Health services research at work for national health policy

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Implementing global knowledge in local practice: a WHO lung health initiative in Nepal

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Abstract

Clinical practice guidelines are widely used to improve the quality of primary health care in different health systems, including those of low-income countries. Often developed at international level and adapted to national contexts to increase the feasibility of effective uptake, guideline initiatives aim to transfer global scientific knowledge into local practice. The WHO’s Practical Approach to Lung Health\(^1\) (PAL) is an example of such an initiative and is currently being developed to improve quality of care for youths and adults with respiratory diseases. We assessed ex-ante the feasibility of successful implementation of PAL in a pilot programme in rural Nepal, studying three components: the quality of the innovation (i.e. the guideline), the effectiveness of the implementation strategy (i.e. training) and the receptiveness of the social system of health staff at all levels (i.e. social and organizational characteristics). We assessed the guideline innovation with the AGREE instrument for guidelines, the intended implementation strategy by critical comparison with literature on effective strategies, and the social system with both a stakeholder analysis and a descriptive analysis of the health care system at district level.

This ex-ante assessment of an adaptive local implementation of international WHO guidelines showed that in July 2002 the ‘implementability’ of the package was challenged on the three components studied. To increase the chances of successful implementation, the national guideline development process should be improved and the implementation strategy needs to be upgraded. In order to successfully transfer global knowledge into local practice, we need to develop additional multifactorial sustained interventions that tackle other culture- and health system-specific barriers as well. The primary health workers are key informants for these barriers.

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\(^1\) Practical Approach to Lung Health (PAL) was initially titled Adult Lung Health Initiative. The name was changed in 2001.
Introduction

Multilateral efforts to improve the quality of primary health care in varying national systems often include the development and introduction of standard clinical practice guidelines. This process typically starts out with the development of generic tools at global level as can be seen in a variety of programmes for essential drugs and disease control [1-3]. The tools are not health system-specific and hence, the potential for instantaneous implementation in many health systems is limited. Consequently, generic tools are meant to be adapted to the specific local context. Overall, the ultimate challenge lies in transferring global scientific knowledge into local practices. Especially in low-income countries, these circumstances are frequently characterized by a chronic lack of sufficiently competent health workers and other limited resources.

Success or failure in the promotion of changes in clinical practice in developed countries with well-trained professionals depends on the characteristics of the implementation process [4-6]. Given the multitude of international initiatives and further globalization of efforts, there is a need for more systematic study of how generic guidelines are implemented through national health systems in developing countries.

This paper takes the example of the ‘Practical Approach to Lung Health’ (PAL), a World Health Organization (WHO) initiative to improve the syndromic management of lung diseases in youths (over 5 years of age) and adults in middle- and low-income countries [7]. PAL is presented as a package that consists of a generic clinical practice guideline and accompanying training materials. It targets the multi-purpose health worker at peripheral primary and Box 1 Description of generic and Nepal specific PAL guideline development

The global, generic PAL guideline was designed and developed at supranational level by expert panels on the initiative of WHO in 1997-1998. [16] The guideline contains algorithms that follow a syndromic approach of disease. Primary care health workers with little training in lung health receive guidelines that comprehensively cover respiratory disease case management. The guideline guides the health worker stepwise through the assessment of a patient and results in a classification. A specific classification leads to specific management and, if necessary, to treatment. The clinical algorithms are presented as flow-charts in topic specific modules. The complete document is 60 pages in length and includes recommendations for follow-up and counselling. Expected outcomes include an increase in rational use of drugs, adequate referrals, shortening of delay in TB diagnosis and treatment, decrease in number and severity of asthma attacks in chronic patients.

The local, context specific PAL-NEPAL adaptation and implementation on the basis of the generic PAL guideline started in November 1999. Nepalese experts and potential stakeholders from the national, regional, district and local health system participated in the Adaptation Working Group (AWG) to produce a context specific PAL guideline. Among the twenty-three participants were eighteen senior health officials representing governmental health offices, clinical departments of tertiary hospitals and academics. Five participants represented the peripheral health care level: 2 district health officers, 2 hospital-based health workers and 1 health worker from a Primary Health Care Centre. The AWG focused its work on the treatment of diseases and specifically addressed the perceived problems with recommended drug therapies in the generic guideline. Their findings and suggestions were presented in October 2001 [18]. This concluded the adaptation into the PAL-NEPAL guideline that was now ready for its first pilot implementation that started in July 2002 in the rural low-land district Nawalparasi.
secondary care facilities. In several countries, elements of PAL are currently being field tested and evaluated [8].

In Nepal, the global, generic PAL package was adapted to the specific Nepalese health care context as part of the guideline development process and also to facilitate its further introduction (Box 1) [9-12]. A pilot implementation of the adapted PAL package, called PAL-Nepal, started in governmental primary health care centres, health posts and sub health posts of Nawalparasi, a rural lowland district (Box 2). The pilot implementation of PAL-Nepal is subject to an evaluation of effects, including costs, organizational effects and health outcomes, using a cluster randomized trial design. Also, it is subject to a qualitative assessment of the development and implementation process itself.

This article presents the latter of the two studies and answers the research question: ‘What are the chances of successful implementation of PAL-Nepal given the characteristics of the guideline, the planned implementation strategy and the social system?’.

The study was carried out by external researchers (AtA, LN, CvdH) who were observers during PAL-Nepal activities and had no active involvement in its development and implementation.

**Methods**

Adapted from Rogers [13], we identified and assessed three components in the development and implementation process of PAL-Nepal: the innovation (the guideline), the implementation strategy (training), and the social system (the social and organizational context of health
workers at the various levels in the Nepalese health care system). We perceived that successful implementation depends on the quality of the innovation itself, the effectiveness of the implementation strategy and the receptiveness of the social system in conjunction with each other. The first two components are elements of the new health policy and the latter determines the context for adoption and diffusion. For each component we selected specific assessment instruments.

**Assessment of innovation**

We used the generic and standardized Appraisal of Guidelines Research & Evaluation (AGREE) Instrument [14] to assess whether one may expect the guideline to be effective in producing the desired changes in outcomes. The AGREE instrument appraises the methods used for developing the guidelines, the content of the final recommendations, and the factors linked to their uptake.

The material for this assessment consisted of the background documents for the generic PAL clinical practice guideline [15;16], the minutes of the adaptation working group meetings held in Nepal [17;18], personal observation reports and the context-specific PAL-Nepal algorithms. Three independent reviewers familiar with developing and assessing clinical practice guidelines assessed the PAL-Nepal documents with the AGREE instrument. For multi-rater Kappa analysis we used SPSS statistical software and additional macros [19;20]

**Assessment of implementation strategy**

For the implementation strategy we established whether — given the available evidence from international literature — we expected the strategy offered to be effective. To assess this, we critically analysed the planned implementation strategy using the framework suggested by Hulscher et al. [21], which is based on evaluation research literature and theories on implementation and behaviour change, and on the data collection checklist developed by the Cochrane collaboration [22]. Additionally, we compared the planned implementation strategy with characteristics of strategies that enhance effective implementation as summarised by Grol and Grimshaw [23;24], Grimshaw et al. [6] and Hulscher et al. [25].

Input for this analysis was derived from the minutes of the Adaptation Working Group meetings [17;18], training plans and training manuals.

**Assessment of the social system**

Finally, we assessed the receptiveness of the social and organizational context of health workers at the various levels in the Nepalese health care system. We perceived the social system at national level foremost as a political system and carried out a stakeholder analysis to assess the feasibility of the political acceptance of PAL-Nepal [26;27]. For this analysis, three respondents (senior health officials) rated the stakeholders’ position towards the PAL-Nepal goals and mechanisms and the anticipated power of the stakeholders to influence the achievement of these goals.
In addition, we described factors at district and local level that influence the system’s ability to take on central guidance. Input came from the literature, discussions with health care workers and personal observations during meetings at national and district/local level in 2001 and 2002 (AtA, LN, RS), the researcher’s diary (AtA) and e-mail communication during the research period 2000 – 2002 (LN, AtA) and field visits totalling seven months over a period of two years.

**Time frame of assessment**

The first phase in the development and implementation of PAL-Nepal started in November 1999, building forth on the work of the international expert meetings that started the construction of the generic PAL package. It ended in July 2002, when the implementation phase started, just before the actual introduction of the PAL-Nepal guideline package to the targeted health workers, which marked the start of the implementation phase. The time locus for this paper is July 1, 2002.

**Results**

**Innovation**

The results of the assessment of the PAL-Nepal guideline with the AGREE instrument are shown in Table 1. The ‘Comments of the reviewers’ reflect the specific findings per item of the AGREE instrument. The inter-rater agreement was low: multi-rater Kappa was 0.29. We hypothesized that part of the variation could be explained by variation in ‘agree’ and ‘strongly agree’.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Reviewers’ comments</th>
<th>Summary Domain Score (0-100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scope and purpose</strong></td>
<td>The overall objectives of the guideline are described. The clinical questions covered by the guideline are specifically described. The patients to whom the guideline is meant to apply are described. The guideline does not describe specifically the social and geographic characteristics of the target population.</td>
<td>78%</td>
</tr>
<tr>
<td><strong>Clarity and presentation</strong></td>
<td>The recommendations in the PAL-Nepal guidelines are specific and unambiguous, and the options for management of the condition are clearly presented. Alternative treatment options are rarely given. It is difficult to identify the key recommendations in this extensive document package. The guideline is supported with tools for application.</td>
<td>69%</td>
</tr>
</tbody>
</table>
Stakeholder involvement
(The extent to which the guideline represents the views of its intended users)

The target users, i.e. health professionals from rural health facilities, did not participate in the development process. Professionals from higher professional groups were represented in the development groups of both the generic and country-specific guidelines. Patient views were not explicitly included in the guideline development process. The target users of the guideline are clearly defined and the guideline is piloted among target users.

Applicability
(The likely organizational, behavioural and cost implications of the guideline)

The potential organizational barriers in applying the recommendations have been discussed in the generic guideline document in a general manner. Specific mentioning of organizational barriers did not occur in the PAL-Nepal guideline. The cost implications are subject of study in the first pilot implementation of PAL-Nepal. At present the cost implications are unclear, yet are studied. The PAL-Nepal guideline does not present key review criteria for monitoring and/or audit purposes. In the generic PAL guideline, however, some outcome indicators for monitoring of asthma and tuberculosis management are mentioned.

Rigour of development
(Process used to gather and synthesise the evidence, the methods to formulate recommendations and to update them)

The guideline is based on ‘expert consultation’ and literature research; it is unclear which criteria were applied for the selection of the underlying evidence. The design for the literature search is unclear. The process of decision-making after the expert consultation is not described. Recommendations are not explicitly linked to the evidence. Differences between recommendations in generic guideline and the PAL-Nepal guideline are not explained. Strong focus on health benefits. Side effects and risks are not made explicit. External reviewers were involved in the process of adapting the generic guideline into the country specific guideline. From the content, status and multitude of the different documents it is obvious that the guideline package is still under construction.

Editorial independence
(Independence of the recommendations and acknowledgement of possible conflict of interest from the guideline development group)

It is not stated whether the guideline is independent from the funding body. Conflicts of interest of guideline development members (both generic and PAL-Nepal) have not been recorded in any of the studied documents.

1 Jefferson [28] validated the treatment recommendations of the generic PAL package on the basis of available evidence. This report was not available to the PAL-Nepal adaptation working group nor to the AGREE assessors and is therefore not included in their analysis.
agree’ or ‘disagree’ and ‘strongly disagree’. The multi-rater Kappa for clustered answering categories ‘agree’ and ‘disagree’ was 0.65, confirming our hypothesis.

**Implementation strategy**

Generic PAL training materials for a five-day training course were developed at international level (by the WHO) and adapted at national level (by the WHO and the National Tuberculosis Association). The National Tuberculosis Centre coordinated the adaptation and translation of all materials and would conduct the training. The implementation strategy in PAL-Nepal consisted mainly of training of primary care health workers using a mix of classroom teaching and interactive elements including clinical practice and exercises. Participants received training documents, a copy of the algorithms—including an A4-sized decision-support tool — as well as a large, poster-sized copy of the algorithms. A critical analysis of the intervention, using the format proposed by Hulscher [21], is presented in Box 3. 

Table 2. shows the comparison of the planned implementation strategy with four characteristics of strategies that are likely to enhance effective implementation.

**The social system**

**Stakeholder analysis at national level**

The stakeholder analysis revealed that the initiators of PAL-Nepal, the National Tuberculosis Centre and the WHO, were the most supportive and powerful stakeholders in the pilot implementation in Nawalparasi. The complete list of potential stakeholders included 15 other international and national health care organisations and groups of professionals in the field of health care in Nepal. The respondents considered all these to be supportive of the implementation of PAL-Nepal but without having an interest or power to influence its implementation.

**Characteristics at district and local level**

Table 3. summarizes the potential barriers at district and local levels that were identified by the adaptation working group and by the WHO and PAL-Nepal partners as well as suggestions made to address these barriers.

**Discussion**

Our three-pronged assessment of the PAL-Nepal guideline enabled a systematic study of those factors that are seen as important for a successful implementation. In the pilot stage of programme development it identified potential complementary improvements in the guideline formulation, a broader and more multifactorial implementation strategy, and some obstacles at district and facility levels.
RELEVANT ELEMENTS OF THE INTERVENTION:

Type of implementation strategy: Professional intervention

- Health workers at Primary Health Care Centres, Health Posts and Sub Health Posts are trained in using new clinical practice guidelines during a 5-day classroom course.
- Training materials can be used as decision tools (visual aids) in daily practice.
- Supervision visits by district health management are recommended.
- First year of intervention is combined with an effect evaluation study, involving daily –non-participatory presence of research assistants in health facilities

1. Flexibility means the accepted variation (or standardisation) in delivering the intervention (site to site/time to time).
   - The intervention appears not to be flexible and therefore may not be able to address variation in needs of learners.

2. Timing includes the time interval between delivering the intervention and clinical decision-making (proximity) as well as the number and the duration of intervention events and time interval(s) between these events (frequency).
   - The intervention is a one-off 5-day course. Given turnovers in staff and uncertainty about how easy it will be for participants to take what they learn and apply it in their own settings without structural support this is likely to be an important limitation.

3. The content of the information consist of the message(s) (e.g. general or specific information on guidelines and/or performance, descriptive or graphical information), and its comparability (the possibility of comparing the received data on performance with those from others, or with standards).
   - Extensive written clinical practice guidelines for the management of respiratory diseases (TB, COPD, Asthma, Pneumonia) containing specific recommendations in approx. 50 decision flowcharts, algorithms and text boxes. The volume and complexity of the algorithms are likely to be a limitation for swift uptake by the target users.

4. The medium for delivering the message(s) can be for example oral, written, electronic, or a combination of these.
   - The course contains a mix of didactic and interactive training activities: Oral presentations to explain the guideline and interactive sessions on clinical practice and exercises. One practical session is planned in a secondary care hospital, demonstrating assessment and classification of symptoms in admitted patients.

5. The sender (deliverer) of the message has various characteristics, including his or her profession (also in relation to the clinical problem) and perceived authority (credibility, attractiveness, power).
   - The initiative for the intervention is taken by the World Health Organisation;
   - The responsibility for implementing PAL-NEPAL rests with the Ministry of Health, Department of Health Services and is delegated to the National Tuberculosis Centre;
   - The training of health workers is organised and facilitated by National Tuberculosis Centre;
   - Trainers are qualified doctors and chest physicians from regional hospitals and are likely to be perceived as respected opinion leaders.

6. The receiver of (or participant in) the intervention can equally be described by profession (also in relation to the clinical problem). The number (targeted and actual) of receivers and their motivation to participate (voluntary, compulsory, financial support) needs description. State also if the intervention was delivered to individuals or groups, including group size, and whether the receivers can learn from each other (social interaction).
   - Receivers are groups of primary care health workers with a mix of training levels: Health Assistants, Auxiliary Nurse Midwives and Auxiliary Health Workers, all employed by the Ministry of Health in Primary Health Care Centres, Health Posts or Sub Health Posts. The differences in qualifications were not reflected in the training.
   - Receivers attend compulsory and receive financial benefits (per diem) during the course. Selection of the first batch of trainees is determined by the random selection of a first group of intervention facilities for the purpose of the effect evaluation research study.
   - Receivers interact during the course in a question and answer format. It is unclear from the training documents to what extent extend the interaction opportunities are likely to facilitate learning.
The innovation

The AGREE instrument indicated areas to improve the present version of the guideline. Firstly, although the scope and purpose of the guideline was clearly stated, it could be more specific about demographic and geographic characteristics of the target population. Secondly, clarity and presentation were generally of high quality. In addition, the reviewers recommended an easily accessible, comprehensive guideline document that integrates the generic and Nepal-specific recommendations. Thirdly, in the area of stakeholder involvement, it was recognized that the target users — health workers at health posts and sub health posts — had not been involved in the development of the generic guideline, nor in the adaptation process for PAL-Nepal. Likewise, patient views had not been incorporated in the development process of the guideline. Their perspectives — for example, the views on the accessibility and use of facilities, or the cultural acceptability of treatments — could have identified potential barriers. Fourthly, the low scores for applicability can partly be explained by the fact that the cost implications and organizational barriers have yet to be evaluated for the pilot implementation of PAL-Nepal. That does not explain, however, why PAL-Nepal lacked recommendations for monitoring and auditing. Some indicators for monitoring and audit of tuberculosis and

Table 2. Comparison of strategies that enhance effective implementation and PAL-Nepal’s implementation strategy

<table>
<thead>
<tr>
<th>Multifaceted strategies seem more effective than single strategies [6;22].</th>
</tr>
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<tbody>
<tr>
<td>PAL-Nepal:</td>
</tr>
<tr>
<td>• Core strategy: 5-day training course</td>
</tr>
<tr>
<td>• Decision support tools are provided</td>
</tr>
<tr>
<td>• Supervision is recommended, implementation not yet planned</td>
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<table>
<thead>
<tr>
<th>Multi-event strategies over a longer time period seem more effective than single event strategies [6].</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAL-Nepal:</td>
</tr>
<tr>
<td>• Single, one-off training course</td>
</tr>
<tr>
<td>• Supervision schedule yet unknown</td>
</tr>
<tr>
<td>• Visual aids distributed once might have continuous effect</td>
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<table>
<thead>
<tr>
<th>Active strategies like workshops and in-practice training are more effective than passive strategies like classroom teaching [6].</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAL-Nepal:</td>
</tr>
<tr>
<td>• Combination of classroom teaching and interactive training techniques involving clinical practice and exercises.</td>
</tr>
<tr>
<td>• One practical session (patient demonstration) in secondary hospital</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Analysis of barriers and facilitators, strengthening of facilitators and selecting effective measures for crucial barriers [23;29].</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAL-Nepal:</td>
</tr>
<tr>
<td>• Potential barriers related to drug treatment were discussed and documented in adaptation phase by working group [17;18].</td>
</tr>
<tr>
<td>• Occasional discussion of human resource barriers (personal observation)</td>
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asthma management were mentioned in the background document, but not for chronic obstructive pulmonary disease and pneumonia. Including such recommendations in the PAL-Nepal guideline is helpful for health workers, supervisors and mid-level managers. Fifthly, the score for rigour of development will increase when the link between the evidence base and the recommendations is clearly shown. The generic PAL guideline referred to different national guidelines and international scientific papers. Most of these documents were made available to the Adaptation Working Group for PAL-Nepal. It is not mentioned to which rec-

<table>
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<tr>
<th>Table 3. Barriers in social system at district and local level and the suggestions made of how to address them</th>
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<tbody>
<tr>
<td><strong>Barriers</strong></td>
</tr>
<tr>
<td>Availability of drugs (identified by AWG)</td>
</tr>
<tr>
<td>Drug supplies of listed essential drugs are supposed to last 6 months but part of the drugs usually ran out before that.</td>
</tr>
<tr>
<td>Some recommended drugs (e.g. salbutamol inhaler) are not listed in the Nepalese essential drug list. Consequently, these are not supplied by the government to the health facilities.</td>
</tr>
<tr>
<td>Applicability of drug treatment (identified by AWG)</td>
</tr>
<tr>
<td>Several specific recommendations in the generic PAL guideline were considered inapplicable in the Nepalese context. For example, the dosage or form of drugs was not always available and possibilities to apply drugs intravenously were absent.</td>
</tr>
<tr>
<td>It was stated that ‘there is definitely a resistance of health workers to use intramuscular drugs’ [18]. Explanations included the occurrence of complications and the fact the most health workers are not authorized to give intramuscular injections.</td>
</tr>
<tr>
<td>Human Resources (identified by WHO, DHS and NTC)</td>
</tr>
<tr>
<td>High staff turnover would be problematic, since there were no plans for training of newly appointed health workers.</td>
</tr>
<tr>
<td>Absenteeism. At SHP the AHW is the only health worker qualified to attend to adults with respiratory complaints, but is also frequently absent (e.g. for training or meetings). In their absence, the MCH attends to patients although she is formally unqualified.</td>
</tr>
</tbody>
</table>

Abbreviations: AWG=Adaptation Working Group, AHW=Auxiliary Health Worker, MCHW=Maternal and Child Health Worker, SHP=Sub Health Post, HP=Health Post, DHS=Department of Health Services, NTC=National Tuberculosis Centre
ommendations the evidence was linked and what the evidence was for the adaptations made in Nepal. The recommendations made in the generic guideline were validated a posteriori [28]. Unfortunately, the validation document was not available during the adaptation process in Nepal, or to the AGREE reviewers. There is substantial evidence in support of the generic PAL recommendations. Most evidence is from contexts in developed countries; hence, it is still informative to confirm this evidence in the context of developing countries. Evaluation of costs, organizational effects and health outcomes of PAL-Nepal — currently being carried out by an international consortium of researchers — is expected to reveal the health benefits and related cost of the PAL-Nepal guideline.

Finally, background documents and the PAL-Nepal guideline lacked a statement of editorial independence. It was not clearly stated whether the guideline developers might receive personal or institutional benefits from the recommendations. The validity of the AGREE instrument in the Nepal context needs to be dealt with. The low inter-rater agreement might be related to characteristics of the AGREE instrument itself, PAL-Nepal or the Nepal context. AGREE is an appropriate instrument in the European context, where guidelines target health workers with a high level of education and address a limited area of clinical practice. In addition, algorithms can be used as an additional decision support tool that summarizes the main actions and recommendations. In PAL-Nepal a set of algorithms is the core element and replaces a textual guideline document. In the case of less skilled health workers and the absence of specific reference manuals on respiratory diseases, the logical choice of the PAL developers has been the introduction of algorithms based on a pragmatic symptomatic approach. The generic background document [16] is an extensive book containing a great deal of information that, according to one reviewer, ‘one expects in a medical textbook rather than in a guideline’. The size of this document is not only an important obstacle in the implementation of PAL-Nepal but it also might challenge the validity of AGREE. The instrument does not assess the medical quality of the recommendations in the guideline, nor does it assess whether basic conditions are met for introducing the guideline, such as educational level of the health workers, drug availability and limited complexity of the algorithm. Also, the relative importance of the domains in AGREE might be unequal. For example, at sub health post level a notification that the authors were not paid by pharmaceutical companies (editorial independence domain) seems a lesser priority than, say, a visually well-depicted algorithm with clearly stated recommendations (clarity and presentation domain).

To better understand the applicability of the AGREE instrument in the context of developing countries, more case studies are needed.

The implementation strategy
The discussion about effective implementations is ongoing and lively [24;29-31]. We used this discussion to assess the effectiveness of an implementation strategy prospectively in a developing country. Our findings give some support to the hypothesis that the PAL-Nepal implementation strategy needs upgrading to become effective. In our critical analysis of the
PAL-Nepal implementation strategy as well as its comparison with the international literature, we identified potential areas for improvement. Firstly, there is a body of evidence that training alone is not effective in changing clinical practice [32]. The PAL mono-event strategy therefore needs expansion. It is likely that a multi-facetted and multi-events strategy will be more effective, for example, organizing multiple opportunities to learn and practice working with the guideline. Recent studies, however, show that it might be more complicated than just adding more and different approaches [29-31]. Studies done in Nepal on effective strategies for improvement of primary health care will also provide useful suggestions [33;34].

Secondly, analysis of implementation barriers was only documented as part of the guideline adaptation process and more specifically the treatment recommendations in the generic guideline. The Adaptation Working Group members studied the applicability of these recommendations in the Nepalese context before including these in the PAL-Nepal guideline. They identified several barriers related to drug treatment and human resources, although these have not been addressed systematically. The adaptation process can benefit from using checklists for barriers and facilitators as used for example by Flottorp and Oxman [35]. These tools can also be integrated in the generic PAL package, like it has been in the adaptation of PAL in South Africa.

The social system: stakeholder analysis at national level
The assessment of stakeholders at national level has been informative in that it has shown the real status of the policy process: as long as PAL-Nepal is dealt with as a pilot implementation project of the WHO and the Ministry of Health — and by other potential future stakeholders — it will not mobilize opposition or support from others. At this stage, the receptiveness for PAL-Nepal was high. Respondents added that if PAL-Nepal is to be implemented nationwide, less tolerant stakeholders might be identified due to the financial implications. So far, the financial input has been relatively low and also has been covered by an international donor. The respondents commented that positive results from the effect evaluation were necessary to mobilize political will and more financial resources. These critical factors have not yet been addressed explicitly.

The social system at district and local levels
During the development of PAL-Nepal, several aspects of the social and organizational context at district and local levels were identified that potentially obstruct its effective implementation. Some were addressed effectively (inapplicable treatments), others were only temporarily solved (staff transfers) or not at all (drug availability, absenteeism of PAL-trained staff in SHPs). In the literature, other obstructing factors are reported. General factors affecting health service delivery in Nepal are poor human resources, difficult geography and poor general infrastructure [10;36-38]. Others address factors that more specifically influence the district and local services’ ability to take central guidance. Campbell et al. [39] mention a lack of human and financial resources and motivation. These two factors hamper the utilization
of clinical protocols and operational guidelines, although these tools are considered to be important and widespread in Nepal [39]. In addition, high absenteeism and communication gaps between villagers and rural health workers on the one hand and the higher health authorities on the other play an important role [40-42]. Aitken [43] presents an explanatory model for the functioning of district health services that shows ‘two value systems or theories with entirely different aims and expectations. (...) Officially, the organization’s value system emphasizes the services delivered: their quality and the number delivered.’ The implicit theory ‘is that the organization exists in order to distribute and account for funds and to provide the staff (...) with income. The duty of staff is therefore the provision of reports showing how these funds have been distributed and justifying their expenditure in terms of “showing progress” towards government targets. (...) The actual services provided are not seen to be very important. The staff are aware of both theories, often translating the demands of one into the language of the other’ [43]. It is crucial to understand these local circumstances in which changes are meant to take place.

Our observations and experiences confirm the comments made by Campbell, Justice and Aitken. We observed a multitude of separate activities in the district capital to support and improve the quality of health services, sponsored by national and international organisations, including the PAL-activities. These activities generated needed additional staff income, i.e. daily allowances and travel allowances. Also, it gave health workers a welcome change from work in remote stations and an opportunity to meet up with colleagues. This resulted in significant absenteeism of health workers from clinical work. Additional earnings through drug retail or private practice were the rule rather than the exception. Drugs that were not available at government facilities could often be purchased from the private businesses of health workers. Health workers spend their working hours combining private and public jobs, favouring the more profitable private jobs, while making sure that reports were presented on time. The centrally run staff appointment system also contributed to absenteeism, as health workers were appointed to unfamiliar localities. Health workers may spend a lot of time in administrative offices negotiating transfers to a more suitable location. Health workers and senior supervisors reported that supervision of peripheral staff in their own duty stations was rare. Supervising tasks had to compete with providing clinical health services at district level, facilitating training courses and workshops, and travelling to regional and national administrative offices. Although the current mechanism for introduction of PAL-Nepal seems appropriate in this stage of PAL development (i.e. through the additional financial incentives provided by a donor in a small pilot), we anticipate that in future, alternatives may be required linking implementation to adaptation of existing systems, for example through the integration of PAL-guidelines into existing training curricula.

We observed that despite these difficult circumstances, health staff were very positive and willing to contribute to the implementation of PAL-Nepal, for example, by facilitating meetings or participating in content discussions. PAL-Nepal is endorsed by the Department of Health Services and facilitated and promoted by the National Tuberculosis Centre, which established operational success through charismatic leadership, staff motivation and strong
communication lines [44]. This programme setting ensured attention and cooperation from the health workers.

**Conclusion**

Our ex-ante assessment of the adaptive local implementation of international WHO guidelines showed that the feasibility to implement PAL-Nepal could be improved, given the characteristics of the guideline package, the implementation strategy and the social system (in July 2002). The innovation has potential for improvement, the implementation strategy is limited and the social system has several cultural and manpower problems at district and local levels. Besides the technical and organizational challenges posed by the assessment of the innovation and the implementation strategy, we argue that the social and organizational reality of the district health services in Nepal need a more prominent role in the efforts to change clinical practice. Borrowing the approach — and the reputation as well — from the successful tuberculosis control programme might prove to be an important step. It can be explored further whether the organizational structure (including reporting, supervision and public relations) can be copied to the PAL-Nepal network of involved primary care health workers in rural Nepal.

We emphasize that both the context-specific PAL-Nepal and the global, generic PAL package are in the development stage. Our findings contribute to the maturation of the PAL programme, as do the findings from colleagues who evaluate PAL elsewhere in the world. This paper is one in a series of assessment reports supporting its further implementation. Developing good generic innovative interventions globally is just the first step in a long process towards successful implementation in local, specific contexts. Assessment of the feasibility of implementation can contribute to efficient allocation of scarce resources. The selected instruments allow for specific recommendations for further development of both the generic as well as the adapted guideline package in Nepal. For successfully transferring global knowledge into local practice, we need to support the development of additional sustained interventions that tackle other, culture- and health system-specific barriers as well. Health workers are key informants for these barriers.

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Reference List


Chapter 6


