KAMUZU UNIVERSITY OF HEALTH SCIENCES

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

IMPRESS EVIDENCE BRIEF 1

Strengthening hospital management

Evidence from a randomised trial of a hospital management intervention

SEPTEMBER 2025

Good hospital management is widely recognised as essential for hospital performance. Yet it has received far less research attention than clinical interventions, and rigorous evidence on *how* to improve management practices remains limited.

The IMPRESS project – a five-year collaboration between Kamuzu University of Health Sciences, the London School of Hygiene & Tropical Medicine, and Malawi's Ministry of Health – co-designed and evaluated a structured hospital management support intervention.

Through a one-year nationwide randomised controlled trial (RCT) involving 30 district hospitals (government and faith-based) in Malawi, IMPRESS tested whether regular, on-site technical support could strengthen hospital management practices and, in turn, improve care for small and sick newborns. This brief focuses on the effect of the intervention on the adoption of recommended hospital management practices.

KEY FINDINGS

- Hospital management practices improved substantially in intervention hospitals, which scored an average of 4.0 on a 1–5 scale compared to 3.4 in controls.
- Improvements took place across all domains of management, with the strongest effect in target setting and performance monitoring.
- The intervention was implemented as planned and generally well accepted, with staff noting that it aligned closely to expected standards.
- Context shaped outcomes: leadership support, engagement of the 'IMPRESS hospital champion', staff turnover, and expectations around incentives all influenced how hospitals responded.
- The cost to co-design and deliver the IMPRESS intervention for one year was MWK50,207,441 (US$29,168) per hospital.
- If the intervention were implemented by the Ministry of Health, it would cost MWK30,842,763 (US$17,918) per hospital.

Background

Malawi has been one of the fastest progressing countries in Africa for newborn survival. With most births now taking place in health facilities, the priority is to improve the quality of hospital care for small and sick babies.

Technologies and trained staff are essential, but they cannot deliver impact if hospitals struggle with problems such as staff shortages, drug stockouts, weak coordination, or adequate supervision. These challenges are often management-related. While studies suggest that management practices may be a driver of quality of care, there is little evidence on *how* to improve them, especially in low-resource hospitals.

To address this evidence gap, the IMPRESS project worked with the Ministry of Health, NEST360, and hospitals across Malawi to co-design and evaluate a structured management support package. This brief focuses on the effect of the intervention on hospital management practices. The effect on clinical outcomes, including newborn mortality, is reported separately (see Evidence Brief #2).

Intervention and Evaluation

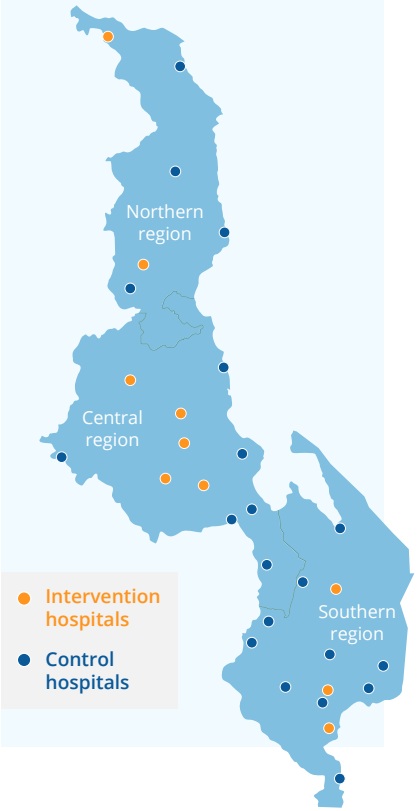
Intervention

IMPRESS provided structured, on-site support to hospital managers. Trained technical assistants (TAs), working in pairs, visited intervention hospitals for one week each month over a year – a total of 12 visits. The intervention was delivered in two phases.

Diagnostic phase (first 2 months): TAs supported hospital teams to conduct a situation analysis, develop a management implementation plan, and identify an 'IMPRESS hospital champion'.

Implementation phase (10 months): TAs provided ongoing support to hospitals to adopt management practices consistent with standards and guidelines set by the Ministry of Health. Key activities are shown in Figure 1.

Figure 2: Location of intervention and control hospitals in Malawi



Evaluation

The intervention was tested through an RCT involving 30 district hospitals across all regions in Malawi (Figure 2). Ten hospitals received the intervention, while 20 served as controls. Management practices were measured at baseline and after 15 months using two complementary tools: the IMPRESS hospital management survey and a structured record review.

Figure 1: Activities undertaken by Technical Assistants

Novel measurement of management practices

Measuring hospital management practices is challenging because management is multi-dimensional and difficult to observe directly. The IMPRESS project developed and evaluated new tools specifically adapted to Malawian hospitals.

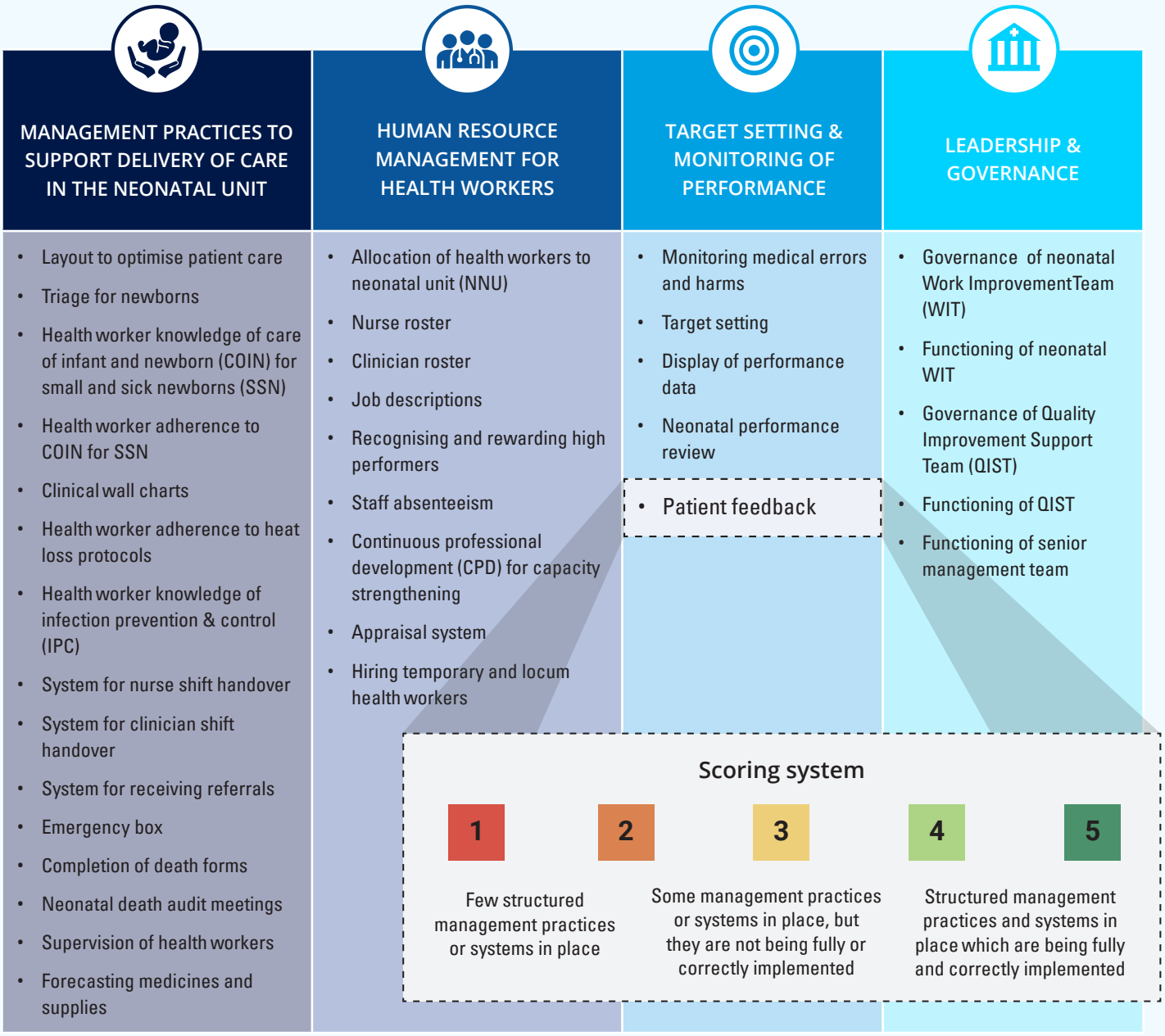
IMPRESS Hospital Management Survey

The main measure of management practices was the IMPRESS hospital management survey, which covers 34 practices organised into four domains (Figure 3). In each hospital, five different categories of staff were interviewed using open-ended questions to determine whether each management practice was in place and how well it was being implemented. Responses were scored on a five-point scale, guided by detailed criteria for what "good adoption" looked like for each practice. Scores were averaged across respondents and practices to create an overall measure for each hospital.

Complementary record review

To address the risk of "social desirability bias", where respondents might report what they thought evaluators wanted to hear, IMPRESS also conducted a complementary record review. This assessed the presence of 25 management items by looking at meeting minutes, clinical manuals, administrative documentation and forms – tangible evidence of whether management systems and processes were in place. Each hospital's score was based on the proportion of these items that were available.

Figure 3: Hospital management practices

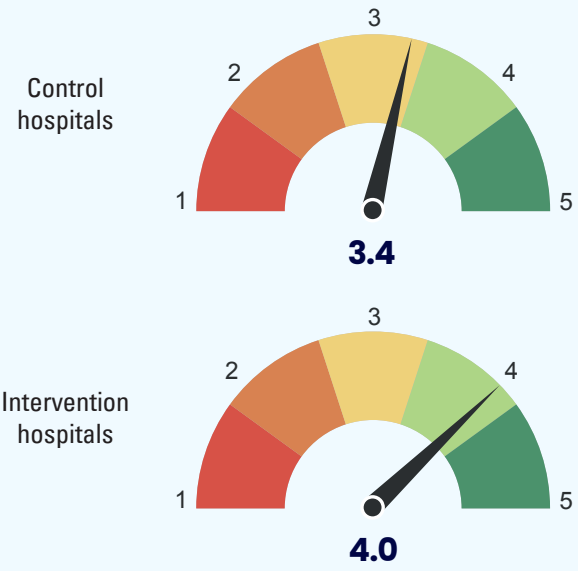


Evaluation findings

IMPRESS led to greater adoption of management practices

The intervention led to an increase in the adoption of structured management practices (Figure 4). At endline, intervention hospitals scored an average of 4.0 on the five-point management survey scale, compared to 3.4 in control hospitals.

Figure 4: Intervention vs control hospitals' management scores



This difference is substantial – equivalent to an effect of 1.23 standard deviations, or moving hospitals about one-third of the way from the control group average towards the maximum possible score of 5. Notably, four of the five best-performing hospitals were in the intervention group, even though there were twice as many control hospitals in the study.

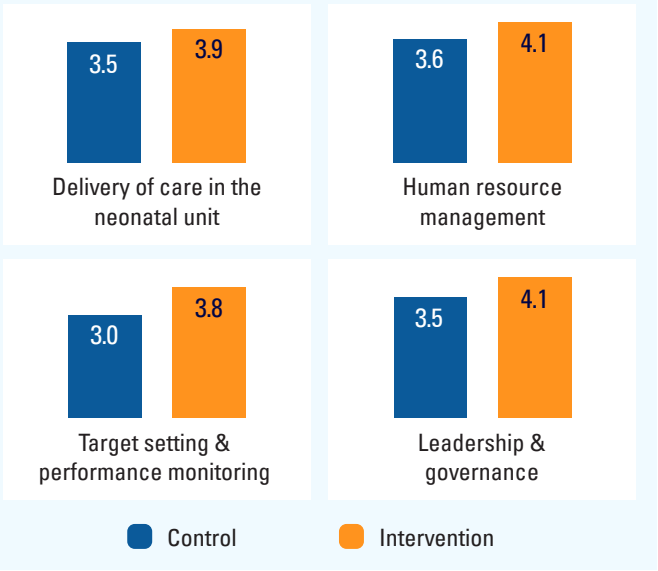
These findings reflect a genuine improvement in management practices rather than simply more favourable reporting by staff. The complementary record review showed a similar pattern: the intervention hospitals had 82% of key management items in place compared with 60% in control hospitals.

Together, the findings show that regular engagement between the TAs and hospitals was successful in embedding structured management practices aligned with government priorities.

IMPRESS improved practices in all four management domains

IMPRESS improved management practices in each of the four domains of management, with a particularly strong effect on "targets and monitoring" (Figure 5). The effect of IMPRESS was therefore not limited to just one or two management domains.

Figure 5: Average scores for intervention vs control hospitals across management domains



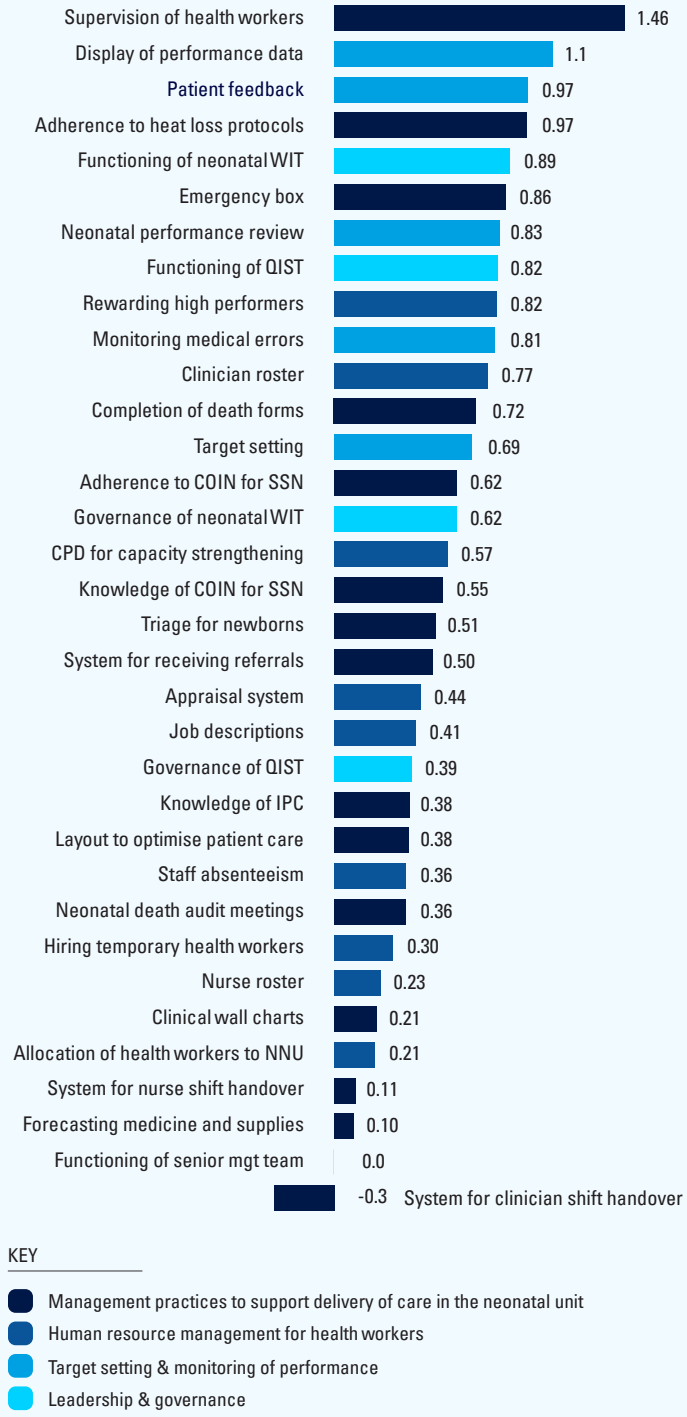
Intervention hospitals outperformed control hospitals in the adoption of 32 out of 34 individual management practices (Figure 6).

The practices most responsive to the intervention included: supervision of health workers, display of performance data, use of patient feedback, health worker adherence to neonatal heat loss protocols, and functioning of neonatal work improvement teams.

By contrast, adoption was weakest for: systems for clinician handovers, functioning of senior management teams, systems for nurse shift handovers, forecasting medicines & supplies, and allocation of health workers to the neonatal unit.

These findings suggest that while the intervention was able to improve adoption of a diverse set of management practices, there are some practices which are stubbornly hard to shift and will require other approaches to improve.

Figure 6: Effect of IMPRESS intervention for each management practice (difference between intervention and control scores)



The intervention was feasible and acceptable

The intervention was implemented largely as intended, demonstrating feasibility in real-world hospital settings. Engagement was intensive, with TAs spending significant time onsite in each hospital, focusing on coaching, monitoring management practices, and tracking progress against tailored implementation plans. The only change from initial plans was that TA visits were maintained at full intensity rather than tapered in the final months, to maximise support to hospital staff.

In-depth interviews with hospital managers and other staff showed that the intervention was generally well received, although with some reservations in a few areas.

Staff appreciated its alignment with existing practices and the respectful coaching approach. As one hospital manager noted:

> It is really fitting well because we were already doing most of the things. So, it's like the coming of the project just helped us to strengthen them.
>
> HOSPITAL MANAGER

Staff valued that TAs were supportive and motivating rather than judgemental, fostering a safe learning environment. However, in some hospitals, initial enthusiasm waned when staff realised the intervention did not provide financial allowances or refreshments. Elsewhere, chronic understaffing and heavy workloads made participation feel challenging.

> The only predicament, it's lack of time from the guys whom we are engaging. We would [plan to] coach let's say the hospital matron on supervision. Then, you would find that they are not available, preoccupied with other activities.
>
> TECHNICAL ASSISTANT

Overall, staff perceived the intervention as congruent with their professional values, organisational mission, and Ministry of Health priorities.

> We are here as a hospital because we want every patient who comes in to be discharged alive. This intervention fits with our mission.
>
> HOSPITAL MANAGER

These findings highlight that a structured hospital management support intervention can be acceptable, but strategies to reduce dependency on external incentives are essential for long-term sustainability.

Factors that enabled or hindered the success of the intervention

The IMPRESS trial showed that structured support helped hospitals improve many of their management practices. Nevertheless, some hospitals responded better than others. For policymakers looking to implement the approach elsewhere, it is important to understand why this was the case. Interviews with hospital staff and TAs identified several enablers and barriers that appeared to be important in determining the intervention's success. Figures 7 and 8 present these factors, and their implications for policy.

Figure 7: Factors that enabled the success of the IMPRESS intervention

		POLICY IMPLICATIONS
Strong leadership Engaged managers and ward in-charges motivated teams, sustained momentum, and embedded new practices into routine systems.	"The in-charge has played a big role. She makes sure that the ward is being run as it should, she reminds us… we are all doing the same thing." MATRON	Leadership development and accountability structures are critical for scaling up management reforms.
Capacity and motivation Regular, supportive coaching built staff skills and confidence to carry out quality improvement tasks.	"They coached on how to conduct WIT meetings, write minutes and present to QIST. We made progress in the early CPAP project after coaching and benchmarking." NURSE-IN-CHARGE	Institutionalise supportive, non-judgmental mentorship and coaching to strengthen frontline management capacity.
Data-driven action Use of local data to identify challenges and solutions enhanced collective problem-solving and accountability.	"We thought that we were doing our normal duties but when we entered the data review, we saw that we were failing and we asked ourselves why we were failing to do it." HOSPITAL CHAMPION	Embed data-use requirements in routine management processes to ensure that problem-solving is evidence-based.
Champions of change Proactive champions facilitated the relationship between TAs and clinical staff, encouraged colleagues, and sustained momentum.	"He (the champion) is self-motivated… someone who is selfless… If you are giving them advice, if you're coaching them, mentoring them on something, this is something that they will not wait for tomorrow, they will actually start doing on the same spot." TECHNICAL ASSISTANT	Formally recognise and empower local champions to strengthen continuity and scale up quality-improvement efforts.

Figure 8: Factors that hindered the success of the IMPRESS intervention

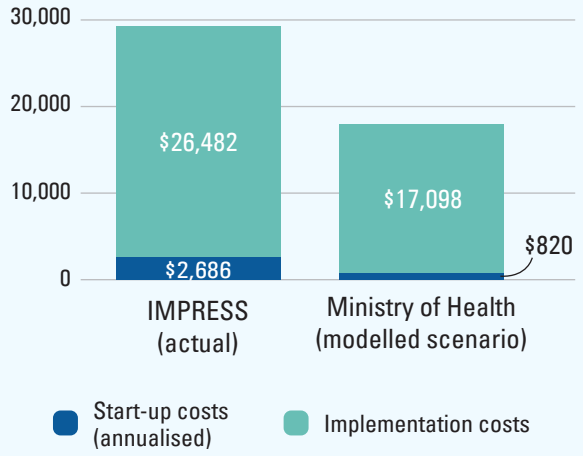
		POLICY IMPLICATIONS
Weak or disengaged leadership Where leaders were absent, unresponsive, or hesitant to act, progress stalled.	"The management in the neonatal ward were not empowered… even when the matron was present, nothing happened." — TECHNICAL ASSISTANT	Strengthen leadership accountability mechanisms to sustain management reforms.
High staff turnover Departure of trained personnel and champions disrupted continuity and increased workloads.	"When the champion went on maternity leave, no one took over." — NURSE	Improve staff retention and handover systems to safeguard institutional memory.
Incentives culture Expectations for allowances and refreshments undermined intrinsic motivation.	"People are used to the old system giving money and providing drinks. [Staff] feel discouraged in doing the audits without expecting anything in return." — HOSPITAL CHAMPION	Reduce dependence on financial incentives by embedding quality improvement into routine roles and responsibilities.
Resource shortages Persistent shortages of supplies and operational funding limited implementation, even where staff were motivated.	"We are only two nurses on duty, and we are also the audit team… it's very hard." — HOSPITAL CHAMPION	Ensure reliable staffing and essential resources to enable the adoption of practices.

Cost of intervention

The cost of the IMPRESS intervention was MWK50,207,441 (US$29,168) per hospital (Figure 9). These costs can be separated into start-up[1] (design and preparation of the intervention) and implementation (delivering the intervention for one year) phases. Activities in the start-up phase and the implementation phase accounted for 9.2% and 90.8% of the total cost, respectively. Under a modelled scenario in which the Ministry of Health implements the intervention with the same staffing levels, the total cost would be MWK30,842,763 (US$17,918) per hospital.

Figure 9: Cost per hospital

Cost in US$ (2024 prices)



1. We annualised start-up costs because such activities support the intervention across multiple years, beyond the first year, so it would overstate the true annual cost to assign them all to year one.

Conclusion

The IMPRESS intervention substantially improved hospital management across a diverse set of management practices. The co-designed intervention was feasible to implement and well-received by hospital staff.

Policymakers looking to institutionalise standards-based management practices in hospitals should consider the IMPRESS intervention as a promising approach. The presence of certain enabling conditions, notably strong leadership and proactive champions, will increase the likelihood of success.

Ntcheu District Hospital nursery ward: the IMPRESS hospital champion leading a neonatal Work Improvement Team meeting.
Photo: Innocent Mauye, Kamuzu University of Health Sciences, 2025.

About this brief

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Photographs: Taken by Innocent Mauye (Kamuzu University of Health Sciences), Ntcheu District Hospital, 2025.

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About IMPRESS

IMPRESS (**I**nnovative **M**anagement **PR**actices to **E**nhance ho**S**pital quality and **S**ave lives in Malawi) is a five-year research project led by the Kamuzu University of Health Sciences and the London School of Hygiene & Tropical Medicine in collaboration with Malawi's Ministry of Health, participating hospitals, and stakeholders in Malawi. The project is investigating how to strengthen management practices to improve the quality of care for small and sick newborns.

All IMPRESS study hospitals are also part of NEST360, which aims to deliver lifesaving care to vulnerable newborns across Africa, and had already received newborn care technologies and training for health professionals and biomedical engineers before the trial began.

More information on IMPRESS: www.lshtm.ac.uk/research/centres-projects-groups/impress

More information on NEST360: https://nest360.org & www.newborntoolkit.org

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