

COMDIS FINAL REPORT

MAY 2011

1	Background Information.....	2
2	Summary	3
3	Highlights of the Research Programme	5
4	Achievement of Programme outputs and purpose.....	9
5	Lessons learnt	25
6	Programme management	Error! Bookmark not defined.
7	Long-term sustainability of the research	29
	Annex 1: Logframe	30
	Annex 2: Financial summary	Error! Bookmark not defined.
	Annex 3: Risk assessment matrix.....	33
	Annex 4: Communication strategy.....	33
	Annex 5: Products and publications	36
	Annex 6: Capacity Development	Error! Bookmark not defined.
	Annex 7: COMDIS projects.....	48
	Annex 8: List of abbreviations.....	53

1 Background Information

Title of Research Programme:	COMDIS
Reference Number:	HD206
Period covered by report:	1 April 2010-31 March 2011. Year 5 of 5
Name of lead institution:	Nuffield Centre for International Health & Development, University of Leeds
Directors:	Prof John Walley & Prof James Newell
Key partners	<p>Bangladesh: National TB Programme (NTP Bangladesh)</p> <p>Bangladesh: Bangladesh Rural Advancement Committee (BRAC)</p> <p>China: National Centre for Tuberculosis Control (NTP) Beijing (NCTB)</p> <p>China: Guangxi Provincial Center for Disease Control and Prevention</p> <p>China: Shandong Chest Hospital</p> <p>China: Shandong University</p> <p>Ghana: Kwame Nkrumah University of Science & Technology (KNUST), Kumasi</p> <p>Nepal: Health Research & Social Development Forum (HERD)</p> <p>Nepal: National TB Programme</p> <p>Pakistan: National TB Programme</p> <p>Pakistan: Association for Social Development (ASD)</p> <p>Swaziland: Good Shepherd Hospital. Lubombo</p> <p>Uganda: Malaria Consortium, Africa (MCA)</p> <p>Uganda: Department of Clinical Medicine, Makerere University, Kampala</p> <p>UK: Malaria Consortium UK (MCUK)</p> <p>UK: Nuffield Centre for International Health & Development, University of Leeds</p>
Countries covered by research:	<p>Bangladesh</p> <p>China</p> <p>Ghana</p> <p>Nepal</p> <p>Pakistan</p> <p>Swaziland</p> <p>Uganda</p> <p>Southern Sudan</p>

	Planned	Actual
Start Date:	1 April 2006	1 April 2006
End Date:	31 March 2011	31 March 2011
Total cost:	£ 5 million	£5million £4,968,752 plus NCT for £31,248

2 Summary

2.1 Achievement of intended outputs as listed in the logframe

Output 1: New knowledge generated through research.

COMDIS (with the national programmes) have developed new evidence, new strategies, guidelines and tools (based on this evidence) which have been used to improve quality, coverage, delivery and demand for/utilisation of CDC programmes. Examples are given below.

- We have a better understanding of the problems facing MDR-TB patients in Nepal and Pakistan, and have designed a community based care model, adopted by the NTP in Pakistan.
- We better understand the mechanisms of TB stigma in Bangladesh, Nepal and Pakistan.
- We have developed and implemented public-private partnerships for TB control, and are assisting NTPs to implement PPPs for TB control in Nepal, Bangladesh and Pakistan.
- We have new knowledge on child TB and sexually transmitted infection (STI) case management in Pakistan.
- We have translated the PPP for TB control approach to address STIs in Bangladesh and are evaluating this approach.
- We have better understanding of why identification and diagnosis of TB suspects does not function well in Nepal.
- We have new knowledge on improving the performance management, lab quality assurance and supervision linking facility, district and provincial health programmes in Pakistan.
- We have developed, and evaluated for TB and malaria, new tools for on-site quality assurance and supervision in Pakistan.
- We have shown that integrating TB within “designated” general hospitals is more effective than CDC/TB dispensaries or specialist TB hospitals, in China.
- We have shown that the national policy on sputum collection centres isn’t effective in China.
- A trial that anti-retroviral treatment (ART) follow-up care in health centres is equally effective and safe, and is more acceptable, than hospital follow-up care in Swaziland; so contributing to the WHO universal access policy.
- We have developed and demonstrated the effectiveness of decentralised TB-HIV case finding, isoniazid (TB) preventive treatment and pre-ART care and late patient tracing systems.
- We now know the limitations of HIV/ ART monitoring in Uganda.
- We have validated in Uganda the new WHO diagnosis of smear negative TB in the context of HIV diagnostic algorithm-guideline; showing increased sensitivity without loss of specificity and reduces the time to diagnosis, as compared to the existing WHO diagnostic algorithm.
- A randomised controlled trial of anti-retroviral treatment, statistically higher than usual care adherence rates (achieving 99%) in people receiving enhanced adherence measures (group counselling, leaflet, treatment supporter and mobile phone recall) in Uganda.
- We know how to improve malaria treatment behaviour in the context of rapid diagnostic tests.
- We are developing evidence of benefits for malaria and lymphatic filariasis control.
- We have shown that in Uganda high retention and use of long-lasting insecticidal nets (LLINs) can be achieved by targeted campaigns and ANC services, but costs can vary significantly.
- We have a good understanding of the quality of malaria care in Uganda following the change to artemisinin-based combination therapy (ACT), and how to identify areas needing support.
- We have a better understanding of treatment adherence to (a) Artemether Lumefantrine (AL) unit dosed pre-packs and (b) AL blister packs plus pictorial leaflets in the treatment of uncomplicated malaria in children aged under five years in a hospital setting in Uganda.
- We have appraised the options for neglected tropical diseases (NTDs) with stakeholders in southern Sudan.
- We have developed the first trachoma risk map in Southern Sudan, enabling targeting of resources to priority areas.

Output 2: Capacity Development of researchers, programme managers and health workers to ensure policy and programme design in COMDIS partner countries can be informed by high quality research findings.

- Country partners now appreciate the importance of good communication, evidenced by their close involvement with CDC Programme Managers. Programme managers increasingly request COMDIS to perform research to help them address their priority problems, and incorporate findings into strategy. Resultant guidelines and training materials are increasing the capacity of health-workers to deliver new strategies and improve quality of care.
- Country research partner organisations research capacity has increased, including development of a research NGO in Bangladesh (SEED) and a COMDIS China research office.
- ASD Pakistan was awarded the Karel Styblo prize for public health in the International TB and Lung Disease conference 2010.

Output 3: Communication involving researchers, programme managers, health workers and others to ensure policy and programme design, at national and international levels, is informed by research findings.

COMDIS research findings have been incorporated into guidelines and training materials, piloted-evaluated, revised and adopted by national/ provincial programmes. These include:

- National guidelines for TB public-private partnerships in Nepal, Bangladesh and Pakistan.
- National MDR-TB, child TB and STI case management guides and modules in Pakistan.
- National guidelines on TB-HIV integration in Nepal and Pakistan.
- National malaria diagnosis policy including use of RDTs with the malaria programme, Uganda.
- National guidelines for malaria case management in Pakistan (including ACT & RDT policies).
- Support to national programmes preparing Global Fund AIDS, TB and Malaria proposals in Pakistan, Nepal, Bangladesh and Swaziland (technical support, and incorporating new knowledge into scale-up plans).
- Support to the national TB programme on microscopy centre, hospital-TB etc. policies China.
- Support for international WHO and national guidelines on TB in tertiary hospitals, Pakistan.
- Establishment of a National Programme for Integrated NTD Control, which has since conducted extensive surveys and treated people in endemic areas in Southern Sudan.
- Development of a DVD describing the history of a Bangladesh woman with TB.
- Support to national programmes communications messages and materials, eg. World TB day.
- Regular reports of COMDIS research in the national media in partner countries.
- Delivering Effective Health Care for All conference, presenting evidence from 3 RPCs.

2.2 Impact of the research programme so far

Purpose: policies/strategies for communicable disease control improved in partner countries and beyond.

- In China, scale-up of improved strategies for adherence and quality-of-care have been and adaptation to a national TB communication guide.
- In Bangladesh, Nepal and Pakistan nationwide scale-up of strategies and tools for the TB public private partnership models, and in Bangladesh the garment factory model.
- In Nepal, research to policy on counselling and financial support to all MDR TB patients.
- In Pakistan MDR TB community-based model, care guide & module being used in scale-up.
- In Pakistan, TB, malaria, STI programme performance management & quality management.
- In Pakistan COMDIS has facilitated national programme scale-up of; i) external quality assurance of TB microscopy ii) tertiary hospital linkages.
- In Pakistan malaria case management guidelines and modules and used in the 19 high burden districts to date), and iv)
- In Swaziland, the health centre model for TB-HIV and ART replicated across Lubombo region.
- In Uganda we validated the new WHO Diagnosis of smear negative TB in the context of HIV diagnostic algorithm-guideline, showing increased sensitivity and reduced time to diagnosis. It is no-longer “interim” and WHO now recommends the guideline internationally.
- In Uganda, quality assurance and training curriculum for the national malaria programme.
- In Southern Sudan, national policy for control of NTDs based on COMDIS recommendations.
- In Southern Sudan, the trachoma risk map has resulted in resources for collection of baseline data to be deployed in Unity State during early 2010.

3 Highlights of the Research Programme

Operational research capacity

Our research partners have

(a) developed their research capacity to allow them to carry out operational research to address problems of national importance

(b) used and developed their high-level links with national disease control programmes (NDCPs) to ensure that OR addresses priority problems and delivers solutions that are feasible in the context, are sustainable and can be scaled up; that NDCPs are aware of progress; that findings are incorporated into policy; and – through the research uptake strategy (part of the communication strategy) – that policy is translated into practice at large scale.

The following is a selection of research projects carried out by COMDIS. Due to length restrictions for this document it is not possible to include all our projects.

Assisting people with MDR-TB to survive their treatment

As a response to the increasing numbers of people diagnosed with multi-drug resistant (MDR) TB, WHO developed the DOTS+ strategy, which requires patients to take a set of powerful antibiotics under direct observation (DOT) for a minimum of 24 months. Most patients need to relocate for treatment. Nepal has been a DOTS+ pilot country since November 2005, and has demonstrated that the strategy is generally successful.

Our work has shown that patients find it very difficult to sustain DOT for 24 months due to huge socio-economic costs: the great majority suffer extreme hardship and take on substantial debts to complete treatment, with major long-term implications for their wellbeing, and some discontinue treatment. 70% suffer side-effects from the drugs used in DOTS+.

We have shown that providing financial support and counselling has substantially increased treatment completion. Counselling alone also increases treatment completion, but is not sufficient to alleviate major financial problems.

The Nepal NTP has responded to this finding by introducing financial support of NRs 1500 a month to all MDR TB patients.

In Pakistan there are similar issues. With the NTP we have designed a model of community-based MDR TB care which is being piloted in preparation for national scale-up. We will soon start a trial of this in comparison to more hospital-based care. Clinical/ case management guidelines for physicians and peripheral health workers have been developed. These are being used to enable quality implementation the \$125 M programme for 10,000 patients through global funds.

Public private partnerships for TB control

The aim of COMDIS Public Private Partnerships (PPP) research is to address the very real issue that private medical practitioners (PPs) are the providers of choice for the majority of urban residents with chest complaints, despite the poor quality of TB diagnosis, treatment and reporting they provide. It was not known whether PPs can be involved in large scale partnerships to provide TB control that are effective, affordable and sustainable. Under the TB Knowledge Programme, we developed a public private partnership for TB control in Lalitpur, Nepal in 1997. Responsibility for the PPP was transferred to Lalitpur Municipality in 2002. COMDIS research has now demonstrated the continuing sustainability of the PPP without external support. A guideline has been developed and has been shown to be effective in 8 other cities besides Kathmandu and Pokhara.

As a result of this success, a much more ambitious project was developed in Bangladesh, involving the Bangladesh NTP, various NGOs and COMDIS. Operational research in Dhaka has demonstrated its feasibility, effectiveness, scalability and sustainability, funding has been obtained from GFATM to scale up across Bangladesh, and scale up is under way. The approach is now being tested for delivery of care for STIs.

In Pakistan, all provinces have now approved PPP as a policy option for TB control. COMDIS-led operational research has led to development of detailed guidelines and tools, and policy is to

develop PPPs in all towns and cities.

Large employers and TB care

Across Asia, many very poor people are employed in the intensive manufacture of items such as garments, leather, carpets, tea, etc. These industries have several commonalities, including low socio-economic status of the workforce, and crowded working conditions. These provide opportunities for TB transmission. However, affected individuals delay seeking treatment because of problems accessing diagnostic and treatment facilities that are normally only open during the working day, and fear that employers will sack employees with TB.

We have worked with BGMEA, the Bangladesh Garment Manufacture and Export Authority, to develop and test a strategy to give garment workers easy access to TB diagnosis and treatment, either within factories or at health services nearby. The strategy has been proven successful, with employers willing to allow workers to access the services and safeguard jobs of those diagnosed with TB, and workers using and appreciating the services, and has been adopted in many large and medium sized factories. The other large garment manufacture employers association, the Bangladesh Knitwear Manufacture and Export Authority, is now in the process of adopting this approach, and tea gardens have shown an interest.

Population disease programmes

In previous DFID funded trials, economic and social research showed that directly observed treatment (DOT) does not add benefit to the other components of the TB “DOTS” strategy. This led to a change in the WHO strategy. Yet country programmes still emphasised DOT. Within COMDIS we have tackled the challenge of what should be done to ensure good treatment adherence and so treatment success and minimise the spread of drug resistance. For example in Uganda a randomised controlled trial of anti-retroviral treatment, showed statistically higher than usual care adherence rates (achieving 99%) in people receiving enhanced adherence measures - group counselling, leaflet, treatment supporter and mobile phone recall.

We have incorporated international best practice (especially WHO) and our research evidence within case management guidelines, modules and other tools to improve the quality of TB care. These include improved messages and communication skills training on the diagnosis, treatment and adherence. In each COMDIS country, through a working group process with the national programme and our local COMDIS partner, we have adapted these guidelines and materials, and the programme has used them nationally. They have contributed to achieving national treatment success targets in COMDIS countries. For example, in Nepal, adoption of the COMDIS deskguide for TB care in Kathmandu, and Kapilvastu has been shown to increase treatment success rates, and reduce treatment non-completion, and has received positive feedback from users. More recently, in Pakistan and elsewhere, we have developed guidelines and tools for other priority programmes such as for malaria and HIV-STI, so as to improve the quality of care, adherence and evaluating and provide a “vehicle” for scaling-up of new policies. For example the malaria materials incorporated new policies for rapid diagnostic tests and ACT drugs.

Much of this experience relates to how to deliver population public health programmes, integrated within and decentralised through the general public and private health facilities. Also, how to develop and manage these services by general health managers. In particular approaches to performance manage and ensure quality assurance for lab tests and care; linking facility, district and provincial levels.

Specifically we have researched and developed generic approaches to delivering long-term care, initially for TB, then HIV-ART and most recently are starting to apply this to non communicable diseases case management and programming. In Uganda we have shown in a trial that the use of mobile phone patient reminders and recall improved adherence to pill counts and appointments. This, with other adherence measures including treatment supporters, group counselling and leaflets, have significantly increased average adherence at pill counts (to 99%).

Also in Uganda we have demonstrated the effectiveness of the WHO interim guideline for TB diagnosis in the context of HIV, and this is no longer interim.

In Nepal, we have applied this approach to develop a working model for TB-HIV collaboration. This has been adopted into national policy, and we have since developed national guidelines and training materials.

We have enhanced knowledge of how to get research into practice through operational research. This includes linking multi-method research with service development – embedded within national health programmes.

Effectiveness and treatment adherence to artemether/lumefantrine pre-packs versus blister packs in the treatment of uncomplicated malaria in Uganda

A randomized, un-blinded study was carried to evaluate the effectiveness of and treatment adherence to artemether/lumefantrine (AL) pre-packs versus blister packs in the treatment of uncomplicated malaria in Uganda among children aged four months to five years. The analysis is still being done and will be completed by the end of February. This study will provide important information for evidence-based decision making both nationally and internationally regarding the use of pre-packs and blister packs of ACT.

Evaluation of the impact of integrated vector control for lymphatic filariasis and malaria through large-scale distribution of long-lasting insecticide-treated nets in Uganda

Lymphatic filariasis (LF) remains a major problem in some parts of the world. Since the vector for LF transmission is similar to that of malaria, it seems reasonable to use integrated vector control. However, the effectiveness of such an approach is not yet known. A sharp reduction in LF infection was seen in the study area, where both mass drug administration and nets were used to reduce transmission; prevalence of LF infection in young children was very low, demonstrating the current low transmission levels; prevalence of infection in the *Anopheles* mosquito vector was reduced from baseline levels, but presence of some mosquitoes carrying the parasite in 2010 indicates that there is still the potential for continued transmission; and universal coverage of mosquito nets in a household was found to be protective against LF infection.

Study findings support a preferential targeting of LLINs to areas where malaria and *Anopheles*-transmitted LF are endemic. These findings are expected to make a major contribution to the evidence base for integrated control of neglected tropical diseases (NTDs), particularly with regards to the integration of an NTD package of interventions with national programmes for malaria, HIV/AIDS or TB control. Additionally, they will allow advocacy for resources to be made available for LF vector control; particularly in areas where it is co-endemic with other vector borne diseases and where mass drug administration for LF might in fact increase malaria transmission. Direct beneficiaries of the present study will potentially be all inhabitants of LF endemic areas in Uganda, amounting to 14 million people according to current population estimates. Given the current international advocacy for increased NTD funding, positive results from the present study are also likely to be translated into increased support to countries with similar LF epidemiology as Uganda, such as Sudan, Tanzania or Kenya.

Parasite based diagnosis of malaria: effectiveness of rapid diagnostic test in diagnosis of malaria in pregnancy in Uganda

A prospective longitudinal design was used to evaluate the effectiveness of rapid diagnostic testing of malaria among pregnant women attending health facilities in Uganda. RDTs were found to be an accurate and appropriate method of diagnosis for peripheral malaria in pregnancy; when performed as point of care (POC) tool, the results are quickly used for case management compared to waiting for microscopy results; but low specificity continues to be of concern, especially in pregnancy where many febrile conditions occur.

Study results are being widely disseminated within Uganda including in support of the development of guidelines for malaria prevention, to ensure that the study results can directly influence implementation in Uganda and beyond.

Visceral Leishmaniasis in eastern Africa: situation analysis on past and present control and research activities, assessment of the feasibility and value of control, and

development of an operational research agenda

Visceral Leishmaniasis remains a substantial problem in parts of Africa, but the evidence base is patchy regarding distribution and burden, and intervention options to improve existing VL control in eastern Africa.

We found that in most of the region's countries the MoHs do not have complete (or any) records of data on leishmaniasis. Disease burden data in most East African countries is almost exclusively facility-based and therefore as a result it can be said that the burden of leishmaniasis in all countries of eastern Africa is certainly under-estimated. Prevention is arguably the most neglected aspect of leishmaniasis control in the region. There have been no trials to evaluate the effectiveness of LLINs and/or other prevention efforts for leishmaniasis conducted in eastern Africa. The impact of health education efforts has also not been assessed. There is limited and sporadic funding for leishmaniasis prevention and control which leads to inconsistent intervention efforts across most of the region. Continuous implementation of activities (particularly longer-term support to strengthen systems) is rare. In many of the endemic countries the MoH has not established a budget line for leishmaniasis or even NTD prevention and control.

We have now provided Ministries of Health and implementing partners in eastern Africa with up-to-date information on leishmaniasis activities in the region, giving them credit for their work, and identifying other partners and hence potential collaborations both within and outside their current area of operation. We are working to encourage current implementing partners to use the situation analysis to lobby for additional support for leishmaniasis control within and outside their current area of operation and to expand their current partnership. Now that the VL situation in the region and relevant contact details for all countries are known, hopefully there will be increased discussion between countries. It is also expected that donors will use the information from the situation analysis to provide increased support to leishmaniasis control, as the document clearly outlines the current shortcomings and opportunities on how to overcome them.

4 Achievement of Programme outputs and purpose

4.1 Research outputs

Our overall assessment is that COMDIS has achieved its programme outputs.

COMDIS has delivered new tools and strategies to improve quality and/or coverage of CDC programmes. These include better methods of case management (for TB, malaria and sexually transmitted diseases), integration within district health management and facilities, better methods of improving external quality assurance, supervision and performance management for TB and malaria and guidelines for public-private mix. All of these delivery strategies are transferable to other communicable and non communicable diseases.

COMDIS has developed new tools and strategies to improve delivery of CDC programmes in decentralised health systems. These include trials of RDTs for malaria, better delivery systems for LLINS, the impact of IPT in children, guidelines and training packages for malaria case management and supervision, and adherence support for chronic diseases such as for HIV-ART. In China the research has identified factors contributing to poor results of the national decentralised TB microscopy policy; and the effectiveness of the designated hospital strategy as compared to the existing CDC TB dispensary model. In Swaziland a trial has shown better adherence and lower death rates when delivering anti-retroviral treatment from health centres as compared to standard hospital based care.

COMDIS has also developed new tools and strategies to improve demand for and utilisation of effective interventions. These include assessments of ways of improving TB case finding, and operationalising external quality assurance. Other studies have investigated the causes of stigma and discrimination associated with TB, and barriers to girls protecting themselves against HIV/STIs. In Southern Sudan, a new tool allows a risk map to be developed for trachoma, allowing limited resources to be targeted to priority areas.

From the policy point of view, our approach of working closely with CDC programme directors has encouraged these senior staff to be involved in the identification of priority research questions, to remain engaged in the research process and to use the research findings to develop policy. In addition addressing WHO/international questions; and providing evidence of effectiveness for WHO diagnostic and care guidelines.

From the practice point of view, our approach of working to develop case management guidelines, training materials and courses means that policies incorporating COMDIS findings have been translated into practice. Large numbers of health workers have been trained and have put evidence-based policy into practice.

Finally, it is worth pointing out that while the great majority of COMDIS trials of innovative interventions have been positive and we have supported scale-up, in contrast two studies (that of the effects of provider and patient incentives, and decentralised microscopy in China) showed no benefit, and so the advice has been not to replicate this intervention. We feel it is important to help programmes to know what does not work as well as what does work!

The remainder of this section gives more detail on specific research outputs, grouped using the log frame layout.

Output 1: New knowledge generated through research.

We have shown that health centre anti-retroviral treatment (ART) follow-up care is as effective and safe, and more acceptable to patients, than conventional hospital ART clinic care. The trial was conducted in Lubombo, a rural region of Swaziland, the country with the highest prevalence rate of HIV in the world. The study demonstrates that care can be decentralized to local level clinics with nurse-led care, reducing crowding in hospital ART clinics. Health centre care reduces patient costs and maintains high rates of attendance. The results have contributed to the achievement of universal access to HIV/ ART care in Africa. We have also tested approaches to TB-HIV care in the same region of Swaziland, demonstrating effective primary care approaches to screening for TB, HIV, commencing preventive treatment, CD4 tests, early initiation onto ART,

enhanced adherence support and late attendee tracing. We have used OR to develop policy and an operational plan for TB-HIV collaboration in Nepal.

We have shown the effectiveness in a randomised controlled trial in Uganda of an enhance package of adherence support for HIV-ART, achieving 99% adherence at pill counts.

We have a better understanding of the problems facing MDR-TB patients in completing treatment under the DOTS-plus strategy, based on research in Nepal. Many of the problems arise from the need for patients to relocate for 24 months or more to DOTS plus centres far from their home and work. The result is isolation from support by family and friends, resulting in loneliness and depression; extreme financial pressure because patients who cannot get work need to rent accommodation and buy food at city prices; stigma by neighbours meaning they must constantly remain vigilant to hide their illness to avoid eviction by landlords frightened of infection; and stigma by health workers aware of the consequences of infection. Patients experience a 'rebound effect', in which they are first elated that their condition has been properly diagnosed, and a treatment identified, but subsequently rebound to misery and depression caused by their economic hardship and social isolation. Many patients are suicidal – some successfully.

This research has contributed to the development of MDR treatment and care policy and guidelines in Nepal. The results are currently being translated to the context of Pakistan, where we have designed a community-based model and developed case management guidelines and modules for physicians and other health workers which are being used to initiate their MDR TB programme nationally.

We have a better understanding of the mechanisms of stigma related to TB, following research in Bangladesh, Nepal and Pakistan. Patients unnecessarily isolate themselves from their children and spouse, to protect them from infection. This continues long after there is any risk to others. One important cross-cutting finding is that stigma appears to have a major gender dimension in all three countries, with women much more at risk of stigma and the consequences much more extreme. The mechanisms of stigma vary from country to country, being very much context-specific. This has important consequences for potential interventions to address stigma. Thus, while there is some truth in existing beliefs that stigma can be addressed by better community health education about TB, this is only part of the story, and context-specific interventions are also needed to protect women patients from local beliefs and practices. The research is contributing to innovative advocacy, communication and social mobilisation (ACSM) approaches in Nepal. A COMDIS ACSM research project in Pakistan, has evaluated social mobilisation through Mullahs and school teachers.

We have developed new tools to assist the development and implementation of public-private partnerships (PPPs) for TB control, and have carried out OR which has assisted NTPs to implement PPPs in Nepal, Bangladesh and Pakistan. There are many generic elements to the development of PPPs: these include the need to have a clear policy framework within which PPPs are developed; a process of identifying potential partners and their roles; a need for transparency to foster trust between partners; careful monitoring; a process of identifying problems as they arise; and a process of ensuring sustainability. While each of these elements is generic, translation needs to be made to the local context. Most NTPs do not have the capacity to carry out alone the operations research needed for translation, and external support is needed. With this support, PPPs are feasible at large scale, and sustainable.

We now have better understanding of the (lack of) selection criteria and support and poor effectiveness of sputum collection/ microscopy centres in township hospitals, China.

Our study in China has shown the superiority of the designated hospital TB clinics model as compared to external (CDC) TB dispensaries (with weak referral links to hospitals) and specialist TB hospitals. This will inform national policy on care for patients presenting to hospitals, and how to improve links with CDC TB public health functions.

We have developed and evaluated case management guidelines for child TB in Pakistan. These have been developed with input from WHO and IUATLD (child health group) – who with

adaptation have disseminated these in Africa.

We have prepared guidelines for sexually transmitted diseases, adapted for the south Asia from WHO materials, which are being evaluated in coordination with the AIDS programme Pakistan, and also being piloted in Bangladesh.

We have developed, evaluated and scaled-up TB and malaria programme performance monitoring of case management in Pakistan. This involves groups of in-charge doctors meeting at each others' facilities in rotation, facilitated by the district coordinator. Data at each level is checked, trends are analysed, problems and solutions identified. Consolidated data from one level feeds up to the next. Approaches for TB have been adapted for malaria, and integrated within the district management system. A similar approach has been developed for PPP and hospitals.

We have evaluated operational procedures external quality assurance (EQA) and supervision of malaria slide microscopy. This has been implemented across Pakistan, contributing to better malaria control.

We have a better knowledge of how to deliver quality malaria care, including how to operationalise and scale-up the new policies for ACT and rapid diagnostic tests in Pakistan. The revised case management guidelines and tools have been adopted by the Malaria Control Programme.

A randomised controlled trial of home based treatment of malaria, with or without intermittent preventive treatment of malaria, has been completed in Ghana. The results show no additional benefit from adding IPT to home based treatment of malaria.

We know more about malaria treatment provider behaviour in the context of RDTs and malaria in adults. Doctors remain reluctant to not treat malaria despite a negative RDT. This line of research is continuing.

We have evaluated the quality of malaria treatment, including diagnosis, in public sector health facilities in Uganda following the change in national treatment policy to ACTs. Our research has described the current situation and the findings have been shared with the National Malaria Control Programme to assist them to identify areas requiring more follow-up support and refresher training.

We have shown that rapid diagnostic tests are accurate and appropriate methods of diagnosis of malaria among pregnant women. When used as a point of care tool, the results are quickly used for case management (in contrast to waiting for microscopy results); but low specificity continues to be of concern, especially in pregnancy where many febrile conditions occur.

We have evaluated in terms of retention, usage, cost-effectiveness and equity, different delivery methods for long-lasting insecticidal nets (LLINs) – one through mass campaigns and the other through antenatal clinics. This study collected both quantitative and qualitative data which demonstrated that high retention and use can be achieved through both targeted campaigns and routine ANC services, at similar distribution costs in the same location. Campaign costs, however, varied considerably between locations due to factors such as distance from Kampala, population concentration and the number of administrative areas covered.

We have assessed the impact of widespread coverage and use of LLINs on both malaria and lymphatic filariasis control in an area of Uganda co-endemic for both diseases. Study findings support a preferential targeting of LLINs to areas where malaria and Anopheles-transmitted LF are endemic.

We have appraised the options for neglected tropical diseases (NTDs), with the ministry of health and other stakeholders in southern Sudan, and this has contributed to policy on these diseases.

We have provided the MoH-GoSS with a new tool to decide on where to target its resources, by developing a trachoma risk map to ensure targeting of limited resources in high priority areas. This has resulted in funds being allocated to conduct a baseline survey in a high priority state.

We have conducted an in-depth situational analysis to provide an up-to-date detailed picture of the distribution and burden of Visceral Leishmaniasis in eastern Africa, as well as past and present interventions to control them; and have identified options for interventions to improve control.

We are in the process of researching the accuracy of RDTs compared to microscopy in detection of malaria infection among pregnant women in Uganda.

We have used a randomised study to compare the treatment adherence to Artemether Lumefantrine (AL) unit dosed pre-packs against AL blister packs plus pictorial leaflets in the treatment of uncomplicated malaria in children aged under five years in a hospital setting in Uganda to enable us to inform National Policy on procurement of drugs. Analysis is ongoing.

Output 2: Capacity Development of researchers, programme managers and health workers to ensure policy and programme design in COMDIS partner countries can be informed by high quality research findings.

Developing country COMDIS researchers are increasingly self-sufficient in research. They

- develop and write proposals (commonly collaboratively with the UK based researcher most involved). Partners have an increasing awareness of the use of qualitative research and the skills to perform it.
- review COMDIS research proposals.
- manage the research in coordination with their national programme partners.
- analyse quantitative and qualitative data.
- draft and submit papers for publication in international journals.
- communicate well with CDC Programme Managers and producing good communications materials.
- carry out financial management and project monitoring.

Programme managers increasingly request COMDIS to perform research to help them address their priority problems, and incorporate findings into strategy.

GRIPP

- Guidelines and training materials produced and evaluated through COMDIS have increased and continue to increase the capacity of health-workers to deliver new strategies and improve the quality of care. These guidelines have been drafted based on the best available evidence, especially WHO materials for TB, malaria and STIs. The products are designed to be context and health worker specific, and include all the guidelines, modules and tools required to effectively implement at scale. The development, evaluation and revision included working with programme officers from national, provincial and district levels.
- After evaluation and revisions, guidelines have been (and continue to be) scaled up by the national, provincial and district CDC programmes, often using a mixture of government, bilateral and GFATM funds – hence COMDIS research and development contributes to more effective utilisation of these resources.
- Increasingly we have worked across countries, especially in South Asia, thus building experience and preparing generic products which can be adapted by other countries.

The capacity of national programme managers to draft and facilitate national technical working groups to develop procedures and materials has been improved, especially in the south Asian country CDC programmes.

Output 3: Communication involving researchers, programme managers, health workers and other to ensure policy and programme design, at national and international levels, is informed by research findings.

District and provincial:

COMDIS development of intervention procedures, guidelines and tools has involved working groups including key officers from all levels of the health services and programmes. The pilot evaluation of new approaches has been done at multi-district scale (in Asia districts are

commonly of greater than one million population). Scale-up has been through integration within district and provincial planning, management and service delivery systems.

National:

COMDIS has worked closely with CDC programme leaders in all COMDIS implementation partner countries. Evidence that CDC programme senior staff have taken research knowledge into account during programme design, and in development of policy documents and practice guidelines and materials, includes their involvement in the production and approval of COMDIS-developed evidence-based strategies and training materials.

COMDIS research has been embedded within CDC programmes, which has ensured that the results of the research were rapidly incorporated into draft guidelines that were piloted and evaluated in the initial districts. The results have been used to revise strategies, guidelines and tools, which have been used by the programme for scale-up.

COMDIS members have been involved in an international review of the Nepal NTP which recommended adoption into policy of COMDIS outputs on TB control in areas with poor access to health services, and expansion of public private partnerships (PPPs). Policy has been reviewed with the support of COMDIS members, and both recommendations have been adopted by the NTP. COMDIS is supporting the development of guidelines and tools to expand PPPs.

COMDIS members were again involved in the annual national planning meeting for the Bangladesh NTP. This emphasised the importance of continuing expansion of public private partnerships for TB control, and operational research into involving employers (especially in the garment industry) in TB control.

COMDIS played a key role in the development of a national policy on malaria diagnosis in Uganda. Through MC Africa, the members were involved in the finalisation of the guidelines, and development and implementation of a training of trainers' curriculum.

In Southern Sudan, COMDIS research has enabled the establishment of a National Programme for Integrated NTD Control

International:

COMDIS disseminated research findings, conducted seminars and courses at the International Union Against Tuberculosis and Lung Disease (IUATLD) annual conferences in Paris (2006, 2008), Cape Town (2007), Cancun (2009) and Berlin (2010). One member is on the IUATLD board.

COMDIS members are on StopTB health systems strengthening, PPP and TB/HIV working groups.

COMDIS has been involved in a new initiative by StopTB to encourage research (and particularly operational research) as part of TB control programmes. COMDIS has taken responsibility for the 'engaging all providers' theme. A WHO publication is expected shortly.

COMDIS has drafted and led a review process involving WHO and IUATLD working groups on child TB case management guidelines, evaluated in Pakistan, and disseminated by the IUATLD in Africa. MDR-TB has been addressed in a similar way.

Malaria Consortium input has been requested and provided at various national and international fora on malaria policy, including Roll Back Malaria and WHO. MC Africa and ASD Pakistan (with WHO) have been consultants for control of neglected tropical diseases.

COMDIS has provided an opportunity for cross partner country collaboration and learning. Findings of several COMDIS research projects initiated in one country have been successfully translated to other partner countries.

4.2 Table summarising progress towards achieving programme targets

Outputs	Verifiable Indicators	Progress	Recommendations/comments
1. New knowledge generated			
<i>A. New strategies and tools to improve quality of CDC programmes</i>	Effective strategies and tools that are adapted to be deliverable at scale in low income settings	Operational research findings have demonstrated quality TB care can be delivered at township hospitals in poor access areas of rural China. Research findings have been incorporated into case management and doctor-patient communication guidelines, which after evaluation have been adopted by the China national TB programme. A participatory in-service training module has been developed, evaluated and revised and used to train around 3,000 TB doctors in the two initial/pilot provinces.	The Desk-guide has been used in some provinces. A version focussing on doctor-patient communication components has been adopted nationally. This is helping to operationalise the new WHO TB Strategy, as well as improve quality of care in general.
		Operational research findings have been included in guidelines for TB and malaria external quality assurance, and evaluation has been completed in Pakistan. This is one of the cross-cutting health systems projects that has taken learning from TB control research and adapted it to malaria control, contributing to health systems strengthening. .	Implemented across all districts of the Punjab and many districts in the other provinces.
		Monitoring and supervision guidelines for national, provincial, district and facility levels in Pakistan, linking TB & health systems, have been developed and evaluated. Punjab province has scaled up across the whole province. The process is generic, and with technical content changes, has been used for introducing service delivery improvements for district child TB, malaria and STIs services, and hospital lab/service strengthening.	Scale-up nationally is in process for TB. A malaria case management monitoring prepared, evaluated and scale-up initiated.
		Guidelines and modules for STI case management developed and evaluated, in Pakistan.	Use in various districts in Pakistan
		An evaluation study shows that a TB unit within a “designated” general hospital is more effective than the specialised TB hospitals or the usual care which is a CDC/ TB dispensary, in China.	Evidence presented and discussed with the NTP China, who, with World Bank funding, plan wider implementation of this strategy.
		Our evaluation of the effectiveness of the new WHO guidelines for TB diagnosis in an HIV setting in Uganda shows that the new guide improves the sensitivity of diagnosis without loss of specificity and shortens the time to diagnosis as compared to the existing WHO diagnostic algorithm.	This is in collaboration with and co-funded by WHO Geneva. WHO now recommends the new algorithm-guide, and no-longer refers to the guide as “interim”.
		We have shown that rapid diagnostic tests are accurate and appropriate methods of diagnosis of malaria among pregnant women. Results are quickly used for case management; but low specificity continues to be of concern.	Being used to inform national policy
		New knowledge on treatment adherence to Artemether Lumefantrine (AL) unit dosed pre-packs compared with AL blister packs plus pictorial leaflets in the treatment of uncomplicated malaria in children aged under five years.	Analysis is ongoing.
		A trial of rapid diagnostic tests for malaria continues in Uganda.	Will be used to inform national policy

		An assessment of the impact of widespread coverage and use of LLINs on both malaria and lymphatic filariasis control supports preferential targeting of LLINs to areas where malaria and Anopheles-transmitted LF are endemic.	
		An evaluation of malaria case management in Uganda following the national drug policy change to ACTs	Informing national policy
		IPT with home based treatment is not better than home based treatment alone.	
		Evaluations of malaria case management and supervisory guidelines & training package has been developed and evaluated in Pakistan. They have been used in the 19 high burden districts to introduce ACTs and RDTs and quality care and reporting generally.	The guidelines and tools are being expanded throughout the Punjab.
<i>B. New strategies and tools to improve delivery and coverage of CDC programmes</i>	Effective strategies and tools that are adapted to be deliverable at scale in low income settings	A trial of how alternative delivery strategies for long lasting nets affect net retention and use is on-going in Uganda.	Data collection is complete and analysis is underway
		Trachoma risk map generated in Southern Sudan to enable delivery of treatment in high risk areas	Following results funds have been allocated to conduct a baseline survey in a high risk state. Manuscript submitted.
		A detailed picture of the distribution and burden of Visceral Leishmaniasis in eastern Africa, as well as past and present interventions to control them; and have identified options for interventions to improve control.	
		Public-private mix for TB care has been shown to improve case finding and treatment outcomes in Bangladesh. Evaluation demonstrates that country-wide scale-up in urban areas is feasible, ad scale-up is under way.	Links with WHO Geneva PPM/ diverse provider's guidelines and national guidelines.
		National PPM strategy and guidelines developed and evaluated in Pakistan	Are in use across the country.
		National guidelines for PPM have been produced and adopted in Nepal, and have been shown to be effective in 10 cities including Kathamndu and Pokhara.	
		Family member DOT has been formally introduced into Nepal's national TB strategy for poor access areas, using guidelines developed by COMDIS.	Supports new StopTB strategy on "diverse providers".
		New knowledge on the barriers to MDR-TB patients completing treatment has been generated, and the effectiveness of financial support and counselling assessed. Based on the findings, all MDR-TB patients now receive financial support.	
		A working model for TB-HIV collaboration has been developed and adopted into national policy, and national guidelines and training materials developed.	
		MDR-TB hospital doctors and other health worker case management guidelines and modules have been drafted in Pakistan, pilot-evaluation to commence in March.	These materials to be used to enable quality implementation of the \$125M 10,000 patient national implementation with GFATM funding.
		Research has shown that DOTS at the workplace in garments factories in Bangladesh is acceptable, feasible and successful.	This approach has been adopted by BGMEA and is in the process of being adopted by BKMEA.
		Child TB guidelines have been developed, and evaluated in hospitals in Pakistan. Seminars with WHO and IUATLD child TB groups conducted.	They have been adapted and used, via the IUATLD, in Africa.

		A review of neglected tropical diseases in Southern Sudan has demonstrated the potential for a more integrated approach to control, and the need for piloting to generate the evidence required to support scale up.	MC has been awarded USAID funding for implementation of integrated mass drug administration in 2 states of SS, which will add to the evidence-base.
<i>C. New strategies and tools to improve demand for and appropriate use of effective interventions</i>	Effective strategies and tools that are adapted to be deliverable at scale in low income settings	An evaluation of enhancements (to doctors and travel reimbursements to patients) aimed at improving TB case finding has shown that this is not adding benefit in China.	Advice given, and decision by NTP China, not to replicate this intervention nationally.
		An assessment of a decentralised to township hospitals model of TB microscopy evaluation show this strategy/implementation has not been effective in China.	The NTP doubts the effectiveness or feasibility of existing approaches were confirmed by this research.
		We now have a greater understanding of TB-related stigma and discrimination in Bangladesh, Nepal and Pakistan. Some findings are also relevant to other countries.	
		Innovations in social mobilisation for TB via Mullahs and school teachers (games, puzzles) have been piloted and evaluated in districts of Pakistan; data are currently being analysed.	
		A WHO patient chart book for patient education has been adapted for use in Uganda.	Materials provided to NACP Uganda.
		In Swaziland a trial has shown better adherence and lower deaths from health centre ART care compared to standard fully hospital-based care. In the intervention health centre/ areas follow-up ART care was decentralised to the health centre (nurse and peer counsellor). This approach is being scaled-up throughout Lubombo region.	The trial evidence supports and contributes to the WHO universal access policy. Provision of follow-up ART care is best decentralised to the health centres, releasing capacity for enrolling ART patients at the hospital.
		Demand for TB services has also been improved through our PPM work (see B above)	
2. Capacity Development			
<i>To ensure policy and programme design in COMDIS partner countries can be informed by high quality research findings</i>			
<i>(a) Research</i> ... capacity of researchers strengthened where necessary to enable them to perform high quality research and to communicate research findings	Researchers able to perform, manage and communicate research	Most proposals developed, performed and managed in-country	
		Researchers in Nepal, Bangladesh and Pakistan have gained further confidence in qualitative research methods	
		Internal research seminar programmes ongoing in Nepal. Mentoring of young researchers of COMDIS partner research NGOs, e.g. ASD, HERD and MC Uganda.	

		The COMDIS operational research linked to development of guidelines, tools and services (embedded within national programmes) approach, initially developed in Pakistan, now also functioning well in Bangladesh, Nepal, China, Uganda and Swaziland.	The embedding of operational research linked to national priorities and resources (including GFATM) contributes to efficient use of these huge inputs, and contributes to the achievement of better health at national scale in COMDIS partner countries.
<i>(b) Policy</i> capacity of programme managers strengthened to encourage them to develop policy and guidelines informed by research findings	Programme managers willing to be informed by research	Policy makers now turn to COMDIS partners for operational research, technical assistance and support to scale-up of interventions.	The capacity of programme managers to recognise the need and use operational research and guidelines/ tools development has been enhanced.
<i>(c) Practice</i> ... capacity of health workers strengthened to enable them to deliver new policies and practices	Guidelines and training materials prepared to train health workers	Guidelines and training materials prepared to train health workers: see 1A and 1B above.	Programme managers now know to adapt and used case management, planning, performance monitoring and laboratory quality guidelines and tools in order to ensure quality implementation nationally,
		Nationwide use of guidelines and training materials to train health workers: see 1A and 1B above.	Programme managers have established technical working groups, including COMDIS partners, to develop the procedures and materials that ensure that new policies are put into practice.
<u>3. Communication</u> <i>To ensure policy and programme design, at national and international levels, is informed by research findings, ...</i>			
<i>(a) Research</i> ... COMDIS partners communicate research findings to policy makers,	Researchers communicate research findings to	CDC Programme Managers (PMs) and COMDIS commission and utilise research effectively. PMs involved in the commissioning of the COMDIS projects, kept informed of progress, informed of outcomes. COMDIS members involved in discussions of policy implications of outcomes.	Increasingly COMDIS partners are cooperating across countries.

academic institutions and national medical associations	targeted individuals and groups throughout the project	Evidence developed by COMDIS partners and others has been synthesised into evidence-based policy recommendations for RDTs in Uganda.	The national diagnosis policy is finalised and COMDIS has contributed to the development and implementation of a training programme for practitioners
		Evidence generated by COMDIS partners was used to develop funding applications and it was possible to establish a National Programme for Integrated NTD Control.	National Programme on integrated NTD control has since conducted extensive surveys and treated people in endemic areas with appropriate PCT.
<i>(b) Policy in COMDIS partner countries</i> ... programme managers and other relevant actors develop policy and guidelines informed by research findings	COMDIS partners work alongside stakeholders to share findings and extend knowledge and demand	In China, scale-up has started using the guideline and in-service training module. 2,500 TB doctors have already been trained in the field test provinces. The NTP plans to print copies and continue training across the other provinces of China. In addition, the NTP/COMDIS have developed a "communication guide" for TB doctors which will be distributed nationally.	The national TB programme China has actively requested our research and development support, for example in microscopy centre and in hospitals and TB dispensaries linkage studies. However, in other areas, such as MDR TB are too sensitive, and our support is not wanted at this stage.
		In China, family member adherence support for TB has been accepted de facto by the NTP and incorporated in the case management guideline (see above).	
		In Bangladesh, national TB policy includes scale-up of the NTP/BRAC/COMDIS PPM model across urban areas.	
		In Bangladesh, TB Guidebook for doctors and other health workers (English and Bengali) developed by COMDIS has been approved by the NTP and now being used nationally.	
		In Nepal, guidelines have been developed to introduce PPP in cities and towns nationwide.	
		In Nepal, a COMDIS TB deskguide has been adopted nationwide.	
		In Nepal, a model for joint TB-HIV care has been developed, adopted into policy, and national guidelines and training materials developed.	
		In Uganda, COMDIS work has led to consensus on the use of RDTs for malaria case management there.	National diagnosis policy document finalised
		In Nepal, MDR TB patients now receive financial support.	
		In Bangladesh, garment factories provide access to TB services for workers.	Adopted by BGMEA; under adoption by BKMEA.
In Pakistan, External Quality Assurance for TB and malaria has been adopted.	Scale-up of these is well advanced across the country.		
<i>(c) Practice in COMDIS partner countries</i> ... health workers able to deliver new policies and practices	Guidelines and training materials produced for scale-up. COMDIS	Malaria performance management materials are in use in the pilot districts of Pakistan.	
		In China, the NTP/COMDIS have developed a "communication guide" for TB doctors, based on the TB deskguide and in-service module, which will be distributed nationally.	
		Operational EQA guidelines for TB and malaria are in use for TB EQA in 18 districts and TB and malaria EQA in 4 pilot districts in Pakistan.	

	partners ensure key stakeholders are involved in training and preparation of new materials and guidelines ensuring suitability	<p>Many case management, implementation planning, performance monitoring, quality assurance, supervision and other guidelines have been developed and used to train CDC managers and health workers, initially in the pilot – evaluation districts, and then provincially/ nationally. Examples include: PPP, Hospital TB care (DOTS linkage), Child TB, MDR TB and TB/ HIV, ART care and sexually transmitted diseases Malaria</p> <p>Already for some of these, the learning and capacity building has been across COMDIS countries. For example, in Bangladesh, national scale-up of the NTP/BRAC/COMDIS PPM model across urban areas continues, has commenced in Nepal and Pakistan.</p> <p>A follow up project to develop a trachoma risk map for eastern Africa is currently being discussed with managers of trachoma control programmes in Uganda and Kenya.</p>	
(d) <i>Policy and practice beyond COMDIS countries</i> ... COMDIS partners communicate research findings, and where appropriate guidelines and training materials, beyond COMDIS partner countries	Research findings communicated to global audiences COMDIS materials made available Open Source and websites recommended by partners	COMDIS partners have run seminars and presented at World Lung Conferences.	
		COMDIS members have published in peer reviewed international journals.	
		Guidelines developed in association with COMDIS have been made freely available on the COMDIS website.	
		Guidelines have been distributed to interested parties through direct contact and at the World Lung Conference, Paris	
		The COMDIS study on prescribers' behaviour is in collaboration with researchers based in KEMRI, Kenya who have already conducted similar studies in Kenya and Zambia	
		TB case management guidelines have been shared and are being reviewed for possible adaptation and use by various countries, eg following COMDIS involvement in review of Indian TB training materials in India. Other countries include the Philippines, Viet Nam and Nigeria. Bhutan has recently completed adaptation of the guidelines.	The interest is from Orissa state TB programme and their IUATLD India partners, however the autocratic process of approval from Delhi NTP is holding things up.
		COMDIS expertise used to inform StopTB policy and guidelines on the use of operational research	

4.3 Research impacts

The COMDIS purpose is: policies/strategies for communicable disease control improved in partner countries and beyond.

We believe that COMDIS has achieved its purpose. COMDIS has demonstrably improved policies/strategies for communicable disease control in partner countries and beyond (see the text below and the table in section 3.4).

COMDIS has made an impact on improving policy/ strategies in partner countries. Examples include

- In China, improved strategies for adherence and quality-of-care have been included within the NTP case management guidelines and in-service training module. In all 2,500 TB doctors in the initial two provinces have been trained.
- In China, a study of a provider and patient incentives project has been shown **not** to add benefit, and should not be replicated.
- In Bangladesh, the NTP strategy now includes scale-up of the NTP/BRAC/COMDIS public private partnership model and materials, and scale-up is under way.
- In Bangladesh, PPP project findings have been incorporated into TB guidebook for doctors and other health workers. This TB Guidebook has been approved by the NTP and being used nationally,
- In Bangladesh, COMDIS project has contributed to the revised Laboratory Guidelines for District Lab Supervisors: as a result the quality of sputum microscopy at the primary care level has improved.
- In Bangladesh, TB care is now available to workers in many garment factories.
- In Nepal, an international review of the NTP has recommended including into national policy COMDIS research findings on provision of DOTS in areas with poor access to health services.
- In Nepal, the NTP strategy now includes scale-up of the NTP/COMDIS public private partnership model and materials, and scale-up is under way.
- In Nepal, MDR TB patients now receive financial support throughout their treatment.
- In Nepal, COMDIS findings have been incorporated into a TB deskguide: as a result, treatment non-completion rates have dropped, and treatment success rates have risen.
- In Nepal, the COMDIS model for TB-HIV collaboration has been adopted into national policy, national guidelines and training materials developed, and national implementation is progressing.
- In Pakistan, ASD has successfully facilitated the NTP scale-up of the TB external quality assurance of microscopy operational guideline which is now in use in 18 districts, and adapted for malaria microscopy (integrated with TB) in 4 districts, and is being further scaled up.
- In Pakistan, the TB and malaria monitoring guidelines have been adopted and scale-up is well advanced, and the guidelines are now being used in more than 30 districts and being scaled-up elsewhere.
- In Pakistan malaria case management guidelines and modules have been developed, evaluated and implemented in 16 districts, and being scaled-up elsewhere.
- In Pakistan, the tertiary hospital linkage to TB control activities guidelines have been adopted by the TB programme and scale-up is in process, is used in 16 tertiary/ teaching hospitals and is being expanded nationally.
- In Swaziland, the successful trial of anti-retroviral treatment delivered at health centres is being replicated across the rest of Lubombo region.
- In Uganda, following the COMDIS research and leading role in consultations on the development of a national policy for malaria diagnosis, the COMDIS partner will be responsible for writing the quality assurance section of the document.
- In Southern Sudan, the national policy for control of NTDs will be based on the findings and recommendations included in the situation analysis document.

It is widely accepted that poor health disproportionately adversely impacts poor people. By improving poor people's health, either through prevention of illnesses such as TB, malaria and NTDs or more effective and more patient-centred treatment of conditions such as TB, malaria, HIV/AIDS and STIs, using approaches aimed particularly at poor people, we are therefore likely to have had an impact on poverty.

We believe we have demonstrated that our impact goes far beyond the people directly involved in the research, and in many cases has national impact because the strategies we have developed as a result of our research have been adopted into national policy and then been implemented at scale. Many of our findings have had international impact, both because we have translated findings from one partner country to others, and because our findings have influenced international bodies such as WHO, StopTB and RBM.

4.4 Table summarising progress towards achieving programme purpose

Purpose	Verifiable Indicators	Progress	Recommendations/ comments
Policies/ strategies for communicable disease control improved in partner countries and beyond	Best practice is reflected in policy documents and programme management documents	<p>Improved adherence and quality of care strategies have been included within the national communicable disease programme/ COMDIS case management and programme management guidelines and in-service training modules – for various diseases and countries.</p> <p>Examples include:</p> <p>The China TB doctors guide Bangladesh, Nepal and Pakistan national TB policy on PPM Malaria case management in Uganda and Pakistan Stigma reduction included in NTP policy guidelines in Bangladesh, Nepal and Pakistan Improved TB guidelines in Nepal National policy for NTD control influenced by COMDIS findings in S Sudan Increase in resources for trachoma mapping in S Sudan Garment manufacturers associations providing work-based TB care in Bangladesh Operational guidelines for TB lab external quality assurance in Pakistan Operational guidelines for malaria lab external quality assurance in Pakistan Improved guidelines for monitoring and supervision of TB patients in Pakistan Family member DOT formally adopted into NTP guidelines in Nepal</p>	<p>COMDIS partners will continue to encourage uptake of remaining COMDIS-generated knowledge not yet incorporated into national policy/ strategies</p> <p>COMDIS partners will continue to support translation into practice of national policies that have been developed based on COMDIS findings</p>

4.5 Progress towards communication strategy targets

We have achieved our communications strategy targets, most importantly around research uptake and policy engagement. Over the course of nearly five years, the RPC has come a very long way in terms of its communications capacity, both at the partner and the overall consortium levels, which drives strategic communications.

Strategy

The communications strategy was revised after the mid-term review (MTR) in year three, and after the appointment of a replacement communications officer to lead overall consortium communications, and again in year four to ensure the results continue to go beyond scientific journals and the institutions involved to be shared by those who can use them to improve disease control both in their own countries and internationally (see annex 4.1). The flexible strategy is now being applied in the final months to maximize and ensure full use of COMDIS outputs, so that its impact will fully warrant the investments made. It is essential that we communicate beyond the end of the RPC, particularly those lessons that have global resonance.

Stakeholders

Throughout the duration of the RPC, COMDIS partners have continued to communicate with key stakeholders as detailed and revised in the communications strategy. Over the years, partners have developed very strong relationships at the senior level that have been invaluable in attaining policy uptake.

Various communications materials have been produced over the last year, including policy briefs, posters, theme papers, case studies and leaflets, with more details below. There are several more that will be published during the next quarter. An electronic newsletter was developed in year three, and the

external distribution list for this is steadily increasing. In terms of internal communications, the newsletter along with the website have also been invaluable in supplementing regional communications conference calls to update COMDIS partners on the work of their fellow colleagues and find synergies.

The Delivering Effective Health Care for All conference was a large final event for COMDIS in year four, and was held at the London School of Hygiene and Tropical Medicine on 29th March 2010. The joint RPC event was supported by DFID to bring together new evidence from COMDIS, TARGETS, and the Consortium for Research on Equitable Health Systems (CREHS). The conference brought together a diverse audience of more than 300 NGO, policy and academic representatives, including key stakeholders funded to attend from partner countries, and DFID staff. A Conference booklet focusing on the themes was produced by the Communications officers from all RPC's and can be accessed here: <http://www.comdis.org/documents/Conference%20Booklet.pdf>. Podcasts of some of the presentations including that of Kamran Siddiqi from Leeds are accessible on the COMDIS website.

Importantly, country level dissemination workshops have been taking place throughout this final year and will continue to take place, including in China who held a Symposium on COMDIS China programmes (2006-2010) in July of 2010 with participants including the Vice Director of the CDC China and the Director of the NCTP, and most recently in Bangladesh with SEED, where a strategy development workshop took place in February 2011 focusing on urban TB health. As a partner of the National Tuberculosis Programme on Operational Research, SEED presented the PPP and TB Workplace (COMDIS projects and also presented the guidelines and tools which have been developed in our COMDIS (e.g. PPP, TB Workplace, Scale up, EQA etc.) projects.

Reaching a UK audience

COMDIS partners have presented at the Houses of Parliament to the All Party Parliamentary TB Group on several occasions

- James Newell, Delivery Systems and Public Private Partnerships (2006)
- Zafar Ullah, TB control in Bangladesh: involving private medical practitioners and the garments industries using Public Private Partnerships (PPPs) (2008)
- Xiaolin Wei, The challenges of improving TB control in China including the management of TB in rural-to-urban migrants and promoting an operational guideline for frontline TB doctors (2008)
- Kerry Bailey, for partner Good Shepherd Hospital, Swaziland presented Integrating TB/HIV Care in Sub-Saharan Africa (2009)

Capacity Building

Throughout the course of the RPC, capacity building for communications and research uptake has been emphasized through one off trainings as well as through ad hoc continuous feedback between partners and the Communications Officer based in the UK.

COMDIS dedicated one day out of the three day COMDIS Partners Meeting in year three to hold a Mini Communications Workshop. The meeting focused on how to build on MTR communications recommendations and there was a presentation for the partners on how to draft policy briefs. The COMDIS communications focal point at Malaria Consortium Africa (MCA) attended a DFID run communications workshop in Kampala in February 2009, alongside four other RPC's in Uganda, and stated that "The mini-workshop was a good motivator for us to improve communication in our daily work." COMDIS also sent its Malaria Consortium Africa and Makerere University staff in Uganda to the upcoming Evidence for Action RPC's communications workshop that took place at that RPC's Annual Partners Meeting in Kampala in year four.

During the All Partners Annual Meeting in year four, the Communications Officer held a one day communications capacity building workshop. The agenda included creating a calendar with key dates and opportunities for communications using post-it notes that we post on the wall, which led to a discussion on opportunities to collaborate. During another group exercise, participants were asked to prepare and bring with them a document that they were 'stuck on' eg. policy brief, case study, flier, even results paper, they presented a problem to a small group who fed back to them with their suggestions and recommendations. The second half of the day was spent in Open Air Radio Studio, SOAS University – where a BBC radio reporter who lectures on media in developing countries at SOAS, and one of the heads of Open Air Radio station at SOAS with similar experience, debriefed participants on how to best target the radio in developing countries, as well as giving advice on how to be interviewed on air about their research. The Interviews were turned into podcasts for our website and were also provided to the participants to use to pitch to the radio stations in their own countries upon their return.

For a full agenda see Annex 4.2.

In year five during the annual all partners meeting in Berlin, there was a communications presentation relating to the end of RPC communications and looking forward. The communications officer met with each partners individually to discuss progress towards products and publications (listed in Annex 5) and provide strategic feedback and support to them. Monitoring and tracking these materials in the final year has been emphasized and is still in progress.

The Communications Officer traveled to several partner offices to conduct capacity building training in areas of policy brief, and human interest case study training, which emphasized 'finding the story in everything that they do.' Feedback was positive and there has been an increase in the quality and capacity of partner staff to develop these products with support from the communications officer, rather than it being led from the UK as at the start.

Links with Other RPC's

COMDIS has continued to build links with other DFID-funded RPCs. The Sources of Information project was a collaboration between Evidence for Action, TARGETS and COMDIS RPCs. COMDIS is currently working with Evidence for Action, and also with some input from new RPC SHARE, to develop a final Lessons Learned for RPC Communication and Research Uptake, to be finalized in the coming month.

The communications officers and managers of TARGETS, COMDIS, SRH & HIV, Realising Rights, Towards 4+5 and CREHS are regularly in contact.

Communicating for Policy and Practice

As outlined in our communications strategies, COMDIS partners have use (and continue to use) a number of different approaches to ensure knowledge from our research is reaching communications targets.

Communication mechanisms including formal and informal face-to-face meetings have proven particularly effective. Workshops & seminars, as mentioned above, have been ongoing at both country and partner levels, including high profile workshops such as the South Asian Association for Regional Cooperation Conference on TB and HIV/AIDS in Nepal in year three. A highlight was when COMDIS staff ensured that the Minister for Health and Population (MOHP) was introduced to TB multi-drug resistant (MDR) patients and heard their stories first hand. After hearing the problems faced by MDR TB patients, the MOHP assured them he would raise those issues at a forthcoming cabinet meeting and as a result these patients are now getting financial support under MOHP.

A workshop bringing together researchers in South Asia with journalists covering the region, possibly facilitated by Panos, is in the planning stages and will be a very good opportunity to expand knowledge in both directions with outcomes including increased coverage of nuanced health stories in the local and national press to influence public demand for health care.

Conferences with research and poster presentations have been another strong point of COMDIS, with partners such as Association for Social Development/ National Tuberculosis Control Programme, Pakistan, presenting their Childhood TB desk guide and structured monitoring: An intervention to increase case detection poster at a IUATLD Conference in year four. Nepal partner HERD has this past year alone produced more than fifteen posters including 'No need to break marriage, if one has got TB' and 'Myths of TB' to help reduce stigma and promote education around TB and other health issues, particularly in hard hit urban slum areas. Reports that are often presented at conferences have also been plentiful, with partners such as Malaria Consortium producing 'Leishmaniasis Control in Eastern Africa: Past and Present Efforts and Future Needs.'

Policy briefs for certain relevant projects have been developed and several more are currently in progress. China in particular has developed more than ten briefs in the past two years, in Chinese with shorter briefs translated into English. A recent policy brief developed by Malaria Consortium in Southern Sudan in collaboration with the Communications Officer accompanied a very well-received Trachoma Risk Map (both found here <http://www.comdis.org/Projects/Mcugriskmaptrachsouthsudan.htm>). Case studies continue to be produced and the need for quotes and photos is continually emphasized to partners in order to show the human side of COMDIS work.

The website has been revamped though not re-launched entirely, and discussions are ongoing with DFID to potentially launch a COMDIS sub-site on the DFID website in coming months. Current changes to the site include the addition of a Media Centre that contains links to our youtube video clips and photo library and other multi-media content and a revised home page. The website and its resources available for download (www.comdis.org) will continue to serve as the main portal for the RPC beyond its close, in

addition to the catalogue of RPC information and outputs listed on the DFID R4D portal. An increasing number of website visits and high visit duration time reflect the growing usefulness of this site as a dissemination portal (statistics found in Annex 4.3)

Annex 5 shows a comprehensive list of publications, with nearly half of them primarily drafted by a developing country member of staff in the lead and many in open access journals. Several have been published since with another handful in the pipeline in the coming months.

In terms of the media, more than thirty features in newspapers, magazines, other similar publications and media in response to requests for such articles have appeared. Several of our partner staff including Xiaolin Wei in China has been called upon to act as expert spokespeople for various on air health segments broadcast on television news.

4.6 Progress with capacity development

Please see Annex 6 for details on Capacity Development

5 Lessons learnt

5.1 Working with partners

We have been pleased with the working relationships between partners in COMDIS, particularly between Leeds and core partners of the RPC. We have experienced few major issues and feel that minor ones have been dealt with in an effective and transparent way. However, we would advise new RPC's to focus early on mechanisms for encouraging direct communication between partners. This has been a challenge for us and one that needs investment at the beginning when relationships are being developed, it is more difficult to go back later and alter habits of communication.

Working with disease programme managers has continued to be at the centre of our success and effectiveness. In the final stages of the RPC we have continued to work hard to maintain the relationships and the trust built up over many years.

Our successful bid for the COMDIS Health Service Delivery RPC has demonstrated and justified to us the importance of long term investment in relationships in-country.

Lessons learnt that may be of use to other rpcs

- Don't assume partners will always follow agreed protocols – check regularly
- Production of academic papers is commonly given a low priority by developing country partners
- You *will* lose key stakeholders/collaborators/partners – plan for it
- Training without immediately using new skills tends not to be useful
- Size of partners is important: in our experience, if partners are too large, RPC activities may be perceived as relatively unimportant among other partner activities; whereas if partners are too small they may be vulnerable
- Long-term relationships (longer than the life of an RPC) strengthen the RPC
- It is essential to develop good personal relationships
- Time spent on non-research activities linked to 'implementation partners' (eg supporting national CDC programmes to develop their programmes, or to develop GFATM applications) is time well spent.

5.2 Good practice/innovation

With a programme that is 5 years or longer, annual review of procedures is important. It is prudent to look back over the administrative systems in place to evaluate if they are working effectively and could be improved. This is often challenging to do when other priorities take over. However, looking back over 5 years it is evident that effective and streamlined administration allows partners to focus on their priorities. It also contributes to their capacity building to enable them to manage their own research. In addition asking the partners for their contribution to developing procedures is also good practice, presenting them with systems without consultation can waste their time and the coordinators.

5.3 Programme/project management

We feel that the programme management for COMDIS has worked effectively. We have a strong team in Leeds who have worked well together and the consortium has benefitted from having two Directors with different strengths. The Leeds team have worked hard to maintain relationships with partners and we believe that this has been key to the relationships and consequently the successful management.

The way that COMDIS uses its funds (to fund in-country research rather than salaries for external applications for grant funding) has meant we have faced administrative challenges due to demanding timeframes. Throughout the life of the RPC we have had to learn to cope with these issues and learn from them, incorporating the lessons into our standard procedures. This has been particularly apparent with financial issues, especially with China. We have spent time increasing partners' capacity to understand and adapt. The result of this has been a working relationship with partners with developed knowledge of each others' institutions and working styles, both of which are very important for future collaborations.

In Bangladesh the NGO SEED has been working well for since it was established over a year ago. We feel this has been a significant achievement to come out of COMDIS.

In addition, the team in China have now finalised a collaboration with the Chinese University Hong Kong (CUHK). They moved from Shanghai to Shenzhen in September 2010. Working in China has been one of our most challenging issues related to management and administration. We feel that finishing the RPC with an agreement in place with CUHK, is another important achievement that the team in China should take credit for.

Lessons learnt that may be of use to other rpcs

- Very regular communication between all partners is essential
- Perseverance with what can often seem insurmountable barriers
- Face-to-face meetings with partners, while expensive, are essential to build good relationships, particularly at the start of the rpc, at changes of personnel, and if major difficulties arise
- All-partner teleconferences are very useful
- Email works well for general communication, but if any difficulties arise, use the phone, or better use Skype, or if necessary meet face-to-face
- Regular monitoring of projects against milestones is essential, with clear corrective action when needed
- Every partner has different requirements for financial management: regular monitoring is essential
- Every minute spent with high level politicians and civil servants (eg Secretaries of Health) is useful
- See the CAG as an opportunity, not a threat

5.4 Communication

Overall DFIDs emphasis on 'communication' provided an opportunity to develop this focus within all the partner organisations. Time and capacity to do communications alongside a heavy workload of research remained the biggest roadblock to communications over the RPC.

The appointment of a communications officer in 2008 provided an excellent focus for new approaches to dissemination of information.

A joint RPC Lessons Learned document is in progress that will detail overall lessons learned and best practices during the course of two five year, health focused RPC's. The aim is to provide learning that will help future RPC's to get a head start in terms of practical do's and don'ts. We are focusing on the inception period & developing a communications strategy, Working with RPC partner organizations, Communications capacity strengthening, Working with external partners, with other RPC's and with DFID, Audiences, Tools, Events and Monitoring and Evaluation.

5.5 Multiplier funding

COMDIS has on many occasions been involved in operational research to identify ways to remove technical and managerial bottlenecks to proper use of Global Fund money. We have worked in parallel, developing better ways to deliver health services and working with national programmes to develop Global Fund applications: thereby obtaining substantial (but unquantifiable) multiplier funding. For example COMDIS has developed guidelines and materials to enable effective implementation of the 10,000 patient, \$125M, GFATM funded national MDR TB programme in Pakistan.

As well as the GFATM, COMDIS has been the platform for other successful research proposals to ESRC/DFID, World University Network, and various malaria agencies.

In a similar way, COMDIS has benefited from substantial but unquantified multiplier effects, in its work with national CDC programmes, which provide resources to facilitate our research. In studies undertaken in collaboration with national TB and malaria control programmes, the programmes are implementing the strategies under trial (including training health workers involved in the trial), while COMDIS provides funds for monitoring and assessment. Such dual-funded studies include randomised controlled trials in China, Pakistan, Ghana and Uganda, and cohort studies in China and Bangladesh.

COMDIS has also benefited from a considerable multiplier effect in national dissemination of research results through COMDIS-informed/ developed guidelines and training materials being used by CDC programmes in China, Bangladesh, Pakistan, Nepal, Uganda and Swaziland. For example, World Bank and China government have funded production of case management guidelines, modules and tools incorporating the findings from COMDIS research and used in the training of 3,000 doctors in China, and various TB, malaria and STI guidelines and tools replicated by the government of Pakistan. .

5.6 Planning for closure of the RPC

COMDIS is committed to responsible closure of the RPC. We have three principles related to closure: to ensure maximum impact of the research, to maintain access to datasets where appropriate; and to ensure continuation of capacity in partner institutions. All partners are aware that funding ends in March 2011.

Below we reproduce the questions from the checklist contained within the DFID document "Research Programme Consortia: responsible closure of research programmes", and our responses.

1. *Is all the work that was contracted for completed?*

The work contracted for has been completed.

2. *What are the core results and policy messages from the research?*

The core results and policy messages from the research are available on the COMDIS website www.comdis.org. Perhaps the most important message is that OR can help ensure CDC funds are used effectively.

3. *Who needs to know these core messages?*

In our view, our key audiences are CDC programme managers in partner countries and beyond, and international agencies and partnerships such as WHO, RBM. Our close work with programme managers in partner countries means that they know the messages and are acting on them, evidenced by their adoption of findings into policy, operational guidelines, and training materials. While we have substantial cross-country translation of our research results, we need to do more to ensure that all messages are known by all partner countries, rather than only those in which the research was performed.

4. *What is happening to the data?*

The data we have is largely operational data and is unlikely to be accepted by the data archives. We routinely retain data for 10 years, and will add a comment to the COMDIS website inviting expressions of interest in secondary analysis (subject to issues of confidentiality, ethical approval, etc).

5. *What is happening to any databases?*

We will retain all databases since they remain useful for our other work.

6. *What capacity has been built for research in this area?*

We have developed substantial research capacity in our partner organisations, which will now be built

upon within COMDIS Health Service Delivery RPC which began on 1st Jan 2011 and involves many of the same partners as COMDIS. We also expect their capacity to be retained using Global Fund funding. Three R&D NGOs have been set up or expanded as a result of COMDIS. MC is integrating research further into its activities.

Our membership of various international working groups on TB and malaria gives us the opportunity to ensure research capacity continues to develop: for example, JN is a member of a StopTB expert group set up to encourage integration of OR into routine TB control.

7. *What will happen to the website?*

It will continue to be hosted either by University of Leeds or as a sub page of the DFID site. It will be linked to the new RPC COMDIS-HSD and will be regularly updated with future publications and products that come of COMDIS.

8. *Has DFID got paper and/or electronic copies of all materials?*

We will ensure that DFID has electronic copies of all our outputs, and will log them on R4D.

6 Long-term sustainability of the research

Sustainability of research teams once research programme funding ends

All COMDIS partner research teams will continue to carry out research after DFID funding ends. This is possible because each partner research team will remain funded through COMDIS-HSD (a new DFID-funded RPC).

Furthermore, many partner research teams have obtained research and development funding either through contracts with national communicable disease control programmes (NCDCCP) using NCDCCP core funds, or through Global Fund money intended to allow operational research to guide project implementation.

This sustainability is in large part due to

- quality research, ensured by research capacity development through COMDIS
- close ties with NCDCCPs' senior management, facilitated by COMDIS partners' commitment to providing ongoing operational support to NCDCCPs, including support to maximise research uptake.

The three research NGOs developed during COMDIS (ASD, HERD and SEED) now have the capacity (managerial, research skills, support skills and networks) to remain independently sustainable.

Promotion of the research once research programme funding ends

We will continue to promote COMDIS research following the end of DFID funding using

- the continuing presence of the COMDIS website
- our continuing networks of NCDCCP senior management, WHO, StopTB, etc.
- academic publications

Access to research products once research programme funding ends

New knowledge developed by COMDIS will remain accessible through academic publications (generally open-access) and incorporation into national and international policies and guidelines.

Products, including operational guidelines, desk guides, training guides will remain accessible through the COMDIS website and through NCDCCPs.

Follow-up research programmes once research programme funding ends

We have been fortunate to obtain funding for a further rpc entitled COMDIS-HSD (HSD = Health Services Delivery) that will partly build on the outputs from this research programme, and partly address wider issues of health service delivery in low income countries.

Communications

COMDIS is in the fortunate situation that we are able to continue to host our website, whether it be on Leeds site or as a sub page of DFID's site, for the foreseeable future given that it will be linked to the future work of new RPC COMDIS HSD. The website will continue to be updated as future COMDIS papers and products are finalized in the coming weeks and beyond, and generate a large body of knowledge that will be accessible globally including to those with low bandwidth requirements. R4D continues to be the other primary portal that hosts key documents and publications within the DFID website.

Annex 1: Logframe

LOG FRAME April 2009

Narrative Summary (NS)	Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumptions/ Risks
<p>DFID goal: The production and uptake of technologies and policies that will contribute to poverty reduction and the achievement of the MDGS</p> <p>RPC goal: Better health for those affected by communicable diseases</p>	<p><i>(No need to complete)</i></p>	<p><i>(No need to complete)</i></p>	<p><i>(No need to complete)</i></p>
<p>Purpose: Policies/strategies for communicable disease control improved in partner countries and beyond</p>	<p>Best practice is reflected in policy documents and programme management documents</p>	<p>Policy documents</p> <p>Programme management documents</p>	<p>Governments and donors allocate sufficient priority and resources to CDC</p>
<p>Outputs: 1. Research New knowledge generated:</p> <p>A. New strategies and tools to improve quality of CDC programmes</p> <p>B. New strategies and tools to improve delivery and coverage of CDC programmes</p> <p>C. New strategies and tools to improve demand for and appropriate use of effective interventions</p>	<p>Effective strategies and tools that are adapted to be deliverable at scale in low income settings</p>	<p>Submitted publications; national documents incorporating tools and strategies;</p> <p>Generic and country specific guidelines, handbooks and other tools.</p>	<p>Staff continuity among COMDIS partners</p> <p>Staff continuity at senior levels of CDC programmes</p>

Narrative Summary (NS)	Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumptions/ Risks
<p>2. Capacity Development</p> <p><i>To ensure policy and programme design in COMDIS partner countries can be informed by high quality research findings, ...</i></p> <p><i>(a) Research</i></p> <p>... capacity of researchers strengthened where necessary to enable them to perform high quality research and to communicate research findings</p> <p><i>(b) Policy</i></p> <p>... capacity of programme managers strengthened to encourage them to develop policy and guidelines informed by research findings</p> <p><i>(c) Practice</i></p> <p>... capacity of health workers strengthened to enable them to deliver new policies and practices</p>	<p>Researchers able to perform, manage and communicate research</p> <p>Programme managers willing to be informed by research</p> <p>Guidelines and training materials prepared to train health workers</p>	<p>Research publications/ reports, COMDIS annual reports, interviews with CDC heads</p> <p>Interviews with CDC programme heads; reports; policy documents and guidelines and materials that demonstrate that they have been influenced by research</p> <p>Guidelines and materials that demonstrate that they have been influenced by research</p>	<p>Staff continuity among COMDIS partners</p> <p>Staff continuity at senior levels of CDC programmes</p> <p>Political, economic and institutional stability</p>

Narrative Summary (NS)	Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumptions/ Risks
<p>3. Communication <i>To ensure policy and programme design, at national and international levels, is informed by research findings, ...</i></p> <p>(a) Research ... COMDIS partners communicate research findings to policy makers</p> <p>(b) Policy in COMDIS partner countries ... programme managers develop policy and guidelines informed by research findings</p> <p>(c) Practice in COMDIS partner countries ... health workers able to deliver new policies and practices</p> <p>(d) Policy and practice beyond COMDIS countries ... COMDIS partners communicate research findings, and where appropriate guidelines and training materials, beyond COMDIS partner countries</p>	<p>Researchers communicate research findings to policy makers</p> <p>Policy and guideline development informed by research findings</p> <p>Guidelines and training materials prepared to enable scale-up</p> <p>Research findings communicated to global audiences</p>	<p>COMDIS reports, communication materials, Interviews with researchers and CDC programme heads</p> <p>Reports; interviews with CDC programme heads; policies and guidelines</p> <p>Reports; guidelines and training materials; reports of training programmes Research publications/ reports, COMDIS communication materials, references in to COMDIS work in non-COMDIS publications</p>	<p>Political constraints in partner countries</p> <p>Staff continuity at senior levels of CDC programmes</p> <p>Political, economic and institutional stability Appropriate knowledge forthcoming</p> <p>New knowledge not overridden by political needs</p> <p>Other influences on CDC programme senior staff do not prevail over RPC efforts to influence CDC programmes National politics permit CDC programme senior staff to set policy according to their beliefs</p>

Annex 3: Risk assessment matrix

There were no changes that led to a reassessment of risks in the final year.

Annex 4: Communication strategy

COMDIS End of RPC Communications Strategy: Looking forward to spring 2011

Objectives

I. To ensure policy and programme design at national and international levels is informed by research findings:

- COMDIS partners will communicate research progress and findings to national programme managers and national policy makers
- COMDIS partners will work with programme managers to develop policy and guidelines informed by research findings
- COMDIS partners will communicate their research findings, guidelines, training materials and other products beyond the COMDIS partner countries to a global level.

II. To disseminate and communicate research, findings and products to other stakeholders (beyond policy and national control programme staff) to reach as wide an audience possible at national and international levels.

- COMDIS partners will network outside the confines of their specialist expertise whenever possible to extend knowledge and understanding of the project aims and findings.
- COMDIS partners will share the research whenever possible on open source platforms thereby increasing capacity.
- COMDIS partners will communicate where appropriate with local communities and community leaders to ensure understanding of the projects and their purpose, and of the diseases studied.
- COMDIS partners where appropriate will ensure that media outlets in the areas and countries chosen for study are kept updated on the project purpose, workings and findings.

Tactics (includes channels and tools)

In General

- Continue to populate and vamp up the new website (just re-launched)
- Populate a toolkit section of the website with comms/advocacy tools for partners and outsiders to use in future, beyond the life of the RPC
- Continue to update intranet section of the website, including:
 - A news section
 - A section that contains all partner activity reports/updates/annual reports
- Communications capacity building – develop communications specific workshops for the upcoming all partner meeting (date and location TBD)
- Reports internal and external (to community, local and national level decision-makers, key policy figures and stakeholders as appropriate)
- Meeting, workshops and conferences – contributing progress reports on research, highlighting areas of concern and interest where appropriate
- More formal contact with media to create interest in potential of project - plan for results phase. As appropriate use case histories, prepare feature materials and photographs for media use. Consider possible video facility for journalists.
- Revision where appropriate of training and other materials
- Contribute to newsletters, policy briefs, websites nationally and internationally

- Write and submit academic working papers
- Address conferences, roundtables, meetings – share presentations where appropriate and likely to influence policy

Results Phase

- Communications Officer to draft a final big paper on bridging gap between research & comms using COMDIS case study examples to populate the document.
- Step up drafting results papers for academic publications, place on our website
- Formal reporting to policy groups, decision makers and stakeholders via formal and informal meetings, workshops, round tables, conferences. Invite media as appropriate or send copies of papers with invitation to discuss further.
- Dissemination through newsletters and websites to research, policy groups
- Position prepared articles, features, op-eds in selected print and online outlets in partner countries
- Media contacts and press releases - offer key personnel for interview with their consent. Follow up key media contacts individually in partner countries

Stakeholder mapping/Target Audience

- Health workers such as doctors, clinical officers, nurses and community workers
- Communicable disease programme managers
- Policy makers at national level and beyond, international and bilateral agencies
- Researchers from South and North working in similar fields particularly research teams involved in COMDIS projects, also other DFID-funded research consortia working in related fields
- Indirectly, through health services individuals exposed to communicable diseases, community leaders and opinion formers in areas at national levels.

Example of one of our Communications Workshops - year 3.

During the All Partners Annual Meeting at the end of the year, the Communications Officer held a one day communications capacity building workshop. The agenda was as follows:

1. Group exercise - participants were asked to prepare and bring with them a document that they were 'stuck on' eg. policy brief, case study, flier, even results paper, they presented a problem to a small group who fed back to them with their suggestions and recommendations. One member from each group then presented their list.
2. Created a calendar with key dates and opportunities for communications using post-it notes that we post on the wall. Discussed opportunities to collaborate.
3. 1/2 day in Open Air Radio Studio, SOAS University - a BBC radio reporter who lectures on media in developing countries at SOAS, and one of the heads of Open Air Radio station at SOAS with similar experience, debriefed participants on how to best target the radio in developing countries, as well as giving advice on how to be interviewed on air about their research. 1-2 researchers were interviewed at a time for approximately two minutes each at the radio station about the research results and the COMDIS approach – these voice clips will be turned into podcasts for our website, youtube, R4D etc. These clips will also be provided to the participants to use to pitch to the radio stations in their own countries upon their return.
4. Throughout the five day meeting, researchers were individually interviewed on camera about their work to create very brief interview clip to post on our website, youtube, flickr etc.

Website Statistics for www.comdis.org

Average number of unique users per month	225
Total number of page impressions	9,500
Total number of visits	2250
Bounce rate	45%
Average visit duration	3 min 27

Number of Publications and products

Publication/product	Number
Refereed journal paper-open access	18
Referred journal paper-not open access	4
Book or Book Chapter	6
International conference paper (DFID priority)	4
Other conference papers (including proceedings)	13
Policy brief (with defined audience)	7
In-house publication (peer reviewed externally)	5
In-house publication (not peer reviewed externally)	37
Mass media publications (newspaper features, magazine articles etc)	7
In-house published product (peer reviewed externally)	31
In-house published product (not peer reviewed externally)	12
actual radio interviews given in response to requests for radio interviews	3
actual television interviews given in response to requests for television interviews	8
actual features in newspapers, magazines, other similar publications and media in response to requests for such articles	18
infomedia websites that provide links to research programme	163,465
Other - please state	
1) Two Blog entries on COMDIS Swaziland: Nursing Times Susan Elden Blog: HIV testing in Swaziland's rural clinics 27-Jan-2009: HIV and renewed hope - Nursing Times blogger and Swaziland public health worker Susan Elden on the heartbreaking stories that come with producing the Good Shepherd hospital's annual report Blog: Tackling stigma with Swaziland's Miss KFC 13-Jan-2009.	
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Annex 5: Products and publications

Publications

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China (COMDIS). The development and scale-up of Communication guide for TB doctors and patients

China (COMDIS). Providing the financial incentives to the migrant TB cases in Shanghai

China (COMDIS). Evaluating the three approaches of hospital and TB linkage in China

China (COMDIS). Summary of COMDIS China outputs

China (COMDIS). Evaluation of the TB designated hospital approach in Zhejiang province

HERD, Nepal. Client satisfaction survey for identifying impact of ACSM among general population

HERD, Nepal. Situation assessment and mapping of stakeholders for TB PPM in four implementation districts (Rupandehi, Banke, Kailali, Palpa)

HERD, Nepal. Study on TB stigma, discrimination and risk- qualitative study to identify appropriate way of dealing with TB related stigma in community

HERD, Nepal. Follow up of PPP in Lalitpur district, Nepal

HERD, Nepal. National HIV/AIDS Conference (2009): Stigma in TB and HIV – presentation and session chair

National conference of Tuberculosis and Leprosy Workers Nepal (2009): paper presented on operational research in National Tuberculosis Programme in Nepal

HERD, Nepal. National Reporting and Planning Workshop of National Tuberculosis Programme (2009): presentation of TB/HIV collaboration operational research in Nepal

HERD, Nepal. Situational Analysis for TB/HIV Collaboration in districts (2009): Dissemination of research findings and way forward

HERD, Nepal. Situational analysis of Public-Private Mix in National Tuberculosis Control in Nepal (2010). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Access to basic essential health care services in Manohara Slum (2009): Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Situation assessment and mapping of stakeholders for TB PPM in different implementation districts (Kathmandu, Lalitpur, Bhaktapur and Kaski) 2009. Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Advocacy, Communication and Social Mobilization (ACSM) need assessment study in Kathmandu district. Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Situation assessment and mapping of stakeholders for TB/HIV collaboration in Kathmandu and Kaski districts (2009). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Situation assessment and mapping of stakeholders for TB/HIV collaboration in Achham district (2009). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Survey on reaching to vulnerable groups through PPM/ISTC in Bhaktapur district (2009/10). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Survey Knowledge, Attitude and Practice in TB in Kapilvastu district (2009/10). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Survey on TB treatment practices among private medical practitioners in Kaski (2009/10). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Operational research on ensuring gender and equity through PPM/ISTC (2009/10). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Operational research on establishing cross referral mechanism among NTP and non NTP TB service providers in Kaski and Bhaktapur districts (2009/10). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Operational research on effective ways of providing care and support to TB/HIV co-infected people in Kaski district (2009/10). Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009): Annual Report. National Tuberculosis Centre, Thimi, Bhaktapur. Research conducted by HERD and COMDIS.

HERD, Nepal. Sushil C Baral et al. (2009): An evaluation study of PPP for Tuberculosis Control in urban setting, Lalitpur, Nepal. Health Research and Social Development Forum, Thapathali, Nepal

HERD, Nepal. Stigma and Discrimination associated with Tuberculosis in Asia: Findings from Nepal (2009). Health Research and Social Development Forum.

HERD, Nepal. Knowledge Attitude and Practice Survey on tuberculosis in Dolakha district (2009). Health Research and Social Development Forum, Thapathali, Nepal

Makerere Team: Kayunga WHO TB Validation project progress report submitted to WHO

Makerere Team: Phase 1 report of the ARV Adherence Intervention Study submitted to the Uganda National AIDS Control Programme

Makerere Team: Kayunga WHO TB Validation Project Interim Report submitted to WHO

Malaria Consortium, Africa. Leishmaniasis Control in Eastern Africa: Past and Present Efforts and Future Needs

Sushil C Baral *et al.* (2009): Assessing the effectiveness of social and financial support to MDR TB patients. Health Research and Social Development Forum, Thapathali, Nepal

SEED, Bangladesh. A section on operations research (on PPP) in the Annual Report of the national TB Control Programme (NTP), Bangladesh

SEED, Bangladesh. International presentation on workplace (garments) at the 41st Union World Conference on Lung Health, 11-15 November 2010, Berlin, Germany (Zafar Ullah A N *et al* (2010) *Tackling TB in the workplace: experience of working with garment factories in Bangladesh*)

SEED, Bangladesh. International presentation on PPP TB at the WHO Workshop on "Promotion and Rationalisation of Operational Research Activities in TB control" in March 2010.

SEED, Bangladesh. Two national presentations (PPP in TB control and TB Workplace) at the WHO/Global Fund joint review meeting held in Dhaka in September 2010.

Sushil C Baral *et al.* (2010): Economic evaluation of DOTS-Plus programme in Nepal - a study on costs, effects and cost effectiveness of DOTS plus program. Health Research and Social Development Forum, Thapathali, Nepal

Book or book chapter

SEED, Bangladesh. A book on "*Public-Private Partnership in TB Care – A Model for Bangladesh*" – Accepted for publication by the University Press Limited (UPL) in December 2010 but not yet published.

Walley, John, Wright, John, Hubley, John, Public Health: An action guide to improving Health." Oxford University Press, second edition, 2009. [Content-case studies from COMDIS]

Wang LX, Lv Q, Wei X, Zou GY, Peng X, Liang X, Walley J, and et al (2009), Guide for tuberculosis service communication skills (including training material), China National Centre for Tuberculosis Control, China Centre for Disease Control. Beijing.

Wei, X and Zhang, T. Operational research of public health in China, Public Health, An action guide to improving health in developing countries, Peking University Press and Oxford Publishing House, Beijing (2009).

Zou GY, Wang XJ, Bi ZQ, Wei X, Ren YY, Niu HB and et al (2009) Rapid response and control of H1N1 influenza: a guide for front-line clinical and public health doctors(including training material), Shandong Centre for Disease Control, Jinan

Products

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. Community-based MDR-TB Care – Consultation Desk guide for hospital doctors

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. Community-based MDR-TB Care – Training Manual for hospital doctors

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. Community-based MDR-TB Care – Training Manual for hospital paramedics

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. Community-based MDR-TB Care – Training Manual for DOTS-Plus Clinic doctors (in process)

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. Community-based MDR-TB Care – Training Manual for DOTS-Plus Clinic paramedics (in process)

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. Community-based MDR-TB Care – Communication Tool for MDR-TB care (in process)

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. Community-based MDR-TB Care – Operational Guidelines for Social Support of patients and providers (in process)

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. PPM-DOTS – Guidelines for mapping and selection of private clinics and laboratories for PPM-DOTS development

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. PPM-DOTS – Guidelines for planning PPM implementation in a district

Association for Social Development/ National Tuberculosis Control Programme, Pakistan. PPM-DOTS – Training Manual for private clinic doctors

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.

PPM-DOTS – Training Manual for private clinic paramedics

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
PPM-DOTS – Case management Desk guide for private clinic doctors

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
PPM-DOTS – Case management Desk guide for private clinic paramedics

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
PPM-DOTS – Guidelines for Monitoring TB care at Private Clinics

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
Childhood TB – Training Manual for hospital doctors

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
Childhood TB – management Desk guide for hospital doctors

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
Hospital DOTS Linkages – Guidelines for Monitoring TB Care at Teaching Hospitals.

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
Hospital DOTS Linkages – Communication Tool for TB Care

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
Hospital DOTS Linkages - External Linkage Guidelines

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
DOTS ACSM – Operational Guidelines for ACSM Events

Association for Social Development/ National Tuberculosis Control Programme/ National
AIDS Control Programme, Pakistan. TB-HIV Co-infection – Operational Guidelines and
Communication Tools to Screen and Manage TB Patients for HIV Infection

Association for Social Development/ National Tuberculosis Control Programme/ National
AIDS Control Programme, Pakistan. TB-HIV Co-infection – Training Manual for Hospital
Staff to Screen and Manage TB Patients for HIV Infection

Association for Social Development/ National Tuberculosis Control Programme/ National
AIDS Control Programme, Pakistan. TB-HIV Co-infection – Operational Guidelines to Screen
and Manage PLWHA for TB Infection

Association for Social Development/ National Tuberculosis Control Programme/ National
AIDS Control Programme, Pakistan. TB-HIV Co-infection – Training Manual for Hospital Staff
to Screen and Manage PLWHA for TB Infection

Association for Social Development/National AIDS Control Programme, Pakistan. Injectable
drug users – Desk guide and training manual for mapping and care of IDUs and their families
(in process)

Association for Social Development/National AIDS Control Programme, Pakistan. Sexually
Transmitted Infections – STI Care Monitoring Guidelines.

Association for Social Development/ National Malaria Control Programme, Pakistan. Malaria
Case Management – Malaria Microscopy Guidelines for PHC Facilities

Association for Social Development/ National Malaria Control Programme, Pakistan. Malaria
Case Management – Training Manual Malaria Microscopy at PHC Facilities

Association for Social Development/ National Malaria Control Programme, Pakistan. Malaria
Case Management – EQA Operational Guidelines for District Laboratory Supervisor

Association for Social Development/ National Malaria Control Programme, Pakistan. PPM-
RBM – Guidelines for mapping and selection of private clinics for malaria PPM development

Association for Social Development/ National Tuberculosis Control Programme, Pakistan.
MDR-TB care - post graduate course at IUATLD conference 2010.

ASD Pakistan poster: Childhood TB management in Pakistan: Systematic development and
implementation.

Association for Development, Pakistan. Operational Guidelines for External Quality Assurance of Sputum Smear Microscopy

Association for Development, Pakistan. Participant Course Work Book: External Quality Assurance of Sputum Smear Microscopy(2007)

Association for Development, Pakistan. Advocacy and Planning Guides for TB-DOTS Implementation in Hospitals(2007)

Association for Development, Pakistan. Child TB case management guidelines (being evaluated)

Association for Development, Pakistan. Multi-drug resistant tuberculosis guide for clinicians (early draft), Malaria Case Management Desk Guide, Training Manual and Facilitator Guide for Doctors

Association for Development, Pakistan. Malaria district implementation planning guide.

Association for Development, Pakistan. Facility and district level monitoring of malaria case management

Association for Development, Pakistan. Operational guide and tools for rapid diagnostic testing for malaria

Association for Development, Pakistan. Development of National case management guidelines and Training Materials for STIs (draft)

Association for Development, Pakistan. Malaria district implementation planning guide.

Association for Development, Pakistan. Paramedics module for STIs monthly and quarterly reporting in urdu and flip chart

Association for Development, Pakistan. Operational Guidelines for Hospital External Linkages (TB Patient Referral)

Association for Development, Pakistan poster: Childhood TB deskguide and structured monitoring: An intervention to increase case detection.

Association for Development, Pakistan poster: Operationalizing childhood TB in high-burden low-income countries Post graduate course.

China (COMDIS). Symposium on COMDIS China programmes (2006-2010) Agenda and Full Report

China (COMDIS). Conference Report From Research into Policy and Practice: Experience from COMDIS research programme in China including conference proceedings

China (COMDIS) Policy brief. Can financial incentives help to localize the treatment of migrant TB patients in Shanghai, China?

China (COMDIS) Policy brief. Lessons learned from the MC policy-1: report from Shandong, China

China (COMDIS) Policy brief. Lessons learned from the MC policy -2: report from Gansu province.

China (COMDIS) Policy brief. Establishing the Intermediate Diagnostic Centre Model in Guangxi.

China (COMDIS) Policy brief. Hospital & TB linkage in China: What is the future for TB control system?

China (COMDIS) Policy brief. Why did the Fidelis financial incentive project not succeed in Shanxi, China?

China (COMDIS) Policy Brief. POLICY BRIEF: What can we learn from the on-going migrant TB research in Shanghai, China?

China (COMDIS). China Cardiovascular disease prevention and control deskguide

China (COMDIS). Identifying TB symptomatics deskguide

China (COMDIS). Introduction to TB case management deskguide

China (COMDIS). Facilitator's guide- TB case management deskguide training

China (COMDIS) Policy brief: Lessons learned from the MC policy-1: report from Shandong

China (COMDIS) Policy brief: Lessons learned from the MC policy -2: report from Gansu province.

China (COMDIS) Policy brief: Hospital & TB linkage in China: What is the future for TB control system?

China (COMDIS) Policy brief: What can we learn from the on-going migrant TB research in Shanghai, China.

HERD, Nepal. Nepal National Tuberculosis Programme (2010). Guidelines for Urban TB Control Programme, Nepal. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal. (Revised version)

HERD, Nepal. Nepal National Tuberculosis Programme (2010). Tuberculosis case management guide for health workers. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal. (Revised version)

HERD, Nepal. Nepal National Tuberculosis Programme (2010): TB HIV co-infection management training manual for health care providers (Basic training). Ministry of Health and Population, National Centre for AIDS and STD Control and National Tuberculosis Centre. (Revised version)

HERD, Nepal. Nepal National Tuberculosis Programme (2010): TB HIV co-infection management training manual for health care providers (Refresher Training). Ministry of Health and Population, National Centre for AIDS and STD Control and National Tuberculosis Centre. (Revised version)

HERD, Nepal. Nepal National Tuberculosis Programme (2010): Flip chart on TB HIV orientation for People Living with HIV (PLWH), Volunteer and Support Groups and Female Community Health Volunteer (FCHVs).

- Referral forms for PPM/ ISTC
 1. Quarterly reporting form
 2. TB service register
 3. Feedback form
- Guidelines for Urban TB Control Programme, Nepal. (Revised version)
- Tuberculosis case management guide for health workers. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal (Revised version)

HERD, Nepal, Posters Titles

- Come on wife let's go together, there is a meeting about TB at the Health post
- My wife has got TB. I am supporting her for continuing treatment
- No need to break marriage, if one has got TB
- Be sure, TB doesn't transmit to other people after you have started your treatment
- Cover your mouth with Handkerchief, shawl or arm while coughing or sneezing
- Coughing for more than 2 weeks. Is it TB?
- Symptoms of TB
- Test sputum for the diagnosis of TB
- Diagnosis and treatment of TB is free of cost in health institutions
- There are higher chances of getting TB to HIV positive people, so do timely diagnosis of TB
- TB can occur to anyone
- Myths of TB:
 - TB infection is more common in urban as compared to rural area
 - Continue regular treatment, cure TB
 - Make patient friendly environment in health institutions
 - Incomplete and irregular use of drugs leads to failure of TB treatment

HERD, Nepal, Posters:

- Cup: TB is cured through regular treatment
- Cup: Continue cough for more than 2 weeks could occur TB

HERD, Nepal, T-shirts:

- 1000 cities, 1000 lives: urban health matters
- On the move against TB innovate to accelerate action

HERD, Nepal. Nepal National Tuberculosis Programme (2008). Guidelines for Urban TB Control Program, Nepal. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009). Tuberculosis case management guide for health workers. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009): International Standards for TB care (ISTC) – Nepali version of ISTC as per Nepal NTP adoption. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009): Public Private Mix and International Standards for TB care (PPM/ISTC) orientation manual for Factory Health Care Setting: Factory owners, staffs, workers and their family. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009): Public Private Mix and International Standards for TB care (PPM/ISTC): Training manual for general health worker working in public and private sectors. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009): Public Private Mix and International Standards for TB care (PPM/ISTC) orientation manual for Paramedical student (other than Medical doctors). National Tuberculosis Centre, Thimi, Bhaktapur, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009): Public Private Mix and International Standards for TB care (PPM/ISTC) orientation manual for Pharmacists (medical shopkeepers) and non-qualified medical practitioners. National Tuberculosis Centre, Thimi, Bhaktapur, Nepal

HERD, Nepal. Nepal National Tuberculosis Programme (2009): TB HIV co-infection management training manual for health care providers (Basic training). Ministry of Health and Population, National Centre for AIDS and STD Control and National Tuberculosis Centre

HERD, Nepal. Nepal National Tuberculosis Programme (2009): TB HIV co-infection management training manual for health care providers (Refresher Training). Ministry of Health and Population, National Centre for AIDS and STD Control and National Tuberculosis Centre

HERD, Nepal. Nepal National Tuberculosis Programme (2009): TB HIV Orientation Manual for People Living with HIV (PLWH). Ministry of Health and Population, National Centre for AIDS and STD Control and National Tuberculosis Centre

HERD, Nepal. Nepal National Tuberculosis Programme (2009): TB HIV Orientation Manual For Volunteer and Support Group. Ministry of Health and Population, National Centre for AIDS and STD Control and National Tuberculosis Centre (NTC)

HERD, Nepal. Nepal National Tuberculosis Programme (2009): TB HIV Orientation Manual For Female Community Health Volunteer. Ministry of Health and Population, National Centre for AIDS and STD Control and National Tuberculosis Centre (NTC)

HERD, Nepal. Nepal National Tuberculosis Programme (2009): TB HIV Orientation Manual For District AIDS Coordination Committee. Ministry of Health and Population, National Centre for AIDS and STD Control, and National Tuberculosis Centre.

HERD, Nepal. Nepal National Tuberculosis Programme (2010): Guideline for standard tuberculosis advocacy messages for general population and targeted groups (DRAFT). Ministry of Health and Population, National Tuberculosis Centre.

HERD, Nepal Poster: We can stop TB – fight against TB, move ahead by innovating actions (poster and hoarding board).

HERD, Nepal Poster: Sign and symptoms of TB – illustrations (Poster).

HERD, Nepal Poster: TB is a curable disease, regular treatment of 6 months can cure TB: help patients to complete full treatment (Poster).

HERD, Nepal Poster: Rights and responsibilities of TB patients (poster).

HERD, Nepal Poster: Secure patient's rights to cure TB: provide support to TB patients to complete full TB treatment (poster).

HERD, Nepal booklet: Patients' charter – adapted to the Nepal context.

HERD, Nepal booklet: ISTC small booklet – adapted to the Nepal context.

Malaria Consortium: Poster:

Use of RDTs to improve malaria diagnosis and fever case management at primary health care facilities in Uganda. In *Malaria Journal* 2010, 9 (suppl 2):P18. Parasite to Prevention: Advances in the understanding of malaria. 20-22 October 2010, Edinburgh Conference centre, Edinburgh, UK.

Malaria Consortium: Targeting trachoma control through risk mapping: the example of Southern Sudan Wall Chart

Malaria Consortium: Targeting trachoma control through risk mapping: the example of Southern Sudan Policy Brief

Makerere University. Antiretroviral Treatment Patient Education Brochures and Flip Charts adapted from WHO

Makerere University. Integrated Management of Adolescent and Adult Illness (IMAI) tools and being currently used by all ART patients at project sites

Makerere University. Antiretroviral Treatment Supporter Training materials adapted from WHO Integrated Management of Adolescent and Adult Illness (IMAI) tools

SEED, Bangladesh: Tuberculosis Case Management Guidebook: For Doctors” in English

SEED, Bangladesh: :“Tuberculosis Case Management Guidebook: For Other Health Workers” – in Bangla

SEED, Bangladesh: Tools and Guidelines for TB Managers on PPP Scale UP

SEED, Bangladesh: STI Guidelines for the National AIDS and STD Programmeme (NASP)

SEED, Bangladesh: Guidelines for District Laboratory Supervisors (DLS) on External Quality Assurance (EQA)

SEED, Bangladesh: Policy briefs on: PPP and TB Workplace

SEED, Bangladesh: Poster on TB Workplace – This poster has been endorsed by the NTP to use nationally.

SEED, Bangladesh: Revised TB Treatment Algorithm for Private Medical Practitioners and health professionals

SEED, Bangladesh: A video documentary entitled ‘Surviving TB: Hasina’s Story’ based on a

<http://www.youtube.com/user/COMDISResearch>

SEED, Bangladesh: Featured visual documentary entitled ‘Nobo Jibon’ – The Renaissance, based on 3 real-life cured TB patients, who got their new life back after getting TB treatment through the PPP project

SEED, Bangladesh: A documentary entitled 'Bina: A success story', based on the real story of Bina and how she overcame TB. Bina's success was due to the PPP project set up by the National Tuberculosis Control Programme, COMDIS (<http://www.comdis.org>) and local NGOs in collaboration with the Bangladesh Garment Manufacturer and Exporter Association (BGMEA).

SEED, Bangladesh: Rally on the World TB Day 2010 – at least 50 Private Medical Practitioners (PMPs), more than hundred garments factory workers and all PPP/SEED staff participated

SEED, Bangladesh: Printed banners to mark the World TB Day 2010 and displayed in the landmark points in Dhaka. Also designed and printed T-shirts for the participants. SEED Bangladesh: Designed and printed official Factsheet for World TB day 2010 and 2011 for the NTP, DGHS, Ministry of Health and Family Welfare. This factsheet has been distributed to all national programmes/ events for the World TB Day 2010 and 2011 and also will be distributed all health institutions and professionals of all districts in Bangladesh.

SEED Bangladesh: Designed and printed official poster for the World TB Day 2010 and 2011 for the NTP; distributed to all programmes/ events on the World TB day, and to all health institutions and PMPs.

SEED, Bangladesh: Participated in various national level Media/Press Conferences related to TB

Annex 7: COMDIS projects.

Country/ Project title	Products
Pakistan (ASD/Leeds)	
External quality assurance of laboratory TB microscopy in Pakistan	Paper accepted. EQA operational guideline, training materials, evaluated & scaled-up by National TB Programme.
External quality assurance for malaria microscopy (adapted from TB)	Paper submitted. EQA guideline and training materials developed & scale-up 19 districts.
Hospital TB internal & peripheral health system linkage, continuity of care	Paper submitted. Guidelines for introduction, linkages, monitoring events, training materials, scale-up in process.
Monitoring TB programme performance	Paper submitted. Developed and being scaled up guidelines for piloted, developed and scaled up at a national level.
Quality of malaria case management; guidelines, materials.	Paper submitted. Malaria management guideline and materials developed and used in 19 districts.
Quality of Multi-drug resistant TB case management guidelines.	Case management guide, operational materials and training materials for doctors, evaluation to about to start.
Urban public-private partnership TB guidelines.	(Pre COMDIS research). Guidelines and monitoring tools developed, evaluation ongoing.
Quality of Sexually transmitted disease case management; guidelines.	(Pre-COMDIS research and paper). STI deskguide, training materials for doctors, evaluation ongoing.
Demand for TB care, communication and social mobilisation.	Results being analysed. Guidelines and training materials for teachers and religious leaders (Imams), evaluation ongoing.
Child TB case management.	Paper drafted. Research presented in IUATLD conference WHO/ COMDIS seminar. Updated case management guideline & training materials developed and used.
Quality of diagnosis of malaria using rapid diagnostic tests in primary care.	Deskaide and orientation material developed and incorporated into paramedic manual, evaluation ongoing.

Bangladesh (BRAC, SEED, Leeds)	
Peri-urban TB control in Bangladesh: situation analysis for public private partnership	Policy paper for Public Private Partnership (PPP) strategy. Published article.
Urban Public Private Partnership for TB control – i) research, ii) scale-up	National PPP guidelines, records - reporting forms, NTP guideline, operational manual, case management guidebook for doctors and the health workers, evaluation of pilot phase completed and end-project is ongoing.
Peri-urban PPP for TB control in Bangladesh: implementation phase.	Training and communication materials, evaluation ongoing
Urban workplace TB care in Bangladesh	Treatment algorithm, case management guidebook, operational manual for health care providers of garment factories and IEC materials, evaluation ongoing.
Assessment and improvement of quality of TB DOTS care in governmental/ NGO facilities	Case management guidebook adapted and approved (from COMDIS generic). Research ongoing
Quality assessment of sputum microscopy at primary care in Bangladesh	Case Management Guidelines for the District Lab Supervisors (DLS), evaluation ongoing.
Developing effective linkages between public and private sector providers for the prevention, care and support of STIs and HIV in Bangladesh	A service linkage model has been developed, where PMPs refer the STI cases to partner NGOs. The partner NGO provided free treatment if the STI patients bring their partners. STI Guideline draft completed and Waiting for approval from the NASP.
Nepal (HERD/Leeds)	
Quality of identification and diagnosis of TB suspects.	Paper submitted. Policy review conducted, with new regimen and treatment support (DOT) policy.
Improving quality of TB case management in primary care.	National TB deskguides, training materials and modules developed, pilot/evaluation, scale-up initiated.
Effects of social and economic support for MDR TB patients on continuity of TB care.	Ongoing evaluation
Linking TB and HIV/AIDS services in primary care	National guidelines and training materials developed, evaluation near completion.
Urban public-private partnership for TB control	Paper drafted. National guideline on Public Private Mix and training materials developed, evaluation ongoing.
Evaluation of sustainability of an urban public-private partnership for TB control in Lalitpur.	Paper submitted and policy review.
Effect of TB-related stigma and discrimination on demand for TB care in Nepal: a community perspective	Paper published and policy review (advocacy, communication and social mobilization strategies).

China (China Comdis/Shandong/Leeds)	
Township hospital intermediate diagnostic centres TB in Guangxi.	Paper published and policy review on decentralising TB diagnostic centres in township hospitals.
Quality of TB case management in primary care in Guangxi province.	Paper published and case management deskguide.
Urban Public Private Partnership for TB control in primary care (hospitals and dispensaries).	Paper submitted. Results presented at the annual COMDIS meeting.
Incentives and continuity of TB care among patients & providers in primary care Shanxi province.	Paper published. Policy not replicated nationally.
Decentralisation of TB sputum collection/microscopy centres: evaluation of demand for TB care with NTP.	Paper submitted. Contributed to revised policy on sputum collection centres
Quality of TB case management training in primary care, Shandong province	Paper submitted, TB case management deskguide and training materials.
TB DOT cohort study.	Study uncovered routine data issues; results considered locally too sensitive to be published.
TB care quality improvement study in Shandong	Developed tools for observation, review of care and recording; only part feasible for provincial use.
Evaluation of TB sputum collection/microscopy centres in primary care, Shandong province.	Paper published. Implications reviewed. Methods utilised in national study (with COMDIS) on-going.
TB care incentives-enablers to complete treatment by rural migrants in Shanghai	Paper published. Communicated evaluation data.
Designated hospitals for TB control: a Public-private partnership model in Zhejiang Province	Paper. Analysis presented, provided evidence for national policy.
Health economic evaluation of alternative financial aid to migrant TB patients in Shanghai	Research completed.

Ghana (KNUST)	
Project title	
Intermittent preventive treatment of malaria in pregnancy, a trial study.	Paper submitted and Policy review.
Improving access and quality of home based management of malaria programme by community health workers using rapid diagnostic tests.	Ongoing evaluation.
Adherence to anti-retroviral treatment (ART).	Paper submitted, Patient education flip chart developed.
Evaluation of quality of TB (in the context of HIV) diagnosis using WHO interim diagnostic guideline in Uganda	Paper submitted, WHO TB diagnostic guideline revised.
Assessment of operational accuracy of the ICT Plasmodium Falciperum rapid diagnostic test for malaria	Paper published and policy review.
Assessment of quality of home management of malaria using rapid diagnostic tests.	Paper submitted for publication, field training manual, bench aid and National guideline revised.
Uganda (Malaria consortium-Africa)	
Evaluation of quality of malaria case management after change in the Uganda national policy to ACTs as first-line treatment	Paper published, Policy reviewed.
Parasite based diagnosis of malaria in Uganda: Effectiveness of quality of rapid diagnostic test in diagnosis of malaria in pregnancy	Ongoing project.
The impact of long lasting insecticidal net usage on malaria and lymphatic filariasis control in an area co-endemic for both diseases	Preliminary analysis of data, ongoing evaluation
Evaluation of adherence to and stock management of artemether/lumefantrine unit dosed pre-packed compared to blister packaging.	Protocol developed and evaluation ongoing
Evaluating different distribution methods for long lasting insecticidal nets	Paper submitted. Survey tools net use developed, ongoing evaluation.
Sudan	
Situation analysis on control activities, assessment of feasibility and value of control against visceral leishmaniasis	Ongoing research project
Trachoma control management and use of risk mapping.	Paper submitted. Policy review on trachoma control.
Situation analysis and intervention options appraisal of neglected tropical diseases.	Paper published and policy review
Makerere University/ Leeds	
Validation effectiveness of WHO interim algorithm/guide on smear negative TB diagnosis in the context of HIV	Paper submitted. Report to WHO, confirming the effectiveness of the guideline.

Africa	Is no-longer “interim” but recommended by WHO.
Adherence to HIV/ anti-retroviral treatment strategies	Published papers. Trial shows effectiveness of a package of adherence strategies.
Swaziland/Leeds	
Trial of anti-retroviral treatment care hospital vs. health centre	Paper published. Approach being expanded.
TB HIV collaborative intervention effectiveness in GSH Hospital including in the integrated HIV-ART/ TB unit.	Paper submitted. Guidelines and training materials.
Integrating of TB and HIV in health centres	Guidelines and training materials, evaluation ongoing.
Pre-anti-retroviral treatment work up, prophylaxis, follow-up	Paper submitted.

Annex 8: List of abbreviations

ACSM	Advocacy, Communications and Social Mobilisation
ACT	Artemisinin-based Combination Therapy
ASD	Association for Social Development
ART	Anti-retroviral treatment
BRAC	Bangladesh Rural Advancement Committee
CAG	Consortium Advisory Group
CDC	Communicable Disease Control
COMDIS	Communicable Disease Research Programme Consortium
DGHS	Director General of Health Services
DOTS	Directly Observed Treatment Strategy
EPI	Expanded Programme of Immunisation
EQA	External Quality Assurance
FMDOT	Family Member Directly Observed Treatment
HERD	Health Research & Social Development Forum
IDS	Institute for Development Studies
IPT	Intermittent Preventive Treatment
IPTi	Intermittent Preventive Treatment for malaria in infants
IPTp	Intermittent Preventive Treatment for malaria during pregnancy
ITN	Insecticide Treated Net
IUATLD	International Union Against Tuberculosis and Lung Disease.
LF	Lymphatic Filariasis
LLIN	Long Lasting Insecticidal Nets
LSHTM	London School of Hygiene and Tropical Medicine
MoH	Ministry of Health
NCTB	National Centre for Tuberculosis Control (NTP) Beijing
NID	National Immunisation Days
NMCP	National Malaria Control Programme
NTDs	Neglected Tropical Diseases
NTLP	National Tuberculosis and Leprosy Programme
NTP	National TB Programme
OPD	Operating Department Practitioners
PM	Programme Manager
PPM	Public Private Mix
PPP	Public Private Partnership
PMP	Private medical practitioner
RBM	Roll Back Malaria
RCT	Randomised Controlled Trial
RDT	Rapid Diagnostic Test
STIs	Sexually Transmitted Infections
TARGETS	Team for Applied Research to Generate Effective Tools and Strategies for communicable disease control Research Programme Consortium
TBCAP	Tuberculosis Control Assistance Programme
TOT	Training of Trainers
UMRC	Uganda Malaria Research Centre
VCD	Vector Control Department
WHO	World Health Organisation