



**ROUTINE MEDICAL EXAMINATION
AN UPDATE**

**HEALTH TECHNOLOGY ASSESSMENT SECTION
MEDICAL DEVELOPMENT DIVISION
MINISTRY OF HEALTH MALAYSIA
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DISCLAIMER

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DISCLOSURE

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EXECUTIVE SUMMARY

Introduction

Routine medical examinations (RME) in Malaysia are carried out for various reasons. They are often done as a requirement before employment in public or private sector and entry into tertiary educational institutions or admittance to residential school.

The purpose of doing routine medical examination is to ensure that the prospective worker or student is free from any serious physical or emotional illnesses or disabilities that will affect the productivity and quality of work life or poses a threat to the safety or health of others in workplace or education institutions.

Routine medical examination (RME) usually includes; medical history, physical examination and laboratory tests such as urine tests and chest x-ray.

Objective

The objective of this review was to determine the effectiveness and cost-effectiveness of routine medical examination for pre-employment and for those entering tertiary education.

Results and conclusion

The search strategies yielded 2 reports (one Health Technology Assessment Report and one Health Technology Review report) and one systematic review only.

There was no new evidence on the effectiveness of routine medical examination for pre-employment found. However based on the previous review, evidence suggested that the conventional pre-employment medical examination done without a definite purpose is of limited value to the employer and the employee. However, routine chest x-ray in routine medical examination is shown to be not cost-effective. The effectiveness of pre-employment urine examination for toxicology was found to be inconclusive when conducted with routine medical examination.

There was no evidence found on routine medical examination for tertiary education.

Recommendation

Based on the above review, routine medical examination should be conducted with a purpose. Well-designed questionnaires and health interviews should be utilized. Cases should be referred for through medical examination based on the findings. Since no evidence was retrieved on the cost-effectiveness of routine medical examination clinical research is warranted to demonstrate the cost-effectiveness of conducting routine medical examination for pre-employment and entry to tertiary education.

Methods

Electronic databases were searched, which included PubMed, Proquest via EBSCO Host search engine, Medline, Cochrane database of systematic reviews via search engine, National Institute for Health and Clinical Excellence (NICE), Google Scholar for published reports.

ROUTINE MEDICAL EXAMINATION

1. INTRODUCTION

Routine medical examinations in Malaysia are carried out for various reasons. They are often done as a requirement before employment in public or private sector, entry into tertiary educational institutions or admittance to residential school.¹

The purpose of doing routine medical examination is to ensure that the prospective worker or student is free from any serious physical or emotional illnesses or disabilities that will affect the productivity and quality of working life or poses a threat to the safety or health of others in workplace or education institution.²

Opinion is divided on the usefulness of routine medical examination at various stages of a person's life. It is important that the time spend and cost incurred should be justified by the result obtained. Screening procedure must be carefully evaluated and the benefit to the patient should be of prime concern.³

This technology review was conducted following a request from the Director of Duchess of Kent Hospital Sandakan, Sabah to look into the effectiveness of routine medical examination in Malaysia for pre-employment and entry to tertiary education institutions.

2. OBJECTIVE

The objective of this review was to determine the effectiveness and cost- effectiveness of routine medical examination for pre-employment and for those entering tertiary education.

3. TECHNICAL FEATURES

Routine medical examination usually includes;

- Medical history
- Physical examination which include; vital signs, blood pressure, height and body weight, vision test.
- Urine examination for Full Examination Microbiology Examination (FEME) and drug of abuse when indicated.
- Chest X-ray

Previously routine medical examination also included blood investigation such as Human Immunodeficiency Virus (HIV), Hepatitis B & C; Venereal Disease Research Laboratory (VDRL) screening but now blood investigation is not routinely done unless requested by the organizations or institutions.

4. Methodology

4.1. Searching

Electronic databases were searched, which included PubMed, Proquest via EBSCO Host search engine, Medline, Cochrane database of systematic reviews via Ovid search engine, National Institute for Health and Clinical Excellence (NICE) websites and Google Scholar for published reports.

The search strategy used the terms, which were either used singly or in various combinations: “medical examination”, “routine medical examination, and “physical examination”, “pre-employment or tertiary education”. Limitation applied included: **Humans, English, All Adult: 19+ years and year 2004-2009.**

4.2. Selection

All published articles related to effectiveness and cost-effectiveness of routine medical examination were selected.

5. RESULTS AND DISCUSSION

The search strategies yielded 2 reports (one Health Technology Assessment Report and one Health Technology Review Report) and one systematic review only.

5.1 EFFECTIVENESS

5.1.1. Routine medical examination for pre-employment

A Technology Review on routine medical examination was conducted by Health Technology Assessment Unit, Medical Development Division, Ministry of Health in 2002. The review report included 12 articles and concluded that most of the available evidence suggests that the conventional pre-employment medical examination done without a definite purpose is of limited value to the employer and the employee. It was

recommended that pre-employment medical examination should be done selectively, depending on the job applied by applicant. From this review, it was suggested that well design questionnaires and health interviews be used to obtain a baseline data of routine medical examination for employee at pre-employment stage.^{2, Level 1}

A Health Technology Assessment Report looking into the effectiveness and cost implication of routine chest radiographs in routine medical examination was also conducted by Health Technology Assessment Unit, Medical Development Division, Ministry of Health in 2002. The systematic review concluded that there was sufficient evidence to support that routine chest radiographs in routine medical examination is not cost-effective.^{1, Level 1}

Levine MR and Rennie WP conducted a systematic review in 2004 looking into pre-employment urine drug testing of hospital employees in the United State. They conducted a literature search of Medline from 1980 through 1999 and included seven studies. The authors concluded that it is unclear whether pre-employment drug testing program in health care industry have achieved their stated purpose that was leading to a safer, drug-free workplace and to higher employee morale with increased public trust.^{4, Level 1}

5.1.2. Routine medical examination for tertiary education

There was no retrievable evidence with regards to routine medical examination for entry to tertiary education.

5.2 COST IMPLICATION

There was no new published evidence to show the cost-effectiveness of routine medical examination for pre-employment and for entry to tertiary education when conducting the research for evidence in the databases by limiting on year from 2004-2009.

6. CONCLUSION

6.1.1 Routine medical examination for pre-employment

There was no new evidence on the effectiveness of routine medical examination for pre-employment found. However based on the previous review, evidence suggested that the conventional pre-employment medical examination done without a definite purpose is of limited value to the employer and the employee. However, routine chest x-ray in routine medical examination is shown to be not cost-effective. The effectiveness of pre-employment urine examination for toxicology was found to be inconclusive when conducted with routine medical examination.

6.1.2. Routine medical examination for tertiary education

There was no evidence found on routine medical examination for tertiary education.

7. RECOMMENDATION

Based on the above review, routine medical examination should be conducted with a purpose. Well-designed questionnaires and health interviews should be utilized. Cases should be referred for through medical examination based on the findings. Since no evidence was retrieved on the cost-effectiveness of routine medical examination clinical research is warranted to demonstrate the cost-effectiveness of conducting routine medical examination for pre-employment and entry to tertiary education.

8. REFERENCES

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