District Clinical Specialist Teams

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In its commitment to the Millennium Development Goals, South Africa has embarked on significant health reforms to reach the targets set. Integral to achieving the targets has been the adoption of a three-stream approach to primary health care (PHC) re-engineering, which includes municipal ward-based outreach teams, integrated school health teams, and district clinical specialist teams.

The authors describe the developments and progress in the implementation of the District Clinical Specialist Team (DCST) stream of PHC re-engineering. The concept of a DCST being responsible for supporting health service delivery at district level, through the provision of clinical leadership and mentoring, and through facilitating health system strengthening for quality care, is new in South Africa. This chapter is thus largely descriptive, outlining the policy and strategic background underpinning the DCST stream; describing the DCST composition, roles and responsibilities; providing an update on DCST recruitment and appointments; discussing DCST induction and orientation; and documenting early DCST achievements.

The authors conclude by offering reflections and recommendations based on DCST implementation to date, and highlight the need for strengthened mentoring and coaching practice for sustainability, the integration of the DCST stream with other PHC strengthening endeavours and district-level co-ordination of programmes for improved maternal and child health outcomes.

The concept of a District Clinical Specialist Team being responsible for supporting health service delivery at district level, through the provision of clinical leadership and mentoring, and through facilitating health system strengthening for quality care, is new in South Africa.

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Introduction

In its commitment to the Millennium Development Goals (MDGs), South Africa has undertaken significant reforms to reach the MDG targets. With regard to achieving the health-related MDGs, South Africa has embarked on health sector reforms specifically aimed at strengthening the primary health care system and district-level interventions, recognising their critical role in achieving the MDGs by December 2015.[1] Reducing maternal and child mortality and strengthening health system effectiveness are strategic outputs in the Negotiated Service Delivery Agreement (NSDA) signed by the National Minister of Health with the President, and between the Minister and each of the members of the Executive Councils responsible for health.[2] Integral to achieving the NSDA strategic outputs has been the adoption of a three-stream approach to primary health care (PHC) re-engineering, which includes the establishment of municipal ward-based outreach teams, integrated school health teams, and district clinical specialist teams.

The District Clinical Specialist Team (DCST) stream of PHC re-engineering was formally launched by the National Minister of Health at a two-day national workshop in September 2012. The Minister's presentation outlined the central role of the DCSTs in improving the quality of care and health outcomes at district level for mothers, newborns and children. Through the initial recruitment process in 2012, 172 DCST appointments were made, comprising 47% of the estimated 364 posts to be filled nationally.3 Since then, scaling up the implementation of the DCST stream has been guided by the 10 recommendations set out in the Ministerial Task Team (MTT) Report.[4]

This chapter deals with developments and progress in the implementation of the DCST stream of PHC re-engineering by: outlining the policy and strategic background underpinning the DCST stream; describing the DCST composition, roles and responsibilities; providing an update on DCST recruitment and appointments; discussing DCST induction and orientation; and documenting early DCST achievements. The chapter concludes with reflections on DCST implementation to date, and recommendations for the further implementation, sustainability and strengthening of the DCST stream.

Policy and strategic imperatives underpinning the DCST

The policy imperatives underpinning the design and implementation of the DCST stream of PHC re-engineering in South Africa rest on international, continental and national initiatives, as does the initial DCST strategic focus on reducing maternal, newborn and child mortality.

Primary Health Care – now more than ever

The World Health Report 2008 entitled "Primary Health Care – now more than ever" and launched in Kazakhstan on the 30th anniversary of the Declaration of Alma Ata, called for a return to the values, principles and approaches of primary health care.[5,6] The Report compared countries at the same level of economic development and showed that those where health care is organised around the tenets of primary health care have better health outcomes for the same investment. Also highlighted was worldwide dissatisfaction with health systems and a call for reorientation of health systems to provide a full range of health care, from households to hospitals, and from preventive to curative care.[7] To address inequities in access to and quality of health care, and to achieve optimal health system performance, the Report recommended four broad policy directions: universal coverage; people-centred, quality service delivery supporting an integrated continuum of care; healthy public policies; and strengthened, distributed and facilitatory leadership.[5]

The transformation of South Africa's health sector around key strategic foci aims to operationalise the policy directions recommended by the World Health Report 2008.[5] Specifically, the DCST stream of PHC re-engineering is intended to improve the quality of care along a continuum, through: the provision of clinical leadership, mentorship and support; health system strengthening; and improved clinical governance.[8] Furthermore, DCSTs facilitate the integration of health programmes at the point of care.

Strengthening the District Health System

South Africa remains committed to the District Health System (DHS) as the vehicle for the implementation of PHC and its values, principles and approaches. South Africa has made significant access and equity gains in the implementation of the DHS, but has performed poorly with regard to delivering quality care and in achieving target health outcomes.[4,9] Major challenges identified as hindering performance are poor supervision and weak management, inadequate co-ordination, insufficient clinical oversight and weak governance.[9]

DCSTs are uniquely located in the District Health System to contribute significantly to enhancements in the quality of clinical services, strengthening the health system, providing clinical leadership, and promoting clinical governance.[8] Since the launch of DCSTs in 2012, provinces have been recruiting and appointing team members who are expected to work closely with district health management teams and district maternal and child health programmes[8] in overseeing the quality, and ensuring the integration, of clinical services provided by community-based, clinic-based, health centre-based, and district hospital-based health services.[9] It is also expected that the DCSTs will work closely with the other two streams of PHC re-engineering.[4]

Focus on maternal, newborn and child health

Following the 2010 country report on the MDGs to the United Nations General Assembly, which declared the unlikelihood of expected reductions in maternal and child mortality being achieved, PHC re-engineering was introduced in South Africa.[8] Furthermore, the Campaign on Accelerated Reduction of Maternal and Child Mortality in Africa (CARMMA) – introduced in the Fourth Session of the African Union (AU) Conference of Ministers of Health in Ethiopia in 2009 – was launched in South Africa in 2012, as was the 2012–2016 Maternal, Newborn, Child and Women's Health and Nutrition (MNCH&N) Strategy, with associated indicators to monitor implementation and progress.[8] The Ministerial Committees on maternal, perinatal and child mortality have continued to provide recommendations to address the major causes of death[8] and to deal with the modifiable factors contributing to avoidable mortality. These foundations have underpinned the initial strategic focus for DCSTs on reducing maternal, newborn and child mortality.

DCST composition, roles and responsibilities

To secure expert guidance on the composition, roles and responsibilities of DCSTs, the Minister of Health appointed a Ministerial Task Team (MTT) in 2011, comprising senior academics and clinicians in both medicine and nursing. The MTT recommendations were presented to the Minister and adopted in 2012. Key issues discussed by the MTT included: ideal and alternative models for DCSTs; the country's ability to recruit medical specialists to DCSTs, given the existing shortages of medical specialists in the public health sector; the need for appointed specialists to be employed on a full-time rather than part-time basis; issues related to working with private medical specialists, should they express an interest in support of the public health sector; remuneration and conditions of employment of DCSTs; induction and orientation of DCSTs; and monitoring and evaluation of the value added by DCSTs.

The standard, nationally accepted structure for a DCST, monitored by the National Health Council, is of seven specialists in each district, comprising three medical and three nurse specialists from obstetrics and gynaecology, paediatrics and family medicine/PHC, and one anaesthetist as listed in Box 1. The focus on maternal, newborn and child health is reinforced in the composition of the DCSTs.

Box 1: Recommended composition of District Clinical Specialist Teams

- Obstetrician and Gynaecologist
- Advanced Midwife
- Paediatrician
- Paediatric Nurse Specialist
- Family Physician
- Primary Health Care Nurse Specialist
- Anaesthetist

The MTT recommended the inclusion of an anaesthetist in an expanded role to oversee emergency and peri-operative care, given the large number of maternal deaths resulting from inadequate expertise in this area, especially in district hospitals.[4]

Towards the provision of clinical leadership, mentorship and support to health facilities and services within districts, the Handbook for District Clinical Specialist Teams outlines the roles of DCSTs in terms of team-work as follows:

- improving the quality of clinical services, through the provision and strengthening of clinical leadership and clinical supervision;
- providing clinical training, and monitoring and evaluation;
- supporting district-level organisational activities;
- supporting health systems and logistics;
- ensuring collaboration, communication and reporting; and
- conducting teaching and research activities, relevant to key issues hindering quality of care in their districts.[8]

The specific responsibilities of DCSTs are to support the clinical practice of frontline health workers through:[8]

- conducting a situational analysis of maternal, newborn, child and women's health (MNCWH) services;
- ensuring root cause analysis towards the identification of priorities;
- ensuring evidence-based planning;
- ensuring the implementation of the four tiers of clinical governance, i.e. ensuring clinical effectiveness; clinical risk management; professional development and management; and people-centred accountability;
- supporting the strengthening of management systems, including information management and supply chain management; and
- supporting the integration of the three streams of PHC re-engineering.

DCST roles and responsibilities are primarily intended to be implemented as teams. Some responsibilities may require DCSTs to operate as dyads, and/or as discipline specialists, depending on the task at hand. Critical to effectiveness are the co-ordination of team activities, and support provided by provincial specialists and by district managers.[8] With regard to team co-ordination, the MTT recommended that the family physician be the leader of the DCST.[4] This recommendation has been implemented in the North West Province, building on what existed in the province prior to the introduction of the DCSTs. However, due to the incomplete composition of many DCSTs, the leadership of the team has been decided on organically, depending on the actual composition of the team in a particular district, and on the experience and qualities of the individuals appointed to the team. In some districts, leadership of the team rotates every quarter.

The Minister proposed that each province appoint provincial specialists at least in obstetrics and gynaecology, and in paediatrics. Provincial specialists are to provide technical support to the DCSTs, and hold DCSTs clinically accountable. District managers are to provide administrative support to the DCSTs, and hold DCSTs administratively accountable.[8] District managers are to ensure a supportive environment for DCSTs by securing the necessary resources for the actualisation of DCST roles, and by managing the performance of DCSTs.[8] Furthermore, to facilitate the DCST clinical training, teaching and research roles and responsibilities, DCSTs are to have access to a fully equipped training/resource centre in their respective districts.

Provincial variations in the implementation of the DCST stream

In recognition of the potential difficulty in appointing a full team to each district, the MTT provided recommendations for a minimum DCST composition in the short term.[4] To suit provincial contexts and health service delivery needs, provinces have implemented varied approaches to realising the DCST stream of PHC re-engineering. Provinces with adapted approaches include the Western Cape, the North West and Gauteng.

In the Western Cape, the DCST component of PHC re-engineering has been integrated within the provincial clinical governance strategy of 2011.[10] To overcome the dearth of specialists in rural and outlying areas in this province, specialists are appointed to regional hospitals and are responsible for providing regular outreach to district hospitals, with a primary role of supporting clinical governance. Initially, the outreach support was provided solely by medical specialists, but more recently, the Western Cape

has adapted the approach to include the cadre of nurse specialists, in line with MTT recommendations.

In the North West, family physicians had already been appointed to all districts prior to the launch of the DCST stream of PHC re-engineering. With the launch of the DCST stream, these family physicians have taken on the role of DCST team leader. Additional family physicians have been appointed to the DCST to form a dyad with the PHC nurse specialist.

Gauteng is predominantly an urban province with a high population density. In districts with higher workloads, the obstetric and paediatric dyads have been augmented with additional members to meet the demands.

Progress on DCST recruitment and appointment

The National Department of Health (NDoH) commenced with the process of DCST recruitment in the latter half of 2011, with shortlisting completed by January 2012 and initial appointments made in July 2012. As per MTT recommendations, and acknowledging that the supply of specialists in the country would not meet the confirmed need, recruitment of medical specialists from countries such as the United Kingdom was also conducted through advertisements placed in international medical journals.

By September 2012, 172 appointments of the possible 364 had been made nationally, and of these appointments, 55% were for nursing specialists. After 18 months of implementation, by the end of April 2014, 206 appointments had been made, amounting to 56.5% posts filled, yielding a vacancy rate of 43.5%. The proportion of nurse specialist appointments remained higher than that of medical specialists. The proportion of advanced midwife, paediatric nurse and PHC nurse posts filled was at 88.5%, 76.9% and 75% respectively. Overall, the recruitment of medical specialists remained below 50%, except for the family physician cadre at 61%.

Table 1 reflects the status of DCST appointments across districts in the country, by specialisation. Table 2 presents the status of appointments in the National Health Insurance (NHI) pilot districts. Except for three districts in the Western Cape, which have no registered DCST members as they rely on outreach from neighbouring districts, 49 of the 52 districts have appointed DCST members. Only two districts – Tshwane in Gauteng and Eden in Western Cape – have achieved the ideal DCST composition of a full seven-member team, as recommended by the MTT. Considering the strategic focus of the DCST stream of PHC re-engineering in maternal, newborn and child health, it is imperative that alternative strategies be sought to recruit the services of appropriately skilled obstetricians and paediatricians, as per MTT recommendations.[4] Furthermore, with only six districts having filled the anaesthetist position by the end of April 2014, and given that anaesthetists have been listed as a scarce resource in the public sector,[11] recommendations developed to increase anaesthetic competence at district level need to be pursued, and alternative approaches to ensuring the expansion of anaesthetic skill and competence should be developed.[12]

Table 1: Number of DCST members, by district and speciality, April 2014

Province	District	Anaesthetist	Obstetrician	Paediatrician	Family Physician	Advanced Midwife	Paediatric Nurse	PHC Nurse	Total
EC	Alfred Nzo DM				1	1	1	1	4
	Amathole DM		1	1		1		1	4
	Buffalo City MM			1		1	1		3
	Cacadu DM					1		1	2
	Chris Hani DM					1	1	1	3
	Joe Gqabi DM					1	1	1	3
	Nelson Mandela Bay MM			1		1	1	1	4
	OR Tambo DM			1		1	1	1	4
FS	Fezile Dabi DM		1			1	1	1	4
	Lejweleputswa DM		1		1	1	1	1	5
	Mangaung MM				1	1	1	1	4
	Thabo Mofutsanyana DM				1	1	1	1	4
	Xhariep DM		1		1	1	1	1	5
GP	Ekurhuleni MM		1	1	1	1	1	1	6
	City of Johannesburg MM		1	1	1	1	1	1	6
	Sedibeng DM		1		1	1	1	1	5
	City of Tshwane MM	1	1	1	1	1	1	1	7
	West Rand DM		1	1	1	1	1	1	6

Province	District	Anaesthetist	Obstetrician	Paediatrician	Family Physician	Advanced Midwife	Paediatric Nurse	PHC Nurse	Total
KZN	Amajuba DM					1		1	2
	eThekwini MM		1	1		1	1	1	5
	iLembe DM			1	1	1	1	1	5
	Harry Gwala DM			1	1	1	1	1	5
	Ugu DM				1	1	1	1	4
	uMgungundlovu DM				1	1	1	1	4
	uMkhanyakude DM				1	1	1	1	4
	uMzinyathi DM					1	1	1	3
	uThukela DM		1			1	1	1	4
	uThungulu DM		1		1	1	1	1	5
	Zululand DM					1	1	1	3
LP	Capricorn DM				1	1	1	1	4
	Mopani DM			1	1	1	1	1	5
	Vhembe DM				1	1	1	1	4
	Waterberg DM			1	1	1	1		4
	Greater Sekhukhune DM				1	1	1		3
MP	Ehlanzeni DM	1	1	1		1	1	1	6
	Gert Sibande DM		1				1	1	3
	Nkangala DM					1	1	1	3
NC	Frances Baard DM				1	1	1		3
	John Taolo Gaetsewe DM			1	1	1		1	4
	Namakwa DM				1	1			2
	Pixley Ka Seme DM	1		1	1	1			4
	Zwelentlanga Fatman Mgcawu DM		1		1	1			3
NW	Bojanala DM		1	1	1	1		1	5
	Dr Kenneth Kaunda DM		1	1	1	1	1	1	6
	Dr Ruth Segomotsi Mompati DM			1	1	1	1	1	5
	Ngaka Modiri Molema DM		1		1	1	1	1	5
WC	City of Cape Town MM	1	1	1					3
	Cape Winelands DM	1	1	1	1				4
	Central Karoo DM								0
	Eden DM	1	1	1	1	1	1	1	7
	Overberg DM								0
	West Coast DM								0
Total		6	21	22	32	46	39	40	206

Source: National DCST database, April 2014.

Table 2: Number of DCST members in NHI districts by speciality, April 2014

District	Anaesthetist	Obstetrician	Paediatrician	Family Physician	Advanced Midwife	Paediatric Nurse	PHC Nurse	Total
OR Tambo DM			1		1	1	1	4
Thabo Mofutsanyana DM				1	1	1	1	4
City of Tshwane MM	1	1	1	1	1	1	1	7
Amajuba DM					1		1	2
uMgungundlovu DM				1	1	1	1	4
uMzinyathi DM					1		1	2
Vhembe DM				1		1	1	3
Gert Sibande DM						1	1	2
Pixley Ka Seme DM	1		1	1	1			4
Dr Kenneth Kaunda DM		1	1	1	1	1	1	6
Eden DM	1	1	1	1	1	1	1	7
Total	3	3	5	7	9	7	10	44

Source: National DCST database, April 2014.

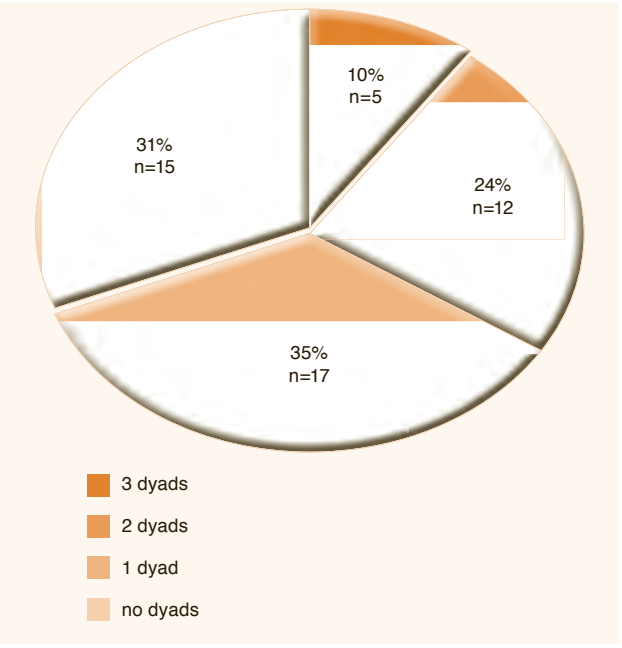
In the absence of a complete team in a district, a minimum composition of a nurse-doctor dyad from a single discipline was proposed by the MTT[4] in order for teams to achieve district functionality, comprising the following dyads:

- family physician and PHC nurse, or
- obstetrician and gynaecologist, and advanced midwife, or
- paediatrician and paediatric nurse

Of the 49 districts that have appointed DCST members, only five districts (10%) have complete dyads across the three areas of speciality listed above, 17 districts (35%) have only one dyad, and 15 districts (31%) have no dyads (see Figure 1). As anticipated by the MTT, challenges have been experienced in the recruitment and appointment of DCST members, with rural districts facing the greatest problem in meeting the minimum team composition requirements.

The three provinces with adapted approaches to DCST recruitment reflect a higher proportion of DCST appointments across districts, as shown in Table 3.

Figure 1: Percentage districts with a nurse-doctor dyad



Source: National DCST database, April 2014.

Table 3: DCST membership in GP, WC and NW by district and speciality, April 2014

Gauteng

District	Anaesthetist	Obstetrician	Paediatrician	Family Physician	Advanced Midwife	Paediatric Nurse	PHC Nurse	Total
Ekurhuleni MM		1	1	1	1	1	1	6
City of Johannesburg MM		1	2	1	1	1	1	7
Sedibeng DM		1		1	1	1	1	5
City of Tshwane DM	1	1	2	1	1	1	1	8
West Rand DM		1	2	1	1	1	1	7
Total	1	5	7	5	5	5	5	33

Western Cape

District	Anaesthetist	Obstetrician	Paediatrician	Family Physician	Advanced Midwife	Paediatric Nurse	PHC Nurse	Total
City of Cape Town MM	2	6	2					10
Cape Winelands DM	3	4	2		1			10
Eden DM	1	1	1	1	1	1	1	7
Overberg DM								0
West Coast DM								0
Total	6	11	5	1	2	1	1	27

North West

District	Anaesthetist	Obstetrician	Paediatrician	Family Physician	Advanced Midwife	Paediatric Nurse	PHC Nurse	Total
Bojanala DM		2	1	2	2		1	8
Dr Kenneth Kaunda DM		1	1	1	2	1	1	7
Dr Ruth Segomotsi Mompati DM			1	1	2	1	1	6
Ngaka Modiri Molema DM		1		1	2	1	1	6
Total		4	3	5	8	3	4	27

Source: National DCST database, April 2014.

DCST induction and orientation

The MTT recognised that for the DCSTs to be fully functional in their new role, teams would have to undergo induction and orientation. In the context of the DCST stream, "induction" referred to the initial introduction of the members of the DCST to their new roles, and "orientation" referred to the longer term capacity- and team-building required to enable the DCSTs to fulfil their roles and impact on maternal and child health at district level.[4] For the purposes of induction and orientation, an intensive one-year programme was recommended for the first wave of newly selected DCSTs.[4] The first induction and orientation programme was implemented from mid-August 2012 in KwaZulu-Natal (KZN) by a team from the University of KwaZulu-Natal (UKZN), funded by the United Nations Children's Fund (UNICEF). The induction and orientation in the remaining eight provinces was centrally managed by the Reducing Maternal and Child Health Mortality through Strengthening Primary Health Care (RMCH) Programme, and implemented by Health Systems Trust (HST) based on an adaptation of the UKZN programme, commencing in mid-November 2013 and funded by the Department for International Department (DFID) of the United Kingdom.

Purpose of the induction and orientation programme

The DCST induction and orientation programme was required to fulfil multiple purposes: firstly, in response to the overt DCST learning outcomes envisaged by the MTT; secondly, in response to structural adjustments to the health system, brought about by the introduction of a new team functioning at district level; thirdly, in response to the inherent identity and role-definition needs brought about by the introduction of a new professional in the health system; and fourthly, in response to the professional socialisation needs of the new cadre of workers.

The MTT outlined the DCST competencies that should be attained through the induction and orientation programme. The MTT envisaged that by the end of the induction and orientation, DCST members would be able to:[4]

- describe their vision and specific goals for the work of the team in their specific district;
- use a range of methods to improve the quality of clinical care;
- provide effective education and clinical training to individuals, and to small and large groups;

- identify weaknesses and improve the performance of the health system;
- support the development and implementation of community-based interventions;
- support district- and facility-level management activities;
- function effectively as a team; and
- evaluate and report on their work.

With regard to structural adjustments to the health system brought about by the introduction of a new team to function at district level, the purpose of the induction and orientation programme was to assist provinces, and each individual DCST, to take cognisance of the local context within which DCSTs were operating. Both in content and in process, the induction and orientation programme was required to assist DCSTs to analyse, be responsive to, and be effective within, their unique contextual challenges, in terms of: the actual composition of each appointed DCST; the availability of facility-based specialists at regional referral services; existing outreach programmes; the actual location and geographic area of operation of each DCST; and the designated accountability and reporting lines.

In response to the inherent identity and role-definition needs brought about by the introduction of a new professional in the health system, the challenge for the induction and orientation programme was to facilitate the definition and clarification of DCST roles in and of themselves, and in relation to other professionals in the health system. The definition and clarification of DCST roles in and of themselves, although guided by job descriptions, needed to be worked out in terms of: the individual professional roles; the roles of dyads, where dyads were present; and the roles of each individual within the team, particularly in the light of mostly incomplete teams being appointed to each district. The definition and clarification of DCST roles in relation to other cadres of workers in the health system needed to be worked out in terms of: the role of the DCST in relation to the district health management team, core and extended; and in relation to programme co-ordinators, operational managers, supervisors and service providers within the district. The particular purpose of the induction and orientation programme was to facilitate role clarification by identifying unique DCST roles and DCST roles that overlapped with others. The induction and orientation programme was required to facilitate the effective management of role conflict and role duplication.

Finally, with regard to the professional socialisation needs of the new cadre of workers, the induction and orientation programme was required to provide opportunity for: professional development in a range of clinical, health system and public health competencies; building professional networks; collaborative problem-solving; engaging in critical dialogue with colleagues to develop best practice; building commitment to whole-system improvement; and providing performance evaluation and feedback.[13]

Learning outcomes of induction and orientation

The literature on leadership and its impact on quality of care and health outcomes guided the design of the induction and orientation programme. Ineffective leadership has been identified as contributing to the varying quality of care being achieved within similar contexts and with similar resource constraints.[14,15] A systematic review examining the relationship between leadership quality and patient outcomes has provided evidence that improved leadership contributes significantly to reduced adverse events and increased patient satisfaction.[16] Leadership development programmes have been shown to provide important opportunities to improve quality of health care by:

- enhancing the organisation's educational and development activities;
- increasing the competency of health workers;
- improving health worker satisfaction and reducing staff turnover; and
- focusing organisational attention on specific strategic priorities.[17]

The greatest contribution of leadership is in managing the context, the staffing and the resources required to deliver effective care.[16]

Against this background of the relationship between leadership and quality of care, the primary emphasis of the DCST induction and orientation programme was to both build the leadership effectiveness of DCSTs and enable DCSTs to contribute to leadership effectiveness in their respective districts. The model of leadership development adopted was based on collaborative leadership, in appreciation of the need to enhance the capacity and unlock the potential of all people within the health system to contribute to the vision and mandate of the health sector.[18]

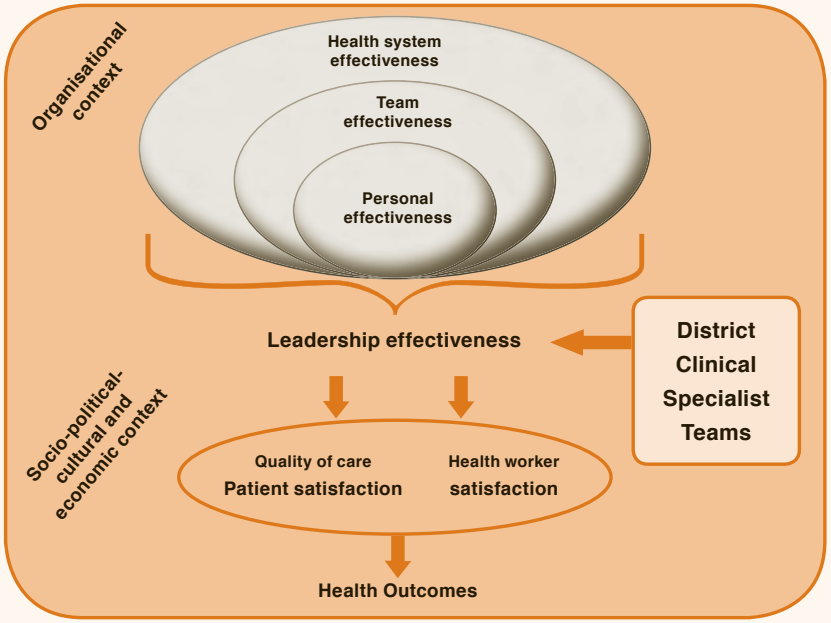
The conceptual framework depicted in Figure 2 shows the relationship between leadership effectiveness, quality of care, and health outcomes.[19] Leadership effectiveness is seen to comprise personal, team and health system effectiveness. Personal, team and health system effectiveness are seen as self-standing entities, but also as influencing each other, and influenced by the organisational context, which needs to be analysed to identify potential areas of required change. Leadership effectiveness contributes to the quality of care, as well as to patient and health worker satisfaction, which in turn contribute to health outcomes. Both quality of care and health outcomes are influenced not only by leadership effectiveness, but also by the socio-political, cultural and economic contexts, which should be analysed and well understood.

Towards enhancing leadership effectiveness, the learning outcomes of the induction and orientation programme covered clinical, public health, health systems, leadership, and management competencies. The learning outcomes planned for each session of the induction and orientation programme spanned individual and team learning. In content, the induction and orientation programme largely aimed to address technical competencies, while in methodology, it largely aimed to address process competencies; develop the capacity of DCSTs for context-specific responsiveness; promote an organisational culture based on trust, supportive mentoring and supervisory relationships, clinical governance and accountability; and promote collaborative leadership.[18,20]

Developing the induction and orientation programme

Action learning was adopted as a relevant adult education methodology for leadership development of the DCSTs and to equip the DCSTs to coach and mentor others.[18,21,22] Action learning is: based on a problem, task or issue; occurs within a small group or team faced with the same problem or task or issue; promotes

Figure 2: Conceptual framework underpinning the DCST Induction and Orientation Programme



Source: Voce, 2011.[19]

collaborative learning, activating prior knowledge and tapping into intrinsic motivations for learning; requires action, followed by critical questioning and reflection; contributes to further action; and is facilitated by an "action-learning coach".[23] Action learning, as an adult education methodology, enables the resolution of complex problems while facilitating learning at the individual, team and organisational level.[23]

Several challenges required resolution in the development of the curriculum. The challenges encompassed the scope of the learning outcomes, the diverse background of DCST members, the varying composition of teams, untested roles of the DCSTs, and the differing contexts within which the teams would need to operate. These challenges contributed to an iterative curriculum development process.[24]

With regard to the scope of the learning outcomes, the DCSTs were required to develop and enhance competencies in: the clinical sphere; clinical governance and quality assurance; health system leadership and management; monitoring and evaluation; adult education and adult learning; team effectiveness; and health systems research. The complexity of the curriculum development task was exacerbated by the diverse background of the DCSTs. This diversity lay not only in the professional background of DCST members, but in their experiential background, with some members being steeped in purely clinical roles, while others had been immersed in administrative or programme management roles. Furthermore, the full complement of DCST membership was not achieved in any district, with DCST teams comprising between two and four members, and with a dyad present in only a small proportion of districts. In addition, DCSTs were operating in varying contexts: some with more and others with less acceptance and support by district management; some well integrated with district maternal and child health programmes, and others less so; some with supportive specialists in referral hospitals and others with fewer or none; and some DCSTs being better resourced than others.

In order to respond effectively to this diversity, a multidisciplinary team of facilitators designed, implemented, reflected on and refined the content and processes of the induction and orientation programme. The team comprised medical specialists and technical experts, public health practitioners, organisational development experts, leadership and management professionals and consultants, and Department of Health advisors and leaders. In KZN, the designers of the induction and orientation programme were responsible for its implementation. For expansion to the other eight provinces, RMCH/HST was required to train trainers, conduct pilot training, and following refinement, roll out the programme to the other provinces.

Structure and content of the induction and orientation programme

The induction and orientation in KZN was conducted primarily in two phases, comprising monthly workshops. Phase 1 was conducted over three months, comprising two workshops separated by several weeks of field-based work by the DCSTs. Phase 2 was implemented through nine three-day monthly workshops, dealing in parallel with topics in maternal, newborn and child health, and in leadership and health system management. Additional general topics were included at the request of provincial programme managers. Between workshops, DCSTs completed field-based activities related to the topics of the previous workshop, with feedback on their activities being incorporated into the subsequent workshop programme. The induction and orientation for the remaining provinces was implemented using a modular approach, covering five modules, through a series of six three-day workshops as follows:

- Module 1 Orientation – one national two-day workshop.
- Module 2 Baseline Assessment and Planning – two three-day provincial workshops.
- Module 3 Clinical Governance – one three-day provincial workshop.

- Module 4 Leadership mentoring and coaching – one three-day provincial workshop.
- Module 5 Integration of Health Services and Programmes – one three-day provincial workshop.

Participation in the DCST induction and orientation was broadened to include additional participants: district managers, district programme co-ordinators and provincial programme managers. The inclusion of additional participants was motivated by considerations of the DCST as a new professional introduced into the district health system, and the concomitant need for role definition, clarification, distinction and negotiation in relation to existing district health system structures, as well as the need to develop partnership and support networks.

In KZN, in addition to the workshops, on-site mentoring and coaching visits were conducted with DCSTs in between workshops. Different approaches to on-site mentoring and coaching were implemented with different DCSTs: one-day monthly site visits; issue-based site visits; and incorporation of DCSTs into site visits planned for strengthening implementation of programme priorities.

Early DCST achievements

Although it may too early to expect major changes in health system effectiveness and in health outcomes, as a result of the implementation of the DCST stream of PHC re-engineering, there are promising signs of movement towards the intended results. The Handbook for District Clinical Specialist Teams, produced by the National Department of Health, documents several case studies of early achievements.[8] Shared here are snapshots of the approach to implementation of the DCST roles, adopted by various DCSTs around the country.

Towards **improving the quality of clinical services**, the DCST in uThungulu District in KZN has described their experiences of helping to save the lives of women following obstetric haemorrhage. The obstetrician on the DCST was able to provide valuable support to clinicians in district hospitals to manage two women, one with severe antepartum haemorrhage and one with a postpartum haemorrhage following a difficult Caesarean section complicated by severe adhesions. In the management of both women, the district clinical obstetrician was able to provide specialist consultant support and propose simple yet effective techniques to manage the obstetric haemorrhage – for the woman with the antepartum haemorrhage, this involved the use of a balloon tamponade, and in both women, this involved the use of a tourniquet. Both patients underwent a life-saving subtotal hysterectomy at the regional referral hospital, and both women had prolonged hypovolemic shock, intensive care unit ventilation and further surgery to remove the abdominal packs. Following the successful management of these women, the DCST made several recommendations which included: processes for early consultation; swift decision-making and early action; measures to deal with skill gaps in district hospitals; making consultant specialist support more readily available; redistribution of doctors in district hospitals; including sessional doctors in training sessions on life-saving skills; and harmonising services.

Towards the **provision of training**, the DCSTs in Gauteng, as in other provinces, have been conducting training in Emergency Steps in the Management of Obstetric Emergencies (ESMOE). As part of this training, they have conducted a series of emergency obstetric "fire drills" with staff in facilities to assess their skills in the management of obstetric emergencies, test facility logistics and systems, and motivate staff to learn and apply their new knowledge. In the City of Johannesburg, fire drills have been conducted in 10 community health centres and in the district hospital every month since August 2012. Over 400 midwives and 25 doctors have been trained. As a result of the fire drills, an advanced midwife located in a clinic in Soweto was able to successfully use the posterior axilla sling traction procedure to deliver a woman who experienced severe shoulder dystocia during the delivery of her 4.4kg baby. Furthermore, midwives' experience of the fire drills has increased their confidence in management of breech deliveries, postpartum haemorrhage and cord prolapse. The DCSTs are providing much-needed skills and knowledge on how to deal with obstetric emergencies.

Towards the **provision of monitoring and evaluation**, DCSTs in KZN, as in other provinces, have conducted a situation analysis of maternal, newborn and child health services in their district. They have engaged with the District Health Information System (DHIS), and the quality of the data that is generated and captured at facility level and transferred to the district level. DCSTs have actively promoted the establishment of regular audit meetings, utilising the Perinatal Problem Identification Programme (PPIP) and the Child Problem Identification Programme (CPIP). Audit meetings have focused not only on identifying the causes of deaths and the avoidable/modifiable factors, but also on remedial actions that need to be implemented. A template for recording the minutes of the meetings ensures that actions identified in previous meetings will be reported on and evaluated in subsequent meetings.

Towards **supporting district level organisational activities**, the paediatrician in the Tshwane DCST reports that the appointment of a DCST comprising different specialists and a combination of doctors and nurses, has been a winning combination.[25] The paediatrician reports that the DCSTs are "bridge-builders", helping to link currently fragmented district and municipal level services, and promoting equal access to a continuum of care. Because of its location and broad job description, the DCST is able to promote networking and collaboration between all levels of the district health system, from community level to tertiary-level care. The DCST continues to work with vertical programmes with the aim of providing high-quality, integrated, client-centred services. Working with hospital and clinic managers has facilitated benchmarking and ensured evidence-based practice. To deepen the gains made to date, the health system should increase its responsiveness to the demands identified by the DCST and their supportive supervision.[25]

Towards **supporting health systems and logistics**, the Nelson Mandela Bay DCST in the Eastern Cape has worked with Emergency Medical Services (EMS) to reduce the unacceptably high ambulance response time for referral of a patient from a Midwife Obstetric Unit (MOU) to hospital. Based on information available to the DCST that only 3.3% of ambulances arrived within the expected one hour, and that the average response time is almost four hours,[26] the DCST conducted an in-depth analysis of the distribution, utilisation and equipping of obstetric ambulances, and of the referral practices in the district. The DCST established that: dedicated obstetric ambulances were not based at the facilities where they were needed; obstetric ambulances were being utilised for non-obstetric-related cases; obstetric ambulances were not fitted with adequate

medical equipment; referral routes were not well defined; and referral processes did not adhere to standard referral protocols. Following a meeting with EMS managers and personnel, a mutual understanding of the challenges and their effects was developed, as well as a shared strategy for resolving the problems. The solutions developed included:

- EMS personnel participated in MOU meetings, and EMS issues were included as a standing item on the agenda.
- A memorandum of agreement was adopted between MOU and the EMS documenting the agreed requirements, roles and responsibilities of both parties.
- Obstetric ambulances were mandated to remain on site and be used for obstetric emergencies only.
- Referral routes and referral protocols were redefined to ensure consistency and efficiency.
- The contact details of all parties (EMS management, MOU management and the DCST) were shared to enable rapid contact with the appropriate parties, to rectify any problems that arise.
- The requirement was implemented that an incident report be written and discussed for any delay longer than an hour.

These measures contributed to a reduction in the proportion of ambulance response times of longer than an hour, from about 12 in a month to one or none in a month, over a nine-month period in 2013.

Towards **ensuring collaboration and team work**, the DCST in Mopani District in Limpopo has promoted a process of appreciative enquiry which, together with other supportive and training activities implemented by the DCSTs, has contributed to a 50% reduction in maternal deaths and a 30% reduction in perinatal deaths between January 2012 and September 2013. The appreciative enquiry process has contributed to improving morale and teamwork, which has in turn contributed to these improved health outcomes. Appreciative enquiry is an action-reflection process usually facilitated by a DCST member, in which the facilitator asks the health service delivery teams to: discover what they are doing well in their work; imagine what they would like to achieve in their work; design actions to achieve their aims; and deliver, reflecting in subsequent meetings on what has been possible to implement in pursuit of their aspirations. The appreciative enquiry process has ensured that service delivery teams remain solution-focused rather than problem-bound, which has generated high morale, enthusiasm and capacity for action.

Reflections on the implementation of the DCST stream

The following are reflections on the implementation of the DCST stream of PHC re-engineering:

Stewardship

Clear political leadership and stewardship were demonstrated through the establishment of the Ministerial Task Team, and by its members, who thoughtfully considered recommendations for the implementation of the DCSTs as reflected in the final report of the MTT.[4] Furthermore, DCST progress and outputs have been monitored by the National Department of Health and reported to the National Health Council – the highest-level health reporting structure.

Of the three streams in PHC re-engineering, the DCST stream has been the most rapidly implemented, showing early successes and changes. However, as the stewardship for the DCST stream is devolved to provinces, adequate financing within provinces needs to be ensured to comply with the compensation agreements for the DCSTs, and for further recruitment to vacant posts, especially in rural and under-resourced areas. Furthermore, ongoing financing needs to be provided to ensure that DCSTs have funding to perform their duties, and that the allocation to the DCST stream does not negatively affect district budgets.

Structure and co-ordination

The political leadership and stewardship demonstrated at the inception of the DCST stream must be intentionally sustained. Sustaining requires central national co-ordination, best achieved through the ongoing appointment of a National DCST Co-ordinator who would respond to provincial implementation challenges and constitute a central point for monitoring, feedback, reporting and support for the DCSTs. Furthermore, DCST co-ordination is also required within provinces. Provinces where co-ordination is strong, such as in Gauteng, KwaZulu-Natal and the Free State, have progressed at a faster pace than have those where the co-ordination may be weaker. At district level, co-ordination is required with other district-level programmes, in particular the MNCWH programme.

Induction and orientation programme

The introduction of new professionals into the health system was accompanied by a supporting induction and orientation programme, which enhanced the capacity of the teams to function in their role within the DHS. The induction and orientation programme provides a model for a rapid but effective national roll-out of a training package. The modular approach can be applied to other national training endeavours. An evaluation by the NDoH of the key components that led the successful implementation of the training of the DCST stream could inspire and catalyse principles and practices applicable to the school health team stream, and to the municipal ward-based outreach team (WBOT) stream. An effective induction and orientation programme supports the rapid implementation of a new policy direction. Towards supporting implementers to be more effective and efficient in making change, the induction and orientation must also comprise a clearly designed mentorship programme.

Mentorship

A substantive workshop-based induction and orientation programme for DCSTs was implemented in South Africa, with the implementation in KZN being supported by a limited, parallel on site mentoring and coaching programme.The limitations of only workshop-based learning in enhancing performance are well documented.[27] Effective, sustained DCST performance requires a complex interplay between the assimilation and application of new knowledge, skills and competencies, an ensuing change in practice, and sustaining the changed practice. The capacity for implementing and sustaining any change is context-bound[28] and requires effective leadership. Leadership is an emergent adaptive phenomenon,[29] associated with the interplay between leaders, followers and the prevailing

organisational and contextual dynamics. In order to deal with organisational and contextual complexities, DCSTs will need to refine and apply generic competencies in problem-solving, divergent and critical thinking, and in creativity and innovation. Mentoring and coaching, facilitated by provincial specialists in the longer term, can promote context-specific reflection, critical learning and transformation of leadership practices.

The induction and orientation training for DCSTs was a successful and useful endeavour, which warrants follow-up and enhancement for a time period of at least six months to one year post-training, accompanied by a mentorship and coaching programme. Consideration may need to be given to how the mentorship programme could facilitate the collaboration of DCSTs and multiple stakeholders operating at district level, particularly the MNWCH co-ordinators and managers, district managers and hospital Chief Executive Officers (CEOs).

Integration of the DCST stream

One of the core goals of PHC re-engineering is to develop integrated, efficient and well-supported PHC teams guided by and accountable to communities.[9,30] The implications of this extend beyond the functioning of PHC re-engineering teams, to existing team structures within the DHS responsible for public sector reform processes, including those driving the implementation of National Health Insurance and the quality improvement processes of the Office of Health Standards Compliance – all of which are critical for attaining and sustaining health system effectiveness, quality of care and improved health outcomes. Implicit in the PHC model for the DHS for South Africa[30] is the governance, leadership and management role of the district health management team, which holds overall accountability for district health service delivery. Towards fulfilling this role is the responsibility for ensuring integration of these three streams for effective PHC delivery, through coherent co-ordination, leadership and oversight.

Health systems readiness to implement the DCST stream

The DCST stream was introduced into, and expected to function within, an already weak DHS facing challenges in human resources, infrastructure, equipment and commodities. While some provinces have been able to commence implementation of the DCST stream rapidly, other provinces have experienced start-up challenges in recruitment and appointment of DCSTs. Some of the challenges include: lack of funding to appoint and support DCSTs, resulting from the absorption of available funds into the equitable share of the district health budget; lack of clarity regarding the roles and responsibilities of provinces in taking over the ownership of the DCST programme, resulting in slow integration of the DCST stream with the broader MNCH programme; inadequate number of clinical specialists, both medical and nursing; inadequate leadership among district managers to guide, support and manage DCSTs; and poor appreciation of the potential role-enhancement and relationships between DCST and specialists based at regional hospitals, which prevents collaborative functioning.

These health system-related challenges hamper the effectiveness of DCSTs. A synergistic intervention, using the induction and orientation programme to bolster the facilitation of health system readiness for the implementation of the DCST stream, may have averted some of these challenges. However, the health system challenges may yet be mitigated through the integration of plans and programmes by the DHS and MNCH Directorates at both national and provincial levels.

Recommendations

Drawing on these reflections, the following recommendations are presented:

- The National Department of Health should continue to advise and lead the consolidation of the DCST stream of PHC re-engineering.
- A National DCST Co-ordinator and provincial DCST Co-ordinators would contribute to the sustainability of the programme, by responding rapidly to DCST implementation challenges. Provincial DCST Co-ordinators need to work very closely with the provincial MNCWH managers and the provincial specialists.
- As the stewardship of the DCST stream is devolved to provinces, adequate financing within provinces needs to be ensured to support the ongoing appropriate appointment and employment of DCSTs, thus complying with the compensation agreements for DCSTs.
- There is need for DCSTs to have their own operational plans and budgets. These need to be linked to district MNCWH operational plans and preferably ring-fenced with the district MNCH budget. An integrated budget will eliminate implementation challenges related to lack of resources and will encourage accountability and integration.
- Provinces should develop plans for continued induction and orientation of newly appointed DCSTs, and should consider how to implement a mentorship programme to enhance DCST performance.
- Carefully devised strategies need to be developed for the integration of the three streams of PHC re-engineering at all levels of the health system. National, provincial and district-level steering committees may need to oversee the planning and implementation of integrated programmes.
- Recruitment and retention plans should be delegated to provinces and districts supported by human resource offices for better management and control.

Conclusion

The DCST stream of PHC re-engineering offers great promise towards the national endeavour of improving maternal, newborn and child health outcomes. As an initiative, it is underpinned by clear policy and strategic imperatives, and has the potential to advance the PHC agenda and to contribute to the strengthening of the District Health System.

Though only a small proportion of districts have a fully constituted DCST, district clinical specialists – as teams, as dyads (where these are present) and as individuals – are fulfilling key responsibilities towards improving the quality of clinical services. Based on a thorough situation analysis of MNCWH services in their respective districts, DCSTs have developed and are implementing plans

to improve the competencies of health workers, are supporting district-level organisational activities, are ensuring collaboration and integration between health services and programmes, and are providing strong clinical governance, supervision and leadership.

Measurable changes in health system effectiveness, quality of care and health outcomes are marginal and not yet consolidated. However, evidence is beginning to emerge of the important contribution of this stream of PHC re-engineering towards attaining the commitments expressed in the Negotiated Service Delivery Agreement.

Intentional, thoughtful planning and ongoing strategising must continue to support the co-ordination of the DCST stream to ensure its consolidation, and its integration with other endeavours to strengthen the primary health care agenda in South Africa.

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