respond effectively to an evolving HIV epidemic with shifting patterns of transmission and differing prevention and control needs.

In the recently published assessment of the quality of HIV sero-surveillance in low- and middle-income countries, it was revealed that in all of Eastern Europe and Central Asia only Ukraine had a fully functioning surveillance system.[7] Surveillance in the other countries was weak due to over-reliance on HIV and AIDS case reporting for longer-term tracking of the epidemic and the lack of studies conducted among most at-risk populations (MARPs) other than IDUs. Two concerns were poor quality data on population health and their limited usefulness for informed policy decisions and Eastern Europe's weak infrastructure for communicable disease control.[8] The assessment found that most HIV prevalence surveys had limited coverage and used convenience sampling, thus producing data from which it was difficult to draw general conclusions. There was also very

A recent assessment of HIV sero-surveillance in low- and middle-income countries, it was revealed that in all of Eastern Europe and Central Asia only Ukraine had a fully functioning surveillance system.

little clinic-based prevalence data available, including data from HIV voluntary counselling and testing (VCT) centres and clinics for sexually transmitted infections (STIs).

STI prevalence estimates of gonorrhoea, Chlamydia trachomatis and herpes simplex virus type-2 from population-based surveys were particularly rare and few studies, if any, provided estimates of recent HIV infections.

As well, the assessment notes that one of the challenges in implementing comprehensive HIV prevention was the almost complete lack of evaluation of HIV prevention initiatives in experimental studies from Eastern Europe. The public health benefit of surveillance requires multiple data collection methods, in particular targeted population-based surveys and clinic-based sentinel surveillance.[9] The inadequacy of public health systems in controlling communicable disease in Eastern Europe was attributed to their limited capacity. This has hindered the application of modern concepts of communicable disease surveillance and control.[10, 11]

In summary, rolling back the tide of HIV in Eastern Europe and Central Asia demands that countries develop high-quality HIV prevention and treatment programmes with stronger surveillance (in particular of MARPs). This in turn will generate richer data and allow for tracking of impacts of interventions. These efforts must be accompanied by interventions to reduce the stigmatization of and discrimination against members of most-at-risk groups and people living with HIV. WHO has emphasized that scarce human resources for health are a major barrier to scaling up HIV services.[12] Successful programmes depend heavily on the capacity of staff and institutions delivering services; so capacity development is a key to improving national HIV responses.

In summary, rolling back the tide of HIV in Eastern Europe and Central Asia demands that countries develop high-quality HIV prevention and treatment programmes with stronger surveillance (in particular of MARPs).

4. Capacity development for surveillance

Tasks, work strategies and structure

Regional Knowledge Hubs

Regional HIV Knowledge Hubs were established in 2003 and 2004 with the support of the German BACKUP Initiative, a programme of the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) and WHO Regional Office for Europe (WHO/EURO). There are three Knowledge Hubs in Eastern Europe, each devoted to a different area of activity: HIV surveillance, based at the Andrija Štampar School of Public Health in Zagreb, Croatia; harm reduction, which operates within the Eurasian Harm Reduction Network, based in Vilnius, Lithuania; and HIV care and treatment, based at the AIDS Training and Education Center in Saint Petersburg, Russian Federation and supported by the American International Health Alliance (AIHA). (Other Knowledge Hubs supported by WHO and other agencies serve parts of Africa and the Middle East).

The Knowledge Hubs' four main tasks are to:

- provide direct technical assistance;
- facilitate the increase in capacity by delivering trainings;
- facilitate networking of regional consultants; and
- adapt generic WHO and UNAIDS tools and guidelines to the needs of countries and regions.

In this manner, they aim to fill important gaps in health services by providing a regional pool of expertise, creating a regional community of professionals facing a common epidemic; and providing a basis for training programmes that are outside of the usual national programmes or sources that might be available. Among other work strategies, Hubs attempt to assess health-service needs annually; increase access and use of these services, as needed and in collaboration with other agencies providing training and technical assistance; market services to target groups, thus creating demand; and evaluate the quality of services.

Knowledge Hub for Capacity Development in HIV Surveillance

The capacity development activities of the HIV Surveillance Knowledge Hub target diverse groups: public health professionals, health-care providers, medical doctors, epidemiologists, networks of PLHIV and other members of civil society.

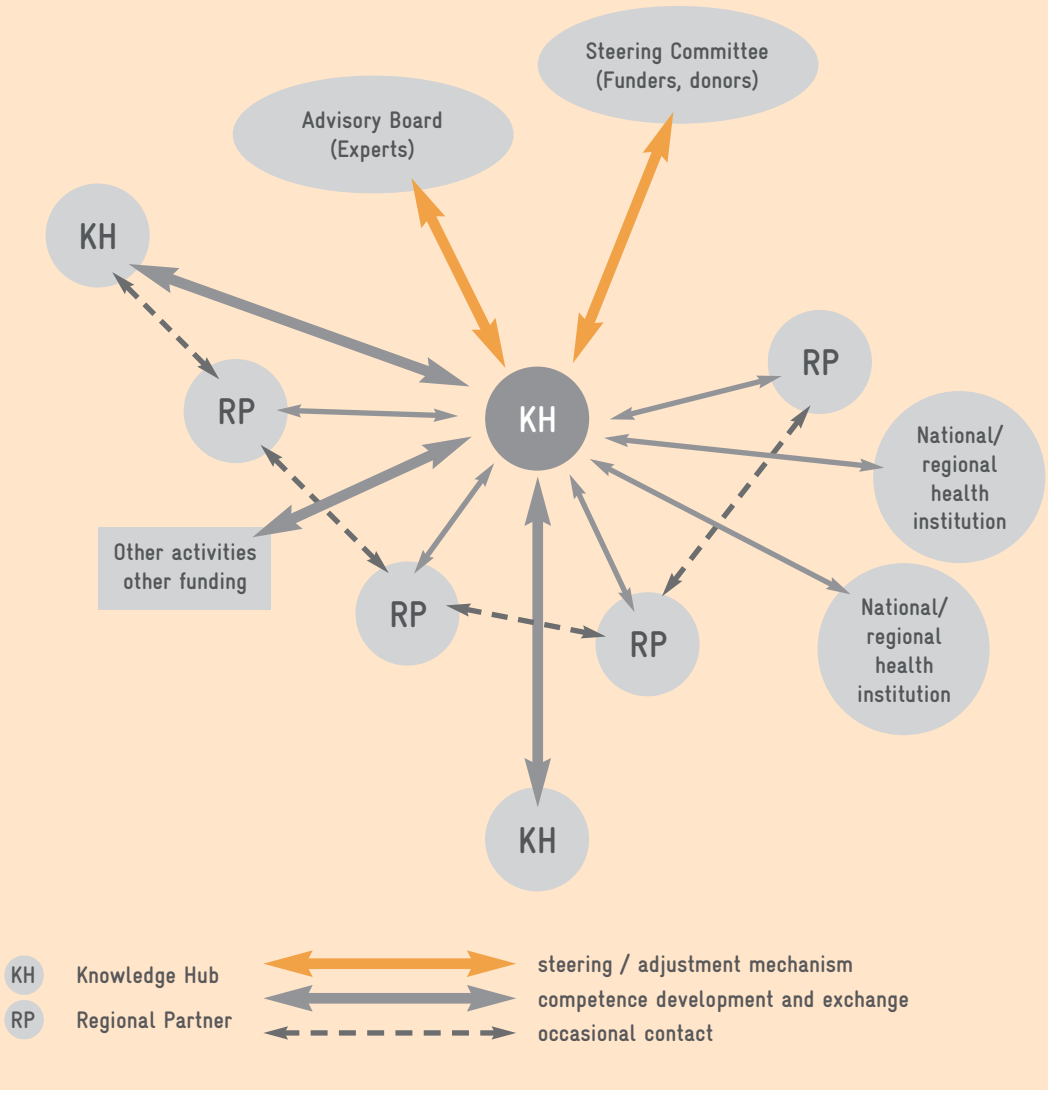
This Knowledge Hub is composed of a core management team, a research and teaching group and an International Advisory Board. Core staff includes a director, an executive director, a development officer, a research fellow and an administrative officer. The International Advisory Board, which meets annually, provides strategic advice. Its close partners include WHO, the United Nations Development Program (UNDP), UNAIDS, the European Centre for Disease Prevention and Control, the International

Capacity development activities of the Surveillance Hub target diverse groups: public health professionals, health-care providers, medical doctors, epidemiologists, networks of PLHIV and other members of civil society.

HIV/AIDS Alliance (Ukraine), the United Kingdom (UK) Health Protection Agency, the University of California (San Francisco), Saint-Petersburg Pasteur Institute, and United States of America (USA) Centers for Disease Control and Prevention. These have resulted in successful collaborations and the further strengthening of research and teaching capacities. Figure 1 shows the organizational structure.

The mission of the Knowledge Hub (also known as the WHO Collaborative Centre for Capacity Development in HIV surveillance) is to disseminate knowledge and best practice tools that increase the capacity of countries to identify the scale and distribution of HIV epidemics in populations most at risk. This approach emphasizes training, technical assistance, networking and adaptation of tools and guidelines that promote knowledge exchange and capacity development.

Figure 1. Structure of Eastern European HIV Knowledge Hubs



This Knowledge Hub brings together an interdisciplinary group of scientists and policy makers from the University of Zagreb and institutions of excellence in HIV surveillance from around the world. Members of its teaching staff are drawn from a number of international academic institutions and UN agencies. These include the national and international partner agencies mentioned above, as well as the Andrija Štampar School of Public Health, Croatia; WHO EURO and WHO Ukraine; University College London, UK; Harvard Medical School, USA; London School of Hygiene and Tropical Medicine, UK; the Faculty of Humanities and Social Sciences, Croatia; "Dr. Fran Mihaljevic" University Hospital for Infectious Diseases, Croatia; and the Institute for Public Health, Croatia. The Knowledge Hub in Zagreb became the WHO Collaborating Centre for Capacity Development in HIV Surveillance in 2007.

Capacity development defined

Capacity development is a multidimensional and somewhat intangible concept, with a variety of meanings. Goodman, for example, describes capacity as "the ability to carry out stated objectives."[13] Brown L et al. define capacity development as:

> a process that improves the ability of a person, group, organization, or system to meet its objectives or to perform better. Capacity development interventions, therefore, work to improve the processes that go on within the health system as a whole (improvement in function); the organizations within the health system (improvement in function); health personnel (improvement in ability to perform work functions); and individuals (improvement in ability to engage productively with the health system through access to services and influencing resource management, and improving their own health).[14]

According to Crisp et al. there are four main approaches to capacity development: a top-down, organizational approach for changing agency institutional practices and policies; a bottom-up organizational approach to provide skills to staff; a partnership approach for strengthening relationships between organizations; and a community approach in which community members form new organizations. They argue that "irrespective of the processes and strategies used to achieve capacity development, this term can be applied to interventions which have changed an organization's or community's ability to address health issues by creating new structures, approaches and/or values".[15]

Capacity development is a dynamic process that typically involves the provision of technical and financial resources. The development of technical expertise is considered essential for organizations and communities to gain skills necessary to provide quality services and improve and evaluate health-system performance.[16] Developing a core of well-trained individuals decreases reliance on external technical and financial resources and increases the sustainability of local efforts.[17] However, despite increased attention to capacity development, there is still limited understanding of the role capacity plays in ensuring adequate performance in health systems.[13]

The Hub brings together an interdisciplinary group of scientists and policy makers from the University of Zagreb and institutions of excellence in HIV surveillance worldwide.

The Knowledge Hub approach to capacity development begins with the premise that beneficiaries of its services should be encouraged to become "reflective practitioners" who use new knowledge and skills to enable better and more cost-effective performance of HIV programmes.

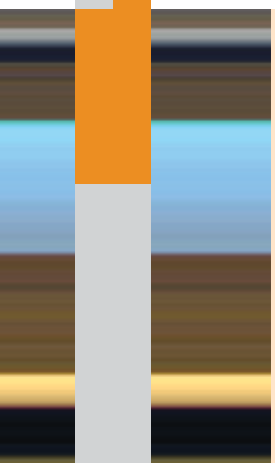
Benefits of a regional approach

As HIV epidemics in Eastern Europe have evolved, so has the understanding that this long-term health and development problem requires regional responses. This involves local institutions committed to continuous learning and improvement and strengthening of specific technical and organizational skills. The premise then is that regional advocacy and capacity development is the best way to ensure a region-wide introduction and scale up of comprehensive HIV services well adapted to national and local epidemiological circumstances and socio-political and cultural contexts. A regional approach to capacity development also fosters:

- comprehensive capacity development provided by regional experts to a broad range of stakeholders at multi-country, regional workshops;
- the use of regional expertise and best-practice sites to develop regional competence and knowledge;
- high-level cooperation and knowledge-sharing among countries with similar HIV epidemics and health-care systems, expediting the adaptation of policies and strategies;
- strengthening of the capacity of national institutions to manage and implement high-quality training over the long term, in collaboration with leaders in the field (e.g. the University of California, San Francisco);
- provision of standardized, adapted and pilot-tested tools that trainees can use in their own countries;
- exchange of good practices and combining of services with support (e.g., multi-country training sessions and study tours) followed by technical assistance and in-country training;
- rapid dissemination of new concepts and guidelines in HIV surveillance (developed by WHO and other UN agencies), via multi-country training sessions;
- greater involvement of PLHIV;
- collaboration, exchange and partnerships among civil society, government and academic institutions in the region; and
- harmonization of activities.

Evaluation of capacity development for surveillance

To assess the educational work and technical assistance of the Zagreb Knowledge Hub, it is critical to examine how this has affected the ability of local service providers to provide and sustain services of good quality. Current frameworks for evaluating HIV programmes, however, do not sufficiently capture capacity development activities. Furthermore, Brown L et al. argue that there is limited empirical evidence for a link between capacity and performance in the health system.[14] Why? Because capacity development and the implementation of new knowledge are influenced by many contextual factors and the



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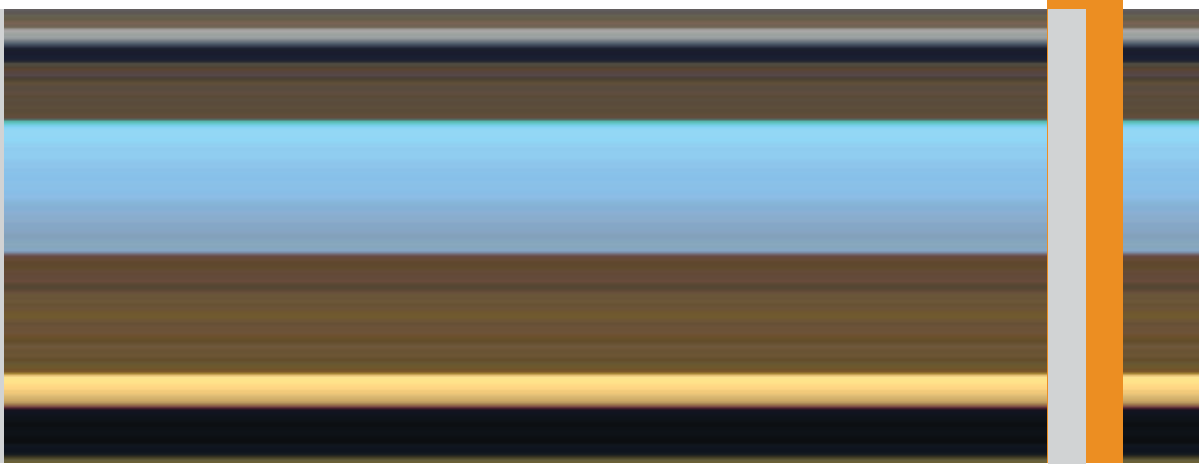
process is often slow, requiring concerted efforts over a long term. Given this, a new set of indicators is needed to define success in more appropriate ways.

This document highlights the outputs and outcomes of five years of work by the Knowledge Hub for HIV surveillance, based in Zagreb. In 2008, GTZ commissioned an assessment that focused on inputs and processes[18]. Currently, most evaluations of capacity development focus more on outputs.[19] In this assessment, the evaluation of outputs dwells mainly on the number of courses held and health professionals and others trained. Assessing outcomes is more challenging as one must measure the translation into practice of knowledge and resources gained through training and technical assistance. Crisp at al. argue that, as capacity development is a process, outcome measures must take account of this.[15] This necessitates the use of qualitative case studies.[20] As a result, we chose the framework developed by Brown et al., which defines outcomes of capacity development as a set of short-term results that can be linked directly to capacity gained on four levels: in systems, organizationally, and by health personnel, patients and community members.[14] Capacity at these four levels, combined, determines the overall performance of a health system. Performance is interpreted by many in international development as the single most important outcome of capacity development.[21] Measuring impact is even more challenging, as this must focus on long-term results generated by improved performance of health system, the sustainability of these systems and improved health status.[15]

As the development of capacity in the health sector requires changing systems and shifting organizational and human resources, the outcome evaluation of the Zagreb Knowledge Hub focused on the extent to which building the capacity of human resources has improved the performance of health-care systems.[22]

Several methods were used to assess the outputs and outcomes of the Hub. These included an analysis of the registry of participants and technical assistance projects; an analysis of reports produced; and semi-structured interviews with key stakeholders in the national AIDS programmes and international agencies who had used services provided by the Knowledge Hub. These interviews included questions such as:

- How were health professions utilizing HIV surveillance skills gained in training?;
- Where new knowledge have been translated into practice, how did this change HIV surveillance?;
- How did the Hub change the way that country health systems respond to HIV? Were any services initiated, restructured, funded more generously?;
- How did the training and technical assistance delivered by the Knowledge Hub influence the performance of the health-care system?
- Were there any strategic benefits resulting from Knowledge Hub's trainings, technical assistance and networking with your organization, country or region?



5. Results

HIV surveillance systems have become increasingly complex in recent years, reflecting the growing complexity of the HIV epidemic. For example, countries have needed to implement comprehensive national monitoring and evaluation systems that measure not only the availability and coverage of services, but also the overall impact of initiatives and approaches. As well, in keeping with the WHO/UNAIDS imperatives "Know Your Epidemic, Know Your Response", countries and entire regions have had to begin monitoring and interpreting HIV epidemiological data and the most significant risks and other factors underlying transmission of the disease: e.g. drug use, sexual behaviour, access to health services, gender inequalities, stigmatization and discrimination, etc. As a result, comprehensive HIV surveillance is essential to assess the burden of HIV and STIs and measure the effectiveness of various interventions. Unfortunately, the quality of surveillance systems varies widely and some countries in Eastern Europe and Central Asia still struggle to collect the most basic data. HIV-surveillance information is collected primarily by health facilities, sometimes in collaboration with academic organizations and civil society organizations working with most at-risk populations. In response to this, training courses and technical assistance activities of the Knowledge Hub for HIV surveillance focus on improving the capacity of surveillance agencies in various sectors.

Outputs

The Zagreb-based Hub provides training that emphasizes acquisition of practical skills and multi-disciplinary approaches to surveillance systems development. Course topics range from broad, introductory courses to specific or specialized courses that address recent developments in HIV surveillance. All courses draw on the most current knowledge in HIV surveillance and are adapted to suit participants' particular needs. Training is delivered through intensive five-day workshops and support offered during country visits. Courses are interactive, with participants spending half their time on practical exercises. Since 2004, the Hub has developed 18 training modules, covering a wide range of topics: for example, an "Introduction to Second Generation HIV/AIDS Surveillance"; "Surveillance in Hard-to-Reach Populations"; and an "Integrated Module on Biological and Behavioural Surveillance in Low-Level and Concentrated HIV/AIDS Epidemics". See Annex I, Table 1 for a list of the names of all training courses, their content, the number of participants trained and the number of countries who attended the course. Annex II, Table 2 shows the number of participants trained per country.

The first courses were given in 2004, and by July 2009 no fewer than 829 participants from 60 countries of Eastern Europe, Central Asia, Africa, Middle East and South-East Asia had undergone training. This shows the global scope of the Hub's work. Seven training modules are now translated into Russian. The first courses in Russian, presented in Russian-speaking countries, were

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organized in 2009. Overall, since 2004, 38 training courses have been given: 25 in Croatia and 13 abroad. (Courses were delivered in Azerbaijan, Bosnia and Herzegovina, Egypt, The Former Yugoslav Republic of Macedonia, Iran, Montenegro, Pakistan, Serbia, Sudan, Turkmenistan, Ukraine, the United Kingdom and Yemen.) The courses with highest attendance were "Respondent Driven Sampling" and "HIV Surveillance in Hard-to-Reach Populations", followed by "Surveillance of STIs" and "Monitoring and Evaluation of the National HIV/AIDS Responses".

Since 2004, 47 participants have received scholarships based on their professional experience and financial need. The Hub is developing a programme with a Scholarship Fund to address the need to train professionals from countries with few resources. The Fund will allow for a significant number of scholarships to be awarded annually to professionals working in some of the poorest countries in the world. In 2009, the Croatian Ministry for Foreign Affairs and European Integration provided funding for scholarships that enabled trainees from countries in sub-Saharan Africa to attend courses in Zagreb.

Quality assurance requires that all courses be evaluated afterwards and the results used to improve course content and organization. Evaluation of individual courses has shown participants are satisfied with the lectures and find the content and approach useful, in particular the emphasis on practical work and protocol development. In November 2008, a larger evaluation and needs assessment was conducted. Questionnaires were sent to all previous participants asking which of the offered courses they would like to attend; courses or topics they would like to see offered in the future; whether they had access to adequate funding for training; and how much of what they have learned had they been able to apply in the workplace. This evaluation showed participants felt a strong need for more training. Some proposed new topics, a few of which are being considered. A small

Trainees at the workshop "Designing Protocols in Population-Based and Clinic-Based HIV Surveillance", in front of the Andrija Štampar School of Public Health, Zagreb, March 2008 (Photo: Danijela Lešo).

number reported having access to funding for training courses, while the large majority reported a serious lack of such funding.

In providing technical assistance, the Hub is strongly focused on longer-term capacity development, to achieve sustainability and effective transfer of knowledge. Technical assistance covers the following areas:

- assessment of the quality of existing HIV surveillance systems;
- identification of priority groups and areas;
- assistance in identification and implementation of operational research and pre-surveillance assessment;
- development of HIV-surveillance strategies, work plans and budgets;
- assistance in implementation of surveillance surveys, selection of HIV and STI tests and testing algorithms;
- training, mentoring and supportive supervision; and
- analysis and interpretation of data.

To date, technical assistance has been provided in 14 countries: Azerbaijan, Bosnia and Herzegovina, Georgia, Iran, Lithuania, Montenegro, Pakistan, Serbia, Somalia, Sudan, Syria, FYR Republic of Macedonia, Turkmenistan and Yemen. Technical assistance activities consist of design and implementation of HIV bio-behavioural surveys in most-at-risk groups (MSM, IDUs, sex workers, young people, male migrants) and are often accompanied by training for the principal investigators and field staff. The Hub's approach to technical assistance is distinctive, as it focuses on long-term assistance in the form of training, mentoring support and supervision throughout the implementation of surveillance activities. Other areas of technical assistance included assessment of the quality of HIV-surveillance systems, planning for HIV-surveillance systems, writing proposals for grants offered by the Global Fund to Fight Aids and Malaria (Global Fund) and assessment of national AIDS responses.

Giving out certificates at the end of the workshop "Time-Location Sampling (TLS)", Zagreb, April 2008 (Photo: Mira Svibovec).

Outcomes: Case studies

Case study 1: Ukraine

This case study explored the transfer of knowledge to Ukraine, the country with the highest HIV prevalence in Eastern Europe, and Central Asia. It is based on material gathered in interviews with Tetyana Salyuk, Programme Manager: Research & Evaluation; Olga Varetska, Head of Team: Monitoring and Evaluation, International HIV/AIDS Alliance in Ukraine; experts at WHO and observers in other countries.

Since the courses began in 2004, a total of 32 participants from Ukraine have been trained. These included representatives of the Ministry of Health; AIDS centres; Donetsk Oblast Tuberculosis Hospital; Ukrainian Centre for AIDS Prevention; Kiev International Institute of Sociology; Ukrainian Institute of Social Research; International HIV/AIDS Alliance; and the All-Ukrainian Network of People Living with HIV/AIDS, etc.

According to those interviewed, the key contribution of the capacity development was a "shift in ideology". Following the Knowledge Hub training sessions, a substantial shift took place in the way HIV-surveillance surveys among high-risk groups were designed. Namely, prior to the trainings, there was limited integration of behavioural and biological surveillance. Epidemiologists (responsible for implementation of serological surveys) and social researchers (responsible for implementation of behavioural surveys) worked separately on survey implementation. Recognizing the importance of merging biological and behavioural data, social researchers and the epidemiologists started working together in survey implementation and in applying for joint-surveillance funding. As a result, the quality of study design has improved, HIV surveillance is now integrated with bio-behavioural surveillance and the different survey data are combined. For example, to recruit high-risk groups study teams began to use respondent-driven sampling (RDS) more often than snowball sampling (in which subjects recruit future subjects from among their acquaintances, a

Participants during group work at the training course "Surveillance of Sexually Transmitted Infections", Dubrovnik, July 2008.

method that often allows for bias). This led to better quality data. Since the initial training sessions, eight surveys have been designed and implemented in each high-risk group every two to three years. Furthermore, integration of bio-behavioural surveillance has influenced HIV prevention. The introduction of periodic RDS of high-risk groups and VCT has allowed a higher number of individuals from most-at-risk populations to benefit from free VCT and test results.

Prior to the trainings, surveys were not based on protocols. Now, all surveys are protocol-based, enabling a standardization of survey design and methods and further transfer of knowledge. Professionals who completed trainings went on to train new teams of surveillance staff. It is estimated that approximately 200 people were trained in surveillance methods by staff who were trained in Zagreb. These in-country workshops were based on materials obtained in Zagreb. In-country experts have also gained enough expertise to analyse RDS data themselves without the need for external consultants. Following the Knowledge Hub trainings, quality of data and reports was raised.

Among its benefits, this improvement helped the International AIDS Alliance in Ukraine in its role as principal recipient of a grant from the Global Fund. The Hub also assisted in the implementation of HIV surveillance activities, and monitoring and evaluation work supported by the grant. As part of this, HIV data triangulation, done in collaboration with the Knowledge Hub, will provide a powerful tool for assessing the impact of the Global Fund support as well as other funding for HIV prevention. The first such project of its kind in Eastern Europe, it aims provide a model for countries the region.

In 2009 the International HIV/AIDS Alliance in Ukraine became the key partner of the Knowledge Hub in the implementation of a training programme in the Russian language, another important achievement. The first training course was held in Yalta in June 2009, attended by 24 participants from eight countries of Eastern Europe, Central Asia and Caucasus. Continued delivery and development of training workshops in Russian with the colleagues from Ukraine means a wider transfer of knowledge to Russian-speaking countries of Eastern Europe and Central Asia. Six training modules have already been translated into Russian including presentations and all training materials.

Recognizing the importance of merging biological and behavioural data, social researchers and the epidemiologists started working together in survey implementation and in applying for joint-surveillance funding.

Case study 2: Sub-regional transfer of knowledge in south-east Europe

This case study explores how the Knowledge Hub helped with the transfer of knowledge to the countries of south-east Europe that share a common language and similar public health structures. It is based on interviews with Goran Čerkez, Assistant Minister of Health for International Cooperation and Development, and President, Country Coordinating Mechanism (CCM), Bosnia and Herzegovina; Boban Mugoša, Director, National Institute of Public Health, National Focal Point for HIV and Vice-Chair of CCM, Montenegro; Milena Stevanović, National HIV/AIDS Coordinator, FYR Macedonia; and Verica Lela Ilić, National HIV/AIDS Coordinator, Serbia.

In total, 225 professionals from governmental and non-governmental sectors of Bosnia and Herzegovina, FYR Macedonia, Montenegro and Serbia were trained. Those trained in Zagreb went on to provide their own, country-level training workshops using materials provided by the Knowledge Hub. The workshops allowed about 100 more people to develop skills needed to conduct HIV surveillance. In this process, national experts gained enough expertise to analyse survey data without the help of external consultants.

Training and technical assistance from the Knowledge Hub also fostered the introduction of second generation HIV surveillance, a framework created by WHO and UNAIDS for tailoring surveillance to the needs of different epidemics. This also improved the quality of HIV surveillance for monitoring and evaluating HIV responses.

The greatest contribution of Knowledge Hub training, however, was in helping to initiate estimates of the size of high-risk populations. A key to this in three cities in Bosnia and Herzegovina, and (soon) in FYR Macedonia, has been assisting directly in setting up the first bio-behavioural surveys among IDUs. Improved surveillance also allowed for a more accurate exploration of the level

Pre-surveillance assessment in Aden, Yemen, May 2007.

and spread of HIV in a number of countries, which led to significant improvements in their health care systems. The ability to do gap analyses (comparing actual performance with potential performance), based on improved HIV surveillance, helped in winning a Global Fund grant in Round 8 in Serbia.

In FYR Macedonia, outcomes can be seen in the development of new protocols for the assessment of HIV/STI epidemics among MARPs. New tools, such as databases, coupon-tracking and forms to be used in RDS have led to better HIV surveillance.

Boban Mugoša, Director of the National Institute of Public Health in Montenegro and Vice-Chair of CCM, Montenegro noted:

> "Thanks to the Knowledge Hub's trainings, the HIV surveillance system in Montenegro was raised up from the dust and now is at the level comparable to those in developed countries. Overall, the national response to HIV epidemic has been much more effective thanks to the training programme."

Dr Mugoša also pointed out how the Knowledge Hub network of professionals assist the development of HIV surveillance by providing easy access to up-to-date knowledge and the sharing of information among surveillance teams. This facilitates the transfer of that knowledge to others in the countries and strengthens collaboration among health-care institutions and NGOs.

Case study 3: North Africa and the Middle East

This looked at the transfer of knowledge from the Hub's European base to regions with low capacities in HIV surveillance and with very different socio-political contexts and public health structures. It drew mainly on interviews with Gabriele Riedner, Regional Advisor HIV/AIDS/STD at the WHO Regional Office for the Eastern Mediterranean (EMRO), based in Cairo.

This WHO Region covers 22 countries in North Africa and the Middle East. Since 2005, 62 professionals from Afghanistan, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Pakistan, Somalia, Sudan and Yemen have attended training courses in Croatia. A further 119 people were trained in technical assistance projects in Egypt, Iran, Sudan and Yemen. Technical assistance has been provided since 2005 by the Knowledge Hub staff to Iran, Pakistan, Palestine, Somalia, Syria, Sudan and Yemen.

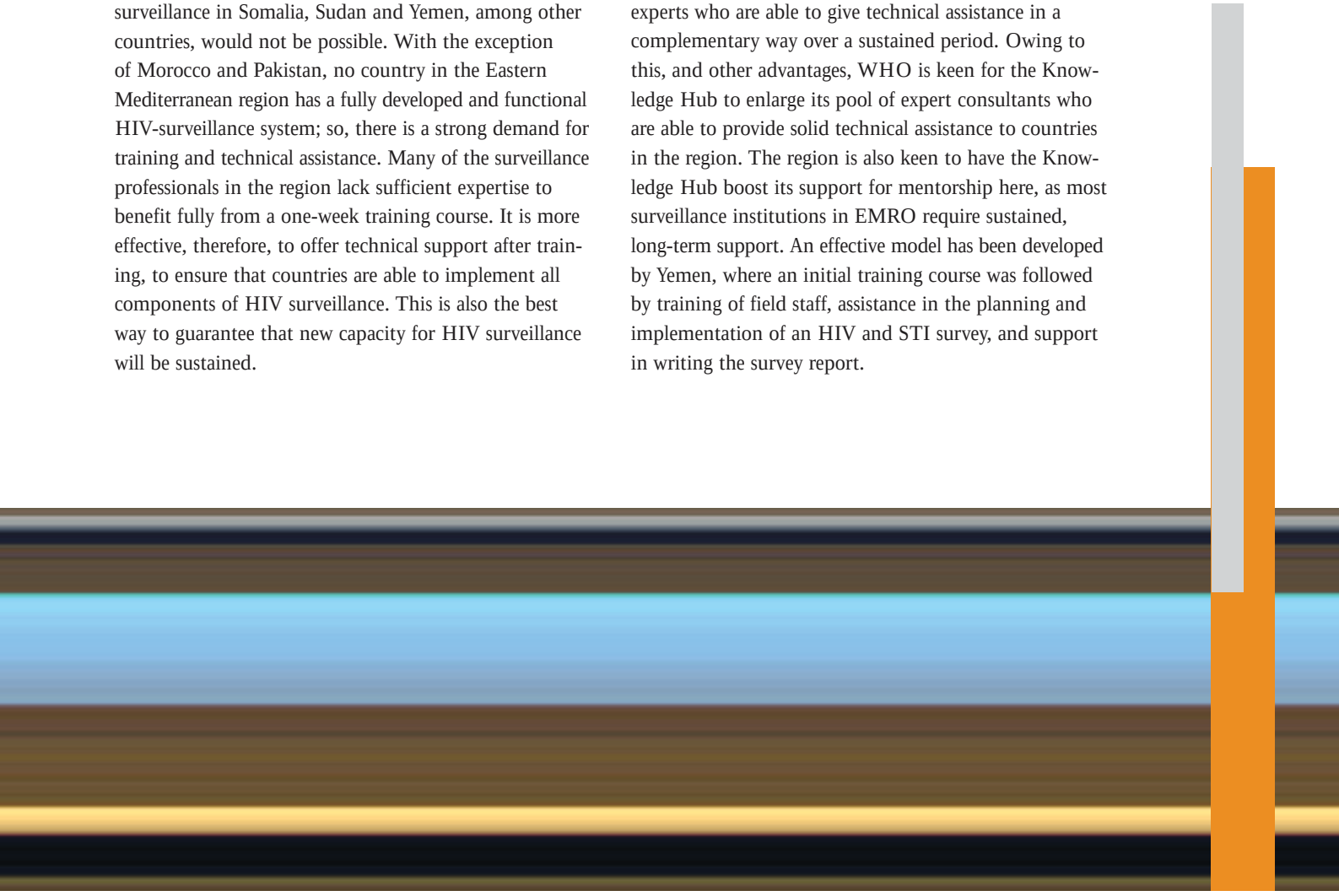
"Thanks to the Hub's trainings, the HIV surveillance system in Montenegro was raised up from the dust and now is at the level comparable to those in developed countries. Overall, the national response to HIV epidemic has been much more effective thanks to the training programme." (Dr. Boban Mugoša)

Knowledge gained at the Zagreb Knowledge Hub's training courses was directly used in implementation of HIV surveillance in Iran, Somalia, Sudan, Lebanon and Yemen. Approximately 50% of the professionals trained were able to use the knowledge gained in practice. The extent to which trainees from the (WHO) Eastern Mediterranean region were able to use knowledge and skills acquired depended on their background and previous experience. Those who were more experienced were able to translate new skills into practice more swiftly and effectively. Most important is that trainees realized that it is not that difficult to implement surveillance among individuals in most-at-risk populations.

Without these training sessions, implementation of HIV surveillance in Somalia, Sudan and Yemen, among other countries, would not be possible. With the exception of Morocco and Pakistan, no country in the Eastern Mediterranean region has a fully developed and functional HIV-surveillance system; so, there is a strong demand for training and technical assistance. Many of the surveillance professionals in the region lack sufficient expertise to benefit fully from a one-week training course. It is more effective, therefore, to offer technical support after training, to ensure that countries are able to implement all components of HIV surveillance. This is also the best way to guarantee that new capacity for HIV surveillance will be sustained.

Since 2005, the development of HIV surveillance in the EMRO Region has been most influenced by three factors: (1) training courses and technical assistance provided by the Knowledge Hub in Zagreb; (2) advocacy at the regional level led by WHO and other UN agencies; and, (3) grants from the Global Fund to Fight AIDS, TB and Malaria. Countries that apply for funding of HIV programmes from the Global Fund have had to overcome their lack of data on HIV by establishing better HIV-surveillance systems.

The Knowledge Hub in Zagreb has been the main provider of training in HIV surveillance in the EMRO countries. An advantage of the Knowledge Hub's approach is that it provides WHO EMRO with a pool of qualified experts who are able to give technical assistance in a complementary way over a sustained period. Owing to this, and other advantages, WHO is keen for the Knowledge Hub to enlarge its pool of expert consultants who are able to provide solid technical assistance to countries in the region. The region is also keen to have the Knowledge Hub boost its support for mentorship here, as most surveillance institutions in EMRO require sustained, long-term support. An effective model has been developed by Yemen, where an initial training course was followed by training of field staff, assistance in the planning and implementation of an HIV and STI survey, and support in writing the survey report.



Such progress, however, should not be overstated, as countries in the region have so far undertaken few initiatives to boost surveillance among high-risk groups. Still, the availability of better data quality in Iran, Somalia, Sudan and Yemen, for example, helps in advocating for more reliable data. Perhaps the Hub's greatest achievement has been reducing reluctance and fear about dealing with high-risk groups and overcoming barriers to conduct surveillance in these populations. Thanks to the Hub, National AIDS Programmes in Somalia, Sudan and Yemen, for example, worked with NGOs that engaged directly with high-risk groups so that surveillance was possible. Surveillance, therefore, enabled much-needed contact with most-at-risk populations and furthered understanding of their HIV prevention needs.

In terms of creating new assets in the region, the Knowledge Hub has trained a cadre of skilled epidemiologists, who are able to serve as technical consultants at home and in other countries. Also, the Knowledge Hub has helped in development and collaborates with the WHO EMRO Knowledge Hub on HIV Surveillance based at the Kerman University of Medical Sciences, Iran. Here, the Zagreb model of capacity development is being adapted to the needs of the North Africa and the Middle East Region. In the long term, WHO EMRO would like the Zagreb and Kerman Knowledge Hubs to work in partnership to provide training and technical assistance.

6. Lessons learnt

Despite constraints experienced by many countries, the Knowledge Hub's first five years of work have highlighted the potential of its approach for strengthening health systems and enhancing the delivery of services. The Hub has shown that it is possible to shape the way that health systems respond to HIV by building on existing resources and pooling and sharing these resources at a regional level. This has led to the creation of effective new models of capacity development for Eastern Europe, Central Asia and beyond.

As the case studies above show, a small core of staff based at the Knowledge Hub in Zagreb have trained professionals from almost one-third of the countries in the world. The Hub has helped to develop effective HIV surveillance and transfer of knowledge throughout and among regions by using south-south and east-east (horizontal) forms of networking; encouragement of regional ownership; quality-assurance mechanisms; partnerships of governments and civil society; and the involvement of people living with HIV in training and technical assistance.

Some of the benefits of this approach have included:

- **Stronger HIV surveillance:** Several countries adopted the recommendation to implement bio-behavioural surveys in most-at-risk populations, instead of behavioural surveys alone, which enhanced the quality of HIV surveillance;
- **More effective responses to HIV:** Stronger surveillance has produced better data, which authorities in a number of countries have used to design more effective responses to HIV;
- **A model approach to developing capacity:** The best approach, particularly for countries where capacities are low, is longer-term support, combining several training sessions and in-country technical assistance;
- **Standardization of tools:** Surveillance protocols for high-risk groups have been standardized in several countries, according to WHO guidelines, helping to sustain heightened surveillance and the implementation of similar surveys over time;
- **Trainees training others:** As noted in the case studies of Serbia and Ukraine, this allowed for another 200 professionals to be trained using materials developed by the Knowledge Hub – a highly cost-effective way to disseminate knowledge within countries. As well, the knowledge gained enabled staff to analyse data without external consultants.
- **Knowledge-building:** The expertise of the Hub itself has grown, and staff learned continuously, by working in partnership with knowledgeable, resourceful and supportive experts from leading agencies such as Global Health Sciences, the University of California, San Francisco, and others; and

Perhaps the Hub's greatest achievement has been reducing reluctance and fear about dealing with high-risk groups and overcoming barriers to conduct surveillance in these populations.

- **Developing partnerships:** As the studies show, the Hub's sensitivity to the needs of clients and flexibility have supported strong partnerships among colleagues in HIV surveillance in a number of countries. For example, the Hub's partnership with the International HIV/AIDS Alliance in Ukraine has resulted in the development of a training programme in Russian, serving the needs of Russian-speaking countries n the region.

To summarize, the Hub's success to date is largely the result of two factors: continued development of staff expertise and partnerships with leading institutions worldwide.

Further investment would pay major dividends

Although considerable progress has been made in building capacity for HIV surveillance, much remains to be done. The organization and delivery of public health services in Eastern Europe is undermined by limited technical and institutional capacity, leaving too many countries in the region ill-prepared for the challenges posed by HIV. There is a regional need to build on progress achieved to date and to strengthen and sustain regional resources and expertise. Only this will help countries scale up towards universal access to services for HIV prevention, care and treatment; and if we fail to build further, countries will simply fail to adopt the technical advances in HIV surveillance needed now to rein in and respond to growing epidemics.

The challenge, however, is not insurmountable. However diverse, countries throughout Eastern Europe and Central Asia share many cultural and social determinants and challenges related to HIV; so, by working together and sharing critical knowledge, they stand a much better chance of developing effective policies and programmes. With additional investment, the Knowledge Hub based in Zagreb will continue to be at the centre of this great regional endeavour: promoting co-operation and learning and supporting public health and other stakeholders at home, and in countries everywhere in these regions, as they apply their new technical, managerial and leadership skills.

With additional investment, the Zagreb Hub will continue to be at the centre of this great regional endeavour: promoting co-operation and learning and supporting public health and other stakeholders at home, and everywhere in these regions.

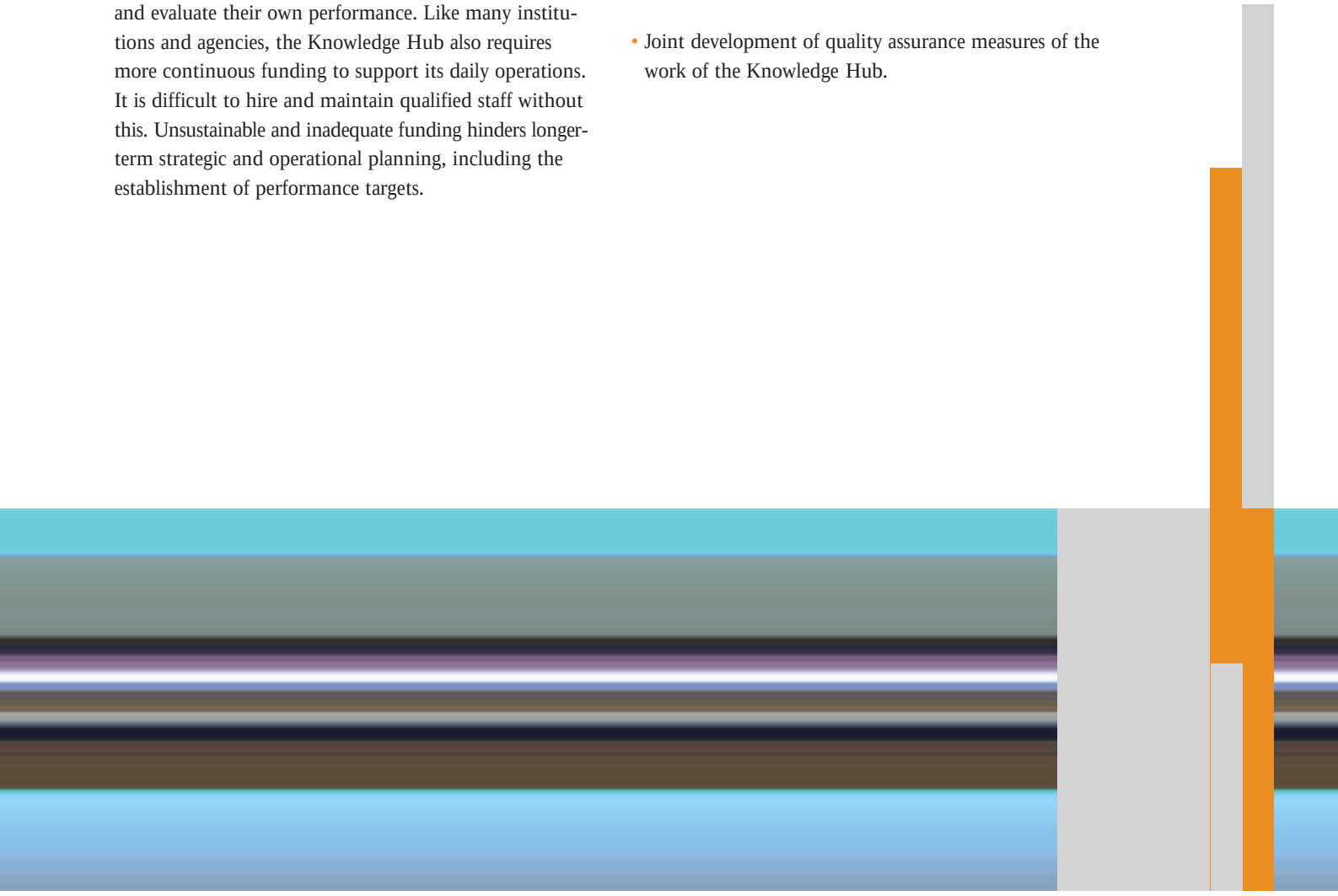
7. Recommendations

Developing effective HIV surveillance in Eastern Europe and Central Asia depends to a great extent on enabling professionals to access and share the knowledge and skills needed to implement HIV programmes of the highest standards. More should be invested in the Knowledge Hub as an institution that has generated new ideas – and put them to work towards substantially developing the capacity for better quality HIV surveillance and more effective responses to the epidemic. The Hub's approach has proven cost-effective in providing long-term capacity development, sharing of best practices and other forms of knowledge transfer.

One area that requires further strengthening is quality assurance, which involves the development of mechanisms and indicators for Knowledge Hubs to measure and evaluate their own performance. Like many institutions and agencies, the Knowledge Hub also requires more continuous funding to support its daily operations. It is difficult to hire and maintain qualified staff without this. Unsustainable and inadequate funding hinders longer-term strategic and operational planning, including the establishment of performance targets.

Key mechanisms for international agencies to support the Hub's capacity development strategies and activities include:

- Establishing contracts with the Hub for training and technical assistance;
- Direct support for the Hub's core functions;
- Scholarships and other financial support for public health professionals and other stakeholders to attend training sessions and workshops;
- Advocacy for increased investment and planning for capacity development activities; and
- Joint development of quality assurance measures of the work of the Knowledge Hub.

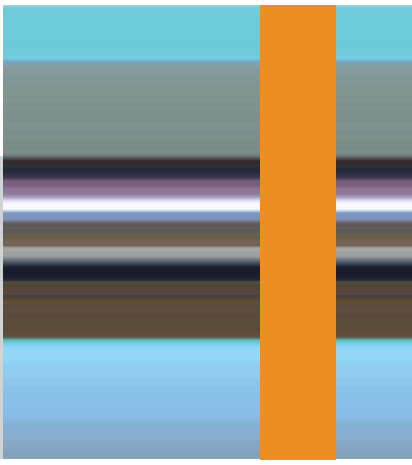


8. References

1. UNAIDS (2008). Report on the global AIDS epidemic. Geneva.
2. UNAIDS/WHO (2008). Eastern Europe and Central Asia: AIDS epidemic update. Regional Summary. Geneva.
3. Mathers BM et al. (2008). Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review. Lancet, 6736(08); 61311-2.
4. European Centre for Disease Prevention and Control/WHO Regional Office for Europe (2008). HIV/AIDS surveillance in Europe 2007. European Centre for Disease Prevention and Control. Stockholm.
5. Holland WW (2001). Overview of policies and strategies. In: Detels R et al. Oxford Textbook of Public Health. Oxford: Oxford University Press.
6. WHO/UNAIDS (2002). Initiating second generation HIV surveillance systems: practical guidelines. Geneva.
7. Lyerla R, Gouws E, Garcia-Calleja JM (2008). The quality of sero-surveillance in low- and middle-income countries: status and trends through 2007. Sex Transm Infect 2008; 84 Suppl 1:i85-i91.
8. Coker RJ, Atun RA, McKee M (2004). Health care system frailties and public health control of communicable diseases on the European Union's new eastern borders. Lancet; 363:1389-92.
9. Aral SO (2002). Determinants of STD epidemics: implications for phase appropriate intervention strategies. Sex Transm Infect 2002; 78 Suppl 1:i3-13.
10. MacLehose L, McKee M, Weinberg J (2002). Responding to the challenge of communicable disease in Europe. Science; 295 (5562):2047-50.
11. Atun RA et al. (2005). Analysis of how the health system context shapes responses to the control of human immunodeficiency virus: case-studies from the Russian Federation. Bull World Health Organ;83 (10):730-8.
12. WHO (2006). Towards universal access by 2010: How WHO is working with countries to scale-up HIV prevention, treatment, care and support. Geneva.
13. Goodman RM et al. (1998). Identifying and defining the dimensions of community capacity to provide a basis for measurement. Health Educ Behav; 25: 258-78.
14. Brown L, LaFond A, Macintyre C (2001). Measuring capacity building. Chapel Hill: MEASURE Evaluation.
15. Crisp B, Swerissen H, Duckett SJ (2000). Four approaches to capacity building in health: consequences for measurement and accountability. Health Promotion Int; 15: 99-107.
16. Schwartz R et al (1993). Capacity building and resource needs of state health agencies to implement community-based cardiovascular disease programs. J Public Health Policy; 14:480-93.
17. Murray M, Dunn L. (1995). Capacity building for rural development in the United States J Rural Studies; 11: 89-97.
18. Buttner & Partner (2009). Assessing Regional HIV Knowledge Hubs - Field Study. German BACKUP Initiative, GTZ.
19. Patrizi P, Sherwood K, Spector A (2004). The Capacity Building Challenge. Foundation Center, New York.
20. Gillies P (1998). Effectiveness of alliances and partnerships for health promotion. Health Promotion Int; 13: 99-120.
21. Kotellos KA, Amon JJ, Githens Benazerga WM (1998). Field Experiences: Measuring Capacity Building Efforts in HIV/AIDS Prevention Programs. AIDSCAP Family Health International. AIDS 1998; 12 (suppl. 2); S109- S117.
22. Fort AL (1999). Want sustainability? Build capacity: A Framework and tool for measuring Progress. Presentation to the Global Health Council's Global Health, Poverty and Development Annual Conference.

9. Abbreviations

AIDS	acquired immunodeficiency syndrome
AIHA	American International Health Alliance
CCM	Country Coordinating Mechanism (for Global Fund grants)
EMRO	Eastern Mediterranean Regional Office
EHRN	Eurasian Harm Reduction Network
FYR Macedonia	The Former Yugoslav Republic of Macedonia
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
HIV	human immunodeficiency virus
IDU	injecting drug user
MARP	most-at-risk population(s)
MSM	men who have sex with men
NGO	non-governmental organization
PLHIV	people living with HIV
RDS	respondent-driven sampling
RDSAT	respondent-driven sampling analysis tool
STI	sexually transmitted infection
UK	United Kingdom of Great Britain and Northern Ireland
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
USA	United States of America
VCT	voluntary counselling and testing
WHO	World Health Organization



ANNEX I

Table 1. Training courses offered since 2004

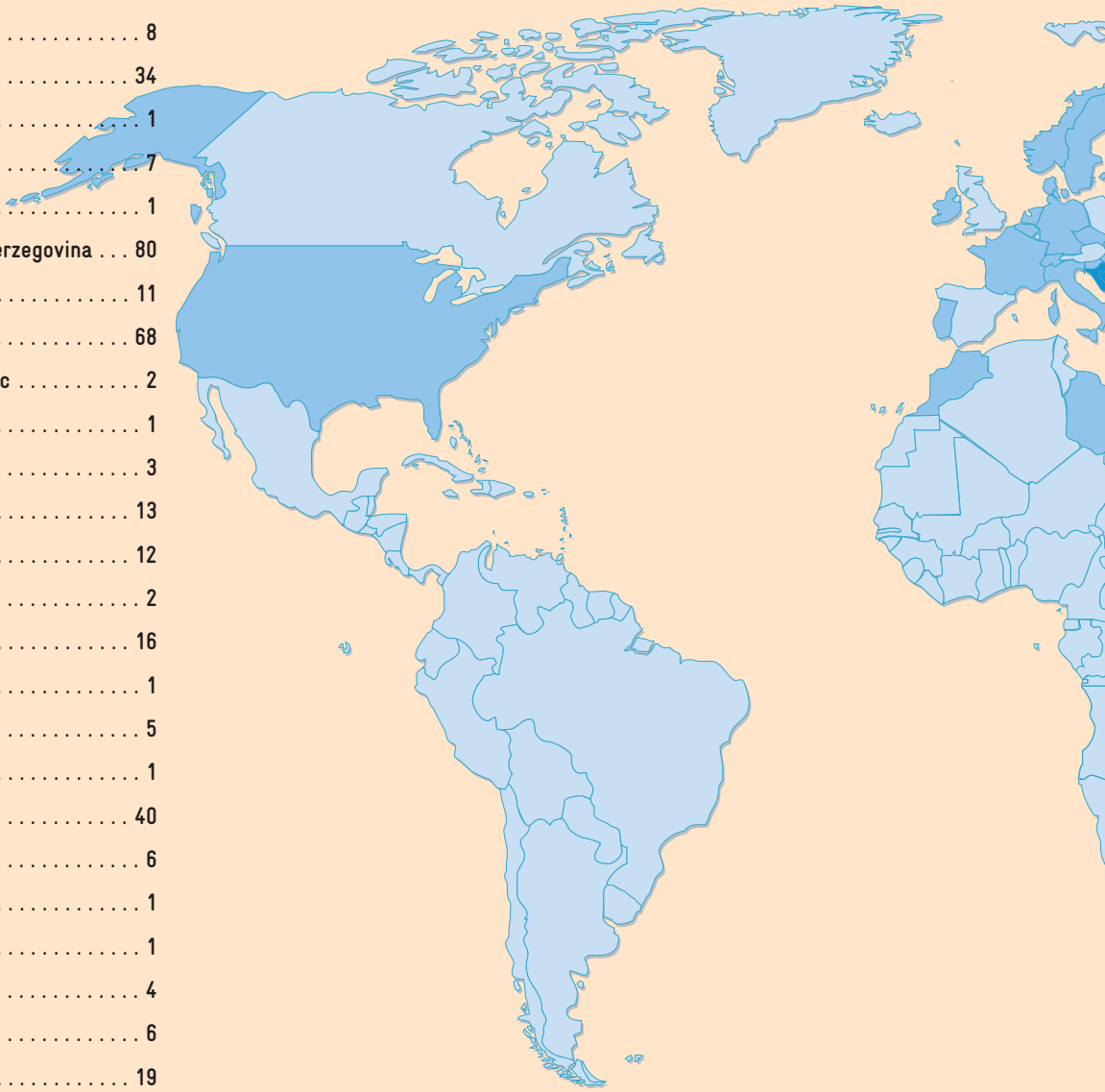
Title	Content	Participants	Countries attending the course
Introduction to HIV/AIDS Surveillance	Introduction and overview of HIV epidemics: globally and regionally; definitions and concepts of public health surveillance, including HIV surveillance; steps and components for designing and establishing an HIV-surveillance system.	61	12
Behavioural Surveillance	Behavioural surveillance in the broader frame of HIV surveillance; overview of tools used for conducting studies of sexual and drug-related risk behaviours; probability and non-probability sampling; qualitative methods used in formative research and pre-surveillance assessment; basic analysis of behavioural surveillance; ethical issues.	17	8
Biological HIV/AIDS Surveillance	Setting up clinic- and institutionally based biological surveillance; HIV and STI tests and testing algorithms; incidence-based HIV surveillance; laboratory quality assurance.	30	14
STI Surveillance	Components of STI surveillance and practical considerations in their establishment; role of surveillance in evaluation of STI prevention and control programmes; new developments in STI control; importance of STI prevention and treatment in HIV control.	87	23
Surveillance of Hard-to-Reach Populations	Implementation of HIV surveillance among groups at higher risk; choice of study designs (cluster-based stratified sampling, time-location sampling and respondent-driven sampling); calculation of sample size and weighting of data; organization of field work.	117	24
HIV Surveillance Among TB Patients	Planning, implementation and evaluation of HIV surveillance among TB patients through sentinel surveys and routine data collection from patient care.	32	17
Monitoring and Evaluation of the National AIDS Response	12-component framework, measuring inputs, process, outputs and impact; steps in developing an M&E plan and setting up a national M&E system; challenges in conducting evaluations.	113	35
Respondent-Driven Sampling (RDS)	Practical skills and theoretical knowledge for design and implementation of an RDS survey; organization of field work; data collection forms; writing up of an RDS protocol.	143	19
Data Triangulation	Concepts, principles and methods of triangulation analysis; practical skills and steps in triangulation.	25	13

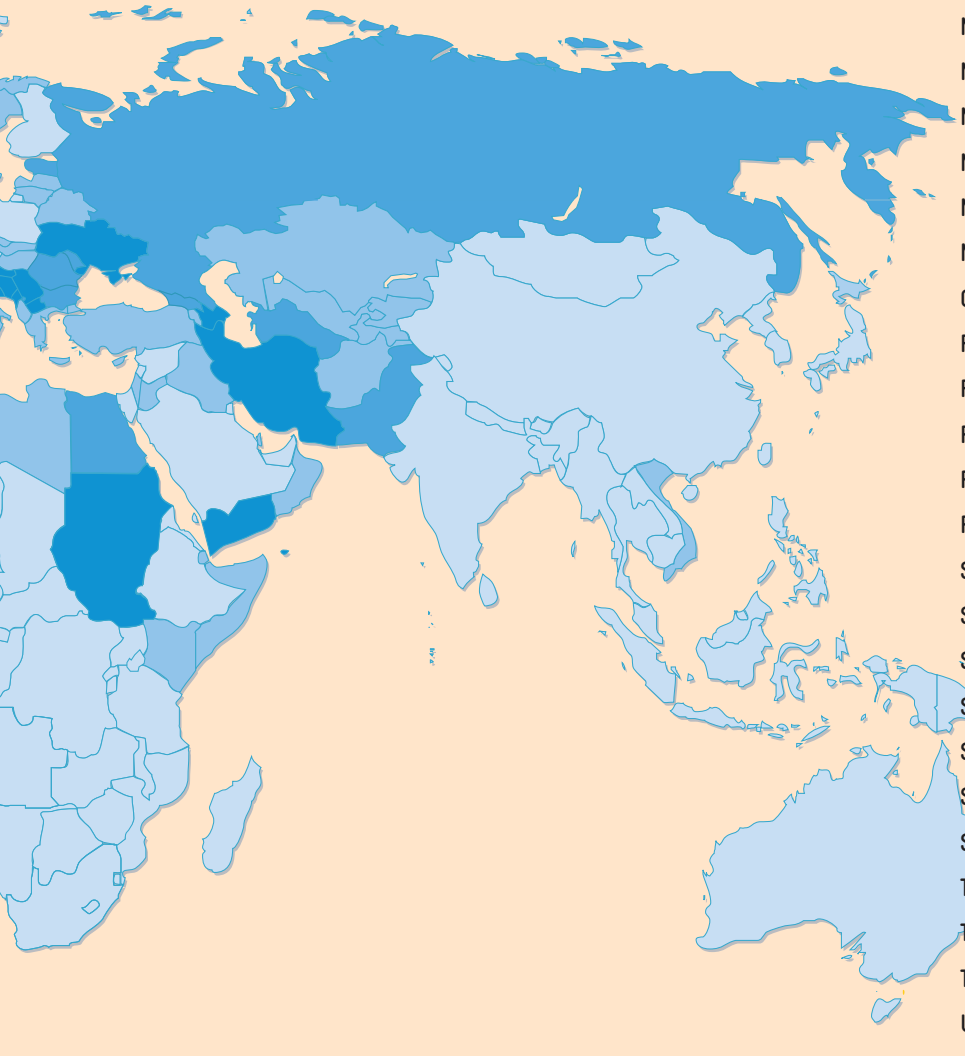
Title	Content	Participants	Countries attending the course
Designing Protocols in Population-Based and Clinic-Based HIV Surveillance	Writing up draft surveillance protocols with emphasis on design and planning of surveillance activities and timelines.	24	11
Time-Location Sampling (TLS)	Practical skills and knowledge to implement bio-behavioural HIV surveys using TLS, a method for collecting information from hard-to-reach populations by sampling people at locations where they may be found.	19	7
Data Analysis Using RDSAT	Steps in RDS data management and analysis, including bivariate and multivariate analysis; interpretation of RDS data.	23	10
National AIDS Spending Assessment (NASA)	Estimating financial needs and resource-tracking analysis using the NASA approach.	23	9
HIV-Resistance Prevention and Assessment	Principles and components of national HIV-resistance prevention and assessment; early warning indicators (EWI) at antiretroviral therapy (ART) sites; EWI data collection tools; EWI analysis and reporting; issues in the development of drug resistance during treatment; resistance testing and interpretation.	19	12
Designing Clinical Research	Principles of literature review, study design, subject recruitment and sampling plans in conducting clinical research; measurements and sample-size calculation; budgets and timetables.	35	5
HIV Surveillance in Low-Level and Concentrated Epidemics	Design and implementation of HIV-surveillance systems; adopting a mix of methods and tools; planning of HIV-surveillance systems in high-risk and bridging populations.	26	8
Data use and Report Writing in HIV Surveillance	Description of three major areas of data use in HIV surveillance: (1) planning of HIV initiatives; (2) programme monitoring and evaluatiom. and; (3) advocacy; sources of error in surveillance, such as random error and systematic error (bias) and how they influence data interpretation; writing draft surveillance reports.	15	9

ANNEX II

Table 2. Numbers per country attending Knowledge Hub training courses

Afghanistan	2
Albania	9
Armenia	8
Azerbaijan	34
Bahrain	1
Belarus	7
Belgium	1
Bosnia and Herzegovina	80
Bulgaria	11
Croatia	68
Czech Republic	2
Denmark	1
Djibouti	3
Egypt	13
Estonia	12
France	2
Georgia	16
Germany	1
Greece	5
Hungary	1
Iran	40
Iraq	6
Ireland	1
Italy	1
Jordan	4
Kenya	6
Kosovo	19
Kyrgyzstan	8
Latvia	8
Lebanon	4
Libya	2





› 10 participants in Knowledge Hub training courses

10–29 participants in Knowledge Hub training courses

‹ 30 participants in Knowledge Hub training courses

Lithuania	8
FYR Macedonia	48
Malta	1
Morocco	4
Moldova	24
Montenegro	39
Netherlands	4
Norway	1
Oman	2
Pakistan	27
Portugal	2
Republic of Kazakhstan	9
Romania	24
Russian Federation	22
Serbia	58
Slovakia	3
Slovenia	3
Somalia	5
Sudan	47
Switzerland	3
Sweden	1
Tajikistan	8
Turkey	9
Turkmenistan	12
Ukraine	44
USA	7
Uzbekistan	3
Viet Nam	4
Yemen	31
Total attendance	829

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