

# The big deal with teaching direct ophthalmoscopy in medical students – one session in the community equals many sessions in the hospital outpatients department

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### Abstract

**Background:** Fundoscopic examination with direct ophthalmoscopy is important for medical students. It can make an immediate diagnosis of a disease in the eye in addition to some systemic conditions. Skill is the factor that leads to success for fundus examination. Therefore, learning the utilization of a direct ophthalmoscope is essential for medical students.

**Objective:** To compare the effect of teaching environment on fifth year medical students' preferences for learning direct ophthalmoscopy skills between community-based practice and hospital outpatient.

**Type of study:** Qualitative research, focused group discussion

**Methods:** Fifth year medical students of Thammasat University, Chumphon Khet Udomsakdi Hospital campus were enrolled in this study. All twelve medical students were divided into two groups and have learned the skill of direct ophthalmoscopy with patients in three-hour sessions for both in the community and hospital outpatients. Both groups were taught by the same ophthalmologist instructor. Focused group discussion was performed to assess the medical student's skill and Self-confidence, Place and Timing, Patients and Knowledge Management of visual acuity (VA) testing.

**Results:** One-Hundred percent of students have concluded that the community based learning is better than hospital outpatients in almost all aspects. The skills gained in, self-confidence, place, timing, patients and knowledge management are superior in community based than hospital outpatients. Only 8.34% (one out of twelve) students reported no difference in the skill between community based and hospital outpatients.

**Conclusion :** Medical students learning in the community improved their skill and confidence with direct ophthalmoscopy more so than those learning in hospital outpatients and has used their knowledge in VA testing as opposed to depending outpatients nurses to perform VA testing. Therefore, these results may use to develop the teaching plan for medical students at Chumphon Khet Udomsakdi Hospital Medical Education Center in the future.

**Keywords:** Direct Ophthalmoscopy, Medical students, Community based, Outpatients, Focus group discussion

Eye SEA 2017; 12 (2) : 53-56

Full text. <https://www.tci-thaijo.org/index.php/eyesea/index>

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## Introduction

The direct ophthalmoscope is an important tool for medical students and physicians.<sup>1</sup> It is necessary to evaluate retina lesions such as diabetic retinopathy, hypertensive retinopathy, papilledema and cytomegalovirus retinopathy. Direct ophthalmoscopy can be used in emergency room outpatient department, inpatient department and intensive care unit with good clinical skills in either dilated or undilated pupil.<sup>2,3</sup> However, using of direct ophthalmoscope is difficult for most medical students.<sup>4</sup> Most students cannot evaluate the fundus background, optic disc or even retinal vessels. Direct ophthalmoscopy skill is the important factor that leads to success for fundus examination. Therefore, the aim of this study is to compare the teaching of using direct ophthalmoscope between community based practice and hospital outpatient department.

## Type of study

Qualitative research, focused group discussion

## Methods

This study is a prospective design. All fifth year medical students (twelve students) of Thammasat University, Chumphon Khet Udomsakdi Hospital campus were enrolled in this study. There are six males and six females. Twelve medical students were equally divided into two groups and were instructed in the skill of direct ophthalmoscope with patients in for three

hours in both the community and hospital outpatients separately (Figure 1). After the students completed their training in both learning environments, a focus group discussion<sup>5,6</sup> was performed to assess each group. The assess points are Skill and Self-confidence (using the direct ophthalmoscope), Place (the darkness and area of examination room) and Timing (timing to examine the retina by using direct ophthalmoscope per patient), Patients (the willingness of patients to be examined by medical students) and Knowledge Management (visual acuity testing has performed by medical students at community by themselves while at hospital outpatients had performed by nurses). The assessment form have attached in the appendix. Data was analyzed and compared and reported in percentages.

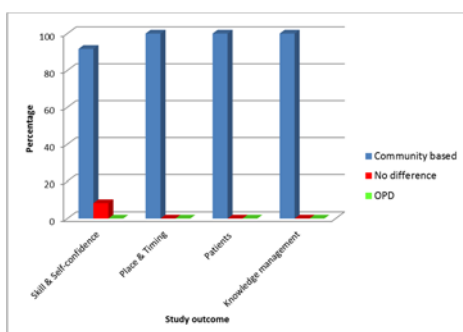
The focus group discussion was used as a tool for discuss between community-based practice and hospital outpatient. Each group of medical students were discuss with pros and cons of direct ophthalmoscopy learning skills in the context of Skill and Self-confidence, Place and Timing, Patients and Knowledge Management. The results of discussion (pros and cons) do not influence on the score of Ophthalmology learning program of the medical students. Overall 30 minutes of focus group discussion was done and the results were concluded.

Hospital outpatients	Community outpatients
<ul style="list-style-type: none"><li>- Class-based teaching- Direct ophthalmoscopy basics) Equipment basics(</li><li>- Visual acuity testing by nurses</li><li>- Fundus examination on patients )5 cases per 1</li><li>- medical student(</li><li>- Patients have not only retinal problems</li></ul>	<ul style="list-style-type: none"><li>- Small group teaching</li><li>- Direct ophthalmoscopy basics )Equipment basics(</li><li>- Visual acuity testing by medical students</li><li>- Fundus examination on patients )5 cases per 1</li><li>- medical student(- Patients have only retinal problems</li></ul>

**Figure 1.** Summarizes the differences in teaching activities for outpatients-based teaching and community-based teaching for direct ophthalmoscopy.

## Results

The results were simply classified into four categories (Figure 2). The first category is the quality of direct ophthalmoscope examination (including skill and self-confidence). Eleven of twelve students (91.66%) have improved their skill and self-confidence in the community more than hospital outpatients and only one student (8.34%) has no difference in preference for his quality of examination skills gained from the teaching sessions. The second category included place, timing and environment. All twelve (100%) students agreed that the community based teaching for direct ophthalmoscopy has been more useful for them after having attended 3 hours of teaching for both groups. The third category are the patients (sample groups). One hundred percent of students have the same opinion that patients in community are more willing to be examined than in hospital outpatients. In the last category, was the knowledge of management of visual acuity. One hundred percent of students have used their knowledge more comprehensively for VA testing in the community compared to hospital outpatients.



**Figure 2.** The bar graph showed four categories of fifth year medical students preference for learning environment in direct ophthalmology teaching in the domains of skill, self-confidence, place, timing, patients and knowledge management.

## Discussion

Results showed that one-hundred percent of fifth year medical students assessed in the focus group session preferred community based teaching over hospital based teaching in the domains of patients. The focus group also found that the place and environment of community based teaching is more widespread, relaxed and isolated compared to hospital outpatients so the students have no pressure to examination the retina. The patients from the community are more likely to be willing to be examined. Therefore, the students can spend more time to improve their skill of direct ophthalmoscopy examination. Only one student has evaluated that he had no preference between community based practice and hospital outpatients in terms of skills gained in direct ophthalmoscopy training. Analysis in deep detail was found that he have got the good clinical skill of direct ophthalmoscope from the hospital outpatients. This data has changed our perceptions about learning skill of direct ophthalmoscopy is not limited in the hospital outpatients. Finally, the teaching plan of direct ophthalmoscopy may develop in next year that included the teaching in both community based and outpatients. Further studies are required to compare the results of new teaching plans in the next project. However, the darkness of examination rooms in community based practices is inadequate compared to hospital outpatients which may hinder examination. This is a minor factor that can be improved in the future by using the screen around the examination area. This project is the pilot study of the community based learning (direct ophthalmoscopy) because of the limitation of sample size therefore, the 6th and 4th year medical students will enroll in next study to give more statistically significant outcome.

## Conclusion

Medical students improved their skill and self-confidence with direct ophthalmoscopy

community learning more than hospital outpatients and used their knowledge in VA testing as they had to rely on themselves rather than nurses. They are happy with community based learning and gained some appreciation of the differences in working in the community. Therefore, these results may use to develop the teaching plan for medical students at Chumphon Khet Udomsakdi Hospital Medical Education Center in the future.

### Acknowledgement

The author acknowledges the Chumphon Khet Udomsakdi Hospital Medical Education Center for funding this project.

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### Appendix

Student ID.....

Please fill the result by 4 categories (table)

Categories	Medical student's result
Skill & Self confidence	
Place and Riming	
Patients	
Knowledge management	