# Clinical Skill Labs in an Integrated Curriculum

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Clinical simulation is one of the techniques used in health-care education that is performed in a situation that mimics a clinical setting in order to learn the technical skills and competency required for health care management.[1] Simulation based Medical education (SBME) is believed to be superior to traditional medical education-which is more teacher centered and the main mode of information transfer is by lecturing,[2] and the reason is, that the SBME is based on active and adult learning.[3] The SBME is implemented in a well-equipped clinical skills laboratory (CSL) under the supervision of dedicated medical educationists with the help of trained supportive staff. In a CSL, the students/learners not only learn and improve technical skills but also obtain non-technical skills, like; team work, leadership qualities, situation awareness, awareness of personal limitations, communication skills and decision-making etc.[4]

Traditionally, medical contents, until recently, were taught in subject wise pattern, like; anatomy, physiology, community medicine and ENT etc. Now an integrated curriculum has been implemented in Khyber PahtunKhwa (KP) medical colleges. In this integrated curriculum system, a single theme or topic is taught by different specialties at the same time in certain time period. For example; while teaching anatomy of human femur bone, there will be a lecture on its gross anatomy, its embryology, its physiology and its fracture management from orthopedic department. To integrate different subjects and make understood their concepts on a single topic, clinical simulations can play important role.[2]

**Importance and use of simulation for clinical skills teaching in an integrated curriculum:**

1. **Integration of basic and clinical sciences:** The integrated curriculum has provided an opportunity for related concepts integration of basic and clinical sciences, which helps medical students in better understanding of topics.[5]
2. **Safe learning environment:** While practicing simulations in clinical skill laboratory (CSL) will provide a safe environment for a learner and patient both.[6]
3. **Learning technical and non-technical skills:** In majority of cases, technical skills like doing venipuncture, BLS etc are taught in CSL, but non-technical skills like; decision making, situation awareness etc, are also mastered.[7] For a health care provider both skills are of paramount importance to safe patient management.
4. **Debriefing and feedback:** Debriefing from the facilitator and feedback from the learner plays key role while improving upon the learning objectives of a task.[8]
5. **Active and adult learning theories:** As the adults are self-motivated, problem oriented and its easy to build on their previous knowledge, so all these factors make it easy for an active learning environment.[9]
6. **Education and clinical outcome:** Studies have shown that, learning processes which involves active participation and hands-on experience have better educational and clinical outcomes.[10]
7. **Skills mastering:** By trial and error, the learner can master their technique and learning styles.[11]
8. **Acquiring new skills:** Before practicing new skills, it can be acquired and practiced in a CSL, some time a simulation based test may be mandatory before allowing the learner to practice in real world.[12]
9. **Continuous medical education (CME) & certification:** Certain skills are fundamental for health care providers, so for maintaining certain level of proficiency in those skills, periodic certification is mandatory. For example Basic Life support (BLS), Adult cardiac Life Support (ACLS) and Advance trauma life Support (ATLS) etc. Such certification can be easily managed in CSL.[13,14]
10. **Full environment simulation:** In certain high tech CSLs certain skills can be taught on high fidelity mannequins.[15]

In conclusion, development of technical and non-technical skills, for under and post graduate trainees, is of paramount importance,

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Especially in integrated curriculum. To learn and master these essential and life-saving skills, a safe and conducive environment is essential. In real life, trainees may face some legal and hands-on hiccups, while learning these skills. To learn, to master and to re-certify majority of these skills, establishment of a well-equipped clinical skill lab, under qualified trainers, in every medical college is call of the day.

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