



Review

Conducting operational research within a non governmental organization: the example of Médecins Sans Frontières

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ABSTRACT

Like many other non governmental organizations (NGOs) that provide assistance to vulnerable populations living in difficult and resource-limited settings, Médecins Sans Frontières (MSF) is confronted with situations for which proven, effective interventions are often lacking and/or where there is need for strong advocacy for improving medical care. As a result, MSF has become an important contributor to health research, and has dedicated resources to guide operational research by establishing its own Ethics Review Board, an innovation fund, an online publications repository and by regularly contributing to major scientific conferences.

However, this increased research activity has led to concern that priorities and resources may be diverted away from the essential mandate of care provision for NGOs. In response, this article discusses the potential role operational research can play within medical NGOs such as MSF, and highlights the relevance of operational research, the essential elements of developing it within the organisation and some of the perceived barriers and solutions.

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1. Background

Médecins Sans Frontières (MSF) is an international humanitarian aid organisation¹ that delivers emergency medical aid to people affected by armed conflict, epidemics, health care exclusion and natural or man-made disasters. MSF currently works in about 70 countries.

Like many other non governmental organisations (NGOs) that provide assistance to vulnerable populations living in difficult and resource-limited settings, MSF is confronted with situations for which proven, effective interventions are often lacking and/or where there is need for strong advocacy for improving medical care.²

To fill this gap, MSF has become an important contributor to health research through expansion of its research activities.^{3,4} This is reflected in the number of peer-reviewed publications that has increased more than 10-fold between 2000 and 2008 (Figure 1). The increased engagement in operational research has led to some important organizational initiatives: MSF has dedicated specific human resources to facilitate operational research, it has established its own ethics review board,⁵ an innovation fund, and an online publications repository,³ and negotiated with over 35 publishers to allow free, open access to all articles written by its staff on its MSF Field Research website.³ MSF also regularly contributes to major scientific conferences and hosts its own research days.^{6,7}

However, with this increased research activity also comes concern from within the organization that research

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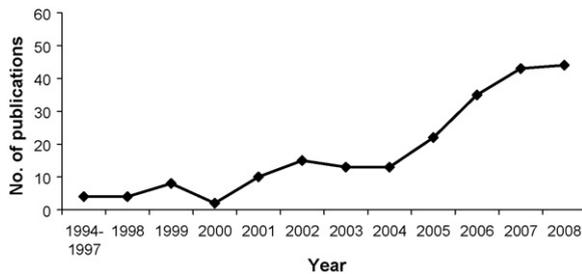


Figure 1. Trend in peer-reviewed scientific publications in MSF Operational Centre Brussels, Belgium 1994–2008.

diverts too much attention and resources from its core job of delivering care.

The term ‘operational research’ is increasingly used by MSF and other health care providers and is broadly understood to mean research activities done within the context of care provision. However, there is limited published information on the experiences so far and the potential role operational research can play within medical NGOs such as MSF. This article is based largely on the experience of the authors, all of whom are involved in operational research in the organisation. From an MSF perspective, we highlight the relevance of operational research, essential elements of building operational research within the organisation and some of the perceived barriers and solutions.

2. Definition and relevance of operational research from an NGO perspective

Many proposed definitions of operational research exist,^{8–11} but from an NGO perspective, a pragmatic definition is ‘the search for knowledge on interventions, strategies or tools that can enhance the quality, effectiveness or coverage of programmes in which the research is being conducted’.

Operational research in MSF is mainly focused on descriptive studies, usually cross-sectional, and cohort studies. Experimental studies such as randomised controlled trials are sometimes done but their complexity and time and resource demands usually make them impracticable for a service organisation.

A key element is ensuring that the research is not disconnected from medical action to avoid it being perceived as an unwanted burden on existing care delivery. Research questions are generated by identifying the constraints and challenges of implementing each programme’s medical activities. The answers provided to these questions should then have direct, practical relevance to solving the identified constraints and challenges, thereby improving medical action.

Three main reasons why operational research is relevant for a medical NGO are: (i) to improve effectiveness of treatment or prevention interventions (improving the quality of assistance), (ii) to assess the feasibility of implementing new models of care (strategies or interventions) among vulnerable groups or in specific settings and (iii) to gather evidence to support advocacy for health policy

change. For example, Table 1 provides some examples of published operational research studies conducted by MSF in each category and their contributions to influencing practice and policy [12–23].

Additional positive spin-offs of an NGO being involved in operational research include: improved medical visibility and credibility which attracts and retains highly qualified medical staff, access to and networking with national and international decision-makers, credible inputs at scientific forums that can serve as platforms for international advocacy and support for the shaping of medical and policy guidelines. The engagement with people who have research skills (epidemiologists, statisticians, anthropologists and medical editors) working in the same team as those who deliver care also fosters an added rigour to programme planning, implementation and evaluations. Involvement in research activity increases knowledge of current literature and inevitably leads to the development of better data collection systems, monitoring and feedback. Publications in scientific journals has traditionally not been a strength of NGOs and much NGO research does not go beyond the gray literature or report level, which limits the potential for similar organisations to learn from each other.²⁴ Strengthening NGO capacity to publish is necessary as publishing in peer reviewed scientific journals brings with it several additional advantages which are summarized in Table 2.

In addition, organisations like MSF have a distinct role to play in settings where academic research is impractical or neglected. For example, academics rarely have access to conflict and disaster settings. Research in these areas is, nevertheless, needed to assess and report on the feasibility and effectiveness of interventions in those contexts.^{25–26} Similarly, some areas are neglected by the traditional research community, and NGOs can step in to fill the void: the support for improved treatment and diagnosis of neglected diseases is one example.²² Finally, NGO proximity with communities can also be a specific advantage in fostering the role of the community in research.^{27,28}

However, from an implementer’s perspective, the ultimate relevance of operational research is whether it contributes to improving the effectiveness or performance of interventions or influences policy change.²⁹

3. Essential elements in building operational research in MSF

MSF has identified a number of essential elements in developing and conducting operational research within an NGO environment. These include: establishing an operational research support unit, developing a research policy guideline, defining the correct and relevant research questions from an operational perspective, integrating research studies into the annual programme planning process, establishing a research registry, defining research protocols and procedures for ethical review, involving national partners to promote co-ownership, ensuring dedicated expertise is available on the field, and dissemination (Table 3). They are discussed in more detail below.

Table 1
Examples of operational research studies published by MSF and their contributions to policy and practice.

Operational research studies (Main author, Title, Country)	Main finding(s)	Contribution(s) to policy and practice
<i>Improving effectiveness and outcomes of medical interventions</i>		
Zachariah R. Payment for antiretroviral drugs is associated with a higher rate of patients lost to follow-up than those offered free-of-charge therapy in Nairobi –Kenya [12]	<ul style="list-style-type: none"> • 58% higher risk of loss to follow up associated with payment for ART 	<ul style="list-style-type: none"> • Policy makers accepted the detrimental effect of ART payment on outcomes and the service began to be offered free-of-charge to all patients in Mbagathi hospital
Unge C. Reasons for unsatisfactory acceptance of antiretroviral treatment in the urban Kibera slum, Kenya [13]	<ul style="list-style-type: none"> • ART dose dilutions by patients who had to pay for ART • Provided reasons why ill ART eligible patients were not accepting ART despite an offer 	<ul style="list-style-type: none"> • Led to policy changes in the Kibera ART programme design and implementation in order to enhance ART uptake • Provided policy recommendations to reduce attrition rates
Massaquoi M. Patient retention and attrition on antiretroviral treatment at district level in rural Malawi [14]	<ul style="list-style-type: none"> • Relatively high levels of loss to follow up at district hospital level and mortality at primary health centres while scaling up ART for universal access 	<ul style="list-style-type: none"> • Led to improved contingency measures for sustaining ART and TB drug supplies during slum violence in Nairobi, Kenya
Reid T. Providing HIV care in the aftermath of Kenya's post-election violence Medecins Sans Frontieres' lessons learned January - March 2008 – Kenya [15]	<ul style="list-style-type: none"> • Effective strategies were implemented to sustain HIV/AIDS care and ART in a setting of urban violence 	
<i>Assessing feasibility of interventions in specific populations or settings</i>		
O' Brien D. Universal access: the benefits and challenges in bringing integrated HIV care to isolated and conflict affected populations in the Republic of Congo [16]	<ul style="list-style-type: none"> • Integrated ART can be offered in a conflict setting with good outcomes 	<ul style="list-style-type: none"> • Provided knowledge on how to implement an integrated HIV/AIDS programme in a rural conflict-affected setting to achieve universal access
Bedelu M. Implementing antiretroviral therapy in rural communities: the Lusikisiki model of decentralized HIV/AIDS care- South Africa [17]	<ul style="list-style-type: none"> • A decentralized, simplified model of ART delivery based on nurses was feasible in rural South Africa 	<ul style="list-style-type: none"> • Led to policy change in allowing non-physician clinicians to administer ART in the province
Zachariah R. Voluntary Counselling, HIV-testing (VCT) and adjunctive Cotrimoxazole reduces mortality in tuberculosis patients in Thyolo - Malawi [18]	<ul style="list-style-type: none"> • VCT and adjunctive cotrimoxazole shown to be feasible, safe and associated with reduced mortality in TB patients under programme conditions 	<ul style="list-style-type: none"> • Provided evidence on feasibility and effectiveness to support country-wide expansion of HIV testing and cotrimoxazole for TB patients in Malawi
Wilson D. HIV Prevention, Care and Treatment in Two Prisons in Thailand [19]	<ul style="list-style-type: none"> • Describes the experience of offering HIV/AIDS care in two prisons in Thailand 	<ul style="list-style-type: none"> • Provided knowledge on how to implement HIV/AIDS care in this setting and related challenges
<i>Advocating for policy change</i>		
Guthmann JP. Assessing antimalarial efficacy in a time of change to artemisinin-based combination therapies: the role of Médecins Sans Frontières [20]	<ul style="list-style-type: none"> • High levels of drug resistance in falciparum malaria and ineffective national regimens in 18 countries 	<ul style="list-style-type: none"> • Led to a shift in national and international policy on use of more effective antimalarial treatment
Van Griensven J. High prevalence of lipotrophy among patients on stavudine-containing first-line antiretroviral therapy regimens in Rwanda [21]	<ul style="list-style-type: none"> • Showed that lipotrophy was an important complication of WHO recommended first-line ART regimens 	<ul style="list-style-type: none"> • Highlighted the urgent need for access to more affordable and less toxic ART regimens in Africa
Balasegaram M. Effectiveness of melarsoprol and eflornithine as first-line regimens for gambiense sleeping sickness in nine Médecins Sans Frontières programmes [22]	<ul style="list-style-type: none"> • Showed higher effectiveness of eflornithine among first-line treatment regimens for stage 2 human African trypanosomiasis. 	<ul style="list-style-type: none"> • Provided evidence for use of eflornithine instead of melarsoprol in African trypanosomiasis
Grais RF Unacceptably high mortality related to measles epidemics in Niger, Nigeria and Chad [23]	<ul style="list-style-type: none"> • Demonstrated unacceptably high measles related case fatality in the 3 countries 	<ul style="list-style-type: none"> • Provided evidence to advocate for improving measles vaccination programmes in the affected countries.

VCT- Voluntary counseling and HIV testing, TB-Tuberculosis, ART – Antiretroviral therapy.
WHO – World Health Organization.

Table 2

Benefits in publishing operational research in peer reviewed scientific journals.

- Improves knowledge of current scientific literature among field staff
- Provides an evidence base for advocating for policy changes with Ministries of Health or international policy makers
- Facilitates the sharing of experience between NGOs and other implementers
- Peer review improves rigour and readability of findings
- Enhances the credibility of NGOs and their influence in the international community
- The 'process' of documenting experiences is a valuable process in itself as it compels one to confront/justify preconceptions and critically reflect on a programme's impact and orientation

3.1. Establishing an operational research support unit

Support staff at headquarters level includes an operational research officer, a data manager and a medical editor who have programme, research and publication skills. The operational research officer is responsible for the coordination of all research-related activities, liaison with operational staff, management of research resources, and training and mentoring of support staff. The data manager provides essential statistical support including the development of routine and prospective data collection tools and statistical analysis. The medical editor supports MSF field staff in setting up, carrying out and writing operational research projects for publication.

3.2. Establishing an operational research policy

As research activity is not the primary mandate of organisations such as MSF, it is useful to establish a formal policy document that outlines: the meaning and purpose

Table 3

Essential elements for building operational research into Médecins Sans Frontières (MSF).

- A competent research officer(s) who has programme skills to lead and coordinate the development of research activity supported by a data manager
- An operational research policy document developed to clarify the 'what, why and how' of operational research in the organisation
- A research registry established and regularly updated
- Research questions generated from within programmes focused to answer implementers' questions
- Research planning, agenda-setting, objectives, targets and budgeting included within annual planning exercise
- Research conducted within the framework of field operations and not run in parallel
- A critical mass of field staff to manage study protocols, conduct operational research, write up manuscripts and publish relevant research
- An institutional ethical review board to facilitate ethical review
- Close collaboration established with local authorities and national partners
- Training, mentorship and on-the-job supervision sustained over time
- Field staff with access to scientific literature and encouraged to attend and present abstracts at scientific conferences
- A dissemination strategy to market the added value of operational research to MSF
- Relevant operational research translated into policy and practice with a spin-off effect to stimulate more research

Table 4

Two examples of generating operational research questions from the programme level.

- Example 1* Lack of knowledge about patient defaulting
Programme objective: Achieve excellent treatment completion or excellent retention rates on therapy (e.g. for tuberculosis or antiretroviral treatment)
Constraint: High default rates from therapy
Research question: Why do people default?
- Example 2* Inefficient use of a diagnostic tool
Programme objective: Achieve high quality sputum smear diagnosis using three sputum smears per patient
Constraint: Three smears per patient are demanding for the laboratory technicians due to human resource shortages and high sputum caseload
Research question: Are two smears as efficient as three for diagnosing smear-positive pulmonary TB?

of operational research from an institutional perspective, guiding principles to be followed when integrating research activity into field programmes, and considerations for initiating and managing an operational research study. The MSF document is practical and includes broad guidance on subjects such as writing a study protocol, seeking ethical clearance, writing conference abstracts or journal manuscripts and determining authorship. Such a document serves as the guiding framework for research activity both at the headquarters and field levels. It is available on the MSF Field Research website.³

3.3. Defining the correct research questions from an operational perspective

When aid programmes have clearly specified objectives and targets, it permits identification of the constraints in meeting these objectives and targets. Once constraints are identified, research questions can be asked to better clarify the constraint or find a solution to the problem. At MSF this approach has ensured that research is generated from the programme itself and the findings are likely to have direct relevance to policy and practice. Research questions could arise from lack of knowledge on a particular subject, lack of a tool or intervention or inefficient use of a tool. **Table 4** gives two examples of how programme objectives can lead to the generation of relevant research questions.

Often research is more about opportunities than constraints – NGOs often find themselves doing pioneering work in unique contexts, and the rigorous documenting of such experiences is important to provide lessons for broader implementation and understanding.

3.4. Integrating research studies into the annual planning process

Once a study question or subject has been identified, it is discussed with the management and field teams to be sure it is integrated into the annual planning process to ensure adequate budgets, human resources and time allocation for implementation. Integration within annual planning also obliges an operational commitment and allows progress towards objectives to be evaluated over time. Budgetary planning is essential to ensure dedicated research support staff are provided. Field staff engaged in research usu-

Table 5
Barriers to operational research in Médecins Sans Frontières (MSF).

Barriers to operational research	Possible reasons	Lessons learnt
Perception and awareness about the role of research		
Senior managers fear that operational research would divert resources from aid delivery	<ul style="list-style-type: none"> • Lack of knowledge on the role and relevance of applied research to field operations • No dissemination or knowledge translation strategy for operational research within the Organisation 	<ul style="list-style-type: none"> • Establishing an institutional policy framework and reference document for operational research reassures operations staff and guides research activity • Research resources are complementary (e.g. a statistician or data clerk cannot do the work of a nurse) • The MSF field research website brings research activity and its impact into the public domain and makes publications easily accessible
Time and opportunity		
Field and headquarters staff have no dedicated time or opportunity for research activity related to protocol development, data analysis or writing papers	<ul style="list-style-type: none"> • Research is added as an additional responsibility on already overworked senior staff 	<ul style="list-style-type: none"> • Open a post of operational research officer at headquarter and field levels to coordinate research activity
No-one to manage research activity at head quarters or in the field	<ul style="list-style-type: none"> • No dedicated budgets or human resources for research implementation 	<ul style="list-style-type: none"> • Include budgets and additional human resources needed for research during the annual operational planning exercise • Give staff dedicated time (e.g. 2 days per week to conduct research)
Lack of human resource capacity		
Very limited outputs of planned research	<ul style="list-style-type: none"> • Individuals in charge of research have limited research or program skills • Capacity building efforts are targeted to the wrong individuals • Rapid turnover of staff 	<ul style="list-style-type: none"> • Establish strict criteria for selection of potential candidates for training • Persons involved with research have to accept contracts of at least 2 years
Study design and implementation		
The research question is not relevant to programme implementation.	<ul style="list-style-type: none"> • The researcher has inadequate understanding or experience working at a programme level (programme skills) 	<ul style="list-style-type: none"> • Provide mentoring in defining the study question, designing studies and data tools
Poor adherence to research protocol	<ul style="list-style-type: none"> • Inadequate on-the-job training and supervision 	<ul style="list-style-type: none"> • Ensure regular supervision and feedback
Poor quality of data or too much data	<ul style="list-style-type: none"> • Poorly designed data collection tools 	<ul style="list-style-type: none"> • Review data on a regular basis
Ethics clearance		
No ethics clearance is sought or received	<ul style="list-style-type: none"> • Programme staff conclude that no ethics clearance is required • Perception that ethics committees are a burden • No functional ethical board exists in the setting 	<ul style="list-style-type: none"> • Ensuring that all study protocols undergo formal ethics review • Making ethics an essential part of training to promote the perception that ethical boards are allies and not adversaries • Establishment of an MSF ethical review board facilitates ethical clearance in conflict settings
Writing skills for publication		
Failure of research to produce manuscripts and publications	<ul style="list-style-type: none"> • Poorly designed studies • Inadequate writing and language skills • No ethics clearance or exemption • No interest in investing efforts for publication in scientific journals 	<ul style="list-style-type: none"> • Writing skills training for publication is vital • Having the support of a medical editor is vital to develop writing skills capacity (through workshops and mentoring) and enhance publication outputs
Policy and practice		
Research findings are not translated into policy and practice at the field level	<ul style="list-style-type: none"> • Key decision and policy makers were not involved from the start and thus lack ownership • Study authorship is not inclusive of key decision makers • MSF workers lack the skills for interacting with national authorities and partners. 	<ul style="list-style-type: none"> • Empower decision makers and local partners to value the study from the beginning and sense ownership • Selected operational research officers should have both research and programme management skills and have longer term contracts (e.g. 2 years) • Introduce a clear performance framework with indicators to evaluate the impact of research on policy and practice over time

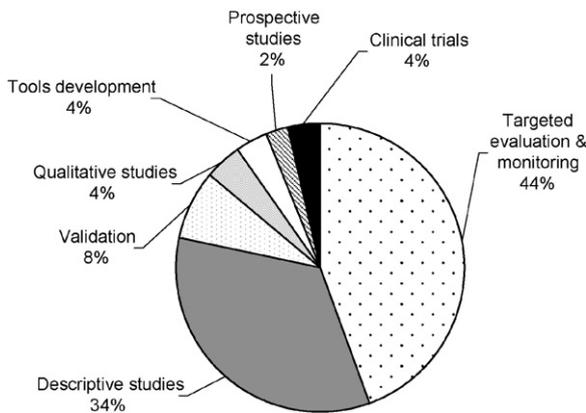


Figure 2. Type of study registered in the Operational Research Registry of the MSF Operational Centre, Brussels, Belgium in 2008 ($n = 166$).

ally have major operational responsibilities and while this increases the synergy between research and programme activities, there is a risk that the research will lose out to operational priorities. MSF has tried, therefore, to allot a period of protected research time for those engaged in research.

3.5. Establishing a research registry

A research inventory provides a yearly overview of all research studies being conducted in the organisation. It forms the basis for coordination of research projects to avoid duplication of studies, and for evaluation purposes at headquarters and field levels. Figure 2 shows the proportion by study type of 166 items on the research registry of the Brussels-based MSF section for 2008.

3.6. Research protocols and ethical clearance

Research needs a 'road map' which takes the form of a research protocol. A study protocol is particularly relevant for seeking formal approval from national authorities, for the purposes of ethical review and to keep institutional memory when staff turn-over is high. All MSF studies now require a study protocol to be developed that is then submitted to the MSF Ethics Review Board (ERB) for ethical clearance and to local authorities where possible. Acquiring ethics clearance in conflict settings is particularly difficult as often as national structures are non-existent.³⁰ MSF has overcome this hurdle through establishment of its own ERB with specific guidelines for this type of situation.^{5,31}

3.7. Involving national partners to promote co-ownership

MSF studies almost always include individuals from the national or district Ministry of Health, and sometimes local academic institutions. This encourages co-ownership and responsibility of national stake-holders in the study findings. This increases the possibility that the study findings will influence national policy. There is little to no operational advantage in conducting a study that is published but does nothing to improve policies in the field. Involving

national partners also fulfils the important ethical obligation of supporting local capacity.⁵

3.8. Ensuring dedicated expertise is available in the field

Building a research staff base that also has field programme skills is essential to conduct and sustain research over time. Training and mentoring should be ongoing across the spectrum of research from study design and implementation to statistical analysis and write up, conference presentation and publication.

3.9. Dissemination

Disseminating research findings within and outside the organization is important to impact on policy, practices and advocacy as well as enhancing awareness and acceptability of research activity. MSF has established an online repository for all its abstracts and journal publications³ and has negotiated with publishers to allow free access to the full text of all articles written by its staff. Research findings are also disseminated via meetings with the relevant authorities, posters and presentations at scientific conferences (including MSF Scientific Days), and media releases.

4. Barriers to operational research: possible reasons and lessons learnt

There are several barriers to developing and conducting operational research in an NGO like MSF. They include lack of awareness by senior managers of the relevance of operational research, the fear that it will divert resources from the core work of the organisation and a perception that research might become an academically driven, top-down exercise with little or no relevance to field work and communities. Care-oriented NGOs often lack the competence and/or capacity for designing or implementing research. Field staff usually do not have research skills. In addition, NGOs often have a rapid staff turn-over, which hinders the sustainability of research and the building of collaborative partnerships. These points may explain why NGOs rarely undertake research, or do it poorly, with little or no impact on their programmes.

The main barriers to conducting operational research in MSF with the possible reasons and lessons learnt are outlined in Table 5.

5. Conclusion

Despite a plethora of over 37 000 NGOs globally involved with activities at various levels of society,² the complementary role operational research can play in making their actions more effective is poorly understood and utilised.

One of the great strengths of NGOs is their role as advocates for the populations they serve. As well as improving delivery of care, health research can make NGOs more effective advocates by adding a strong evidence base to demands for improvement, and accountability of policy makers and governments. NGOs can also be directly

involved with translation of research findings into policy and practice.

Despite its demonstrated value, a large gap seems to exist between the call for more operational research and NGO engagement. For instance, the 2007 Sydney Declaration³² called for allocating 10% of all resources to HIV programming for operational research, but this has hardly been taken up by NGOs involved in HIV care. This underutilised resource provides an excellent opportunity for NGOs to develop research capacity that can enhance their programme effectiveness and should be encouraged.

The increasing engagement in and professionalism towards operational research in MSF has helped highlight both the successes and shortcomings of its medical actions for vulnerable communities around the world and to advocate for change. Put simply, operational research has helped MSF objectively document what is happening on the ground thereby increasing its effectiveness. Operational research is not a luxury; it should be an integral part of all NGOs' programmes.

Authors' contributions: The different co-authors have been involved with operational research over many years in MSF and have contributed their ideas and experiences to this paper either through direct or forum discussions or emails. RZ wrote the first draft which was critically reviewed and improved by NF, BD, OY and TR. All co-authors significantly contributed to the different drafts and the intellectual content. All co-authors have seen and approved the final version. RZ is guarantor.

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