

# The Challenge of Rapid Data Collection and Health Promotion: A Quick and Easy Approach

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## Abstract

Rapid data collection can provide an insight into causation, the socio-cultural reality, and complex social processes. This is especially important in disease outbreaks when information is quickly required on local needs that is essential for success. Quantitative data alone are not sufficient to provide an in-depth understanding. The challenge is to use a rapid data collection approach that can provide practical solutions by integrating the available evidence, professional expertise, and stakeholder experiences. This viewpoint reflects the opinions of the author that highlight the strengths and weaknesses of rapid data collection and the presentation of an approach that can be implemented with minimal interference in a health promotion and healthcare program context. The approach is implemented in five phases in collaboration with local authorities, communities and other key stakeholders. The experiences from Patagonia, Argentina are discussed to show how the quick and easy approach led to co-production and the synthesis of data to create practical solutions at the community level. In conclusion, the quick and easy approach is versatile and low cost that is urgently needed in all health promotion programs and can be provided by the training of Community Health Workers and other health professionals.

**Keywords:** Rapid data collection; disease outbreaks; Hantavirus; community health; Argentina

## Introduction

Rapid data collection can provide an insight into causation, the socio-cultural reality, and complex social processes and is especially appealing when the quick turnaround of findings are useful for the development of health promotion programs. Quantitative data alone are not sufficient to provide an in-depth understanding and it is qualitative, rapid data collection integrating the best available evidence, professional expertise, and stakeholder experiences that can provide a meaningful outcome [1].

Despite methodological advancements, a previous review has found that the challenges in the implementation of rapid data collection approaches concerned sampling, the interpretation of findings and management of field research. It also found that attention must be paid to the quality of the data collection and to the synthesis of the findings to avoid losing the richness and insight gained in this type of an approach. The variability in the use of terminology, the poor quality of reporting of study designs, mainly data analysis methods, and lack of reflexivity were other key challenges [2].

Anthropological insights can also significantly contribute because they help us to understand the complexity of the problem. Anthropological studies usually require a long-term input, a 'slow science', in which evidence is collected in a steady and methodical way. Anthropologists are trained to provide in-depth accounts which can be difficult to translate into practical recommendations, compounded by a poor understanding of how programs function, and that can be disregarded for being too vague. There is a missing link between the program manager and the anthropologist, best performed by an intermediary with the skills to provide an interpretation of the findings. However, this is a skill set often lacking, for example, in the context of disease outbreak responses, and it is rapid data collection, produced using epidemiology and the social sciences, which is more useful as the situation changes, often on a daily basis, in a program context [3].

Rapid data collection approaches have the potential to generate findings that can inform health promotion programs, as well as policy and in healthcare settings, and can provide useful contributions to a systems approach to better understand the challenges and to identify collective actions. Attention must be paid to data collection, analysis and the application of the findings and this paper provides clarity for its use in a practical context.

## Materials and Methods

This viewpoint reflects the opinions of the author to highlight the strengths and weaknesses of rapid data collection and to present a quick and easy approach that can be implemented in community health promotion and healthcare settings. The experiences from the prevention of an infectious disease, the Andes hantavirus, in Patagonia, Argentina are discussed to show how the approach led to co-production and the synthesis of the data to create practical solutions at the community level.

The limitations of a quick and easy approach include the time constraints in the field that can limit sampling to those participants who are less accessible or willing to take part [4]. The availability and reliability of secondary sources of information as well as access to and the availability of interviewees can be mitigated by gaining the cooperation and trust of the key stakeholders involved in the process of data collection and analysis.

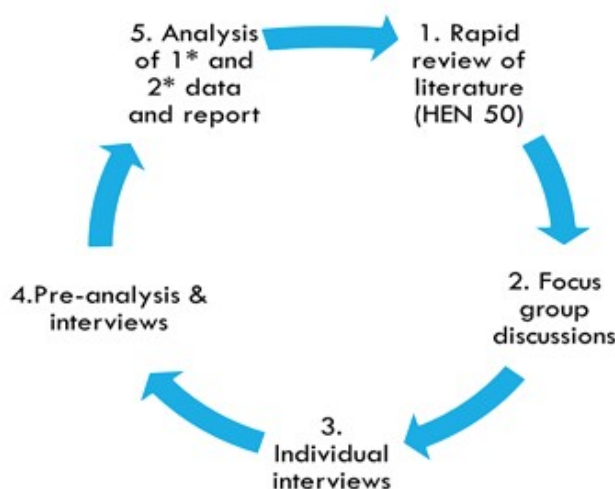
## Discussions

A key aim in community health promotion programs is to provide an understanding of the reality of health perspectives and local needs in order to enhance design and co-production. Co-production is a way of working with all stakeholders to share ideas to lead to improved health, service delivery and healthy environments [5]. The quick and easy approach described in this paper uses an evidence-based practice that is recognised as integrating the best available evidence, professional expertise, and stakeholder needs and experiences [6] to identify the most appropriate solutions. The quick and easy approach is versatile and uses site visits

and observations, individual and group interviews, preceded by a desk-based review of the relevant literature. It can be carried out at the beginning or during a health promotion program, by two or three people, with minimal interference, over a short period of a few weeks and at low cost.

The quick and easy approach is implemented in five phases in collaboration with local authorities, communities and other key stakeholders, as follows:

1. A rapid desk review of the secondary sources of information.
2. The primary data is collected using qualitative focus group discussions.
3. The primary data is collected using qualitative individual interviews.
4. The primary data collected is analysed using a simple cut and paste technique.
5. A synthesis of the primary and secondary sources into a set of program recommendations.



**Figure 1:** A quick and easy approach for rapid data collection

### **Phase 1: A review of Secondary Sources of Information**

A desk-based review of the relevant secondary sources is carried out using a recognised approach [7] for the rapid assessment of the evidence. The inclusion criterion can include the type of study and country context within specific a timeframe. The search strategy can focus on terms used in the title, key words, and abstract initially using electronic databases that provide a basic word search facility including Google scholar and later databases that provide an advanced search facility such as the Cochrane database of systematic reviews.

### **Collecting the Primary Data**

Individual and focus group interviews and observational techniques that draw upon people's knowledge and experiences are used to collect primary data. Interviewing follows a schedule of either core themes (access to health information) or key questions (how often do you access health information-where, how much time do you spend reading and why?) that define the areas to be investigated. Two types of interviewing are commonly used: unstructured and semi-structured. Unstructured interviews use specific questions (how often do you attend a clinic?). Semi-structured interviews are conducted using an informal structure consisting of open-ended questions that define the area to be explored (tell me about the clinic you attend?).

Purposive sampling for interviewing selects respondents for interviews based on specific characteristics for a range of perspectives including geographic representation (urban and rural), type of health facility (primary care clinics, hospitals), gender (male and female), health worker role, socio-cultural context and family members.

Informed consent is the voluntary agreement to have a role in an investigation after being fully informed and often signing a consent form. It is an ethics code requirement in research studies and delays produced by ethical approvals have been discussed elsewhere in the literature [8]. However, ethics approval is not necessarily required in rapid data collection in a program context [9] or in short, time-sensitive studies using rapid data collection techniques.

A point of saturation can be achieved in the primary data collection when all the viewpoints and information about the topic appear to have been identified and continuing the interviewing will not reveal any new insights [10].

## **Phase 2: The Qualitative Focus Group Discussions**

Focus group discussions are facilitated interviews, held with a small defined group of people (3-10) who have specialist knowledge or a shared interest in a particular topic and are interviewed to understand their perceptions, needs and attitudes. Usually held in a familiar environment, in a group setting or online for 30-90 minutes such as with health workers in a clinic to discuss their needs when working with patients. Interesting or unusual information identified during a focus group discussion can lead to an expanded line of inquiry such as an individual interview with other family members or with key stakeholders in a neighbourhood.

## **Phase 3: The qualitative Individual Interviews**

Individual interviews involve a conversation, face to face, by telephone, or online. The interview gains more insight into a person's perceptions and experiences than could be gained in a focus group discussion and usually lasts between 30-60 minutes. It can be completed in a comfortable and familiar environment such as a home, a workplace, or in a park, to discuss and identify needs and experiences.

## **Phase 4: The data analysis**

To help compile a record, hand-written notes or a laptop can be used to keep an account of the interviews but are not normally audio-recorded because of the cost and time necessary for transcription and translation. A second person can also make a record to cross-check the findings through a reflexive discussion with the interviewer, normally after each interview, to reduce bias and to monitor accuracy in the data collection.

The data analysis identifies both common ground and differences in the primary data using a simple cut and paste technique suitable for small quantities of primary data. The field notes go through a quick process of disaggregation and re-aggregation using the following steps:

1. The process of disaggregation begins when copies are made of the original field notes. The copies are used to identify a classification system for the major categories of discussion. The categories are identified in the text by using colours to highlight them in the text.
2. Once the colour coding is complete the marked text is 'cut up' and sorted into files that have been marked in each category which will form the headings of the findings in the report.
3. The process of re-aggregation happens by rereading each category file to analyse the content in its new context to create new insights as the structure of the findings and conclusions emerge into the report. This involves more than one evaluator each with differing points of view, to assess the same information to provide a cross-check of the key conclusions.

Triangulation is a technique to analyse results of the same study using different sources (quantitative and qualitative) of data such as reports, Rapid knowledge, attitude, and practice (KAP) surveys, observations, and interviews [11] to verify the conclusions.

### **Phase 5: A synthesis of the Primary and Secondary Sources of Data**

A synthesis of the primary and secondary sources of data into a short report with specific recommendations and in a timely manner can be a valuable resource for the development and adaptation of a community health promotion program. The science emerges from the sources of data, however, this does not guarantee the best outcome. The art is the analysis, an application of our professional experience and local perspectives, that can co-produce a synthesis of the data with the best outcomes for a health promotion program. An understanding of how best to apply the 'art and science' requires an appreciation that it is not only about being scientifically right but also about being real, in any given context [12].

Next, the experiences from a community health promotion program in Patagonia, Argentina are discussed to show how a process of co-production led to the synthesis of the data to create practical local solutions for the prevention of the Andes hantavirus.

### **A Case Study in Patagonia to Prevent Hantavirus Outbreaks**

Poverty in the Andean region, population movements, high-risk areas of cross-infection and a perceived low risk of an endemic disease present favourable conditions for a future international hantavirus outbreak. The Andes hantavirus pulmonary syndrome is a severe infection that is capable of spreading person to person through airborne droplets. The Andes hantavirus has a 35% mortality rate and there is currently no treatment or a vaccine. Hantaviruses are spread from a specific rodent host species to humans via urine, faeces, and saliva in an aerosol and less frequently by a bite. People usually encounter the hantavirus when collecting forest products such as the rosa mosqueta, also a favourite berry of mice. A feature of hantavirus outbreaks in the Andean region has been the lack of coordinated communication or community involvement, both of which are crucial for successful outbreak responses [13]. It is important to understand how communities can play a crucial role in containment and local surveillance and this demands an innovative approach that can quickly provide clarity to the program design. Using the quick and easy approach, four communities (Lago Puelo, El Hoyo, El Bolson and Epuýen) in the 42nd parallel region covering the provinces of Rio Negro and Chubut, Patagonia, Argentina, were interviewed to understand the factors leading to the spread of the Andes hantavirus [14].

The residents in El Bolson, Lago Puelo, El Hoyo and Epuýen live close to the forest environment but sensitivity to the hantavirus is low in all communities and it is not perceived to be a significant risk by the local population. The four communities have distinct socio-ecological characteristics, however, in general, El Bolson and Lago Puelo were observed to be similar in their level of capacity to better organise activities such as training workshops to prevent and manage future outbreaks. Lago Puelo, for example, had established neighbourhood associations which can be used to engage the local population. El Hoyo also has the experience of local cooperatives supporting initiatives to provide public transport and care for the elderly. It is in Epuýen, the poorest community, where hantavirus cases seem to be most prevalent and in which, for economic and social reasons, people often enter the forest. Lago Epuýen, for example, is an area of high-risk, partly because of a change in forest habitat leading to a concentration of natural forest and mice, and because it is a popular area with residents and tourists. Lago Epuýen does not have any warning signs or restricted access to help people to avoid contact with the hantavirus in such "hotspots" by public health authorities, especially during high seasonal periods. Epuýen has a history of community frustration and tension with local authorities, a situation made worse by COVID and recent forest fires, which hinders community involvement to prevent future hantavirus outbreaks.

The synthesis of the data collected through a quick and easy approach was discussed with the key stakeholders including public health officials, community members and experts in zoonotic diseases in the Andean region. This led to a co-production of specific recommendations for local authorities to work more closely and in a more structured way with communities to manage future hantavirus outbreaks. The key recommendations were:

- 1) Identify who will represent the community, for example, members of neighbourhood associations or cooperatives.
- 2) Establish a local coordinating group, such as a committee structure, in each community with the purpose to discuss problems and solutions and to share resource ideas regarding local disease outbreaks. The local coordinating committee (LCC) is comprised of representatives from local services (hospital, municipality, police etc) and the selected representatives of the community. The LCC should meet on a regular basis, such as every 3 months, and have a membership of approximately 10 – 15 persons.
- 3) Establish a central coordinating committee (CCC) with an overarching responsibility to discuss broader issues and solutions across the region and to coordinate activities across of the LCCs. The CCC meets every 6 months and has at least one representative from each of the LCC plus a representative from epidemiology and other relevant regional services.
- 4) Develop a training plan to build the competencies of the both the LCC and CCC.
- 5) Regularly review the progress of both the LCC and the CCC towards achieving their goals.

## Conclusions

A quick and easy approach can be carried out by health professionals that work closely with communities including community health workers (CHWs). The international evidence on CHWs shows that they can be effective in interacting with householders and communities to inform, to collect data and to develop local competencies [15]. CHWs provide a bridge between health policy and the health system and the local level, and it is important that new skill sets are delivered to communities, for example, by working with local neighbourhood associations and cooperatives.

A quick and easy approach can provide an insight into the socio-cultural reality, which is especially important in disease outbreaks, when information, analysis and adaptation are quickly required. The approach can increase program effectiveness as well as assisting in the co-production of practical solutions by sharing information, based on local needs, to help to promote empowerment and the long-term sustainability of health promotion programs.

A quick and easy approach is an appropriate intervention in many different contexts, including with vulnerable groups and during disease outbreaks, to make promotion and prevention more relevant and effective at a local level. The quick and easy approach is urgently needed in all community health promotion and healthcare programs and can be achieved by providing skills training for CHWs and other health professionals.

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