

**CONTRIBUTING EVIDENCE TO PROGRAMMING:
ARMED VIOLENCE MONITORING SYSTEMS**



By Elisabeth Gilgen
and Lauren Tracey

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WORKING PAPER



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and **Lauren Tracey**





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List of abbreviations

AVMS	Armed violence monitoring system(s)
BCPR	Bureau for Conflict Prevention and Recovery (United Nations Development Programme)
CISALVA	Centro de Investigaciones de Salud y Violencia (Research Centre on Health and Violence, Colombia)
CRMA	Crisis and Recovery Mapping and Analysis
GIS	Geographic information system
IADB	Inter-American Development Bank
ICJS	Institute of Criminal Justice and Security (Jamaica)
ICPC	International Centre for the Prevention of Crime (Canada)
LJMU	Liverpool John Moores University
MODAT	Mission d'observation de la délinquance de l'agglomération toulousaine (Crime Observatory of Toulouse, France)
NGO	Non-governmental organization
NIMSS	National Injury Mortality Surveillance System (South Africa)
OBSERDH	Observatorio de Derechos Humanos y Derecho Internacional Humanitario (Colombia)
OCVP	Observatory on Conflict and Violence Prevention (Somalia)
OECD	Organisation of Economic Co-operation and Development
RCSO	Resident Coordinator's Support Office (United Nations)
SIDA	Swedish International Development Cooperation Agency
SILEX	Sistema de Información de Lesiones de Causa Externa (Injury Surveillance System, El Salvador)
TIIG	Trauma and Injury Intelligence Group (United Kingdom)
UNDP	United Nations Development Programme
VPA	Violence Prevention Alliance
WHO	World Health Organization



The Geneva Declaration

The Geneva Declaration on Armed Violence and Development, endorsed by more than 100 countries, commits signatories to supporting initiatives intended to measure the human, social, and economic costs of armed violence, to assess risks and vulnerabilities, to evaluate the effectiveness of armed violence reduction programmes, and to disseminate knowledge of best practices. The Declaration calls upon states to achieve measurable reductions in the global burden of armed violence and tangible improvements in human security by 2015. Affiliated organizations include the Bureau of Crisis Prevention and Recovery (BCPR) and the United Nations Development Programme (UNDP), the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD), and the Quaker United Nations Office (QUONO).

For more information about the Geneva Declaration, related activities, and publications, please visit www.genevadeclaration.org.

United Nations Development Programme

The Bureau for Crisis Prevention and Recovery (BCPR) of the United Nations Development Programme (UNDP) aims to ensure that UNDP's development efforts, and those of the wider UN system in situations of fragility, incorporate necessary elements of crisis prevention and timely recovery support. This requires a focus on skills and capacities in national institutions and communities—in order that risks of disasters and violent conflict are minimized and a foundation for sustainable development secured.

In this capacity, in 2010 UNDP provided risk education, prevention and recovery support to 86 countries, stabilizing communities, supporting short-term employment and livelihoods, re-establishing governance and the rule of law and promoting gender equality throughout—acting as a bridge between humanitarian and longer-term development efforts.



About the authors

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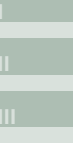
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The views expressed in this publication are those of the authors and do not necessarily represent those of the United Nations or UNDP.





Executive summary

Governments, development practitioners, and United Nations agencies are increasingly looking for ways to ensure that resources for development programmes and humanitarian interventions are used effectively and to support interventions with a proven record of success. Such evidence-based policy-making has also gained popularity in relation to the prevention and reduction of armed violence. To support this trend, practitioners and other stakeholders are establishing new mechanisms and research tools, including armed violence monitoring systems (AVMS).

In the past few decades, AVMS have become an important tool to better understand the scale and distribution of armed violence. The United Nations Development Programme (UNDP) currently supports AVMS in Bosnia and Herzegovina, the Caribbean, Colombia, Croatia, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Kenya, Somalia, South-eastern and Eastern Europe, and Sudan. UNDP has observed that national governments are increasingly requesting support for AVMS.

This Working Paper—commissioned by the UNDP—aims to clarify the concept of AVMS and to deepen understanding of their work. It is designed to inform policy-makers and practitioners who are working on violence reduction and prevention and who are interested in supporting or establishing an AVMS. The report will also allow experts who are already engaged in AVMS to compare their experiences with those of others. Last but not least, the paper aims to inform researchers and academics who work on developing indicators that capture the scale and scope of armed violence at a local, national, or global level.

A substantive literature review has revealed three key elements that are characteristic for AVMS across the board in conflict as well as non-conflict settings. An AVMS can be defined as an intersectoral system that:

1. gathers data on an ongoing and regular basis;
2. systematically analyses the data, including the nature of the armed violence; and

3. disseminates the information with a view to informing evidence-based programming and policy-making.

Although much has been written on the monitoring of armed violence, there are only a few comparative studies on AVMS. This Working Paper presents the results of a survey conducted among a convenience sample of 20 AVMS. The survey highlights that AVMS is a generic term for a range of different monitoring systems. Whether an AVMS calls itself a crime or violence observatory, an injury surveillance system, or an early warning system largely depends on the theoretical approach of the experts who established the system and on the geographical setting. If public health specialists create an AVMS, it will probably be called an injury surveillance system. AVMS in Latin America, on the other hand, are almost always referred to as observatories.

The survey further highlights the fact that AVMS commonly collect data from a wide range of sources, although these always include some official statistics. The standard of data collection therefore partly reflects governments' willingness and ability to collect and provide accurate figures. Local governments and city authorities have been among the first to recognize the need for evidence-based approaches to armed violence. The survey confirms the central role of governments not only in providing data but also in funding AVMS. The majority of the surveyed AVMS are financed by local, regional, or national governments. At the multilateral level, the World Health Organization (WHO) and UNDP have been indispensable to the establishment of AVMS.

A comparative analysis of five AVMS in Colombia, Jamaica, South Africa, Sudan, and the United Kingdom (selected from the 20 AVMS participating in the survey) provides information on the application of the three key elements of an AVMS. It highlights the challenges inherent in ongoing data collection in a conflict-affected setting, where official data is often lacking, and suggests ways to overcome these challenges. The comparative analysis shows that an important part of the work of AVMS is the promotion of quality data through the provision of technical assistance to official sources and applying consistent definitions and classification.

The Working Paper concludes with a number of key observations that are relevant when establishing an AVMS:

- The role of the government is central in any AVMS, making constructive cooperation between an AVMS and the government indispensable.
- The 'whole-of-government' capacity of an AVMS is one of its major assets. AVMS enable coordinated action and facilitate a whole-of-government approach in programming and policy-making.

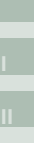
- ‘Surveillance for the sake of surveillance is a poor use of resources’ (Holder et al., 2001, p. 16). Linking evidence to programming is a critical part of preventing and reducing violence.
- Systematic data collection not only helps policy-makers to develop effective prevention strategies, but it can also be used by practitioners to measure the impact of those strategies on levels of armed violence in a given community.
- Financial considerations should not hinder the establishment of an AVMS. Through forms designed to record information on incidents of armed violence, and through the use of open-source software that allows this information to be fed into a central database, cost-effective AVMS can be established in countries with limited financial resources.



Governments, development practitioners, and United Nations agencies spend billions of dollars every year on development programmes and humanitarian interventions. They are increasingly looking for ways to ensure that resources are used effectively and to support interventions with a proven record of success. The Paris Declaration of the Organisation of Economic Co-operation and Development (OECD), endorsed on 2 March 2005, is an international agreement that calls for an increased commitment in harmonization, alignment, and aid management with a set of measurable actions and indicators. Its follow-up agreement, the Accra Declaration, also calls for commitments to guarantee the measurability of aid effectiveness (OECD, n.d.).

Evidence-based policy-making can be defined as an approach that ‘helps people make well informed decisions about policies, programmes and projects by putting the best available evidence from research at the heart of policy development and implementation’ (Davies, 2004, p. 3). It assists the design of governmental policy by conducting a diagnosis of the issue at stake, identifying a target audience, judging a programme’s effectiveness, and evaluating the need for future funding. As such, evidence-based policy-making adds to the efficiency of service delivery by the international community, which is thus accountable to affected groups. Not surprisingly, this approach is widely practised and much literature is dedicated to improving it.¹

Evidence-based policy-making has also gained popularity in relation to the prevention and reduction of armed violence. For the purposes of this study, armed violence is defined as the ‘intentional use of illegitimate force (actual or threatened) with arms or explosives, against a person, group, community, or state, that undermines people-centred security and/or sustainable development’ (Geneva Declaration Secretariat, 2008, p. 2). The concept is a holistic one and includes all forms of armed violence—from armed conflicts, gang violence, political assassinations, and extrajudicial killings to street crimes, muggings, robbery, bar fights involving youths, and sexual and intimate-partner violence.



New mechanisms and research tools are being developed to support evidence-based policy-making in the field of armed violence prevention and reduction. One approach is the establishment of armed violence monitoring systems (AVMS). An AVMS entails the ongoing and systematic collection and analysis of data on armed violence. These systems have assisted international organizations, states, and municipalities to clarify the prioritization and diagnosis of armed violence prevention and reduction initiatives. Consequently, state actors, communities affected by armed violence, as well as public and private entities increasingly support and provide the necessary resources to create AVMS.

This report is designed to inform policy-makers and practitioners; experts engaged in AVMS; and researchers and academics who work on developing indicators that capture the scale and scope of armed violence on a local, national, or global level.

Specifically, this paper aims to:

- clarify the concepts and provide a list of criteria that define AVMS;
- shed light on the work and nature of existing AVMS;
- compare selected AVMS from different geographical settings;
- identify the links between AVMS and armed violence prevention and reduction programming and policy-making;
- provide information about emerging lessons learned.

Section I provides a framework for the analysis of different types of AVMS, identified on the basis of a substantive literature review. It looks at three approaches regarding the prevention and reduction of armed violence and then describes three key activities that are characteristic of an AVMS. Section II presents the findings of a survey conducted among a convenience sample of 20 AVMS. While there are countless AVMS activities around the world—ranging from regional conflict early warning systems to municipal crime observatories and hospital-based injury surveillance systems—the sample presented in this report provides key insights into the work of AVMS in general. Section III compares five AVMS from Colombia, Jamaica, South Africa, Sudan, and the United Kingdom. The case studies were selected from among the 20 AVMS participating in the survey. They show the relative diversity of the different forms of AVMS and review applications of their various activities. The paper concludes by providing a number of observations that are relevant to the establishment of an AVMS.



I. A framework for armed violence monitoring systems

A substantive literature review carried out for this report has provided important insight into the different approaches to the prevention and reduction of armed violence. Broadly speaking, three different approaches emphasize the importance of systematic and ongoing data collection for the planning of armed violence prevention and reduction programming: 1) a conflict prevention approach, 2) a criminal justice approach to crime prevention, and 3) a public health approach to violence prevention.² While the first approach traditionally focuses on armed conflicts, the other two consider non-conflict settings. It is important to note that both the public health and the criminal justice approaches can also contribute to conflict prevention, the latter especially in areas where high levels of gang violence have effectively created armed conflicts.

All three approaches have defined their own type of AVMS. Conflict prevention experts have set up early warning systems; criminologists have launched crime observatories; and public health specialists have established injury surveillance systems.

Across the board, all three types of AVMS feature some common key elements and characteristics. They all acknowledge that armed violence is complex and that countless aspects determine its scope and scale, its causes and consequences.³ The different aspects of armed violence are connected in complex ways and cannot be understood separately.

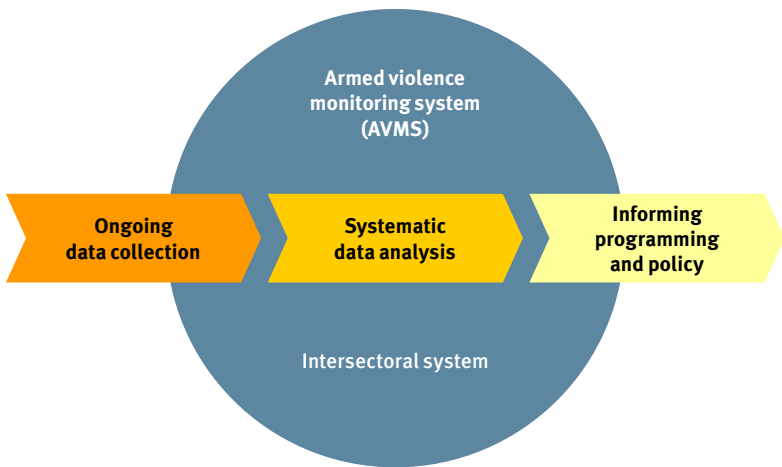
Within the framework of an AVMS, different actors increasingly collaborate within departments, or among agencies and levels of government, and between public, private, and non-profit sectors in order to collect information on armed violence from a broad range of sources. Such data gathering enables a comprehensive analysis of incidents of armed violence, their causes, and their consequences. This type of intersectoral synergy is also known as a ‘whole-of-government’ approach,

where a government actively uses formal and/or informal networks across the different agencies within that government to coordinate the design and implementation of the range of interventions that the government’s agencies will be

making in order to increase the effectiveness of those interventions in achieving the desired objectives (OECD, 2006, p. 14).

Consequently, an AVMS can be defined as an intersectoral system that a) gathers data on an ongoing and regular basis, b) systematically analyses the data, including the nature of the armed violence, and c) disseminates the information with a view to informing evidence-based programming and policy-making to prevent and reduce armed violence (see Figure 1). The following sections describe the three approaches and present the three key activities of AVMS.

FIGURE 1 The AVMS framework



Three approaches to the monitoring of armed violence

The concept of data collection for the sake of active prevention of armed conflicts was developed during the cold war. Monitoring systems were established in the 1950s in the field of national military intelligence and became known as ‘early warning systems’ (Wulf and Debiel, 2009, p. 3). Today the term ‘early warning system’ is also used to define mechanisms ranging from those that track the outbreak of disease and natural disasters to those that capture signs of drought, famine, and climate change. They are accompanied by a vast amount of research activities and literature dedicated to improving their effectiveness and efficiency.⁴

Criminologists have emphasized the need to apply evidence-based policy-making to the prevention of armed violence outside conflict settings for many decades. Since its foundation, the United Nations has been active in the

development and promotion of internationally recognized principles in crime prevention and criminal justice, with UN conferences on crime prevention and criminal justice held every five years since 1955. In 1992, the UN published the first compendium of standards and norms on crime prevention and criminal justice (UNODC, 2006). Crime prevention is now recognized as a multisectoral and integrated endeavour that is informed by an evidence base and the examination of underlying crime factors. Crime observatories have been established in order to support this work (see Box 1).⁵

Box 1 Types of AVMS

■ **Conflict early warning system**

An early warning system is ‘any initiative that focuses on systematic data collection, analysis and/or formulation of recommendations, including risk assessment and information sharing, regardless of topic, whether they are quantitative, qualitative or a blend of both’ (Austin, 2004, p. 2). Conflict early warning systems are set up ‘in the latent stages of a perceived potential armed conflict with the aim [of] reduction, resolution or transformation’ (p. 2).

■ **Crime observatory**

A crime observatory involves ‘ongoing research undertaken by municipalities to monitor crime trends and patterns to influence effective policy development to address current issues and identify emerging problems’ (ICPC, 2010, p. 198, n. 845).

■ **Injury surveillance system**

Injury surveillance systems undertake ‘ongoing, systematic collection, analysis, and interpretation of health data essential to the planning, implementation, and evaluation of health practice, closely integrated with the timely dissemination of this data to key stakeholders. The final link of the surveillance chain is the application of the data to prevention and control. A surveillance system includes a functional capacity for data collection, analysis, and dissemination linked to public health programmes’ (Holder et al., 2001, p. 11, n. 3).

The public health approach to the prevention of armed violence has its roots in a landmark workshop on violence and public health convened by US Surgeon General C. Everett Koop in 1985. Until that time, many viewed armed violence exclusively as an issue of international security or criminal justice. The workshop signalled the entry of public health into the field of violence prevention and set the stage for public health specialists to engage in the prevention of armed violence. The public health approach also highlights the importance of gathering evidence to define preventive solutions. In 1996, the 49th World Health Assembly adopted Resolution WHA49.25, declaring

violence a major and growing public health problem across the world. Six years later, WHO released its *World Report on Violence and Health*, which consolidates the organization's efforts to apply an evidence-based approach to the prevention of all types of violence (WHO, 2002). Public health specialists have since published guidelines on the collection of data and the establishment of injury surveillance systems.⁶

Activity 1: ongoing data collection

Most AVMS collect data on a number of key indicators of armed violence, from the number of people killed and injured to the number of victims of violent assault (such as robberies and threats) and sexual or domestic violence. Sources of data on these key indicators include criminal justice and vital registration statistics, information from hospitals and morgues, reports from non-governmental organizations (NGOs) and international organizations, media reports, and household surveys (see Annexe 2).

A Jamaican police officer marks a seized handgun at a police station in Kingston, Jamaica, May 2009.
© Ricardo Arduengo/AP Photo



Criminal justice statistics are a major source of data on homicides and other crimes, such as rapes and robberies. They record all the incidents reported to the police and classified as illegal. Beyond that, the vital registration system provides information on the most basic population statistics, including causes of death. Where vital registration data is missing, morgues may provide alternative data since they typically store corpses and often keep records of the causes of death. Hospital records tend to be used to access information on severe, but non-fatal, injuries. Media data or information from community groups such as local NGOs are used to fill the gap if official statistics are inadequate. These resources are of special relevance in conflict settings, where official data is often missing altogether.

All of these sources are biased in favour of settings with functioning governmental registration systems or good media coverage. They do not capture the more subtle impacts of violence, such as domestic, sexual, and intimate-partner violence, or perceptions of insecurity. To assess the incidence of violent acts in a given community, many researchers thus rely on survey data.

Each data source suffers from specific limitations (see Annexe 2). To compensate for the limitations, AVMS make use of several data sources and pool them together. By overlaying different data sources, a more complete picture of the complex phenomenon of armed violence can be generated. This requires data to be comparable, which calls for careful consideration of the definitions and classifications used. An important part of the work of an AVMS is thus the promotion of quality data through the provision of technical assistance to official sources and the application of consistent definitions and classifications.

Public health specialists differentiate between passive and active surveillance. Active AVMS seek out and investigate information, with staff members regularly and actively contacting data sources or the population to gather information about armed violence in a given community. They might interview people affected by armed violence or consult secondary data to fill the information gap in countries where official statistics are lacking or where there are reasons to believe that the official statistics are inadequate. Active surveillance usually requires larger expenditures of human and financial resources (Holder et al., 2001, p. 11).

A passive AVMS, on the other hand, receives reports submitted from hospitals, the police, and other sources. In a passive AVMS, relevant information is usually collected in the course of doing other routine tasks. For example, doctors are routinely required to fill out death certificates for legal requirements. These forms can be used for medical insurance purposes, but they

can also provide valuable information for surveillance purposes. For a passive AVMS to be effective, it is important that the forms used to collect this information are designed with this dual function in mind, which should have no significant impact in terms of cost (Holder et al., 2001, p. 11). A form that is used for the death certificate can be designed in a way that allows for the addition of information on the instrument of violence, the geographical location of an incident, and information on perpetrators.

Activity 2: systematic data analysis

Each situation of armed violence is characterized by its own unique combination of drivers, dynamics, and effects. Raw statistics alone rarely allow for an understanding of the context-specific causes and consequences of armed violence. There is a need for further analysis and interpretation of raw data in order to draw out the most important features and to present information in a comprehensible way. One key activity of an AVMS thus involves the systematic analysis of available information. Case-by-case analysis of data helps to identify hotspots where incidents of armed violence occur in a given community and to understand the ‘who, what, where, when, and why’ of incidents of armed violence.

A systematic analysis of incidents of armed violence helps to undertake ‘a clear diagnosis of its context-specific geographic and demographic patterns, as well as risk and protective factors for armed violence’ (Bellis et al., 2010, p. 11). Yet the core indicators measuring victimization due to armed violence may not always be enough. The OECD points out that,

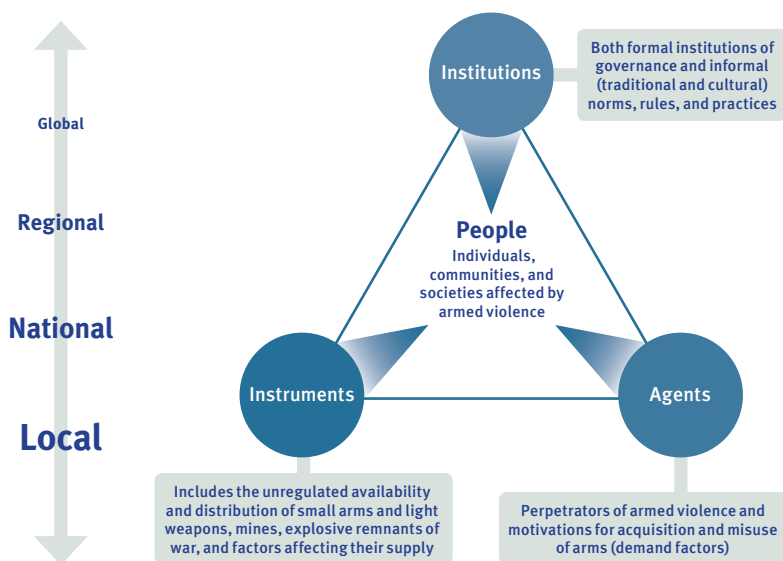
in some cases, using an indicator that tracks the number of homicides may not be a good indication of the social and economic distortion caused by armed violence. This can be true in territories controlled by organised crime or warlords, where homicide rates can actually decrease as control over the population becomes solidified through the threat of violence alone (OECD, 2009b, p. 74)

The OECD’s ‘armed violence lens’ provides a helpful analytical framework that captures key features of armed violence (see Figure 2). The strength of the lens lies in its ability to be applied in both conflict and non-conflict settings and to be used by conflict prevention experts, criminologists, and public health specialists alike (OECD, 2009b, pp. 49–51).

A starting point for any analysis is the question of what is needed to make people (individuals, communities, and societies) feel safer and more secure in the particular context in which they live. Second, understanding the motivations of the agents (perpetrators) and the ways in which they are organized is essential to designing effective prevention initiatives. Third, it is important

FIGURE 2 The armed violence lens

SOURCE: OECD (2009b)



to assess the extent to which formal and informal institutions of governance contribute to people’s sense of security—or perpetrators’ demand for weapons. Fourth, the armed violence lens focuses on instruments. Although the widespread availability of weapons does not directly cause armed violence, it needs to be considered a key risk factor (OECD, 2009b, pp. 51–55).⁷ It is important to note that not all monitoring systems include an analysis of the type of weapon used in an incident. For example, more specialized monitoring systems set up to monitor gender-based violence may not focus on the instrument aspect in their analysis.

Activity 3: dissemination of information

‘Surveillance for the sake of surveillance is a poor use of resources’ (Holder et al., 2001, p. 16). Ultimately, all the steps taken in an AVMS are directed to the overall purpose of the exercise: to inform accurate and effective armed violence prevention strategies (see Box 2).

When implemented correctly, an AVMS ‘allows policy-makers to approach problems actively rather than reactively’ (ICPC, n.d.). It can inform the design of preventive measures that are adapted and tailored to local problems. Consequently, the dissemination of information to all key stakeholders

Box 2 Examples of armed violence prevention approaches

Some strategies that have proved promising include measures to reduce access to firearms, law enforcement and criminal justice interventions, firearm victimization programmes, and comprehensive community-based programmes. Whereas the first three types of programme involve direct work with victims or perpetrators and explicitly target risk factors that can yield a measurable decrease in armed violence, the fourth type entails broader development programmes.

Direct approaches

Measures to reduce access to firearms

- Legislation and regulation
- Disarmament programmes
- Gun-free zones

Law enforcement and criminal justice interventions

- Policing strategies
- Sentence-enhancement laws
- Juvenile gun courts
- Criminal justice system reforms

Firearm injury prevention programmes

- School-based safety education
- Community-based gun safety programmes
- Hospital-based violence prevention programmes
- Public education and awareness campaigns

Comprehensive community-based programmes

- Public safety and community security programmes
- Addressing gang violence through community-oriented, multi-strategy interventions

Indirect approaches

- Parenting programmes
- Life skills and social development
- Academic enrichment programmes
- Mentoring programmes
- Reducing access to and harmful use of alcohol
- Environmental and urban design
- Disrupting illegal drug markets
- Programmes to reduce inequalities

Source: Bellis et al. (2010, p. 7)

involved in programming and policy-making is crucial to the effectiveness of an AVMS. The intersectoral nature of an AVMS is a major asset in this regard. Effective AVMS coordinate action among policy-makers and programming stakeholders by bringing different government agencies, health and social

services, and security and justice providers together and supporting the development of coordinated programming.

A successful AVMS is not only able to inform policy-makers on how to develop prevention strategies, but it can also be used by practitioners to retrospectively measure the impact of these strategies on levels of armed violence in a community. In this context, the dissemination of information to key stakeholders is crucial. 'Local stakeholders are best placed to identify appropriate benchmarks of success' (OECD, 2009b, p. 73).

A poster calls for an end to gun crime in Liverpool, UK. © Mark Henley/Panos Pictures





II. Survey findings

In the past few decades, AVMS have become an important tool for better understanding the scale and distribution of armed violence. Consequently, UNDP has observed that national governments are increasingly requesting support for AVMS. Currently, UNDP supports AVMS in Bosnia and Herzegovina, the Caribbean, Colombia, Croatia, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Kenya, Somalia, South-eastern and Eastern Europe, and Sudan.

Most of the UNDP-supported AVMS operate at the city and regional levels and are led by public entities with financial support from multiple sources. Annual budgets run from less than USD 100,000 (Croatia) to more than USD 2 million (Sudan). The systems supported by UNDP generally collect data on homicides, assaults, and sexual violence. Information is gathered from police and forensic data, but some also collect information from community surveys and public health enterprises. Data is normally disaggregated by several demographic factors, then mapped and statistically analysed using systems such as Google Maps, SPSS, and Access.

Data collected from these systems is used to inform the planning process of intervention strategies. Hotspots and populations at risk of perpetrating or falling victim to acts of violence can be identified through these mechanisms. Data is collected on predetermined intervals ranging from daily to annually. The AVMS also help to create a baseline of armed violence and to measure the impact of different interventions to reduce or prevent violence. As opposed to making an assessment that provides a snapshot of the context as done through surveys, these AVMS produce continuous and consistent information. This allows for better impact assessments and helps capture information on unintended consequences.

Although government interest in AVMS is on the rise and much has been written on the monitoring of armed violence in general, there are only a few comparative studies on AVMS. Two of these are especially worth noting. In 2008 the Research Centre on Health and Violence (Centro de Investigaciones de Salud y Violencia, CISALVA) of the University of Valle in Colombia compared 33 violence observatories in Latin America. It described their focus of work as ranging from monitoring citizen security in general (58 per cent) to the

observation of gender-based violence (21 per cent) and other forms of violence, such as youth violence or political violence (21 per cent).⁸ In 2008 the International Centre for the Prevention of Crime (ICPC) in Montreal presented a paper on crime observatories. It was based on an online questionnaire that was sent to a total of 102 institutions that monitor crime and violence. Among these, 17 organizations met the ICPC's definition of a crime observatory.⁹

For this study, a survey was conducted based on a convenience sample of 20 AVMS. The results shed light on institutional settings of these AVMS; data sources used; type of indicators collected; annual budgets and financial support; as well as the software tools applied. The responses from the 20 AVMS, together with an extensive literature review, form the basis of the analysis of this section.

Survey methodology

A list of 70 AVMS was put together on the basis of the 33 violence observatories identified by the CISALVA Institute, the 17 organizations defined by the ICPC, a number of violence monitoring systems supported and recommended by UNDP, and injury surveillance systems recommended by WHO. A short questionnaire was sent to this non-representative and illustrative sample (see Annexe 3); 20 of the 70 AVMS completed the questionnaire (see Annexe 1).¹⁰

Out of these 20 AVMS, six were established or are supported or run by UNDP. They are 1) the Observatory on Conflict and Violence Prevention in Somalia (OCVP); 2) the Crisis and Recovery Mapping and Analysis Project in Sudan; 3) the Observatorio Nacional de Violencia y Delincuencia in El Salvador; 4) the Observatorio de la Violencia in Honduras; 5) the Community Policing Information System in Croatia; and 6) the Centro de Estudio y Análisis en Convivencia y Seguridad Ciudadana.

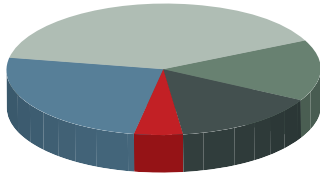
The sample represents only a fraction of a far greater universe of AVMS. Nearly two-thirds of the 20 AVMS are in Latin America (four in Central America and the Caribbean and eight in South America), while Asia is not represented. This geographical distribution is not representative of the actual presence of AVMS across the globe; rather, it is a result of selecting the two main studies by the CISALVA Institute and the ICPC. Yet experts agree that Latin America has some of the most innovative approaches to reducing and preventing armed violence, including some of the most elaborate AVMS.

Types of AVMS

As described in Section I, the term AVMS refers to a wide range of systems dedicated to the ongoing and systematic measuring and monitoring of armed violence. A substantive literature review reveals that there are three major types of AVMS: 1) early warning systems, 2) crime observatories, and 3) injury surveillance systems. Graph 1 shows that of the AVMS that took part in this survey, 25 per cent describe themselves as injury surveillance systems, 15 per cent see themselves as crime observatories, and 5 per cent function as conflict early warning systems; another 40 per cent of the AVMS describe themselves as violence observatories.

The survey highlights that the categories are fluid. The OCVP in Somalia, for example, includes a strong conflict early warning component. It was established in January 2010 as part of UNDP's Community Safety project in Somaliland. Hosted by the University of Hargeisa, it is intended to form the central node for an Early Warning and Response Network (EWARN), which will be built up at a later stage and which will include academic institutions, civil society, and government and UN agencies working on community safety in Somalia.¹¹

Graph 1 AVMS by type



- Early warning systems (5%)
- Injury surveillance systems (25%)
- Violence observatories (40%)
- Crime observatories (15%)
- Other (15%)

Whether an AVMS calls itself a crime or a violence observatory, an injury surveillance system, or an early warning system largely depends on the theoretical approach of the experts who established the system and the geographical setting. If public health specialists have founded an AVMS, it is probably called an injury surveillance system (see the case study on South Africa in Section III). AVMS in Latin America, on the other hand, are almost always referred to as observatories.

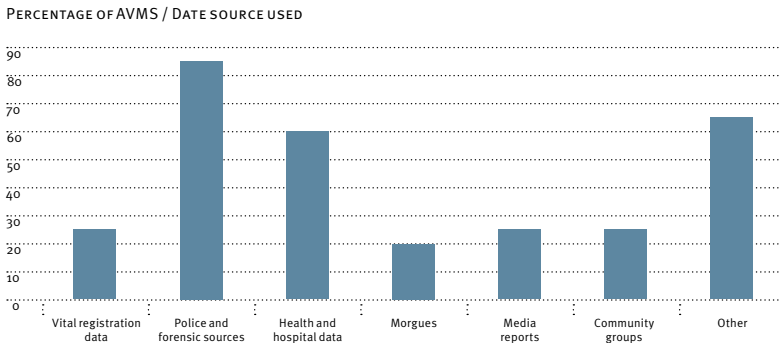
The AVMS that define themselves as 'other' types are the National Registration System on Family-related and Sexual Violence in Peru (Sistema Nacional de Registro en Violencia Familiar y Sexual), Colombia's Observatory on Human Rights and International Humanitarian Law (Observatorio de Derechos Humanos y Derecho Internacional Humanitario, OBSERDH), and the CISALVA Institute itself. Peru's AVMS functions as the backbone of the Free Women's Emergency Centres, which offer free telephone counselling. It cross-references the information produced in incoming calls with the National Police of Peru, the prosecution office, and print and television media.

The OBSERDH in Bogotá follows a broader approach than most of the other AVMS. In addition to violent crimes and armed conflict, it also monitors human rights abuses. The OBSERDH publishes a wide range of reports on various issues—from national homicide patterns to challenges in the implementation of social and cultural rights.¹² The CISALVA Institute is not a monitoring system itself but rather a centre of competence for AVMS in the Latin American region. Together with the Inter-American Development Bank (IADB), it has developed a methodology for municipal AVMS, to which it referred in the questionnaire (see the Colombia case study in Section III).¹³ It has further helped to set up AVMS not only in Colombia, but also in Brazil, El Salvador, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Peru, and Trinidad and Tobago.

Data collection

All of the surveyed AVMS collect data from at least one governmental source (see Graph 2); police and forensic services are the most common sources used. AVMS also make regular use of other sources not listed here. The Australian National Homicide Monitoring Programme, for example, includes information from coroners' reports. The programme aims to inform public policy on the prevention and control of violence by identifying on a case-by-case basis as precisely as possible the characteristics of individuals who are at risk of perpetrating or falling victim to homicide, and the circumstances that contribute to the likelihood of a homicide actually occurring.

Graph 2 Percentage of surveyed AVMS by data source used (multiple responses)



The Violence Observatory in Honduras (Observatorio de la Violencia de Honduras), for example, was established in June 2006 with financial and

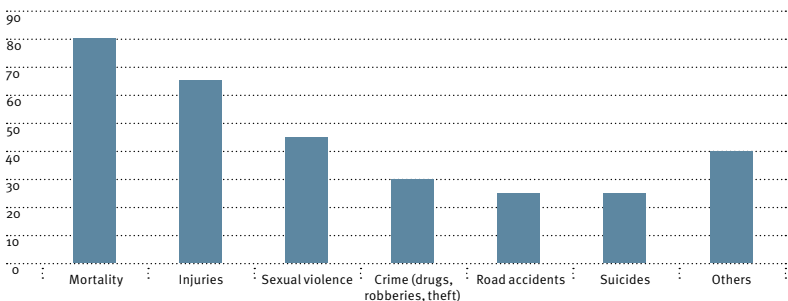
technical support from UNDP and the Swedish International Development Cooperation Agency (SIDA). In order to collect comprehensive data on a regular basis, the observatory established collaborative ties with several data sources, including medical forensics in different institutions, the Hospital Escuela, the head of criminal investigation, and the head of the preventive police (Policía Preventiva). UNDP and SIDA assist its local partners in the purchase of technical instruments and materials, in providing adequate training to utilize pertinent technology, and in training key professionals to systematize and analyse data on violent deaths throughout the country.

As data collection typically includes official statistics, the standard of data collection largely depends on a government's willingness and ability to collect and provide accurate figures. In situations where governmental institutions are fragile or non-existent, or in countries where the government itself is involved in an armed conflict or other incidents of armed violence, AVMS must resort to gathering data by conducting surveys and through other costly means (see the Sudan case study in Section III).

Mortality is the most common indicator monitored (see Graph 3). Data on non-fatal injuries and on sexual violence are also frequently collected, as are mortality data resulting from road accidents and suicide. Most AVMS collect data on multiple indicators, while some gather data on the entire spectrum of indicators. The National Violence and Crime Observatory in Uruguay (Observatorio Nacional sobre Violencia y Criminalidad) is an example of the latter. It is run out of the Division of Statistics and Strategic Analysis within the Ministry of Interior and collects data on mortality, violence-related injuries, sexual violence, and other types of crime (such as robberies), as well as mortality due to road accidents and suicides.

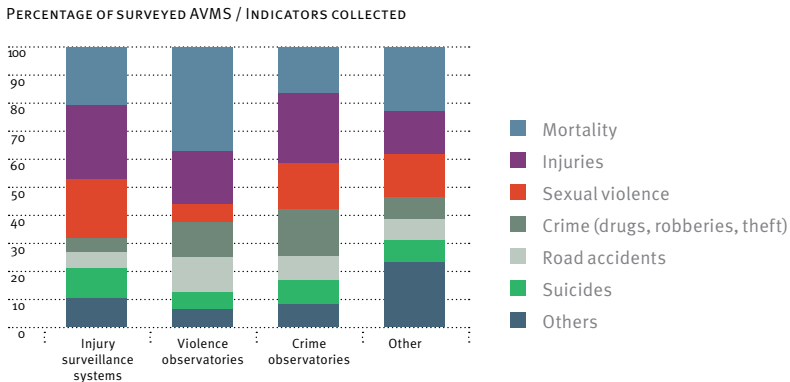
Graph 3 Percentage of surveyed AVMS by indicators collected (multiple responses)

PERCENTAGE OF AVMS / INDICATORS COLLECTED



A comparison of different types of AVMS and their indicators confirms that injury surveillance systems, violence and crime observatories, and other forms of AVMS are very similar entities (see Graph 4). While injury surveillance systems focus more on the direct physical harm caused by armed violence (mortality, injury, and suicide), crime observatories put slightly more emphasis on the monitoring of other crimes, such as robberies or illegal drug abuse. Violence observatories are situated somewhere between those two types, with a strong focus on violence-related mortality. However, the distinctions are small, supporting the decision to group them together as AVMS in this paper.

Graph 4 Percentage of surveyed AVMS by type and indicators collected

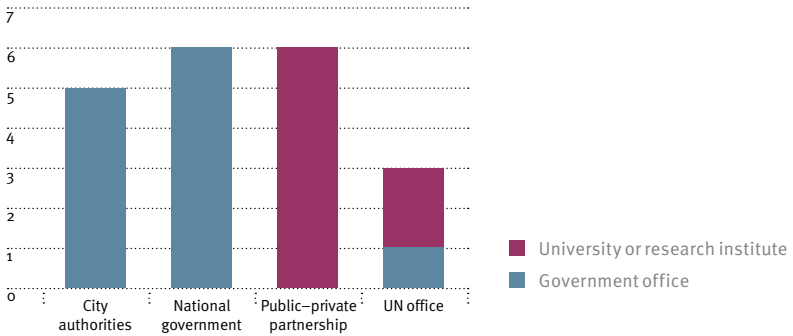


Institutional setting

Local governments—especially city authorities—have been among the first to recognize the need for evidence-based approaches to armed violence. Local authorities are often most immediately confronted with armed violence and are thus the most inclined to respond (UN, 2010). Nowadays, many national governments have followed the lead of city authorities and have set up AVMS at the national level. Graph 5 shows that five AVMS participating in this study were established by city authorities and six were set up by national governments. These 11 AVMS are run out of governmental offices, including governmental health facilities or criminal justice offices. This corresponds to the findings of the ICPC study of 2008, which states that ten out of the 17 AVMS analysed were run by a government organization, or were associated with government offices.

Graph 5 Institutions that run AVMS

NUMBER OF AVMS / LEAD AGENCY



Three AVMS were established under the leadership of a UN agency. These are the Violence Observatory in Honduras (see below), the Crisis and Recovery Mapping and Analysis Project in Sudan (see Section III), and the OCPV in Somalia (see above).

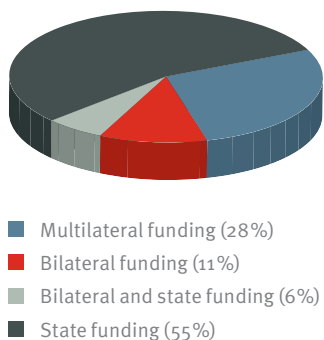
Of note is the approach taken by the six AVMS that were set up as public-private partnerships. They are typically run out of universities or research institutes, but they work together with governmental offices. They are the Crime Observatory of Toulouse (Mission d'observation de la délinquance de l'agglomération toulousaine, MODAT) in France; the National Injury Mortality Surveillance System (NIMSS) in South Africa; the Crime Observatory in Jamaica; the CISALVA Institute in Colombia; the Violence Indicator Profiles for the English Regions; and the Trauma and Injury Intelligence Group in the United Kingdom. The cases of Colombia, Jamaica, South Africa, and the United Kingdom are described in detail in Section III.

MODAT was set up following the municipality of Toulouse's approval of the 'local security contract' in 1999 (GIPCVAT, 2004, p. 48). The contract called for the ongoing and systematic evaluation of the local security situation. MODAT is run by an academic research institute called Ressources & Territoires and employs researchers, experts, statisticians, and students. It collects data on indicators related to crime and insecurity and conducts studies and research on crime in the public and private spheres. MODAT works closely with local policy-makers, participates in the development of crime prevention programmes, and functions as a platform for the exchange of and debate on issues of insecurity (p. 48).

Financial support

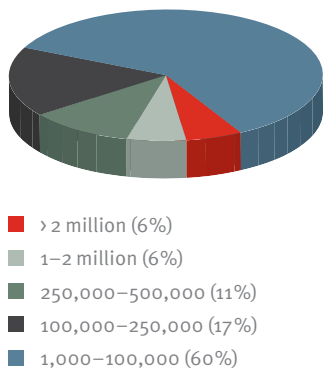
A review of the financial support for AVMS confirms the central role of governments supporting this domain. Graph 6 indicates that the majority of the AVMS that took part in this survey (55 per cent) are funded by local, regional, or national governments, including municipalities. The rest of the AVMS receive bilateral, multilateral, or mixed international funding.

Graph 6 Percentage of AVMS by type of support (n = 18)



At a multilateral level, two UN agencies have been indispensable to the establishment of AVMS: WHO and UNDP. WHO supports a number of hospital-based injury surveillance systems in selected low-income countries and has published a range of technical guidelines on injury surveillance.¹⁴ In addition, WHO helped to set up the Violence Prevention Alliance (VPA), a network of WHO member states, international agencies, and civil society organizations working to prevent violence. Among other things, the VPA has established a crime observatory in Jamaica (see Section III).

Graph 7 Percentage of AVMS by annual budget, in USD (n = 18)



AVMS require trained staff as well as a certain level of infrastructure. As Graph 7 shows, however, 60 per cent of the AVMS that have taken part in this survey have indicated that their annual budget is below USD 100,000. The wide range in annual budget—from less than USD 100,000 to more than USD 2 million—can mainly be explained by the difference between active and passive AVMS (see Section I). In a passive AVMS, relevant information is collected while undertaking other routine tasks. Through the development of open-source software systems and Internet-based applications

such as Google Maps, AVMS have been made accessible to a wide range of potential partners as a rather inexpensive tool.

The UNDP-supported Crime Observatory in Croatia, for example, is a passive AVMS. It functions as a community policing information system, a new,

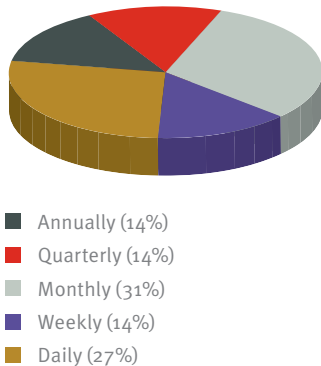
geographically determined database that allows easy identification of crime hotspots. The Community Policing Information System in Croatia is not an intersectoral AVMS; it is limited in its focus and has a relatively small annual budget of less than USD 100,000. Nevertheless, its impact is considered substantial. Its information on hotspots of armed violence is informing decisions about where to establish Crime Prevention Councils (including representatives of the mayor's office, community police, and civil society), along with small-scale infrastructure projects aimed at increasing community safety.

Active AVMS, on the other hand, employ staff members to regularly contact data sources or the population to seek information about armed violence in a given community. This type of activity requires a significantly larger budget (see the Sudan case study in Section III).

Software

Graph 8 shows that the AVMS under review collect data on a daily (27 per cent), weekly (14 per cent), monthly (31 per cent), quarterly (14 per cent), and annual (14 per cent) basis. The monitoring systems that collect data on a daily basis are mostly passive systems (see Section I). They collect information in real time, thanks to software that transfers data entries automatically to a central AVMS.

Graph 8 Percentage of AVMS by frequency of data collection



The Injury Surveillance System in El Salvador (Sistema de Información de Lesiones de Causa Externa, SILEX), for example, tracks violence-related injuries based on a specially designed Web application that allows for real-time data collection. The open-source software (PHP and MySQL) simply requires a computer with Internet access. The system has built-in control mechanisms that prevent the generation of inconsistencies, such as a child under five years of age with a previous pregnancy or a man having an abortion after rape. The SILEX Web application is equipped with

tools that facilitate the creation of tables and graphs (Salinas et al., 2008). At this writing, the software had been installed in a total of 38 hospitals where information on injuries can be entered into the system.

In addition to software tools developed in-house, AVMS typically make use of Microsoft Access, Microsoft Excel, SPSS, EPI-Info, ArcView, Google Maps, or Stata. With the revolution of computer and information technologies, geographic information systems (GIS) are now commonly used to graphically publish data. In simple terms, GIS is the merging of cartography, statistical analysis, and database technology.

There are dozens of emerging and interactive Web services, commonly known as Web 2.0. They are radically changing the ways in which armed violence can be monitored by using digital information and the Internet. An innovative use of Web 2.0 is ‘crowdsourcing’, which can be described as the use of ‘a large group of people to report on a story’ (Okolloh, 2009, p. 65). The idea behind crowdsourcing is that events can be monitored by any eyewitness. With a large enough volume of reports, the proportion of false reports would diminish and events would be described as accurately as possible. Crowdsourcing has been hailed as:

a new buzzword in the world of humanitarian information. The combined power of mobile phones, mapping technology and social networking can enable citizens in crisis to seek help, facilitate aid deliveries, bear witness to abuses and hold governments and aid agencies more accountable (IRIN, 2010a).

In Kenya UNDP is supporting a crowdsourcing initiative called Uwiano Platform for Peace. The initiative was set up after post-election violence erupted in 2007. Eyewitnesses can send a text message from their mobile phones to a toll-free number (6397) to report a build-up of tension, hate speech, or incidents of armed violence. The messages are received and analysed at the office of the National Steering Committee on Peace-Building and Conflict Management—part of the Ministry of State for Provincial Administration and Internal Security—or by a separate team at PeaceNet, an NGO partner in the Uwiano programme (IRIN, 2010b).

Parallel to the establishment of the Uwiano Platform for Peace, a group of Kenyans pioneered open-source software called Ushahidi (meaning ‘testimony’ in Swahili), which integrates a series of Web 2.0 applications, including Web-based interactive maps. It allows users to track reports from specific locations to monitor hot spots of activity (Okolloh, 2009). The Ushahidi software was used throughout Kenya to map the post-election violence in late 2007 and early 2008; since then it has also been applied in many other humanitarian settings (see Box 3).

Box 3 The Ushahidi software

Ushahidi is the name of a website (<http://www.ushahidi.com>) and software that enables the collection of eyewitness reports of violence sent in by email and text message and their placement on a Google map. With 45,000 users in Kenya alone, the software developers saw the need for a platform that could be used by others around the world. Since early 2008, they have grown from an ad hoc group of volunteers into a focused organization. The team is comprised of individuals with a wide span of experience ranging from human rights work to software development.

The Crisis Map of Haiti, for example, is based on Ushahidi (<http://haiti.ushahidi.com>). It maps incidents of violence in near real time, reflecting reports coming from inside Haiti via SMS, the Web, email, radio, telephone, Twitter, Facebook, television, live streams, and other tools. Volunteers at the Fletcher School at Tufts University in Medford, Massachusetts, as well as in Washington, DC, Geneva, London, and Portland, Maine, then create the maps.

Another project using Ushahidi is the Christchurch Recovery Map (<http://eq.org.nz>). The website was launched immediately after the earthquake on 22 February 2011 in Christchurch, New Zealand. It mapped locations of services such as food, water, toilets, fuel, cash machines, and medical care. Information was gathered via Twitter messages, SMS, and email.

Ushahidi has also been used in post-earthquake Chile (<http://chile.ushahidi.com/>) and post-earthquake and post-tsunami Japan (<http://www.sinsai.info/ushahidi/>).

Sources: Ushahidi (n.d.a; n.d.b); Christchurch Recovery Map (n.d.)



III. Linking data to programming

The previous section of this report, Section II, presents the findings from the survey of 20 AVMS with a focus on institutional settings; data sources; indicators collected; the annual budgets and financial support; as well as the software tools used. While the survey results shed light on some basic information regarding different AVMS, they do not provide much comparative information on the intersectoral nature of AVMS or on the three main activities they carry out, namely 1) ongoing data collection, 2) systematic data analysis, and 3) the dissemination of policy-relevant findings to inform programming designed to prevent and reduce armed violence.

Of the 20 AVMS reviewed in this paper, five have been chosen for a more in-depth analysis. The choice was made based on the following three criteria: geographical setting, economic status (examples from low-, middle-, and high-income countries), and type of AVMS (early warning system, injury surveillance system, and crime observatory). The five case studies focus on AVMS in Colombia, Jamaica, South Africa, Sudan, and the United Kingdom. The information culled from the survey questionnaire was complemented with a substantive literature review on the five AVMS, as well as interviews with experts working in or on these AVMS.

Colombia

In the 1990s, Colombia experienced one of the highest crime rates in the world. In those years, ‘the annual homicide rate in Colombia [...] oscillated around 60 per 100 000 inhabitants; in 2000, the world’s average homicide rate was 8.8 per 100 000 inhabitants, which is about 7 times less than Colombia’s rate’ (Franco, 2003, p. 2033) To understand the patterns of violence and crimes, several municipalities started to collect and analyse data more systematically. The UNDP-supported Centre for Study and Analysis on Citizen Security in Bogotá (Centro de Estudio y Análisis en Convivencia y Seguridad Ciudadana), for example, conducts research on violence, conflicts, and crime in Bogotá.¹⁵

Building on such efforts in Bogotá, Cali (see Box 4), and other cities, the CISALVA Institute—together with the IADB and with the support of the

Colombia Programme of the Centre for Latin American Studies at the University of Georgetown—held a series of meetings with city council members in medium-sized cities to bolster municipal observatories. As a result, the CISALVA Institute and the IADB developed a so-called ‘regional system of standardised indicators of coexistence and citizen security’ (Sistema Regional de Indicadores Estandarizados de Convivencia y Seguridad Ciudadana). More than 20 municipal observatories have since followed suit and are applying the CISALVA–IADB system (Gutiérrez Martínez et al., 2007, p. 80).

Box 4 The DESEPAZ programme

In 1993, the mayor’s office in Cali, Colombia, launched a programme called ‘Desarrollo, Seguridad, Paz’ (Development, Security, Peace), or DESEPAZ, which includes an integrated violent death surveillance system. This system facilitates the collection of data on incidents of armed violence and helps to characterize the context of violence, identify risk and protective factors, and monitor the impact of violence reduction programmes on homicide rates.

The information on reported homicides from the police, forensic medicine, the attorney general’s office, and the department of transportation are integrated into a single database on a weekly basis. On the basis of this data, programmatic responses are developed. One intervention strategy implemented in the 1990s was the restriction of the carrying of firearms by civilians during high-risk periods such as weekends, holidays, and election days. It also included restrictions for those with legal permits to carry firearms.

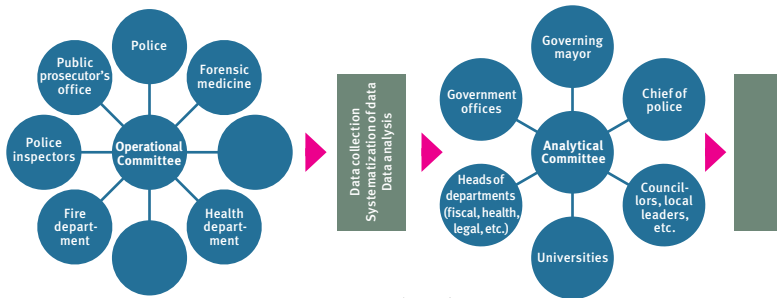
An evaluation of the impact of DESEPAZ associates the programme with a significant reduction in the homicide rate. ‘In Cali, the homicide rate during the intervention period (November 1993–December 1994) was 89 per 100,000 compared to 107.5 during non-intervention periods’ (Zavala and Hazen, 2008, p. 24).

Source: Zavala and Hazen (2009, pp. 24–25), based on Villaveces et al. (2000)

The CISALVA–IADB system proposes a structure that is centred on two committees: the Operative Committee and the Analytical Committee (see Figure 3). Both are intersectoral in nature. The Operative Committee includes representatives from the police, forensic medicine, the departments of traffic, health, and fire, and the public prosecutor’s office. It collects information in a regular and systematic manner and stores the data in a central location (CISALVA, 2008a). The same Operative Committee then validates the information obtained from each source on a case-by-case basis. The centralized data collection allows for cross-referencing and comparisons

between the different sources, which is important to avoid overlaps and double-counting and which also allows gaps to be identified. The systematization of the information enables the statistical analysis, geo-referencing, and the production of information-sharing tools, such as regular information bulletins (Gutiérrez Martínez et al., 2007). Hot spots, risk factors, and characteristics of armed violence can thus be identified.

Figure 3 Structure of municipal observatories following the CISALVA–IADB system



Source: CISALVA (2008a)

The CISALVA–IADB system typically follows an intersectoral and whole-of-government approach and conducts all three AVMS activities: ongoing data collection, systematic data analysis, and the dissemination of the findings with a view to supporting evidence-based policy-making and programming. The CISALVA–IADB system has established an Analytical Committee that includes not only the mayor of a municipality affected by armed violence and other representatives from the public sector, but also representatives from the private sector, universities, research institutions, and civil society. These stakeholders are brought together under the umbrella of the municipal crime observatory. On the basis of the data analysis, interventions are designed and later implemented (CISALVA, 2008a).

An evaluation of the municipal observatories using the CISALVA–IADB system shows that linking data to programming does not always guarantee that the data will be used. The findings reveal that smaller municipalities with a municipal observatory often have a tendency to adopt the violence prevention and reduction strategies employed by the leading municipalities in the area. This occurs despite the availability of on-site consultations from observatory staff. Nevertheless, the evaluation suggests that the continuity of the municipal observatories, combined with the participants' growing familiarity with and confidence in the use of the data, more tailor-made responses will be developed (Gutiérrez Martínez et al., 2007).

Jamaica

In 1998, faced with a dramatic increase of violence, the Jamaican Ministry of Health designed and implemented a Violence-Related Injury Surveillance System at the Kingston Public Hospital. Through this passive monitoring system, information on violence was integrated into the existing computerized patient administration system. It has proven efficient and cost-effective. Inspired by the success of this surveillance system, the Ministry of Health later expanded it and established the Jamaica Injury Surveillance System in major hospitals in the country to track all intentional and unintentional injuries.¹⁶

In 2004, the Violence Prevention Alliance launched the Jamaican Violence Prevention Alliance (VPA Jamaica)¹⁷ programme under the umbrella of the Ministry of Health. 'VPA participants share an evidence-based public health approach that targets the risk factors leading to violence and promotes multi-sectoral cooperation' (WHO, n.d.a.). VPA Jamaica is a typical example of an intersectoral network; WHO member states, international agencies such as UNDP, and civil society organizations are working together to address the root causes of violence, prevent violence, and improve services for victims. There are no costs associated with participating in the VPA, nor does the VPA remunerate participants.

In 2006, VPA Jamaica formed the Crime Observatory, which is operated under the Institute of Criminal Justice and Security (ICJS) at the University of the West Indies. An important innovation of the Observatory is the recognition that ranges of data sources are required to accurately assess and identify the nature and extent of crime in any one location. To this end the data from the Jamaica Injury Surveillance System is overlaid with police crime data as well as local data sources from churches, NGOs, and community organizations. The Crime Observatory then systematically analyses the data. It identifies hot spots using GIS technology guided by the Mona Geoinformatics Institute at the University of the West Indies.

The Observatory started to collect data on cases in the neighbourhoods of West Kingston, in the Granville community in St. James, and in the villages of Flankers and Norwood. In 2008, it 'successfully mapped homicides and crime hot spots in 10 communities across the island' (VPA, 2008, p. 6). The community's response to the armed violence data mapping has been very positive. Community organizations report feeling better informed about the characteristics of armed criminal activity in their neighbourhood (VPA, 2008). Within the Crime Observatory, UNDP finances an Organised Crime Watch (see Box 5).

Box 5 UNDP Organised Crime Watch

Following a 2007 conference on organized crime and politics that was supported by the University of the West Indies and UNDP, the ICJS was asked to develop an ‘Organised Crime Watch’ desk within the Crime Observatory. UNDP supports the desk as part of its Violence Prevention, Peace and Sustainable Development Programme.¹⁸ The project is currently in its second phase: the ICJS is analysing legislation related to organized crime; exploring the link between organized crime and violence; and informing policy.

Source: ICJS (n.d.)

The Observatory functions under the umbrella of the VPA and is therefore directly linked to the key stakeholders of violence prevention and reduction initiatives. As part of the work of the observatory, representatives of government and non-governmental agencies, staff of the Jamaica Constabulary Force, and representatives of the communities attend monthly meetings. The meetings offer a forum for presenting data on crime and violence in the communities, discussing root causes of violence, and agreeing on peace-building strategies (VPA, 2009, p. 3). The observatory is further involved in measuring the impact of specific violence prevention and reduction programmes. Through the Crime Observatory, VPA Jamaica started a study on ‘Making Communities Safe: Activities and Practices towards Building a Safer Community’ in 2009. This research evaluates the effectiveness of community-based peace maintenance and peace-building practices (VPA, 2009).

The VPA is focused on alliance building, sharing findings and best practices, and conducting joint activities that bring together the multiple skills and inputs necessary to reduce violence within these communities. A VPA Jamaica review of police data gathered since 2001 has found that there has been a 42 per cent drop in homicides in Kingston (in the four Kingston Metropolitan Area police divisions of Kingston Central, Kingston East, Kingston West, and St. Andrew Central). It considers the reduction in homicides the result of the work by government agencies along with many NGOs (VPA, 2009, p. 1).

South Africa

In 1999, the South African government established the National Injury Mortality Surveillance System (NIMSS) as a permanent system to register all injury (or non-natural) deaths that occur in South Africa on an annual basis. The NIMSS is co-hosted by the Medical Research Council and the University of South Africa. The added value of this intersectoral institution lies in its



A young male suspected of rape is brought to the Simelela Centre in Khayelitsha for forensic evidence gathering. The centre provides medical and support services to rape survivors and is integrated with the police, justice and health departments. © George Philipas/AMO/Panos Pictures

approach of overlaying different data sources and collecting data from a variety of sources on an ongoing basis.

From 1999 to 2007, the NIMSS increased its geographical area of focus. While in the beginning it collected data from 15 morgues in 5 of 9 provinces, by 2007 this number had increased to 39 morgues in 7 provinces. This gradual increase has contributed substantially to the scope and overall coverage of information collected by the NIMSS, which now spans across both urban and rural areas of South Africa. The NIMSS collates routinely collected information from several data sources and different points in the medico-investigative procedure, namely: post-mortem reports, information from the South African Police, chemical pathology laboratory results, and criminal justice system reports. It is estimated that the data collected by the NIMSS in 2007 covered between 42 and 49 per cent of all non-natural mortality in the country, which makes the NIMSS the source of the most detailed information on the 'who, what, where, when, and why' of fatal injuries in South Africa (Donson, 2008, pp. 2–3).

The systematic analysis of the data is an important aspect of the work of the NIMSS. Its annual report summarizes the data from all morgues that participated during the reporting year. Standard analyses describe the role of various lethal means, such as firearms, sharp implements, and explosives, in homicides and suicides among men, women, and children. According to the 2007 NIMSS report, interpersonal violence was the main cause of death, accounting for 36 per cent of all deaths (Donson, 2008, p. x).

In contrast to the AVMS reviewed in the case studies on Colombia and Jamaica, the NIMSS has not created its own platform for bringing policy-makers and programming stakeholders together; instead, it only publishes its annual reports on its website. Yet while the NIMSS is not directly linked to programmes, there is evidence that merely disseminating the data within the public domain has advantageous consequences in terms of awareness raising and advocacy. For example, NIMSS data has informed gun control advocates in shaping stricter laws in South Africa, such as the Firearms Control Act of 2000, and in averting recent attempts to relax them (see Box 6). The NIMSS further helps in evaluating the impact of direct and indirect interventions that are expected to reduce some of the major causes of fatal injury (Kirsten, 2008).

Box 6 The Firearms Control Act

The Firearms Control Act of 2000, promulgated on 1 July 2004, sets out how the government must license firearms. It defines under what circumstances the particular use of a gun is a criminal offence, for example when keeping an unreported gun at home. The Act requires that when a firearm is not under the direct control of its owner, it must be stored in a South African Bureau of Standards-approved safe, storeroom, or device. If this storage unit is at home, the owner must have exclusive access to it, and hunting and sports shooting firearms must be stored unloaded. Further, the Act gives the police the power to search and seize or to take body prints or bodily samples without warrants under ‘extraordinary and well-defined’ circumstances.

Moreover, the Act contains ‘presumptions’ that limit the ability of witnesses or suspects to remain silent by requiring them to raise reasonable doubts about their involvement in a particular crime—again under ‘extraordinary and well-defined’ circumstances. These include cases where illegal guns are found on particular premises or in vehicles and cases of drive-by shootings where the refusal of witnesses to provide information seriously impedes investigations. The Act also contains severe maximum sentences, ranging from two years for failing to store an antique gun properly to 25 years for trading illegally in firearms.

Source: Gun Free South Africa (2007)

Sudan

In 2007, in order to bolster an evidence-based and targeted approach to security promotion in Sudan, UNDP and the UK Department for International Development launched the Threat and Risk Mapping and Analysis system, which has since been renamed Crisis and Recovery Mapping and Analysis (CRMA) Project (UNDP and GDI, 2011). In short:

CRMA is a knowledge management system that provides a geo-referenced evidence-base for programming related to conflict and risks. In practice, it combines a set of databases with geographic information (maps) and simple software tools to generate a set of products and services (Nyheim and Albrecht, 2010, p. 9).

CRMA is a UNDP Direct Execution project, established to support multi-sector strategic planning. Apart from UNDP, CRMA key clients are governments (East Sudan, the three Protocol Areas, Darfur, and South Sudan) and the UN Resident Coordinator's Support Office (RCSO).¹⁹ In order to function independently from UNDP, it is run out of an office outside the UNDP building in Khartoum.

Working in a setting such as Sudan presents a number of challenges on the political, operational, and technical fronts. In view of the limited access to internationally available software, bandwidth, and technical capacity among partners, CRMA has developed a set of GIS-enabled support tools. The formats and software used are compatible with other GIS software, allowing for the possibility of merging different tools, or of fully migrating these to others. The Information Management Working Group, a joint unit of the UN and its partners, produces a standardized ArcView GIS package that enables complex data to be visualized and mapped, facilitating information sharing and analytic processes (IMWG, n.d.). Operational challenges arise in connection with access, security, bureaucratic impediments, the size of the country, and the logistical complexities inherent in moving around Sudan. Politically, the setting is not always stable and consistent efforts are needed to ensure that CRMA's purpose, process, and benefits are well understood.

Due to these challenges, CRMA cannot collect data at fixed intervals. As a result, its data is gathered 'from external agencies (international organizations, NGOs, and [the] government) and to a lesser extent generated through CRMA's own data collection processes' (Nyheim and Albrecht, 2010, p. 10). CRMA generates data on community perceptions of crisis and human security-related threats and risks; it also collects data on basic services and on 'who does what where'. CRMA is producing maps and short analytical reports for international actors involved in peace-building or developing conflict-

sensitive strategies. The project is run with 15 international and 12 national expert staff; the human resources absorb around 60 per cent of the annual budget of approximately USD 2 million (Nyheim and Albrecht, 2010, p. 10).

A review of CRMA's start-up phase shows that the most sophisticated level of development has been reached in East Sudan and the three Protocol Areas. A full cycle of risk mapping is conducted through data collection, validation, and the development of methodology together with key stakeholders. At this writing 'it is too early to draw conclusions on whether [...] CRMA has helped state governments (through evidence-based planning and programming) tackle conflict and risks at state level' (Nyheim and Albrecht, 2010, p. 18). Likewise, it is too early to tell whether evidence-based planning has helped RCSO and UNDP to better prevent and reduce conflict and risks. However, interviewed stakeholders confirmed that that CRMA has helped to introduce a culture of evidence-based programming and coordination among actors on the ground.²⁰

United Kingdom

Two AVMS from the United Kingdom have participated in this study: the Violence Indicator Profiles for the English Regions and the Trauma and Injury Intelligence Group (TIIG). Both AVMS are located at the Centre for Public Health of the Liverpool John Moores University (LJMU). The Centre acts as UK focal point for WHO violence and injury prevention activities. It chairs the Violence Prevention Alliance Working Group on Youth Violence, Alcohol and Nightlife and seeks to promote and facilitate a public health approach to violence prevention through research, systematic literature reviews, and the maintenance of databases for measuring and monitoring violence.²¹

This case study focuses on TIIG, an injury surveillance system covering north-western England, and reflects the characteristic intersectoral approach and engaging in the AVMS activities of data collection, analysis, and dissemination. It is run out of the LJMU from where it has established local partnerships with health services, ambulance services, the police, fire service, and other universities. TIIG systematically collects data on violence-related injuries with sources from the emergency departments, the North West Ambulance Service, and the fire and rescue service. TIIG works with data providers to promote the consistent collection of quality injury data and to improve the comparability of data between injury data sources.

TIIG publishes the information on its website and provides local partners with regular reports showing trends in injuries and identifying at-risk groups and

communities. It also offers a data request service that offers ad hoc analysis for local partners. TIIG's focused, analytical approach is particularly useful for local programming purposes. Data is disseminated on a monthly basis (bi-weekly in some areas) to partners from the police, community safety, health, and licensing authorities.

As a consequence, TIIG's data has been used by a variety of agencies to inform, monitor, and evaluate prevention strategies, to target policing and licensing enforcement in nightlife areas, and to identify at-risk communities; this approach allows partners to effectively target those most at risk (including through media campaigns). Concrete programming and policy examples include the Neighbourhood Renewal Project, the Campaign against Living Miserably, and the evaluation of the impact of the Alcohol Misuse Enforcement Campaign and the Licensing Act 2003. The TIIG data is not only used to develop and implement violence prevention activities, but also to monitor the activities once they are implemented. LJMU is involved in evaluating specific programmes (see Box 7).

Box 7 The Licensing Act 2003 and its impact

The Licensing Act 2003, introduced in November 2005, abolished set pub closing hours in England and Wales. The problems created by standardized closing times were a source of concern for many years. On the one hand, the simple fact of a closing time was thought to encourage some to drink as much as they could before the doors closed. On the other, standardized closing times meant that across the country large numbers of—mainly young—people in various states of drunkenness gushed into open public space and onto public transport simultaneously (Hough et al., 2008).

The TIIG data is not only used to develop and implement violence prevention activities, but also to monitor the activities once they are implemented. In 2007, TIIG evaluated the Licensing Act 2003 and found that it was associated with a significant reduction in the number of assault cases admitted to emergency rooms compared to previous years. Yet the study emphasizes that such positive effects, even if sustained and applicable to the nation as a whole, would have only a small impact on the growing social and economic burden of alcohol-related problems. Such interventions, it argues, should thus be seen as part of a wider programme of action, one that must also tackle the root causes of risky drinking and violence (Bellis, Anderson, and Hughes, 2007). Indeed, according to findings from the British Crime Survey, the surveyed victims believed offenders to be under the influence of alcohol in half of all violent incidents (Flatley et al., 2010, p. 60).

Comparative analysis

The five examples from Colombia, Jamaica, South Africa, Sudan, and the United Kingdom demonstrate how AVMS function in different geographical and political contexts and highlight how data has been received by policy-makers and programming stakeholders. They provide information on the impact of AVMS on evidence-based programming. A comparative analysis highlights the importance of the three key activities of any AVMS, but also identifies challenges that may arise in different contexts (see Table 1 on page 46). With the exception of CRMA in Sudan, all are set up as intersectoral institutions.

The first key activity of an AVMS is systematic data collection. A review of CRMA in Sudan highlights the challenges inherent in ongoing data collection in a conflict-affected setting, where official data sources are often lacking and where more expensive AVMS are required to actively gather data by conducting surveys and other costly means. One limitation of data generated through surveys is that they only provide snapshot information of a given moment in time, which means that trends in armed violence cannot be evaluated and that the data cannot be used by practitioners to measure the impact of a prevention and reduction programme on levels of armed violence. But despite these limitations, the stakeholders interviewed regarding CRMA confirmed that the project had helped to introduce a culture of evidence-based programming and coordination among actors on the ground. Further, it allows international and national agencies to take better-informed decisions on prevention and to facilitate a more efficient and collaborative use of scarce resources (Nyheim and Albrecht, 2010).

The challenge of data collection in violent settings can also be observed in the Colombian case. An evaluation of the municipal observatories functioning under the CISALVA–IADB system shows that in the Antioquia Department—an area where illegal armed groups have settled—most causes of death could not be identified. In the municipality of Chigorodó, 100 per cent of the cases lacked an identified cause of death (Gutiérrez Martínez et al., 2007, p. 82). The CISALVA–IADB itself does not collect data but is limited to consult the municipal observatories functioning under its aegis. CISALVA–IADB cannot do more than to ensure that the municipal observatories are aware of these informational deficits and to reinforce the need for complete information. The evaluation suggests that in order to fill the information gaps, strong political will from governments and local authorities, effective coordination from institutions that serve as information source, and active engagement in building human capital are required (Gutiérrez Martínez et al., 2007).

All of the five case studies provide a systematic analysis of data, the second key activity of an AVMS. While they do not necessarily apply the armed violence lens (see Section I), they all analyse the collected data in a methodo-

Table 1 Comparison of case studies

AVMS	Intersectoral Institution	Ongoing data collection	Systematic data analysis	Dissemination of information
Colombia Municipal observatories following the CISALVA–IADB system	✓ The municipal observatories include key stakeholders such as the governing mayor, the police, the public prosecutor's office, and the health and fire departments.	✓ Multi-source data collection through an Operative Committee (including vital registration data; hospital and morgue data; criminal justice data).	✓ Conducted through the inter-sectoral Analytical Committee, which includes government and nongovernmental bodies.	✓ The Analytical Committee consists of stakeholders who work directly on armed violence prevention and reduction programming.
Jamaica Crime Observatory	✓ Run out of the University of the West Indies; part of the Violence Prevention Alliance, a network of government, inter-, and non-governmental agencies.	✓ Multi-source data collection (including hospital data, criminal justice data, data from local churches, NGOs, and community organizations).	✓ Standardization of data analysis, including the use of GIS technology.	✓ The Violence Prevention Alliance brings together key stakeholders who work on safe communities.
South Africa National Injury Mortality Surveillance System (NIMSS)	✓ Interdisciplinary initiative, run by the Medical Research Council and the University of South Africa.	✓ Multi-source data collection (including morgue data, data from the South African Police, and investigation processes).	✓ Systematic analysis of fatal injuries, including the manner, case, time, and scene of death.	✓ Publication of annual reports; programme evaluation on request.
Sudan Crisis and Recovery Mapping and Analysis (CRMA) Project	✗ UNDP Direct Execution project, established to support multi-sector strategic planning.	✗ No systematic data collection at regular intervals; collects data on community perceptions of crisis and human security-related threats.	✓ Production of maps and short analysis reports for international and national actors.	✓ Provides information to international and national stakeholders (state governments, Resident Coordinator's Support Office, and UNDP).
United Kingdom Trauma and Injury Intelligence Group (TIIG)	✓ Run out of Liverpool John Moores University; includes local partnership with health and fire services, police, and universities.	✓ Collection of data from hospitals, the ambulance service, and the fire and rescue service.	✓ Production of analytical reports.	✓ Works directly with local partners, also involved in evaluation of programming.

logically rigorous way and identify the nature of violent incidents. Systematic data analysis takes on special relevance when different data sources—which may apply various definitions—are pooled. For example, a homicide in the criminal justice system generally refers to one lethal *incident* of armed violence, while a violence-related death in the vital registration statistics or hospital data means one *person* killed. Homicide rates in the criminal justice system may thus fail to correlate with those in the vital registration system. Cross-referencing, checking, and case-by-case analysis are therefore important means to increase the accuracy of the data, which also needs to be checked with regards to its comparability. An important part of the work of all the five AVMS is thus the promotion of quality data through the provision of technical assistance to official sources and the application of consistent definitions and classifications.

The third key activity—dissemination of information with a view to informing programming and policy-making—is a crucial one. There are several options for disseminating the information. The data and analysis can be disseminated through publically available reports, such as on an AVMS website. The NIMSS in South Africa, for example, publishes its reports on the website of the Medical Research Council. To produce a closer link with programming efforts, the reports can also be directly disseminated to the programming stakeholders and policy-makers. The TIIG in the UK and the Crime Observatory in Jamaica are in direct contact with the programming stakeholders. Although CRMA is not intersectoral in nature, it disseminates the information to a broad range of national and international stakeholders. Alternatively, the AVMS can establish itself as a forum where stakeholders get together. The municipal crime observatories in Colombia take this approach, gathering stakeholders directly under their leadership.





Conclusion

In the past few decades, armed violence monitoring systems have become an important tool to better understand the scale and distribution of violence and the complexities of armed violence in particular. The aim of this study is to provide information about the institutional setup of AVMS, to show how they gather and analyse data in an ongoing and systematic way, and to highlight how they disseminate the information with a view to supporting the design and development of armed violence prevention and reduction programming. The case studies from Colombia, Jamaica, South Africa, Sudan, and the United Kingdom demonstrate how AVMS data has been received by policy-makers and programming stakeholders. This study concludes with a number of key observations that are relevant to the establishment of an AVMS:

1. Government involvement is critical to the success of an AVMS.

Regardless of whether a government body, a UN agency, or a private institution established an AVMS, the role of the government remains central. Official statistics are used regularly, independently of the institutional setting of an AVMS. Armed conflicts and crime are politically sensitive issues and governments may be reluctant to provide data or may downplay the extent of a problem. Yet a government may also see reasons to overplay the problem. The strong focus on evidence and the use of data for policy purposes means that statistics are fundamentally connected to the political economy of development assistance. Evidence regarding the extent and impact of the problem on the community is required to attract funding to implement various development initiatives, creating an incentive to exaggerate the problem.

Experts agree that data manipulation for such political reasons is particularly pronounced with respect to trends in homicide, conflict deaths, massacres, narcotics production, and trafficking in firearms (Andreas and Greenhill, 2010). The effectiveness of an AVMS therefore depends to a large extent on the government's willingness and ability to provide accurate figures. To this end, constructive cooperation between an AVMS and the government is indispensable.

2. The whole-of-government capacity of an AVMS is one of its major assets.

According to a recent study, the success of the observatory in Honduras lies in its capacity to coordinate and harmonize information among different actors with diverging interests as well as to encourage the circulation of comprehensive, systematic, and officially sanctioned data on the general situation of violence in Honduras (UNAH, 2009). Likewise, a review of the CRMA in Sudan shows that—although the system does not collect data at fixed intervals—an important value-add of the system lies in its capacity to coordinate actors and actions (Nyheim and Albrecht, 2010).

Thanks to its intersectoral nature, an AVMS not only provides information on the scope and scale of armed violence, but also coordinates action among policy-makers and programming stakeholders. As noted by one observer:

Programmes that have demonstrated the most success in reducing armed violence, including gang violence, have brought together a range of violence prevention and reduction strategies and are multisectoral and sustainable. Emerging evidence from low- and middle-income countries suggests that the best chances of success come from comprehensive public safety and community security programmes that broadly address the political, economic and social drivers of violence, and have both national and local support and ownership (Bellis et al., 2010, p. 5).

Consequently, and through support for AVMS, a whole-of-government approach is gradually replacing the traditional model for preventing and reducing armed violence, according to which government agencies such as the departments of health, social services, the environment, security, and criminal justice work in isolation. Increasingly, the role of the private sector in crime prevention and armed violence reduction is also being recognized and integrated into such whole-of-government approaches (Capobianco, 2005).

3. Linking evidence to programming is a critical part of preventing and reducing violence.

AVMS have proven to be an excellent tool for diagnosis and mapping. However, AVMS often emerge as an answer to the lack of reliable information rather than as primary tools for policy-making. For many, this is merely a secondary objective. The use of AVMS information for policy-making and programming is not yet systematically integrated, partly because of the complex nature of armed violence, which is sometimes linked to transnational challenges beyond the scope of a national government. The violence associated with trafficking networks that smuggle arms, drugs, and people in



A 13-year-old boy practises street boxing as part of an initiative aimed at preventing children from becoming involved in crime, March 2011. © Carlos Garcia Rawlins/Reuters

Central and South America, for example, may trickle down to the national level and manifest itself as gang violence in Honduras. The national violence observatory of Honduras can therefore only do so much to address the challenges of armed violence (Gutiérrez-Secretan, 2010).

Yet even when AVMS are not directly linked to programmes or interventions, there is evidence that merely disseminating data within the public domain has advantageous consequences in terms of awareness raising, thus constituting an important first step for prevention. This is especially true when information is disseminated among people who live in a community affected by armed violence, largely because local communities are well placed to explain patterns of violence and clustering of violent incidents on a GIS map through their own experiences in the neighbourhood. Local involvement also helps to empower the community and increase local ownership in any armed violence prevention and reduction effort.

4. Systematic data collection allows for effective evaluations of programming.

By collecting data on an ongoing basis, an AVMS is able to inform policy-makers on how to develop prevention strategies; in addition, practitioners can use AVMS data to measure the impact of those strategies on levels of armed violence retrospectively. In many cases, it is difficult to demonstrate the impact of a single programme on national homicide rates as many factors influence this rate. However, as a recent OECD report notes:

micro-level indicators—such as the level of crime in the community, the number of participants benefiting from the programme, or changes in the community’s perceptions about security—can offer important evidence of the effectiveness of (violence reduction) programming at the local level (OECD, 2009b, p. 74).

Evaluation of both the process of creating an AVMS and the resulting policies, programmes, and interventions is therefore an important tool for continually improving AVMS and programming efforts.²²

5. Even with limited resources, AVMS can be successful.

Adequate resources are needed for the effective implementation of an AVMS. Passive monitoring systems also require an initial investment, such as in computers (and database software) for data entry; staff for data collection and data entry; and staff training, including in data analysis. Those responsible for entering the data must be computer-literate and competent in the use of the database software (Zavala and Hazen, 2009, p. 44).

Yet financial considerations should not represent a stumbling block to the establishment of an AVMS. In countries with limited resources, it may not be possible to set up elaborate, multidisciplinary systems that can access different data sources. Without the buy-in of government and international donors, the CRMA in Sudan could not have been established. This survey has shown that even small, localized AVMS (such as the municipal observatories following the CISALVA–IADB system) are able to provide information on the ‘who, what, where, when, and why’ of armed violence at the local level. Through the use of forms designed to record information on incidents of armed violence, and open-source software that allows this information to be fed into a central database, small and localized AVMS can be established in a way that is sensitive to local realities and needs.

To conclude, AVMS are a key to ensuring that armed violence prevention and reduction programmes and interventions are coordinated through a whole-of-government approach and that they can secure support based on a proven

record of success. Community-specific data on armed violence—as collected by an AVMS—can measure the impact of a prevention and reduction programme. AVMS allow users to combine and analyse multiple data sources, which subsequently permits government agencies and non-governmental bodies to take better-informed decisions on prevention and to facilitate a more efficient and collaborative use of scarce resources. An ever-increasing number of AVMS are being explicitly linked to armed violence prevention and reduction programmes. But even when AVMS are not directly linked to programmes or interventions, evidence shows that merely disseminating data within the public domain has advantageous consequences in terms of raising awareness, informing policy-making, and making a first step towards the prevention of armed violence.



Annexe 1. List of AVMS

Africa

Country	Name	Location / Website
Somalia	Observatory on Conflict and Violence Prevention	University of Hargeisa
		http://www.ocvp.org/
South Africa	National Injury Mortality Surveillance System	South African Medical Research Council
		http://www.mrc.ac.za/crime/nimms.htm
Sudan	Crisis and Recovery Mapping and Analysis Project	UNDP Sudan
		http://www.sd.undp.org/projects/dg13.htm

Australia and Oceania

Country	Name	Location / Website
Australia	National Homicide Monitoring Program	Australian Institute for Criminology
		http://www.aic.gov.au/about_aic/research_programs/nmp/0001.aspx

Central America and the Caribbean

Country	Name	Location / Website
El Salvador	Observatorio Nacional de Violencia y Delincuencia	Consejo Nacional de Seguridad Pública
		http://www.cnsps.gob.sv/index.php?option=com_content&view=article&id=218&Itemid=138
	Sistema de Información de Lesiones de Causa Externa	Ministerio de Salud Pública y Asistencia Social
		—



Central America and the Caribbean (cont.)

Honduras	Observatorio de la Violencia	Instituto Universitario en Democracia, Paz y Seguridad
		http://iudpas.org/observatorios/observatorios.html
Jamaica	Crime Observatory	Institute of Sustainable Development, University of the West Indies
		http://vpajamaica.com/index/index.php?option=com_content&view=article&id=62&Itemid=84

Europe

Country	Name	Location / Website
Croatia	Community Policing Information System	UNDP Croatia
		http://www.undp.hr/show.jsp?newscontainer=132696&page=51874&singlenewsid=121594
France	Mission d'observation de la délinquance de l'agglomération toulousaine	Centre de Ressources Midi-Pyrénées pour les Acteurs de la Cohésion Sociale
		http://www.ressources-territoires.com/prevention-et-securite/les-actions/observation-des-territoires.php
United Kingdom	Violence Indicator Profiles for the English Regions	Centre for Violence Prevention at the Centre for Public Health, Liverpool John Moores University
		http://www.preventviolence.info/viper/
	Trauma and Injury Intelligence Group	Centre for Violence Prevention at the Centre for Public Health, Liverpool John Moores University
		http://www.tiig.info/

South America

Country	Name	Location / Website
Colombia	Centro de Estudio y Análisis en Convivencia y Seguridad Ciudadana	Secretaría de Gobierno de Bogotá, Alcaldía Mayor de Bogotá
		http://www.ceacsc.gov.co/
	Observatorio de Derechos Humanos y Derecho Internacional Humanitario	Programa Presidencial de Derechos Humanos y Derecho Internacional Humanitario, República de Colombia
		http://www.derechoshumanos.gov.co/
	Observatorio de Salud Pública	Secretaría de Salud de Santander
		http://www.observatorio.saludsantander.gov.co/
	Observatorios Municipales del Delito	Instituto CISALVA, Universidad de Valle
		http://prevencionviolencia.univalle.edu.co/
Observatorio del Delito	Municipio de Pasto	
	http://www.saludpasto.gov.co/	
Sistema de Vigilancia de la Violencia Intrafamiliar	Secretaría de Salud, Gobernación de Boyacá	
	http://www.boyaca.gov.co/	
Peru	Sistema Nacional de Registro en Violencia Familiar y Sexual	Ministerio de la Mujer y Desarrollo Social, Lima
		http://www.mimdes.gob.pe/archivos_sites/registro_pncvfs/que_es.htm
Uruguay	Observatorio Nacional sobre Violencia y Criminalidad	Dirección de Política Institucional y Planificación Estratégica, Ministerio del Interior, Montevideo
		http://www.minterior.gub.uy/webs/observatorio/





Annexe 2. Data sources

Criminal justice data

Criminal justice statistics are a major source of data on homicides and other crimes, such as rapes and robberies. It is now a legal requirement in nearly all countries that every homicide (the illegal killing of one person by another) be certified and registered by the criminal justice system. Homicide is a label used to gather information about a specific way in which people die. Most generally, homicide can be defined as ‘unlawful death inflicted on a person by another person’ (Geneva Declaration Secretariat, 2008, p. 68). Criminal law differentiates between intentional and unintentional homicide:

Intentional homicide requires that the perpetrator purposefully intends to cause the death or serious injury of a victim. Situations where the perpetrator is reckless or grossly negligent, or where the perpetrator kills in self-defence, are therefore usually excluded from the category of intentional homicide (Geneva Declaration Secretariat, 2008, p. 68).

Intentional homicide is commonly referred to as ‘murder’, while unintentional homicide is commonly known as ‘manslaughter’. Criminal justice statistics do not capture all violent incidents but are limited to data on incidents that are classified as ‘illegal’. The killing of a person by a police officer acting in the line of duty may be excluded, as may the killing of an enemy combatant taking part in hostilities during an armed conflict.

Legal definitions vary, so that comparisons of intentional homicide rates across countries and regions must be conducted cautiously. It is not only a comparison of the level of intentional homicides in a country, but also a comparison of what countries and regions consider illegal and include in their statistics. Furthermore, criminal justice data record only criminal acts that were actually reported to the police. The accuracy of criminal justice data therefore depends on the willingness of the people to report crimes accurately. It is widely recognized that cases of sexual and intimate-partner violence are seldom reported to the authorities, and criminal justice data generally fail to reflect the incidence of gender-based violence in a given community (Harrendorf, Heiskanen, and Malby, 2010, p. 7ff).

Vital registration data

The second source of data on violence-related mortality is vital registration statistics. These are defined as:

the total process of (a) collecting information by civil registration or enumeration on the frequency of occurrence of specified and defined vital events, as well as relevant characteristics of the events themselves and of the person or persons concerned, and (b) compiling, processing, analysing, evaluating, presenting and disseminating these data in statistical form (UN, 2001, p. 3).

This most basic source of population statistics consists of the permanent registration of vital events, particularly births and deaths. Vital statistics are usually gathered by the government. In many high-income and some middle-income countries, vital registration statistics are the usual source of mortality data. Yet few low-income countries have functioning vital registration systems. And in countries where vital registration data exists, it is fragmented and in many cases incomplete (AbouZahr et al., 2007). For 2009, death registration data containing usable information on the cause of death is lacking from 82 (43 per cent of all) countries—most of which are low-income and middle-income countries (Ozanne-Smith, Bartolomeus, and Grills, 2009, p. 431).

Sample vital registration systems are an alternative in countries where there is no reliable registration of deaths, death certification is not common, and autopsies or post-mortem reports are limited or unavailable for large territories or regions. In China, India, and Tanzania, for example, such systems aim to determine the cause of death in a sample of cases in a given region of each country. These countries use verbal autopsy reports to determine the cause of death of an individual based on an interview with the next of kin of the deceased. ‘The experiences in China, India, and Tanzania suggest that “sampling” vital registration may be a cost-effective way to obtain reliable data on vital events in large populations or in countries with limited resources where national coverage is not possible’ (Setel et al., 2005, cited in Zavala and Hazen, 2008, p. 30).

Hospital and morgue data

Hospital and morgue records are another important source of data on violent fatal or non-fatal injuries. Hospital data collection is typically undertaken in intensive care units, emergency rooms, and ward admission records or discharge summaries. Some hospitals have specialized ‘triaging officers’ who sort and allocate patients according to the nature and seriousness of their

injuries. Triage officers, registration clerks, and attending nurses—who are generally involved in keeping records on emergency cases—are obvious candidates for consideration as partners of AVMS when collecting data. In theory, these records should be among the most reliable sources of information on injury; however, most hospitals do not require good record-keeping from their doctors or nurses. Their priority is the treatment of patients. Furthermore, the irregular or unpredictable pattern of trauma caseloads in high-violence settings complicates comprehensive record-keeping. Many doctors and nurses are unaware that the information they record might be useful for surveillance purposes, with the result that forms are frequently filled out in a cursory manner, with many blanks, and that they are often illegible (Holder et al., 2001).

Hospital data is further biased in favour of settings with well-established health care facilities. In many low- and middle-income countries, health care systems are typically divided into three tiers. The first and lowest tier refers to the primary community-based health care systems and to village doctors working in local medical centres. The second tier includes regional hospitals. Only the highest and last tier includes hospitals with intensive care units and emergency rooms. In low- and middle-income countries, hospital records may thus not be able to reflect the rates of rural non-fatal (and possibly fatal) injuries. Lower-tier primary health care systems and community-based elements of health systems are not covered by intensive-care or emergency data either.

Morgue data provides an alternative. Morgues (in a hospital or elsewhere) are used for the storage of human corpses awaiting identification, or removal for autopsy or disposal by burial, cremation, or other method. Australia's Monash University and WHO are developing guidelines for the establishment of a morgue-based fatal injury surveillance system. The project aims to promote the use of international norms and standards for the collection of information on injury-related deaths that are registered and investigated in morgues (Ozanne-Smith, Bartolomeus, and Grills, 2009).

Secondary data

The media and community groups such as local NGOs are typical secondary sources of data. They may fill the gap in countries where official statistics (criminal justice and vital registration statistics, and morgue and hospital data) are inadequate or lacking. This is also of relevance in countries where official statistics are manipulated for political purposes. A number of prominent academic institutes make use of media data to estimate the number of deaths in conflict settings. They include Iraq Body Count; the Uppsala



Two sisters care for their brother, who was hospitalized after he was shot in the leg during a raid by bandits near Gereida, South Darfur, April 2007. © Sven Torfinn/Panos Pictures

Conflict Data Programme; the Peace Research Institute Oslo; the Armed Conflict Database of the International Institute for Strategic Studies; the Stockholm International Peace Research Institute's *Yearbook*; the Political Instability Task Force database; the *Armed Conflicts Report* by Project Ploughshares; and the Institute for Conflict Management in India.

The availability of global news databases, such as Factiva or LexisNexis, has facilitated the capture of incidents and associated deaths in a wide number of war zones. Moreover, thanks to their sophistication, media sources that permit the electronic selection of news stories and events are an efficient tool for collecting data on armed violence. However, the quality of the data depends largely on the quality of available documentation. The robustness of the data is therefore a function of the quality of media coverage. Moreover, the ability to arrive at accurate numbers depends on the quality of available documentation and the ability to trace specific events (Small Arms Survey, 2005, pp. 233–39).

Survey data

All of the above-mentioned sources are biased in favour of settings with functioning governmental registration systems or good media coverage. They do not capture the subtler impacts of violence, such as domestic, sexual, and intimate-partner violence, or perceptions of insecurity. Survey data has therefore become a common standard to assess the incidence of violent acts in a given community. A household survey, for instance, is ‘a population-based epidemiological study in which a cross-section of a reference population is surveyed by means of a standard instrument for information collection, such as a questionnaire’ (Sethi et al., 2004, p. 8).

Ideally, an entire population would be surveyed. A survey that covers all members of a population is referred to as a census. Yet since it may not be possible to survey an entire population, surveyors often select a representative sample of the population. There are several methods for selecting a sample, including:

- a. simple random sampling (a sample is selected at random from the total population under study);
- b. stratified random sampling (a sample is selected from a number of population subgroups);
- c. systematic sampling (a sample generated by randomly picking a number and then by selecting every record that falls at an interval equivalent to this number); or
- d. cluster sampling (a sample produced through random selection from sub-groups such as enumeration areas, cities, universities, provinces, districts, or hospitals) (Sethi et al., 2004, pp. 12–15).



Annexe 3. Questionnaire

1. How do you describe your violence monitoring system?

- Violence observatory
- Crime observatory
- Injury surveillance system
- Incident monitoring mechanism
- Other

What is the name of your violence monitoring system?

2. Is the monitoring system:

- Publicly led (national government)
- Publicly led (city authorities)
- Privately led (NGO)
- Privately led (academic institutions)
- Public–private partnership
- Other

Please describe how the monitoring system is managed (2–3 sentences).

3. Where is the violence monitoring system located?

- Government office
- Line ministry office (including hospitals)
- UN office
- NGO office
- University
- Other (please specify)

4. What is the geographical scale of the violence monitoring system?

- Regional (more than one country)
- Nationwide
- State/province/district (or multiple states/provinces/districts)
- City (or multiple cities)
- Neighbourhood (or multiple neighbourhoods)
- Other (please specify)



5. What is the nature of financial support for the violence monitoring system? (multiple answers)

- External multilateral support (UN, World Bank, etc.)
- Bilateral support
- State funding
- Private funding
- Other

Is the financial support for the violence monitoring system multi-year?

6. What is the estimated annual value of support (per year)?

- more than USD 2 million
- USD 1–2 million
- USD 500,000–USD 1 million
- USD 250,000–USD 500,000
- USD 100,000–USD 250,000
- USD 50,000–USD 100,000
- USD 1,000–USD 50,000

7. What are the key indicators collected by the violence monitoring system?

(multiple answers)

- Mortality (homicides, murder, manslaughter)
- Violence-related injuries
- Sexual violence
- Crimes (robbery, drugs, etc.)
- Other (please specify)

8. How regularly does the violence monitoring system generate findings (including reports)?

- Annually
- Quarterly
- Monthly
- Weekly
- Daily

How does it publish the information?

9. What are the key sources of data for the violence monitoring system?

(multiple answers)

- Vital registration data
- Health and hospital data
- Morgue data

- Police and forensics data
- Media reports (television, radio, newspaper, Web-based)
- Human rights reports
- Community organizations
- Other (please specify)

10. What kind of information management software tools are used by your armed violence assessment? (multiple answers)

- Access
- Stata
- SPSS
- EPI-Info
- ArcView
- Google Maps
- Excel
- Other (please specify)





Endnotes

- 1 See Davies (2004); Manning (2009); Moseley and Tierney (2005); ODI (2004; 2009); OECD (2009a); Solesbury (2001); Sutcliffe and Court (2005); Young et al. (2002).
- 2 In addition, there is a rights-based approach to violence prevention. Regardless of whether an act of violence takes place in a conflict or non-conflict setting, a state is obliged to guarantee the right to life and to prevent acts of violence leading to deaths. 'There are two interesting entries to this point: First, individuals in state custody (people deprived of their liberty) in which case the state must be held unconditionally responsible for the security and safety of the people placed under its protection. Second, when individuals are not in state custody, it is still a state obligation to protect against third-party violations (reference is made to state deprivation or neglect)' (Kjaerulf and Barahona, 2010, p. 385).
- 3 See Moser and Winton (2002); Diprose (2008); Gilgen, Krause, and Muggah (2010).
- 4 See Barton and von Hippel (2008); Campbell and Meier (2007); Cilliers (2005); Goldstone (2008); Marshall (2008); Nyheim and Albrecht (2010); Schmeidl (2008); UNDP and GDI (2009); Wulf and Debiel (2009).
- 5 See Homel (2004); ICPC (2008; 2010); Kulach (2006); UNODC (2008); UNODC and UN-HABITAT (2009).
- 6 See CDC (2001); Holder et al. (2001); Ozanne-Smith, Bartolomeus, and Grills (2009); Sethi et al. (2004); Small Arms Survey (2008, chs. 7–9); WHO (2002; 2004a; 2004b).
- 7 See the chapter on small arms and light weapons guidance in OECD (2005) or the chapter on guns, knives, and pesticides in WHO (2009).
- 8 The CISALVA Institute uses the term 'violence observatory' to describe an AVMS. See CISALVA (2008b).
- 9 The ICPC uses the term 'crime observatory' to refer to AVMS. See Carrière (2008).
- 10 There are several reasons for this low response rate. First, the time period was relatively short (1–2 months). Rather than intending to be exhaustive, the survey was to provide a preliminary scan. Further, insufficient time and personnel prevented individual follow-up with all prospective respondents. Third, a number of addressees could not be reached and their names were thus dropped. Finally, online survey instruments generally elicit a low response rate.

Given the limited timeframe of this study, a number of AVMS could not respond to the questionnaire. Among these are the municipal observatories in Panama; the French National Delinquency Observatory (Observatoire national de la délin-

- quance), the French Observatory on Drugs and Drug Addictions (Observatoire français des drogues et des toxicomanies), the Central American Observatory on Violence (Observatorio Centroamericano sobre Violencia), and the National Violent Death Reporting System in the United States; on the latter, see Butchart (2006).
- 11 Author communication with Mireille Widmer, UNDP Somalia, 10 November 2009.
 - 12 See OBSERDH (2009a; 2009b).
 - 13 See CISALVA (2008a; 2008b).
 - 14 See WHO (n.d.b).
 - 15 See also Prince, Ferland, and Bruneau (2009, pp. 29–32).
 - 16 See Ward et al. (2002) and Ashley and Holder (2002).
 - 17 See VPA Jamaica (n.d.).
 - 18 See UNDP Jamaica (n.d.).
 - 19 The RCSO has been mandated by the UN Country Team in Sudan to coordinate recovery and development activities within the framework of the Comprehensive Peace Agreement, the Eastern Sudan Peace Agreement, and the Darfur Peace Agreement. The RCSO in Sudan focuses on planning and implementing sustainable recovery and development activities; supporting the decentralization of UN activities to the state level; and assisting state governments in sustainable recovery and development planning (RCSO, n.d.).
 - 20 Author communication with Jago Salmon, BCPR, 16 November 2010.
 - 21 See Anderson, Hughes, and Bellis (2007); Bellis et al. (2010); Bellis, Anderson, and Hughes (2007); McVeigh et al. (2005a; 2005b).
 - 22 Evaluation of programming is an important part of the Paris Declaration on Aid Effectiveness and the Accra Agenda for Action. See OECD (n.d.).





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PHOTO ► A sign on a bus window bans weapons in the neighbourhood of Soacha, Bogota, Colombia. © Espen Rasmussen/Panos Pictures



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