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Participatory approach to quality development in infection prevention and control (IPC) in Nigerian health facilities

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SUMMARY

The development of an educational concept of a training programme for infection prevention and control (IPC) was seen as a key issue to successfully address the complexity of change processes of professional IPC routines in clinical procedures. Therefore, the Nigeria Centre for Disease Control (NCDC), Nigeria, and the Robert Koch Institute (RKI), Germany established an interdisciplinary project framework, involving knowledge and competences from different disciplines and professions like health professionals, epidemiologists and educators (MAURICE project). A multi-module training programme for health care workers to improve IPC standards was developed and implemented based on the participatory approach and a systemic view for organizational change.

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Introduction

Healthcare-associated infections (HCAI), are infections which occur in a patient while receiving care in a hospital or other health care facility, but which were not present or incubating at the time of admission. HCAI represent the most

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frequently adverse event associated with patient care. [1] In developed countries the estimated prevalence of endemic hospital-acquired infection is 5%–15% in the regular wards and up to 50% in intensive care units. For developing countries the prevalence is underestimated or unknown. [2,3] The occurrence of HCAI in developing countries implies higher mortality rates, prolonged hospital stays, excess costs, increased microorganism resistance to antimicrobials, and other adverse consequences.

Prevention of HCAI is the responsibility of all individuals and health care providers. All health care workers (HCW) should understand IPC measures embedded within clinical procedures, as well as the importance of precautions for biohazard security and risks associated with the environment. Numerous studies have identified hindering factors and enabling factors of the implementation of IPC measures, i.e. the routine incorporation (“normalization”) of interventions in everyday health care practice. Although national guidelines exist in many low- and middle-income countries, the implementation of IPC continues to be a struggle. [4,5].

The World Health Organization (WHO) recommends as part of one core component of IPC, that all HCW should be trained by utilizing team- and task-based strategies that are participatory. [1] However, standard training programmes focus on the professionalization of individuals not taking into account the systemic and organizational dimension of IPC, although it is acknowledged that HCAI are a problem in the context of complex health care systems related to issues of structure, governance, and human factors. [6] This doesn’t seem to be enough to bring about sustainable change in all day routines of clinical procedures. We assume that the missing link is a training approach which combines professionalization and organizational development, both in a participatory way. This means that there is a need to finally to bring the two worlds together, which mostly still remain separate in this context: The world of natural science knowledge and the world of social negotiation in an organization. Therefore the Nigeria Centre for Disease Control (NCDC), Nigeria, and the Robert Koch Institute (RKI), Germany, developed a training programme to initiate participatory quality development of IPC in Nigerian hospitals (MAURICE project).

The training programme for participatory quality development in IPC

IPC knowledge and skills must be the content of an IPC training programme, but they alone are not sufficient to raise the IPC standard in a health facility. [7–9] Training approaches are needed that motivate colleagues to take responsibility for IPC under real working conditions, provide process instruments and enabling skills for a collective IPC improvement and support the actors with onsite visits and workshops. This kind of training has to be based on the analyses of the local working and IPC conditions and has to integrate actively the management of the hospital. These assumptions lead us to the following pedagogical and didactical decisions:

- > participatory approach
- > systemic view
- > congruence of content
- > ethical commitment.

Participatory approach

For more than three decades the participatory approach had been highly recommended in the field of community development and public health in order to support empowerment processes as well as to increase effectiveness and sustainability of international development collaboration. [10,11] The participatory approach describes a bottom-up strategy, which focuses on local conditions and strengthens internal ownership and commitment by engaging and motivating the people affected. The basic understanding of participation and the participatory approach can be summarized in the following aspects [12]:

- > The target group becomes the main actor (action, visibility, voice)
- > Local context conditions and local knowledge/beliefs play the key role in the process
- > Participation changes the role of (foreign) experts in the training/project: equitable collaboration between service and target group is emphasized (communication and relationship)
- > Participation happens on all steps of intervention (plan, do, check, act/Public Health Action Cycle)

The project transfers the basic understanding of the participatory community approach to the context of IPC quality development in health facilities. According to this shift the HCWs get trained as *IPC change agents* focussing on their field knowledge and supporting them with IPC knowledge/competences and process skills. The objective of the training is to enable the participants to collaborate with their colleagues in a participatory way on IPC issues: This means improving IPC standards by applying the participatory approach in their health facility and being supported by their management.

Systemic view

The *systemic view* represents the organizational aspect of IPC (e.g. leadership, equipment, workload) as well as the relational aspect (e.g. communication, collaboration of staff members/different cadres).

The *systemic view* is introduced in the training concept to better reflect the all-day complexity of IPC challenges in a health facility. Appropriate instruments are needed to analyse and organize all the influencing and interacting factors in order to support HCW in managing the IPC relevant aspects. This instrument is presented by the four-factor-model of the “Theme Centred Interaction” (TCI) developed by Ruth Cohn. [13] The four factors Cohn identified, and which have to be balanced in the learning process, are the *THEME* (the topic of a learning or working process, e.g. IPC, hand hygiene), *ME* (the person itself, e.g. the health care worker), *WE* (the relational aspect; the team, e.g. in a ward) and the *GLOBE* (influencing context indicators, e.g. infrastructure, working conditions, material resources, space).

By defining the improvement of IPC practice as an on-going learning process of HCWs in a hierarchical organisation, the model helps the participants to identify, understand and discuss the influencing factors of IPC in their daily work conditions during the training. It trains them to understand IPC in a holistic way and to act accordingly in their health facilities.

Congruence of content and method

Each didactic decision in the training programme was based on the philosophy of the pedagogical approach itself, in order to reach a high level of congruence of content and method. This results, among other things, in a high professional demand on the didactic skills of the trainers. There are various reasons why this congruence seems to be necessary: The participatory approach and the systemic view cannot be taught in a traditional way – it would be a contradiction in itself. They have to be experienced to be properly understood. The concrete experience and the reflections make it possible to consider the desired IPC improvement as a *continuous learning process*. [11].

Secondly, the participants of the training programme are trained as *IPC change agents*. Therefore, in order to stimulate and improve the competences they will need later in their hospitals, it is necessary to apply participatory tools and systemic methods during the workshops.

Finally, the participatory approach and systemic view refer not only to methods and tools, but also substantially to professional attitudes, which must be experienced and reflected by the participants. [9].

Ethical commitment

The ethical commitment to focus the perspective of IPC improvement not only on the well-being of patients, but also on reducing the health risk of health professionals is an expression of respect and appreciation of this professional group. Their motivation for IPC improvement can be additionally stimulated by this expansion of perspective and has a positive effect on the desired processes of change.

These four pedagogical decisions lead to the following composition of the group of participants.

Composition of group of participants

Each participating hospital is asked to send two members of the staff to the training, preferably colleagues which were already engaged in IPC committees or as IPC focal persons. The two colleagues should cover two different cadres in the hospital (e.g. doctor/nurse or nurse/laboratory staff). With this decision the following aspects should be matched:

- the future work of the HCWs as *IPC change agents* in the hospital covers different professional perspectives and needs interprofessional cooperation
- the training can strengthen the already existing IPC structure in the hospital
- the HCWs can work and plan as a “tandem”, or a “professional couple”

Furthermore, representatives of the management board of the hospitals are invited to participate in the training programme in order to support the *IPC change agents* work and the process of participatory IPC quality improvement in the health facility. Therefore the training concept emphasised a transparent and stimulating communication with the management of the engaged hospitals and accompanies the bottom up approach with this element of a top-down strategy (double tracking).

Short description of the training modules based on the participatory and systemic approach

Training modules for HCW and members of the management of the engaged hospitals are developed through an intensive collaboration with the staff of NCDC, RKI, the Federal Ministry of Health, Lagos and Nasarawa State ministries of health.

The implemented training programme consists of four modules:

- Module (1): a four-day training workshop (target group: health care worker)
- Module (2): a four-week field phase in the hospitals with one onsite mentoring and feedback loops
- Module (3): a two-day training workshop (target group: health care worker and management staff)
- Module (4): 6 months of mentoring

First module

The first module starts with a four-day training workshop. The participants get an introduction of the educational approach for participatory quality development of IPC and basic knowledge/competences about IPC with a focus on standard, transmission-based precautions and risk assessment. Various didactical elements are integrated in the presentations and foster a participatory working culture and a constantly increasing exchange among the participants and between participants and trainers.

A set of tools for participatory engagement of HCW is introduced, like photo-voice, rapid appraisal, observation sheets and others. The systemic view is experienced and exercised by using the four-factor-model to analyse a concrete IPC problem from their work area. A field-visit (half day) in a hospital enables the participants to work with the participatory tools in a clinical setting – different from their own - and to deepen the discussion about IPC problems as well as specific needs for improvement.

The four-day workshop concludes with the planning of a participatory IPC project that the “*IPC change agents*” intend to implement in their own hospitals during the four-week field phase. This project enables a first transfer of the Maurice-approach into their working practice.

Second module

During the four-week field phase the participants receive at least one on-site mentoring visit by one of the trainers facilitator. During their little participatory IPC project, the trainers encourage the trainees to plan small steps and appreciate little changes in the professional behaviour of colleagues and their increasing interest in IPC issues rather than only look for big solutions.

They are asked to document the process weekly. The communication style and the suggestions during the mentoring sessions follow the basic ideas of the participatory approach and systemic view.

Third module

In a two-day workshop, the participants are invited to present the projects they worked on during the field phase to

share their experiences. The presentations are divided into short sessions and exercises on IPC knowledge and process skills, which address areas of problems and challenges reported by the *IPC change agents*.

After the project presentations and discussions, the medical directors of the hospitals are invited to participate at the workshop. Thus, the interaction among the management representatives of the participating hospitals, as well as between management and staff is strengthened by different activities. The *IPC change agents* and their medical directors close the session with a written commitment for concrete next steps toward a participatory IPC improvement in each of the engaged hospitals.

Fourth module

Supportive mentoring of the hospitals engaged in the training is offered. The *IPC change agents* are asked to submit weekly protocols about the IPC process and to contact the trainer who will assist them during the process.

Teaching materials

A draft handbook for the facilitators as well as for the *IPC change agents* has been developed. The handbook for the facilitators consists of the core content and the philosophy of the training approach, didactical materials for the implementation and methodological notes on their use. For the health care workers and *IPC change agents*, a condensed presentation of the content of the approach and the underlying core assumptions is prepared. In addition, they are provided with methods, tools and working sheets which help to start and organize collaboration with their colleagues in the health facility.

Both manuals focus on the working contexts of the respective target groups. Both target groups are called upon to use the handbooks as orientation aids and to adapt the material to their specific contexts and working needs.

The IPC teaching material for standard precautions, the so-called *one pagers*, are based on the manual on infection prevention and control developed by the NCDC. For each standard precaution all essential information is summarized on one laminated page to enable the participants to use these training materials in their respective hospitals.

Evaluation of the MAURICE project

The evaluations of the different phases of the training show a very positive response on the approach and the tools offered during the training programme. Here are some findings from the evaluations:

- > After the first workshop phase the participants expressed satisfaction about the way the approach was introduced in the training. They were convinced that this approach could help address IPC related problems. However, they were afraid to face problems during the four-week field phase which are related to the cooperation of staff and the funding of IPC needs identified during needs assessment. They therefore asked for ongoing support and mentoring.

The IPC project presentations of the participants in the third module after the field phase gave interesting insights in the very different processes, results, perceptions and local conditions faced by the *IPC change agents*. It is important to note that the topics chosen, the way of addressing the identified problems and the achieved results differed very much from hospital to hospital. These differences could be found regarding the IPC outcome as well as the quality of the participatory processes.

All *IPC change agents* reported on the steps taken in their field phase, most of them with very impressive concrete results:

- > An IPC culture assessment board was created
- > Committees were implemented or re-established
- > Step down trainings were held
- > Needs assessments were carried out
- > Management was pushed and took decisions to improve infrastructure (e.g. water supply, IPC material, to clean up environment)
- > changes in IPC collaboration and awareness are noted (collaboration between IPC focal person and staff)
- > The systemic view as an analytic method was introduced to the colleagues and worked on.

Furthermore, the change agents also reported difficulties in working with colleagues in a participatory way and complained about their already heavy workload. They seemed to be very motivated, but also limited in energy and time.

- > The evaluation at the end of the third module (workshop after the field phase) showed that over 90% of the participants believed that presenting and discussing their project during the training programme was very helpful for further progress on their work. The participants explained that they appreciated the development of a common IPC -vision together with the management.
- > The evaluation of the management representatives showed a high acceptance of the educational training approach. They however expressed concern about the lack of cooperation among the health care workers and wished that more staff from each hospital could be involved in similar training programmes in the long-term. They identified encouragement and motivation as necessary elements required to achieve sustainable change. They also expressed their desire to continue participating in the training programme.

Lessons learned: observations and experiences from the MAURICE training project in Lagos

During the training programme, the different modules and workshop phases had to be adapted to the needs of the participants. Balance had to be maintained between imparting IPC knowledge to participants and applying the theory and practice of the participatory approach and systemic view. These approaches had to be constantly elaborated through a continuous reflection process by participants and trainers.

The importance of involving staff from different cadres became evident. It was clear that each group had special IPC

needs, which had to be satisfied to enable them contribute to the improvement of IPC culture in a sustainable way. These needs and requirements differed significantly among the cadres of health care workers and had to be adapted to each target group. The participatory approach and the systemic view provided the understanding and meaningful tools to address these differences and needs of specific groups. This was shown by the different processes established in the participating hospitals and activities like the following:

- Photovoice was used to document the situation at the waste collection point in order to get the support of the management to change the deplorable and unacceptable situation;
- the four-factor-model (TCI) was discussed during an IPC meeting in the ward as a basic discussion for a first IPC need assessment;
- WHO survey tools for infrastructure or hand hygiene had been discussed and self-confidentially adapted to the needs and possibilities of a health facility.

It should be noted that the processes of IPC improvement, which the *IPC change agents* developed together with the target group in their hospitals, differ. Each was tailored to correspond to the local conditions and the IPC situation of the specific health facility.

The inclusion of the management representatives in the training programme showed promising results and should be intensified as a prominent resource in IPC quality development.

All *IPC change agents* expressed the need for further support in terms of process mentoring and onsite support. It is evident that the IPC improvement must be seen as a long-term process. In addition to onsite support, the change process should be sustained by flexible, small training units of IPC competences and participatory process skills.

Conclusions

The inter-and transdisciplinary collaboration between IPC experts, educationalists and practitioners for the development and the implementation of the approach seems to be fruitful. The training of facilitators must be implemented with high attention to the theoretical bases and the implication for professional attitude and didactical choices. Also, at this level the communication skills are crucial for the effectiveness of the implementation of the training.

The MAURICE project was well accepted by the participants and gave them an understanding of the complexity of IPC in an organization as a relational system matching their all-day experiences of IPC challenges. The participants were able to translate the skills and knowledge gained during the training into concrete projects in collaboration with the target groups and with support of the hospital management.

The results of the operational research will review these preliminary conclusions and allow a more differentiated assessment.

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Conflict of interest statement

None declared.

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