World Health Organization

Providing health intelligence to meet local needs

A practical guide to serving local and urban communities through public health observatories

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Contents

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The initial draft of this guide was prepared for the World Health Organization Centre for Health Development (WHO Kobe Centre) in Kobe, Japan, by Bobbie Jacobson, OBE, Honorary Senior lecturer, Institute of Health Equity, University College, London, United Kingdom and Carlos Castillo-Salgado, Professor, Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, Maryland, United States of America. The guide reflects the knowledge, expertise, and views of these two individuals as well as the collective views of the Expert Reference Group (see Annex) which provided inputs through a consultation meeting hosted by the Johns Hopkins Bloomberg School of Public Health on 19-20 June, 2014. This guide also embodies the programme of work led by the WHO Kobe Centre over a two-year period to develop technical support and guidance for new and existing urban public health observatories, a process which engaged a broader group of experts in research and consultations.

Funding for the development of this guide was provided by the WHO Kobe Centre. Megumi Kano commissioned the work and provided overall technical guidance. The Expert Reference Group contributed to earlier drafts of this guide. Beatriz Araceli Díaz Torres prepared the case study of the Juárez City Observatory. Peter Aspinall conducted a background review and survey of public health observatories and provided technical input. Lee Warren also provided technical inputs. Ana Lucia Ruggiero contributed information and knowledge management expertise. Robert Blum, Philip Leaf and team of the Urban Health Institute, and Stacey Lloyd, Amanda Latimore, Aracelis Torres and Marissa Bailey of the Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, helped organize and facilitate the June 2014 consultation meeting. Technical editing was done by David Bramley and Megumi Kano.

Authors' Note

By Bobbie Jacobson and Carlos Castillo-Salgado

In a rapidly urbanising world where inequalities in health and their causes are growing at an alarming pace, there is an equally urgent need to be able to understand and quantify the depth and range of inequality so that effective action can be taken at every level in society. Local public health observatories have helped make visible the health inequalities within and between neighbourhoods and localities that have in the past remained invisible.

It is heartening to discover that many cities, regions and countries are actively establishing and expanding their own local health observatories. Although many successful local health observatories have been operating for decades on many continents, there has been little detailed guidance on what is needed to ensure success. This guide is the first of its kind that brings together knowledge and expertise across several continents to help those intending to develop and expand their own local health observatories. It builds on the considerable work that the WHO Kobe Centre has already developed. We have tried to produce a guide that is easy to use and packed with references to local resources and wisdom gleaned from international experiences of running an effective local or urban health observatory, including two case studies from very different parts of the world.

It is clear from our assessments that no two observatories are the same, each operating in different political, financial and stakeholder climates. Our aim has been to provide clarity on what principles and processes need to be observed to establish and sustain a robust health observatory to monitor, provide local evidence and support effective decision-making. Rather than provide a prescription for implementation we have focussed on offering a range of options, resources and questions that might need to be answered at each step.

Our discussions went well beyond the impact that a guide alone could have. We focussed on what further support might be needed by health observatories in the making. Strongest amongst these was to ensure that observatories in the future are sustainable and that they have a means of fostering and continuing mutual learning and support. This is the next challenge that we hope will be successful.

INTRODUCTION

During the last two decades, inequalities in social and economic well-being have increased at unprecedented rates, particularly in urban settings, according to reports from national and international agencies *(1–5)*. Some estimates suggest that, depending on the world region, 50–80% of the world's population will live in cities by 2030 *(3)*. Latin America, at 79% urban, is currently one of the world's most urbanized regions. Social and economic determinants and their impacts on health and health inequalities need to be understood and quantified at both the level of the city as a whole and, crucially, at the level of the neighbourhood or small area. Health observatories have developed the expertise that local decision-makers need to target resources effectively in order to tackle the root causes of inequalities in health, both locally and city-wide. The analytical and knowledge outputs of local health observatories have become essential tools for local evidence-based decision-making, particularly in major urban areas.

The WHO Centre for Health Development (WHO Kobe Centre) in Kobe, Japan, has conducted research and developed tools to support such health observatories *(6, 7)*. The last decade has seen the successful development of a number of examples of well-established and emerging public health observatories *(8)* serving largely, but not exclusively, urban populations.

Although the successful creation of a local health observatory is ultimately dependent on the context in which it operates *(9)* it also needs to integrate a number of common public health and other functions and competencies. This guide draws together the learning and experiences of a broad range of local health observatories.

AIMS AND OBJECTIVES

The aim is to provide a user-friendly guide for local government agencies in health and other sectors, academia, civil society organizations and individuals who are planning, developing or sustaining a public health observatory (PHO) designed to provide information and intelligence on local and urban populations. While excellent observatory-type organizations provide health intelligence at international or national levels, the focus of the guide is observatories that serve local – primarily urban – populations and their stakeholders.

In achieving this aim, the objectives are to:

- develop a globally relevant working definition of a local PHO;
- define the range of core and other functions of a local PHO, and the resources and competencies that would be required to fulfil such functions; and
- provide practical resources and case studies to illustrate how such functions might operate in practice.

Multiple methodologies were used to produce the guide. The members of the international Expert Reference Group (see Annex) provided valuable input on the basis of their experience, a scoping review was conducted of the literature on public health observatories and a selective e-survey of PHOs was carried out *(10)*.

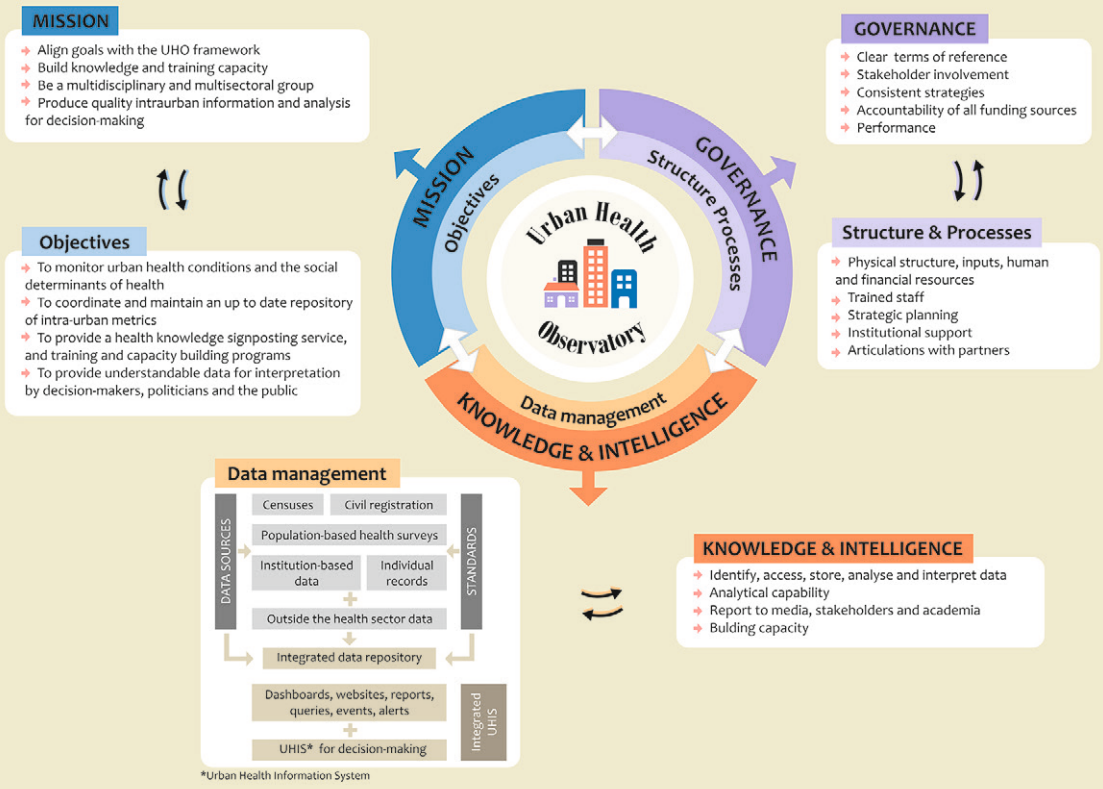
ESTABLISHING A PUBLIC HEALTH OBSERVATORY SERVING LOCAL AND URBAN POPULATIONS

Earlier work commissioned by the WHO Kobe Centre defined an overall conceptual framework within which PHOs serving local urban populations should operate *(11)*. The framework, summarized in Figure 1, is not prescriptive but provides a useful prompt for the principles, functions and processes that a local health observatory needs to consider carefully. Essentially, every PHO should ask:

- What is our overall mission and strategy?
- What are our specific objectives?
- Do we have a clear governance framework?
- Do we have the right structures and processes in place?
- Do we have an effective strategy for data access and management?
- Are our knowledge and intelligence outputs tailored to local decision-makers and civil society leaders?

Furthermore, a "social determinants of health" approach *(12)* is regarded as fundamental to a PHO's understanding of, and responses to, public health problems and health inequity *(9)*. This is in recognition of the large body of evidence from around the world that demonstrates the effects of the broader determinants of health. The use of a "social determinants of health" approach is apparent, for instance, in health situation analysis reports by PHOs which take into account factors beyond the health sector.

FIGURE 1. A WORKING CONCEPTUAL FRAMEWORK OF AN URBAN HEALTH OBSERVATORY



UHO = urban health observatory
Source: Caiaffa et al. *(11)*. Reproduced with permission of the copyright owner.

PART I: KEY CONSIDERATIONS FOR DEVELOPING A PUBLIC HEALTH OBSERVATORY

1. WHAT IS A PUBLIC HEALTH OBSERVATORY?

This guide does not aim to prescribe what a PHO should do. No two observatories have identical structures, settings and range of outputs. Their diversity is a reflection of the need to be responsive to local stakeholders and populations. However, all PHOs share some general principles of operation.

PHOs have a unique overall mission to provide health intelligence (information, data, knowledge and evidence) that results in local, evidence-based action for a defined local population. PHOs primarily transform raw data and evidence into health intelligence that local health decision-makers use as the basis for shifting resources or mobilizing new ones to improve health and reduce inequalities (Box 1). PHOs can provide a bridge for translating research evidence into relevant local practice. Their practice is distinct from that of national statistical agencies in three main ways. First PHOs respond primarily to local needs rather than national ones. Second, PHOs work primarily in partnership across sectors and with a range of local agencies, institutions and civil society groups whose decisions affect the population covered by the observatory. Third, whatever their institutional setting, PHOs are committed to producing outputs that are free from institutional constraints.

BOX 1. THE JOB OF A PUBLIC HEALTH OBSERVATORY

The "job [of a public health observatory] is to give frontline health and social care organizations, as well as government policymakers, the information and evidence they need to make the best decisions about improving people's health and reducing health inequalities."

Source: Association of Public Health Observatories, United Kingdom & Ireland, 2008.

2. WHAT ARE THE FUNCTIONS OF A PUBLIC HEALTH OBSERVATORY?

The functions and services offered by PHOs differ according to the local context in which they operate, the resources and skills available to them, and their stage of development. While their titles may differ – e.g. urban health observatory, public health observatory, regional health intelligence unit – PHOs invariably have a focus on the health and health care of a defined geographical population which may be urban, subnational or local. PHOs have many different organizational forms, ranging from standalone units to fully-fledged networks organized at country-wide or international level. On the basis of a literature search *(10)* a range of PHO functions can be identified (Box 2).

While no two observatories have an identical range of functions or services, those that are most commonly shared and regarded as critical are:

- generating population-based health situation analyses, surveillance and intelligence reports (e.g. annual population health reports, trend analyses of health determinants and outcomes);
- primary commitment to working with local or regional partners to support evidence-based decision-making; and
- data analysis and interpretation (e.g. analysis and interpretation of social inequalities in mortality rates or comparative geographical differences in access to primary health care).

There are clear distinctions between the functions of a PHO and its services. For example, the

BOX 2. THE RANGE OF FUNCTIONS PROVIDED BY PUBLIC HEALTH OBSERVATORIES

- **Secondary data analysis:** compiling, processing, and analysing existing population health data and intelligence to inform evidence-based policy-making.
- **Partnership:** responding to and actively working for local partners to meet the health needs of the defined target populations of the PHO.
- **Evidence and knowledge translation:** generating evidence, translating knowledge into usable intelligence, and communicating this information in an effective way to key local users.
- **Training:** strengthening capacity of the public health workforce in skills for using population health data and intelligence.
- **Research:** undertaking primary population health research and evaluation for stakeholders in the PHO's defined population.
- **Information advocacy:** active campaigning for better information and data on the health of local populations.

production of annual population reports is a service many PHOs provide for local users, and this service depends on that PHO having data management and analysis *functions*. Many observatories, depending on their mandate and capacity, have additional (and often interdependent) functions and services such as:

- providing a repository or safe haven for routinely collected health or survey data (i.e. holding data collected regularly by other bodies);
- knowledge sharing and evidence review (e.g. literature review to establish cost-effective practice and reduce social health inequalities);
- training and educational activities for health analysts and other professionals;
- external or public communications and advocacy for improving health;
- a primary commitment to working with national and international partners;
- primary data collection, data governance and quality assurance (i.e. the observatory collects data itself);
- supporting health impact assessments;
- primary research on population health (e.g. specific evaluations of population health and interventions involving collection of new data).

3. WHAT IS THE GEOGRAPHICAL AND POPULATION COVERAGE OF A PUBLIC HEALTH OBSERVATORY?

There is wide variation in the sizes of populations served by PHOs, with each model having advantages and disadvantages. The populations can be broadly classified as:

- international (e.g. WHO global health observatory and its regional health observatories);
- national (e.g. Public Health England, Swiss Health Observatory);
- subnational or regional (e.g. French regional health observatories, Canadian regional intelligence units, European Observatory on Health Systems and Policies);
- city, urban, local or subregional (e.g. public health observatories of Barcelona, Belo Horizonte, Ciudad Juárez, Johns Hopkins University/City of Baltimore, Colombian observatory network).

In general there are positive economies of scale and statistical advantages to covering a large population – e.g. over 1 million – as this reduces problems associated with analysis of small numbers. However, there are also advantages to being close to local partners and users in a smaller population. In countries where infant mortality is low (e.g. below 5 per 1000), it is not usually statistically possible to examine trends without methods that combine many years of data. Study of larger populations allows for detailed ethnic and age-related analyses, whereas this cannot be achieved with smaller populations without risking loss of individual confidentiality. In smaller cities, towns and regions, the importance of coterminous data analysis cannot be overstated. Decision-makers need information that covers the boundaries of their populations. For smaller populations, there will be fewer agencies to work with, thus allowing the PHO to provide deeper and more responsive services to stakeholders. Ultimately the size of population served by a PHO will be determined by a number of factors, including the gap in population health information to be filled and the organizations willing to fund such a service. For instance, the populations served by PHOs in the United Kingdom ranged from 2 to 8 million and were predetermined by national policy which defined regional boundaries within the health system.

Deciding geographical coverage – questions to consider:

- In the local political and administrative context, what is the most pragmatic geographical population to cover?
- What are the boundaries of the local decision-making authorities, and will the observatory be able to provide health analyses that are coterminous with these boundaries?
- Will the geographical population covered by the PHO be large enough to answer key health questions of the stakeholders?
- Should the observatory aim to combine with similar PHOs in order to provide analytical answers with statistical confidence?
- Are there university or academic partnerships that could add unique skills and value to the work? Can resources be shared?
- Will the PHO team be large enough to engage effectively with the major stakeholder organizations within the PHO's geographical area?

4. WHAT ARE POSSIBLE INSTITUTIONAL SETTINGS FOR A PUBLIC HEALTH OBSERVATORY?

Successful PHOs have been based in a variety of institutional settings**.** In some cases the physical or institutional base of a PHO has differed from its line of accountability**.** For example, a PHO might be based in a university but be accountable to its main institutional funder outside that university.

In practice, the institutional base for a PHO is usually determined by what is possible and affordable in the local context. In Africa, for instance, where resources for local PHOs are scarce, the WHO Regional Office for Africa supports a major initiative to establish PHOs in a number of African states. While this initiative supports efforts at country level, further local developments could emerge over time *(13)*, with advantages and disadvantages in each case. If resources are identified, an appraisal of options for the best physical base will be valuable. Primary considerations need to include appropriate space, costs of infrastructure, and ease of data storage and management. Other important factors will be stakeholders' perceptions of whether the PHO can produce objective outputs that are unconstrained by

vested interests, and whether the institution within which it is based allows equitable engagement with all major stakeholders within its area of coverage.

TABLE 1. THE DIVERSITY OF INSTITUTIONAL SETTINGS FOR A PUBLIC HEALTH OBSERVATORY

(Note: the table is meant to be illustrative, not exhaustive)

SETTING	KEY FEATURES	EXAMPLES
International agency	• Global remit • International data and indicators across world regions and countries • Responsive to international priorities and users • Difficulty in producing local intelligence and impracticality of linking with numerous local stakeholders	WHO Global Health Observatory (http://www.who.int/gho/en/) WHO-associated regional health observatories: • Africa (http://www.aho.afro.who.int/) • Americas – Regional Observatory of Human Resources in Health (http://www.observatoriorh.org/) • European Observatory on Health Systems and Policy (http://www.euro.who.int/en/about-us/partners/observatory)
National body	• National and some subnational intelligence • Data-rich nations can provide comparator intelligence for small areas across the whole country • Tendency to be responsive to national rather than local priorities and stakeholders	Ireland and Northern Ireland PHO (http://www.inispho.org/) Observatory of Public Health in Mexico, Ministry of Health (http://www.dged.salud.gob.mx/contenidos/dess/descargas/salud_publica/saludpublica_2010.pdf) Public Health England (https://www.gov.uk/government/organizations/public-health-england)
University or other independent research institution	• Excellent access to interdisciplinary and analytical expertise • Development of advanced methodology • Stability (e.g. staff base) compared with public sector • Capacity for innovation, training and research • Responsiveness to local stakeholders varies with funding sources and academic culture	African Population Health Research Centre (http://www.aphrc.org) Belo Horizonte Observatory for Urban Health (http://medicina.ufmg.br/osubh/) Cali Violence Prevention Observatory & Colombian Network (http://www.cisalva.univalle.edu.co) Johns Hopkins University Bloomberg School of Public Health Global Public Health Observatory (http://www.jhsph.edu) Juárez Health Observatory (http://observatoriodejuarez.org/dnn/Inicio.aspx)

SETTING	KEY FEATURES	EXAMPLES
Subnational regional body	• Regional indicators and priorities • Ability to provide useful comparators across a whole region • City-level, small area and neighbourhood intelligence sometimes limited	Public Health Observatory, Saskatoon Region, Canada (https://www.saskatoonhealthregion.ca/locations_services/Services/Health-Observatory)
Local city authority	• Highly responsive to city health priorities, often with access to detailed city-held data • Skilled in analyses and methods for monitoring demographic diversity and mobility • Often focused on the social determinants of health and inequality • Health care sometimes excluded • Not always able to provide comparisons outside the city's jurisdiction; small numbers in small cities prevent some detailed analyses	Barcelona Public Health Observatory (http://www.aspb.cat/default.aspx) Guatemala City Observatory of Urban Health (http://osu.muniguate.com/) Santander Observatory of Public Health (http://www.observatorio.saludsantander.gov.co) Social Observatory of Alcaldía de Santiago de Cali (http://www.cali.gov.co/observatorios/)
Local health care system	• Highly responsive to local health agencies and local population needs • Often with good access to health care data • Sometimes with a greater focus on health care than wider health inequalities and their determinants • Sometimes subject to more frequent organizational disruption and change in the health care system	The nine former English PHOs were mostly hosted within their local health care system; they are now integrated within Public Health England – a national government body
Commercial body	• Able to respond swiftly and responsively to specific customer requirements • Population perspective not always apparent • Commercial interests and policies often prevent sharing of outputs • Methodological transparency an issue • Costs often very high and outputs not usually free to other users who might access the knowledge but who have not commissioned the work itself	Many major health and economic consultancies undertake population intelligence work but do not strictly fit within the framework definition of a public health observatory as they have many other main functions

Deciding the institutional base – questions to consider:

- Have possible spaces been identified to accommodate all potential PHO staff on one site?
- Have the costs of infrastructure (office space, IT, data security arrangements) been compared at different potential sites?
- Which costs could be minimized by sharing them with the host institution (e.g. IT services, communications, web expertise)?
- How secure will the data be in each option?
- How will stakeholders view the options?
- Will the PHO have freedom to publish its outputs without censorship?

5. WHAT IS THE NEED FOR LOCAL AND CITY-LEVEL HEALTH OBSERVATORIES?

The reasons for establishing a local health observatory depend on the gaps in the population health information system. For countries and regions with no national collection of health and demographic data, the case for both national and local PHOs is obvious and strong. In some countries national information is collected but is not available, not published or not used to support local health decision-making. In such situations the case for a local PHO is also strong.

For countries that already have good national information and reporting systems, arguments for establishing subnational PHOs are equally strong. National bodies serve national interests and are unable to respond to the unique health intelligence needs of a city or region. National bodies chiefly follow national directives and many local priorities cannot be met when needed.

The case for establishing a local PHO could be based on the following:

- **Rapid urbanization** in most parts of the world means that cities and their infrastructures have become increasingly large and complex. City population size has grown so significantly to justify detailed comparative analyses within cities. Marginalization of large urban groups highlights the need to understand growing patterns of inequality and social exclusion.

- **Political and legislative responsibilities** for promoting health and monitoring health and health inequalities often exist at local government level. For instance, the mayor of London, United Kingdom, has a statutory obligation to monitor the health impacts of city strategies and produce and monitor a health inequalities strategy for the city *(14)*. In Canada, all provinces have mandatory requirements for a population health monitoring function which has led to observatories being established *(15)*.
- **Specialist analytical methods**, requiring methodological expertise in demography and epidemiology, can be provided by local and urban PHOs to assess the health needs of urban populations. Population projections and analyses of mobility, ethnicity and deprivation are essential in diverse and rapidly changing populations. The need to provide information at neighbourhood level is paramount if real inequalities are to be uncovered and tackled by urban planners and decision-makers.
- **City authorities** and political infrastructure usually differ from those in less urbanized parts of the country. There is often an additional level of city-wide governance with legislative and fiscal responsibilities for health and health care. However, while cities may collect their own data they may not have the skills to analyse the data. A city-level PHO will need direct links with the city-wide and relevant local administrations in order to fully understand the health needs within cities.
- Many **important institutions** are based in cities and urban areas. Almost all major grant-giving bodies, research institutions, universities and colleges are based in cities. An increasing number of university public health divisions and institutes have established their own PHO to serve their city. The case for building on the implementation of new research evidence and the skills and infrastructure of a university can be powerful arguments for funding such a service.
- A city or local PHO will be **closer to the decisions about health**. The PHO will not only have more expert knowledge about health in that city, but will be better attuned to the needs of its stakeholders in a way that a national body cannot be. Its staff and their expertise will be better known and used by local stakeholders.
- A city or local PHO can be **more cost-effective**. In large cities there are often local organizations that produce some health intelligence but these outputs are not commonly shared more widely and may also be duplicated elsewhere. The local PHO can do this work once and share the results with the whole city and its stakeholders. This is a more cost-effective approach and releases local partners to do other work.

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Making the case for a city or local health observatory – questions to consider:

- Are routine sources of information and data published? If so, at what geographical level are they accessible and published? If there are few local data, and especially neighbourhood data, the case for a local observatory is strengthened.
- Is there an alliance of city-wide and local organizations willing to fund or finance the creation of a city or local observatory?
- Will there be competition from existing organizations? If so, how will an observatory add value?
- What do local organizations and stakeholders want, and what is currently missing?
- What resources would be saved by local organizations and what duplication of effort is avoided by providing an observatory for a whole city?

Useful resources

- Human resources for health observatories: contributing to evidence-based policy decisions. Geneva: World Health Organization; 2012 (http://www.who.int/hrh/resources/observer10.pdf, accessed 22 September 2014).
- WHO Regional Human Resources for Health (HRH) observatories (accessed 5 November 2014):
  1. Africa Health Workforce Observatory: http://www.hrh-observatory.afro.who.int/
  2. Observatorio Regional de Recursos Humanos en Salud (Regional HRH observatory for the Americas): http://www.observatoriorh.org/
  3. Regional HRH observatory for the Eastern Mediterranean: http://www.emro.who.int/entity/human-resources-observatory/index.html
  4. Regional HRH observatory for South-east Asia: http://www.searo.who.int/entity/human_resources/data/en/.
- Urban Health Equity Assessment and Response Tool (Urban HEART). Geneva: World Health Organization; 2010 (http://www.who.int/kobe_centre/publications/urban_heart/en/index.html, accessed 22 September 2014).

6. SHOULD A PUBLIC HEALTH OBSERVATORY HAVE A GENERALIST OR A SPECIALIST APPROACH?

The issues addressed by PHOs usually reflect a mixture of the institution's vision, the skills and expertise of the staff, the perspectives of the funders and

local stakeholders, and local population needs. Most PHOs aim to provide generic services – i.e. covering "cradle to grave" topics, and all populations and settings. However, some observatories, such as cancer registries and health protection bodies, provide specialized data and intelligence only in their areas of expertise. There are good arguments for both approaches. The generic approach, adopted by most, suits a wide range of stakeholders who need to make good decisions about health and healthcare spending across the whole spectrum of care and intervention. However, it is difficult for an observatory to cover the whole range of issues with equal expertise. On the other hand, observatory staff and teams specializing in providing data and information only on cancer or communicable diseases are often very highly skilled in their topic area.

The thematic PHO model has been developed by the Pan American Health Organization (PAHO) in Latin America with prime examples across Colombia and in Ciudad Juárez, Mexico (*16*; see also the Juárez case study in Part III.2). A further model has emerged in the United Kingdom in which specialist or "themed" observatories have been established within existing generic PHOs. This has proved to be an efficient use of existing skills and resources, and has been helpful for staff development. The themes developed mainly reflect priorities within England 's Department of Health – such as obesity, maternal and child health, and mental health. This model was built on the national lead roles developed within England's PHO network (see London case study in Part III.1).

Generalist or thematic observatory – questions to consider:

- What approach do local stakeholders or institutions want – generalist or thematic?
- Is there the right skill mix for a generalist team or specialist teams?
- What are the advantages and risks of focusing on a specialist or generalist service?
- What do funders want?
- Are there special health needs locally?

Useful resources

- Gutierrez-Martinez MI, Del Villin RE, Fandiño A, Oliver RL. The evaluation of a surveillance system for violent and non-intentional injury mortality in Colombian cities. Int J Inj Contr Saf Promot. 2007;14(2):77–84.
- Juárez PHO (https://www.youtube.com/watch?v=wgbqoNa2iuA&feature=youtu.be, accessed 5 November 2014).
- National Child and Maternal Health Intelligence Network (http://www.chimat.org.uk/, accessed 5 November 2014).
- United Kingdom National Obesity Observatory (http://www.sepho.org.uk/viewResource.aspx?id=13268, accessed 5 November 2014).

7. WHAT TYPES OF ANALYTICAL TOOLS AND INFORMATION PRODUCTS DO PUBLIC HEALTH OBSERVATORIES PRODUCE TO SUPPORT LOCAL DECISION-MAKING?

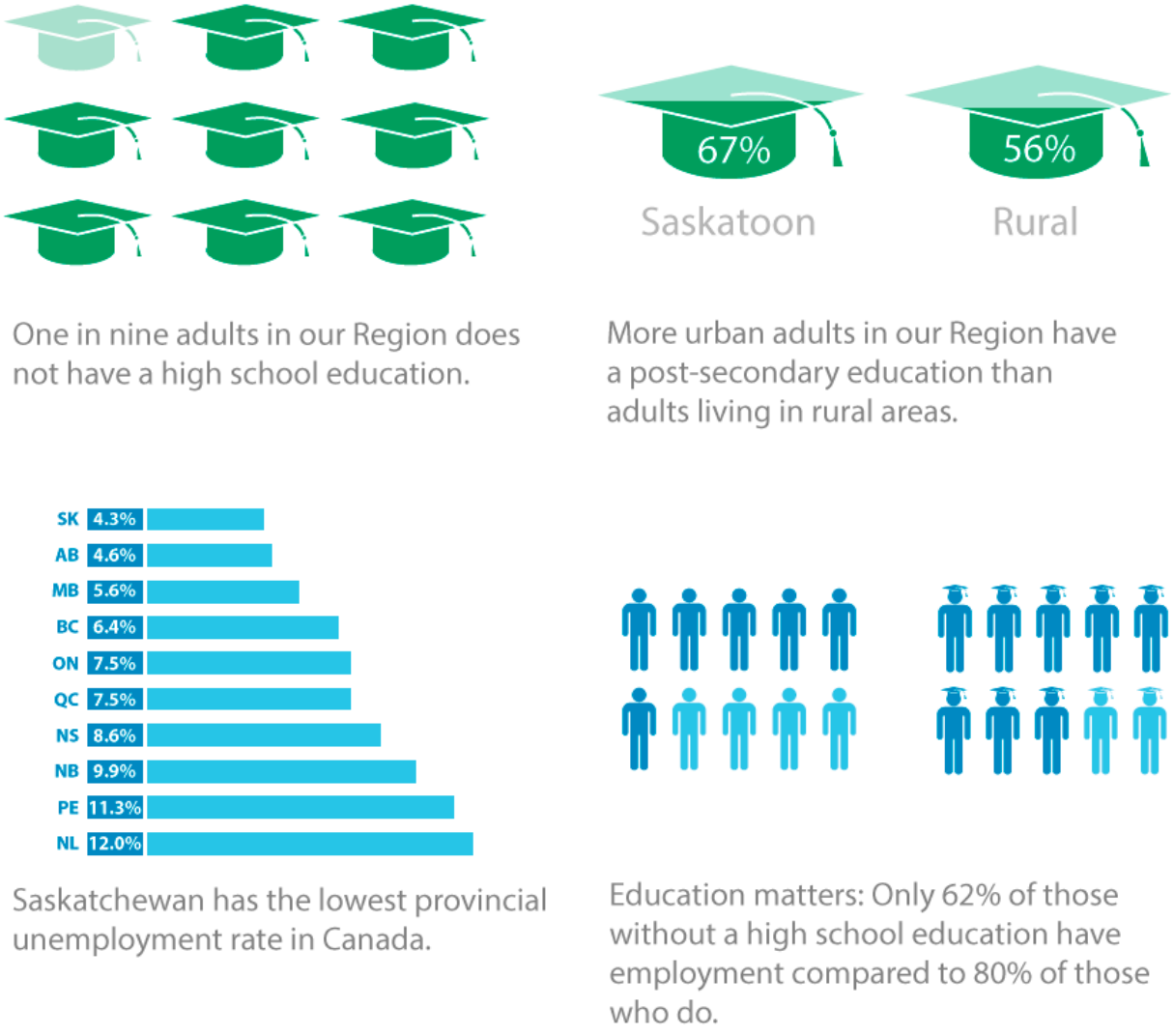
The management and analysis of quantitative data is at the heart of the work of all PHOs. Many PHOs initially prove their added value by producing regular reports on health surveillance, or key health determinants and outcome indicators for their populations. Once well-established, many PHOs have developed more complex analytical tools that provide local decision-makers with robust and easy-to-understand analyses and projections for their local areas, taking population diversity and movement into account.

Types of health situation analyses performed by PHOs include small-area analyses, projections of disease and demographic trends, bridging of data gaps with estimates of disease and lifestyle prevalence, economic assessments, use of geo-mapping to visualize small-area patterns of health and their causes, comparative performance monitoring and inequality intervention profiles. Alongside such mainly epidemiological analyses, PHOs have developed increasingly sophisticated, user-friendly tools to help nontechnical users understand and interpret the findings of analyses. Such tools – such as health profiles – were pioneered within the English PHO network and have since been adopted in many countries. Profiles enable "at-a-glance" visualization of major health issues and of health inequalities between local areas, their neighbourhoods and the subgroups within the population. The English local health profiles utilize a statistical visualisation tool

with "traffic lights" highlighting indicators which are better (green), not significantly different (yellow) and worse (red) (see London Case Study for an example of a local health profile).

Many PHOs have developed additional services or activities that are complementary to their core functions. These include evidence review and knowledge-sharing (e.g. PHOs in Wales, United Kingdom, and Saskatoon, Canada), training and capacity-building (e.g. Public Health England, Bloomberg School of Public Health/Baltimore observatory in the USA, and the Latin American PHO network), economic assessments (e.g. former Yorkshire and the Humber PHO of England) and primary research and evaluation (e.g. PHOs in Belo Horizonte, Brazil, and Barcelona, Spain). More often than not, such services develop in stages as PHOs become firmly established. It is important for a PHO to have access to the necessary resources and skills, as well as the engagement of local stakeholders, before developing this wider range of functions.

FIGURE 2. ONLINE INFOGRAPHICS OF SOCIAL DETERMINANTS OF HEALTH INDICATORS FOR THE SASKATOON HEALTH REGION (CANADA)



Source: CommunityView Collaboration: http://www.communityview.ca/infographic_SHR_determinants_2014.html (accessed 16 December, 2014). Reproduced with permission of the copyright owner.

Building on data analysis – questions to consider:

- What data analysis and other services already exist in the area/region/city?
- Where can the PHO add value to what is needed locally?
- What do stakeholders want and what key health intelligence is missing?
- What are the scientific skills of the PHO staff and how can they be used to best effect?
- Can new services be developed by collaborating or combining with existing partners?
- Are the areas to be developed relevant to the health policy challenges of the local population?
- If new areas of expertise need to be developed, how will they be funded?

Useful resources

From Public Health England (accessed 5 November 2014):

- Health profiles (a snapshot overview of health for each local authority in England, in comparison to national averages, produced annually): http://www.healthprofiles.info
- Interactive health profiles: http://fingertips.phe.org.uk/profile/health-profiles
- Local health (interactive maps and reports at small-area level and at local authority level): http://www.localhealth.org.uk/
- Data and knowledge gateway – a single point of access to over 100 data and analysis tools from across Public Health England: http://datagateway.phe.org.uk/.

8. HOW CAN A PUBLIC HEALTH OBSERVATORY SUPPORT TRAINING AND CAPACITY-BUILDING?

The data and analytical skills of PHO staff are a scarce resource, and there are few formal training programmes for such professionals. Many PHOs recognize the importance of bringing these professionals together for mutual learning and have hosted regular forums on a range of mainly scientific and technical topics relevant to the local populations served (e.g. the Latin American PHO networks, Public Health England, the French Network of Regional Health Observatories). This can be achieved without major expenditure of time and resources.

An increasing number of courses can be taken remotely online at little or no cost. The most recent developments in distance learning are the massive open online courses (MOOCs). These are resources that PHOs can utilize to obtain training for their staff and to offer their own training and capacity-building programmes to others.

Once established, some PHOs have run more formal training courses for a range of professionals and decision-makers. These have been short courses, summer schools, day-release programmes and time-limited staff secondments to the PHO. Formal training programmes are very resource-intensive and PHOs usually have to charge participants to cover the costs of running such programmes. The wide range of programme topics has included basic epidemiology, analytical methods, statistical interpretation, decision-making and evidence review, as well as health topics and systems relevant to the city or region in question.

Training and capacity-building – questions to consider:

- Is there capacity to develop formal training or capacity-building networks?
- Are there standards for accreditation of training that would need to be met?
- What might the demand be?
- Are there competitors for such activities or services?
- Would it be useful to collaborate with others to provide such programmes and, if so, with whom?
- Is there access to the right venues and equipment for training?
- What is the right balance between training and analytical/evidence-related services?
- Who should be targeted for such programmes?
- What are the costs and should a charge be made to users? If so, how much?

Useful resources

From Johns Hopkins University Bloomberg School of Public Health (accessed 5 November 2014):

- Online professional training in epidemiology for health managers: http://www.jhsph.edu/academics/continuing-and-executive-education/face-to-face-trainings/epi-for-managers/
- Open courseware: http://ocw.jhsph.edu.

From Massive Open Online Courses (MOOC) (accessed 5 November 2014):

- Coursera: https://www.coursera.org (e.g. The Data Scientist's Toolbox at https://www.coursera.org/course/datascitoolbox)
- Canvas Network: https://www.canvas.net/?gclid=CKmu_cCrmMACFSdp7AodPzIAZg.

9. HOW CAN A PUBLIC HEALTH OBSERVATORY SUPPORT RESEARCH AND EVALUATION?

While research is not a primary role of PHOs, some have developed research capacity over time. This has usually been developed wholly within the PHO or, in some cases, by academic institutions in partnership with PHOs. PHOs with a research and evaluation function are largely university-based and can draw on the mix of scientific and business expertise needed to obtain grant funds in a highly competitive environment.

For instance, the Belo Horizonte Observatory for Urban Health (based at the Universidade Federal de Minas Gerais in Brazil) and the Barcelona PHO in Spain (part of the Agència de Salut Pública de Barcelona, the city's public health authority) developed effective research components, focusing primarily on defining and tackling health inequalities in urban settings.

The Barcelona Public Health Agency has led a major four-year project "INEQ-CITIES", funded by the European Union and covering 16 European cities in 13 countries. As a result, it was possible for the first time to compare and map inequalities in mortality and their causes, and to quantify the causes of avoidable mortality at city level across Europe. The study also included a review of the probable impacts of social and health policies in reducing inequalities in the selected cities. An online atlas was produced to summarize the findings *(17, 18)*.

The Barcelona PHO has also been involved in an evaluation of the impact of a major urban renewal programme under the terms of the "Neighbourhoods Law" *(19)* programme which targets deprived neighbourhoods in the city to improve health and reduce health inequalities. The resultant work has been summarized in a short film for wider distribution to a lay audience (see Useful resources, below).

Research and evaluation – questions to consider:

- Is there sufficient access to the skill range to obtain competitive funding and undertake major research?
- Is it possible to collaborate with accessible academic institutions to increase the skills base?
- If the PHO carries out major research projects will it still be able to be responsive to local stakeholders' needs?

Useful resources

- The INEQ-CITIES online atlas (https://www.ucl.ac.uk/ineqcities/atlas, accessed 5 November 2014).
- A short film on the Barcelona Neighbourhoods Law urban renewal programme and its impact on health inequalities (http://vimeo.com/92917895, accessed 5 November 2014).

10. HOW CAN A PUBLIC HEALTH OBSERVATORY ENSURE SUSTAINABILITY?

The need to secure future resources, which affects the success of any PHO, is one of a number of factors that need careful attention. They fall into four broad groups:

- stakeholder and community engagement and demonstrating added value;
- strategic planning and alliances;
- modernizing communications systems for outputs;
- business development capacity.

Increasing the depth of engagement with the local community and key local stakeholders, and the depth of understanding of what they need from the PHO, lies at the heart of continuing relevance and success. Project feedback is fundamental to improving the usability of future outputs. Some well-established PHOs have undertaken major external peer

review processes involving feedback from their key stakeholders to ensure they learn ways to improve their services in future.

Planning for sustainability should begin early in the life of a PHO. Developing a strategy and consulting on plans for the medium term (3–5 years) are vital. Identifying and involving key local organizations and individuals who will help champion and contribute to the observatory's governance can also help to ensure a positive future for the PHO.

In some parts of the world, PHOs have been able to sustain future stability and increase capacity by creating both formal and informal networks. PHOs established as independent entities can be successful as long as their funding remains on a firm footing. In the longer term, it has been easier to sustain PHO services through the creation of networks, usually at national level or across several neighbouring countries, often with a common language. An organized network has the advantage of access to a critical mass of expertise and major opportunities for task- and knowledge-sharing. The 26 regional health observatories in France have been part of the world's longest functioning network of public health observatories – the Fédération nationale des observatoires de santé (FNORS). PHOs in Ireland and the United Kingdom created a coordinated network known as the Association of Public Health Observatories, or APHO, which flourished for nine years. The key to APHO's success was its small secretariat office which played a facilitating and coordinating role. All major scientific work was led by individual PHOs working in an integrated way.

Effort should not be spared to ensure that the PHO's communication system is up to date and that outputs are effectively communicated via traditional media and social media. Products that are widely known and used can help the PHO to secure a stable future.

PHOs seeking future stability and expansion also need to be able to rely on a robust business development function. In a larger institution, such as a university, this function may be found in research development offices or academic departments that have the expertise and knowledge to help scientists secure competitive grant funding. If this resource is not available to a PHO, it can be obtained under contract. A variety of future sources of funding can be obtained through effective "horizon-scanning" and building a business case on behalf of the PHO. In recent years some PHOs have expanded their skills and capacity by developing "an observatory within an observatory" based on a specialist theme such as obesity, health inequalities or maternal and child health. The English PHO network has successfully developed this.

To build a network or not – questions to consider:

- What would be the added value of joining a network?
- Are there similar organizations to collaborate with?
- Are there skills and functions that could be accessed via a network?
- Are there advantages for training and staff retention?
- Who would be in charge of such a network and how would it work – e.g. would there be a secretariat office?
- Would such a network be virtual or actual?
- Would autonomy be lost by joining a network?
- Would there be sufficient funds to support the creation of a network?
- Could a network be developed with professional civil society groups?

Useful resources

- Fédération nationale des observatoires de santé (FNORS; French Federation of Health Observatories) (http://www.fnors.org/index.html, accessed 5 November 2014).
- The former Association of Public Health Observatories of the UK and Ireland (APHO) (http://www.apho.org.uk/, accessed 5 November 2014).
- The South East PHO External Peer Review Report, June 2009 (http://www.sepho.org.uk/ViewResource.aspx?id=12934, accessed 5 November 2014).
- United Kingdom Child and Maternal Health Observatory (http://www.chimat.org.uk/, accessed 5 November 2014).
- United Kingdom National Obesity Observatory (http://www.sepho.org.uk/viewResource.aspx?id=13268, accessed 5 November 2014).

PART II: WORKING EFFECTIVELY

1. INTERNAL FUNCTIONS

1.1. Securing continuing funding

The sustainability of a PHO depends on whether it can secure sufficient and continuing funds to carry out activities and provide high-quality services over time. There are many ways in which funding has been secured:

- recurring annual public funding sufficient to support high-quality activities and services;
- a single allocation of funds from government or a grant-making body;
- a mix of recurring funds and additionally funded programmes by local or other stakeholders and grant-givers;
- a mix of recurring funds supplemented with research and other successful awards;
- a mix of public funds and customer charges for additional services;
- a wholly commercial model in which all services are funded through independent sources.

Many long-established PHOs have been able to secure a mix of recurring funding and grants or commissions for specific pieces of work. Recognizing the added value provided by subnational PHOs, government health departments have sometimes become the source of recurring core funding. This more complex mix of funds has enabled PHOs to expand over time and retain staff over long periods, but it also requires robust business management so that timely delivery of all outputs can be achieved. This model also requires PHOs to achieve a good balance between scientific and management staff. Some PHO networks with limited business resources have benefited from the creation of subnetworks of business and communications managers to assist learning and management of large projects.

1.2. Recruiting and retaining the right staff

An observatory cannot survive without excellent well-trained staff. Many PHOs will not initially be able to offer staff stable or long-term contracts. However, this should be a key objective over time as it is closely linked to staff retention rates. Nevertheless, staff expectations vary from model to model and country to country. In countries where the PHO is part of a well-established public or health sector, staff will probably expect long-term contracts. Otherwise, short-term rotations can be common, especially among managers and administrators. In university or commercial settings, short-term contracts are more common, though core personnel may have more stable employment (e.g. tenured faculty).

Deciding on the right staff mix for a PHO is dependent on resources being available and range of functions or services being delivered, as well as the availability of the right skills. Some of the longer-established PHOs in Europe have used the following "rule of thumb" for what constitutes a minimum core staff skill mix (Box 3).

BOX 3. MINIMUM CORE STAFF OF A LOCAL PUBLIC HEALTH OBSERVATORY

- Director
- Two public health analysts (one senior)
- Business and communications manager
- Knowledge manager or trained public health librarian
- IT/data governance specialist
- Web developer
- 1–2 administrative assistants (full- or part-time)

Source: Association of Public Health Observatories, United Kingdom & Ireland, 2008.

Hanoi © World Health Organization

Within this core it can be seen that, with a relatively small total resource, a balance can be achieved between a PHO's scientific and technical side and its business side. There are many ways for such a mix to be achieved – e.g. through accessing this resource from within the PHO's host institution, sharing scientific resources with a university or local stakeholder, or buying skills from independent sources. It is usually vital to have a dedicated, senior public health specialist leading the PHO and establishing it among key partners. Once the core is established and working well, further expansion can be planned if the climate is right among funders and stakeholders.

When recruiting analytical staff it is important to check – i.e. to interview and to evaluate – whether their skills match what the PHO is looking for, as there are many different skills needed along the data transformation pathway (see Part II.1.4). As an observatory expands, it may be able to recruit or second public health and other staff for further training in data management and analysis. This helps maximize the expertise available in a city or local population. However, it is important to find a balance between experienced and less experienced staff. Too many inexperienced staff who require the extensive time of senior staff to train them may compromise the PHO's outputs and thus disappoint stakeholders and funders.

Retaining good staff is always a challenge, especially in cities where there may be competition from other institutions. Staff with public health analytical skills are usually a scarce resource. The key route to retaining good staff is effective leadership and management together with good training opportunities. Staff need to feel they can influence the way a PHO works, that their inputs are always valued and that they are being treated fairly. They need to know that there are development, training and maybe promotion opportunities for them. Staff training can cost time and money but it needs to be part of a PHO's plan, however small the funds may be. Good relations with partner institutions such as universities and health-sector bodies may offer free or reduced-cost opportunities for further training (see Part I.8). Additional in-house training can sometimes be funded by arranging and charging for external training courses and using the additional funds to support PHO staff training.

However small an observatory is, all staff need to be trained in the fundamental principles governing good data protection and freedom of information, staff recruitment and management, and the effective management of projects. All staff handling and analysing data will need more detailed training on the use and information governance of the PHO's datasets. Such programmes may be led by an observatory's host institution or by the PHO itself. As an observatory grows in size, these principles will need to be enshrined in procedures and protocols.

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Recruiting and retaining staff – questions to consider:

- Are there enough resources to recruit and secure the minimum core staff to establish a PHO?
- What mix of contracts should be offered (e.g. permanent, temporary, secondments, joint/shared posts)?
- Who will lead the process until a director is recruited?
- Is there sufficient space and computer equipment to accommodate a core staff? Will it all be on one site?
- What are the job descriptions of the core staff? Can job descriptions used by other PHOs be adapted?
- Does the PHO's host body have recruitment protocols that need to be followed?
- Can partners be involved in recruitment to key posts such as director and analysts?
- What resources can be identified annually for training and development, and what is a fair process for staff to access such resources?
- Are there basic courses that all staff can share with host or other local organizations (e.g. equal opportunities, recruitment, staff appraisal etc.)?

Useful resources

- Lam M, Jacobson B, Fitzpatrick J. Establishing a regional health observatory: some questions answered. London, London Health Observatory; 2010 (http://www.lho.org.uk/viewResource.aspx?id=15755, accessed 9 September 2014).

1.3. Managing business and communications

No matter how excellent a PHO's outputs, if no one knows they are there and no one asks for them, they will never be used to make a difference to health. No matter how small the resource available some provision needs to be made for the PHO's business and communications functions.

What is meant by business and communications? The business function of any organization, especially one that receives public money, should:

- manage the finances in a transparent and accountable manner;
- assist the director in planning for the best use of resources and for future expansion; and
- assist staff in timely management of projects and ensure systems are in place for doing this.

Once established, a PHO will need to plan and monitor the use of its budget no matter how small the amount. Effective business leadership from within the PHO will enable it to expand and build its resources as well as establish business systems. As a PHO's portfolio becomes bigger and more complex, an effective business manager will be able to help ensure that staff are trained in project management. This is an important internal process that will ensure that the PHO team prioritizes and reviews the use of resources to meet the requirements of funders and stakeholders.

The communications function of a PHO comprises:

- internal communications with staff, and possibly with a host organization;
- stakeholder input into information needs, and feedback on outputs;
- wider media and other promotion of the PHO's work, including social media.

To begin with, a PHO may not need sophisticated media communications support, and it may be sufficient to rely on a small amount of support from a host or stakeholder institution. Social media can play an important role in making activities and assessments known on a low budget but with high capacity to engage civil society partners and the public. It is vital for every PHO from the outset to establish regular communication channels with its users and stakeholders so that its outputs and its website are shaped by local needs. As a PHO expands its influence and funders, it is likely to need more dedicated support for external communications and social media strategies. More detail on stakeholder engagement and communications is given in the two case studies in Part III.

Business and communications – questions to consider:

- Are sufficient resources allocated for the business and communications needs of the PHO? How will these be linked to other parts of the PHO (e.g. the website)?
- How will the right skills be accessed (internally, through a host or local organization, or via external contracts)?
- Who will take responsibility for monitoring the internal budget and payments?
- Will it be necessary to produce annual accounts? If so, who will be responsible for this?
- How will the relationships with key stakeholders and funders be developed and maintained? Who will be responsible for this work?
- What will the communications plan be for key PHO outputs? Who will be responsible for their delivery?
- How will quality assurance of the accuracy and wider understandability of outputs be organized? Will there be internal or external peer review? Who will finally sign off and take responsibility for the validity of each output? Will the director do this?
- At what point will expertise in media, including social media, be needed? How will it be obtained?
- If there is media interest in an output, who will be the spokesperson?
- Are there key stakeholders who must always be forewarned about publication of potentially controversial PHO outputs?

1.4. Managing data, its analysis and interpretation

Part of the unique expertise of an observatory is its ability to turn data into relevant intelligence that informs decision-making. Raw data and crude numbers usually lead to the wrong conclusions and may also result in breaches of confidentiality and of data protection laws.

Data should flow through a number of transformational steps before they can be effectively used and understood as actionable intelligence for health decision-making. These steps need to be clearly defined and should be followed in the core work of every observatory.

FIGURE 3. THE EIGHT STEPS OF THE DATA TRANSFORMATION PATHWAY

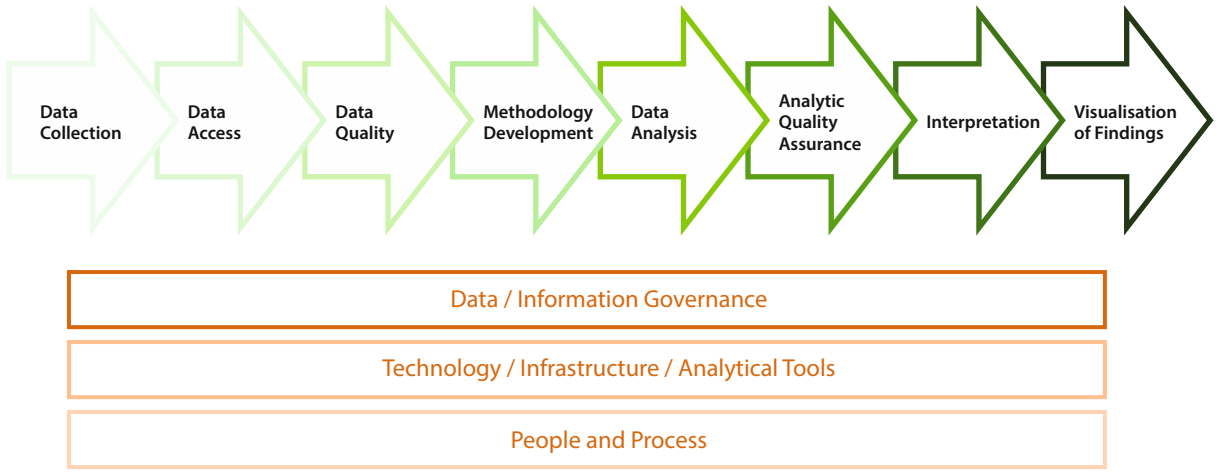

Figure 3 illustrates the eight linked steps in the transformation of data into usable health intelligence that are underpinned throughout by information governance in which restricted access to data is managed in a controlled manner.

The steps in the pathway can be summarized as follows:

1) **Data collection:** Although this is not often a primary function of PHOs, those involved in the primary collection of data or research will need to establish additional complex processes for such collection and for quality assurance. Arrangements need to be made for collection of data either by researchers or by participating institutions.

2) **Data access:** This is an often complex and time-consuming process by which data-sharing agreements are drawn up to permit an observatory and its named staff to access, hold and analyse routine data that are already collected or produced by external sources. In some countries routine data are collected and quality-assured by national bodies. However, where this is not the case, there is an opportunity for the observatory to fulfil this role. Other observatories may have been set up with the capacity to collect "primary" data for research, either from health surveys or sources that are not reported routinely.

3) **Data and information governance and quality assurance:** Data and information governance relates to managing restricted access to data in a controlled manner and ensuring that information is transparent and open to scrutiny. In many countries this process is defined by law to protect the rights and confidentiality of individuals. Data security and confidentiality guidelines provide information on accepted practices for securing and protecting public health data. An example from the United Kingdom's Data Protection Act, which illustrates a fundamental principle of data governance, states: "Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed." While this legislation applies specifically to the United Kingdom, it could be seen as underpinning good practice wherever an observatory is established.

Governance also includes managing the lifespan of data – i.e. how data are used within the observatory from initial access and storage through to controlled destruction. This process should be underpinned by rigorous compliance with standards for information technology (IT) infrastructure (e.g. security control methods to ensure restricted access to datasets), tools to interact with data (e.g. Spotfire, Tableau, QlikView and Microsoft Reporting Services) and general hosting of the hardware which will be used to store the

data. This should be complemented by training of all staff handling data (e.g. applying rules to suppress small numbers to avoid potential identification of individuals). This requirement is often specified in data-sharing agreements.

Data quality assurance ensures that data conform both to national standards of accuracy and to those of the observatory. The process includes data cleaning to check and remove spurious values, and standardization using agreed and reproducible definitions and nomenclature known as "metadata".

4) **Methodology development:** This includes developing appropriate calculations and statistical processes to address the questions posed by users at the right geographical level. For urban observatories, developing robust methods for calculation of health-related indices at small-area and neighbourhood levels is vital for identifying the many inequalities that coexist within cities. The use of methods appropriate for dealing with small numbers of events at such levels is critical. Agreeing on such processes in relation to published evidence is one of the most important scientific elements of an observatory's analytical work. The development and application of such methods should be a transparent and rigorous process which is open to external scrutiny, usually via the website.

5) **Data analysis:** The application of statistical, epidemiological and numerical processes to transform raw health-related data into meaningful health intelligence is at the heart of the work of all observatories.

6) **Analytical quality assurance:** This is vital to ensuring the accuracy and validity of analytical outputs, which in turn leads to maintaining the reputation of the observatory. Quality assurance is best undertaken by those who have not been involved in producing the original analysis – i.e. an external analytical peer review.

7) **Interpretation:** This works in concert with analysis and is the process of making intelligence actionable by helping decision-makers to understand real differences or inequalities and change. For example, interpretation will distinguish between statistical differences, identify important outliers in comparative analyses, and at its best will explain analytical trends in relation to evidence of policy implementation.

8) **Visualization of findings:** Outputs must be relevant and accessible to different audiences. Technical public health professionals may want access to detailed data findings and methods, whereas senior decision-makers and politicians may prefer simply visualized evidence that enables them to understand and make their case for local change. The best method of achieving this is to use appropriate graphical or other illustrations to portray key messages unambiguously and clearly. A key strength of an observatory will be its ability to illustrate and explain differences and inequalities between neighbourhoods across a whole city or beyond. Examples include generic and topic-related community health profiles, and range from simple yet powerful bar charts to maps and statistical control charts.

Ulaanbaatar © World Health Organization

Managing data effectively through each of the eight steps calls for a range of specialist, data-related skills. It is unlikely that a single professional will possess the whole range of skills. Every observatory needs to have a plan for how it will access the right professional expertise alongside effective infrastructure. The required breadth of skills in the observatory needs to be balanced with budgetary constraints and operational needs. As a minimum, there should be a detailed understanding of, and experience with, data management, information and data governance, analysis and interpretation. Some of these roles may overlap. Ideally, access to the following types of specialists will be important for every observatory:

- **IT and information specialist:** This should be someone who understands IT and information and, importantly, how the two relate.
- **Data manager:** If data volumes are significant, this role will implement the standards and controls that a data governance specialist will determine. This role will manage the physical data systems within the observatory and throughout the data pathway.
- **Data and public health information analysts:** The need is for various analysts, epidemiologists and statisticians. The number needed depends on the resources available and the objectives of the observatory in relation to its users. Generic skills for this role would be the ability to analyse and interpret public health data, define methodology and communicate intelligence outputs clearly.
- **Data and information governance specialist:** This is a complex role and requires a detailed understanding of data protection and freedom of information law and standards. This role is often combined with that of IT/information specialist or data manager. If these roles cannot be secured within the observatory itself, then flexible approaches to partnering with other organizations and employing jointly-funded posts can provide a good solution.

Data and analysis – questions to consider:

- How will the observatory ensure that only the minimum data needed to deliver against its objectives have been obtained or used? This is best practice and ensures compliance with most data protection laws.
- Has the observatory a sufficient budget for implementing a rigorous data transformation pathway?
- Is there a budget for buying data that are not yet available but that stakeholders need? If not, a business case with costing will be needed.
- Is observatory practice compliant with data protection and freedom of information legislation? An information governance expert is a key resource who can protect the observatory against risk in this area.
- Does the observatory have satisfactory access to information governance expertise?
- Has the right breadth of data skills been incorporated into the observatory recruitment strategy?
- Has the appropriate investment been made in technology to ensure quality data storage and that intuitive data-reporting tools are available?
- Is there a strong quality assurance process and culture within the observatory?

Useful resources

- European Union Data Protection Directive, to be superseded by the General Data Protection Regulation (http://ec.europa.eu/justice/data-protection/document/review2012/com_2012_11_en.pdf and http://www.eudataprotectionlaw.com/, accessed 5 November 2014).
- United States Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic and Clinical Health Act (HITECH) legislation (http://www.hhs.gov/ocr/privacy/hipaa/understanding/index.html, accessed 5 November 2014).
- United States Freedom of Information Act (http://www.foia.gov, accessed 5 November 2014).
- United Kingdom Data Protection Act 1988 (http://www.legislation.gov.uk/ukpga/1998/29/contents, accessed 5 November 2014).
- What is the Freedom of Information Act (UK)? (http://ico.org.uk/for_organisations/freedom_of_information/guide/act, accessed 5 November 2014).

1.5. Developing and maintaining an up-to-date website

Nearly all current observatories have websites through which they transmit vital new knowledge to local, or even international, users. Some websites are updated regularly, others not. Some use

sophisticated modern tools to help take account of a wide range of disciplines among their decision-makers. A PHO website not only allows users to find PHO outputs easily, but it can also be used as a springboard to locate or "signpost" relevant material on other websites. Every credible organization, particularly an evidence- and data-led one such as an observatory, needs a relevant, accurate and accessible website. Of paramount importance is the need to keep content up to date which, depending on the volume and complexity of material to be uploaded, may need to be managed by a full-time dedicated, trained knowledge specialist.

A key question to answer is whether the observatory website will be produced in-house, by a third party, or by a combination of the two. Using a third party can work well for a simple site, but costs can mount as the complexity of the website grows over time. A hybrid approach can work well if a third party developer can be identified with whom the observatory can form a lasting partnership. A further option could be to partner with other similar organizations and share a technical resource or utilize a core website development approach. This has been achieved in some parts of the world where several observatories have their own websites that are technically supported by a shared language so that users can consistently search for information across all sites.

A good website can usefully be seen from two perspectives: its design (i.e. the way its content is organized and the ease of access for its main users) and the technical web development supporting its effective function. The content and evolution of every observatory website should be tailored by regular feedback from its users. Users will go elsewhere if this is not the case. The type of scientific language used needs to be carefully overseen so that the observatory's outputs are understood by widely differing audiences across a variety of sectors that have an impact on health. These include authorities responsible for improving the determinants of health (e.g. housing, education and environment), which are outside the health system. Observatories serving different language groups will also need to consider whether Internet-based translation of their materials is good enough.

Over time observatories may become important repositories for shared local knowledge. It is vital that their content is organized in a way that is meaningful to the main users. If, for instance, an observatory's main audience is clinicians, the website content will need to be designed so that clinicians can find their specialist resources in very few clicks. This process can become complex and is probably best managed, where feasible, by a professional trained in public health library skills.

Many observatories have found it helpful to establish a simple website initially and to expand its capacity over time. This can be efficiently achieved by commissioning a reliable third-party web developer. Once an observatory is able to expand its outputs, act as a host for other partners and develop web tools and interactive capabilities, it will become important to have some internal capacity to steer the website's further development. As a minimum this might require one internal web developer to undertake building some of the web functions and a knowledge manager (i.e. trained public health

librarian or information specialist) to work with stakeholders to develop appropriate content hierarchies. Tasks such as web design and database development can be accessed externally. Observatories that become part of a network can link their websites via a process known as "interoperation" which allows users to search all the observatory websites at the click of a button. This requires the use of a validated public health language to make searches consistent and comprehensive.

As a website becomes more complex, it will be more challenging to keep it fresh and up to date as new technologies develop. Many users will access observatory resources through their social media accounts, and this should be taken into account when establishing a web presence. The management of social media accounts is becoming more common among observatories and needs the skills of information and evidence management. Over time it may be very important, especially for governance and for securing future funding, to develop a website that can provide statistics on the PHO's outputs. This can be achieved technically with relative ease through the website. However, interpretation of such statistics needs to be undertaken carefully alongside social media monitoring. Ultimately there is no substitute for feedback through regular contact with key stakeholders. Above all it will be important to ensure there is a mechanism, whether internal or external, to keep the website live and free from security risks.

An up-to-date website – questions to consider:

- Is there a clear understanding of the user base and what information users want to access? If not, surveys and workshops should be used to find out, and the findings incorporated into what is actually delivered.
- Will the website be resourced from internal or external resources, or from a combination of the two?
- Is the right in-house expertise available either to manage the whole process or to oversee a third-party development of the website?
- What type of information do users want? Will it be made available on the website, and what information on other websites will the observatory direct users to?
- Which technology route will be followed? (Java, .NET and PHP are the main options.)
- Is there the appetite for continued investment in the website? Without this, the site can soon look tired.
- Does the observatory website comply with accessibility standards and legislation (e.g. European Union cookie laws)?
- Will the site need to be accessible via mobile devices, include a blog, be interoperable with other observatory sites, or possibly harness the power of social networking? Consideration should be given to these questions in the website design phase.

Useful resources

- AboutCookies.org. European Union legislation regarding cookies (http://www.aboutcookies.org/default.aspx?page=3, accessed 5 November 2014).
- Google Analytics. Tools to help analyse the traffic to a website (http://www.google.com/analytics/, accessed 5 November 2014).
- PewResearch Internet Project. Social media update 2013 (http://www.pewinternet.org/2013/12/30/social-media-update-2013/, accessed 5 November 2014).
- Usability.gov from the US Department of Health and Human Services. Guidelines to be considered when developing a website (http://guidelines.usability.gov/, accessed 5 November 2014).
- Wordpress. A site offering a range of style templates (http://wordpress.com/, accessed 5 November 2014).
- World Wide Web consortium. Standards for web development, including accessibility guidance (http://www.w3.org, accessed 5 November 2014).

2. OUTWARDLY FOCUSED FUNCTIONS

2.1. Leadership and governance

The director or head of a PHO is a key ambassador for the PHO, both internally and externally with potential and actual stakeholders and funders. Successful leadership will ensure that the PHO establishes its position in the public health work of the city (or other local jurisdiction) and its localities, and that that PHO's work is known, widely used and appreciated. The example set by the PHO's leader should be built on by the observatory team. Probably the best way to assess whether this is the case is to establish governance mechanisms that enable the PHO to engage regularly with its key stakeholders.

The skills needed in a PHO director depend, to some extent, on the context in which the PHO is established. In most cases, it is important to ensure that the director has a broad public health background and experience of working at a senior level within the city or elsewhere. Ultimately those establishing a PHO must decide what qualifications and background they are looking for in a director. In an observatory that can afford to recruit its core analytical complement, it may be wise to look for public health and leadership breadth in the director.

Most PHOs will need a form of oversight or governance mechanism for the PHO. This provides an opportunity for a PHO to establish a board or advisory mechanism involving the key funders, stakeholders and representative users. The choice of the Chair of such a board will reflect the local context. A city observatory may wish to invite its chief medical officer to chair the board. A university-based PHO may have a more global perspective since its overall remit is much wider than the local population. As the local context changes over time, the composition of the board should also be reviewed. The PHO governance mechanism will vary according to the funders' and stakeholders' wishes. Broadly speaking, the objectives of its governance mechanism would normally focus on the more strategic work of the PHO, leaving its operational responsibilities to the director and staff. The board's role, therefore, could include agreeing on and reviewing:

- the PHO's mission and overall aims;
- its objectives and priorities;
- its annual or longer-term plans in relation to affordability;
- its financial plans and budget;
- delivery against its agreed plans throughout the year;
- peer or other review of its overall aims and objectives.

Finally, all board members should be advocates for the work of the PHO.

Leadership and governance – questions to consider:

- Who will be responsible for deciding or recruiting the PHO's director? What skills and experience will be expected from the director?
- What kind of governance mechanisms will be set up?
- Who are the most important funders and stakeholders who should be involved in the governance mechanisms?
- How will users be involved in the governance mechanisms?
- How will a board and other governance mechanisms work, and how resource-intensive will they be?
- Over time, how will its governance mechanisms know that the PHO is delivering against agreed objectives and priorities?

- Will stakeholder review mechanisms and reports be needed?
- What kind of authority will the board or other governance mechanism have if major problems arise in the PHO (e.g. mismanagement of finances, serious stakeholder dissatisfaction, evidence of poor practice, etc.)?

Useful resources

- The South East Public Health Observatory pilot peer review. June 2009 (http://www.sepho.org.uk/ViewResource.aspx?id=12934, accessed 5 November 2014).

2.2. Partnerships

One of the strengths of a PHO established at city or local level is that it is able to form sustainable local partnerships that will enable it to provide timely health intelligence to guide important decisions about how resources are used to improve health and reduce health inequalities. While maintaining the independence of their outputs, PHOs need to be well-informed about policy and practice in their defined populations. Working with key local partners will help, and will also acquaint partners with the expertise a PHO has to offer a city or local community. Moreover, working closely with partners may help cement the future development of the PHO itself.

The potential partners for a PHO are many and diverse. They can generally be classified into the following groups:

- those whose investments, as a part of their routine work, can positively influence health and health care (e.g. local authorities and health sector bodies);
- those with whom the PHO works jointly to deliver its outputs (e.g. local public bodies, universities);
- PHO users;
- civil society leaders;
- current and potential funders (e.g. foundations, nongovernmental organizations).

It will be important for each PHO to decide whether and how to engage with this diversity of partners. As this is often a very resource-intensive process, it is sometimes easier and more cost-effective for PHO teams to ensure that they link with existing groups and partnerships rather than establishing and servicing new ones. Clearly, the form of partnership arrangement will depend on the size and importance of associated projects as well as on the local political context.

2.3. Products and services

For the outputs of a PHO to be relevant and useful, its products must be informed by what partners and funders want. For instance, some PHOs produce excellent status reports on the health of the populations within their city or locality. It is important for PHOs to establish whether this adds value to the health information that already exists. In some countries, local health organizations already produce their own annual health status reports and may not need further input from the local PHO. Clearly, PHOs that are funded for specified outputs such as surveillance reports and tools need to deliver those outputs. A PHO always has to achieve a balance between specific products requested and funded by individual organizations and outputs that help a city plan or evaluate its local health investments. It is not possible to please everybody all the time.

The right balance between these competing demands is a judgement that needs to be made transparently by the PHO, with assistance from its governing board. If a PHO sees itself primarily as providing a city-wide service, then it must take care not to agree to so many national and international projects that its stakeholders no longer see it as a local resource. Some PHOs undertake a mix of national, international and local work, making that challenge even greater. Above all, a PHO should not undertake work that is outside its expertise.

The questions in this section are designed to help a PHO deal with some of these dilemmas. An additional challenge to PHOs is: how accessible will the products be to a wide range of opinion-formers and decision-makers? The answer to this question will in turn depend on a PHO's definition of its key audiences. If the audiences are primarily small, scientific and technically qualified groups such as public health specialists among stakeholder bodies, the PHO will essentially be speaking to users like itself. However, to reach the main decision-makers who often have no technical or scientific background, a PHO's outputs need to be written and designed in accessible language. Involvement of users in the design of important PHO outputs can help greatly to ensure that a PHO's products are fit for purpose. Monitoring of website downloads of particular products will also provide high-level information on whether its outputs are used.

Products and services – questions to consider:

- What products has the observatory been resourced to develop or produce?
- Are these prioritized in the delivery plans?
- Has the PHO made sufficient staff time and resources available for local work?
- How does the PHO manage its programme of work to maintain the right balance?
- What do local stakeholders think of the PHO services they can access?
- Do some of PHO publications in the scientific literature need "translation" for local stakeholders?
- Do each of the outputs contain a clear and short summary of key points?
- Are the outputs peer-reviewed for ease of understandability and accuracy?
- Does the website design make the products easily accessible, including to sight-impaired users?
- How does the PHO obtain user feedback on the accessibility of its outputs?

Useful resources

- Plain English Campaign. Free guides [website] (http://www.plainenglish.co.uk/free-guides.html, accessed 5 November 2014).
- Guide to knowledge translation planning at CIHR. Ottawa: Canadian Institutes of Health Research; 2012 (http://www.cihr-irsc.gc.ca/e/45321.html, accessed 5 November 2014).
- Library and knowledge services for public health – frequently asked questions. London: Public Health England; 2013 (http://www.apho.org.uk/resource/item.aspx?RID=124437, accessed 5 November 2014).
- Knowledge translation framework for ageing and health. Geneva: World Health Organization; 2012 (http://www.who.int/ageing/publications/knowledge_translation/en/, accessed 5 November 2014).

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PART III: CASE STUDIES

The following two case studies provide a detailed description of how two PHOs work in practice, serving cities in different parts of the world and providing actionable evidence to support their local health decision-makers. The public health observatories in London, United Kingdom, and Ciudad Juárez, Mexico, were selected as case studies since they illustrate very different but equally successful models of operation within different contexts. The Juárez Observatory is an example of a thematic observatory which was established relatively recently with an exclusive focus on preventing violence and promoting peaceful coexistence. The London Health Observatory has had a longer history, providing a generalist model with a built-in specialist role in tackling health inequalities and tobacco control. The Juárez Observatory is university-based and the London Health Observatory was based within the health care sector. Both PHOs show how they can serve their city populations with ever-changing, highly mobile populations.

1. THE LONDON HEALTH OBSERVATORY

BOX 4. THE LONDON HEALTH OBSERVATORY (LHO)

The LHO was established in 2001 and operated for 13 years. It was a member of a network of eight, later nine, regional PHOs that were established by government policy in 1999 and were integral to the English public health system *(1)*. The LHO provided information, data, analysis and evidence on the capital's diverse population, which grew from about 7 million to 8.2 million in the last decade. While being a generalist observatory, it also took a national lead role in monitoring health inequalities, ethnicity and tobacco control. The LHO was a key member of a United Kingdom–All Ireland partnership of observatories known as the Association of Public Health Observatories (APHO) *(2)*. Information and outputs of the LHO can be found on its website at www.lho.org.uk.

1.1. Range of services provided

The services of the LHO included:

- accessing and analysing large, complex datasets and turning them into easy-to-use tools for evidence-based, local decision-making on health and health care;
- providing a national lead programme of analyses and easy-to-use electronic tools for use by local agencies in the specialist areas of health inequalities, ethnicity and tobacco control;
- providing a responsive, electronic, personal enquiry service for local and national organizations aiming to improve health and health care;
- providing an up-to-date website and "knowledge signposting" service for users collating relevant health policy and evidence documents produced by other organizations in LHO's three specialist topics;
- actively working in partnership with local health, research and other related agencies to provide a programme of work relevant to the capital city and its citizens;
- hosting programmes of capacity-building and training in methods of data analysis and health impact assessment for public health professionals, health analysts and decision-makers in London.

1.2. Why a city-level health observatory was needed in London

From a global perspective, the United Kingdom has a good national information system with a national health surveillance and monitoring service provided by the Office of National Statistics, the former Health Protection Agency, the National Health Service (NHS) Information Centre and other national bodies. However, there are several reasons why this was not enough:

- National bodies serve national interests and are not able to be responsive to the unique health intelligence needs of a city. National bodies work largely according to national directives and many local priorities cannot be met at the time they are needed.
- London's population is large, uniquely diverse and constantly changing. Many of London's local authorities now serve ethnic majorities. London is one of the few cities in England that need, and are large enough for, the detailed ethnic and other sociodemographic analyses that are vital for assessing whether health needs are really being met at neighbourhood level. Working with its local partners, the LHO pioneered many new ways of analysing national data that had not been done nationally.
- As a capital city, London has always had a large number of complex and unique decision-making bodies that have an impact on health through the resources they deploy. There were over 70 National Health Service (NHS) bodies in London alone. The LHO has also been able to tap into the huge expertise of the many research institutions that are concentrated in the capital. To produce relevant and timely information and intelligence locally, the LHO always worked closely with the elected city mayors and the Greater London Authority (GLA). It had shared staff with the GLA, the local NHS and universities across London.
- London's health intelligence capacity was not confined to the LHO. It was widely distributed in small groups between the city level and every local public health organization. By using national data to deliver comparable and rigorous outputs for every London organization, the LHO allowed local public health analysts to be released to conduct their own analyses on local data that were not accessible to the LHO and national bodies. This allowed for a more efficient and productive system.

1.3. Geographical area and population served

The total population of London is 8.2 million – larger than that of some European countries. The health of London as a whole conceals major health inequalities between London's neighbourhoods and local decision-making bodies. The LHO has been instrumental in developing tools for small-area analyses of London at local and neighbourhood levels, making these inequities visible to decision-makers. At the same time the observatory contributed widely to international comparisons of what can be achieved at city level. The large diversity of people living, working in and visiting London has enabled the LHO to undertake some groundbreaking analyses of the impact of changes in the ethnic make-up of London following the expansion of the European Union and its impact on maternity services *(3)*.

1.4. Institutional base

When the LHO was first established, it was based within an independent health policy organization, the King's Fund. This helped greatly to establish its reputation for independent and rigorous outputs. The LHO's accountability, however, was always within the wider pan-London NHS, for it was important for the LHO to be seen to be serving all of London and not only one part. It was equally crucial to ensure its ability to be a "critical, independent friend" to all of London's communities and organizations.

Later on it became clear that for the LHO to be successful it needed to be closer to the local health decision-making bodies and public health leadership – at that time within London's NHS. The LHO has been based in many different NHS organizations over its 13 years of operation. This is unique and reflects the more volatile and changing organizational structures within London's crowded NHS.

Other practical reasons for being physically based in an NHS body included being able to share infrastructure costs and being closer to health-system thinking. The LHO also benefited from existing data governance arrangements that met strict guidance and legal requirements. This sometimes, but not always, enabled easier access to key national health datasets for the LHO.

1.5. Data analysis and other services

In the first year of the LHO, it was important to get the basics right. Core funding for all PHOs had already been assured through England's then Chief Medical Officer Sir Liam Donaldson who remained a vital champion of the observatory network. Vital early priorities for the LHO were:

- to secure premises for its operation and establish clear pan-London governance arrangements;
- to establish and maintain a modern up-to-date website;
- to recruit an effective staff complement;
- to develop a small but distinctive programme of work for London that was seen to be needed across the whole city and widely regarded as adding value to the health knowledge base. The LHO's first major publication was a report titled *Mapping health inequalities across London (4)*. It was the first report in the city to identify health inequalities defined by the geography of London's local decision-making bodies. This set the LHO on a path of recognition as a scientific organization able to make a relevant contribution to the debate on the distribution of health and wealth in the capital at a time when the government had set national targets for reducing health inequalities.

1.6. Support for training and capacity-building

The LHO created a London Health Intelligence Network and hosted a programme of regular development and knowledge exchange for health analysts and public health and local authority staff in London. Events were attended by up to 80 people. Topics were decided with local analysts to ensure their relevance to practice, and involved local practitioners and academic presentations and discussions. The year of the LHO's establishment – a post-census year – offered a unique opportunity for the observatory to support easy access to training in analysis and early access to census data. This programme was delivered jointly by the LHO and the demographers working with London's mayor. Its success resulted in London's 31 local health bodies responsible for public health cementing their relationship with the LHO and funding a programme of work from the LHO each year for a further five years.

As a result of the requirement for London's mayor to undertake health impact assessments of all pan-city strategies, the LHO became a regular contributor, and published scientific reviews of the evidence underpinning the strategies *(5)*. Supported by a pan-London coalition of health bodies, the LHO pioneered introductory and longer courses in health impact assessment. These were hugely oversubscribed with more than 1000 professionals being trained across many agencies. The courses were chargeable, with subsidies provided by the GLA for civil society applicants.

Later, when the country-wide APHO network was established, the PHOs worked together to develop a formal training programme and curriculum for health intelligence analysts whose formal training had been nationally neglected in the past. The LHO

piloted this programme in London. The PHOs worked together to host a major staff training and knowledge-sharing event for all observatory staff each year, with over 300 PHO staff attending.

1.7. Areas of focus

The LHO took an early policy decision that its priority was to aim to remain generalist and respond to challenges across the entire spectrum of health and health care, but to develop some specialist practice over time. This position reflected the decision-making challenges of its local stakeholders who needed to cover the whole spectrum of health and care. This meant that scientific staff had to be prepared to respond to any topic and be trained in the use and analysis of many datasets. This decision was good for staff career development. Over time, the LHO developed a new way of specializing in areas where it had significant expertise alongside its generalist capacity. It built on its major methodological and analytical expertise in monitoring and analysing health and ethnic inequalities and tobacco control through additional national programmes in these areas commissioned from the Department of Health. This resulted in the "lead role" model developed by the APHO in which every PHO developed national lead roles in priority topics. This was an efficient way of using scarce expertise across the country and giving local users throughout England access to rigorous and comparable health intelligence at local level.

In London, where the population suffers an excess of mental health problems, the LHO was further commissioned by a pan-London coalition of mental health organizations to analyse and interpret very complex mental health data that was important for improving performance of mental health services.

In effect, the LHO model of providing a generalist responsive service, and developing specialist themes within it, avoided the risk of isolation by focusing on only a few specialist areas. This paved the way, in later years, for a series of themed "observatories within observatories", funded mainly by the Department of Health and developed across the APHO network, based on each PHO's national lead role (e.g. maternal and child health, mental health and obesity).

1.8. Internal functions

Securing continuing funding. The LHO, along with all the English PHOs, had a small amount of assured annual funding via the chief medical officer. This was considered essential to establish continuing funding for core PHO functions, including leadership, data analysis and data governance, business management and administration, knowledge management, web development and communications. As the PHOs matured, the core resources were allocated in relation to a formula, which was weighted for population size and deprivation. In the case of the LHO, additional programmes were funded over

time by London stakeholders. The content of these programmes was firmly led by the local funders and enabled expansion of the LHO's staff. The LHO's national specialist roles were funded mainly on a rolling (review) basis by the Department of Health. The content of these programmes was largely specified by the funders, with input from users around the country. The LHO developed a sophisticated programme of project management as the portfolio of programmes became more complex. The aim was always to take on only what was achievable in the timetable agreed. In practice, unforeseen problems often caused delays – such as in the time taken to secure new datasets.

Recruiting and retaining staff. The LHO staff group was initially small but grew in size and skills as the observatory gained support and further resources. The largest group at the LHO was the data and analysis team, but resources were also devoted to the business and communications team as this was considered just as important as the scientific team. Staff training and development were also prioritized and almost certainly became a factor in the very high retention rates, especially of scientific staff. Many went on to develop further postgraduate qualifications, largely funded by the LHO. As recruitment of staff in the capital was more costly than elsewhere in the country, the LHO worked in partnership with local public health teams and city level government (e.g. sharing and seconding staff over time). One staff member was recruited and remained in the post over a long period, working jointly between the LHO and the Greater London Authority's demographic team. All staff participated in regular team meetings, appraisals and objective-setting. LHO analytical staff were involved in delivering wider training for analytical and public health staff within London.

The LHO team saw itself as an integral part of the wider APHO which was a highly successful network in which much expertise was borrowed and shared. Skills not available within the LHO team could almost always be found within other PHO teams.

Managing business and communications. LHO's business development had three elements – managing existing finances and the project portfolio, communications and administration, and developing new business. The first two elements were seen as part of the core resource, while business development was seen as an additional function for sustaining the LHO's further development. A wide range of skills was needed, ranging from a good grasp of NHS finances, staff recruitment and project management, to external and web-based communications alongside formal competitive bidding. This was a challenging and often underfunded set of responsibilities.

Managing data and analysis. Although the LHO usually operated through the data and IT infrastructure of its physical hosts, data governance, access, analysis and interpretation were major responsibilities within the LHO itself. In the terms of the United Kingdom's Data Protection Act, the LHO was almost always defined as a "data processor" rather than a "data owner". This was because the LHO was not involved in *collecting* primary data, but rather in *accessing* datasets collected and quality-assured by other, usually national, bodies. Each dataset accessed by the LHO was accompanied by an explicit data-sharing agreement that specified the terms under which the data could or could not be shared or used as well as covering issues of confidentiality, including who could use the data and how the data should be stored and eventually destroyed. The requirements differed for each dataset. A senior analyst was responsible for induction and training of other staff in the specifics of each dataset. A full time IT and data specialist was seen to be essential for assuring information and data governance.

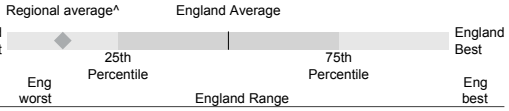
The LHO had processes for quality assurance of analyses, reports and outputs. There was a clearly defined hierarchy of signing off findings as correct before formal publication. For important national outputs, such as local community health profiles *(6)*, which were compiled jointly across the whole APHO network, the process ensured that the analyses of one PHO were always quality-assured by a different PHO. These processes helped to minimize errors and assured the network's reputation for rigour. Methodologies for analyses and web tools were shared across APHO to minimize duplication and maximize use of expertise. Health profiles have become an "official statistic" and are updated every year for the whole country, covering neighbourhoods as well as larger areas.

FIGURE 4. EXAMPLE OF A LOCAL HEALTH PROFILE FOR WESTMINSTER, LONDON, 2014

E09000033

Health Summary for Westminster

The chart below shows how the health of people in this area compares with the rest of England. This area's result for each indicator is shown as a circle. The average rate for England is shown by the black line, which is always at the centre of the chart. The range of results for all local areas in England is shown as a grey bar. A red circle means that this area is significantly worse than England for that indicator; however, a green circle may still indicate an important public health problem.



Domain		Indicator	Local No Per Year	Local value	Eng value	Eng worst	Eng best
Our communities	1	Deprivation	52,162	23.3	20.4	83.8	0.0
	2	Children in poverty (under 16s)	10,885	35.4	20.6	43.6	6.4
	3	Statutory homelessness	807	6.2	2.4	11.4	0.0
	4	GCSE achieved (5A*-C inc. Eng & Maths)	984	69.6	60.8	38.1	81.9
	5	Violent crime (violence offences)	5,651	25.7	10.6	27.1	3.3
	6	Long term unemployment	1,402	8.5	9.9	32.6	1.3
Children's and young people's health	7	Smoking status at time of delivery	54	2.3	12.7	30.8	2.3
	8	Breastfeeding initiation	2,140	89.8	73.9	40.8	94.7
	9	Obese children (Year 6)	334	25.3	18.9	27.3	10.1
	10	Alcohol-specific hospital stays (under 18)	11	29.4	44.9	126.7	11.9
	11	Under 18 conceptions	50	21.2	27.7	52.0	8.8
Adults' health and lifestyle	12	Smoking prevalence	n/a	17.0	19.5	30.1	8.4
	13	Percentage of physically active adults	n/a	55.0	56.0	43.8	68.5
	14	Obese adults	n/a	17.9	23.0	35.2	11.2
	15	Excess weight in adults	295	52.6	63.8	75.9	45.9
Disease and poor health	16	Incidence of malignant melanoma	8	3.9	14.8	31.8	3.6
	17	Hospital stays for self-harm	166	73.2	188.0	596.0	50.4
	18	Hospital stays for alcohol related harm	1,023	552	637	1,121	365
	19	Drug misuse	2,255	13.9	8.6	26.3	0.8
	20	Recorded diabetes	8,841	4.3	6.0	8.7	3.5
	21	Incidence of TB	59	26.9	15.1	112.3	0.0
	22	Acute sexually transmitted infections	4,195	1,910	804	3,210	162
	23	Hip fractures in people aged 65 and over	121	459	568	828	403
Life expectancy and causes of death	24	Excess winter deaths (three year)	45	12.6	16.5	32.1	-3.0
	25	Life expectancy at birth (Male)	n/a	81.1	79.2	74.0	82.9
	26	Life expectancy at birth (Female)	n/a	85.1	83.0	79.5	86.6
	27	Infant mortality	11	3.8	4.1	7.5	0.7
	28	Smoking related deaths	198	247	292	480	172
	29	Suicide rate	23	11.2	8.5		
	30	Under 75 mortality rate: cardiovascular	110	84.2	81.1	144.7	37.4
	31	Under 75 mortality rate: cancer	168	128	146	213	106
	32	Killed and seriously injured on roads	180	81.8	40.5	116.3	11.3

Indicator Notes

1 % people in this area living in 20% most deprived areas in England, 2010 2 % children (under 16) in families receiving means-tested benefits & low income, 2011 3 Crude rate per 1,000 households, 2012/13 4 % key stage 4, 2012/13 5 Recorded violence against the person crimes, crude rate per 1,000 population, 2012/13 6 Crude rate per 1,000 population aged 16-64, 2013 7 % of women who smoke at time of delivery, 2012/13 8 % of all mothers who breastfeed their babies in the first 48hrs after delivery, 2012/13 9 % school children in Year 6 (age 10-11), 2012/13 10 Persons under 18 admitted to hospital due to alcohol-specific conditions, crude rate per 100,000 population, 2010/11 to 2012/13 (pooled) 11 Under-18 conception rate per 1,000 females aged 15-17 (crude rate) 2012 12 % adults aged 18 and over, 2012 13 % adults achieving at least 150 mins physical activity per week, 2012 14 % adults classified as obese, Active People Survey 2012 15 % adults classified as overweight or obese, Active People Survey 2012 16 Directly age standardised rate per 100,000 population, aged under 75, 2009-2011 17 Directly age sex standardised rate per 100,000 population, 2012/13 18 The number of admissions involving an alcohol-related primary diagnosis or an alcohol-related external cause, directly age standardised rate per 100,000 population, 2012/13 19 Estimated users of opiate and/or crack cocaine aged 15-64, crude rate per 1,000 population, 2010/11 20 % people on GP registers with a recorded diagnosis of diabetes 2012/13 21 Crude rate per 100,000 population, 2010-2012 22 Crude rate per 100,000 population, 2012 (chlamydia screening coverage may influence rate) 23 Directly age and sex standardised rate of emergency admissions, per 100,000 population aged 65 and over, 2012/13 24 Ratio of excess winter deaths (observed winter deaths minus expected deaths based on non-winter deaths) to average non-winter deaths 1.08.09-31.07.12 25 At birth, 2010-2012 26 At birth, 2010-2012 27 Rate per 1,000 live births, 2010-2012 28 Directly age standardised rate per 100,000 population aged 35 and over, 2010-2012 29 Directly age standardised mortality rate from suicide and injury of undetermined intent per 100,000 population, 2010-2012 30 Directly age standardised rate per 100,000 population aged under 75, 2010-2012 31 Directly age standardised rate per 100,000 population aged under 75, 2010-2012 32 Rate per 100,000 population, 2010-2012 ^ "Regional" refers to the former government regions.

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Audit and reflection. The LHO used a number of approaches for audit of its work. Its enquiry service was prospectively audited to inform patterns of use of LHO services and to improve user access to routine questions. A quarterly audit of both LHO enquiries and use of the LHO website and Twitter accounts was presented at every LHO board meeting. This gave the LHO a perspective on what users wanted, which products were successful, and how observatory services were used by different organizational stakeholders.

All PHOs worked together in an external peer-led audit of their services in which senior PHO staff were trained as peer reviewers working with other PHOs and their stakeholders. This resulted in constructive and helpful feedback and engagement of all LHO staff and key London stakeholders.

1.9. Outwardly focused functions

Leadership and governance. LHO accountability and wider PHO accountability were complex. Each PHO had its local board but was also accountable nationally to the English Department of Health and to local stakeholders who commissioned and paid for additional programmes of work. The LHO board was essentially a partnership board whose members provided constructive critical input but also helped to promote the LHO's services.

The day-to-day LHO leadership was provided through its director who was known to be ultimately accountable for the quality of the LHO outputs, its financial probity and information governance, the conduct and skills development of its staff, and the standard of its partnerships. The LHO director was the link to the board, to London and to national stakeholders.

Each of the LHO's projects had an internal lead staff member who was responsible for its management and delivery. For large externally-funded projects, such as local health profiles, there was often an external sponsor and sometimes a project board.

Partnerships. The LHO established and tested different approaches to partnership. At the beginning, each of its analysts was designated as the first contact for a subregional area of London mirroring the London NHS geographical infrastructure. As the LHO programme expanded, individual LHO team members became widely known for their expertise and were approached in their project lead roles or for their known expertise. All analysts participated in the LHO enquiry service and lasting relationships were formed through this. Relations with academic partners were facilitated largely through the director and senior scientific staff. The LHO had a protocol for media relations, and to ensure consistency all major dealings with the media were through the director. This resulted in wide use of the LHO as spokesperson on London's health issues and consistent use of the LHO enquiry service by the media.

The look and feel of LHO outputs. The LHO was a certified member of the Plain English Campaign (http://www.plainenglish.co.uk/) and invested significant effort into the readability of its outputs, website and social media communications. As many of its reports and tools were backed by detailed statistical methods, these were transparently made available to technical users, often in accompanying appendices. The LHO developed publication guidance for authors so that its outputs were consistently presented with the aim of being understandable to a wide range of decision-makers who were not necessarily public health professionals. All major reports had an accompanying, easy-to-read summary of the approach, findings and conclusions for those who had no time to read in detail. As the LHO matured, it developed, in partnership with the APHO web developers, a number of web tools that displayed complex information in simple ways, with alternative presentations available according to user preferences. The two internationally best-known simple presentations of highly complex data and analyses are London's Jubilee Line of health inequality *(7)* and its Health Inequality Intervention Toolkit developed to support cross-government objectives to reduce inequalities in life expectancy and infant mortality *(8)*. In its final report published to mark the start of the London Olympic Games, the LHO team presented a hugely complex set of data completely pictorially, using the analogy and image of the Olympic stadium running track *(9)*.

2. THE CITY OF JUÁREZ OBSERVATORY

BOX 5. THE CITY OF JUÁREZ OBSERVATORY

The City of Juárez Observatory is located on the Mexican side of the Mexico-USA border. It was established in 2008 at the Instituto de Ciencias Biomédicas de la Universidad Autónoma de Ciudad Juárez (UACJ) with the local government and PAHO. The observatory currently serves an estimated 1.2 million of some of the most mobile populations living, working and moving across the Mexico-USA border. The observatory's focus is violence prevention and peaceful coexistence. Plans for expansion to 10 cities along the entire Mexico-USA border are underway. Information about the work of the Juárez Observatory can be found on its website: http://observatoriodejuarez.org/dnn/Inicio.aspx.

2.1. Creation of the Juárez City Observatory

In recent years, civil insecurity, including violence, has been a very sensitive social and public health concern in the Juárez community. The City of Juárez has been recognized as one of the most dangerous and violent cities in the world, with international news sources reporting shocking figures: "between 2007 and 2011 more than 9,000 people were killed, with the peak coming in 2010, when Juárez saw a record 3,116 homicides, or about 8 murders per day, according to figures released by the Chihuahua attorney general's office" *(1)*. Gangs and unidentified persons continually expose individuals and businesses to dangerous situations where norms and laws are systematically broken. In its crime and safety report on Juárez, the Overseas Security Advisory Council of the USA's Department of State indicated, "The State Department's 'Critical' crime threat level for this industrial city of 1.2 million is well-deserved. Violence is an everyday occurrence in Juárez. There are no particular sections of the city to avoid as violence can occur anywhere, anytime" *(2)*.

Public insecurity affects all members of the Juárez community throughout the whole life cycle. In childhood, violence is evident with physical and mental abuse; interfamily violence, sexual abuse, homicides and suicides affect adolescents and young adults; while abuse of women and the elderly complete the spectrum. The results of this systemic violence are evident in aspects of health and quality of life, such as mental health, drug and alcohol misuse, and high preventable mortality.

The direct costs of the violence are increased costs of medical care – including emergency care, mental health and police services – at local, state and federal levels. The indirect costs of the violence are reduced productivity, absenteeism from work, negative economic and social development, and a profound decrease in the quality of life of the people in the wider community.

All these conditions have been present in the City of Juárez, so it is important to look for steadfast but permanent solutions, based on appropriate data and evidence-based health situation assessments.

The reintegration of the Juárez community based on respect for the law, health, human rights and peaceful coexistence, requires comprehensive and permanent actions by a responsible and organized civil society with the support of the academic community, local authorities and other key stakeholders.

As a result of this very serious public health and social situation, the Juárez Security and Peaceful Coexistence Observatory was established. The goal of the observatory is to provide the local city authorities and civil society groups with the relevant information required to measure and monitor the extent, distribution and social determinants of the principal forms of violence in the Juárez municipality, and to facilitate the development and implementation of policies and programmes that help to establish a better quality of life in the region.

The observatory began its activities in November 2008. The observatory has identified the principal sources of relevant data and information, major civil society groups and organizations, and both governmental and nongovernmental programmes working on the promotion of healthy communities and the prevention and control of violence.

2.2. Stakeholders, evolving mission and objectives

The original partnership behind the observatory consisted of the Universidad Autónoma de Ciudad Juárez (UACJ) which physically hosts the observatory, the local city government, and the United States–Mexico Border Office of PAHO which provided technical cooperation. The academic setting offers the observatory scientific credibility, institutional capacity for training, social and public health research expertise, as well as a high success rate in obtaining research grants. After 80 years of working on the Mexico–USA border, the field office of PAHO ceased its technical cooperation activities in May 2014. In response to this institutional vacuum, UACJ will provide institutional continuity for observatory activities.

The observatory's mission is to develop, strengthen and evaluate preventive public policies directed at improving public health security and peaceful coexistence among the Juárez population on the basis of data collected from reliable information sources, health assessments and systematic reports.

The main objectives are:

- to develop and propose strategies to assess, prevent and decrease urban violence and other priority public health problems, and improve quality of life in the metropolitan area of Juárez;
- to develop recommendations for public policies directed towards improving security and peaceful coexistence among the Juárez population on the basis of evidence generated from the information and assessments produced by the observatory;
- to develop recommendations for the implementation of the above, with active participation of civil society, public and private sectors, and the academic community;
- to evaluate the outcomes of the implementation of public health strategies and policies.

2.3. Range of services

In line with its mission and objectives, the observatory provides the following services:

- collection of information from multiple sources that can be analysed to identify patterns and core

indicators of the health and quality of life, security and peaceful coexistence among different population groups of Juárez;
- production of useful validated information and assessments to develop health policy options and strategies to improve health and peaceful coexistence in the Juárez region;
- provision of training in the collection, validation and use of relevant social and public health information;
- proposal of plans of action, with civil society and government, for better quality of life and peaceful coexistence;
- performance of monitoring and evaluation of healthy public policies, programmes and projects directed toward healthy and peaceful coexistence;
- support for the implementation of social communication strategies to strengthen health, security and peaceful coexistence.

2.4. The need for a city observatory

The observatory was proposed for the City of Juárez because of the high rate of violence and the lack of supporting urban-level information to assess the types and frequency of violence and related health problems. During its initial phase, the observatory was able to identify population groups and urban areas most affected in order to inform decisions for control and prevention. The city authorities recognized that certain residents and areas suffered disproportionately from large social and health inequalities, often resulting in violence, which seriously hampered the advancement of health and human development. Various stakeholders recognized the importance of a multisectoral approach to properly understanding and responding to the serious urban violence in Juárez, as highlighted by the observatory.

In its second phase, the observatory will gather additional validated data on health care, priority public health conditions, frequency and types of diseases and social determinants affecting the populations of cities in 10 Mexico–USA border states. These include six states on the Mexican side – Baja California, Chihuahua, Coahuila, Nuevo Leon, Sonora and Tamaulipas – and four on the USA side – Arizona, California, New Mexico and Texas.

Currently, the information gathering, research activities and services of the observatory are provided regularly for community and government authorities in Juárez. However, the plan is to increase the catchment area of the observatory to include the urban conglomerates of the northern border of Mexico and of the southern border of the USA. The observatory plans to collect core health information and produce health assessments and epidemiological profiles of the "sister cities" along the Mexico–USA border.

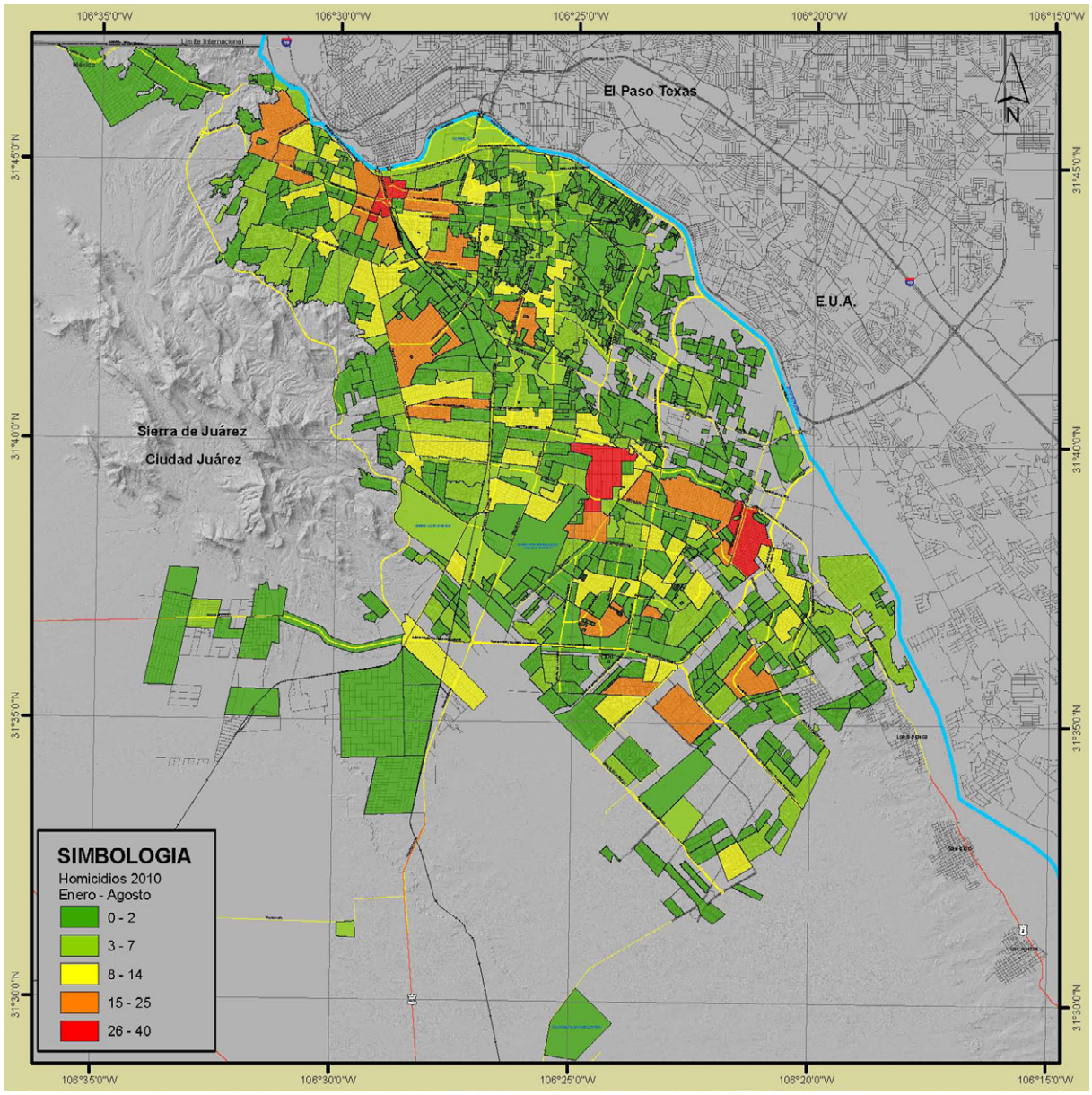
2.5. Support for training and capacity-building

During the first phase, a major role of the observatory was to develop training materials on the collection, validation and strategic use of data and information. Multiple workshops and short courses were developed and organized to train leaders of civil society and local authorities to better understand public health information and assessments and the role of social determinants of health. During the workshops, special emphasis was placed on discussing the need for new urban health policies and strategies focused on the prevention and control of urban violence and other critical public health problems in the city. In addition, the university provided coaching and mentoring of local authorities in evidence-based health policy interventions.

The Juárez observatory aims to be the authoritative source of information and knowledge on urban health and violence in Juárez. During its first years, the observatory produced guidelines for processes related to data management across different institutions and civil society groups, with special attention to documenting the trends in urban health and violence and the policy responses of local and national governments, to improve the effectiveness of efforts to control violence. The observatory published periodic electronic bulletins with specific information about the urban areas and neighbourhoods with high levels of violence.

As part of these efforts, thematic maps were produced to facilitate understanding of the distribution of violence. An example of a thematic map is shown in Figure 5. It documents the number of homicides of women by neighbourhood within Juárez between the months of January and August 2010.

FIGURE 5. MAP SHOWING CRITICAL NEIGHBOURHOODS FOR FEMALE HOMICIDES IN JUÁREZ MUNICIPALITY, JANUARY–AUGUST 2010



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2.6. Scope of work

Following the PAHO recommendations for the development of local observatories of urban violence *(3)*, the Juárez observatory specialized in urban health violence at the municipal level. The observatory provided technical support for the development of the observatory in Zapopan *(4)*. Additionally, as part of the Mexican National Institute of Statistics, Geography and Information, the Juárez observatory developed and maintains a subsystem of statistics on urban violence.

In its new phase, as noted above, the observatory will expand its role to include assessment and monitoring of core health indicators in 10 "sister cities" along the Mexico–USA border. This expansion will include collaboration with the United

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States–Mexico Border Health Commission. UACJ will continue to provide the technical and administrative leadership for the observatory.

2.7. Data, information and knowledge management

The observatory was defined as an operational research facility where a designated group of information and knowledge management specialists and analysts gather and integrate health and violence data to produce useful information for the assessment of the frequency and distribution of urban violence in the neighbourhoods of Juárez municipality. The absence of a distinct data clearinghouse for health and quality of life indicators in Juárez was a major obstacle for the development of policies and interventions to address the challenges of its high rate of severe urban violence.

The observatory developed a data depository of mortality and violent events in Juárez. Since 2009, all deaths related to violence and external causes from Juárez have been geo-coded to facilitate assessment and monitoring of the location of violent events. The descriptive analyses and ecological correlations of violent events and their socioeconomic determinants are complemented by operational research projects.

As a specific example, the observatory collaborated in the analysis of the National Survey of Urban Insecurity. This household survey was conducted in Juárez, as in 15 other major metropolitan areas of Mexico. The Colegio de la Frontera (a major research centre on the Mexico–USA border) collected urban health data and collaborated with the Juárez observatory in assessments of urban violence.

2.8. Dissemination and public accountability

The observatory publishes four annual bulletin reports and maintains its own website. Additional reports with recommendations on public policies are produced and presented three times a year to the local authorities, community leaders and town hall meetings.

Several governmental and civil society organizations have participated in the public accountability forums of the observatory, including: the Secretary for Public Security of the State of Chihuahua, the Police Intelligence Corps, the Centre for Prevention and Care for Women and Family Subject to

Violence, the Federal Preventive Police, the Assistant Prosecutor for Organized Crime, the Commission for Government Policies on Human Rights, the National Institute for Women, the National Institute of Social Development, the Chihuahua Institute for Women and the Women's Hospital.

Furthermore, the university provided special training on public sensitivity and accountability for violence against women for agents of the Federal Preventive Police. PAHO collaborated in co-organizing forums on public health accountability for violence against women and families, and on the role of the observatory in providing relevant recommendations for policies and programmes to prevent urban violence in Juárez.

2.9. Managing the business of the Juárez observatory

The original membership of the observatory represented a coalition of the local government of Juárez, the Universidad Autónoma de Ciudad Juárez (UACJ) and the PAHO office in El Paso (TX), USA, which worked together to gather and link information and data produced by different government agencies, civil society, community agencies and the university.

The university provided the physical facilities and infrastructure. PAHO and the local government provided the funds to support the contracts and salaries of the core staff and leadership of the observatory. Several external consultants from other health observatories on urban violence were invited to provide expert support in the initial developmental phase. PAHO/WHO guidelines and recommendations for observatories on urban health violence were used to create the information and knowledge management component of the observatory and PAHO staff gave additional technical support.

Given the international reputation of Juárez and pressure because of urban violence there, the Mexican federal health authorities provided some grants to support the production of initial health assessments. A strategic plan for multisectoral collaboration, which presented the mission, vision and plan of action of the observatory, was jointly prepared by the three partners *(5)*.

2.10. Leadership and governance

The observatory has a unique model of governance based on a partnership between city government, a university and a PAHO field office.

This governance model ensured that the operations and activities of the observatory would benefit from: (a) PAHO/WHO technical networks, the international experience of other observatories developed under their coordination, and their guidelines for data and document registration and management procedures; (b) local civil authority as the agency responsible for mobilizing efforts to prevent and control urban violence in Juárez; and (c) the authoritative academic and scientific expertise of the university to support the validation and interpretation of data on health and its socioeconomic determinants. An additional benefit was the university's role in providing expertise in training and operational research, as well as scientific networks.

The strategic plan included the structure and organization of the observatory with an Executive Committee, general coordinator and technical secretary. Representatives of the Juárez government, PAHO and the university form the Executive Committee. The technical secretary is in the university. The observatory created two committees: the Committee for Analysis and Health Information Systems, and the Committee for Proposals and Evaluation of Public Policies. Both committees generated intersectoral working groups, including the major community groups of Juárez.

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This is a guide for local government sectors, academia, civil society organizations and individuals who are planning, developing or sustaining a public health observatory to provide policy-relevant, evidence-based information to local populations and their stakeholders. It describes the range of functions of a local public health observatory and the resources and competencies that would be required to fulfil such functions. It also provides practical resources and case studies to illustrate how such functions might operate in practice, with a focus on urban settings.

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