



Innovations at Scale for Community Access and Lasting Effects

## Supervision: A review

*'The unexamined life is not worth living –  
the unexamined work is not worth doing'*

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## **inSCALE – Innovations at Scale for Community Access and Lasting Effects**

The inSCALE programme aims to increase coverage of integrated community case management (ICCM) of children with diarrhoea, pneumonia and malaria in Uganda and Mozambique. inSCALE is funded by Bill & Melinda Gates Foundation and sets out to better understand community based agent (CBA) motivation and attrition, and to find feasible and acceptable solutions to CBA retention and performance which are vital for successful implementation of ICCM at scale.

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## Executive summary

**Introduction and methods:** This document aims to assist in the selection and design of innovative supervision approaches for the inSCALE project by demonstrating the areas in which supervision innovation is possible. The document sets out the historical and theoretical context of supervision, reviews the evidence for its effectiveness and summarizes potential innovations in supervision. It outlines the innovative approaches identified as most promising. Key considerations in selecting promising approaches were:

- Evidence of an impact from empirical data OR evidence of a possible impact based on program reports and theoretical consideration.
- Potential acceptability and feasibility based on program reports and information on the country context.

Articles for this review were located through a systematic search of PubMed and Web of Science and through hand searches of reference lists and relevant web sites.

**History and current state of supervision:** Supervision was originally conceived as a management process to oversee a check on a person's work, however, supportive supervision is now recognized as best practice. When done well supportive supervision defines objectives and expectations, monitors performance, helps interpret data, provides focused education, helps with planning and problem solving and enhances community participation. In practice supervision is still often administrative, top-down, irregular and of poor quality. Poor supervision has various causes which can be structural (e.g. lack of financial or human resources), functional (e.g. inadequate tools or training) and cultural (e.g. a traditionally hierarchical system). Understanding these problems is key in designing effective and feasible supervision approaches.

**Overall impact of supervision:** Most studies examining the impact of supervision suffer from methodological limitations and care must be taken in interpreting their results. Overall there is some evidence of a benefit of supervision on a range of outcomes; and studies suggest that combined innovations are more effective than single strand strategies and that basic program elements, such as the availability of drugs, must in place for supervision to be effective. When supervision quality is poor the quantity appears to have no impact on performance. The few well documented examples of supportive supervision suggest that it can impact performance, but that it can be difficult to implement. Supportive supervision approaches vary in their component parts. Many of the components (e.g. increasing supervisor autonomy through a list of authorized contacts) have not been tested and could be adapted as one or as a package of innovations.

**The innovative approaches:** Innovative approaches were identified in three supervision areas:

1. Supervision mode: Peer, group, self assessment, community, and tiered systems.
2. Supervision tools: Checklists.
3. Supervision focus: Implementing a theoretical model and focusing on problem solving (at supervisor, provider or community level).

Overall there were few rigorous data from low income countries but several novel approaches to supervision emerged from the literature including theoretical constructs such as solution focused supervision.

After reviewing the evidence the following promising innovations were identified:

- Group supervision using revolving tools that focus on issues such as goal setting and problem solving.
- Stronger peers providing support to weaker peers through on the job training and mentoring.
- Community supervision through community monitoring of CBA performance.
- Reduced frequency of supervisory visits with between visit activities such as self assessment (with possible audio recording of consultations) and regular phone calls from a supervisor.
- Improving the quality of supervision by employing a full time central supervisor of supervisors who can mentor supervisors, model good behavior and problem solve.

The importance of data use, problem solving and the possibility of targeted supervision was an overarching theme.

**Conclusion:** This review has shown the diversity of supervision approaches that have been tried and demonstrates that many promising approaches exist. Overall study findings suggest that supervision can improve performance, however, data are not rigorous and none had motivation or retention as outcomes. Follow up times were short and little data on sustainability were located. The need for innovative supervision approaches is recognized in the national and international arenas and most countries have systems that can be built on.

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## **1.1 Introduction, aims and methodology:**

This document sets out the historical and theoretical background behind supervision, reviews the evidence for its effectiveness and summarizes potential innovations in supervision. The information provided aims to assist in the selection and design of innovative supervision approaches by illustrating the context within which they work and demonstrating the range of areas in which innovation is possible.

Papers for this review were located through a PubMed and Web of Science search using combinations of the following search terms: Supervis\*, developing countries, low income countries, health worker, and/or community health worker/volunteer. A hand search of reference lists, relevant web sites and bibliographies was also conducted and supplementary searches on specific topic were conducted as these emerged. The initial search resulted in 1,023 titles of which 128 articles were considered relevant for this review. The located papers relate to a variety of countries and address supervision of a variety of health care providers including: paid and unpaid voluntary cadres, nurses and midwives. Information was also extracted from the inSCALE international stakeholder review (Strachan 2010) and from inSCALE project documentation from Uganda and Mozambique. Details of individual studies included in this review are provided in Appendix 1.

The term Community Based agent (CBA) is used in the document, except when specific studies used different terms such as Community Health Worker (CHW).

## **1.2 Supervision the historical context:**

Formal health worker supervision can be dated back to the early 1900's, when it was conceived as an organizational/management process 'linking the professional hierarchy with daily clinical practice' (Curtis 1992 p. 96). In developing countries the need for supervision was highlighted during the Primary Health Care movement where remote workers were perceived as needing supervision to link them to the health system and to supplement their often limited training. The role of the supervisor, set within the legacy of colonial hierarchies, was focused around the idea of the supervisor as the 'over-seer' (Clements et al 2007). Supervision was viewed as a means of imposing the health system's requirements on the providers rather than to determine and address the providers' needs (Marquez & Kean 2002).

By the start of the decade there was a recognition that traditional supervision was not working. The move away from traditional supervision had begun, and the term 'supportive supervision' was coined (Clements et al 2007). Supportive supervision is now widely recognized as best practice for health worker supervision in low income countries and has been adopted by agencies such as WHO. Key elements of supportive supervision are that the supervisor:

- Has clear roles and responsibilities
- Is able to develop rapport
- Discusses the previous visit
- Promotes provider participation
- Jointly identifies problems
- Facilitates problem solving
- Gives constructive feedback
- Educates or trains the provider
- Discusses and interprets data
- Makes suggestions and is proactive
- Seeks client input
- Discusses the next visit

(Tarvow et al 2002)

Several step by step guides to supportive supervision exist, which provide details of the approach and identify the characteristics, attitudes and behaviors of a good supervisor (Path 2003, JHIPIEGO 2005). Manuals take a similar approach but vary in content. For example some provide details of

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how to analyze the causes of performance gaps and plan interventions to address them, while others provide direction on creating a shared vision among program workers (Rohde 2006). When done well supportive supervision defines objectives and expectations, monitors performance, helps interpret local data, provides motivation, enhances job satisfaction, provides focused education, links the tiers of the health system, models correct practices, helps with planning and problem solving and enhances community participation (Marquez & Keen 2006, Rowe et al 2005, Bosch-Caplanich & Garner 2008, Rowe et al 2010). The need for supportive supervision strategies to be modified overtime to keep abreast of changing standards has been noted (Rohde 2006) as has the need to understand the existing and evolving influences of supervision (Rowe et al 2010).

The term facilitative supervision is sometimes used synonymously with supportive supervision (Marquez and Kean 2002) but it differs slightly in the tools used and the level of community involvement. It was developed as a way of improving family planning services and it emphasizes mentoring, team work, joint problem solving and open communication and includes the community by orienting them towards a rights based approach to service quality (Suh et al 2007, Najjemba 2006).

Whilst supportive supervision is considered best practice it should be noted that much of the supervision literature in this area relates to supervising health workers rather than Community Based Agents (CBA). The difference between the needs of health workers CBAs must be considered when designing CBA supervision interventions. For example, CBA supervision often mirrors health worker supervision in aiming to link the CBA and the health system, however, this focus has been criticized given that the CBAs' work environment is the community. It has been suggested that their supervision should thus be focused around links with the community as the culture of the health system may have limited salience (Robinson & Larson 1990). For example, in Colombia Community Health Workers (CHWs) reported that observed health changes, interactions with the community, health changes seen through records and discussions with other CHWs were all more important than supervision as key for performance (Robinson & Larsen 1990).

### 1.3 Supervision the theoretical context:

Supportive supervision was influenced by the emergence of different models of 'clinical' supervision in developed countries (Fowler et al 2007). These models outline the functions of supervision and the process through which supervision is thought to occur. They originate from different theoretical stances and provide a myriad of potential starting points for supervision interventions. Selected clinical supervision models are presented In Table 1. Understanding the variety of models puts supervision interventions within a broader context and can lay the foundations for designing and evaluating supervision interventions. For example in low income countries supervision has tended to focus on formative (increasing skills and knowledge) and normative (enhancing accountability and quality assurance) elements rather than restorative (facilitating collegial and supportive relationships) elements. A reorientation of supervision to include restorative elements could be beneficial. Despite their utility for suggesting new ways to approach supervision, these models have been criticized for stressing the supervision function and philosophy without giving details of how the model may be practically applied (Lakeman & Glasgow 2009).

**Table 1: Examples of models of supervision**

Model	Examples of how implemented
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<p><b>Three-function interactive model</b> (Procter 1987, Jones 1996, Cutliffe &amp; Procter 1998):</p> <p>Supervisor and supervisee are jointly responsible for completing formative (increasing skills and knowledge), normative (enhancing accountability and quality assurance) and restorative (facilitating collegial and supportive relationships) supervision</p>	<p>Normative</p> <ul style="list-style-type: none"> <li>- Meetings</li> <li>- Observation of care</li> <li>- Formal evaluation</li> <li>- Review of patient records &amp; activity logs</li> </ul> <p>Restorative</p> <ul style="list-style-type: none"> <li>- Group supervision</li> <li>- Case conferences</li> <li>- Identification of solutions to problems in practice</li> </ul> <p>Formative</p> <ul style="list-style-type: none"> <li>- Continuing education</li> </ul>
<p><b>Intervention analysis framework</b> (Heron 1989, 1990, Watson 2002, Sloan and Watson 2001):</p> <p>This consists of two intervention approaches:</p> <ul style="list-style-type: none"> <li>- Authoritative interventions where the locus of control is with the supervisor and interventions are prescriptive (advice to direct behavior), informative (information and instruction), and confronting (challenging behaviors and attitudes).</li> <li>- Facilitative interventions where the locus of control is with the supervisee and the interventions are cathartic (enabling the release of tension), catalytic (encouraging self-exploration and self directed problem solving) and supportive (validating supervisee's attitudes and actions).</li> </ul>	<p>Selecting when the interventions should be used should be determined based on the supervisor's role, the needs of the supervisee and the context.</p> <p>Examples of using this framework focus around one to one supervision and how the supervisor asks and answers questions in prescriptive, informative, confronting, cathartic, catalytic or supportive ways.</p>
<p><b>Practice/problem-centered supervision</b> (Nicklin 1997, Fowler 2007)</p> <p>Supervision is managerial, educational or supportive with both supervisor and supervisee identifying clinical problems. Solutions are then identified that are structured, focused, logical and measurable.</p>	<p>Uses a cycle of: Analysis, problem identification, objective setting, planning, implementation and evaluation to ensure that supervision is more than rhetoric and actually produces change.</p>
<p><b>Solution-focused approach</b>(Driscoll 2000, Fowler 2007):</p> <p>Focus on the positive through goal identification rather than why problems arose. It assumes that the supervisee has these solutions within themselves.</p>	<p>Techniques to help in identifying existing skills, strengths, resources and goal include:</p> <ul style="list-style-type: none"> <li>- The use of scales: A scale 0-10 is used by the supervisee to assess their current position, their satisfaction with the position and their desired position</li> <li>- The miracle question</li> <li>- Searching for exceptions</li> <li>- Constructive feedback</li> <li>- Follow-up tasks</li> </ul>

#### 1.4 Supervision the reality:

A review of low income country supervision studies and policy papers (Bosh-Capblanch & Garner 2008) illustrates the conceptual move from traditional to supportive supervision, with the following components emerging across the reviewed studies: problem solving, reviewing information with the supervisee and observation of clinical practice. Field reports of actual practices are in striking contrast to this conceptual move.

In practice supervision with an administrative focus is most common with problem solving and feedback rarely reported (Bosh-Capblanch & Garner 2008). In Kenya and Benin interviews with 99 health workers found that half saw supervision as an exercise of control and criticism. The health workers reported that supervision was infrequent and irregular, top-down and that supervisors did not provide feedback (Mather & Imhoff 2006). Findings are similarly for CHW supervision, for example in a Zambian CHW program 50% of CHWs had no supervision (Stekelenburg et al 2003). Even recent high profile initiatives such as the Accelerated Strategy of Child Survival and Development (ASCSD) have reported inadequate supervision (Perez et al 2009), in Mali 38% of ASCSD CHWs had never been supervised and 81% said that they lacked support from supervision (Perez et al 2009). As Lehmann and Sanders (2007) conclude in their review CHWs 'In the worst cases, CHWs do not even know who their supervisors are or what they can expect from them' (Lehmann & Sanders 2007, p 20).

Countless other examples exist where supervision has been found to be irregular, to have little continuity between visits, where supervisors are appointed without job descriptions or training and where supervision activities do not focus on the quality of care (Uys et al 2005, Tarvow et al 2002, Manongi et al 2006). For example observations of 16 health worker supervisors in Zimbabwe found that, although supervisors spent an average of 2.5 hours at each facility, they spent only 6% of their time discussing patient care issues (Tarvow et al 2002), whilst in Malawi 18-22 people made supervision visits to a given clinic giving inconsistent advice (Rohde 2006). Issues around program, delivery, such as poor drug supply and high staff turn-over, can hinder the impact of supervision even when it does occur (Robinson et al 2001, Lakeman & Glasgow 2009, Trap et al 2001).

Understanding barrier to supervision can help ensure that innovative supervision approaches are designed, in light of these realities, to overcome or circumnavigate the barriers. To this end Box 1 (adapted from Rowe et al 2010) shows common supervision problems in low income countries and their causes. Several barriers in Table 1 are related to the performance of the supervisor, however, there are few data on the determinants of supervisor performance (Rowe et al 2005), developing an understanding of these determinants could enhance the design of effective supervision innovations.

It is important to note that supervisors and supervisees are not blank pages, they will integrate supervision innovations into their existing values and will adopt the elements that are consistent with their values and goals and may reject elements that are not (Rowe et al 2005). Thus factors such as supervisor background will impact how an individual approaches supervision and the likelihood that they adopt an innovation. A qualitative study of PMTCT supervisors in South Africa found that, despite the supervisors having the same job description and training, the supervisor who was previously employed in a clerical role took an administrative focus to her supervision whilst the supervisor who had a counseling background focused on being available to provide emotional support (Daniels et al 2010). In many settings CBAs are supervised by health workers who may be more comfortable providing a form of supervision that fits within the health system

tradition of administrative and hierarchical supervision rather than adopting innovations (Robinson & Larsen 1990).

**Box 1: Common supervision problems and their causes (adapted from Rowe et al 2010)<sup>1</sup>**

**Common problems**

Supervision is:

- Not always done by staff with the needed skills
- Irregular and/or infrequent
- Unstructured (e.g. checklists are often not used)

Supervisors:

- Act as inspectors rather than facilitators
- Do little more than check that health workers were at their posts
- Do not develop rapport or interact with the providers and do not promote provider participation
- Do not observe patient care
- Are inadequate at seeking client input
- Are inadequate at making suggestions, providing guidance and education
- Are inadequate at identifying problems and at problem solving
- Are inadequate in discussing and interpreting data
- Do not provide feedback or give more negative comments than positive
- Are inadequate at discussing past and future visits; little follow-up
- Do not motivate health workers

**Common causes of problems**

**Structural**

- Geographic factors (large population size/area to cover or poor accessibility)
- Lack of financial or human resources or costs of supervision are overlooked during the planning phase
- Inadequate transportation (e.g. no working vehicle or no fuel)

**Functional**

- Roles and responsibilities are not defined
- No or inadequate tools to measure supervisory functions and progress
- Lack of training, experience and investment in supervision
- Lack of job description means that the supervisor, supervisee and community can misunderstand the role
- Lack of authority to take actions such as solving problems or rewarding good performance)
- Effective supervisors or managers who are supportive of good supervision are lost to other projects

**Cultural**

- Traditional emphasis on inspection and blame
- Traditional hierarchical system
- Tradition of avoiding interpersonal conflict means that feedback is skipped
- Inactivity due to perceptions of lack of a resources

**Time management/priority setting**

- Poor planning skills (e.g. lack of supervision schedule)
- Supervision approach/supervisor not consistent (e.g. each vertical programs has its own supervisor)
- Supervision not a priority (e.g. other activities for with per-diems take priority)
- Other responsibilities or competing activities reduces number or length of supervisory visits)
- Poor job motivation and low morale (e.g. supervision is tedious, salaries low, no professional development)

<sup>1</sup>(Nicholas et al. 1991; Rowe et al. 2001; Tavrow et al. 2002; Valadez et al. 1990 ; Loevinsohn et al. 1995; Vernon et al. 1994; Aitken 1994; Ashraf et al. 1996; Ben Salem & Beattie 1996; Snell & Dualeh 1988; Mathauer & Imhoff 2006; Dieleman et al. 2003; Manongi et al. 2006; Foreit & Foreit 1984; Graham-Jones & Nabarro 1988; Heldal et al. 1997; Meuwissen 2002; Capps & Crane 1989; Altigani 1992; Muula & Maseko 2006; Marquez & Kean 2002, Hermann et al. 2009, Haq et al. 2008, Rowe et al. 2010, Rohde 2006)

## 1.5 Supervision the impact:

**1.5.1 Overall impact:** Two reviews that included supervision in low income countries were located, the first concluded that managerial interventions (e.g supervision, audit and feedback) consistently had moderate to large effects on performance (Rowe et al 2005), whilst a subsequent review (Bosh-Capblanch & Garner 2008) concluded that there was evidence of a benefit of supervision on a range of outcomes but that many studies have methodological limitations which made it difficult to draw conclusions. Despite the lack of hard evidence it is widely recognized that quality supervision is key for CBA programs (Bhattacharyya et al 2001, Lehmann & Sanders 2007) with inadequate supervision reported as a reason for the failure of programs and for high CBA attrition rates (Kelley et al 2001, Bhattacharyya et al 2001).

Studies suggest that supervision does not affect all areas of performance equally. In Uganda a four arm randomized control trial on rational drug use in 127 health units compared the impact of providing guidelines alone; providing guidelines plus training; and providing guidelines, training plus supervision. The groups that received training or training and supervision performed better than the group that received guidelines alone. However, the difference between the group that received training alone versus training plus supervision was small or non-existent for some indicators (e.g. antibiotic or injection use) but large for other indicators (e.g. correct treatment of malaria). The author concludes that supervision increases the effects of training if it is directed at indicators that are easy to supervise and amenable to change (Kafuko et al 1996). There is, however, some evidence that supervision targeted at one performance area can influence other performance areas: A study with health workers in Zimbabwe found that supervision focusing on improving stock management also improved adherence to Standard Treatment Guidelines with scores increasing by 6% in the intervention group compared to a 10% decrease over time in the control group (Trap et al 2001).

**1.5.2 Impact of supervision frequency:** Although increasing the frequency of supervision is often a goal of supervision interventions there is little evidence on the optimal frequency of supervision. When quality is poor the quantity of supervision appears to have no impact on performance (Osterholt et al 2009) with a randomized trial in Brazil demonstrating that the frequency of family planning supervision could be reduced from monthly to quarterly with no detrimental effect on program performance (Foreit & Foreit 1984). Data from The Philippines found that more frequent supervision was associated with increased performance amongst health workers in intervention areas that received improved supervision but not amongst those in the control group (Loevinsohn et al 1995). No association was found between supervision frequency and CHW (Senegal) or health care provider performance (Armenia) in multivariate analyses (Rowe et al 2007, Fort & Voltero 2004), which may have been because the intervention did not succeed in improving supervision quality/quantity (Rowe et al 2007). In contrast, in Bangladesh results from a multivariate analysis of cross section data found that regularly supervised CHWs had ARI treatment accuracy 4.2 times higher than those with irregular supervision ( $p < 0.01$ ) (Hadi 2003).

**1.5.3 Impact of best practice 'supportive supervision':** There are few well developed and well documented examples of supportive supervision and even fewer that have been rigorously evaluated. Only one randomized control trial was located, this implemented supportive supervision to improve immunization coverage in Georgia (Djibuti et al 2009). The intervention included developing supportive supervision guidelines and tools, training supervisors, improving communication lines, monitoring and evaluation and providing funding. Specific intervention

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elements included using supervisor checklists, self assessment, and work planning action sheets. After 12 months of implementation supervisors in intervention areas rated supervision barriers as less prevalent (Likert scale) than those in control areas, supervision frequency was higher as were provider ratings of the effectiveness of management. Coverage of DPT-3 increased by 12% (to 89%) in the intervention areas compared to 4% in the control areas ( $p=0.075$ ) (Djibuti et al 2009). In India supportive supervision was also implemented for immunization providers, but with significant technical support from external agencies. A team of 6-7 supervisors visited each of 1116 health facilities every 6 months and spent 4-5 days in each clinic with the aim of using supportive supervision approaches to assist staff identify and correct wrong practices, improve skills and initiate corrective actions at appropriate levels through information sharing. The study found significant increases in performance, measured through a checklist, over 4 rounds of evaluation (corresponding to 3 rounds of supervision), with a 36% change in performance scores over 18 months ( $p<0.01$ ) (Suraratdecha et al 2008).

In contrast to the findings from Georgia and India, a study in Benin showed that supportive supervision can be difficult to implement. In Benin a robust supervision strategy for IMCI was implemented consisting of a 5 day training on supportive supervision, development of supervision protocols, use of experienced supervisors of supervisors, provision of supervisory checklists, job aids and the provision of one vehicle per health zone. After implementation very few supervisory visits were actually made with supervision being nearly non-existent. Supervision frequency increased 5 fold with the addition of quarterly supervisor meetings where supervisors presented the results of their supervision and engaged in problem solving. Coverage decreased to under 20% of needed IMCI supervision visits after 2 years (Rowe et al 2010). Feasibility issues have also been found implementing facilitative supervision. Only one formal evaluation of facilitative supervision was located (Suh et al 2007). In Senegal facilitative supervision was used with family planning providers but feasibility was affected by low client flow reducing the number of supervisor-supervisee observations and supervision frequency was lower than planned with supervisors visiting on average once every 3 years rather than every 6 months. The authors suggest several modifications to make the approach simpler and easier to deliver (Suh et al 2007). Program documentation from Uganda suggest that facilitative supervision improves teamwork and communication, leads to creative problem solving and that it is acceptable with health workers who value feedback/problem solving (Najjemba 2006).

Lessons learnt from implementing supportive supervision (Marquez & Kean 2001) are that:

- It requires motivation from both supervisors and staff to adopt new behaviors and attitudes. Top managers must be committed.
- Supportive supervision takes time and investment (estimated 2 years) it is not a quick fix.
- Some decision making authority must be decentralized to front line supervisors.
- Implementers should select which of range of supportive supervision mechanisms/tools are appropriate for the context and adapt and test them.

### 1.6 Introduction to the innovative approaches:

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Innovative approaches were identified through this literature review and through interviews with national and international stakeholders (Strachan 2010). Some of the innovative approaches have been evaluated whilst others were suggested as a result of study or program findings. Where evaluations were conducted many had small sample sizes, non-random sampling, no blinding, and no control groups. Care must be thus taken with interpreting the results both because of the methodological weaknesses and because interventions have often not been sustained past a pilot phase (Marquez & Kean 2001) and most of the located studies had short follow up – little is known about sustainability and scalability.

Innovative approaches were identified in three supervision areas the: mode, tools and focus of supervision. The approaches included within these areas are:

4. Supervision mode: Peer, group, self assessment, community and tiered systems.
5. Supervision tools: Checklists.
6. Supervision focus: Implementing a theoretical model and focusing on problem solving.

The advantages and disadvantages of these approaches are shown in Table 2. Several of the evaluations tested more than one of these three elements, and their classification into one of these categories was done based on the element that was reported as the focus of the study. It should be noted that several authors advocate for the implementation of bundles of linked and coordinated interventions that target multiple determinants of retention, motivation and performance (Lehmann et al 2008, Mathauer & Imhoff 2006, Rowe et al 2009). Reviews of factors influencing performance conclude that combined interventions, such as those that include consciousness-raising, acceptance-gaining and practice-enabling strategies, are more effective than single strand strategies (Woodward 2000, Dieleman et al 2009). It is also stressed that contextual factors that support performance and motivation such as the availability of drugs and community support must in place for supervision to be effective (Dieleman et al 2009).

### **1.7 Innovative approaches within supportive supervision:**

Whilst supportive supervision is recognized as best practice it varies in terms of its components, most of which have not been tested and which could be adapted as one or as a package of innovations. Components where evaluations were not located include:

- Appointment of a single supervisor to whom supervisees are accountable (Rohde 2006)
- Increase supervisor autonomy e.g by using an authorized list of contacts who may be contacted directly by the supervisor to ensure rapid response to problems (Rohde 2006)
- Establishing a supervisor of supervisor (Rowe et al 2010)
- Checklists at various levels and at various times e.g short 'red flag' check list at all visit, quarterly and annual checklists for a more detailed review (Rohde 2006)
- Checklist with immediately quantifiable measures of performance (Suh et al 2007)
- Review cases from registers and/or discuss issues with or interview clients (Rohde 2006)
- Using data to determine which sites need a visits (Marquez & Kean 2002)
- Work plan action sheets (Djibuti et al 2009).

**Table 2: Advantages and disadvantages of innovative supervision approaches**

Approach	Advantages	Disadvantages
Peer supervision	<ul style="list-style-type: none"> <li>• Peers empathize with each other and may be less inhibited by hierarchy</li> <li>• Not starting from blank page: Structured activity guidelines/checklists exist, but these assume literacy.</li> <li>• Supported in country and by international stakeholders.</li> <li>• CBAs report peer interactions as important.</li> </ul>	<ul style="list-style-type: none"> <li>• Peer supervision may create tension.</li> <li>• Peers may not challenge each other enough for optimum reflection and learning.</li> <li>• Peers may suffer from the same weaknesses and issues.</li> <li>• Has not been used to address structural problems.</li> <li>• Difficult to change content over time</li> </ul>
Group supervision	<ul style="list-style-type: none"> <li>• Motivational benefit of being in a team.</li> <li>• Allows both peer support and technical guidance.</li> <li>• People may be more likely to take action as a group rather than as individuals.</li> <li>• Content can change over time.</li> <li>• Supported in country and by international stakeholders.</li> <li>• Efficient and logistically easier than individual supervision.</li> </ul>	<ul style="list-style-type: none"> <li>• Can be difficult to schedule times when all can attend and groups can be difficult to sustain.</li> <li>• Individual weaknesses or needs may go unnoticed.</li> <li>• May require CBAs to travel significant distances with more remote CBAs being less likely to attend.</li> <li>• No observations of practice.</li> </ul>
Community supervision	<ul style="list-style-type: none"> <li>• CBA workplace is the community and rewards and sanctions are key instruments available to the community</li> <li>• Community ownership may increase sustainability.</li> <li>• CBAs report that interactions with the community are important for their performance.</li> </ul>	<ul style="list-style-type: none"> <li>• Communities may not feel able to challenge CBAs or may not have the ‘skills’ for formative or normative supervision.</li> <li>• Systems can be resistant to decentralizing power.</li> <li>• Can lead to diffusion of responsibilities</li> <li>• Not suggested in country</li> </ul>
Self assessment	<ul style="list-style-type: none"> <li>• May work on several levels (learn from experience, strengthen commitment to perform, foster self agency).</li> <li>• Gives providers greater ownership of the evaluation process.</li> <li>• May make face-to face supervision more effective.</li> </ul>	<ul style="list-style-type: none"> <li>• Poor validity and those with low performance abilities may have poor SA abilities.</li> <li>• Providers can distrust the method and find it embarrassing (e.g audio taping).</li> <li>• Time consuming and fatigue can set in over time.</li> <li>• Overlong forms may actually de-motivate</li> <li>• Requires literacy.</li> <li>• Not suggested by international stakeholders or in county.</li> </ul>
<b>Approach</b>	<b>Advantages</b>	<b>Disadvantages</b>

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<p>Two tired system with local and central supervisor</p>	<ul style="list-style-type: none"> <li>• Central supervisors can model good behavior and act as mentors for local supervisors.</li> <li>• Providers and supervisors motivated by visits from central office.</li> <li>• Central supervisors high caliber.</li> </ul>	<ul style="list-style-type: none"> <li>• Central supervision often lengthy and difficult to implement in busy locations.</li> <li>• Requires dedicated central supervisors as other personnel may not prioritize the visits.</li> <li>• Top down approach.</li> <li>• Not suggested by international stakeholders or in county.</li> </ul>
<p>Checklists</p>	<ul style="list-style-type: none"> <li>• Structure visits and focus them on key activities</li> <li>• Objectivity can make feedback easier to give and take</li> <li>• Content can change over time</li> <li>• Supervisors can track change over time</li> <li>• Can include technical guidance /decision points</li> <li>• Can be aligned with training checklists</li> </ul>	<ul style="list-style-type: none"> <li>• Time consuming and fatigue can set in over time – mechanical use</li> <li>• Overlong forms may actually de-motivate</li> <li>• Can dominate supervisory sessions</li> <li>• Forms focusing on observations can be hampered by low client flow</li> <li>• Assumes supervisors can recognize problems</li> </ul>
<p>Applying a theoretical model</p>	<ul style="list-style-type: none"> <li>• Theoretically based.</li> </ul>	<ul style="list-style-type: none"> <li>• Few details of how models can be practically applied.</li> <li>• Models often western based and not based on experience.</li> <li>• Has not been used to address system level issues.</li> <li>• Content does not change over time.</li> </ul>
<p>Problem solving</p>	<ul style="list-style-type: none"> <li>• Accepted by providers who find the approach satisfying and democratic.</li> <li>• Does not require a high frequency of supervision.</li> <li>• Can address system level issues.</li> <li>• Many tools available: not starting from blank page</li> </ul>	<ul style="list-style-type: none"> <li>• Problem solving is a skill and requires support.</li> <li>• Increases workload and can place unrealistic expectations on providers time.</li> <li>• Supervisors may be resistant if they gain status from hierarchical systems.</li> <li>• Diffusion of responsibilities can leave the intervention with no one in charge.</li> <li>• Problems selected may not be essential or may not be solvable.</li> </ul>

## 1.8 Supervision modes

### 1.8.1 Peer supervision

- Peer supervision was developed within social work, mental health and counseling fields in developed countries. During supervision sessions peers usually maintain equal status and supervision focuses on restorative elements (i.e encouraging collegiate and supportive relationships). The empirical evidence from these fields is methodologically weak and does not show strong support for of an impact of peer supervision (Spense et al 2001).
- In low income countries peer supervision is less focused on the restorative elements and more on formative (learning new skills) and normative (quality assurance) elements. Innovative approaches using a peer focus include:
  - Peers observing consultations and providing feedback,
  - Peers supporting weaker colleagues (e.g. through on the job training),
  - Peers discussing issues and problem solving
  - Peers being promoted to a more formal supervisory role.
  - Non CBA peers selected by the community who serve as a CBA buddy.
- Peer strategies were mentioned in the inSCALE in-country reports as desirable and in Uganda many peer approaches have already been tried.
- The international stakeholder interviews (Strachan 2010) highlighted that peers can empathize with the perspective of other CBAs and that they thus may make the best supervisors. This was suggested as being particularly important when power imbalances between traditional supervisors and CBAs can inhibit learning and problem solving. Having a supervisor from the community may also lead to a higher degree of CBA-community trust.
- Four low income country studies were located which used a peer supervision approach. The first two used peers in a discussion and problem solving approach, the third peer observation and the fourth stronger peers supporting weaker ones. All suggested some impact of peer supervision, although impacts were small in some settings:
  - A qualitative study of peer group supervision amongst Trinidadian psychiatric nurses found that the nurses, who met weekly using a manual with suggested activities, were more mindful of how they interacted with clients, were more satisfied with their work and had enhanced roles. However behavior change was difficult in busy and overcrowded wards (Lakeman & Glasgow 2009).
  - A controlled trial with Indonesian family planning providers compared self assessment to self assessment and peer group meetings and found only small changes in communication between those receiving self assessment only and those receiving self assessment and group meetings (Kim et al 2000).
  - In Mali health worker who completed self assessment with peer observation had 10% higher compliance to care standards compared to a non random control group ( $p < 0.001$ ) (Kelley et al 2003).
  - In Indonesia immunization nurses who had low coverage or incomplete records hosted experienced nurses from nearby clinics for 1-2 weeks who provided on the job training. Vaccination coverage increased from 42 to 68% (26%) in the non-

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randomly selected intervention areas compared to 58 to 60% in the control areas ( $p < 0.001$ ). The intervention was popular as it tackled real problems but relied on having data available to identify poor performers (Robinson et al 2001).

- No empirical data was located on the promotion of well performing peers to formal supervisory roles but this strategy is posited as a means of reducing attrition by providing a career pathway for CBAs (Rahman et al 2010). However, innovations that take this approach would need to manage the expectations of those not selected (Strachan 2010). Similarly no empirical data on using a buddy system was located.
- Using m-health for peers to discuss issues and frustrations was suggested by international stakeholders (Strachan 2010) and has been used in developed country settings to reduce feelings of isolation (Mason & Hayes 2007, Nickson 2008). Sustaining these virtual groups proved difficult in Australia due to time commitments and the format not meeting the participants needs (Nickson et al 2008).
- Concerns have been raised that peer supervision may create tension between staff members (Bose et al 2001) and that effectiveness may be compromised because peers may not challenge each other enough for optimum reflection and learning and may suffer from the same weaknesses and issues (Lakeman & Glasgow 2009).

### 1.8.2 Group supervision

- Group supervision involves a group of CBAs meeting together with a supervisor. The focus of the meeting is usually performing regular supervisory activities (collecting data, discussing problems and continuing education) but in a group rather than in an individual context.
- The international stakeholder interviews identified group supervision as an important approach highlighting the motivational benefit of working in a team and its efficiency in terms of time and logistics. Groups were reported as a useful arena for problem solving approaches allowing both peer support and technical guidance from a supervisor to be provided (Strachan 2010). Group supervision was mentioned in the in-country reviews suggesting that there is support for these types of innovations within the inSCALE countries.
- Program reports from Ecuador suggest that group supervision makes action taking more likely. In this setting individual supervision of health workers was found to be a barrier to participation in local health activities. When the focus of supervision was changed to group supervision participation increased and teams were able to see the connection between supervision and planning (Benavente & Maden 1993).
- Only two low income country studies were located exploring the impact of group supervision, one suggested an impact on performance and another that group supervision was logistically easier than individual supervision and had no detrimental impact. A study in Guatemala evaluated group supervision of family planning providers (Vernon et al 1994) by replacing one of two annual supervisory visits with a group meeting that focused on training. The intervention group had an 11% increase in couple years protected compared to a 22% decrease in the control group (difference was non-significant). In Kenya group supervision was as effective as individual supervision and allowed supervisors to cover a larger geographic area at a lower cost (Jacobson et al 1987, reported in Lantis et al 2002).

### 1.8.3 The community

- There is a small body of literature on improving the delivery of services through community involvement. It is based on the premise that communities can hold providers accountable and can pressure and monitor them through social rewards and sanctions if they have relevant information about the status of the delivery of services and community entitlements (Bjorkman & Svensson 2009).
- The importance of the community as the work place of the CBA has led to suggestions that the idea of 'community participation' should be replaced by 'health systems participation'. That is supervision should be focused on developing the relationship between the CBA and the community – for example by the supervisor assisting the CBA to collect their own data on community needs, heightening their visibility and designing information systems that are based on sharing information with the community (Robinson & Larson 1990).
- The international stakeholders interviewed (Strachan 2010) also stressed the importance of the community in monitoring and supervising CBAs. Many of the interviewees proposed the establishment of health committees who supervise and monitor CBAs as an effective way of both engaging the community and encouraging ownership. It was suggested that such groups should review data as it was argued that this allows workers and volunteers to see that they are making a difference which is motivating. An approach suggested as having achieved this end was the Community Based Health Information System (CBHIS) initiated by AMREF with the Ministry of Health in Kabwe in South West Kenya (Strachan 2010)
- Only one study was identified examining the impact of community monitoring, this suggests that community monitoring can be very effective. This RCT from Uganda included communities discussing data on health facility performance and their rights as patients. They then worked with the facility to develop an action plan for the facility and a way of monitoring providers. This led to increased quality and quantity of primary health care in the intervention compared to the control areas and changes in mortality and morbidity. E.g Significant difference in weight of infants, a 33% reduction in under-5-mortality in the treatment communities and 20% higher utilization of outpatient facilities (Bjorkman & Svensson 2009).
- Community participation can be acceptable and feasible with community members reporting that they are 'proud' to be part of the program (Sennun et al 2006)

### 1.8.4 Self assessment

- Interest in Self Assessment (SA) began in the 1970's and it has been widely used in the education, management and health fields in developed countries. Studies suggest that SA shows promise as a means of improving performance in these settings. SA may result in 4 types of benefits:
  - o Learning from experience,
  - o Functioning more efficiently,
  - o Strengthening commitment to performance,
  - o Fostering self agency (e.g by increasing provider participation and giving providers greater ownership over the evaluation process). (Bose et al 2001)

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- SA usually focused on completing a knowledge test or a self assessment checklist to identify activities done and/or strengths and weaknesses in specific areas of performance. The checklist can be completed about performance in general or about performance in a particular consultation. The later is done by completing the checklist after the consultation through recall or by reviewing a video or audio tape of the consultation (Bose et al 2001).
- SA can be done as a post training activity, between supervision visits or as part of a supervisory visit. It is proposed that SA can enhance the effectiveness of supervisory visits as providers have already thought about their performance. When done with a supervisor, the supervisor may review the provider's SA checklist or may compare the provider's checklist with one they have completed through observation. Peers can also meet to review the SA checklists or can observe consultations and compare an SA checklist with one completed by a peer. Generally some level of external support is provided with very few studies using SA as a stand alone tool (Bose et al 2001).
- Questions of validity around SA stem from different theoretical stances on self assessment. Some theories posit that people will distort their performance to view themselves favorably whilst other theories state that people will assess themselves from the perspective of others and are not likely to inflate their abilities/performance. When compared to external measures SA has been found to have low to moderate validity of SA (Bose et al 2001).
- Three low income county studies using SA were located. The first used a checklist to evaluate communication in family planning consultations in order to identify behavior to improve, the second was similar in nature but used a SA tool that included a teaching element and also included audio-taping consultations and regular supervisor visits, the third used SA of a fever consultation and peer observation. All suggested some impact of SA, although impacts were small in studies where SA was not complimented by ongoing support:
  - o A controlled trial with Indonesian family planning providers compared self assessment to consolidate training skills to controls who received training only. The SA covered a different communication skill each week for 16 weeks and included identifying behaviors to improve. Providers were trained on SA for half a day prior to the intervention. During the intervention problem solving was recognized as a weakness and training on defining behavioral goals and problem solving was initiated. Levels of facilitative and active communication increased by 3% in the intervention group but not in the control group ( $p < 0.001$ ) (Kim et al 2000).
  - o In Mexico medical students were trained in interpersonal communication (IPC) before starting their rural rotations. A control group received standard 2 monthly supervision visits and in an intervention group supervisors were trained in IPC and the students conducted twice monthly self assessments between supervisory visits. The self assessment included audio recordings of consultations and a job aid that covered essential skills, explained the importance of the skill and provided information on how to perform the skill. The doctors in the intervention group used 13 more facilitative phrases per consultation than the control doctors and provided 63% more biomedical information ( $p < 0.001$ ), a small sub set of doctors had pre and post intervention data which confirmed these finding (Kim et al 2002).
  - o In Mali compliance to care standards were 10% higher in an intervention group that conducted self assessment with peer observation than in a non-randomized control group ( $p < 0.001$ ) (Kelley et al 2003).

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- Group self assessment has been utilized in several settings but has not been evaluated (Bose et al 2001)
- There is some evidence that providers need to learn self assessment skills, especially as there may initially be some resistance/distrust around the method. Providers with poor abilities to perform may also be less able to assess themselves accurately, which may reduce the utility of SA (Bose et al 2001). Questions on the durability of behavior change that results from SA, the type of behaviors that can be influenced and the best format for SA requires further research (Bose et al 2001).
- Feasibility issues with self assessment include finding time to complete the forms and fatigue when the forms are used repeatedly (Kelley et al 2003, Kim et al 2000) and initial embarrassment when conducting SA by reviewing audio-tapes (Kim et al 2002).
- Evidence from developed countries suggest that to be effective SA requires supervision and ongoing support, that checklists should not be overly long and should target specific rather than general criteria that are clearly defined and discussed with the provider before the SA (Bose et al 2001).
- Self assessment was not suggested in the international stakeholder interviews nor in the in county reviews.

### 1.8.5 Two tiered supervision:

- One study was located which provided extra supervision through a two tiered supervision system. In India STI supervision was provided routinely by state supervisors and every 3 months central supervisors visited 10% of the clinics. The central supervisors used a quality monitoring tool and, with the provider's input assessed performance. The central supervisor then generated a technical report with recommendations, which were then followed up by the state supervisor. Over a 4 year period all performance indicators increased three-fold ( $p < 0.001$ ), however, the 2-3 hour long monitoring tool used by the central supervisor was difficult to apply in busy clinics (Mogasale et al 2010).

### 1.9 New supervision tools: Checklists

- The use of checklists has gained popularity in many low income countries, they are seen as a way of structuring supervisory visits and have been popular with donor supported projects as they focus supervisory visits on the activities of greatest interest to the implementing or funding agency (Marquez & Kean 2001). Checklists are usually used as part of supportive supervisory packages and have also been used as part of problem solving interventions to identifying problems and weaknesses.
- Three low income country studies were located where checklists were used as a stand alone tool, all suggest positive impacts.
  - o In the Philippines elements for inclusion in a checklist to monitor facility performance were identified with program managers. Supervisors of midwives were then trained for 1 day on the use of the checklist and on giving feedback. Checklists were completed using the clinic records and by asking midwives knowledge questions. In the intervention clinics average clinic performance increased by 11 points (from 26/60) compared to a 5 point increase in the control clinics ( $p = 0.003$ ) (Loevinsohn et al 1995).

- In Nepal intervention supervisors used a monitoring guideline and checklist tool focusing on rational drug use. Supervisors made visits 1 and 3 months after providers were trained in standard treatment protocols. 6 months after training adherence to treatment guidelines has increased by 14% in the intervention clinics but decreased by 6.2% in the randomly selected control clinics (Kafle et al 1997).
- In Nigeria a quality assurance exercise (QA) resulted in an agreement to provide monthly supervision and the development of a checklist to measure provider performance using a simulated diarrhea episode. After 2 months the percentage of diarrhea cases correctly classified in the simulation increased from 41 to 74% ( $p < 0.005$ ) and history taking also improved (e.g asking about home treatment used increased from 52 to 81%) ( $p < 0.05$ ) (Zeitz et al 1993).
- Studies have found that checklists can be difficult to implement in busy settings (Mogsale et al 2010) or, if they rely on observations, in settings with low foot traffic (Zeitz et al 1993).
- Lengthy checklists may actually hinder supervision by causing fatigue and mechanical use, and checklists need to be designed so they do not dominate the supervision encounter. They should be based on easy to identify and defined criteria (Marquez & Kean 2001). Fatigue could be reduced by changing checklists over time to ensure novelty.

## **1.10 Supervision Focus:**

### **1.10.1 Applying a model in practice**

- As described in section 1.3 several supervision models exist, which originate from different theoretical stances (Fowler et al 2007, Lakeman & Glasgow 2009). Whilst many of the models do not give details of practical applications they could serve as a starting point for an inScale innovative approach.
- Only one low income country study was identified which specifically applied supervision models in practice. This tested two models implemented with health workers in South Africa. For some outcomes data from controls, who received standard ministry of health supervision, were available.
  - Modified Matrix model: The model focuses on training supervisors on the supervisor-supervisee relationship, the institutional and client environment and the tasks and functions of the supervisor and supervisee. The intervention found a non significant difference in job satisfaction and no difference in patient satisfaction pre and post intervention. Quality of care did not change in either the intervention or control areas (Uys et al 2005).
  - CHES model: This model focuses on training supervisors in understanding and practicing the principles of primary health care and to develop and monitor indicators of quality. It includes the use of a continuous quality improvement tool and prioritizing actions with the community. No difference in quality of care or patient satisfaction pre and post intervention (Uys et al 2005)
- The implementation of these models focused on one time training sessions for supervisors and their impact may have been limited by not taking a more comprehensive approach. It has been noted that one time training is unlikely to change supervisor behaviors – learning skills on the job or through mentoring may provide more sustainable behavior change (Simmons et al 1987, as cited in Marquez & Kean 2001).

### 1.10.2 Focus on problem solving

- Operational research from 12 countries concluded that supervision is an essential component of quality improvement (Brown et al 1998) and over time there has been a changing focus in supervision towards the resolution of problems. Problem solving is one of the elements of supportive supervision but it has also been implemented as a stand alone intervention, which work under the premise that they implement a process that improves outcomes (Oliveira-Cruz 2003)
- Problem solving focused interventions have focused on both improving the quality of supervision and on training supervisors to implement a problem solving approach with providers. They can thus take place at multiple levels for example either with district teams, the community, the clinic or the provider. Problems can be identified through discussion but data collection is common. Data can come from surveys or they can be collected/collated by the supervisor, the community or the provider themselves.
- Six low income county studies were located that focused on problem solving, all but two suggest that problem solving could have moderate to large impacts on a variety of outcomes :
  - o In Niger (Tawfik et al 2001) supervisors were trained in quality assurance and developed a supervision plan which involved using a rapid assessment checklist. A district level management team was also put in place which included a 'coach'. The coach helped providers identify problems and solve them using local resources. Limited financial assistance was provided for transportation. Before the intervention supervision was not occurring but afterwards all scheduled visits took place. Problem solving techniques were well understood.
  - o In Tanzania (Ahmed et al 1993) a taskforce collected and presented data to a district level working group on the preparation and follow up of supervision activities. Problems and solutions were discussed at district level and an action plan developed which included monitoring progress. Interview data suggest that district level satisfaction with supervision increased and the involvement of the district team in supervision increased.
  - o In Zimbabwe (Trap et al 2001) pharmacy staff were trained to provide supervision to health workers every 3 months with a problem solving focus. One group focused on adherence to treatment guidelines and the other on stock management guidelines. Issues identified as deficient in a baseline survey were discussed with health workers and agreements made on how to improve performance. Stock management scores improved by 7% in the stock management group and decreased by 7% in the control group ( $p < 0.001$ ). Adherence to treatment guidelines improved by 19% in the treatment guideline group and decreased by 10% in the control group ( $p < 0.001$  for some diseases). This intervention used existing staff who had no previous experience in clinical supervision and had a low frequency of supervision visits.
  - o In Turkey (Ozek et al 1998) family planning providers were trained in communication and then received 5 supervisory visits within a year from a group of supervisors. The supervisors observed sessions with a checklist and then discussed the results and sought solutions with the health workers, clinic/hospital directors and provincial/national directorates. Observational data from a small sample suggest that counseling facilities and skills improved (e.g the number of clinics classified as providing adequate counseling increased from 0/15 to 13/13 as measured by the

checklist). The use of a team of high level supervision impacts on the feasibility of this intervention.

- In Guatemala (Vernon et al 1994) one of two annual supervisory visits for family planning providers was replaced with a two day district meeting run by supervisors. During the meeting providers completed checklists to identify problems and together chose 5-10 things to change. In subsequent supervision visits the supervisor assessed the improvement. After one year 80% of the identified problems had been solved and there was a non significant difference in couple years protected (7% increase in the intervention group and a 22% decrease in the control group). The managers liked the focus on quality and the use of the structured checklist.
- In Thailand (Sennun et al 2006) district level supervisors were re-trained to improve their abilities and supervision tools were developed. The supervisors then collected and examined performance data for each facility and either problem solved with the health officer or with both the health officers and community leaders. Both interventions were liked by the 6 health officers involved. Client satisfaction and perception of quality, which was already high, decreased in the health officer intervention group ( $p=0.001$  &  $0.006$ ) and satisfaction increased very slightly (73/90 to 75/90) in the community intervention group ( $p=0.013$ ). Problem solving was seen as a democratic process and those involved in the interventions reported that they liked seeing change and learning to analyze. The interventions increased the workload of the health officer and not all of them could participate in all the intervention steps.
- Program experience suggests that health workers derive satisfaction from problem solving and participatory approaches, but that they need support (Kim et al 2000). A problem solving approach can be difficult in hierarchical settings, for example in India supervisors did not like participatory problem solving approaches as they preferred the status they got from the hierarchical system - change can be difficult and threatening (Marquez & Kean 2001)
- Feasibility issues include that a diffusion of responsibilities can leave a system with no- one in charge, and a reliance on providers to problem solve can place unrealistic expectations on their time (Marquez & Kean 2001).

### **1.11 Recommendations and conclusion**

The most promising innovative approaches were then selected. Key considerations in this selection were:

- Evidence of an impact from empirical data OR evidence of a possible impact based on program reports and theoretical consideration.
- Potential acceptability and feasibility based on program reports and information on the country context.

The following innovations were identified:

- Group supervision using revolving tools that focus on issues such as goal setting and problem solving.
- Stronger peers providing support to weaker peers through on the job training and mentoring.
- Community supervision through community monitoring of CBA performance.

- Reduced frequency of supervisory visits with between visit activities such as self assessment (with possible audio recording of consultations) and regular phone calls from a supervisor.
- Improving the quality of supervision by employing a full time central supervisor of supervisors who can mentor supervisors, model good behavior and problem solve.

The importance of data use, problem solving and the possibility of targeted supervision was an overarching theme.

This review has shown the diversity of supervision approaches that have been tried and demonstrates that many promising approaches exist. Overall study findings suggest that supervision can improve performance, however, data are not rigorous and none had motivation or retention as outcomes. Follow up times were short and little data on sustainability were located. The need for innovative supervision approaches is recognized in the national and international arenas and most countries have systems that can be built on.

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## Appendix 1: Tables of studies

### 1. Mode of supervision: Peer

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability, scalability	Moderators of impact
<p><b>Experienced nurses provide on the job training to poor performers:</b> Immunization nurses with poorly reported data or data indicating poor coverage hosted experienced nurses, selected by the district health officers, for 1-2 weeks to provide training on techniques for maintaining vaccine quality, practical advice such as injection techniques, operating the information system and strategies to increase coverage. Experienced nurses received credit towards advancement and trip expenses.</p>	<p>Indonesia: Robinso n et al 2001</p>	<p><b>Sample selection:</b> Each of the 5 districts health officers in a province selected 2-4 health centers to participate (15 selected in total).</p> <p><b>Sample size:</b> 12 intervention centers and 95 non participating as controls.</p> <p><b>Design:</b> Quasi experimental with data collected pre and post intervention.</p> <p><b>Length of intervention:</b> 11 months.</p>	<p>Vaccination coverage calculated from HIS data and adjusted with information from cluster surveys conducted pre-intervention.</p> <p>Survey of immunization management practices.</p> <p>Assessments by the trainer nurses at the start and end of the training.</p> <p>Qualitative interviews with trainers, hosts and disease control officers.</p>	<p>Overall coverage increased from 42 to 68% in the intervention centers and from 58 to 60% in the control centers (<math>p &lt; 0.001</math>).</p> <p>Number of correct practices increased from 7/12 before training to 10/12 after training.</p>	<p>Intervention was acceptable and proved popular with participants and facility managers as it was seen as practical and tackling real problems.</p> <p>Feasibility was increased by the use of nearby facilities which reduced travel costs and ensured facilities were similar. Feasibility may be hindered where there is no data to select experienced and poor performing nurses.</p>	<p>Intervention worked well because of the hierarchical structure in the study site.</p> <p>Poor availability of transport meant no impact on coverage in 2 intervention centers.</p> <p>Greatest impact was in centers where nursing staff did not change over time.</p> <p>Intervention potentially only useful in poor performing facilities</p> <p>Difficult to determine whether coverage increases were due to reporting changes.</p>
<p><b>Peer group clinical supervision:</b> Group of psychiatric nurses selected a supervision method and focus (group supervision with a focus on role development). Group was provided with a manual of supervision processes (e.g reviewing a critical incident, sharing a positive experience) and had 1 day training on peer supervision after which they developed a 'contract' for the meetings and met every 2 weeks for 1-2 hours. Peers took turns running the sessions and organized them how they wanted. Used a cycle of assessment, planning, acting, observing and reflecting.</p>	<p>Trinidad: Lakeman &amp; Glasgow 2009</p>	<p><b>Sample selection:</b> No information provided.</p> <p><b>Sample size:</b> 10 nurses</p> <p><b>Design:</b> Qualitative action research</p> <p><b>Length of intervention:</b> Not specified</p>	<p>Monthly FGD asking questions related to the assessment, planning reflection cycle.</p>	<p>Nurses reported they were more mindful of how they interacted with service users, more satisfied with their work, had enhanced roles (e.g adopted a counselor role).</p>	<p>Reflecting was acceptable but new. Several nurses reported normally suppressing recollections of work.</p> <p>Group sessions were more acceptable than individual as they were perceived as more supportive and interesting.</p> <p>Two peer groups were formed due to timing issues</p>	<p>The intervention has less impact roles and behaviors on overcrowded and busy wards.</p>
Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility,	Moderators of

					acceptability & scalability issues	impact
<b>Promote CHWs to supervisors</b>	Bangladesh: Rahman et al 2010	Intervention tried after study suffered high CHW attrition (78% over 3 years) as a means of providing CHWs with career pathway	N/A	Intervention not tested	Promotion leaves CHW positions that need filling.	
<b>Buddy system:</b> Community member meets with the CBA to go through their records and give support.	InSCALE country documents	Implemented on small scale in Uganda	N/A	Intervention not tested		

### Mode of supervision: Group

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability, scalability	Moderators of impact
<b>Group supervision with a focus on training:</b> 44 family planning facilities replaced 1 of two annual visits with a 4-6 hour group meeting with all providers in the district during which routine tasks were completed and the providers were trained on subjects they or the supervisors felt were necessary.	Guatemala: Vernon et al 1994	<p><b>Sample selection:</b> 6 areas selected based on their interest/support. 5 districts in each area selected at random and 2 assigned to this intervention 2 to a problem solving intervention and 1 to control (25 control facilities in total).</p> <p><b>Sample size:</b> Supervision records for all 71 family planning clinics. Surveys of 71 providers and 331 clients who lived within 15 blocks of 38 randomly selected clinics in the intervention and control areas.</p> <p><b>Design:</b> Quasi experimental: data collected pre- post intervention for couple years protection (CYP) &amp; post for other indicators</p> <p><b>Length of intervention:</b> 2 years</p>	Supervisor records for outcomes such as % outlets supervised and CYP. Survey of providers and clients for satisfaction outcomes	<p>11% increase in CYP compared with 22% decrease in control (non-significant difference).</p> <p>Coverage 86% 1<sup>st</sup> year of intervention (60% in control) and 96% second year</p> <p>No difference in provider or client satisfaction (high in all groups)</p>	<p>Accepted by managers who felt the increased interaction was positive and that time was used productively. They worried about the loss of supervisor presence in the facility.</p> <p>Intervention designed to be feasible with existing resources.</p>	Greater increases in CYP in health posts than health centers.

### Mode of supervision: Community

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability & scalability issues	Moderators of impact
<p><b>Community monitoring:</b> Citizen report cards summarizing key data from surveys conducted in their area disseminated and patient rights discussed through community meetings held over 2 afternoons with 100 invitees from all different spheres of life. This was followed by facility and community-facility meetings where a final action plan/contract is agreed.</p> <p>After these initial meeting communities were responsible for establishing ways to monitor providers' progress.</p>	<p>Uganda: Bjork-Man &amp; Svensson 2009</p>	<p><b>Sample selection:</b> 50 facilities in 9 districts randomly allocated to intervention and control</p> <p><b>Sample size:</b> 50 clinics 5000 households</p> <p><b>Design:</b> RCT with pre and post intervention facility and household survey</p> <p><b>Length of intervention:</b> 1 year</p>	<p>Household survey including health outcomes and utilization.</p> <p>Service delivery survey using data from records.</p>	<p>Increased quality and quantity of primary health care. E.g Significant difference in weight of infants and a 33% reduction in under-5-mortality in the treatment communities.</p> <p>20% higher utilization of outpatient facilities</p> <p>Treatment communities more engaged and began to monitor the health unit more closely.</p>		<p>Involving a large number of community members may increase the chance of action.</p>
<p><b>Health system participation:</b> Supervisor focuses on developing a relationship between the CHW and the community through supervisors facilitating the CHWs conducting a survey of community needs, heightening CHW visibility and designing an information system that is based on sharing information with the community</p>	<p>Colombia: Robinson &amp; Larsen 1990</p>	<p>Intervention was suggested after a survey of 186 randomly selected CHWs found that community interactions, support and observing changes in health were the most highly rated influencers of performance.</p>	<p>Tools used in survey that identified the need for the intervention included job diagnostic survey, work performance scale and ranking of factors influencing performance.</p>	<p>Intervention not tested</p>	<p>Observations from CHW programs across Latin America suggest community participation is usually passive - this may impact the feasibility of the intervention.</p>	

## Mode of supervision: Self assessment

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability & scalability issues	Moderators of impact
<p><b>Self assessment to consolidate skills after training:</b> Family planning providers received 5 days training on client centered approach to family planning.</p> <p>Two interventions tested:</p> <ol style="list-style-type: none"> <li>1. Self assessment: Each week providers spent 15-20 minutes using a 2 page open ended form to evaluate one counseling session. Each week the form focused on 1 of 8 skill areas. The form included identifying 2 behaviors to improve in the following weeks and has space for recording outcomes</li> <li>2. Self assessment and peer groups meeting: As above but in addition a weekly 30-60 minute peer meeting using a discussion guide that reflected the SA topic for that week. Groups did not have a moderator or facilitator.</li> </ol> <p>Providers had ½ days training on the interventions and after initial difficulties defining behavior goals a single problem solving meeting was held.</p>	Indonesia: Kim et al 2000	<p><b>Sample selection:</b> 6 matched districts in 2 provinces. In each province 1 district served as a control, 1 received the self assessment intervention and 1 received self assessment and peer group meetings.</p> <p>Clinics in districts randomly chosen and 1-2 providers in each clinic asked to participate (selection of providers unclear), each provider randomly identified 6 clients to participate in a survey before training (2), immediately after training (2) and at a later date (2).</p> <p><b>Sample size:</b> 170 clinics, 201 providers and 1,210 clients.</p> <p><b>Design:</b> Quasi experimental with data collected pre and post intervention.</p> <p><b>Length of intervention:</b> 16 weeks</p>	<p>Counseling skills by coding audiotapes of consultations.</p> <p>Exit interviews on clients' perception of the sessions in terms of self efficacy, self expression and satisfaction.</p> <p>Qualitative interviews with providers about their experiences.</p>	<p>Comparing post training to post intervention levels facilitative communication increased from 28 to 33% of utterances in the SA group, from 28 to 36% in the SA and peer meeting group and did not change in the control (<math>p &lt; .0001</math> for changes in intervention groups)</p> <p>Levels of active communication increased from 12 to 15% of utterances in the SA group, from 12 to 17% in the SA and peer meeting group and did not change in the control (<math>p &lt; .0001</math> for changes in intervention groups)</p> <p>Client perceptions had small but statistically significant changes in the SA group but not in the control or SA and peer meeting group.</p>	<p>Inexpensive and feasible due to a simple and uncomplicated design.</p> <p>Despite no support from supervisors all providers completed the 16 week process, however some providers did not have time to complete the SA form between clients and completed them later - they then had problems remembering what had happened</p>	<p>Impact of intervention was greater with educated clients and amongst more experienced providers.</p> <p>The intervention followed training which may have motivated the providers to complete the SA.</p>
Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability &	Moderators of impact

					scalability issues	
<p><b>Supervisor training and self assessment as follow up to training:</b> Resident doctors trained for 2 days on interpersonal communication (IPC) with a half day refresher 5 months later. During the refresher training intervention doctors were trained on the intervention.</p> <p>Participating supervisors attended a 3 day training on IPC, evaluating IPC quality supervisory skills and use of assessment tools (e.g. observation checklist)</p> <p>At the 2 monthly supervision visit intervention supervisors observed interactions with patients, gave feedback and identified areas needing improvement which were reviewed at subsequent visits.</p> <p>Between visits the doctors were encouraged to use every interaction with a patient as an opportunity to practice new skills and were asked to audiotape 2 consultations a month. The doctors listened to the consultation and assessed their performance with a job aid covering essential IPC skills and explaining meaning, importance and how to perform the skill. Some doctors also completed additional written self assessment on a specific communication skill</p> <p>Control doctors received regular supervision i.e 1 day every 2 months by experiences supervisors with a focus on standards of care.</p>	Mexico: Kim et al 2002	<p><b>Sample selection:</b> 6 supervision zones in 1 region randomly divided into intervention (4 zones) and control (2 zones).</p> <p>No data on selection of doctors except that it was not random.</p> <p>Data collected from all clinics with first 3 patients of the day selected for audiotaping and interview.</p> <p><b>Sample size:</b> Subset of data from a larger study of patients with complete data. Post test data from 157 patients, 60 students from 60 clinics. Cohort data available for 28 doctors (21 of whom are from the intervention group) who saw 147 patients</p> <p><b>Design:</b> Quasi experimental post test design with a smaller pre-post cohort.</p> <p><b>Length of intervention:</b> 4 months</p>	<p>IPC skills through coding audio taped consultations.</p> <p>Individual interviews for socio demographic characteristics and work experience of supervisors, doctors and patients</p> <p>Qualitative data collected at end of study to explain findings</p>	<p>Number of utterances (expressed thoughts) was much higher in the intervention group than in the control (196 versus 128).</p> <p>Higher frequency of facilitative utterances in intervention than control group (48 versus 30) (<math>p &lt; 0.001</math>), this remained significant in a regression model controlling for confounding. Cohort data confirm this finding.</p> <p>Intervention doctors provided 63% more biomedical information and counseling than control group (<math>p &lt; 0.0001</math>), this remained significant in a regression model. Cohort data confirmed the finding.</p> <p>No different in active patient communication between intervention and control doctors.</p>	<p>Intervention was acceptable with doctors reporting that the assessment was strongly motivational. However they initially found the audiotaping daunting (asking clients if they could record, hearing themselves, sharing the recording with the supervisor).</p> <p>Intervention feasible in well run setting, however supply and maintenance of tape recorders was problematic and each assessment took 30-60 minutes.</p>	<p>New doctors may be more open to influence and thus more accepting of SA.</p> <p>High loss to follow up may have influenced the results</p>
<b>Innovation:</b>	<b>Source</b>	<b>Approach</b>	<b>Tools/outcomes</b>	<b>Evidence</b>	<b>Feasibility, acceptability &amp; scalability issues</b>	<b>Moderators of impact</b>
<b>Self assessment with peer</b>	Mali:	<b>Sample selection:</b> Intervention	Fever care	54% overall compliance to care	Extra work involved in	Availability of

<p><b>observation:</b> Peri-urban health workers completed a self monitoring tool with 17 questions on the care of fever. The tool was completed once a week based on the first person who presented with fever each Monday morning.</p> <p>The consultation was also observed and an assessment form completed by a peer. The provider and peer then discussed the results.</p> <p>Monthly forms on clinic statistics and structural quality (stock outs, seating for patients, hand washing facilities etc) were completed by the person in charge of the clinic with a colleague.</p> <p>To ensure compliance forms dropped off/picked up each Friday by the study coordinator.</p>	<p>Kelley et al 2003</p>	<p>group selected by study team in consultation with study coordinator. No other information provided.</p> <p><b>Sample size:</b> 12 intervention and 24 control providers observed three times post intervention. This corresponds to 103 client-provider interactions</p> <p><b>Design:</b> Quasi experimental post test.</p> <p><b>Length of intervention:</b> 3 months</p>	<p>standards: proportion of observed tasks performed correctly.</p> <p>Qualitative data on the implementation process.</p>	<p>standards in the intervention group, 10% higher than the control group (<math>p &lt; 0.001</math>)</p> <p>12% difference between intervention and control group in compliance with assessment standards (<math>p &lt; 0.005</math>) but no difference in counseling standards.</p> <p>No difference in terms of complying to structural quality standards.</p>	<p>completing the SA and long duration of the study was mentioned as discouraging.</p> <p>Staff turn over meant sensitization work had to be repeated.</p>	<p>transport and the interest of the district medical officer was key to successful implementation.</p> <p>Intervention was in a peri-urban area which may moderate impact and affect feasibility.</p>
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Draft not for citation

## Mode of supervision: Two tiered

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability & scalability issues	Moderators of impact
<p><b>Two tier supervisory system using a checklist:</b> STI providers supervised routinely by state level supervisors. Supervisory visits to 10% of clinics per quarter were made by a central level team with the state supervisors. The central supervisors used a quality monitoring tool, developed in a participatory manner, to assess five performance areas (e.g. quality of care, coverage and community involvement).</p> <p>The tool took 2-3 hours with active involvement of the providers.</p> <p>The central team generated a technical report with recommendations leading to immediate actions which were followed up by the state supervisors</p>	<p>India: Mogasale et al 2010</p>	<p><b>Sample selection:</b> All clinics visited by central supervisory team. These clinics were chosen in conjunction with the state partners.</p> <p><b>Sample size:</b> 292 clinics</p> <p><b>Design:</b> Observational with data collected post intervention. Data collated at visit 1,3 and 5.</p> <p><b>Length of intervention:</b> 45 months</p>	<p>Performance collated from the checklist</p>	<p>All 5 performance indicators showed consistent improvement (three-fold increase) over the 45 months of observation (<math>p &lt; 0.001</math>).</p> <p>The first year had accelerated quality improvement, the second and third year showed a slow but quality continued to increase. In the fourth year performance appears to have stabilized.</p>	<p>Difficult to apply the tool in busy clinics</p>	

## 2. New tools: Checklists

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability & scalability issues	Moderators of impact
<p><b>Training in basic supervision skills and introduction of checklist:</b> Indicators of what midwives should do identified with program managers and drafted into a checklist that scores each indicator (0-3) and records information over time to monitor changes in performance.</p> <p>All public health nurses, municipal health officers and supervisors were given a two day training on the use of the checklist, including 1 day in the field, and a brief introduction to supervision theory and giving feedback.</p> <p>Checklists were completed using clinic records and by asking midwives knowledge questions.</p>	<p>Philippines: Loevinsohn et al 1995</p>	<p><b>Sample selection:</b> 4 remote provinces in urgent need of management improvement chosen by MOH as intervention and 6 in same region chosen as control.</p> <p>124 health facilities randomly selected. No information provided on selection of midwives within a facility.</p> <p>Infants in household survey sampled using WHO cluster method.</p> <p><b>Sample size:</b> 49 intervention and 63 control facilities. Number of midwife included was not provided.</p> <p>31 validations of supervisor use of the checklist.</p> <p>560 infants included in the household survey to validate midwife record keeping.</p> <p><b>Design:</b> Quasi experimental with data collected pre and post intervention</p> <p><b>Length of intervention:</b> 6 months</p>	<p>Facility performance measured using checklist</p> <p>Supervisors' use of checklist validated against supervisor from central office.</p> <p>Midwives' record keeping validated against household data.</p> <p>FGDs with midwives and supervisors.</p>	<p>Average clinic performance score improved in the intervention clinics from 26/60 to 37/60 and in the control clinics from 27/60 to 32/60 (p=0.003 comparing change in intervention and control areas).</p> <p>In intervention clinics there was a does response between supervision frequency and improvement (p=0.007) but not in the control clinics.</p> <p>There was 1.45 (CI 0.08-2.82) more supervision visits in the intervention area post intervention.</p> <p>There was high correlation between the local and central supervisors use of the checklist (correlation coefficient =0.975) and there was no evidence that midwives falsified their records.</p> <p>Midwives felt the checklist was motivational and reminded them of important tasks.</p>	<p>Intervention was acceptable with midwives and supervisors saying it improved relationships. The midwives liked its objectivity and the supervisors liked having clear and concise supervision method.</p> <p>Assessment was feasible and took approximately 1 hour but relies on the availability of good clinic data.</p>	<p>Scores for some indicators were already high at baseline and thus did not change.</p>
Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability & scalability issues	Moderators of impact

<p><b>Checklist developed as a result of quality assurance training of PHC supervisors:</b> PHC supervisors were trained in quality assurance over 3 days. Training included the use of flow and cause/effect diagrams to improve work processes as well as and group decision making to develop high performance work teams.</p> <p>Supervision competencies were selected as a priority for QA and supervisors agreed to conducted monthly visits to evaluate performance using a diarrhea case management checklist.</p>	<p>Nigeria: Zeitz et al 1993</p>	<p><b>Sample selection:</b> No information provided except that the district was selected for convenience.</p> <p><b>Sample size:</b> 10 supervisors, 29 checklists pre and 31 post intervention</p> <p><b>Design:</b> Pre-post</p> <p><b>Length of intervention:</b> 2 months</p>	<p>Treatment of diarrhea based on checklists for a simulated case.</p>	<p>% diarrhea cases correctly classified in the simulation increased from 41 to 74% (<math>p &lt; 0.005</math>).</p> <p>History taking also improved (e.g asking about home treatment used increased from 52 to 81%) (<math>p &lt; 0.05</math>).</p>	<p>PHC supervisors could understand and use the flow and cause/effect diagrams.</p> <p>It was not practical to observe diarrhea consultations due to infrequent attendance at the clinic of children with diarrhea.</p>	
<p><b>Checklist related to rational drug use:</b> District supervisors were provided with the checklist and then visited clinics for supervision 1 and 3 months after training.</p> <p>Control clinics received training but no supervision</p>	<p>Nepal: Kafle et al 1997</p>	<p><b>Sample selection:</b> 9 districts randomly selected and allocated to intervention (3) or control (6). 4 health posts randomly chosen in each district and 3 close by sub posts.</p> <p><b>Sample size:</b> 63 health facilities. 30 prescriptions collected and 10 observations made per clinic.</p> <p><b>Design:</b> RCT</p> <p><b>Length of intervention:</b> 6 months</p>	<p>Cases treated in accordance with guidelines, cases treated with injection, cases treated with antibiotics, average drugs per case, consultation length.</p>	<p>Significant difference between the control and intervention group in:</p> <ul style="list-style-type: none"> <li>- Prescribing according to standards (20% difference)</li> <li>- Injection practices</li> <li>- Consultation time (66 second difference)</li> </ul> <p>Non significant difference in other indicators</p>		

### 3. Focus of supervision: Applying a model

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability, scalability	Moderators of impact
<p><b>Supervisors trained in ‘modified matrix model’:</b> Supervisors (head nurses, primary health care coordinators, zone matrons, program managers) from hospitals and clinics trained for 5 days over a 3 month period. Training focused on the supervisor-supervisee relationship, the institutional and client environment and the tasks and functions of the supervisor and supervisee. The 6 functions of the supervisor were: relate, develop, evaluate, monitor, counsel and administer.</p> <p>Control received standard MOH supervisor training.</p>	<p>South Africa: Uys et al 2005</p>	<p><b>Sample selection:</b> One of 3 districts assigned to modified matrix intervention, one to CHES intervention (see below) and one to control. No information on district selection.</p> <p>3 hospitals and 6 clinics selected in each district. 3 clinics were randomly chosen and 3 were chosen based on proximity to sampled clinics.</p> <p>Hospital records were randomly sampled. No information on patient or supervisee selection.</p> <p><b>Sample size:</b> Level of perceived supervision n=70 pre and 45 post intervention in the intervention district and 12 and 13 in the control district. No sample size provided for job satisfaction data.</p> <p>Quality of care in clinics n=59 pre and 48 post intervention in the intervention district.</p> <p>Quality of care in hospitals n=45 pre intervention and 45 post-intervention in both intervention and control districts.</p> <p>Patient satisfaction n=123 pre and 20 post intervention in the intervention districts.</p> <p><b>Design:</b> Quasi experimental, pre and post intervention data collection.</p> <p><b>Length of intervention:</b> Unspecified.</p>	<p>Perceived supervision level measured with a 12 item scale.</p> <p>Job satisfaction survey.</p> <p>Quality of care measured with a checklist competed from clinic records /observations on quality of diabetes and hypertension care.</p> <p>Quality of patient documentation measured in hospitals using Nursing Records Standard Sheet.</p> <p>Patient satisfaction measured using self completed Patient Satisfaction Questionnaire or a shorter fieldworker administered questionnaire (illiterate patients).</p>	<p>Perceived supervision level score in intervention district was 33/60 pre intervention and 32/60 post intervention. In the control district the levels changed from 20/60 to 36/60 (p=0.39).</p> <p>Job satisfaction in the intervention area changed from 122/190 pre intervention to 75/190 post intervention (p=non significant). No data from control area.</p> <p>Quality of care in clinics was 11/15 pre intervention and 12/15 post intervention (p=0.18). No data from control area.</p> <p>Quality of documentation in hospitals was 15/82 pre intervention and 11/82 post intervention. In the control district the levels changed from 13/82 to 11/82 (p=non significant).</p> <p>Patient satisfaction was 11 pre intervention and 15 post intervention (p=non-significant). No data from control district.</p>		<p>Quality of care could have been influenced by issues such as staff levels and bed occupancy rather than supervision.</p>

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability & scalability issues	Moderators of impact
<p><b>Supervisors trained in CHES model:</b> Supervisors of clinics (head nurses, primary health care coordinators, zone matrons, program managers) were trained on the quality of individual patient care and to develop indicators to monitor quality. Training also included understanding and practicing comprehensive primary health care.</p> <p>A continuous quality improvement tool for monitoring and implementing change was utilized.</p> <p>A population based element (including clients and community representatives) was introduced for the prioritization of steps for action.</p>	<p>South Africa: Uys et al 2005</p>	<p><b>Sample selection:</b> As above except hospitals excluded.</p> <p><b>Sample size:</b> Quality of care in clinics n=22 pre and 47 post intervention in the intervention district.</p> <p>Patient satisfaction n=52 pre intervention and 30 post intervention in the intervention districts.</p> <p><b>Design:</b> Pre and post intervention.</p> <p><b>Length of intervention:</b> Unspecified.</p>	<p>As above but only pre-post data on quality of care in clinics and patient satisfaction available.</p>	<p>Quality of care in clinics was 10/15 pre intervention and 11/15 post intervention (p=0.39). No data from control area.</p> <p>Patient satisfaction was 14 pre intervention and 14 post intervention (p=non-significant). No data from control district.</p>		

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## Focus of supervision: problem solving

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability & scalability issues	Moderators of impact
<p><b>Training on topic specific supervision with a focus on deficiencies identified in a survey:</b> Pharmacy staff trained to undertake supervision either focusing on stock management or adherence to standard technical guidelines (STG).</p> <p>Two supervision visits were made 3 months apart, at each visit the supervisors initiated discussion focusing on deficient areas (as revealed by the baseline survey) and together they agreed on ways improve knowledge and performance.</p>	Zimbabwe: Trap et al 2001	<p><b>Sample selection:</b> Intervention districts (8) randomly selected from 4 provinces where supervisors were available. Control districts (6) randomly selected from the 3 other provinces. In the intervention districts health facilities were matched based on their baseline performance and one was randomly allocated to receive either stock management or adherence to technical guideline supervision.</p> <p><b>Sample size:</b> 24 facilities in each group and 10 supervisors.</p> <p><b>Design:</b> Quasi-experimental with pre and post intervention.</p> <p><b>Length of intervention:</b> 9-11 months.</p>	<p>Stock management measured based on availability, use of stock cards, monthly ordering etc. of 12 drugs and 3 medical supplies.</p> <p>STG measured by randomly selecting 30 patients from the out-patients register who had 1 of 4 common conditions and extracting diagnosis, drug dose/duration.</p>	<p>Modest but significant improvements in both intervention groups – with some evidence that focused interventions can have an impact on overall performance.</p> <p>Overall stock management score improved by 7% in the stock management group and decreased by 7% in the STG intervention group and control groups (p&lt;0.001)</p> <p>Overall STG scores improved by 19% in the STG group, 6% in the stock management intervention group and decreased by 10% in the control group. However differences were only significant for non STI related conditions (P&lt;0.001).</p>	<p>Intervention was feasible as it used existing staff and had a low frequency of supervision visits.</p> <p>Pharmacy staff who had not previously been expected to provide clinical supervision successfully.</p>	<p>Interventions rely on extraneous factors such as drug availability.</p> <p>Intervention may not have been as successful without a baseline survey to identify areas of need.</p>
<p><b>Supervisor completed observational checklist and joint problem solving:</b> Health workers received 2 weeks family planning training. Three supervisors (clinicians and health educators) then conducted 5 visits over a 1 year period to observe sessions with checklists (same as those used in training) discuss results and sought solutions with the HW, clinic/hospital directors and provincial and national health directorates. HW assessed themselves on interpersonal-interactions.</p>	Turkey: Ozek et al 1998	<p><b>Sample selection:</b> No information provided.</p> <p><b>Sample size:</b> 15 clinics and between 13-60 observations.</p> <p><b>Design:</b> Observational with data collected only post intervention using checklists. Data collated at visit 1,3 and 5.</p> <p><b>Length of intervention:</b> 1 year</p>	Checklists collated (including interpersonal interaction, general and method specific counseling, facilities and infection prevention procedures).	<p>Anecdotal evidence that information sharing, communication and motivation was increased.</p> <p>1st visit 6/15 clinics had no counseling room, 2/15 conformed with infection prevention standards and 0/15 providers had adequate counseling skills by 5th visit all performed adequately on these indicators.</p>	Feasibility limited by the high level and number of supervisors making each visit and by lengthy checklists	Impact may not be due to intervention (secular change /selection bias).

Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility, acceptability, scalability	Moderators of impact
<p><b>Supervisors trained in Quality Assurance:</b> Supervisors of health facilities trained in quality assurance (i.e. data collection and utilization, monitoring indicators, problem identification and solving. A supervision plan was developed during the training and supervisors were provided with rapid assessment tool for child health services and supervision checklist.</p> <p>Technical assistance was provided to develop a district level management team which included a ‘coach’ to help providers identify and solve problems using local resources and limited financial support was given for transport.</p> <p>A drug cost recovery program was also implemented and all providers and supervisors were trained in IMCI.</p>	<p>Niger: Tawfik et al 2001</p>	<p><b>Sample selection:</b> No information provided</p> <p><b>Sample size:</b> 13 health facilities in two districts</p> <p><b>Design:</b> Pre and post intervention.</p> <p><b>Length of intervention:</b> 1 year</p>	<p>No information provided</p>	<p>Prior to intervention no supervisory visits had been conducted, after the intervention all scheduled visits were made</p>	<p>Supervisors felt the checklist was too long.</p> <p>Problem solving techniques were well understood, especially brain storming for prioritization and matrix analysis for selection solutions</p>	
<p><b>District level workshops to discuss evaluation of yearly action plan:</b> Task force of 4 people collect information and present evaluation data with a focus on preparation and follow up of supervisory activities to a district level working group to discuss successes and failures, problems and their causes and possible solutions and prepare a plan of action.</p> <p>Plan for action included morning sessions and monthly meetings with members of the district health management team.</p>	<p>Tanzania: Ahmed et al 1993</p>	<p><b>Sample selection:</b> Members of health management team and heads of health units. No information on selection provides.</p> <p><b>Sample size:</b> 9 members of health management team and 6 heads of health unit</p> <p><b>Design:</b> Pre and post intervention interviews</p> <p><b>Length of intervention:</b> 1 year</p>	<p>Interviews on satisfaction with preparation, participation and follow up of supervision.</p> <p>Examination of documents to assess whether meetings were established and supervision preparation and follow up.</p>	<p>Increase in satisfaction of health management team with supervision.</p> <p>Supervision objectives and targets considered, schedule prepared and distributed to health facilities, entire health management team involved in preparing supervision activities. Pre intervention only a few members were involved.</p> <p>Irregular attendance at morning sessions.</p>		
Innovation:	Source	Approach	Tools/outcomes	Evidence	Feasibility,	Moderators of

					acceptability & scalability issues	impact
<p><b>Supervisor collects data and problem solved with health provider:</b> 3 district level supervisors retrained to improve their abilities, to plan for supervision of primary care units (PCU) and develop instruments and documents. The supervisors then worked with health officers to establish treatment and health promotion criteria and collected and examined monthly performance data. The supervisor and health officer analyzed work performance, compared outcomes with targets, identified problems and solved.</p>	Thailand: Sennun et al 2006	<p><b>Sample selection:</b> PCU selection criteria included having enthusiastic and responsible staff with a good relationship with the community and their supervisors. PCU health officers were selected based on their work performance meeting minimum requirements. No information on how clients were selected except that it was a convenience sample.</p> <p><b>Sample size:</b> 3 supervisors, 3 health officers in and 195 clients (these include clients in this intervention PCU and in the community intervention PCU described below).</p> <p><b>Design:</b> Pre and post intervention</p> <p><b>Length of intervention:</b> 6 months</p>	<p>Health officers completed 33 item job satisfaction survey.</p> <p>Clients completed a survey including an 18 item scales on perception of service quality and care satisfaction.</p> <p>Semi-structured interviews, reviews of reports and observations with a checklist were also used.</p>	<p>Increase in health officer job satisfaction (n=6)</p> <p>Clients perception of service quality decreased from 81/95 pre intervention to 78/95 post intervention (p=0.001) and for client satisfaction from 74/90 to 72/90 (p=0.006).</p> <p>The acceptance and respect between health officer and supervisor increased (qualitative data).</p>	<p>Intervention was acceptable - those involved reporting that they liked the democratic process, seeing change, learning to analyze problems and find solutions.</p> <p>Long term feasibility may be hindered by the intervention increasing the work load of the health officers and because not all the health officers could participate in all the supervision steps.</p>	Impact may not be due to intervention (secular change /selection bias)
<p><b>Community collects data and problem solves:</b> As above for supervisor training and numbers of supervisors and health officers. Supervisors facilitated establishing action plan for treatment and health promotion, expected outcomes, collected data, health officers present data and the supervisors, health officers and community leaders (teacher, headman, housewife etc) problem solve.</p>	Thailand: Sennun et al 2006	As above	As above	<p>Increase in health officer job satisfaction (NB n=6)</p> <p>Clients' perception of service quality was similar pre and post intervention. Client satisfaction increased from 73/90 to 75/90 (p=0.013).</p> <p>The health officers felt less alone and the supervisors felt the intervention promoted a sense of belonging.</p>	<p>Intervention was acceptable - those involved reporting that that they liked that a range of people participated and the community was proud to be part of the team.</p> <p>Feasibility issues as above.</p>	As above
<b>Innovation:</b>	<b>Source</b>	<b>Approach</b>	<b>Tools/outcomes</b>	<b>Evidence</b>	<b>Feasibility, acceptability &amp;</b>	<b>Moderators of impact</b>

<p><b>Provider completed checklist and joint problem solving:</b> 1 of two annual supervisory visits replaced with a 2 day district level meeting run by supervisors who had received 5 days training. Each staff member completed a checklist to identify solvable problems and together chose 5-10 things to change and made and action plan. In the subsequent visit the supervisor assessed the level of improvement.</p>	<p>Guatemala: Vernon et al 1994</p>	<p><b>Sample selection:</b> 6 areas selected based on their interest/support. 5 districts in each area selected at random and 2 assigned to this intervention 2 to an indirect supervision intervention and 1 to control (25 control facilities in total).</p> <p><b>Sample size:</b> Supervision records for all 71 family planning clinics in the intervention and control areas. Surveys of 71 providers and 331 clients who lived within 15 blocks of 38 randomly selected clinics in the intervention and control areas.</p> <p><b>Design:</b> Quasi experimental with data collected pre and post intervention for couple years protection (CYP) and post intervention for other indicators</p> <p><b>Length of intervention:</b> 2 years</p>	<p>Supervisor records for outcomes such as % outlets supervised and CYP.</p> <p>Survey of providers and clients for satisfaction outcomes</p>	<p>7% increase in CYP compared with 22% decrease in control (non-significant difference).</p> <p>Coverage 99% 1st year of intervention (60% in control) and 77% second year</p> <p>No difference in provider or client satisfaction (high in all groups)</p> <p>After 1 year 80% of identified problems were solved</p>	<p><b>scalability issues</b></p> <p>Accepted by managers who liked the focus on quality and the use of structured checklists.</p> <p>Intervention designed to be feasible with existing resources.</p>	<p>Greater increase in CYP in health centers than health posts</p> <p>More complex problems less likely to be solved.</p> <p>Would need to change checklists over time to give sense of novelty which would require high level input.</p>
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