EFFECTIVE CAPACITY-BUILDING STRATEGIES FOR HEALTH TECHNOLOGY ASSESSMENT:

A RAPID REVIEW OF INTERNATIONAL EXPERIENCE

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June 2015

EXTENDED EXECUTIVE SUMMARY

Introduction

Health Technology Assessment (HTA) is one of the tools that supports the policy formulation process. Using multidisciplinary analyses, it examines the health, economic, social and ethical implications of the use of new (and existing) 'technologies,' broadly defined as any interventions to improve health. These analyses inform the development of clinical protocols, the composition of benefit packages and reimbursement mechanisms for health care providers, for example.

The clinical and economic assessment of interventions is the particular concern of HTA, given that resources are insufficient to cope with the existing burden of disease. Economic analyses are therefore the core activity of HTA. However, to have policy impact, the findings of these evaluations need to be inserted into government's priority-setting processes, where they are weighed against numerous other concerns. Participation in certain stages of these processes is also a function of HTA practitioners.

Approach to the review

This review was commissioned by PRICELESS SA (Priority Cost Effective Lessons for System Strengthening South Africa), an initiative hosted by the School of Public Health at the University of the Witwatersrand in South Africa. The review is an activity of the International Decision Support Initiative (iDSI) in which PRICELESS SA and the Thai government's Health Intervention and Technology Assessment Programme (HITAP) are partnered with NICE International, the international wing of the UK's National Institute for Health and Clinical Excellence.

The purpose of the review is to assist this partnership in identifying ways to scale up practical support for more systematic, fair and evidence-informed priority setting in health care, first in South Africa and possibly then more widely in the region. This is in the context of relatively under-developed HTA capacity in Sub-Saharan Africa.

The review draws on:
- a rapid scan of the literature from low- and middle-income countries on building capacity in health systems and policy research (with a focus on health economics and HTA);
- the researcher's own evaluations of capacity-building programmes for health economics and financing in South Africa;
- the lessons shared by participants at a side meeting on HTA of the Prince Mahidol Award Conference in Bangkok, Thailand in January 2015; and
- the deliberations of a national workshop on HTA run by PRICELESS SA in Johannesburg in March 2015.

The focus of the review is on how independent (or quasi-independent) research organisations can contribute to capacity development in HTA. The review treats HTA as comprising the functions of both economic evaluation and broader approaches to priority setting.

The review is guided by a conceptual framework for understanding organizational capacity that sees capacity as not only i) the numbers and skills of individuals in an organisation, but also ii) the strengths of the organization itself, iii) the extent to which the organisation is networked with other relevant actors in performing its tasks, iv) the positive features of the public sector environment in which the organisation has to operate, and v) a supportive contextual environment.

The review's recommendations are formulated for the iDSI partnership but may be of use to other research groups, both in South Africa and in other African countries.

What are the international lessons for building political support for HTA?

A supportive environmental context makes it easier for organisations to build capacity, both internally and externally. Political will is one element of a supportive context and especially important for effective HTA systems. Internationally, HTA has begun to be integrated closely into government decision-making in some countries (for example, in England and Thailand). This has come with greater awareness of the need to consider not just efficiency concerns but also issues of equity and social values, whilst balancing the demands of different stakeholders. At the same time, the methodologies underlying HTA have become more sophisticated, taking into account both delivery platforms and the synergies between different interventions. In some low- and middle-income countries (such as Indonesia, Korea and Taiwan), the obligation to incorporate HTA in policy-making has even been enshrined in legislation.

The impetus internationally towards universal health coverage (especially in largely publicly financed health systems) has helped to spur on these developments: this is because the definition of affordable benefit packages, purchase prices for pharmaceuticals and reimbursement rates for providers are informed by economic analyses. Universal health coverage also creates a climate in which it is possible to build popular support for fair and efficient priority setting.

This positive international context provides several opportunities for African countries. In South Africa, it provides an enabling context for several internal developments that are likely to create an increased demand for informed priority setting. First, the newly created Office of Health Standards Compliance represents a major new potential consumer of such evidence that has legal authority and administrative structures to enforce service delivery and quality standards. Second, establishing quality services that offer value for money will be of critical concern if the draft National Health Insurance policy is to be affordable and supported by critical stakeholders such as the Treasury.

Third, the newly created Southern African Health Technology Assessment Society (SAHTAS) can be expected to improve the regional climate for general HTA, just as the regional chapter of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) has created a platform for methodological and other debates with respect to the economic evaluation of pharmaceuticals. Fourth, both SAHTAS and the African Health Economics Association will be holding conferences in South Africa over the coming 12 months. These events have the potential to both build political support for HTA and contribute directly towards capacity-building efforts. This was the experience of Hungary, for example, where the creation of a health economics association was a very important step in establishing an avenue through which HTA could formally influence policy-making.

These positive external and internal contextual features are tempered by a number of challenges facing South Africa and other African countries. These include: limited capacity in health economics; the absence of HTA agencies in African Ministries of Health to coordinate the HTA process (unlike in several South-East Asian countries); and decision-making processes that are often fragmented across tiers of government and between 'silos' within the Ministry of Health.

Therefore, despite an improving political climate both within the region and South Africa, there is still some way to go to achieve the political support that is required to foster the active and routine use of HTA in government decision-making (what one might call national capacity to commission and apply HTA).

Recommendations to research institutions seeking to build political support for HTA in South Africa and elsewhere

1. See the development of political support as a critical aspect of capacity building and develop a detailed understanding of how to stimulate and sustain this support. While government is a key stakeholder in this regard, and should undoubtedly be the focus of initial efforts, it is also important to build support for HTA-informed decision-making in broader society (including civil society groups, patient groups and the media). This is because of the highly contested nature of resource allocation policy.
2. As HTA is a complex and sometimes alienating concept, develop a simple and eye-catching policy brief that explains the concept and demonstrates its application (the term HTA should possibly be substituted with a more comprehensive and self-explanatory term). Thus, show how, internationally (and specifically in low- and middle-income countries), HTA has contributed to affordable and equitable health care and has led to improved health outcomes. The policy brief should include an explanation of what an appropriate HTA system could look like. This should be targeted at policy-makers and senior managers in the Ministry of Health as well as other key stakeholders. It should provide concrete examples of how HTA could be incorporated into decision-making. Disseminate this brief as widely as possible.
3. Use occasions such as the meetings of HTA and related societies to disseminate information on the practical use of HTA evidence, provide training to policy-makers and managers on how to commission and use evidence, and garner ideas from policy-makers and managers on how best to support their decision-making needs.

What are the international lessons for building public sector institutional capacity for HTA?

While the previous section looked at the general political climate with respect to HTA, this section looks at the capacity of public sector institutions to support and drive priority-setting processes, specifically within South Africa (the situation in many other African countries can be expected to be the same or worse, given economic constraints).

The international literature identifies the following necessary components of a fair and sound priority-setting process that is based on HTA and effectively manages political, commercial, advocacy and donor interests:

- Specific legislation and structures to oversee the use of HTA to inform government decision-making
- Specific legislation and structures to register new health products that are efficacious and safe to use
- A systematic process that involves a wide range of stakeholders in identifying policy-relevant interventions for assessment
- Economic analyses of priority interventions that use sound methods and are based on criteria that conform to social and health objectives
- Budget impact analyses that project the financial impact of new interventions
- A deliberative process that combines the findings of the above analyses with more subjective criteria generated through consultation, and makes recommendations
- A government decision-making process that assesses these recommendations and decides whether to fund new interventions under the public budget
- An appeals and evaluation process that allows government decisions to be challenged and assesses the impacts of newly funded interventions
- A mechanism to adjust and update recommendations on the basis of new information

Such an HTA process could adjudicate different approaches to public health interventions, just as it does, more commonly, for pharmaceuticals, medical equipment and procedures. It needs to be formalised, transparent, robust and protected from political and commercial pressures. It also needs to be funded sustainably (for example, through government grants and not only ad hoc research grants) and should avoid funding from stakeholders with vested interests (such as pharmaceutical groups). It requires considerable expertise within government to lead and manage, not only in terms of technical analysis but also in terms of stakeholder management. The literature from South-East Asia accordingly emphasises the importance of developing a core HTA team (or agency) to take on these tasks. Successful HTA agencies in this region have as many as 20 to 80 full-time academic staff.

The HTA agency does not necessarily have to conduct all economic analyses itself: it could commission research from a variety of external institutions as well (which is the model followed by Thailand, for example) but would need to establish strict guidelines for the implementation of such research. Importantly, while an HTA agency is responsible for putting forward recommendations, it is the senior decision-making structures within the Department of Health that decide whether and how these recommendations should be incorporated into policy.

Analyses of a range of low- and middle-income countries that have set up less successful HTA processes identified a number of challenges: there is a severe shortage of local research capacity; there are weaknesses in legal and institutional structures; there is a shortage of quality data; HTAs are often flawed as a result of poor research methods, especially where there are no standardized HTA research guidelines and processes; research is seldom directed towards major health problems; benefit packages are not updated on the basis of new data and products; there is minimal involvement of stakeholders; budget considerations are not taken into account; and HTA evidence is not used appropriately because health professionals and policy-makers do not have a good understanding of HTA and research is not timely.

Turning to the situation in South Africa, while the National Department of Health undertook to set up an HTA agency several years ago, this has not yet come to fruition. Further research is required to understand why this is so. In Thailand it took over two decades of

experimenting with the creation of various units and programmes before the institutionalisation of a national agency in 2007.

As already mentioned, priority-setting processes in the South African government are complex and fragmented. Importantly for this review, health economics skills are in short supply within government and are not always harnessed effectively to support decision-making. While some data for HTA are improving (such as Burden-of-Disease information), South Africa's public health information systems are generally weak. While some aspects of information systems in the private sector are strong (such as claims data), these systems do not take a comprehensive approach to understanding disease burdens or health outcomes, whereas cost data are generally confidential.

An important component of the development of national HTA capacity is the publication of national guidelines for HTA. Only a limited number of protocols have been developed for the African context and the appropriateness of their design and application still needs to be investigated further. General guidelines for HTA do not yet exist in South Africa although there are guidelines for pharmacoeconomic studies (although they are apparently generally not yet applied). Clinical guidelines exist but do not always incorporate clearly defined economic considerations.

Recommendations to research institutions seeking to build the capacity of Ministries of Health and Treasuries to commission and use HTA evidence

1. Develop a good relationship with key individuals in the Department of Health and Treasury, seeking their opinions on what sort of support they require to build awareness on how to use HTA evidence, and initiate, structure and facilitate a process that supports more rational commissioning and use of HTA on a national scale. In particular, develop an understanding of how to progress beyond in-principle support to effective processes that gradually improve the way that HTA evidence is incorporated in government decision-making.
2. Develop a better understanding of current priority-setting structures and processes in government (at national, provincial, district and facility levels) as well as key flaws in these processes and capacity-constraints.
3. Identify a few concrete, useful and immediate interventions to enhance government capacity, not just for understanding, conducting or commissioning HTAs, but also on how to manage what can become politically highly charged processes. This could include, for example, such activities as coaching committee members on what is expected of a priority-setting committee, how to interrogate evidence and arranging policy dialogues on pertinent issues and advising lower levels of the health system on how to implement HTA-related advice (in the fashion of NICE). These could be done at a national level or, in a decentralised system, at lower levels. They would be a mechanism to give policy-makers a concrete understanding of what is possible with HTA, develop trust between policy-makers and technical experts, and give technical experts a better understanding of the context facing decision-makers.
4. Undertake a demonstration research project, possibly in collaboration with other country research partners, in order to provide the Department of Health with a 'small win' as well as provide capacity-building opportunities to government and academic staff.
5. Explore the possibility of collaborating with the Department of Health on facilitating the development of official guidelines for HTA and threshold for cost-effectiveness (this

could become a collaborative activity involving a number of research groups or associations). An analysis of what data are available and mechanisms for dealing with data weaknesses could form part of this process.

6. Discuss with the Department of Health possibilities for the longer-term training of key individuals earmarked to develop in-house HTA expertise (for example, mentoring, short courses and internships at research organisations).

7. Explore whether and how, in the longer term, research groups could help the Department of Health perform HTA agency-like functions with the intention of eventually graduating towards a fully-fledged HTA agency. Such functions could include convening meetings to identify research priorities and commission research.

What are the international lessons for successful networking between HTA experts?

This section focuses on the capacity of the 'task network' of HTA experts in government, research organisations, consultancies and private health financing organisations that need to be linked effectively in order to identify priority areas of research, collaborate on developing methodologies or conducting research, and discuss the implications of research findings.

The benefits of regional and international research linkages are emphasised by studies from Kenya, Malawi, Nigeria and Thailand, amongst others. Experience from South Africa shows that the capacity of relatively small health economics research units to take on large projects was made possible through partnering with like-minded organisations. This created a critical mass to undertake work, promoted the sharing of methods between the partners (thereby building capacity) and enhanced the profile of the research partners (thereby extending their policy influence).

Looking at existing potential networks for HTA in South Africa, it is clear that the country has already conducted a number of cost-effectiveness-related studies over the decades. There are a number of well-established researchers with considerable experience, as well as a number of up-and-coming researchers interested in working in the field. There are a smaller number of well-established research groups. While the links between all these individuals and groups appear to be many and varied, and several of them have links with government, to date there does not seem to have been a forum or process that makes optimal use of existing HTA research capacity in the country. This suggests that efforts to network HTA researchers more closely are required.

With respect to international lessons for successful networking, it is clear that networks require very active management and careful negotiation of the responsibilities of, and relationships between, the different partners. The body of this review provides several tips on how to achieve this, drawing particularly on experience from South Africa.

Recommendations for research organisations seeking to strengthen the task network for HTA researchers in their countries or region

1. Invest considerably in expanding relationships with key stakeholders within the country, region and internationally, but ensure that these relationships are guided by clear objectives. Analysing the nature, strengths and weaknesses of existing networks might be a necessary precursor to this activity.

2. Consider partnering with one or two local organisations on a concrete project in order to enable a larger piece of HTA work, strengthen methodologies and model a collaborative, multi-disciplinary approach to building HTA capacity. Such an activity would also help to cement relationships.
3. Given that there is considerable research expertise in the private sector in some countries, explore what role this could play in supporting the development of an HTA system. Private sector players could eventually be commissioned to conduct appraisals but these would have to adhere strictly to formal guidelines. It is unclear whether datasets held by the private sector are either suitable or available for use in economic appraisals by independent researchers: this might be one issue that a network could explore.
4. Consider establishing a formal regional network: apart from helping to build capacity regionally, this could also inform the development of priority-setting approaches in the home country. Careful thought would need to be given to how to run and sustain such a network (drawing on international lessons), and how to ensure this network creates meaningful capacity. The involvement of policy-makers would be important for an HTA network and the number of countries involved might need to be limited to enable in-depth discussion and implementation of clearly defined activities. However, it may be premature for research organisations to venture into this domain without prior experience of effective HTA processes in their own country context.

What are the international lessons for strengthening the organisational capacity of HTA research groups?

When it comes to building research capacity, the focus is often on individual researchers. However, to ensure that research capacity is enduring, and not overly dependent on a few remarkable researchers, it is critical to strengthen the organisational capacity of research institutions: this tends to be a relatively neglected component of donor-funded capacity-building efforts. While PRICELESS SA appears to have good organisational capacity (in terms of financial sustainability, sound governance and financial management, skilled researchers and quality assurance), it – and most other South African HTA research organisations - remain small and largely soft-funded. This section therefore looks at the international experience of building the organisational capacity of research groups, including how to optimise the support provided by international partners.

Experience from Africa and South-East Asia identifies multiple challenges to building research capacity in low- and middle-income countries. These include inadequate financial and human resources, problems retaining skilled staff, as well as weak governance and management. Capacity-building partnerships with international partners often struggle with finding a compromise between the research interests and priorities of local and international researchers, imbalances in power between research partners, and a lack of trust. This notwithstanding, there are some examples of successful partnering between Northern and Southern partners in health economics capacity-building in Africa which are detailed in the body of the review.

An interesting point is that Mexican and Thai researchers found that the strong organisational capacity of their research groups was partly accounted for by their frequent face-to-face interactions with policy-makers (in meetings and on training programmes). Their trustworthiness was based on the relevance of their work to contemporary issues, long-term innovative research programmes that provided timely information, high quality

research underpinned by local and international peer review, core values consistent with the social objectives of government, intellectual independence, being uncompromising in avoiding research funding from organisations with vested interests, and transparency. Studies from South Africa also highlight the important synergy between policy-makers and researchers in training programmes: while researchers are able to disseminate their research findings, policy-makers are able to convey research priorities to researchers as well as convey implementation challenges.

International studies confirm the need to ensure core funding for research groups, which are typically soft-funded. This puts a heavy burden of continual fund-raising on the shoulders of senior staff, makes it difficult to attract high calibre staff because of the lack of job security, forces research units to cross-fund important activities such as capacity-building from research funds and distorts research agendas according to the needs of international funders.

Thus, one of the important factors that has contributed to the success of the Thai Health Intervention and Technology Assessment Programme has been substantial funding by government and international agencies, although this has brought its own challenges as the Programme has had to carefully manage its academic independence. Core government funding also provided stability and opportunities for expansion of health systems research in China and Mexico which have seen growth in the number of researchers, and an improved ability to take on long term programmes of research that have a direct and profound influence on government reforms, whilst retaining some degree of academic independence.

Recommendations for strengthening the organisational capacity of research groups

1. Consider the creation of an advisory Board or reference group as this helps to protect the independence and continuity of a research group, as well as promote strategic thinking. With respect to HTA-related work, two Boards might in fact be appropriate: one a 'Policy Advisory Board' that involves the Department of Health and Treasury, plus selected senior managers from other levels of the health service (such as Provincial Departments of Health); the other a Scientific Advisory Board, which involves international experts. However, a clear purpose for the Boards is required as well as appropriate appointees.
2. In partnerships with local and international researchers, create structures and processes for decision-making and communication that are mutually satisfying, and actively manage the needs and concerns of the various partners.
3. Incorporate a funding strategy into an organizational capacity-building plan that seeks to move towards long-term and core funding, and put mechanisms in place to preserve academic independence where this funding is under government or donor control.

What are the international lessons for building the capacity of individual research staff to conduct and apply HTAs?

This section looks at strategies for building the skills of individual research staff to conduct HTAs. This distinguishes it from an earlier section which focused more on building the capacity of staff who are involved in priority-setting processes, but do not need specialised knowledge of HTA.

With this focus in mind, this section looks at building the capacity of research staff through formal and informal training. It also distinguishes between building the capacity of staff external to an HTA organisation (through external training programmes) and building the capacity of internal staff (through programmes to nurture junior staff so that they can gradually take on more senior responsibilities in the organisation). A particular complexity of HTA is that it requires multi-disciplinary skills: researchers from specific disciplinary backgrounds may need to learn and apply skills from other disciplines or learn how to work effectively in multi-disciplinary teams.

Local training programmes were an important explanatory precursor to HTA agencies in Korea, Malaysia, Taiwan, and Thailand. In these countries, training programmes included short courses and workshops as well as Master's and PhD degrees. Training programmes are also a very good vehicle through which to keep open information channels between researchers and decision-makers as discovered in Thailand and South Africa.

While short courses are likely to be needed, longer, postgraduate training tends to be neglected in health systems and policy research development generally and is probably an additional need. These might include different forms of instruction, including face-to-face interaction, online training (including through MOOCs), internships and dissertations. PhD training is critical to provide the advanced skills required to conduct complex research and lead research teams.

With respect to where researchers could access training, there is a range of opportunities for regional or international training. A tactic used by the Thai government was to give relatively large numbers of its staff the opportunity to undergo PhD training at the London School of Hygiene and Tropical Medicine by providing bursaries. The main gap in this sort of training, though, is the lack of local technical support that allows close and on-going supervision of local research studies. Further, formal training by international experts is expensive, especially when located overseas: it is therefore not a viable or complete alternative to local training. Nonetheless, informal exchanges with overseas partners remain very useful.

Another dimension of capacity-building is building the capacity of staff working internally in a unit. This is an important component of any research capacity-building strategy in African countries, as they struggle with a chronic shortage of mid-level research staff. In South Africa, this seems to be because, as soon as staff gain sufficient skills within a research environment (which tends to offer relatively low salaries), they become easily employable in the government and private sectors (which offer higher salaries as well as the opportunity to have a more direct impact on policy). This results in a severely over-stretched cohort of senior researchers, which in turn jeopardises the sustainability of training programmes relying on their expertise and guidance.

Building the capacity of internal staff requires a research organisation to adopt a number of strategies, as detailed in the body of this report. One of the more difficult types of support to provide is mentorship.

Recommendations for research organisations seeking to build the capacity of external and internal research staff

1. Survey key stakeholders regarding training needs regarding HTA (in terms of content and format). Also investigate the content and format of existing courses more thoroughly.

Finally, investigate the training experience of countries with well-established HTA training programmes. On the basis of this, develop a detailed training strategy.

2. Seek funding and technical support for designing appropriate courses, including the development of locally relevant case studies.
3. Develop a strategy for recruiting local researchers into the organisation, and developing the capacity of all internal staff. On-the-job mentorship of young researchers is important.
4. It is not essential to send research all staff on formal training programmes overseas. However, there may be fruitful exchanges that can be arranged. Participants should be carefully selected, however, and exchanges should have clear learning objectives.

Conclusion

Research organisations working in the field of HTA have to do so much more than conduct high quality research: they also have to engage with a complex array of stakeholders, network closely with a number of other research organisations, build partnerships with different levels of government and train the future generation of HTA researchers and policy-makers. In low- and middle-income countries where there are no government HTA agencies, they also have to support the development of an effective HTA-informed priority-setting process that is sensitive to societal and government needs and priorities. International experience advises that, in embarking on this complex process, it is important to start small, building on existing capacity and opportunities through the development of sound partnerships.

There are clearly many possible dimensions to a capacity-building strategy for HTA in South Africa and the region: the key will be to select appropriate starting points that build on research partners' strengths, meet some of the immediate needs of the country governments and contribute to longer-term goals.

Table of Contents

1. Introduction

Health Technology Assessment (HTA) is one of the tools that supports the policy formulation process. Using multidisciplinary analyses, it examines the health, economic, social and ethical implications of the use of new (and existing) 'technologies,' broadly defined as any interventions to improve health. These analyses inform the development of clinical protocols, the composition of benefit packages and reimbursement mechanisms for health care providers, for example.

The clinical and economic assessment of interventions is the particular concern of HTA, given that resources are insufficient to cope with the existing burden of disease. Economic evaluations and budget impact analyses are therefore the core activity of HTA. However, to have policy impact, the findings of these assessments need to be inserted into government's priority-setting processes, where they are weighed against numerous other concerns. Participation in certain stages of these processes is also a function of HTA practitioners. This review therefore treats HTA as comprising the functions of both clinical and economic assessment, as well as broader approaches to priority setting.

The review was commissioned by PRICELESS SA (Priority Cost Effective Lessons for System Strengthening South Africa), an initiative hosted by the School of Public Health at the University of the Witwatersrand in South Africa. The review is an activity of the International Decision Support Initiative (iDSI).[1] While iDSI is a collaboration between a number of institutions, thus far it's activities in South Africa have largely involved a collaboration between PRICELESS SA, the Thai government's Health Intervention and Technology Assessment Programme (HITAP), the Centre for Health Economics at the University of York, and NICE International, the international wing of the UK's National Institute for Health and Clinical Excellence.

The purpose of the review is to assist this partnership in identifying ways to scale up practical support for more systematic, fair and evidence-informed priority setting in health care, first in South Africa and possibly then more widely in the region. This is in the context of relatively under-developed HTA capacity in Sub-Saharan Africa (Kriza, Hanass-Hancock et al. 2014).

2. The review approach

This is a rapid review that does not pretend to capture all the international experience relevant to building capacity in HTA. Instead, it draws on:
1. a rapid scan of the literature from low- and middle-income countries on building capacity in health systems and policy research (with a focus on health economics and HTA);[2]
2. the researcher's own evaluations of capacity-building programmes for health economics and financing in South Africa;

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[1] More information on iDSI can be found at http://www.idsihealth.org/about-us/.
[2] Search terms included 'capacity building,' 'health/health systems research,' 'health economics,' and 'health technology assessment'

3. the lessons shared by participants at a side meeting (entitled *Learning from practice: HTA capacity development across Asia*) of the Prince Mahidol Award Conference in Bangkok, Thailand on 25 January 2015 (referenced from now on as PMAC 2015); and
4. the deliberations of a national workshop on HTA run by PRICELESS SA in Johannesburg in March 2015.

The focus for the time being is on how independent (or quasi-independent) research organisations can contribute to capacity development: this is because this is the organisational position of the iDSI partners. The review does not look at how governments (or donors) could drive the development of national HTA and priority-setting capacity, or how to ensure that HTA evidence is translated into policy: these topics may need further investigation at a later stage. However, the review does look at how iDSI-like groupings could partner with their governments in supporting them to manage HTA management and priority-setting processes.

As the review is intended to inform the development of a capacity-building strategy, it is guided by a provisional analysis of existing challenges to building HTA and priority-setting capacity in South Africa. **Table 1** makes use of the Hildebrand and Grindle (1994) conceptual framework for understanding organizational capacity and uses PRICELESS SA as the unit of analysis.[3] The framework sees capacity as not only the numbers and skills of individuals in an organisation, but the strengths of the organization itself, the extent to which the organisation is networked with other relevant actors in performing its tasks, the positive features of the public sector environment in which the organisation has to operate, and a supportive contextual environment. **Table 1** examines how all these elements would affect the ability of PRICELESS SA (as the South African-based partner in the iDSI partnership) to carry out a range of capacity-building activities, namely:
- conducting HTA and informing priority-setting processes, including doing so through training;[4]
- facilitating a South African HTA network;
- supporting the development of an HTA 'agency' in government (with the understanding that this might be 'virtual' in nature, at least at first); and
- facilitating an African HTA network.

The analysis is based on the workshop mentioned above and is therefore necessarily very rough: it may need to be developed further at a later stage through a process of consultation with stakeholders. Nonetheless, it serves the purpose of identifying the following questions as pertinent to the review:
- what are the international lessons for building political support for HTA?
- what are the international lessons for building public sector institutional capacity for HTA?
- what are the international lessons for successful networking between HTA experts?
- what are the international lessons for strengthening the organisational capacity of an HTA research institution?
- what are the international lessons for building the capacity of staff?

These questions are addressed in the sections below.

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[3] The framework could be used to analyse the capacity of other South African research groups but it is assumed that the iDSI partnership will focus on building capacity with and through PRICELESS SA.

[4] The findings in this section could be applied to other research institutions in South Africa and not just PRICELESS SA.

Table 1: A preliminary analysis of existing factors that have the potential to facilitate or constrain a range of capacity-building activities by PRICELSS SA

ELEMENT OF CAPACITY		To conduct HTA and inform priority-setting processes, including through training activities	To facilitate a South African network	To support development of a South African HTA 'agency'	To facilitate an African network
Environmental context (i.e. the extent to which the broader context facilitates or hinders the ability of the unit to carry out these functions)	☺	• There is growing international interest in, and awareness of, HTA, which is creating political support for commissioning and using HTA in planning health services (for example, the World Health Assembly resolution on using HTA in support of universal health coverage (World Health Assembly 2014)) • There is well-established experience in high-income countries of conducting and using HTA which can inform HTA in LMICs as well as provide training opportunities • There is emerging LMIC experience of HTA and other priority-setting techniques, especially in South-East Asia, which provides additional learning and training opportunities in contexts more similar to the South African and African settings • Growing interest in mandatory health insurance as a means to combat inequity in many countries, including South Africa, is stimulating greater interest in effective priority-setting and reimbursement approaches (for example, in Zambia) • The large private health insurance sector in South Africa has considerable skills and experience in priority-setting, including HTA • A new Southern African Health Technology Assessment society has just been launched and a regional conference is planned for September 2015, followed next year by a South African-based conference of the African Health Economics Association in 2016			
	☹	• Awareness of, and political support for, HTA and formal priority-setting approaches is still relatively limited in many African countries, including South Africa WHAT ARE THE INTERNATIONAL LESSONS FOR BUILDING POLITICAL SUPPORT FOR HTA?			
South African public sector institutional capacity (i.e. the extent to which the nature of the public sector facilitates or hinders the ability of the unit to carry out these functions)	☺	• Some individuals in the National Department of Health have long-standing experience of assessing evidence on treatment protocols for the Essential Medicines List • The more recently formed Office of Health Standards Compliance has been through an extensive process of defining facility, equipment and service norms and setting quality targets			The nature of the South African public sector does not directly influence the ability of the unit to carry out this function. However, the nature of the public sectors of other countries may affect their ability to participate in a network. This will need further investigation should PRICELESS SA wish to take on this function.
	☹	• Priority-setting decision-making is fragmented across levels of government, directorates within the Department of Health, and facilities • Very few individuals in the National and provincial Departments of Health have training on priority-setting approaches • The data and methods for guiding decision-making are not always available or appropriate • A previous attempt to set up a government HTA agency failed WHAT ARE THE INTERNATIONAL LESSONS FOR BUILDING PUBLIC SECTOR INSTITUTIONAL CAPACITY FOR HTA?			

Networks (i.e. the extent to which the unit is able to participate in task networks that allow it to fulfil its tasks)	☺	• The unit is relatively well networked with other South African research groups, National Treasury, the National Department of Health and some provincial health departments, and has been able to positively influence the National Department as well as health journalists (e.g. salt policy) • The unit is relatively well networked with international HTA groups and has made some initial contacts with institutions in some African countries • The unit is in a formal partnership with NICE International and HITAP	
	☹	• The unit does not have a relationship with all provincial departments or with all relevant directorates • The unit has been unable to influence the National Department on some issues (e.g. breastfeeding policy) WHAT ARE THE INTERNATIONAL LESSONS FOR SUCCESSFUL NETWORKING BETWEEN HTA EXPERTS?	The unit is not extensively networked in Africa (however, through other iDSI partners it would be able to develop these relationships)
Institutional capacity (i.e. the extent to which there are strong institutional systems in place)	☺	• The unit has good university governance structures • The unit has a Steering Advisory Committee and a Technical Advisory Committee • The unit is relatively well-funded • The unit is well-managed and has access to relatively good financial and human resource management systems (through the university) • Quality assurance is good through peer review and other university-related mechanisms	
	☹	• The unit is largely funded by research grants which means that it continually has to fund-raise for specific research projects: however, it does have dedicated funding through iDSI for capacity-building WHAT ARE THE INTERNATIONAL LESSONS FOR STRENGTHENING THE ORGANISATION CAPACITY OF AN HTA RESEARCH INSTITUTION?	
Human resources (i.e. the numbers and skills of staff)	☺	• The unit has experienced senior and mid-level researchers • The unit can draw on the experience and support of NICE International and HITAP	
	☹	• The unit is small which places a heavy workload on staff, makes it difficult to take on large projects, and threatens its sustainability should any of the current staff decide to leave • The unit finds it difficult to recruit experienced black researchers WHAT ARE THE INTERNATIONAL LESSONS FOR BUILDING THE CAPACITY OF STAFF?	

☺ = positive feature; ☹ = negative feature

Note: this is a very rough analysis, simply for the purposes of identifying the main questions the review should address

3. What are the international lessons for building political support for HTA?

A supportive environmental context makes it easier for organisations to build capacity, both internally and externally (Hildebrand and Grindle 1994). Political will is one element of a supportive context and especially important for effective HTA systems (Mohara, Youngkong et al. 2012). The iDSI has been formed at a time when internationally HTA has begun to be integrated closely into government decision-making in some countries (for example, England and Thailand). This has come with greater awareness of the need to consider not just efficiency concerns but also issues of equity and social values, whilst balancing the demands of different stakeholders (Shah, Cookson et al. 2011, Glassman and Chalkidou 2012, Mohara, Youngkong et al. 2012). At the same time, the methodologies underlying HTA have become more sophisticated, taking into account both delivery platforms and the synergies between different interventions (for example, through the on-going Disease Control Priorities in Developing Countries Project). In some middle- and high-income countries (such as Indonesia, Korea and Taiwan), the obligation to incorporate HTA in policy-making has even been enshrined in legislation (as discussed in the side meeting of PMAC 2015).

The impetus internationally towards universal health coverage (especially in largely publicly financed health systems) has helped to spur on these developments (Teerawattananon, Tantivess et al. 2009, World Health Assembly 2014): this is because the definition of affordable benefit packages, purchase prices for pharmaceuticals and reimbursement rates for providers are informed by economic analyses. Universal health coverage also creates a climate in which it is possible to build popular support for fair and efficient decision-making: one of the features explaining Thailand's success is the widespread social acceptance of HTA as an element of decision-making (Mohara, Youngkong et al. 2012, Teerawattananon, Tritasavit et al. 2014). In this new era, Kaló, Bodrogi et al. (2013: 264) note that *'[o]ne of the most important questions of the HTA implementation roadmap is whether capacity building should come first or whether mandatory HTA requirement in the reimbursement process can induce the necessary background knowledge*.' In most of the case studies reviewed in this report, however, the development of capacity was an important precursor to the evolution of a functional HTA system (Kaló, Bodrogi et al. 2013, PMAC 2015).

This positive international context provides several opportunities for South Africa (Glassman and Chalkidou 2012). First, some of the conceptual and technical difficulties associated with HTA and priority-setting have been elucidated and addressed, at least to some degree: this might make it more feasible and palatable for a government such as South Africa's that is strongly equity-focused to incorporate HTA (which is often associated with efficiency concerns) in its decision-making. Second, relatively sophisticated HTA methodologies and evidence are now available which will reduce the costs to the country of doing HTA (although it is critical that important local differences are incorporated when applying evidence to the South African situation). Third, technical expertise from other countries is available to support capacity-development in South Africa: the iDSI partners, NICE International and HITAP, are ideally placed to provide this support, given their governments' extensive use of HTA and the fact that they combine experience from high- and middle-income countries.

The newly created Southern African Health Technology Assessment Society (SAHTAS) can be expected to improve the regional climate for HTA. Like the regional chapter of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR), it creates a specific forum for sharing methodological expertise and HTA findings, as well enabling discussion on how to apply HTA findings to the health systems and resource constraints of

African countries.[5] The creation of an health economics association in Hungary was a very important step in strengthening political support for HTA and creating an avenue through which HTA could formally influence policy-making, apparently through involving policy-makers in its frequent meetings (see **Box 1**). Both the new Southern African Health Technology Assessment Society, and the African Health Economics and Policy Association (AfHEA), will be holding conferences in South Africa in the near future (SAHTAS in September 2015 and AfHEA in 2016). These events also have the potential to both build political support for HTA and contribute directly towards capacity-building efforts.

Box 1: Hungary's experience of HTA capacity development

> ***Training in HTA***
> - Starting in the mid-1990s, two new centres were established at two universities, tutors received scholarships from The World Bank to study HTA-related disciplines at international centres, and DFID established a programme at a third university to facilitate the application of evidence-based medicine.
> - By 2000, the number of professionals with a thorough understanding of HTA had reached 50.
> - Several universities then introduced undergraduate training programmes in economic evaluation of medical technologies.
> - 2007 saw the introduction of the first postgraduate course with a major focus on economic evaluation and economic modelling.
> - By 2010 the number of professionals with personal experience of economic appraisal exceeded 200.
>
> ***Publication of guidelines for HTA***
> - 2002 saw the publication of methodological guidelines for conducting health economic evaluations.
> - Initially intended to be updated every two years, they were only updated once (in 2013).
>
> ***Creation of a formal scientific forum for debate around HTA issues***
> - In 2003 the Hungarian Health Economics Association was established, meeting 8 to 10 times a year and holding structured discussions on major policy issues.
> - From 2007 the association has also held an annual health economics conference.
> - In 2007 it also became the official Hungarian chapter of ISPOR (International Society for Pharmaceuticals and Outcomes Research).
> - It gained recognition from policy-makers and became involved in providing policy advice.
> - By 2013 it had over 100 members.
>
> ***HTA becomes a compulsory element of policy decisions***
> - In 2004, the Hungarian National Health Insurance Fund Administration made cost-effectiveness and budget impact analysis compulsory for reimbursement of pharmaceuticals.
> - An internal HTA department was created by the Ministry of Health.
> - In 2009, a critical appraisal checklist was developed to improve the quality of economic appraisals for pharmaceuticals.
> - In 2010, decision-making criteria were introduced for new hospital technologies, especially medical devices.

Source: Summarised from Kaló, Bodrogi et al. (2013)

South Africa's internal political environment also appears receptive to an increased role for HTA. Since 1994 treatment protocols have been applied to the public health sector and reinforced by an Essential Medicines List, while treatment algorithms in the private sector guide medical scheme authorisation and reimbursement patterns. A recent upsurge in

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[5] See the Society's website at http://www.htasa.org.za/southern-african-health-technology-assessment-society/.

interest in HTA, as evidenced by the contributions of government representatives at the March workshop, is linked to the imperatives of the proposed National Health Insurance policy: these require value-for-money interventions if the policy is to be affordable (and supported by Treasury) and dramatically improved quality if it is to be acceptable to the general populace.

While the formulators of the Essential Medicines List and Essential Treatment Guidelines (which include detailed treatment protocols that are supposed to consider clinical and cost effectiveness) have always been consumers of HTA evidence (as have a range of government directorates, university departments and specialist colleges involved in developing disease-specific guidelines), the newly created Office of Health Standards Compliance represents a major new potential consumer of such evidence that has legal authority and administrative structures to enforce service delivery and quality standards. Should the National Health Insurance policy eventually be enacted, it is expected that HTA evidence will be required to support the development of benefit packages as well as reimbursement mechanisms for providers. All these initiatives reflect the core elements of an HTA system (Glassman and Chalkidou 2012).

These positive external and internal contextual features are tempered by a number of challenges. The experience of African countries in building capacity for priority-setting is not well-documented (besides the experience of the well-known Tanzanian Health Interventions Project which included an impressive (and possibly more important) range of management interventions in addition to the application of cost-effectiveness information (Doherty and Govender 2004)). Africa has certainly had experience of determining minimum benefit packages for poorly resourced public sectors but the lessons for countries aspiring to deliver more comprehensive and equitable services are not clear (and this review has not been able to explore the experience of Essential Drug Lists in Africa). Certainly, the influence of donors and international agents on priority-setting in low- and middle-income countries were not always positive in earlier decades (Glassman and Chalkidou 2012).

While health economics, one of the core disciplines in HTA, has grown considerably in Africa since the analysis provided by McIntyre and Wayling (2008), and several health economists are reportedly increasingly involved in economic evaluations (personal communication with Anna Vassall, London School of Hygiene and Tropical Medicine), African health economists often still work in relative isolation and face heavy workloads (Doherty 2011).

Besides this, African Ministries of Health tend not to have their own HTA agencies, unlike the case in an increasing number of South-East Asian countries. As shown by the experience of such countries (PMAC 2015), government HTA agencies usually coordinate the HTA process, rather than research institutes or consultants. Growing interest in using HTA has thus not yet been translated into strong institutional support in Africa (although a proposed social health insurance policy in Zambia has engendered an interest in introducing cost-effectiveness evidence into the decision-making process around a benefit package (Kamanga 2015)).

Within South Africa, decision-making processes are often fragmented across tiers of government as well as between departments and directorates (Doherty 2015): apart from management challenges, this is a structural problem associated with the country's quasi-federal nature. In addition, severe implementation challenges often scupper attempts to deliver cost-effective and high quality care.

Therefore, despite an improving political climate both within the region and South Africa, there is still some way to go to achieve the political support that is required to foster the active and routine use of HTA in government decision-making (what one might call national capacity to commission and apply HTA). It is very encouraging, though, that the South African National Department of Health and Treasury are supportive of partnering with the iDSI initiative in working toward this goal.

<u>Recommendations for research organisations seeking to build political support for HTA in South Africa and elsewhere</u>

1. See the development of political support and engagement as a critical aspect of capacity building and develop a detailed understanding of how to stimulate and sustain this support. While government is a key stakeholder in this regard, and should undoubtedly be the focus of initial efforts, it is also important to build support for, and engagement with, HTA-informed decision-making in broader society (including community groups, patient groups, health facilities, health professionals, industry, the general public and the media). This is because of the highly contested nature of resource allocation policy. Further work is required to understand the best strategies for how to approach and involve other sections of society, especially in the initial stages. Further work is also required to understand the different types of capacity that these different groups require (such as the capacity to understand, critically evaluate and interpret research in a well-informed way).
2. As HTA is a complex and sometimes alienating concept, develop a simple and eye-catching policy brief that explains the concept and demonstrates its application (the term HTA should possibly be substituted with a more comprehensive and self-explanatory term). Thus, show how, internationally (and specifically in low- and middle-income countries), HTA has contributed to affordable and equitable health care and has led to improved health outcomes. The policy brief should include an explanation of what an appropriate HTA system could look like. This should be targeted at policy-makers and senior managers in the Ministry of Health as well as other key stakeholders. It should provide concrete examples of how HTA could be incorporated into decision-making. Disseminate this brief as widely as possible.
3. Use occasions such as the meetings of HTA and related societies to disseminate information on the practical use of HTA evidence, provide training to policy-makers and managers on how to commission and use evidence, and garner ideas from policy-makers and managers on how best to support their decision-making needs.

4. What are the international lessons for building public sector institutional capacity for HTA?

While the previous section looked at the general political climate with respect to HTA, this section looks at the capacity of public sector institutions to support and drive priority-setting processes, specifically within South Africa (the situation in many other African countries can be expected to be the same or worse, given economic constraints).

Glassman and Chalkidou (2012) itemise the components of a fair and sound priority-setting process based on HTA that effectively manages political, commercial, advocacy and donor interests (see **Box 2**). What is perhaps not clear from this summary is that the 'technology'

under investigation could also include public health interventions, and is not only about pharmaceuticals, medical equipment and procedures. Asia-Pacific Observatory (2015: 19) notes that *'[p]ublic health interventions are the most challenging [to assess], which requires a mature HTA agency to incorporate it in HTA programs because these assessments are resource-consuming, require a multidisciplinary approach, and need advanced assessment approaches for complex interventions.'*

Box 2: Components of an effective and fair HTA-informed priority-setting process

- An explicit legal and institutional framework
- A registration system that assures safety and efficacy of new products
- A scoping process that identifies interventions for assessment
- Cost-effectiveness analysis using appropriate methods and based on socially acceptable criteria
- Budget impact analysis that projects the financial and fiscal impact of new interventions
- A deliberative process that combines the findings of the above analyses with more subjective criteria dependent on national values and context, and makes recommendations
- A decision-making process that assesses recommendations and decides whether to fund new interventions under the public budget
- An appeals, tracking, and evaluation process that allows decisions to be challenged and assesses the impacts of newly funded interventions

Source: Summarised from Glassman and Chalkidou (2012)

As **Box 2** shows, an effective and fair HTA-informed process needs to be formalised and robust. It also requires considerable expertise within government to lead and manage. Asia-Pacific Observatory (2015) therefore emphasises the importance of a core HTA team:

> *'The HTA process involves multiple stakeholders, which makes it essential to have a HTA focal point or agency to coordinate the HTA activities and cooperate with partners. This focal point organization is not only committed to HTA work, but also responsible for gaining the trust of all stakeholders. As such, the focal point organization should be independent from the government,*[6] *refuse financial support from private sources, and have a clear or explicit code of conduct to deal with conflict of interest. Most importantly, the focal point should have full-time academic staff because conducting HTA is very technical and time-consuming. Although the number of full-time staff relies on the scope and responsibility of the core team or HTA institute, in order to make a significant impact the focal point needs to have critical mass and the ability to retain staff.'*

Box 3 presents lessons from the introduction of successful HTA agencies in South-East and East Asia. A notable feature of some of the agencies is that they are well-staffed, with the agencies in Korea, Thailand and Taiwan having 80, 34 and 22 full-time academic staff respectively (Asia-Pacific Observatory 2015). A feature of all the agencies is that they produce evidence but do not have decision-making powers (unlike NICE in the UK), which

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[6] 'Independence' does not necessarily mean separate from government but that the focal point is able to carry out its research without political interference. Most of the focal points in South-East Asia are government structures, including the very effective HITAP. Despite its semi-autonomous status, HITAP is under the Thai Health Ministry's Bureau of Policy and Strategy. HITAP therefore has 'insider' rather than 'outsider' status, and has a closer relationship with the Ministry than universities (personal communication with Sripen Tantivess, HITAP).

means that there are some barriers to achieving policy impact (PMAC 2015) (see **Box 3**). At the same time, it allows them to remain neutral and focus on presenting policy-makers with well-developed policy options.

Box 3: Lessons from the introduction of formal HTA agencies in China, Indonesia, Korea, Malaysia, Taiwan, Thailand and Vietnam

> *Characteristics of successful HTA agencies*
> - An HTA process that is independent of political pressures
> - Financial sustainability through government budgets rather than reliance on research grants
> - Sound management of conflicts of interest between different stakeholders (including avoidance of financial support from pharmaceutical companies)
> - Full-time multidisciplinary staff with not only technical skills but also interpersonal skills for managing stakeholders and communication skills to transfer findings to non-technical stakeholders
> - Collaboration with an extensive local and international network of technical stakeholders
> - A systematic process for identifying policy-relevant topics for assessment
> - High quality research with an explicit quality assurance mechanism including local and international review
>
> *Factors conducive to establishing HTA agencies*
> - A high proportion of health care spending on the public sector, especially in the context of a universal health coverage policy
> - Political support for HTA, especially when it is backed up by legislation to include HTA in policy-making
> - Good health information systems that provide large, complete datasets
> - Good quality local training opportunities for HTA-related disciplines (such as pharmacoeconomics and health economics)
> - Efficient and trusting collaborative relationships between HTA agencies and policy-makers
> - Independence from external aid which encourages concern for efficiency in resource allocation
>
> *Barriers to policy impact*
> - Silo-based decision-making processes in government that prevent transparency and proper consultation with stakeholders
> - The use of inappropriate and short-term criteria by government to adjudicate between different courses of action
> - Tight control by government of research dissemination, especially where evidence conflicts with policy
> - Greater respect for the opinions of senior figures than the findings of research evidence

Source: Summarised from PMAC (2015)

Boxes 4, **5** and **6** present the specific experience of the pioneering HITAP from Thailand, probably the best-known of the middle-income country HTA agencies. **Box 4** presents a description of the HTA process that was developed by HITAP and its founding organisation, the International Health Policy Programme.

Box 4: Thailand's process for using HTA to inform a benefit package for universal health coverage

'Nomination of health topics: representatives of several groups of stakeholders (four for each group of policy-makers, health professionals, academics, patient associations, civic groups and lay citizens; and three for the healthcare industry group) can propose six topics each annually. Topics must be accompanied by supportive information indicating the procedure used to determine their importance and the rationale for submission according to established criteria.

Prioritization of health topics: a panel comprising representatives of four stakeholder groups (health professionals, academics, patient and civic groups) select at least ten topics yearly for assessment according to six prioritization criteria: size of the affected population, severity of problems, effectiveness of interventions, variation in practice, economic impact on household expenditure, and ethical and social implications. Topic selection is facilitated by the information provided by the IHPP and HITAP's research staff. Each criterion has been identified through an explicit scoring approach with well-defined parameters and thresholds. Based on the scoring system, the proposed interventions are ranked and their order is adjusted through deliberation.

Technology assessment: after the selected topics are approved, economic evaluation and budget impact analysis are conducted by the two health policy research institutes in collaboration with external experts, following the Thai HTA methods guidelines. The guidelines recommend the quantification of marginal costs and health outcomes, expressed in terms of quality-adjusted life years (QALYs), of new interventions versus standard practice (the so-called incremental cost–effectiveness ratio [ICER]). In some cases where cost–benefit analysis is more appropriate for evaluation (e.g., antenatal screening for Down syndrome), the researchers calculate cost–benefit ratios. Relevant stakeholders participate in the scoping of research questions, validation of results and elaboration of preliminary recommendations.

Appraisal: technology assessment findings and recommendations are subsequently presented to the SCBP [Subcommittee for the Development of the Benefit Package and Service Delivery] for appraisal. This procedure does not have any written guidelines. The subcommittee, which consists of multidisciplinary members, except industry representatives, are selected by the NHSO Board [Board of the National Health Security Office] from several stakeholder groups. Appraisal criteria may include the assessment results as well as feasibility and social value judgments. In terms of determining exactly what constitutes good value for money, the SCBP considers a threshold of one per-capita gross domestic product (GDP; US$4800 in 2011) per QALY gained.

Decision-making: although the SCBP is not the formal decision-maker, their recommendations on the inclusion or exclusion of assessed interventions are, in practice, endorsed by the NHSO board.'

Source: (Mohara, Youngkong et al. 2012)

This process was designed to be explicit and inclusive. Mohara, Youngkong et al. (2012) report that, between 2009 and 2010, out of 30 topics nominated by various stakeholders for inclusion, 12 were selected for appraisal. On the basis of appraisals, five new interventions were recommended for inclusion in the benefit package. Until recently, five interventions for the benefit package, and five interventions for the drug formulary, were investigated each year (Tantivess 2013) although these numbers have reportedly now increased. This illustrates how HTA can have a significant impact on resource allocation decisions, preventing the inclusion of cost-ineffective interventions as a result of lobbying by stakeholders. Interestingly, Tantivess, Teerawattananon et al. (2009) report that deliberations by stakeholders in this process agreed that cost-effectiveness tools, although very useful, were insufficient to guide decision-making, and required that some projects

investigate wider issues such as management concerns, feasibility of interventions, performance issues and socio-political implications.

This demonstrates the usefulness of stakeholder consultation, not only for getting political support but also for getting inputs during the priority-setting process. **Box 5** summarises the strengths and weaknesses of the consultation with civil society in Thailand and highlights the fact that involving health professionals adequately can be a difficult task.

Box 5: Thailand's experience of involving civil society in priority-setting processes

Successful features:
- Lay citizens were very active in the HTA process because they were used to participating in Thailand's annual National Health Assembly.
- While not as active as individual citizens, civic groups did participate in the HTA process. This was assisted by the fact that there were pre-existing interactions between these groups before the HTA process was established.
- As community representatives did not have the skills to provide technical documentation on specific interventions, they were allowed to simply suggest health conditions and were also provided with technical support.

Disappointments:
- Civic groups and patient representatives were not very active in the HTA process.
- There was limited participation by health professionals in the process. As hypothesised by (Mohara, Youngkong et al. 2012:144), this may have been because *'[t]here are social institutional barriers for health professionals, such as autonomy, inadequate communication, lack of coordination between professional associations, or lack of common interests across specialized groups.'*

Source: Summarised from Mohara, Youngkong et al. (2012)

Box 6 gives background on how HITAP was established, as well as critical factors that allowed it realise the achievements described above.

An analysis of a range of other middle-income countries that have set up HTA agencies (Glassman and Chalkidou 2012) – including Brazil, Chile, Colombia, Croatia, Estonia, the Republic of Korea, Malaysia, Poland and Uruguay – found that, despite successes, they are faced with a number of challenges: there is a severe shortage of local research capacity; HTAs are often biased due to poor quality and reporting features, especially as there tend not to be standardized method and process guidelines; research is not directed towards major health problems; and HTA evidence is not used appropriately because health professionals and policy-makers do not have a good understanding of HTA and because research is not timely.

The same analysis notes that while several other middle-income countries are also strengthening their ability to compile essential medicines lists and benefit plans, they *'all have common limitations as well—a shortage of quality data, inadequate local capacity, lack of legal frameworks, limited formal institutional structures, incapacity to revise and update benefits based on newly available data or new products, minimal stakeholder involvement, and sometimes limited connection to decision making on public and donor budgets'* (Glassman and Chalkidou 2012: x).

Box 6: The development of HITAP in Thailand

Objectives
- promoting evidence-based resource allocation
- generating evidence for policymaking
- training researchers
- developing health technology assessment infrastructure
- development HTA management
- communicating and disseminating
- social mobilisation

Key activities
- Established in 2007.
- In 2008, published first guidelines for conducting health economic evaluations to standardise methods and promote high quality data. These guidelines were endorsed, leading to an updated version in 2013.
- Conducted a willingness-to-pay study (per quality-adjusted life year): the findings were used to develop a public spending threshold of Gross National Income per capita per QALY gained
- Conducted a survey of the capacity gap amongst decision-makers and researchers to identify training needs. The results were used to design annual two-day basic economic evaluation course for decision-makers and a three-day economic evaluation modelling workshop for researchers (mainly for local participants but occasionally including participants from neighbouring countries). Over 1,200 participants have benefited.
- Developed Thailand's HTA database and a menu of standard costs
- From 2008 conducted reviews of interventions for the Subcommittee for Development of the National List of Essential Medicines (National Drug Formulary), and from 2009 for the NHI benefit package.
- Established an international unit in 2013, which works extensively with international partners such as HTAsiaLink, iDSI, WHO and NICE

Features explaining success
- Strong political commitment, supported by the fact that there is a well-established culture of evidence-based policymaking in Thailand
- Long-term development of infrastructure for conducting health policy and systems research, such as the systems and institutes for disease surveillance, national surveys and information technology
- Initial location of HITAP within a research unit (The International Health Policy Programme) which had long-standing experience of research and capacity-building, was already well-networked in the policy community, worked closely with government in identifying research priorities and communicating findings, yet remained independent in its research
- Well-funded, with an initial block grant for the first five years: although located under the Ministry, does not receive a government budget, relying instead on
- Long-term development of both individual and institutional capacity as well as HTA infrastructure, leading to a critical mass of researchers (in 2013, HITAP had 50 staff, 40 of whom were researchers or research assistants, and 7 of whom had PhDs, while 20 had an MSc; the ratio of mentors to fellows was 1:5)
- Involvement of all relevant stakeholders, including decision-makers, health professionals, the private sector and the general public
- The development of methodological guidelines and benchmarks (which were also applicable to private stakeholders conducting appraisals)
- Commissioning of research from a range of in-country research groups (medical consortia, all levels of public and private hospitals, universities and royal colleges)
- Consideration of a number of factors in the decision-making process, not only evidence
- Routine use of HTA to inform the Essential Medicines List (and strong enforcement of the list)
- Widespread social acceptance of HTA as an important component of priority-setting

Challenges
- Resource constraints (financial and human resources)
- Appraisal of health promotion and disease prevention
- Providing technical support to lay stakeholders to strengthen their participation
- Expanding HTA to look beyond simply the economic impacts

Sources: Summarised from (Tantivess, Teerawattananon et al. 2009, Teerawattananon, Tantivess et al. 2009, Mohara, Youngkong et al. 2012, Tantivess 2013, Teerawattananon, Tritasavit et al. 2014) and personal communicatons with Sripen Tantivess and Yot Teerawattananon from HITAP

Turning to the situation in South Africa, an extensive project undertaken by the Department of Health to examine and determine a way forward for health technology management, recommended the creation of an HTA agency as part of a health technology management processes: this has not yet come to fruition. Further research is required to understand why this is so as such an understanding may be important in developing a future strategy for developing an HTA agency (even if it is only 'virtual' in nature).

The Thai experience shows that South Africa is not alone in experiencing difficulties in establishing an HTA agency (Tantivess 2013). Thailand took over two decades of experimenting with the creation of various units and programmes before the institutionalisation of a national agency in 2007 (Teerawattananon, Tantivess et al. 2009, Tantivess 2013). The impetus that shifted a loosely networked community of HTA academics into a formal and coherent agency seems to have been the demands from many stakeholders to include expensive technologies in the NHI benefit package as Thailand experienced an economic recovery (Tantivess, Teerawattananon et al. 2009). Policy-makers in the Thai Cabinet and National Health Insurance authority foresaw exponentially rising health expenditure and questioned the sustainability of national health insurance in the long-term (personal communication with Sripen Tantivess, HITAP). As a consequence, the Thai government demanded evidence on the impact of particular technologies, including public health interventions, in order to inform coverage decisions. Such evidence was also used to justify policy decisions to key stakeholders, such as health professionals, beneficiaries, industry and taxpayers.

The experience of Hungary in getting government to establish a formal HTA structure shows a somewhat different sequence of events. There, a growing HTA community coalesced around an association, which then developed a high profile and was able to engage closely with government, prompting it to set up its own HTA department (although apparently not an independent agency) (see **Box 1**).

Returning to the South African situation, as already mentioned, priority-setting processes in the national and provincial Departments of Health are complex and fragmented. The same is likely to be true at district and facility level. For example, working at a lower level of the health system, Barasa, Molyneux et al. (2015: 386) showed that priority-setting practices in African hospitals are influenced by a host of issues, including *'(1) contextual factors such as decision space, resource availability, financing arrangements, availability and use of information, organizational culture and leadership, (2) priority setting processes that depend on the type of priority setting activity, (3) content factors such as priority setting criteria and (4) actors, their interests and power relations.'*

Importantly for this review, health economics skills are in short supply within government and are not effectively harnessed to support decision-making (Gilson, Doherty et al. 1999, Doherty 2015). While some data for HTA are improving (such as Burden-of-Disease information), South Africa's public health information systems are generally weak. While some aspects of information systems in the private sector are strong (such as claims data), these systems do not take a comprehensive approach to understanding disease burdens or health outcomes, whereas cost data are generally confidential.

Nonetheless, there are some very experienced individuals in the National Department of Health (especially with respect to the Essential Medicines List, Office of Health Standards Compliance and some aspects of financing, particularly around HIV/AIDS) who form an important core with which to engage: their interest in developing a more effective HTA

process was apparent at the March workshop. There are individuals within national Treasury who are also very competent and interested in seeing HTA evidence used more systematically by the Department of Health. It must be kept in mind, though, that, as in many countries, the relationship between Treasury and the Department of Health has not always been an easy one (Gilson, Doherty et al. 1999, Doherty and Conco 2009).

In reflecting on how to grow public sector institutional capacity to develop and manage an HTA system, Glassman and Chalkidou (2012: xi) reflect that:

> *'Current capacity-building efforts could be more directly targeted to government counterparts charged with setting priorities. Hands-on technical pilots and demonstration projects … could engage policy makers on real-time concerns. Coaching through procedural advice and knowledge exchange among countries, assisted by a global facility or regional network, would also be essential. Exchanging examples of legislation, process guidelines (including conflict-of-interest management), handling of confidential data, stakeholder involvement, and overall governance and oversight would prevent duplicate efforts.'*

This quote highlights the importance of technical support to government units and officials, not just on conducting or understanding HTA but on how to manage what can become politically highly charged processes. This support could take the form of coaching or mentorship, but also include formal training through workshops and short courses, especially for more experienced officials.

Longer-term training for more junior officials could also help to build up a critical mass of skilled government personnel for future years. While losing trained staff to government is always a blow for academic units, producing new researchers for government has been identified as a particular contribution to national capacity of the South Africa academic units specialising in health economics (Doherty 2009, Rispel and Doherty 2011). A particularly successful collaborative internship programme in health economics and financing that involved the National Department of Health, the Centre for Health Policy and the Health Economics Unit is described in **Box 7**: a particular feature of this programme was that it achieved the multiple objectives of training staff for government, improving the financial sustainability of training institutions, conducting research relevant to government, building trust between government officials and academics.

Apart from the development of HTA systems and skilled staff, an important component of the development of national HTA capacity is the publication of national guidelines for HTA (as confirmed by studies from the Asia-Pacific and Hungary (Kaló, Bodrogi et al. 2013, PMAC 2015). As noted by Kriza, Hanass-Hancock et al. (2014), only a limited number of protocols have been developed for the African context and the appropriateness of their design and application still needs to be investigated further. General guidelines for HTA do not yet exist in South Africa. There are guidelines for pharmacoeconomic studies but, as these are only voluntary, they have not yet had an impact. Clinical guidelines exist but, according to workshop participants, are seldom based on clearly defined economic considerations.

In conclusion, PRICELSS SA and the other iDSI partners are well-placed to work with the Department of Health to develop HTA systems and capacity: this seems to be a niche that is not occupied by any other South African stakeholders (who may be supporting government with respect to their particular areas of expertise but perhaps not thinking of developing wider systems or having expertise on how to manage such systems). The newly formed

association may amplify interactions with government and provide opportunities for consultation, but is unlikely to be able to offer the day-to-day support that may be required, especially in the next year or so. Unfortunately the international literature does not give much detailed advice on how researchers can best support government in building it's own HTA capacity although frequent and open dialogue was clearly a feature of the Thai experience (Teerawattananon, Tantivess et al. 2009, Mohara, Youngkong et al. 2012).

Box 7: The internship programme in health economics and financing of the National Department of Health, Centre for Health Policy and Health Economics Unit in South Africa

A capacity-building project was commissioned by the Directorate of Health Financing and Economics of South Africa's National Department of Health. It was funded by the EU through a direct grant to government, and involved the Centre for Health Policy at Wits University and the Health Economics Unit at the University of Cape Town:

> *'The project required the two research units to conduct research that had the dual purpose of training young researchers in health economics and providing external support to the DHFE. Work undertaken under this project had to respond to priorities identified jointly by the DHFE and the units, but specifically excluded brief and hurried pieces of work responding to crises in government.'*

Meetings with government to review the progress of the capacity-building programme were placed back-to-back with quarterly meetings to discuss priority research needs and policy findings more generally, helping to institutionalise the relationships between government and the research units.

Research interns trained under this arrangement subsequently worked as health economists in the National Department of Health.

Source: Summarised from Doherty, Gilson et al. (2002)

<u>Recommendations to research institutions seeking to build the capacity of Ministries of Health and Treasuries to commission and use HTA evidence</u>

1. Develop a good relationship with key individuals in the Department of Health and Treasury, seeking their opinions on what sort of support they require to build awareness on how to use HTA evidence, and initiate, structure and facilitate a process that supports more rational commissioning and use of HTA on a national scale. Face-to-face meetings are also a good mechanism for sharing evidence (including that from other countries) with government. In particular, develop an understanding of how to progress beyond in-principle support to effective processes that gradually improve the way that HTA evidence is incorporated in government decision-making.
2. Develop a better understanding of current priority-setting structures and processes in government (at national, provincial, district and facility levels) as well as key flaws in these processes and capacity-constraints (Barasa, Molyneux et al. (2015) is an article that demonstrates the sort of analysis that may be necessary). Use this analysis to identify opportunities to become involved in the process.
3. Identify a few concrete, useful and immediate interventions to enhance government capacity, not just for understanding, conducting or commissioning HTAs, but also on how to manage what can become politically highly charged processes. This could include, for example, such activities as coaching committee members on what is expected of a priority-setting committee and how to interrogate evidence, arranging

policy dialogues on pertinent issues (Rajan, Adam et al. 2015),[7] and advising lower levels of the health system on how to implement HTA-related advice (in the fashion of NICE). These could be done at a national level or, in a decentralised system, at lower levels. They would be a mechanism to give policy-makers a concrete understanding of what is possible with HTA, develop trust between policy-makers and technical experts, and give technical experts a better understanding of the context facing decision-makers.

4. Undertake a demonstration research project, possibly in collaboration with other country research partners, in order to provide the Department of Health with a 'small win' as well as provide capacity-building opportunities to government and academic staff. Exploring areas where government could disinvest from certain interventions (because of ineffectiveness or obsolescence) might be a priority as this was raised several times by senior government officials in the March workshop.

5. Explore the possibility of collaborating with the Department of Health on facilitating the development of official guidelines for economic evaluation in health and health care, and a threshold for cost-effectiveness (this could become a collaborative activity involving a number of research groups or associations (see below)). Such guidelines (known in the UK as Treasury's "Green Book") are a big asset as they help to standardise assessments, as well as give government a strong interest in, and sense of ownership of, HTAs. An analysis of what data are available and mechanisms for dealing with data weaknesses could form part of this process.

6. Discuss with the Department of Health possibilities for the longer-term training of key individuals earmarked to develop in-house HTA expertise (for example, mentoring, short courses and internships at research organisations).

7. Explore whether and how, in the longer term, research groups could help the Department of Health perform HTA agency-like functions with the intention of eventually graduating towards a fully-fledged HTA agency. Such functions could include convening meetings to identify research priorities and commission research. Eunethta (2008), a handbook on developing an HTA agency in the European context, provides useful guidance.

5. What are the international lessons for successful networking between HTA experts?

Sections 3 and **4** referred very briefly to the need to build the capacity of broader civic groups in society to understand and use HTA. This section focuses on the capacity of the smaller 'task network' of HTA experts in government, research institutions, consultancies and private health financing organisations that need to be linked effectively in order to identify priority areas of research, collaborate on developing methodologies or conducting research, and discuss the implications of research findings. Theobald, Taegtmeyer et al. (2009: 7) emphasise the importance of such partnerships and linkages, on the basis of examining three capacity-building case studies from Kenya, Malawi and Nigeria:

> *'Researchers need to build partnerships on many fronts: multi-disciplinary partnerships to ensure that their research does justice to the holistic and complex nature of health systems; partnerships for capacity building to promote demand,*

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[7] Rajan et al. (2015) describe a policy dialogue as having the features of: a broad process with several iterations; involving a broad range of key stakeholders; considering both the technical and political aspects of a problem; involving evidence-based and politically sensitive discussions; and having a concrete purpose or outcome in mind.

delivery and uptake of research; and partnerships with the broader research, policy and practice constituency, from communities to service providers to policy makers, to ensure the timeliness and relevance of the research agenda and a receptive research-policy-practice interface.'

The benefits of regional and international linkages are emphasised by Thailand's HITAP which, from its earliest days, actively sought to link to international networks in order to exchange information and mobilise resources (Tantivess, Teerawattananon et al. 2009):

> *'Once moderate progress has been made, international support to enhance policy awareness of the usefulness of HTA becomes more important. The experience of using HTA in policy decisions in one country can be influential in the context of another country, especially in countries that have similar economic and health infrastructures. Therefore, regional networking, such as HTAsiaLink and HTA Network of the Americas …, is equally important to international or global networking, which is widely available in many forms.'* (Asia-Pacific Observatory 2015).

HTAsiaLink is in fact actively engaged in a range of capacity-building initiatives to strengthen its member organisations as well as individual researchers (HTAsiaLink 2013). One of these initiatives is to give young researchers the opportunity to present research to a conference of colleagues from the region, and receive feedback from experienced researchers.

As discovered by South Africa's Centre for Health Policy and Health Economics Unit, the capacity of relatively small research units to take on large projects is made possible through partnering with like-minded organisations (Doherty 2009, Rispel and Doherty 2011). This creates a critical mass to undertake work but also promotes the sharing of methods between the partners (thereby building capacity) as well as promoting the profile of the partners (thereby extending their policy influence). This has been a key reason why the two units have been able to 'punch about their weight' in the local and international research arena, as well as survive for around 25 years on largely soft-funded research posts.

Looking then at existing potential networks for HTA in South Africa, it is clear that the country has already conducted a number of cost-effectiveness-related studies over the decades (see, for example, Doherty (2010)). As the recent workshop in March revealed, there are a number of well-established researchers with considerable experience, as well as a number of up-and-coming researchers interested in working in the field. There is a smaller number of well-established research groups. While the links between all these individuals and groups appear to be many and varied, and several of them have links with government, to date there does not seem to have been a forum or process that makes optimal use of existing research capacity in the country.

The March workshop has the potential to be the starting point for a more coherent process. The newly launched society also provides a formal structure for engagement and many of its objectives[5] align with the potential objectives of the iDSI partnership: this is an opportunity but also poses a challenge to the partnership in carving out its own particular niche and avoiding duplication of efforts. In this regard, a lesson from an evaluation of the African Health Economics and Policy Network (HEPNet) is that its capacity-building activities were judged to remain highly relevant, even following the launching of the African Health Economics Association: this was because of the more sustained and intimate nature of the capacity-building efforts that could be undertaken by a highly structured network with

limited membership (that included policy-makers), as opposed to a loosely structured society with an extensive and ever-changing membership (Doherty 2011).

With respect to international lessons for successful networking between partners, **Box 8** presents the findings of a formal evaluation of HEPNet, which was successfully coordinated by South Africa's Health Economics Unit for ten years. **Box 9** provides an assessment of factors explaining the success of three other networks or collaborations linked closely to the Wits School of Public Health (presented by Kathy Kahn at the March workshop). The message from these two boxes is that networks require very active management and careful negotiation of responsibilities and the relationships between partners. As came out from the March workshop and was expressed in Doherty (2011), relationships are cemented when networked partners work closely on a research project.

Box 8: Lessons from the Health Economics and Policy Network (HEPNet)

Factors explaining success of the network
- hands-on coordination by efficient, knowledgeable, approachable leaders
- limited membership of 8 countries and 37 institutions (Ghana, Kenya, Nigeria, South Africa, Tanzania, Uganda, Zambia and Zimbabwe)
- collective ownership and governed by a Steering Committee
- formal government buy-in through participation of Ministry of Health in each country
- formal country responsibilities and institutional focal points

Challenges
- personal characteristics of some country coordinators and focal points (acting as gatekeepers to the network)
- difficulties drawing in policy-makers in some countries
- staff turnover
- funding limitations
- other constraints on participation e.g. heavy workloads
- Steering Committee did not develop funding strategy and find coordinator beyond initial 10-year funding period

Source: Summarised from Doherty (2011)

Box 9: Lessons from three African networks in which the Wits School of Public Health is instrumental

- Strong support from senior leadership of institutions during start-up
- Strong, transparent and effective leadership for networks/collaborations
- Strong anchoring institutions which had the financial and human resources to sustain the network/collaboration, especially at start-up
- Shared goals and mutual benefits
- Equal partnerships
- Clear expectation of active participation
- Dedicated resources for collaboration in terms of funding and a secretariat
- Started small and grew subsequently
- Regular face-to-face meetings
- Recognised and addressed challenges
- Refusal to compromise on agreed principles and ethical guidelines (especially in relation to hidden agendas of partners or funders)
- Supportive administrative systems

Note: These networks are CARTA, INDEPTH and the Wits/Brown/Colorado/African Population and Health Centre Collaboration
Source: Summarised from presentation by Kathy Kahn at March workshop

1. Invest considerably in expanding relationships with key stakeholders within the country, region and internationally, but ensure that these relationships are guided by clear objectives. Analysing the nature, strengths and weaknesses of existing networks might be a necessary precursor to this activity.
2. Consider partnering with one or two local organisations on a concrete project in order to enable a larger piece of HTA work, strengthen methodologies and model a collaborative, multi-disciplinary approach to building HTA capacity.
3. Given that there is considerable research expertise in the private sector in some countries (such as in the administrators of health insurance schemes), explore what role this could play in supporting the development of an HTA system. Private sector players could eventually be commissioned to conduct appraisals but these would have to adhere strictly to formal guidelines. It is unclear whether datasets held by the private sector are either suitable or available for use in economic appraisals by independent researchers: this might be one issue that a network could explore.
4. Consider establishing a formal regional network: apart from helping to build capacity regionally, this could also inform the development of priority-setting approaches in the home country. Careful thought would need to be given to how to run and sustain such a network (drawing on international lessons), and how to ensure this network creates meaningful capacity. The involvement of policy-makers would be important for an HTA network and the number of countries involved might need to be limited to enable in-depth discussion and implementation of clearly defined activities. However, it may be premature for research organisations to venture into this domain without prior experience of effective HTA processes in their own country context.

6. What are the international lessons for strengthening the organisational capacity of an HTA research institution?

When it comes to building research capacity, the focus is often on individual researchers. Building the capacity of individual researchers is discussed in **Section 7**. However, to ensure that research capacity is enduring, and not overly dependent on a few remarkable researchers, it is critical to strengthen the organisational capacity of research institutions: this tends to be a relatively neglected component of donor-funded capacity-building efforts (Lusthaus and Neilson 2005). While PRICELESS SA appears to have good organisational capacity (in terms of financial sustainability, sound governance and financial management, skilled researchers and quality assurance), it remains small and largely soft-funded. In addition, the iDSI partnership might also want to consider supporting the development of organisational capacity for other research groups, whether inside or outside government. This section therefore looks at the international experience of building the organisational capacity of research groups, including how to optimise the support provided by international partners.

A comparison of six African, South-East Asian and Indian sub-continent countries (which included South Africa's Health Economics Unit and Vietnam's Health Strategy and Policy Institute, both of which are involved in HTA) yielded the findings in **Box 10**. The study concluded that *'[t]he development of strong in-country analytical and research capacity to guide health policy development is critical, yet many health policy analysis institutes remain*

very fragile. A combination of more strategic planning, active recruitment and retention strategies, and longer term, flexible funding, for example through endowments, needs to be promoted' (Bennet, Corluka et al. 2012: 1). This study noted that the organizational base of a research institute – whether academia, an NGO or in government – conferred different advantages, depending on circumstances. Government-based institutes are able to influence policy more directly but are pressured by policy-makers to respond to their immediate needs. University-based research institutes may be able to protect their intellectual independence more easily but have a more distant relationship with policy-makers.

Box 10: An analysis of the organisational capacity of six research institutes (in academia, NGOs and government) in Bangladesh, Ghana, India, South Africa, Uganda and Vietnam

> '(i) <u>Financial resources</u>: three of the institutes had received substantial external grants at start-up, however two of these institutes subsequently collapsed. At all but one institute, reliance upon short term, donor funding, created high administrative costs and unpredictability.
> (ii) <u>Human resources</u>: the retention of skilled human resources was perceived to be key to institute success but was problematic at all but one institute. In particular staff often moved to better paid positions elsewhere once having acquired necessary skills and experience, leaving remaining senior staff with heavy workloads.
> (iii) Governance and management: board structures and roles varied according to the nature of institute ownership. Boards made important contributions to organizational capacity through promoting continuity, independence and fund raising. Routine management systems were typically perceived to be strong.
> (iv) Networks: linkages to policy makers helped promote policy influences. External networks with other research organizations, particularly where these were longer term institutional collaborations helped promote capacity.'

Source: Bennet, Corluka et al. (2012)

In reviewing the experience of several African countries, Ager and Zarowsky (2015) identified multiple challenges to building research capacity (see **Box 11**). Amongst other things, **Box 11** raises the issue of how to develop a healthy relationship between Northern and Southern partners in a capacity-building initiative (including the funders of such partnerships). In reviewing research capacity-building initiatives in Africa, Ager and Zarowsky (2015) characterized a current political economy of knowledge production which emphasizes building the individual researcher (rather than a research team), expects Southern partners with weak institutional capacity to manage and produce innovative research, and reflects the globalization of knowledge (which creates '*tensions between efforts to embrace the global 'Community of Science' and the promotion and protection of national and institutional agendas in an unequal global health research environment*' and (Ager and Zarowsky 2015: 1). They caution that capacity-building strategies need to deal with these realities and encapsulate their concerns with the current situation in Africa by saying that:

> *'it could be argued that, at the institutional level, many African universities are likely to be at the worst point with respect to a flexible, responsive enabling environment: completely weak universities at least leave the researchers alone to get what funding they can and do what they want (at the risk of per diem and consultancy driven 'survival research'); elite universities support and celebrate both local and globalized lone rangers, but mid-level or emerging universities, in trying to put systems in place and be 'accountable' to national agendas and foreign funders, run the risk of stifling initiative and productivity through managerialism and bureaucratization, which*

emphasize compliance over creativity and collegiality. In the process, they risk losing their most creative and productive researchers to the global knowledge economy because, in fact, the ' individual researcher' model is still the fundamental model of research' (Ager and Zarowsky 2015: 7).

Box 11: Challenges to health research capacity building in Sub-Saharan Africa

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securing long-term funding
- difficulties securing any funding *per se*
- difficulties building capacity with only short-term funding
- difficulties securing the longer-term funding required to sustain capacity-building
- difficulties getting host governments to contribute to capacity-building

establishing sustainable models of capacity strengthening
- apart from difficulties securing funding, lack of interest in funding less experienced researchers
- unrealistically short timeframes for research studies
- researchers incentivized by consultancies rather than research

ensuring Southern ownership
- addressing Southern research priorities when most funding is from the North
- weak South-South linkages (especially between Anglophone, Francophone and Lusophone Africa)
- brain drain of researchers from the South to the North

establishing partnerships between researchers, policy-makers and donors
- differing agendas
- unequal power relationships
- lack of national research strategies
- limited demand for evidence by policy-makers

securing trust and cooperation
- establishing commitment, understanding and trust
- need for this to persist on an interpersonal level when inter-institutional relationships falter
- continual negotiation around different approaches and power contestations

finding common interest and addressing disincentives for academic engagement
- lack of incentives for stakeholders to engage together in capacity-building
- lack of incentives for academia as a career in the South
- lack of professional recognition for knowledge transfer as a valid academic pursuit
- competition between individual researchers and institutions
- mutually incomprehensible research frameworks and discourse

accommodating local health system priorities and constraints
- severe capacity-constraints at a district and provincial level which undermines local commissioning of research and accurate identification of research gaps
- low adherence to local health priorities
- inappropriate influence of international experts and donors in setting research priorities

establishing and retaining research teams
- barriers to achieving a critical mass (especially poor retention)
- undue focus on developing individual research 'stars' as opposed to teams
- piecemeal and fragmented research projects

sustaining mentorship and institutional support
- barriers to achieving adequate research administration, IT support and laboratories
- insufficient mentors
- barriers to achieving intensive, one-on-one mentorship over a sustained period of time

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Source: Ager and Zarowsky (2015)

This notwithstanding, there are some examples of successful partnering between Northern and Southern partners in health economics capacity-building in Africa. **Box 12** describes the

collaboration between a Swedish Institute and the Department of Economics at the University of Zambia. **Box 13** describes the features accounting for the success of international partnerships in health economics and financing with the South African Centre for Health Policy and Health Economics Unit. Apart from the support provided by international partners, a number of institutional features accounted for the sustainability and policy impact of these units. Some of these features also form part of ensuring success in translating research into evidence. The strong leadership and governance of the individual partner organisations as well as the partnership were particularly important features (personal communication with Yot Teerawattananon, HITAP).

Box 12: Lessons from collaboration with an international partner to build health economics capacity in Zambia

At the time of this evaluation in 2005, SIDA had funded collaboration between the Swedish Institute of Health Economics and the Department of Economics at the University of Zambia for 10 years. When the collaboration was initiated, there were no health economists in the Department or in the Ministry of Health. The collaboration led to a number of research studies, participation in regional health economics workshops, funding for Master's training at the Health Economics Unit in Cape Town, and PhD training at the Department of Economics. This led to the development of a critical mass of health economists and greater demand for research evidence by the Ministry of Health.

Some challenges were:
- The Department of Economics remained overly dependent financially on contracts with the Ministry of Health
- Individuals trained by the Department were not retained in the Department
- The Department had difficulty developing skills further (for example, through strengthening its own Master's course)
- The Department did not make sufficient use of capacity-building opportunities offered by HEPNet, mainly because of communication failures within the department

Such a long-term institutional collaboration between a Northern and Southern partner is unusual as collaborations tend to easier to set up than sustain. Factors accounting for the success of this collaboration were shared values between the two institutions, and institutionalised collaboration that went beyond simply good relationships between individuals.

Source: summarised from Erlandsson and Gunnarsson (2005)

Box 13: Features accounting for the success of international partnerships supporting the Centre for Health Policy and Health Economics Unit in South Africa

- pre-existing research capacity in the South African institutions
- long-standing links between individuals in the different institutions (including through training) and good interpersonal relationships
- shared ideological perspectives and research interests
- balancing partners' differing research priorities
- engagement of a broad range of staff in joint activities
- equitable funding mechanisms recognising the needs and constraints of all partners
- joint post for a Northern partner in South African institutions
- Northern support to develop Master's and PhD programmes in local institutions
- institutionalised partnerships based on long-term development of trust, adjusting partnerships over time as needs and circumstances change, and establishing mechanisms for responsive governance, including shared decision-making (sometimes evolving into consortia)
- core funding for South African partners

Source: Summarised from (Doherty 2004, Doherty 2009)

This suggests that reviewing best practice in knowledge translation should also form part of a capacity-development strategy (although not reviewed here). For example, (Gonzalez-Block 2009, Pitayarangsarit and Tangcharoensathien 2009) find that the strong organisational capacity of Mexican and Thai research groups are partly accounted for by face-to-face interactions with policy-makers (in meetings and on training programmes). These research groups' perceived trustworthiness is based on the relevance of their work to contemporary issues, long-term innovative research programmes that provide timely information, high quality research underpinned by local and international peer review, core values consistent with the social objectives of government, intellectual independence, being uncompromising in avoiding research funding from organisations with vested interests, and transparency.

Studies from South Africa also highlight the important synergy between policy-makers and researchers in training programmes: while researchers are able to disseminate their research findings, policy-makers are able to convey research priorities to researchers as well as convey implementation challenges (Doherty 2009, Doherty 2011). These features of trusting relationships are critical to linking evidence (and researchers) to policy (and policy-makers) although they take considerable time and effort to establish (personal communication with Sripen Tantivess, HITAP).

All these studies confirm the need to ensure core funding for research groups which, in South Africa at least, typically tend to be soft-funded. This puts a heavy burden of continual fund-raising on the shoulders of senior staff, makes it difficult to attract high calibre staff because of the lack of job security, forces research units to cross-fund important activities such as capacity-building from research funds and distorts research agendas according to the needs of international funders.

Thus, one of the important factors that has contributed to the success of HITAP has been substantial funding by government and international agencies, although this has brought its own challenges as HITAP has had to carefully manage its academic independence (Pitayarangsarit and Tangcharoensathien 2009, Tantivess, Teerawattananon et al. 2009). Core government funding also provided stability and opportunities for expansion of health systems research in China and Mexico which have seen growth in the number of researchers, and an improved ability to take on long term programmes of research that have a direct and profound influence on government reforms, whilst retaining some degree of academic independence (Gonzalez-Block 2009, Qingyue 2010). Further, *'[l]ocally funded studies are more likely to address national priorities and health system needs and have greater credibility than internationally funded and conducted studies'* (Teerawattananon, Tantivess et al. 2009).

In conclusion, in reflecting on the complex relationships that arise from capacity-building efforts, Ager and Zarowsky (2015: 7) emphasise that *'[t]he work of capacity strengthening and innovation happens in the interstices and relationships as much as in the formal structures and metrics of research'* and quote Luna and Ager (2012: 2) as saying that capacity-building is really about '*[m]anaging expectations and maintaining trust through operational friction.'*

<u>Recommendations for strengthening the organisational capacity of research groups</u>

1. Consider the creation of advisory Boards or reference groups. Bennet, Corluka et al. (2012: 8) note that Boards can *'help protect the independence of the institute, promote continuity (in the face of staff turnover) and help ensure strategic thinking and learning*. With respect to HTA-related work, two Boards might in fact be appropriate: one a 'Policy Advisory Board' that involves the Department of Health and Treasury, plus selected senior managers from other levels of the health service (such as Provincial Departments of Health); the other a Scientific Advisory Board, which involves international experts. However, a clear purpose for a Board is required as well as appropriate appointees.
2. In partnerships with local and international researchers, create structures and processes for decision-making and communication that are mutually satisfying, and actively manage the needs and concerns of the various partners.
3. Incorporate a funding strategy into an organizational capacity-building plan that seeks to move towards long-term and core funding, and put mechanisms in place to preserve academic independence where this funding is under government or donor control.

7. What are the international lessons for building the capacity of individual research staff to conduct and apply HTAs?

This section looks at strategies for building the skills of individual staff to conduct HTAs: while the focus is on staff who aim to become researchers, it is also relevant to staff who may not remain directly involved in research but become closely involved in the commissioning and use of research (such as in government policy units), and therefore need specialised knowledge of HTA. This distinguishes this section from **Section 4** which focused more on building the capacity of staff who are involved in priority-setting processes, but do not need specialised knowledge of HTA.

Asia-Pacific Observatory (2015: 19) emphasises that *'the availability of local training programs related to HTA in local academic institution(s) is one of the significant factors that should be considered as part of HTA institutionalization'* as this was an important explanatory precursor to HTA agencies in Korea, Malaysia, Taiwan, and Thailand. In these countries, training programmes included short courses and workshops as well as Master's and PhD degrees. Training programmes are also a very good vehicle through which to keep open information channels between researchers and decision-makers as discovered in Thailand with HTA workshops (Teerawattananon, Tritasavit et al. 2014) and in South Africa with health economics courses (Doherty 2011).

With this focus in mind, this section looks at building the capacity of research staff through formal and informal training. It also distinguishes between building the capacity of staff external to an HTA organisation (through external training programmes) and building the capacity of internal staff (through programmes to nurture junior staff so that they can gradually take on more senior responsibilities in the organisation). The latter is an important component of any research capacity-building strategy in South Africa, as the country struggles with a chronic shortage of mid-level research staff. This seems to be because, as soon as staff gain sufficient skills within a research environment (which tends to offer relatively low salaries), they become easily employable in the government and private sectors (which offer higher salaries as well as the opportunity to have a more direct impact on policy) (Doherty 2011).

This results in a severely over-stretched cohort of senior researchers, which in turn jeopardises the sustainability of training programmes relying on their expertise and guidance. In the case of the Centre for Health Policy, it led to the inability to recruit and attract a black director except for a short period (Rispel and Doherty 2011). At one point in the history of the Health Economics Unit it meant that half of the research staff were foreigners and there were very few South African applicants for vacant posts (Doherty 2009).

This problem is important to keep in mind as it could impinge on the ability of PRICELESS SA and other South African research institutions to build up a critical mass of HTA researchers and sustain broader capacity-building strategies. As several participants at the March workshop reiterated, there is currently stiff competition between government, the private health financing industry, universities and other research institutions in the recruitment of skilled HTA researchers. The problem is also important to keep in mind because of South Africa's unique legacy of apartheid. Presently, as witnessed at the March workshop, the senior leadership in the HTA community is largely dominated by white researchers and experts (even within government). An important component of the iDSI strategy therefore needs to include strengthening the representation of black researchers in the field.

Health economics is a discipline integral to HTA and is one of the disciplines in very short supply on the African continent. The March workshop identified the lack of cost-related assessment as one of the major flaws of current guidelines in South Africa. Like HTA, using health economics to support decision-making requires a health systems approach as well as the consideration of a host of factors other than simple efficiency (such as equity and sustainability). Further, as with many HTA practitioners, health economists trained in South Africa tend to have multi-disciplinary backgrounds (Doherty 2011). For these reasons, the experience of South Africa's health economics-related units and programmes is examined extensively in this review (and also for the reason that these units and programmes have been evaluated at several stages of their existence). It should not be forgotten, though, that HTA includes many other disciplines and their effective combination may require added capabilities that are not discussed here. As described in detail by Barasa, Molyneux et al. (2015), *'[t]raining on priority-setting includes describing the detailed and complex processes as well as the role of actors and context in influence the outcomes of decisions'*. Furthermore, pharmacoeconomics is a distinct sub-discipline of health economics, typcially occurring within the Pharmacy Departments of universities: unfortunately, this review has not been able to review capacity-building experiences in this particular sub-discipline.[8]

Likewise, this review has not been able to assess the various benefits and constraints of different sorts of training, especially with respect to the topic of HTA, as international literature is not immediately available on the topic. While short courses are likely to be needed, longer, postgraduate training tends to be neglected in health systems and policy research development generally and is probably an additional need (Bennett, Agyepong et al. 2011). These might include different forms of instruction, including face-to-face interaction, online training (including through MOOCs), internships and dissertations. PhD training is critical to provide the advanced skills required to conduct complex research and

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[8] In HITAP, the majority of researchers are pharmacists. Most of them were trained in pharmacoeconomics in Thai Schools of Pharmacy. They work on many types of health technologies and public health interventions, not only pharmaceuticals. They tend to have a better understanding of health systems than colleagues from other health and non-health professions. Opportunities for health economics training in Thailand are limited (personal communication with Sripen Tantivess, HITAP).

lead research teams. As Ezeh, Izugbara et al. (2010) assert, the Consortium for Advanced Research Training in Africa (CARTA), which builds institutional capacity to conduct PhD training, is also a key strategy to build universities as it:

> 'addresses the increasing neglect of African university administrators and faculty in extant initiatives on the continent. The initiative's goal of strengthening human resources and university-wide systems critical to the success and sustainability of research productivity in public and population health will rejuvenate institutional teaching, research and administrative systems, and improve the skills of faculty and administrative managers in graduate-level teaching and successful higher degree supervision, mentoring, grant application skills, research management, and the use of ICT resources for knowledge management, dissemination, and information retrieval.'

With respect to where researchers could access training, in its review of the South-East Asian experience, Asia-Pacific Observatory (2015) notes that opportunities in that region for regional or international training are considerable:

> 'Each HTA agency in this study received international support in terms of South-South or North-South partnerships and overseas formal trainings of staff. International technical support is very useful, especially at the beginning stages. To date, resources are widely available at the international level, such as through international agencies including WHO- CHOosing Interventions that are Cost-Effective (WHO-CHOICE) and World Bank Flagship program as well as academic networks including Disease Control Priorities Network.'

A tactic used by the Thai government was to give its staff the opportunity to undergo PhD training at overseas institutions by providing bursaries (Tantivess, Teerawattananon et al. 2009). The tactic of sending staff for formal health economics and financing training at the London School of Hygiene and Tropical Medicine was followed by South Africa's Centre for Health Policy and Health Economics Unit during the early years of their existence and prior to the creation of local Master's and PhD programmes (Mayhew, Doherty et al. 2008).

The experience of the World Bank Flagship Programme is captured in **Box 14**: this is another initiative, which provides international training opportunities with the added advantage that training is regionalised.

However, PMAC (2015) warned that international agencies tend to focus on providing policy advice rather than on in-depth capacity-building of researchers and that, therefore, the main gap in training is local technical support that, apart from formal courses, allows close and on-going supervision of local studies. Further, formal training by international experts is expensive, especially when located overseas: it is therefore not recommended as a viable or complete alternative to local training. Nonetheless, informal exchanges with overseas partners proved – and no doubt remain - very useful for South African health economics institutions (Doherty 2009).

In South Africa, fortunately, there are local institutions that are now able to offer formal training in HTA (the Health Economics Unit's MPH in Health Economics appears to be the most substantial of these). Several of these courses have benefited from in-depth international support and advice but adapted teaching materials extensively to local conditions.

Box 14: Lessons from the World Bank Institute's Flagship Programme on Health Sector Reform and Sustainable Financing

Between 1997-2008, the Programme '*delivered 319 short-term training events to more than 19,400 policy-makers, analysts and implementers in 51 Bank client countries. Resource persons from more than 34 technical and implementation partners from around the world have collaborated to develop and deliver learning materials, approximately half located in developed countries and half in developing countries*' (Shaw and Samaha 2009: 1).

A prominent part of the Programme were the topics of health economics, resource mobilization, and allocation of public finances.

The training strategy was made up of:
- A global course (which focuses on identifying new content areas and setting standards for training and evaluation)
- Regional courses (which prioritise issues relevant to the region, adapt training to local needs and provide feedback to the global course)
- National courses (which deal with particular issues in-depth or address particular capacity gaps, and also feed back to the global course)
- Video conferencing (which address urgent issues and promote North-South and South-South cooperation)
- e-Learning courses (which are in high demand and are a promising mechanism for introducing participants to new techniques with a more flexible time schedule)
- Occasional senior policy seminars (which support the discussion of strategic issues with senior policy makers)
- Occasional conferences (which allow the dissemination of information on issues of national and international importance)

South Africa's Health Economics Unit and Centre for Health Policy were amongst the first six regional partners of the Flagship Programme. Teaching materials were modified extensively by the South African units, which also conducted much of the training. In 2008, 92 and 96 percent of course participants scored the course as a '4' or a '5' on a scale of 1 to 5 (with 5 being the highest rating). The Programme was unable to establish a regional partner in Anglophone Africa in the long term, however.

An evaluation of the Programme globally affirmed its approach and effectiveness but identified the following challenges:
- while demand for the course is high, there are some difficulties satisfying certain participants (especially from NGOs and the private sector) and attracting sufficient high level policy-makers
- national courses are more demanding of faculty time and require more in-depth knowledge of local situations
- strong regional partners are critical for success - it is difficult to improve the capacity of weak partners, and the need to provide financial and technical support stretches the resources of the Programme thin
- the demand for detailed implementation training and documentation of 'best practice' is difficult to meet
- it is difficult to find trainers who have both theoretical and implementation experience, are good at training and align their teaching with the objectives of the Programme
- monitoring and evaluation falls short because of pressures to increase the volume of training, lack of incentives to do high quality evaluation and lack of financing
- financial sustainability is precarious

Source: Summarised from Shaw and Samaha (2009)

With respect to Master's training in health economics specifically, lessons from the Health Economics Unit Master's in Public Health in Health Economics are summarised in **Box 15**. This Master's has trained over 115 Master and 15 PhD graduates (from a range of different disciplinary backgrounds), with participants rating the course highly (Doherty 2011). Participants come from across the region and the vast majority are retained in the region and even their home countries.

The only other write-up of an health economics course from a low- or middle-income country that was discovered by this review was one from Bangladesh although not many details of the course are provided (see **Box 16**). There are certainly other health economics courses in Africa (such as in Zambia) but these have not been evaluated publicly.

Box 15: The experience of South Africa's Health Economics Unit's Master's in Public Health in Health Economics

- Design the training programme with an African orientation (e.g. using case studies from African countries) so that students see the relevance of information to their own situations.
- Ensure the programme is well structured and combines specific technical skills (e.g. economic evaluation) with exposure to broader health systems, policy and planning issues so that graduates find it easier to apply their skills in the workplace.
- Impart skills that tally well with health and development policies so that graduates are able to engage in policy-relevant work.
- Ensure that teaching is research-led so that the quality and relevance of information is maintained, making sure that there is a good balance between theoretical and practical knowledge.
- Ensure that teaching staff are highly experienced and dedicated to training.
- Provide adequate supervision in terms of hours and skills, ensuring that supervisors are not over-stretched (particularly with respect to PhDs).
- Nurture good relationships between students and staff.
- Remain aware that health economics students do not have a background in public health and vice versa.
- Ensure students are carefully selected on the basis of a number of objective factors and graduate within a reasonable time period.
- Ensure efficient day-to-day management of the programme.
- Find opportunities for participants to gain post-Master's experience as finding one's first job in health economics is difficult.
- Encourage the National Department of Health to provide bursaries as these are in short supply for South African students (including government employees).

Source: Doherty (2011)

Box 17: The experience of the Health Economics Unit of the Ministry of Health and Family Welfare in Bangladesh

- Established in 1994 with subsequent creation of an institute for degree programmes in 1998
- Provides training for government officials on health economics and GNSP issues
- Trains about 150-160 participants from a range of government departments every year
- Training covers economic evaluation in health care, costing procedures, health care financing, research methodology, expenditure tracking etc.
- Destabilised by failure of promised donor funding to be renewed past initial period
- Capacity to conduct training and research reduced

Source: (Howlader 2013), Rahman (2013)

Another dimension of capacity-building is building the capacity of staff working internally in a unit. The South African Health Economics Unit has a clear strategy for continually developing their own staff (see **Box 17**) and staff report high levels of satisfaction with their training experiences, as well as characterising their working environment as *'inclusive, collegial and easy-going'* (Doherty 2011: iii). About ten junior researchers were produced by the unit over the decade studied.

Box 17: Strategies used by the South African Health Economics Unit to develop the capacity of their own staff

- New staff are encouraged to enrol in a part-time Master's programme.
- If staff are enrolled in a Master's at Cape Town University, the unit pays their fees and allows them to spend half their time on attending seminars, writing assignments and completing their dissertation.
- If staff are enrolled in the Units' Master's, this acts as a mechanism for integrating them into the life of the unit.
- Staff who have a Master's are encouraged to enrol for a PhD, and given assistance writing their proposals (their fees are also paid if they are enrolled at UCT).
- Staff's PhD research projects are often the projects for which they were employed and are earning a salary.
- Staff doing a PhD are assigned a university mentor and also form a PhD support group.
- Junior staff are given intensive supervision on their research projects and other duties.
- Junior staff are also entitled to a sabbatical amounting to one month per year of employment.
- Staff attend occasional seminars organised by the Unit or the School, as well as courses offered by the university for young researchers and lecturers, which also helps them to improve their teaching skills.
- Junior staff teach undergraduate medical students with senior staff moderating assignment marking.
- Staff meet monthly to discuss their research and peer review forms part of the quality assurance process.
- All staff are encouraged to spend one day a week writing (either for their thesis or articles).
- International experts provide regular research training and supervision to staff through a number of strong and often long-standing institutional partnerships. Beyond this research support, international experts also provided support:
  - from the Swedish Karolinska Institute to develop the Master's in Health Economics; and
  - with Prof. Gavin Mooney who visited the Unit for several months for a number of years, in getting journal articles ready for submission (i.e. identifying parts of researcher's work that were worthy of publication, identifying suitable journals, thinking through the 'angle' the article could take and editing the text, including in response to reviewers' comments).

Sources: (Doherty 2009, Doherty 2011)

As is the case with Health Systems and Policy research more generally, mentorship schemes for developing researchers are sorely needed. Bennett, Agyepong et al. (2011: 5) advise that their *'development requires careful planning to motivate and support senior researchers who could act as mentors. Given the challenges in developing mentorship schemes, efforts to build communities of practice among … researchers within countries and at regional levels may also be helpful.'* **Box 18** describes the active efforts by HITAP to structure mentorship of its own staff and ensure the development of high quality researchers.

Box 18: HITAP's mentorship scheme

> 'Capacity building aims at expanding researchers' competence and capacity, and consists of 3 approaches as follows: a. Increasing the number of mentorships by selecting highly equipped Ph.D. graduates who have made a commitment to participate in HITAP, and to increase the experience and transfer of knowledge to young researchers in an apprenticeship system. b. The forming of an apprenticeship system, with the selection of talented and committed individuals to work with senior mentors in the form of on-the-job training. c. Supporting researchers in the apprenticeship system who show the capacity and commitment needed for further study at the Masters and/or Ph.D. levels in institutions, both locally and abroad, in relevant topics such as health economic evaluation, clinical epidemiology, evidence synthesis, biomedical statistics, and ethics and resource allocation. The prerequisite condition for these researchers is that they must participate in on-the-job training for capacity assessment as a researcher for a period of time.'

Source: HITAP website (http://www.hitap.net/en/research/17721)

Recommendations for research organisations seeking to build the capacity of external and internal research staff

1. Survey key stakeholders regarding training needs regarding HTA (in terms of content and format). Also investigate the content and format of existing courses more thoroughly. Finally, investigate the training experience of countries with well-established HTA training programmes. On the basis of this, develop a detailed training strategy.
2. Seek funding and technical support for designing appropriate courses, including the development of locally relevant case studies.
3. Develop a strategy for recruiting young researchers into the organisation, and developing the capacity of all internal staff. On-the-job mentorship of young researchers is important.
4. It is not essential to send research all staff on formal training programmes overseas. However, there may be fruitful exchanges that can be arranged. Participants should be carefully selected, however, and exchanges should have clear learning objectives and expected outcomes.

8. Conclusion

Research organisations working in the field of HTA have to do so much more than conduct high quality research: they also have to engage with a complex array of stakeholders, network closely with a number of other research organisations, build partnerships with different levels of government and train the future generation of HTA researchers and policy-makers. In low- and middle-income countries where there are no government HTA agencies, they also have to support the development of an effective HTA-informed priority-setting process that is sensitive to societal and government needs and priorities.

Drawing on findings from a series of case studies, Theobald, Taegtmeyer et al. (2009: 6) concur that, *'[r]egardless of focus or scale, researchers need to be able to forge partnerships, up and down the complex hierarchy of stakeholders involved in health policy, practice and research, and try to build credibility in the process.'* The same authors advise that in resource-poor contexts, it is important to *'start small, build on what exists and sustain genuine partnerships'* (Theobald, Taegtmeyer et al. 2009: 6).

There are clearly many possible dimensions to a capacity-building strategy for HTA in South Africa and the region: the key will be to select appropriate starting points that build on the iDSI partners' strengths, meet some of the immediate needs of the country and contribute to longer-term goals.

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