The Rapid Assessment Protocol for Insulin Access (RAPIA): research for action on access to diabetes care

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Introduction

Rapid Assessment Protocols (RAPs) have been used extensively in different health-related areas such as services for communicable diseases, including malaria, tuberculosis and STDs, for the purpose of developing interventions,[1–7] and are viewed as useful tools as they have the following main principles.[8]

- Speed – the methods are intended to provide relevant information quickly, upon which decisions about healthcare interventions can be made.
- Use of multiple data sources – different methods are used to access different sources of data to get a balanced overview.
- Pragmatism – the methods provide adequate information, without necessarily being 'scientifically perfect'. Triangulation, or cross-checking between different sources of data is used to establish the validity and reliability of the data collected.
- Cost-effectiveness – the focus is on research instruments that provide information cheaply, and are not labour and time intensive. Where possible, use is made of existing data.

The use of this type of research tool therefore allows researchers to gather data quickly in order to effect change.

Access to diabetes care in developing countries has been viewed as problematic and most of the factors relate to access to medicines and especially insulin.[9–11] Other issues related to the health system, healthcare worker training, access to diagnostic facilities and syringes are known, but are not documented. As such, a clear and detailed analysis of the situation regarding barriers to access to diabetes care is not available in sub-Saharan Africa.

The concept behind the RAPIA

The Rapid Assessment Protocol for Insulin Access (RAPIA)[12] was developed by the International Insulin

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Foundation (IIF). The IIF was established, by leading academics and physicians in the field of diabetes, in an attempt to embark on a concerted effort to improve the prospects for people with type 1 diabetes in the world's poorest countries. This was due to the shocking fact that although Leonard Thompson was the first person given an injection of insulin in 1922 in Canada,[13] many children in developing countries still died due to a lack of insulin. Work by the IIF found the life expectancy of a child to be as low as 7 months in rural Mozambique[14] compared with near normal life expectancy in the UK.

In order to achieve these objectives, a clear analysis of the constraints to insulin access and diabetes care was needed. The IIF's view was that increasing the supply of insulin through donations or other means was not sustainable and the root of the problems needed to be solved, which lead the IIF to develop the RAPIA.

The RAPIA

The aim of the RAPIA is to provide a practical field guide to assist teams in the collection, analysis, and presentation of data to evaluate and inform the development of healthcare services for diabetes management in low- and middle-income countries.

The RAPIA is structured as a multi-level assessment of the different elements that influence the access patients have to insulin in a given country. The framework of the RAPIA studies the path of insulin from its arrival in the country to the point that it reaches or fails to treat the patient effectively and thereby identifies how and where the system works and/or fails. It does this by collecting opinions and perspectives of the different people interviewed rather than precise statistical data.

This instrument provides the tools to enable a research team to collect information on the structure and functioning of insulin supply services/practices and also to conduct an assessment of the quality of care currently provided to people with type 1 diabetes.

Data are collected through document reviews, interviews, and observations.

The RAPIA is structured as a multi-level assessment of the health system and is divided into three levels.

1. *Macro* – Looks at the overall structure present in the country and is aimed at the Ministry of Finance, Ministry of Trade, Ministry of Health, private sector, national diabetes association, central medical store, and educators.

Table 1 The different levels of the RAPIA questionnaire

Level	Issues addressed in RAPIA	Means of investigation
MACRO Ministry of Trade	Trade issues (laws, barriers to trade) Trade infrastructure	Interviews Document reviews -
Ministry of Finance	Funding of health system Taxes on diabetes medicines Funding diabetes	Interviews Document reviews
Ministry of Health	Funding of health system Organisation of delivery of diabetes care and education Resources available for diabetes National programmes for diabetes Pricing of insulin and medicines Distribution of insulin and medicines Funding for insulin and diabetes and education Tendering and purchase of insulin and medicines	Interviews Document reviews
Private sector	Pricing of insulin and medicines Distribution of insulin and medicines	Interviews Document reviews -
National diabetes association	Issues with diabetes and insulin	Interviews Document reviews -
Central medical store	Tendering and purchase of insulin and medicines Distribution and storage of insulin and medicines Pricing of insulin and medicines	Interviews Document reviews
Educators	Training of healthcare professionals with regards to diabetes	Interviews
MESO Regional health organisation	Issues with diabetes in specific area Organisation of care for patients with diabetes	Interviews Document reviews -
Hospitals, clinics, health centres, dispensaries, etc.	Treatment and management of patients with diabetes Infrastructure present and/or lacking for diabetes care Access to appropriate tools for diagnosis and treatment	Interviews Site visits
Regional medical store	Distribution and storage of insulin and medicines Pricing of insulin and medicines	Interviews Site visits
Laboratory	Diagnosis of patients	Interviews Site visits
Pharmacy/dispensary	Distribution and storage of insulin and medicines Pricing of insulin and medicines	Interviews Site visits
MICRO Health workers	Problems encountered in treatment of patients Training for diabetes care Infrastructure present and/or lacking for diabetes care Tools present and/or lacking (including education)	Interviews Observations
Traditional healers	Problems encountered in treatment of patients Treatment of patients with diabetes	Interviews Observations
Patients	Access to treatment and education	Interviews

2. *Meso* – Regional and district health officers receive similar questionnaires to those for the Ministry of Health. 'Healthcare settings' (hospitals, clinics, health centres, etc.) and pharmacies/medicine dispensaries are assessed for infrastructure and management.

3. *Micro* – At the micro level carers and patients are analysed to see what in their view is lacking for adequate access to insulin and care.

These levels and the sources of information for them are detailed in Table 1. The meso and micro levels are carried out in three distinct geographical locations: the capital city, a large city or urban area, and a predominantly rural area chosen by local partners to represent a different geographical and economic situation. From this data collection information is found with regards to:

- health service structure and functioning – medicine procurement, diabetes management;
- diabetes policies written and enacted;
- reported practice of diabetes management;
- observed practice of diabetes management;
- availability of insulin, medicines, syringes, and monitoring equipment;
- existence of distribution networks for insulin, medicines, and other diabetes supplies;
- insulin and medicine supply-related knowledge and attitudes among patients and their carers.

Detailed areas of investigation for each type of questionnaire are given in Table 2. In all stages of the RAPIA local stakeholders play a key role in logistical support, contacts, information, and identifying interviewers. During the reporting of the findings local partners provided input on drafts and recommendations prepared. This allowed any recommendations developed to be discussed and ranked according to feasibility, and through consensus these were prioritised to develop an action plan for the country.

Results and implications of the RAPIA

To date the RAPIA has been implemented in three sub-Saharan Africa countries: Mali, Mozambique, and Zambia; and also in Nicaragua and Vietnam. In these countries the information collected was analysed and discussed to develop policy recommendations to identify and remove the barriers that hinder accessibility of insulin and proper diabetes care to all those who need it.

In all these countries diabetes is placing an increasing burden on the health system and individual. Implementing the RAPIA helped these countries discover problems surrounding access to insulin and medicines and the appropriate management of diabetes. These findings were then used as a tool for change.

In looking at the results from sub-Saharan Africa the RAPIA resulted in:

- improvements in access to insulin (Mali, Mozambique, and Zambia);
- development of non-communicable disease policies (Mozambique and Zambia);
- inclusion of RAPIA recommendations in government policies and programmes (Mali and Mozambique);
- improvement and increase in visibility of diabetes associations (Mali, Mozambique and Zambia);
- inclusion of RAPIA recommendations in projects and programmes of national non-governmental organisations (NGOs) (Mali);
- external funding and support for diabetes programmes (Mozambique and Zambia);
- use of RAPIA for monitoring and evaluation (Mozambique).

From the experience in Mozambique[15] the RAPIA provided information to the Ministry of Health to assist it in developing a national plan on non-communicable diseases. In addition, during the RAPIA certain problems were identified with regards to insulin distribution, the price of insulin and diabetes medicines to individuals, and the general organisation of care for people with diabetes.

Based on the recommendations from the RAPIA, actions were taken so that now insulin supply has greatly improved, people with diabetes now only have to pay a US$0.20 prescription fee, and diabetes consultations have been established in many areas of the country. In addition, the diabetes association has increased its role and is now an active partner with the Ministry of Health in improving diabetes care.

Lessons learnt and conclusions

The RAPIA process can be defined as research for action as the research process actually contributes to the development of a specific action plan. Although the target of the RAPIA was initially type 1 diabetes and was further extended to include aspects for type 2 diabetes, these conditions can serve as a model for other non communicable diseases.

From the implementation of the RAPIA, 11 key elements for a 'positive' diabetes environment have been identified.[16,17]

1. Organisation of the health system.
2. Data collection.
3. Prevention.
4. Diagnostic tools and infrastructure.
5. Drug procurement and supply.
6. Care.
7. Healthcare workers.
8. Adherence issues.
9. Patient education and empowerment.
10. Community involvement and diabetes associations.
11. Positive policy environment.

These 11 points provide a list of ingredients needed for a country to provide an environment that is able to prevent and manage diabetes. The RAPIA allows these 11 elements to be assessed, problems identified, and adapted solutions to be found.

In addition, the RAPIA process was able to bring diabetes care to the forefront and contribute to making the case for resource-poor countries to start addressing the issue of diabetes and non-communicable diseases.

Table 2 The main areas of investigation of the RAPIA

Target questions with regards to insulin and diabetes care (Questionnaires)	Funding for diabetes care	Taxes and import restrictions on insulin and medicines	Labour resources	Organisation of care	Supply of insulin and medicines and related supplies (cost, mark-ups, taxes, black market)	Infrastructure	Tools for monitoring and administration of diabetes care	Training	Awareness and education	Prevalence, incidence, number of cases seen	Process of care from diagnosis to treatment
Ministry of Trade		×			×						
Ministry of Finance	×	×									
Ministry of Health	×	×	×	×	×	×	×	×	×	×	×
Private sector		×			×	×					
National diabetes association		×		×	×		×	×	×	×	×
Central medical stores	×	×		×	×						
Educators								×	×	×	
Regional health organisation	×		×	×	×	×	×				×
Regional medical stores	×	×			×	×					
Hospitals, clinics, health centres, etc.	×		×	×	×	×	×			×	×
Laboratories					×	×	×		×	×	×
Pharmacies		×			×		×		×	×	×
Health workers				×	×	×	×	×	×	×	×
Traditional healers				×				×	×	×	×
Patients	×			×	×		×		×		×

Review Article

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