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Embedding the WHO-ICRC Basic Emergency Care course as a sustainable curriculum innovation in pre-service nursing education in Uganda

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Case Report

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Abstract

Background

Health professions education is increasingly expected to produce graduates who are clinically competent, ethical, confident and able to work in teams across complex health systems. In many low-resource settings, however, undergraduate nursing students may complete training without a structured approach to recognising and responding to acutely ill and injured patients. This paper describes the process of embedding the WHO-ICRC Basic Emergency Care (BEC) course within undergraduate nursing education in Uganda.

Methods

We report a health professions education case study informed by education quality improvement. The intervention began in 2018 as an externally supported short course and was incorporated into the fourth-year Emergency and Trauma Nursing course unit during curriculum review in 2019. Anonymous voluntary feedback from 32 fourth-year nursing students from one of the cohorts that completed a five-day BEC course was analysed using inductive content analysis.

Results

The embedding process moved through five stages. These were recognising the emergency-care preparation gap, introducing BEC as a pre-service training intervention, piloting delivery, incorporating BEC into the curriculum, and planning for sustainable university-led delivery. Student feedback generated four themes, which were translating ABCDE into structured first-response practice, building confidence to recognise, prioritise and communicate emergency problems, using simulation and team-based learning as safe rehearsal, and strengthening system readiness for transfer of learning.

Conclusion

BEC can support competency-based, learner-centred emergency-care education for undergraduate nurses. Embedding BEC before graduation may strengthen clinical readiness, teamwork and a common language for first response, while offering a scalable model for health professions education in low- and middle-income countries.

Introduction

Health professions education (HPE) has moved beyond transmitting discipline-specific knowledge towards preparing graduates who can communicate effectively, work in teams, show leadership, and respond safely to complex clinical situations [1]. This shift is particularly important in nursing education,

where graduates are expected to recognise clinical deterioration and initiate timely care in wards, outpatient departments, maternity units, emergency units and community settings.

Uganda experiences a high burden of acute illness and injury, including trauma, severe infection, obstetric emergencies and acute complications of chronic disease [2]. Emergency care services remain under-resourced, with large patient volumes, limited organised systems and insufficient emergency-care training among frontline health workers [4]. The World Health Assembly has recognised emergency, critical and operative care as essential health-system functions and called for stronger, standardised training for frontline clinicians [5]. In Uganda, as in many low-resource settings, nurses are often the first clinical contact, triage decision-makers and coordinators of immediate assessment, stabilisation and referral [6, 7].

This burden reinforces the need for emergency-care training before qualification, not only after deployment. Across sub-Saharan Africa, emergency care has increasingly been framed as a system function that depends on early recognition, initial stabilisation, triage, referral and continuity across levels of care [8–10]. For nursing education, this means that students need a common first-response language and repeated opportunities to practise essential actions before they enter clinical environments where nurses may be the first available providers.

The WHO-ICRC Basic Emergency Care course (BEC) provides a practical, structured approach to the acutely ill and injured patient. Evidence from sub-Saharan Africa shows that BEC improves emergency-care knowledge, skills and confidence among practising health workers and nurses [11–14]. Recent emergency nursing commentary has also highlighted the importance of BEC for strengthening nurses' role in recognising, prioritising and responding to emergencies [15].

Emerging evidence from Uganda and Malawi also suggests that short-course emergency-care learning is strengthened when it is paired with deliberate preparation, follow-up mentorship or opportunities for repeated clinical use [8, 16]. This is important for pre-service education because confidence and knowledge gains may decay if students do not have supervised opportunities to rehearse and apply skills after training.

Most published BEC implementation has focused on continuing professional development after qualification [11]. This leaves a gap in pre-service nursing education. Students may encounter emergencies during clinical placements and soon after graduation, yet may lack confidence to assess, prioritise and act independently when patients deteriorate in adult, paediatric, medical, surgical, maternity or outpatient settings. From an HPE perspective, this is not only a content gap. It is a competency, confidence and transfer-of-learning gap.

The local educational problem was therefore defined as insufficient structured preparation of undergraduate nursing students for first-line emergency recognition and response. The educational change idea was to move BEC from an externally supported short course towards a sustainable curriculum component within undergraduate nursing education. This paper describes how BEC moved

from an externally funded short course to a sustainable curriculum innovation within pre-service nursing education, and examines students' experiences of its value for confidence, clinical readiness and first-response capability.

Methods

Design and educational context

We used a health professions education case-study approach informed by education quality improvement. The case was located within an undergraduate nursing programme at a public university in Uganda. Before the improvement work began, emergency and trauma content existed in the programme, but students did not routinely complete the full WHO-ICRC BEC course as part of pre-service preparation. Faculty observed that students valued emergency-care skills but often needed a simple framework to support independent first response across clinical areas.

The improvement work started in 2019, enabled by external support through the EMERGE project. EMERGE standing for Emergency and Critical Care Nursing Empowerment, Research, and Capacity Growth in Uganda, is an emergency and critical care nursing capacity-building initiative. The first cohort included approximately 35 undergraduate nursing students and 4 faculty. Implementation was disrupted in 2020 by the COVID-19 pandemic. The team considered adapting BEC for online delivery, but student feedback showed a strong preference for face-to-face training because it allowed direct interaction with facilitators, immediate correction of mistakes and supervised practice of emergency-care skills. The programme was therefore paused until 2024, when renewed support from Seed Global Health and the University of Manchester enabled face-to-face delivery to resume for two additional cohorts.

Since then, approximately 100 students, 10 nursing faculty and 65 nurses have been trained. Early delivery treated BEC as an additional course outside the formal curriculum, but end-of-course student feedback and observed gains in confidence supported further embedding within undergraduate training.

Educational intervention

BEC was selected because it is an evidence-based intervention designed for frontline providers in low-resource settings and teaches a systematic approach to assessment, initial stabilisation and management of adult and paediatric emergencies [15, 17]. The course was delivered over five consecutive days, with approximately eight hours of instruction and practice per day. Teaching methods included interactive lectures, trainer demonstrations, skills stations, simulation scenarios, team-based practice and workbook-guided learning. The curriculum emphasised ABCDE (Airway, Breathing, Circulation, Disability, and Exposure) assessment, "look, listen and feel", SAMPLE (Signs and symptoms, Allergies, Medications, Past medical history, Last oral intake, and Events leading up to the incident) history-taking, triage, stabilisation, cardiopulmonary resuscitation, handover and timely referral. The trainer-to-learner ratio was 1:5.

From an HPE perspective, BEC was treated as a competency-based educational intervention rather than only a short course. Following positive student feedback and faculty reflection, BEC was incorporated into the fourth-year Emergency and Trauma Nursing course unit during curriculum review in 2024. Final year was selected deliberately because students had completed foundational sciences and had enough clinical exposure to understand acute deterioration but had not yet entered the workforce as independent practitioners. This timing was also intended to minimise loss of knowledge and skills before transition into practice, given evidence that emergency-care competencies can decay without reinforcement or clinical application [18].

Embedding and sustainability process

The process of embedding BEC combined student training, faculty development, clinical mentorship and sustainability planning. Initially, certified external trainers supported delivery. Over time, faculty members, ward nurses and additional trainers completed BEC training so that local capacity could replace dependence on donor-funded external facilitation. Training equipment and course materials were procured during the externally funded period.

The sustainability plan was to move BEC from a project-supported activity to a university-supported component of undergraduate training. Seed Global Health and University of Manchester support for BEC ended in 2025, but the implementing university and department put structures in place to sustain delivery through trained faculty.

From 2026, certified BEC trainers and master trainers within the faculty will deliver the five-day course using existing equipment and low-cost teaching methods, with certification provided through the African Federation for Emergency Medicine (AFEM). This approach is intended to keep the course manageable within existing tuition and departmental resources while retaining the practical skills-based learning that makes BEC valuable.

The innovation was not the BEC course itself, but its repositioning as a pre-service, competency-oriented curriculum component designed to prepare students for emergency recognition and response before entry into the workforce.

This local trainer pathway is consistent with wider emergency-care education work in Africa, where sustainability has depended on developing context-aware educators, protecting skills-based practice time and reducing reliance on visiting faculty or short-term external delivery [16, 19].

The longer-term scale-up aim is to provide a model that can be adapted by other universities and diploma-level nursing institutions in Uganda and similar African settings.

Table 1
Process of embedding BEC within undergraduate nursing education at a Ugandan university

Phase	Educational action	Purpose for health professions education
2018 pilot	BEC delivered as an externally supported course to about 30 students.	Test acceptability and respond to limited student confidence in emergency care.
Early learning	Student feedback and faculty observations suggested improved confidence and ward performance.	Use learner and faculty feedback to refine the educational change idea.
2019 curriculum review	BEC incorporated into the fourth-year Emergency and Trauma Nursing course unit.	Move from an optional short course towards curriculum embedding.
2024–2025 Capacity-building	Faculty, ward nurses and external trainers were trained; equipment and course materials were obtained.	Build institutional capacity and reduce dependence on external trainers.
2026 Sustainability and scale-up	From 2026, delivery planned through university-led low-cost approaches, with potential adoption by other institutions.	Support continuity and wider pre-service emergency-care preparedness.

Evaluation and participants

This paper reports one evaluation cycle from a fourth-year cohort that completed BEC after it had been incorporated within undergraduate emergency and trauma nursing training. The main phenomenon of interest was students' perceived educational value of BEC, including preparedness, confidence, skill development and transferability to clinical practice. Process learning focused on requirements for sustaining and scaling BEC within nursing education.

Thirty-two fourth-year undergraduate nursing students participated in the course and were invited to provide anonymous feedback after completion. Feedback participation was voluntary. No patient outcomes were measured because the focus was educational improvement rather than clinical effectiveness.

Data collection and analysis

Anonymous post-training feedback forms included open-ended questions on students' experiences, perceived changes in knowledge, skills and confidence, and suggestions for improvement. Responses were reviewed manually using inductive content analysis [20]. Similar responses were grouped into categories and refined into themes that captured educational value, implementation learning and system requirements for transfer of learning. No statistical hypothesis testing was undertaken. Counts are presented only for the number of students who completed the course and returned feedback forms. Quotations are reported anonymously using numbers.

Ethical considerations

This was an education quality improvement activity. Anonymous feedback was collected through routine quality assurance and training evaluation to improve the BEC course. Students were informed that anonymised quotes might be used in publication and were asked not to include identifying information. Participation was voluntary and informed consent was obtained before feedback was provided. Feedback was collected independently of BEC trainers and faculty involved in teaching. The activity did not involve experimental procedures or patient data and followed the Declaration of Helsinki and relevant institutional training guidance in Uganda.

Results

All 32 students completed the WHO-ICRC BEC training and anonymous feedback forms. The results are presented in two parts: the process of embedding BEC within undergraduate nursing education and student feedback on the educational value of the course.

Process outcome: from external short course to curriculum component

The embedding process began with a locally recognised educational problem: students needed greater confidence and a structured approach for first response to emergencies across clinical placements. Seed Global Health funding through the EMERGE project enabled the initial pilot in 2018 and supported repeated delivery, trainer preparation and acquisition of teaching resources. Early implementation demonstrated that students valued the course and that BEC could fit within undergraduate nursing training if the timing and teaching arrangements were protected.

The major curriculum milestone occurred during the 2019 curriculum review, when BEC was incorporated into the fourth-year Emergency and Trauma Nursing course unit. This positioned BEC at a point where students were sufficiently clinically exposed to benefit from simulation and emergency scenarios, but still early enough to influence their transition into independent practice.

Sustainability was built into the model by training faculty and clinical mentors, using existing teaching equipment, embedding BEC within a final-year course unit, and shifting delivery from donor-supported external facilitation to university-led implementation.

Translating ABCDE into structured first-response practice

Students described BEC as moving emergency care from general awareness to a practical sequence of action. They highlighted ABCDE assessment, “look, listen and feel”, SAMPLE history-taking, triage, stabilisation, handover and cardiopulmonary resuscitation as tools that helped them prioritise urgent needs and initiate timely interventions. This supported the educational aim by giving students a

repeatable framework for first response rather than leaving emergency recognition to confidence or experience alone.

"It equipped me with skills, ABC, that I will be using in patient assessment and intervention. It also helped me learn to identify some emergency signs in patients." (Student 05, Anonymous)

"My knowledge and skills improved greatly. I can identify an emergency sign and intervene correctly as needed." (Student 07, Anonymous)

"I now feel better prepared to respond to a wide range of emergencies with confidence and precision. One of the most valuable aspects has been the improvement of my resuscitation skills," (Student 21, Anonymous)

Confidence to recognise, prioritise and communicate emergency problems

Students reported greater confidence in recognising and differentiating emergency signs from non-emergency signs, making initial decisions based on patient presentation and communicating more clearly with nurses and other students during placements. Confidence was linked not only to acquiring new knowledge, but to having a common language and sequence for action. This was important because the intended outcome was readiness for first-line response across different clinical areas, not only in formal emergency units.

"It gave me confidence to intervene accordingly as needed, as per the patient's presentation." (Student 08, Anonymous)

"I can identify an emergency sign and intervene correctly as needed. It has helped me to differentiate between emergency signs and non-emergency signs." (Student 30, Anonymous)

"For the skills, I am confident because I was trained on how to do the different skills." (Student 11, Anonymous)

Simulation and team-based learning as safe rehearsal

Students valued the practical and interactive design of the course. Simulations, skills demonstrations, teamwork and workbook-guided learning made the training lively, memorable and easier to apply. These methods functioned as safe rehearsal before clinical practice, allowing students to practise decision-making, coordination and technical skills without risk to patients.

"The simulations where we exercised the practical sessions, the amazing team leads that made the work so lively." (Student 15, Anonymous)

"The availability of a workbook from which we could read before, during, and after the training" (Student 31, Anonymous)

System readiness for transfer of learning

Students highlighted the need for BEC as more than a one-off training. They recommended wider inclusion across nursing curricula, more protected time for practical sessions and refresher learning. They also recommended early placement or deployment in emergency units so that new skills could be used and consolidated. Their feedback pointed to a transfer-of-learning gap between the BEC approach and routine clinical processes in some facilities.

"I would recommend more time for training at least one week for theory and another week for the simulations." (Student 28, Anonymous)

"One of the main challenges I experienced during the BEC training was the limited time allocated for certain practical skills, particularly resuscitation... repeated practice is essential for building confidence and competence." (Student 17, Anonymous)

"I recommend that after the training, students are taken to emergency units to utilise the acquired knowledge and skills. This will help with retention. Delayed exposure to these emergencies, can lead to forgetfulness." (Student 23, Anonymous)

"I would strongly recommend the BEC training to other cadres of nursing students like diploma. The programme is highly practical and equips learners with essential emergency care skills that are directly applicable in clinical practice." (Student 12, Anonymous)

Lessons learned

Several lessons emerged from moving BEC from a short course into a pre-service nursing curriculum. First, curriculum innovation was easier to justify when it began with a locally recognised competence gap rather than with the availability of an external course. Faculty and students already recognised that emergency recognition, triage, structured handover and early stabilisation were expected of graduating nurses, but these competencies needed a clearer organising framework. Positioning BEC as a response to this gap helped the course fit within existing educational priorities rather than appearing as an additional project activity.

Second, the practical identity of BEC should be protected during curriculum embedding. Student feedback showed that the value of the course lay in practicing skills, rather than in receiving more emergency-care lectures. This matters because African BEC evaluations have consistently highlighted the importance of skills-based learning, local facilitation and confidence-building for frontline providers [12, 13, 21]. Online or workbook-based resources can prepare students and support revision, but they should complement rather than replace supervised practice [4, 8].

Third, sustainability depended on building a faculty and clinical mentor pipeline. The most important shift was not only that students were trained, but that faculty, ward nurses and local trainers developed capacity to deliver and reinforce the course. Similar African emergency-care education initiatives have

shown that training-of-trainers, educator development and mentorship approaches are important when programmes are expected to continue after external partners leave [16, 19]. For universities, this means that BEC should be accompanied by faculty development, trainer succession planning and clear departmental ownership.

Fourth, BEC needs a deliberate bridge to bedside practice. Students recommended emergency-unit exposure soon after training because they recognised that skills can be forgotten when they are not used. This lesson is consistent with evidence that structured triage and emergency-care tools can improve communication, prioritisation and patient flow when they are linked to routine clinical processes [6, 22]. Curriculum teams should therefore consider pairing BEC with clinical placement objectives, simulation refreshers, bedside checklists, handover prompts and mentor feedback so that the course becomes part of everyday clinical reasoning.

Fifth, scale-up should be realistic about resources. The course can be delivered with low-cost methods and existing equipment, but it still requires protected time, trained facilitators, reliable teaching materials, functioning simulation space and coordination with clinical placement sites. If these enabling conditions are not planned, BEC risks being absorbed into the timetable as theory content and losing the active learning elements that students found most useful. Sustainability should therefore be judged not only by whether BEC appears in the curriculum, but by whether students continue to receive enough guided practice to become confident first responders.

Finally, the experience suggests that pre-service BEC is most useful when viewed as part of emergency-care system strengthening. It does not replace investments in emergency units, referral systems, staffing, equipment or specialist emergency nursing, but it can help create a common language for first response across wards and facilities. In settings where nurses are often the first clinical contact, embedding BEC before graduation may be a practical way to strengthen the workforce foundation for safer emergency care while broader health-system reforms continue [9, 10].

Discussion

This HPE case study shows how BEC can move from a short course into a curriculum component within undergraduate nursing education. The main contribution of this paper is documenting a sustainable curriculum innovation in health professions education, highlighting the transition of BEC from a donor-supported short course to a faculty-led component of pre-service nursing education.

The findings align with the broader shift in HPE towards learner-centred and competency-based education. BEC gives students a structured way to recognise, prioritise and respond to emergencies, while simulation and skills stations allow them to rehearse communication, teamwork and decision-making. The findings are consistent with studies from Uganda, Tanzania and other sub-Saharan African settings reporting improved knowledge, skills and confidence after BEC training among practising health workers [11]. The report also strengthens the argument that BEC is relevant to emergency nursing

education specifically. Introducing this approach before graduation may help create a critical mass of nurses who can recognise deterioration and initiate first-line care before specialist review or transfer.

Active learning was central to acceptability and perceived usefulness. Students valued simulation, skills stations, demonstrations, teamwork and workbook-guided learning. This echoes reports from Uganda, Tanzania, Malawi and wider sub-Saharan Africa in which practical teaching methods, mentorship and repeated exposure supported emergency-care learning and confidence [23, 24]. The implication for curriculum planners is that BEC should not be reduced to lecture content. Its educational value depends on protected practice time, trainer feedback, team rehearsal and clinical opportunities to use the approach.

The implementation process also exposed a systems issue. Education alone cannot guarantee practice change when clinical systems do not mirror what students are taught [25]. A BEC-to-bedside toolkit could help bridge this gap by linking ABCDE assessment, SAMPLE history, triage categories, handover prompts, emergency equipment checks and referral triggers to local workflows. Refresher sessions, mentorship and purposeful emergency-unit placement may also be needed to retain skills and convert confidence into reliable performance [21].

Limitations

This report has several limitations. First, it was conducted within one undergraduate nursing programme, which may limit transferability to institutions with different staffing, timetables, skills laboratories or funding arrangements. Second, the evaluation relied on anonymous immediate post-training feedback, so findings reflect perceived value and confidence rather than objectively measured competence. Third, there was no long-term follow-up to assess retention, clinical application or patient-level outcomes. Fourth, faculty observations of improved confidence and ward performance were part of routine educational reflection and were not measured using a formal observational tool. Finally, the report describes an education improvement process and should not be interpreted as causal evidence of clinical effectiveness.

Conclusion

The WHO-ICRC BEC course was progressively embedded within undergraduate nursing education in Uganda through a process that began with externally supported training and moved towards institutional ownership. The report shows that BEC can strengthen pre-service emergency-care preparedness by improving students' perceived knowledge, confidence, structured first-response skills and readiness for clinical practice. Future research should evaluate objective competence before and after BEC training, assess skill retention and clinical application after graduation, test a BEC-to-bedside toolkit in routine care settings, and examine the cost and feasibility of scaling BEC across universities and diploma nursing institutions.

Declarations

Ethics approval and consent to participate

This was an education quality improvement activity using anonymous feedback collected through routine quality assurance and training evaluation to improve the BEC course. The activity did not involve experimental procedures or patient data. Ethical approval was obtained from the Makerere University School of Health Sciences Research and ethics committee, reference number MAKSHSREC-2026-243. Participation in the feedback process was voluntary, and informed consent was obtained before feedback was provided. Students were informed that anonymised quotes might be used in publication and were asked not to include identifying information. Feedback was collected independently of BEC trainers and faculty involved in teaching. The activity followed the Declaration of Helsinki and relevant institutional training guidance in Uganda.

Consent for publication

Not applicable. The manuscript does not contain identifiable individual participant data. Anonymous student quotations are reported using student numbers only.

Availability of data and materials

The anonymised feedback data analysed for this manuscript are not publicly available because the feedback was collected through routine quality assurance processes and participants did not consent to open data sharing. Reasonable requests may be considered by the corresponding author subject to institutional governance and protection of participant anonymity.

Competing interests

The authors declare no competing interests. One author is affiliated with Seed Global Health, and another is affiliated with the University of Manchester. These affiliations did not influence the evaluation, findings, interpretation or conclusions reported in this manuscript.

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Authors' contributions

R.N., C.A., T.D.N. and P.M. contributed to conceptualisation of the manuscript and educational evaluation. T.D.N., R.N., C.A., J.K., S.I.T. and P.M. contributed to implementation design, training coordination and interpretation of findings. R.N., C.A., T.D.N., L.K., J.N., R.M., S.N.M., E.A., M.N., G.M., M.C.N., G.M.N., J.S.D.,

A.M.K., F.K., D.N., M.F.N.B., R.M., H.A., M.N., S.N., A.N., the EMERGE Group and P.M. contributed to project implementation, training support, supervision, resources or critical review of the manuscript. T.D.N., R.N., C.A. and P.M. drafted the manuscript. All authors reviewed and approved the final manuscript and agree to be accountable for all aspects of the work.

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