



Defining and assessing evidence for the effectiveness of technical assistance in furthering global health

Gary R. West*, Sheila P. Clapp, E. Megan Davidson Averill and Willard Cates, Jr.

FHI 360, Durham, NC, USA

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In an era when health resources are increasingly constrained, international organisations are transitioning from directly managing health services to providing technical assistance (TA) to in-country owners of public health programmes. We define TA as: ‘A dynamic, capacity-building process for designing or improving the quality, effectiveness, and efficiency of specific programmes, research, services, products, or systems’. TA can build sustainable capacities, strengthen health systems and support country ownership. However, our assessment of published evaluations found limited evidence for its effectiveness. We summarise socio-behavioural theories relevant to TA, review published evaluations and describe skills required for TA providers. We explore challenges to providing TA including cost effectiveness, knowledge management and sustaining TA systems. Lastly, we outline recommendations for structuring global TA systems. Considering its important role in global health, more rigorous evaluations of TA efforts should be given high priority.

Keywords: technical assistance; research utilisation; programme effectiveness; programme evaluation; research to practice

Introduction

Over the past half-century, international nongovernmental organisations (INGOs) have made many contributions to the health and development needs of low-income countries. They have brokered funding, established programmes, conducted research and helped deliver services on an enormous scale. However, the role of INGOs is changing. In May 2009, President Obama announced the Global Health Initiative (GHI) – a major effort by the US Government (USG) to address public health issues around the world. The GHI encourages INGOs to transition from managing service delivery programmes to providing more technical assistance (TA). Under this transition, country governments and local organisations will own, manage, strengthen and sustain their national health programmes (USAID 2010). Other funders have called for INGOs to make similar changes in their roles (OECD 2010, The Global Fund 2010).

Finding more effective and efficient ways to deliver TA is a priority for achieving global health goals. However, no guidelines or model systems have been generally accepted to define TA or direct TA efforts (Potter and Brough 2004). Some TA activities lack focus, follow through and contextual sensitivity. Also, many TA services

*Corresponding author. Email: GWest@fhi360.org

are uncoordinated across organisations and vary widely in their quality and comprehensiveness (Mitchell *et al.* 2002, Ministry of Foreign Affairs of Denmark 2007, Curry *et al.* 2010, Government Accountability Office and President's Emergency Plan for AIDs Relief 2010, OECD 2010, UNAIDS 2011). Because TA is an important means for capacity-building and a core activity in the emerging field of 'implementation science', TA methods need to become more evidence-based, standardised and rigorously evaluated (Potter and Brough 2004, Padian *et al.* 2011).

To advance our understanding of global health-related TA practices, systems and needs, we review published evaluations and relevant theories. We define TA, describe delivery systems and summarise what is known about TA practices and effectiveness. We also outline the skills required for competent TA providers and present suggestions for increasing cost-effectiveness and sustaining high-quality TA systems. Our findings may also be applicable beyond global health, to organisations working in other domains (e.g., human services, international monetary policy, disaster response and defense) engaged in improving their TA systems (Neufeld 1978, Marincioni 2007, Gibbs *et al.* 2009, Gates 2010).

Defining TA

We were unable to find a commonly accepted definition of TA in the published literature. To most, TA is a simple, straightforward activity: (1) a programme manager requests help or a technical expert identifies a need to design a new or enhance an existing programme; (2) a content expert is identified to provide the assistance; (3) the TA is provided; and (4) recommendations from the TA are put into practice. But, even a superficial assessment will quickly reveal that providing effective TA is a complex and challenging process.

Structurally, TA is provided through a broad range of systems, using a variety of methods. TA can be a one-time activity performed by consultants or long-term assistance provided by a resident advisor (Mitchell *et al.* 2002). A TA system can be highly centralised with a core group of providers, or it can be decentralised, with loose coordination of short-term independent consultants (Ministry of Foreign Affairs of Denmark 2007, Tyson and McNeil 2009). TA activities often include training, mentoring, reviewing literature, analysing data, and developing and disseminating tools and guidelines that are tailored to address specific technical needs.

Some have proposed that a TA system should function as an 'interpretive bridge' to catalyse improvement (Logan *et al.* 2005). Clearly, TA should help programme staff learn about relevant developments in science, technology and programme practice. TA can also be a platform for linking research to action to meet the specific needs of an organisation (Mitchell *et al.* 2002, Kegler and Redmon 2006, Lavis *et al.* 2006). In practice, TA most often involves responding to requests for short-term assistance. It usually does not include a systematic assessment of need or the development of long-term plans for improving the effectiveness of programmes (Backer *et al.* 1995, Mitchell *et al.* 2002, Potter and Brough 2004, Lavis *et al.* 2006, Ministry of Foreign Affairs of Denmark 2007, Bertozzi *et al.* 2008, Durlak and DuPre 2008, The Global Fund 2010). To capture the evolving need for TA in a transitioning world, we propose the following comprehensive, system-based definition: 'TA is a dynamic, capacity-building process for designing or improving the

quality, effectiveness, and efficiency of specific programmes, research, services, products, or systems. A TA system continually assesses TA needs and monitors the relevance and utility of an evolving base of experience, knowledge, and technology. It assists others in adapting and applying new knowledge, technology, and innovative practices to improve outcomes and increase impact’.

Two major concepts underlay TA (Figure 1): market ‘pull’ and technology ‘push’ (Rimer *et al.* 2001, Mitchell *et al.* 2002). Pull begins at the programme level. It facilitates access to technical information that programme implementers believe they need. Thus, pull TA reactively responds to requests for support. Push TA proactively integrates emergent knowledge, research findings and technology into programme practice (Rimer *et al.* 2001, Lavis *et al.* 2006). Push TA often begins at the central level and targets groups of programmes, helping them adopt innovations, technologies and new treatment regimens or programme approaches. But the push component can also involve assessing the needs of multiple programmes and promoting the use of up-to-date knowledge, extant research findings and proven interventions.

Logically, as pull and push are mutually reinforcing concepts, TA systems should include both. Programme managers who request assistance (pull TA) can benefit from learning about TA systems and resources, and TA providers trying to integrate new knowledge and technology (push TA) can learn about programme needs, challenges and capabilities. TA providers who respond to pull requests can build trust with programme staff, which facilitates the integration of research findings or evidence-based practices into local programmes. Push initiatives can help programme

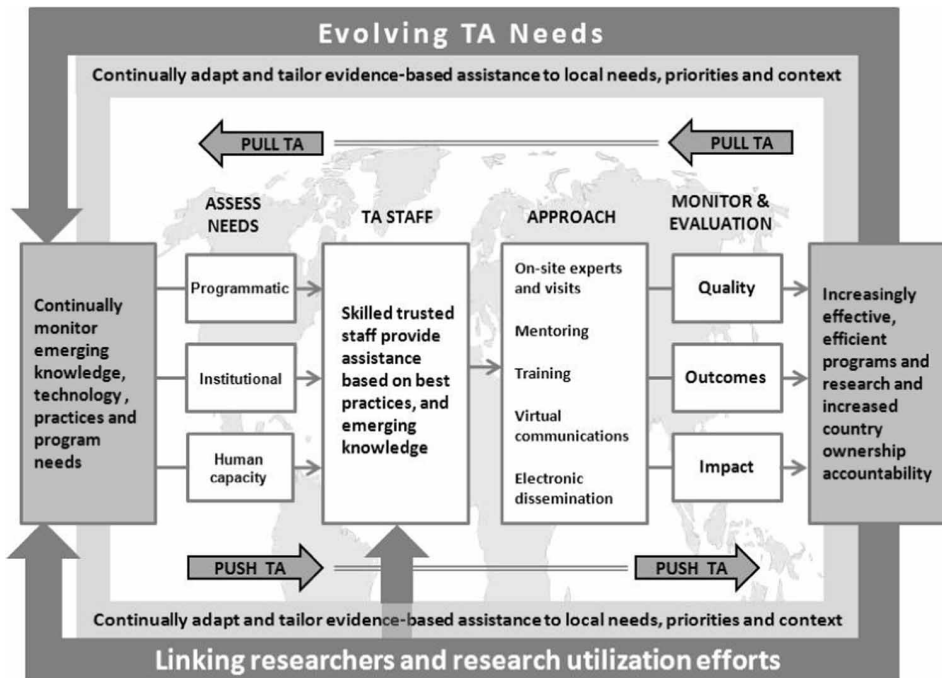


Figure 1. A dynamic TA system model.

managers not only improve their efforts but also encourage the use of the TA system when needs emerge.

TA provider knowledge and skills

Successful TA providers must understand the experience, context, capabilities and challenges of the programmes they are trying to support (Blanchard and Aral 2010). Knowledge of changing programme needs and implementation capacities is required to determine evolving TA priorities. Moreover, TA providers must evaluate and synthesize information from multiple sources and agree on the most relevant, feasible solutions to address identified needs and local circumstances. They must also engage the recipients of TA when designing and delivering the assistance (rather than merely disseminating information). Above all, effective TA providers must maintain trusting relationships with the programmes they are serving. Without such trust, recommendations may not be heeded by TA recipients, even when compelling evidence for their effectiveness exists (Mitchell *et al.* 2002, Rogers 2004).

Because TA can help improve the quality and relevance of research (as well as programmes), TA providers who support in-country research teams (push) need to be familiar and experienced with the scientific, regulatory and operational issues likely to be encountered. For example, in the recently completed CAPRISA 004 clinical trial (which demonstrated that a vaginal gel containing the antiretroviral drug tenofovir can prevent HIV among women), experienced biostatisticians, data managers, social scientists and communications experts provided scientific and operational support to the South African investigators (Abdool Karim *et al.* 2010).

Relevant theories

Many behavioural change, social and system theories are relevant to understanding issues surrounding TA. Although a full discussion of these theories is beyond the scope of this article, we will highlight three of the most relevant.

Diffusion of Innovation theory, which defines diffusion as the process by which an innovation is disseminated over time among members of a social system, is especially germane to understanding how to structure TA systems and improve their effectiveness (Valente and Rogers 1995, Rogers 2002). For an innovation to be accepted, diffusion theory indicates that the advantage of integrating it into practice must be clear and compatible with the local context. Recommendations by TA providers will probably not be accepted by programmes if the innovation is not based on evidence, cannot be easily implemented or is inconsistent with local needs. Diffusion theory also predicts that early adopters and peer opinion leaders will be the most influential agents of change and that a critical mass of adopters will be needed for system-wide change (Rogers 2002, 2004 Bertrand 2004, Chinman *et al.* 2005, Peterson *et al.* 2007).

Social cognitive theory, with its core concept of self-efficacy, also provides insight into TA systems. Based on this theory, we expect that confident, well-prepared TA providers who have strong evidence supporting their recommendations are most likely to succeed. Conversely, some local health officials (even if they are convinced that implementing the recommendations will enhance operations) may doubt they have sufficient skills to implement them or to gain support from higher-ranking local

policy-makers (Leviton 1989, Bandura 1999, Pajares 2002). Although training on how to be a good TA provider is rarely mentioned in the literature, social cognitive theory explains that people learn from others who model ‘skilled’ behaviour. Much like proponents of diffusion theory, proponents of social cognitive theory may stress that priority should be given to ‘pushing’ into practice the TA recommendations that have the most compelling evidence of significant benefit.

Finally, *readiness-to-change theory* builds on the concept that, like individuals, communities and organisations can be at different stages of readiness to receive TA (Edwards *et al.* 2000, Mitchell *et al.* 2002). Assessing readiness to receive TA and to integrate new knowledge or technology into practice can help determine which organisations should have priority for receiving TA. Applying this theory can also help identify the most effective TA methods for a given context (Leviton 1989, Prochaska *et al.* 1993, Valente and Rogers 1995, Edwards *et al.* 2000).

Evidence for TA effectiveness

To assess the effectiveness of TA, we used the PRISMA guidelines for systematic reviews (Moher *et al.* 2009) to examine the scientific literature from January 2000 through October 2010 for published evaluations of TA. We searched both PubMed and POPLINE databases using the keywords ‘technical assistance’, ‘research utilisation’, ‘research to practice’ or ‘technology transfer’ coupled with ‘assessment’, ‘evaluate’, ‘evaluation’ or ‘study’. Our initial search found 1181 articles, of which 1067 were excluded as irrelevant or incomplete based on our review of abstracts. We reviewed the full text of the remaining 114 articles (including 16 we had identified through reviewing citations). Of these articles, 23 were included in our assessment (Table 1). Each article met the following inclusion criteria: (1) was an evaluation of TA that had been provided to a specific programme or system, (2) described the methods used to provide the TA and (3) presented data relevant to the TA. While we may have missed some evaluations indexed with different keywords, our review was extensive. We did not systematically assess the quality of the study methods or try to rank the evaluations.

The TA field is characterised by many unpublished reports in the ‘grey’ literature that are not peer reviewed and can be hard to access. We assessed reports appearing in the grey literature during 2010–2011 using the same keywords and criteria used to search the scientific literature by combing the USAID Development Experience System (DEXS), Google and Google scholar. We reviewed 520 reports and found many descriptive programme evaluations in multiple countries, but no specific evaluations of TA that met our criteria.

Only 2 of the 23 published evaluations had an international focus. The remaining 21 evaluated TA provided to US-based organisations. All 23 described their TA approach and methods in detail, and nine included a comparison or control group and six randomised respondents. All of the evaluations documented some benefit of TA on programme operations, programme outcomes or organisational capacities. Four of the articles assessed the degree to which NGOs receiving TA maintained ‘fidelity’ in adapting interventions into their programmes. Encouragingly, the evaluations that used the most rigorous methods tended to produce the most compelling findings. Although limited, the published evidence suggests that easily

Table 1. A summary of published evaluations of technical assistance: 2000–2010.

Lead author	Year ^a	Recipients (n)	Location ^b	Focus	Study design ^c	Major Findings and conclusions
Kelly (Kelly <i>et al.</i>)	2000	ASOs (83)	Metropolitan areas in 47 US states	HIV prevention	E, RR, CG	Active collaboration between researchers and service agencies results in more successful adoption of evidence-based practices than distribution of implementation packages alone
Stevenson (Stevenson <i>et al.</i>)	2002	CBOs (13)	RI, US	Substance abuse	CS	A needs assessment was useful in focusing technical assistance. TA and training can build confidence in evaluation methods
Jolly (Jolly <i>et al.</i>)	2003	CBO (98)	8 US cities	HIV prevention	QA	Preferred TA providers have practical experience, accessibility, cultural competence and communications skills
Kelly (Kelly <i>et al.</i>)	2004	ASOs (86)	78 countries	HIV prevention	E, RR, CG	Advanced communication technologies can provide a cost-effective means to disseminate new intervention models worldwide
Mitchell (Mitchell <i>et al.</i>)	2004	Community coalitions (41)	ME, US	Behavioural and community health	QE, CG	While coalition effectiveness improved, no explicit relationship was found between the amount of TA delivered and coalition effectiveness
Batchelor (Batchelor <i>et al.</i>)	2005	CPG/Prevention agencies (21)	TX	HIV prevention	QE	Increased use of behavioural data in planning
Kegeles (Kegeles and Rebchook)	2005	CBOs, ASOs and LHDs (44)	US	HIV prevention	QA	Collaboration between TA providers and CBOs increased evaluation capabilities
Tang (Tang <i>et al.</i>)	2005	Health promotion practitioners (240)	China (7 cities/one province)	Health promotion	QE, CS	Marked improvements in key reform areas and self reported knowledge
Kegler (Kegler and Redmon)	2006	CHP (48)	US	Tobacco control	QA	TA services resulted in increased knowledge and skills, strengthened leadership and partnership and changes in program practices

Table 1 (Continued)

Lead author	Year ^a	Recipients (n)	Location ^b	Focus	Study design ^c	Major Findings and conclusions
Florin (Florin <i>et al.</i>)	2006	CBOs (9)	RI, US	Tobacco control	QE	Understanding of the programme logic model facilitated TA services. Continued interaction between TA providers and programme coordinators helped identify needs and target TA. Proactive offering of TA is needed for interventions to be successfully adapted and implemented with fidelity to core elements and to ensure programme sustainability. TA strategies are associated with better use of data for community assessments, planning and use of grant funds. Collaborative efforts and community participation are critical to facilitate utilisation of behavioural health research findings. TA and frequency of TA requests were associated with higher recruitment rates. GTO model can build individual capacity and enhance programme performance. Schools increased their adoption of sun protection policies. Compared dosage of TA received. Results demonstrate limited impact of TA on board functioning. Increasing effectiveness of the internal coalition results in an equally effective response on evidence-based prevention programmes.
Harshbarger (Harshbarger <i>et al.</i>)	2006	CBOs and LHDs (162)	US	HIV prevention	QE	
Olivia (Oliva <i>et al.</i>)	2007	LHDs (61)	US	Maternal and child health	QE	
Peterson (Peterson <i>et al.</i>)	2007	CHP (7)	NM, US	Behavioural health	CS	
Spoth (Spoth <i>et al.</i>)	2007	Community/ University Teams (14)	IO, PA	Drug abuse	E, CG, RR	
Chinman (Chinman <i>et al.</i>)	2008	Community coalitions (10)	CA & SC, US	Substance abuse	E, CG	
Emmons (Emmons <i>et al.</i>)	2008	Elementary schools (28)	MA	Skin cancer	E, RR, CG	
Feinberg (Feinberg <i>et al.</i>)	2008	Community coalitions (96)	PA, US	Adolescent behavioural health	QE, CG	
Riggs (Riggs <i>et al.</i>)	2008	Community coalition (24)	5 US States	Drug abuse	E, CG, RR	

Table 1 (Continued)

Lead author	Year ^a	Recipients (n)	Location ^b	Focus	Study design ^c	Major Findings and conclusions
Hunter (Hunter <i>et al.</i>)	2009	Community coalitions (2)	US	Substance abuse	QE	Effective TA models consist of two-way interactions that emphasize collaboration between TA providers and recipients
Mayberry (Mayberry <i>et al.</i>)	2009	CBOs (24)	9 US states	HIV prevention	QE	Providing TA markedly enhance CBO capacity to plan, implement and evaluate interventions
Gibbs (Gibbs <i>et al.</i>)	2009	CBOs (4)	TX, KS, MO, DC, /US	Sexual violence prevention	QE	TA systems should invest in relationship building, collaborate with program staff, tailor TA to programme preferences, and combine structured with programme-specific TA
Kalichman (Kalichman <i>et al.</i>)	2010	CBOs (111) and LHDs (11)	37 US states	HIV prevention	QE,	Interventions are commonly adapted to improve community fit and meet programme constraints. Programmes found adapted interventions to be beneficial
Rohrbach (Rohrbach <i>et al.</i>)	2010	High schools (65)	US	Drug abuse	E, CG, RR	Comprehensive intervention support (with TA) results in stronger effects on implementation fidelity

^aYear of publication.

^bUS state abbreviations used.

^cE, experimental; QE, quasi-experimental; CG, comparison group; RR, random assignment of respondents; QA, qualitative assessment; CS, case study.

Note: ASO, AIDS service organisation; CBO, community-based organisation; CHP, community health programmes; CPG, community planning groups; GTO, Getting to Outcomes project; LHD, local health department.

accessible, collaborative TA systems that include continued interaction between providers and recipients are most likely to have an impact.

Results of the two internationally focused TA evaluations largely echoed what has been learned from US domestic evaluations. They used two different, but both apparently effective, methods of providing TA. The first evaluation targeted 86 AIDS NGOs in 78 countries using a new intervention. The NGOs were randomised either to receive enhanced TA support or to be in a control group. The NGOs that received enhanced TA support participated in an interactive distance-learning curriculum coupled with telephone consultations with a behavioural scientist. The NGOs in the control group received reference materials with no consultations. The investigators found that virtual systems can effectively link service providers to support for adopting a science-based programme. Twenty-seven (64%) of the 42 NGOs receiving enhanced TA support, versus only 14 (34%) of the 41 control NGOs, developed a new or modified an existing programme (Kelly *et al.* 2004).

The second evaluation was of TA services provided to health-promotion practitioners during a major TA project to build capacity for community-based health in China. Rather than using a series of ad hoc consultancies, the project used a progressive approach to introduce new concepts (for promoting community health) that called for an increasing degree of Chinese input and management to ensure sustainability and maintenance of technical support. The evaluation utilised a range of quantitative and qualitative methods, including pre/post surveys of practitioners; independent assessments commissioned by the World Bank; content reviews of plans, proposals and evaluation reports; and a post-project review of newly developed policies, strategies and guidelines. However, it did not include a comparison group. The results showed many practical changes in knowledge and skills, which were reflected in annual plans, project proposals, implementation and evaluation reports, and guidelines for schools, hospitals, workplaces and communities. The TA providers also achieved a trustworthy, respectful working relationship with Chinese colleagues that contributed to its success (Tang *et al.* 2005).

Although relevant theory and published evidence on the effectiveness of TA provide a reasonable foundation for structuring and implementing TA systems, there are many unanswered questions and little data on providing TA in developing countries or in different cultural contexts. As TA is a major activity of the GHI and other global programmes, we believe that the emerging framework for implementation science, proposed for programmes supported by the US President's Emergency Plan for AIDS Relief (PEPFAR), urgently needs to be applied to TA. This framework includes more rigorous monitoring and evaluation, operations research and evaluation of impact to improve quality and effectiveness (Padian *et al.* 2011).

Challenges to TA systems

Challenges to TA systems are common. For example, inadequate funding and non-availability of qualified TA providers may limit responses to pull requests. Once on site, challenges in defining expectations, agreeing on priorities, establishing collaboration with programme staff and providing TA with sufficient 'dose' strength can arise. Accepting too many TA requests can reduce the quality of assistance (Mitchell *et al.* 2002, Hunter *et al.* 2009). Lastly, some organisations are not ready to receive TA, believe it is too costly, or do not have the capacity to implement

recommendations (Rogers 2002, Greenhalgh *et al.* 2004, Logan *et al.* 2005). With all of these challenges, it is not surprising that TA systems also have difficulty retaining their experienced staff. INGOs have encountered all of these issues, finding them to be amplified by the geographic scope and multicultural requirements of global efforts.

Knowledge management

All TA systems need to manage an increasing amount of scientific or technical knowledge to determine what is most useful for local programmes. Thousands of publications and reports of innovative global health practices are generated each year. For example, during 2010, more than 14,000 publications on HIV/AIDS issues, nearly 3000 on malaria, and more than 5300 on tuberculosis alone were cited in PubMed. Screening systems can help TA providers identify the most relevant publications to share with TA recipients, but programme managers are often unable to review the vast amount of information to identify what could help improve their services (Goldstein *et al.* 1998, Bertozzi *et al.* 2008).

Internet sites and other sources of programmatic information also exist, but most focus on US domestic issues (Goldstein *et al.* 1998, Armstrong and Del Rio 2009). Moreover, reports of evaluations of international programmes are difficult to access. Even when available, programme managers may not know which sources of information are authoritative, reliable and up to date (USAID 2011). TA systems need to have user-friendly procedures for assessing proposed best practices (from all sources) for the quality, relevance and feasibility of implementation (Rimer *et al.* 2001, Bertozzi *et al.* 2008).

Supporting research to practice

Once a study is completed, translating findings into use can also be frustratingly difficult (Rogers 2002). A survey of researchers in 10 countries found that less than half had any type of 'bridging' relationship with policy-makers or programme managers (Lavis *et al.* 2010). Furthermore, researchers may underestimate the resources required to bring a new programme to scale. Likewise, most programme staff do not routinely read published reports of research or have experience integrating emerging research findings (Goldstein *et al.* 1998, Kelly *et al.* 2004, Lavis *et al.* 2006, Peterson *et al.* 2007). When they do attempt to adapt evidence-based interventions to local context, they may inadvertently neglect or revise components that are critical to their effectiveness.

To help facilitate the research-to-practice process, researchers, TA providers, recipients of TA, implementing agencies, and local communities should be viewed as one 'boundary-spanning' team that moves through the process together, always focused on the eventual utilisation of the research findings (Sogolow *et al.* 2000, Rogers 2002, Greenhalgh *et al.* 2004, Chinman *et al.* 2005, Lavis *et al.* 2006). This approach can help ensure that research meets the needs of programmes, without compromising study effectiveness. Once findings are available, the team can help facilitate integration of the findings into practice (World Health Organization 2004, Peterson *et al.* 2007). Experienced TA providers can also highlight programmatic issues that could be translated into future research questions that, if answered, could lead to more effective programmes. TA providers can facilitate lasting programme

and research ‘exchange relationships’ that increase researchers’ credibility with programme staff, identify opportunities and capabilities for future studies, and increase willingness to participate in research (Logan *et al.* 2005, Blanchard and Aral 2010).

Cost-effectiveness

Costs for providing TA in developing countries vary substantially (Ministry of Foreign Affairs of Denmark 2007), but salary and travel costs for TA providers are the major expenses. However, the time and effort local programme staff exert to define TA needs and secure needed assistance can also add up (Florin *et al.* 2006).

Three approaches can be used to reduce TA costs and increase effectiveness. The first approach focuses TA efforts on a narrow range of evidence-based priorities decided using a collaborative process. This (rather than responding to all pull requests) will help ensure that interventions most likely to achieve key programme outcomes are well supported. Responding to all pull TA requests will not be cost-effective, and having a clear consensus on priorities will help control costs and increase the impact of the TA that is provided (Mitchell *et al.* 2002).

The second approach expands virtual TA programmes using emerging communication technologies such as distance learning, telephone consultation, mobile devices, texting systems and other Internet-based approaches to reduce personnel costs and travel expenses. This approach was used in several of the evaluations of TA we reviewed and appears feasible (Kelly *et al.* 2004, Marincioni 2007, Oliva *et al.* 2007). However, advances in computer and virtual technologies are evolving at such a fast pace that they need to be constantly monitored to identify new capabilities that can support TA systems.

The third approach transfers TA responsibilities from international staff to well-trained local staff. The cost of training and providing assistance through local TA providers is substantially lower than for international staff. Local TA providers are also more accessible and more likely to have direct knowledge of programme needs (Ministry of Foreign Affairs of Denmark 2007). However, local staff will need significant support to keep up on emerging research and innovative practices, and retaining them once they are trained and experienced can be a formidable challenge (Stevenson *et al.* 2002, Kegeles and Rebchook 2005, Oliva *et al.* 2007, Hunter *et al.* 2009).

Local TA systems can benefit from embedding experts with the required TA experience and skills into country teams (Rogers 2002, Meyerson *et al.* 2008). These experts can rapidly learn programme needs and gain local credibility more easily than TA providers who periodically visit. Resident experts can mentor the TA providers and help establish the systems needed to sustain local efforts. They can also serve as an interface between global information systems and ‘push’ efforts (World Health Organization 2004, Meyerson *et al.* 2008). If adequate provisions are made to sustain local TA infrastructure, embedding experts into country teams could be highly cost-effective in the long term. Such approaches may be required to build technical capacities in large-scale systems, such as that described earlier in the evaluation of TA in China (Tang *et al.* 2005).

The most cost-effective approach will likely be a permutation of the options. A well-designed ‘south-to-south’ TA capacity-building programme may tie together

and strengthen all three options. Such programmes could identify common needs, provide peer mentoring to TA staff in neighbouring countries and create attractive career opportunities for local TA providers. Targeted assistance can still be obtained from international staff as needs emerge (CDC 2002).

Creating global TA systems

Creating and sustaining effective global TA systems to support the GHI or other global programmes is a formidable undertaking but will be fundamental to their success. Although priority should be given to strengthening the evidence based on TA effectiveness, the available literature is useful in guiding the development of TA systems. An ideal TA system must perform two critical functions. First, it must incorporate an in-depth knowledge of evolving programme needs and challenges. Second, it must continually and critically examine emerging knowledge, technologies and innovative practices to determine which are the most relevant, feasible and likely to improve programme effectiveness and capabilities.

A key task for TA systems will be to recruit, train, and retain skilled and experienced staff. This is especially true for local TA providers who, working with counterparts in other countries, can form a global community of TA practice. Assistance must be tailored to address local priorities, using cost-effective methods. The TA systems should link researchers to programmes to facilitate identifying research needs and translating research results in practice. Lastly, evaluating the quality, process, cost-effectiveness and impact of assistance must be an integral component of all TA systems. We believe the theory and evidence discussed here should stimulate the emergence of such systems – those that operate effectively at all levels (local, country, regional and global) and help achieve the world's health and development goals.

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