Process evaluation of 3 feet model: summary of themes

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| Element | Key themes |
| Events (activities) | Implementation of real-time death reporting, review and responses for MNCH:* Consolidated death reports: including data and modifiable factors linked to different levels of the system, identifying pro-active (preventive) and responsive (care) actions.
	+ Establishing ‘When, where, who to act on identified problems at different levels’ (driver, SD2)
* Open-tap analogy dashboards provided a structured and logical approach to targets, monitoring, analysis and recording (give e.g)
	+ Directs attention to priorities
	+ Local solutions e.g. intensification of ESMOE drills, intensified screening in PHC (3H’s tool), individualised QIP in PHC facilities, identification of hot spots and household outreach to identify children with malnutrition.
* Locally developed standard operating procedures with accountability to head of institution (CEO or medical manager), give e.g.
* Meaningful theory of change for local actors:
	+ ‘brilliantly presented by the clinical manager particularly highlighting the identified modifiable factors, the key actions, time frame, responsibility and progress.’ (partner trip report, D3, Apr ‘21)
	+ ‘the 3 feet gives you a system, a structure to work with, you know exactly what you are looking for’
* Improved quality of data (give e.g.)
	+ M4RP algorithm has resulted in a major improvement in the quality of mortality numerator data (partner trip report, Nov ’21)
	+ The quality of DHIS data have improved as accurate number of deaths are reported with accurate causes of death with an ICD-10 code. (driver, SD3)
	+ A senior district manager indicated that the AG had noted the good quality of data from the three sub–districts where the 3 Feet Model is implemented (partner meeting minutes, Jul 22)

Methodology widened:* To include NCDs, COVID (give e.g)
	+ ‘even with Covid we applied it, we reviewed all the deaths; I remember some of the patients were seen 3 times a day, you understand, just to make sure that we are getting systems right, from reviews, identifying gaps, […].’
* Shift from mortality to morbidity surveillance (near misses in maternity, diabetes complications)
	+ Supported by introduction of training in ICD10 coding, mobilising Case manager, Revenue Clerks
	+ Exploration of possibility of introducing an electronic register developed in the Western Cape (HECTIS)
* Greater engagement with and valuing of community based care:
	+ CHWs involved in identifying and responding appropriately to complications related to NCD in the community (driver, SD1)
* Clinical governance linked to audits, CPD.

Integration into routines* The ‘sub-district response to death is systematic, holistic and standardised’ (driver, SD2). ‘It was clear that there are regular Clinical Review meetings at the hospital and that the entire Clinical Units were active participants’ (researcher observation, Apr ’21)
* Integration into district performance – portfolio of evidence for the quarterly performance review and district health planning, reporting to AG

Actions to ensure sustainability * District engagement
	+ Formal endorsement, and mandate to scale up
* Continuing professional development
	+ Assessment of needs: clinical, public health and management sciences
	+ Attempts to draw on support from a family medicine department at UCT did not succeed

Constraints* Natural catchment areas do not correspond with formal boundaries of the sub-district, cross provincial referral systems particularly challenging
* Weak background systems
	+ Poor record keeping emergency centres and in-patients
* Structured approach to CPD lacking and need for framework (clinical, managerial and public health),
	+ network and connectivity challenges
* Crises and competing demands disrupt institutional routines: provincial demands (CTOPS and launch of COVID vaccination); COVID-19
	+ ‘You can have three deadlines at the same time, out of which you need to pick up what matters the most, the one that you know that is important, then you give your whole to it.’ (driver, SD2)
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| Entities (actors) | Establishment of Monitoring and Response Units:* Management triangle of drivers, experts and navigators, especially clinicians and managers, the ‘right people round the table’ (driver, SD2)
* All three MRUs observed to be in ‘a healthy status’ (partner trip report, Apr’21), ‘ enthusiasm and good by-in into the 3-feet model by current sub-district actors. This was evidenced by the ‘quality’ participation of actors to attend the meeting and the level of conversation during the meetings.’ (researcher observation, Apr ‘21)
* Creating possibility of coordinated action between PHC (incl. community-based services), district hospital, emergency medical services (EMS), multi-disciplinary team (MDT)
	+ The amazing coherency and team spirit between the PHC platform (including Community Services); the Acute hospitals, and increasingly EMS (partner trip report Nov 21). 'It's we - PHC and hospital' (driver, SD2)

The champions were the drivers at sub-district level:* Two of the three sub-districts had new district hospital leadership (CEO and medical manager); in the third, the medical manager had become the CEO
	+ ‘the meeting was completely different compared to 2017’ (partner trip report, Apr ’21)
	+ The encouraging growth and confidence of the members of the 3 Feet Teams in all three Sub-districts, but especially the ‘Drivers’ at hospital and PHC level
	+ ‘This model works … this model is one of the best models thus far that I have been exposed to, I will forever ensure that it is there wherever I go.’ (driver, SD1)
* Mobilising other actors, alliance with sub-district PHC managers, hospital nursing service and unit operational managers, and MDT
* Adopted a model of shared leadership:
	+ Despite apologies of (key) actors attending another meeting (CEO, nursing manager), the meeting took place, chaired by the acting deputy nursing manager, the statistics and report were presented by the acting operational manager maternity and the PHC manager with active participation of ALL other actors displaying ownership of the data. Reports were well prepared and presented. (researcher observation, Apr ’21)
	+ Chaired by CEO, full team attending MRU, shared presentation of reports, and skilled participation and inputs by advanced midwives, NSM (researcher observation, Jun ’21)

Peer support:* Forging of links – formal and informal across three sub-districts
* Within sub-districts, second hospital in D1
	+ ‘… we are calling our neighbouring hospital to try and get them on board… us calling our neighbour is so that he can see and learn, it’s sort of benchmarking how we are running the business of the day. We have decided to support them in their own meeting...’ (driver, SD1)

District support* model could be institutionalised provided the District Office commits and provides mentorship and resource support (partner trip report, Feb ’22)
* District meeting with all sub-districts (Jun ‘22)

Constraints* Navigators: Uneven representation by information officers, key to integration into wider performance reporting processes, role of district and sub-district programme managers
* There is an obvious shortage of staff, nursing staff
* The turn-over of staff (CEO and mid-level managers), need for continuous processes of renewal and induction
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| Parts (entities + actors = mechanisms) | Driver-led system of governance* Key role of driver
	+ ‘I feel that it needs the driver to be there. Now, once you have the driver for any reason being committed to other activities, for me it become a hindrance to the progress.’ (driver, SD1)
	+ Driver capable of providing ‘leadership, decision-making and resource allocation’ (driver, SD2)
* But recognises shared leadership and accountability in a team
	+ ‘They know that, yes I am the driver, but one can say they are co-drivers. If I’m not here they jump in.’ (driver, SD2)
	+ So we know that [NSM] can go on maternity leave for four months and the dashboard will still be taken care of, and [CEO] can be called to a meeting in Polokwane … and the meeting can still be chaired, without a problem’ (driver, SD2)
	+ ‘there are no significant barriers; as long as you have a team, the morale is very high, they are willing to help and serve, there shouldn’t be any problem.’
	+ MRU as ‘Coordinated, inclusive and functional structure in pursuit of positive clinical outcomes’ ensuring ‘accountability decentralised, M&E and planning shifts from central to community level, clinical governance to operational level’ and ‘all levels of care are owning up to deaths and respond promptly to modifiable factors to avoid recurrence.’ (driver, SD2)
* Importance of multi-disciplinary team
	+ ‘at some point we had dieticians, social workers and everyone to try and deal with the maternal and child problems and mainly malnutrition’  (driver SD2)
* Challenges problematic professional hierarchies
	+ ‘and they [OPMs] can even tell me that we have tried to convene a meeting but the doctor is just never available; then I can call and say doc, please respect this sister’s call for this meeting because it is important.’ (driver, SD1)
* Coordination between PHC and hospital, key to achieving outcomes
	+ ‘Before, the PHC, the hospital and the clinics we were working in parallel from each other, there was no communication, we were isolated from each other. So, when we are at the clinic we are at the clinic, we don’t care about the patient; when we are at the hospital you manage what is coming in. So it was more at the level where you are and you focus on your space. Clearly that was not yielding any result. I remember we had a couple of maternal deaths and every day we called an emergency chopper to transport the patient. Until we started the 3 feet model, that’s when we started to sit in the same boardroom with our PHCs. So, the bringing of the 2 teams together was a breakthrough for me to a successful implementation.’ (driver, SD1)
	+ ‘This relationship we are having with PHC, for me that is the best foundation’ (driver, SD2)
* Reliance on stable leadership and nodes in the system
	+ ‘you found yourself mostly having community service medical officers, these are people that are leaving or their contracts are [at the] end of 12 months … so you cannot reliably say this one will chair … but your OPMs [of] … clinical units in those wards… I know they can reliably report to me’ (driver, SD1)
	+ ‘you look where you are working, the resources at your disposal, the reliability of the team.’ (driver, SD1)

‘I think it was mainly a communication gap that the 3 feet model come in and bridged and that has since helped us to reduce maternal mortality.’ (driver, SD1)Actionable intelligence* ‘Coming back to the dashboard, OTA, those are some of the tools that are very very effective especially for someone in my office, because they give you an overall view of the hospital within 30 minutes without even having to page 50 pages of a document; But you just look at that and you realise that in my hospital these are the problems […]. So it’s a quite focused summary that is very accurate on what is happening in the hospital. So it is very easy to implement, you just need to learn the model and you must be patient in learning because it might take a bit of time. But once you have it, it becomes in you, it should not be a problem.’ (driver SD1)
* Increase in U5 deaths over the course of 2021 provoked local reflection on causes in D3: Noted increases in mortality: A rapid review and appraisal of the causes of this increase in mortality reveal that Covid 19 is playing a major contributory role – but not as a cause of death. The factors attributed to COVID 19 Lockdown measures as a major contributing cause of these deaths are :

a) Reduced attendance of pregnant women for routine antenatal care. At D3 hospital, 7 of the perinatal deaths occurred in unbooked mothers;b) Reduced attendance of Under 5 children for Road to Health appointments;c) The inability of Community based services to visit creches and schools;d) The tragic consequences of poverty, resulting from job losses and an inadequate social relief system. This has manifested in a significant rise in under 5 malnutrition.* ‘model allowed us to identify the hot spots, and plan and run community campaign door to door to identify children with MAM before they get to SAM and closing the tap’ (driver, SD3)
* Prompts action at various levels of prevention for all diagnoses, don’t end with problem identification (driver, SD2)
* Real time data informs resource allocation at local executive level, sub-district to set short term wins for challenges from community to hospital levels.

‘The quality of the data is at the core of the whole process’Empowered mindsets* ‘the 3 feet gives you a system, a structure to work with, you know exactly what you are looking for’ (driver, SD1)
* ‘they shared a dream, they shared a system that can improve many outcomes. Although, at first, it was very heavy, but just the engagement and the intention of the model, that’s what caught my eyes. I started attending the meetings regularly, I started reading a little bit and I fell in love with the model.’ (driver, SD1)
* ‘What motivates a team is when ..they are adding value, that actually what they are doing is important. That is just adding in not something different to be honest.’ (driver, SD1)
* ‘as long as we have a team that has that at heart, that says every death matters, then we will be able to achieve.’ (driver, SD2)
* ‘So in terms of scaling up… we are willing  to be the ambassadors of this model across the district, across the province or wherever else we may be asked to assist.’ (driver, SD1)
* Systems thinking

Capacity for learning* Double loop learning, applied to other conditions.
* Triple loop, learning to learn: ‘Everyday in every meeting is an opportunity to learn’, ‘everyday we improve in our presentation’, the ‘journey of learning is lifelong’ (driver, SD2)

Peer support * ‘the three of us talking is actually making it easy for us to implement. It’s making us to be flexible in how we are approaching the 3-Feet model. So, that is very crucial, we are learning from each other in a nutshell.’ (driver, SD1)

Improved continuity of care* PHC to hospital level
* working relations between the hospital, EMS and its feeder clinics.
* handing over systems
* real time reporting has allowed the sub-district to set short term wins for challenges from community level to Hospital levels.
* Further identifies common causes of deaths and serves as guidance to training and capacity building to the team.

District support (driver, SD1)* ‘It just needs a bit of commitment and a district boost where it becomes as a compulsory meeting that is monitored by someone else’
* ‘…in terms of sustainability, it just need someone at the top to be a pressure and oversight view, but otherwise, once you have the drivers that are committed, the system can run as far as 10 years’
* ‘at the district level because someone needs to see that things are done. Otherwise sometimes people will just say we know it and they think they have mastered it all…’

The model is cost-effective as it requires no additional budget or programme. |
| Outcomes | The alarming finding from the reports presented is the significant increase in perinatal and Under 5 deaths. (partner trip report, Nov ’21)Reduce referrals to tertiary services ‘I can safely say that since 2019 there hasn’t been any maternal death in [hospital] to date, [and] we are seeing a very great decline with the number of perinatal mortality. Of course, we still have problems with extreme prematurity and infections in pregnancy. But overall, there is a drastic decline in terms of maternal mortality and perinatal mortality.’ (driver, SD1)SD2: 'we have come a long way - diarrhoea and SAM much less'. shift to new generation of issues (foetal health and to morbidity). (driver, SD2)SD1: ‘even with Covid we applied it, we reviewed all the deaths; I remember some of the patients were seen 3 times a day, you understand, just to make sure that we are getting systems right, from reviews, identifying gaps, […]. In the end in terms of the case [fatality] rate of Covid-19 we are at 15% one of the lowest in the province’ (driver, SD1) |