

## Original Article

## Evaluation of Medical Officer Certificate Programme Course Competency Based Learning

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### ABSTRACT

**Background:** Medical Officer Certificate Programme (MOCP) is a 6 months training programme in Pediatrics/Medicine at medical colleges wherein doctors work like postgraduate students, learn various Out Patients and In Patient Department (OPD and IPD) procedures, attain hands on skills, perform day and night duties, attend postgraduate training programmes and specialty clinics. This is a course unique to Maharashtra. It has been designed to overcome shortage of Pediatricians and Physicians in the state. **Objective:** To evaluate the efficacy of MOCP courses for medical officers by finding out if their clinical skills have improved and if they have achieved expected level of competence. **Methods:** Public Health Department deputed 28 medical officers of primary health centers. At the end of 6 months training course, they were evaluated during 2012-2013. **Results:** OPD increased by 24% and IPD by 54%. There was a decrease in the number of cases referred to tertiary centers by 24%, post-MOCP training. Infant immunization increased by 35% after training. Number of children with severe acute malnutrition/moderate acute malnutrition treated increased by 22%, treatment of neonatal emergencies, resuscitation, sepsis, jaundice increased by 36%. Number of adults with diarrhoea and snake bite treated increased by 40% and 63% respectively. Number of ECGs taken and myocardial infarctions managed also has shown rising trend. **Conclusion:** There was tremendous benefit to the patients after MOCP training. Skill of doctors was found to have enhanced. It is therefore recommended that such novel trainings should be imparted in other states of India too.

**Keywords:** Medical Officer, Medicine, Pediatrics, Public Health, Training

Public Health Department of Government of Maharashtra started two unique teaching programmes for medical officers i.e. Medical Officers Certificate Programme (MOCP) and Certificate Course in Clinical Nutrition (CCCN). MOCP is a short term 6 months comprehensive training programme for

medical officers (MOs) from primary health centers (PHC) to work in the Department of Pediatrics/ Medicine of medical colleges in the State of Maharashtra. MOs are taught like residents and postgraduate students, working in OPD, IPD, attending day and night duties, specialty clinics, national programmes specially related to nutrition,

emergency treatments, skill building through various procedures like intravenous (IV) lines resuscitation, intubation, ECG, lumbar punctures etc. They are given interactive power point, video conferencing lectures by eminent specialists like professors, clinicians, Padma awardees on relevant subjects, ethics and motivation. Examination is taken at the end of 6 months. This course is expected to overcome to some extent, vacancy short fall of pediatricians and physicians at the PHCs for the Public Health Department of Maharashtra.

Through the present paper, we have analyzed and evaluated the efficacy of MOCP courses to MOs. Evaluation has been done to find out if the clinical skills of the medical officers have improved or otherwise and if they have achieved expected level of competence.

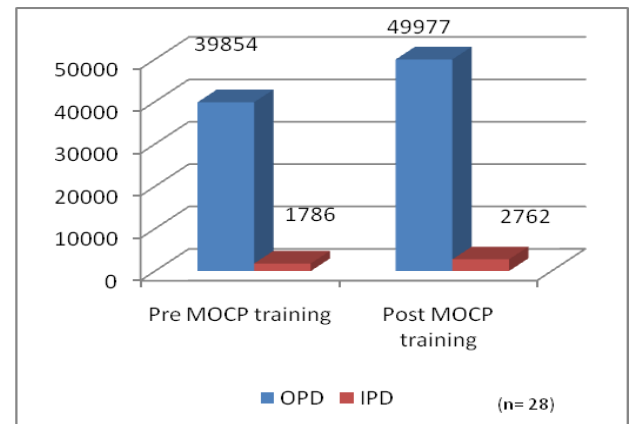
## MATERIAL AND METHODS

Medical officers trained in 2012-2013 were selected for the present study. They were trained in medical colleges and had passed the theory and practical examination. They were reposted back to the original PHCs, where they were posted earlier. Data was collected from MOs pre-training i.e. from February to May 2012 and post training period from February to May 2013. Questionnaire was sent to 56 MOs from the second batch of training. 32 MOs replied out of whom 28 had completed the questionnaire. So, they formed the study group. Structured questionnaire included questions on the number of OPD and IPD cases pre and post MOCP training, difference in case referrals, difference in neonatal emergency management, severe acute malnutrition (SAM) management, medical emergencies before and after training.

## RESULTS

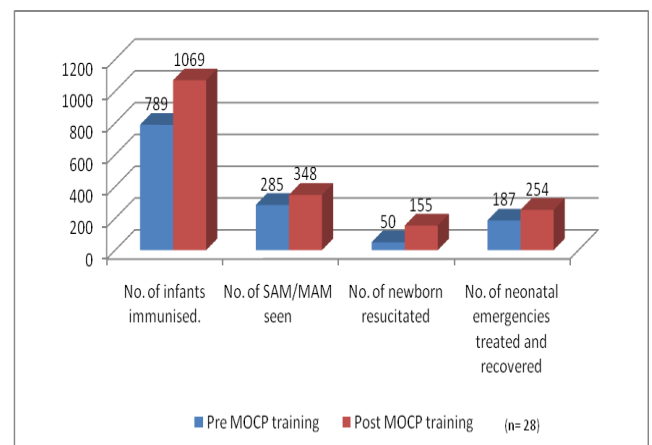
A sample of 28 MOCP trained MOs was studied for the present report. These belonged to different districts of Maharashtra which were Jalna - 1, Latur - 4, Wardha - 3, Nandurbar - 1, Aurangabad - 2, Nasik - 3, Bhandara - 1, Parbhani - 1, Raigad - 1, Gondia - 1, Gadchiroli - 1, Nanded - 1, Pune - 1, Nagpur - 1, Jalgaon - 1, Thane - 1, Satara - 2, Washim - 1. Out of total 28 trained MOs, majority i.e. 82% belonged to PHC followed by 7% each from rural hospital (RH) and district hospital (DH) and 4% were from tertiary hospital (TH). The MOs were provided training in Medicine and Pediatrics departments in 9 medical colleges of Maharashtra. Out of these 28 MOs, 14

of them received training in Pediatrics and remaining 14 received training in Medicine.



**Figure 1 - Number of OPD and IPD patients, pre and post MOCP training**

There has been an increase in the number of both OPD and IPD patients by 25% and 54% respectively in post MOCP training (Figure 1). There has been decrease in the number of cases referred to higher tertiary centers in post MOCP training period by 24% (494 vs. 615) than pre-training period. It shows that after receiving MOCP training more cases have been managed by these MOs which were earlier used to refer to higher centers.



**Figure 2 - Pre and post-training management of pediatric patients**

As shown in figure 2, there has been a rise in number of management of pediatric cases due to all the indications in post-training period. Infant immunization has increased by 35%, number of SAM/MAM treated has increased by 22%, newborn resuscitation has increased by around 190%

and treatment of neonatal emergencies like sepsis, and jaundice has increased by 36% in post-training period than pre-MOCP training period.

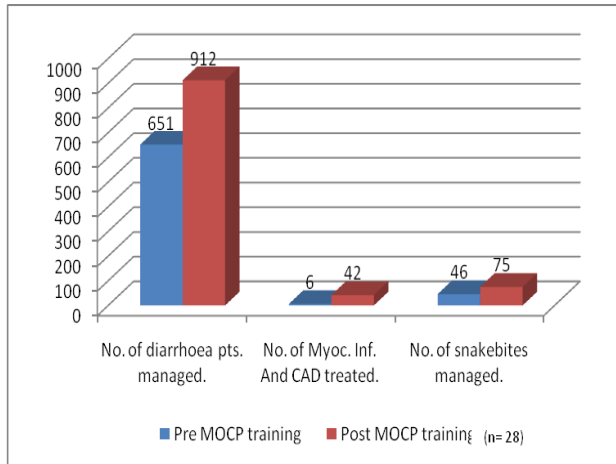


Figure 3 - Pre and post-training disease management

Figure 3 shows a rise in the number of patients suffering from diarrhoea, myocardial infarction and coronary artery disease, snakebite, managed in the post-training period. Number of diarrheal patients managed has increased by 40%, number of myocardial infarction and coronary artery disease managed has drastically increased and snakebite management has increased by 63% in post MOCP training than pre MOCP training period.

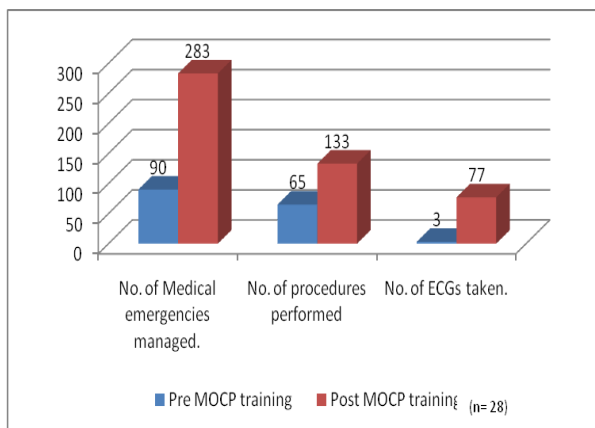


Figure 4 - Procedures and management of medical emergencies, pre and post MOCP training

As shown in figure 4, the number of medical emergencies handled, and number of procedures performed such as insertion of vein flow, Ryle’s tube insertion, intubation, etc and number of ECGs taken has

drastically increased in post MOCP training than in pre-training period.

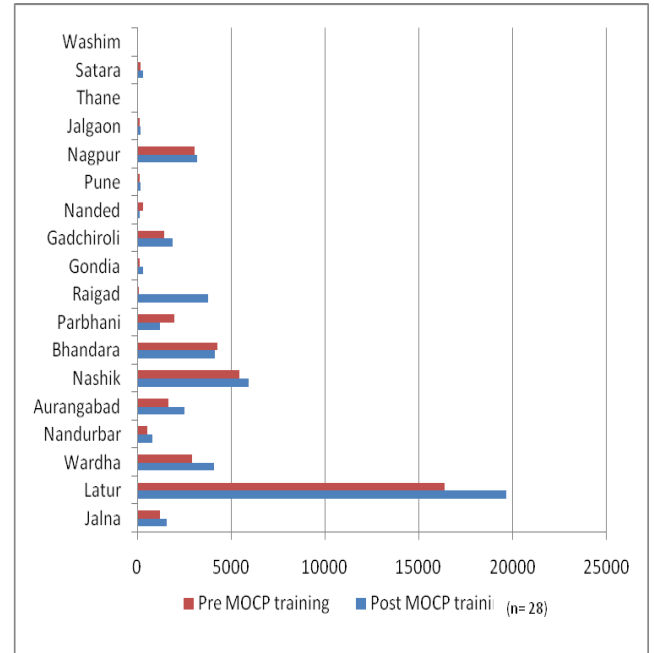


Figure 5 - District wise number of OPD patients, pre and post MOCP training

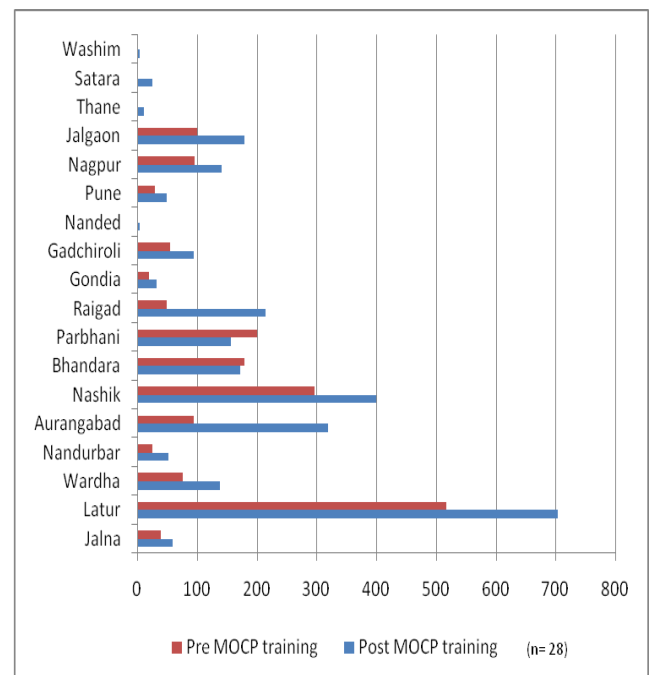


Figure 6 - District wise number of IPD patients, pre and post MOCP training

Figure 5 and 6 shows the number of OPD and IPD patients respectively, treated in 18 districts of Maharashtra. From the figures it can be seen that except for Parbhani and Bhandara, in all the other districts there has been a rise in number of OPD and IPD patients treated. Maximum number of OPD and IPD patients treated was reported in the district of Latur. This indicates the reduction of morbidity in those districts after receiving MOCP training.

## DISCUSSION

India is acutely facing shortage of doctors. We have 6 doctors per 10,000 populations. For 1.1 billion people population, our doctor to population ratio is 1:1600 [1]. As per WHO 2006 report, India was ranked 98<sup>th</sup> out of 144 countries due to less ration of physician to population ratio. We are far behind the international standards where doctor to population ratio is 1:1000 [2]. Thus, MOCP is a unique course that has tried to bridge the gap between a general practitioner and specialist. When we have tremendous shortage of Pediatricians and Physicians in the Public Health Department, especially in rural areas, this course has been found to be extremely useful. It is very cost effective. Doctors have developed immense skills in handling emergencies right from snake bite, chest pain, and neurological problems due to birth asphyxia [3-5]. In India, we are facing scarcity of specialists particularly in the area of Pediatrics, Anaesthesia, and Obstetrics and Gynaecology [6]. Even in Maharashtra, the situation is not different. At the national level, we have shortage of 46% pediatricians, 49% obstetricians, and 63% anaesthetists in community health centers (CHCs) across the country [7].

MOs have learnt the state-of-the-art techniques and have been updated with latest knowledge as they learnt in tertiary medical colleges. This opportunity cannot be given in District or sub-District hospitals. Thus, they were in a position to practice all the skills when they went back to their PHCs. They also established good linkages with the medical colleges and the teachers therein. Motivation and confidence building was observed in the doctors.

## CONCLUSION

Medical Officers Certificate Programme course is a unique course in the country and it has helped to fill the shortage of Pediatricians and Physicians at Primary Health Centers in the State of Maharashtra. Through this course, doctors felt that they learnt the state of art treatment and their

confidence level was increased. Overall doctors and patients were both satisfied after the training.

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