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TRAINING PROGRAM FOR DRIVER LICENSING SCREENING FOR MEDICAL IMPAIRMENT

FINAL REPORT

AUGUST 1977

U.S. DEPARTMENT OF TRANSPORTATION
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TRAINING PROGRAM FOR DRIVER LICENSING SCREENING FOR MEDICAL IMPAIRMENT

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Ingomar, Pa.

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16. Abstract

The purpose of the contract was to create a complete curriculum package for training motor vehicle license examiners to identify individuals with potentially unsafe physical or mental conditions. The present report describes the process followed in developing the training and the products that resulted. One of the by-products developed for the subject curriculum was the Medical Evaluation Checklist---a performance aid that helps driver examiners to decide whether or not an applicant should be referred to a physician for medical evaluation. The present report also provides a set of recommendations for further research. One recommended study tests whether administration of this course increases the number of medical referrals by examiners, while decreasing or holding constant the number of inappropriate medical referrals. The second recommended study involves the refinement of the Medical Evaluation Checklist and a practical test of its effectiveness.

Part II of the present report describes the development of curriculum materials designed to combat the problem of false identification documents presented by applicants for operator's licenses. These materials teach driver examiners to detect imposters and altered or counterfeit documents. They convey the scope of the false ID problem and establish motivation for scrutinizing ID documents carefully.

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PREFACE

A provision of Section VII of National Highway Safety Program Standard No. 5--Driver Licensing, requires: "A system providing for medical evaluation of persons whom the driver licensing agency has reason to believe have mental or physical conditions which might impair their driving ability," and "A medical advisory board or equivalent allied health professional unit composed of qualified personnel to advise the driver licensing agency on medical criteria and vision standards."

In support of this provision, Highway Safety Program Manual No. 5--Driver Licensing, provides the following guidelines:

1. Driver examination procedures will be structured to specifically observe and measure an applicant's qualifications relevant to his physical and mental characteristics.

2. Such examinations shall be administered by selected and trained examiners.

3. Examination screening standards should be recommended by a Medical Advisory Board.

4. All questions of a strictly medical nature should be referred to the Medical Advisory Board for decision.

5. Applicants who fail to meet screening standards may be referred, following criteria established by the Medical Advisory Board, to appropriate medical authorities for further examination and assistance.

In the furtherance of this licensing function, that is, identifying unsafe drivers with physical and mental deficiencies, a number of projects have previously been undertaken by State and Federal agencies and by national organizations. The National Highway Traffic Safety Administration (NHTSA) developed the Basic Training Program for Driver License Examiners - 1971 (DOT-HS-800-536) to assist States in establishing their training programs for this occupational field. In 1973, the American Medical Association (AMA) and the American Association of Motor Vehicle Administrators (AAMVA) produced an audio-visual driving licensing training package, entitled Screening for Driver Limitations, to assist examiners in recognizing symptomatic signs

reflecting unsafe physical or mental conditions. State and local agencies have developed diagnostic techniques, particularly as they relate to identifying problem drinkers, and the NHTSA has conducted a study of these activities entitled "Diagnostic Assessment of Driver Problems" (DOT-HS-4-01015). Medical Advisory Board guidelines to assist in their development and implementation have been promulgated by various Federal, State, and private section agencies.

To continue the effort of assisting the States in identifying applicants and drivers with potentially unsafe physical and mental conditions, the need for a comprehensive curriculum package for driver examiners was identified. This training was to prepare state driver examiners for detecting signs and symptoms of medical conditions that may affect the ability of a driver or applicant to drive safely. To prepare such a course package, INNOVATRIX, Inc., of Ingomar, Pennsylvania, was awarded Contract No. DOT-HS-6-01337. Three instructional documents were written: a Course Guide to assist administrators in planning and evaluating the program, Instructor Lesson Plans for use by the instructor in the preparation and conduct of the course, and a Student Study Guide to be used by the students as a text and workbook. The course materials were written by Dr. Andrew P. Chenzoff, who also served as Project Director, and Dr. Linda G. Binstock. Sanford P. Schumacher was the Principal Investigator.

Serving as consultants to INNOVATRIX were:

1. Elaine Petrucelli and Lee N. Hames of the American Medical Association.

2. Arthur A. Tritsch of the American Association of Motor Vehicle Administrators.

3. William K. Keller, M.D., of Louisville, Kentucky, and Paul L. Weygandt, M.D., of Akron, Ohio, who served as medical consultants.

The assistance of these individuals is greatly appreciated and hereby acknowledged.

Part II of this final report describes the development of a second set of curriculum materials addressed to the same audience (i.e., driver license examiners). These training materials were designed to teach examiners how to detect imposters and counterfeit or altered identification documents. In addition, they convey the scope of the false ID problem and establish motivation for the examiner to scrutinize identification documents carefully.

The Driver Licensing Screening for Medical Impairment curriculum was pilot tested in Madison, Wisconsin, by the Wisconsin Division of Motor Vehicles. Without the dedication and total cooperation of the following individuals of the Wisconsin DMV, this pilot test could not have been successfully completed.

Milo Hodgson, Chief, Driver Examination & Improvement
Allen W. Bailey, Driver License Program Manager
Dale Allen, Medical Evaluation Unit
William Raske, Medical Evaluation Unit

Mr. Allen and Mr. Raske had the difficult task of presenting the curriculum package for the first time. A special word of appreciation goes to Dr. James Weygant of Sheboygan Falls, Wisconsin, and to Lee Hames and Elaine Petrucelli of the AMA for attending the pilot test administration and providing valuable comments and support.

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TRAINING PROGRAM FOR DRIVER LICENSING SCREENING FOR MEDICAL IMPAIRMENT

($47,975)

IDENTIFICATION OF STATE SCREENING PROCEDURES AND DETERMINATION OF FUNCTIONAL TRAINING REQUIREMENTS

The purpose of the initial study activities was to determine what state driver license examiners do on the job with respect to screening for medical impairment and to determine, in general terms, what needs to be taught in the subject course. The first step was to meet with consultants from the American Medical Association and the American Association of Motor Vehicle Administrators to obtain their concept of how screening is accomplished in the various states and their suggestions concerning relevant literature items. The literature items that were obtained and reviewed are included in the Bibliography and References to this Report.

The second step involved observation of driver examiners at work and interviewing of examiners and their supervisors. Based upon information supplied by our consultants, the literature review, and direct job observation, four major job functions relevant to physical and mental screening by Driver License Examiners were identified. These four major job functions are shown in Figure 1.

The third step was to develop the Job Performance Requirements (JPR's), which also served as the functional training requirements during the next step of the process. The JPR's structured and delimited the course of instruction to be designed, in the sense that when the course materials enabled driver examiners to satisfy these Job Performance Requirements, the curriculum would be successfully prepared. The Job Performance Requirements for the subject course are shown in Appendix A.

FUNCTION A: REVIEW AVAILABLE RECORDS FOR INDICATIONS OF PHYSICAL OR MENTAL DEFICIENCIES.

To examine any available pertinent records that the examinee brings to the examining station or that are locally available. To detect in the records any signs of possible medical impairment that may be present and to question the examinee concerning these conditions.

FUNCTION B: DETECT SIGNS AND SYMPTOMS OF MEDICAL IMPAIRMENT.

To observe, test, and interview the applicant and to record any signs and symptoms of medical impairment that may be noted. To verify their validity and severity by questioning the examinee.

FUNCTION C: SELECT A COURSE OF ACTION.

To choose from among the following alternatives a course of action justified by the facts: (1) medical referral, (2) license restriction, (3) disqualification, (4) no action based on medical threat to safe driving is required.

FUNCTION D: REPORT THE MEDICAL PROBLEM, IF ANY, AND EXPLAIN TO EXAMINEE.

To fill out the proper forms in the prescribed manner. To explain tactfully the status of the license, the next step in the process, and what recourse is available to the examinee.

FIGURE 1. Medical Screening Functions of the License Examiner.

JOB DESIGN AND DEVELOPMENT OF THE TRAINING STRUCTURE

Investigation of the medical screening methods employed by departments of motor vehicles in various states revealed that the task was not being performed according to any standard, objective methodology in any state. Therefore, this portion of the examiner's job had to be designed before training could be developed.

Analysis of Signs and Symptoms

Project consultants from the American Medical Association prepared a comprehensive list of signs and symptoms of physical and mental conditions that could interfere with the safe operation of a motor vehicle. There were 263 signs and symptoms in the initial list. In order to reduce this number to one that would be more manageable by laymen driver license examiners, the original set of signs and symptoms was discussed with a physician designated by the American Medical Association. The purpose of this discussion was to:

1. Identify signs and symptoms that mean almost the same or that are always observed together.

2. Identify signs and symptoms that cannot be reliably observed by a layman.

3. Identify signs and symptoms that should trigger a license examiner to request an immediate medical evaluation of the applicant.

As a result of this discussion, the original list of signs and symptoms was reduced to a final list of 51. The 51 signs and symptoms used in this training curriculum are listed and defined in Appendix B, Complete Glossary of Signs and Symptoms.

Development of Medical Evaluation Checklist

In order to provide the license examiner with a set of rules for deciding when applicants should be referred for medical examination, a methodology and a performance aid was developed. The performance aid is called the Medical Evaluation Checklist. The Checklist has three parts and is based upon two decision rules:

1. You should require a medical evaluation when you observe (or are told about) a highly significant, severe sign or symptom (called an "automatic").

2. You should require a medical evaluation when you observe (or are told about) three "non-automatic" signs or symptoms that appear in the same column of the checklist.

In the course, these decision rules are presented as guidelines rather than as strict rules.

The Checklist has three parts. The first part consists of 12 questions to be administered to the examinee at the start of the process. The first 10 of these questions are "automatics," and a valid "yes" to any of them is enough to trigger a medical referral. The last two questions give the examiner clues concerning what to watch for during the remainder of the examination. The Medical Evaluation Checklist is presented in Appendix C.

If the applicant does not answer "yes" to one of the "automatics" in Part 1, Part 2 of the MEC is used. Part 2 is organized around the following phases of the examination process:

1. Entry and Greeting

2. Vision Testing

3. Knowledge Test

4. Walking to Vehicle

5. Driving Test

For each of these phases, a list of signs and symptoms is presented. These signs and symptoms are the ones most easily observed during the phase under which they are listed, although most of these signs and symptoms can be observed at any time. If the examiner does not observe an "automatic" and does observe two "non-automatics" in one column of Part 2, Part 3 is designed to resolve the issue. It contains additional questions and tests which probe for further evidence concerning whether the applicant should or should not be referred for medical evaluation.

In addition to helping examiners decide when to refer applicants for medical evaluation, the Medical Evaluation Checklist helps to teach examiners what kinds of people physicians would like to see because they are apt to have safety-related medical problems and what kinds of people are apt to get a clean bill of health, as far as driving is concerned, if given a medical evaluation.

Development of the Training Structure

Developing the training structure involves sequencing the instructional objectives and segmenting the program in terms of instructional units or lessons. Basically the sequencing decisions depend upon:

1. Whether one task must precede another on the job.
2. Whether several objectives share common task elements.
3. Whether one objective must be achieved before the training on another objective is begun.
4. Whether no relationship exists between the learning of one criterion behavior and the learning of another.

On the basis of these considerations, the objectives were ordered into a reasonable teaching sequence. The sequenced objectives were then organized into a series of units of instruction.

The total course consists of 13 units of instruction. Part 1, Medical, consists of the following seven units:

I-A Introduction to Examiner's Responsibilities and Roles with Respect to Medical Screening

I-B Cardiovascular System

I-C Neurological System

I-D Ophthalmological System

I-E Mental/Emotional System

I-F Age-Related Signs and Symptoms

I-G General Medicine and Review

Part 2, Task-Related, consists of the following six units:

II-A Screening Methods for Different Phases of the Examination Process

II-B Interview Methods

II-C Using Records for Medical Screening

II-D Medical Advisory Board

II-E License Restrictions

II-F Review and Evaluation

The distinction between medical and task-related units is important. The medical portion of the course serves to teach the identification of the important signs and symptoms. After a discussion of the examiner's role in medical screening and some actions he should and should not take, it helps the examiner discriminate among signs and symptoms that are too trivial to report, those that are severe enough to be considered, and those that warrant an immediate medical referral.

The task-related units then teach how to use the Medical Evaluation Checklist, how to interview for further information when necessary, how to use records, how the state's Medical Advisory Board works, and how to apply restrictions. The final unit serves as a review to consolidate the previous learning.

The unit structure and sequenced behavioral objectives are shown in Figures 2 and 3 on the following pages. These objectives provided the basis for developing the instructional materials.

PART I MEDICAL	
UNITS	TITLE AND OBJECTIVES FOR UNIT
I-A	*Introduction to Examiner's Responsibilities and Roles with Respect to Medical Screening* By the end of this unit, the trainee: 1. Will be able to state at least one reason for the importance of medically screening license applicants and other examinees. 2. Given a list of roles and responsibilities, will be able to distinguish between those which <u>are</u> and those which are <u>not</u> appropriate for license examiners in their medical screening function.
I-B	*Cardiovascular System* By the end of this unit, the trainee: 1. Given two specific signs or symptoms presented in this unit, will be able to describe a severity level at which these signs or symptoms are important and a severity level at which they are trivial. 2. Will be able to list the four especially significant signs and symptoms presented in this unit.
I-C	*Neurological System* By the end of this unit, the trainee: 1. Given two specific signs or symptoms presented in this unit, will be able to describe a severity level at which these signs or symptoms are important and a severity level at which they are trivial. 2. Will be able to list the eight especially significant signs and symptoms presented in this unit.

FIGURE 2. Course Objectives (Medical).

UNITS	TITLE AND OBJECTIVES FOR UNIT
I-D	*Ophthalmological System* By the end of this unit, the trainee: 1. Given two specific signs or symptoms presented in this unit, will be able to describe a severity level at which these signs or symptoms are important and a severity level at which they are trivial. 2. Will be able to list the two especially significant signs and symptoms presented in this unit.
I-E	*Mental/Emotional System* By the end of this unit, the trainee: 1. Given two specific signs or symptoms presented in this unit, will be able to describe a severity level at which these signs or symptoms are important and a severity level at which they are trivial. 2. Will be able to list the nine especially significant signs and symptoms presented in this unit.
I-F	*Age-Related Signs and Symptoms* By the end of this unit, the trainee: 1. Given two specific age-related signs or symptoms, will be able to describe a severity level at which these signs or symptoms are important and a severity level at which they are trivial. 2. Will be able to list the six especially significant age-related signs and symptoms mentioned in this unit.
I-G	*General Medicine and Review* By the end of this unit, the trainee: 1. Given a list of signs or symptoms, will be able to identify those that are only temporary deterrents to safe driving. 2. Will be able to list all fifteen especially significant signs and symptoms which should warrant referral of the applicant for medical evaluation.

FIGURE 2. (Continued)

UNITS	TITLE AND OBJECTIVES FOR UNIT
	3. Given a series of case studies, will be able, for each, to: a. recognize previously studied signs and symptoms b. decide whether or not the signs and symptoms, as described in the case studies, are severe enough to be recorded c. place a checkmark on the Checklist to signify the sign or symptom was "seen" in the case study, and was severe enough to record.

FIGURE 2. (Continued)

	PART II TASK RELATED
UNITS	TITLE AND OBJECTIVES FOR UNIT
II-A	*Screening Methods for Different Phases of the Examination Process* By the end of this unit, the trainee: 1. Given problems describing a driver examiner's observations of an applicant, will be able to: a. Correctly complete the Medical Evaluation Checklist (MEC). b. Decide if sufficient evidence exists to refer the applicant for a medical evaluation. 2. Will be able to name types of signs or symptons best observed during each of the following stages of the examination process: a. Entry and Greeting b. Vision Testing c. Knowledge Test d. Walking to Vehicle e. Driving Test
II-B	*Interview Methods* By the end of this unit, the trainee: 1. Given a set of problems, each describing an initial set of signs and symptoms, will indicate the next comment to be made or question to be asked by the examiner. 2. Given five situations in which an applicant for licensing has stated that he has a particular safety-relevant medical problem, and given a fellow class member assuming the applicant's role, will be able to effectively and tactfully elicit additional necessary information.

FIGURE 3. Course Objectives (Task Related).

UNITS	TITLE AND OBJECTIVES FOR UNIT
	3. Given two situations in which an applicant must have a physical examination before the licensing process can continue, and given a fellow class member assuming the applicant's role, will be able to tactfully explain what has to be done before the license can be issued.
II-C	*Using Records for Medical Screening* By the end of this unit, the trainee: 1. Given a set of five records that contain indications of medical deficiencies that need to be explored, will correctly identify each such indication. 2. Given a set of blank forms and a set of five problems stating that individuals with certain specific medical conditions need to be disqualified, restricted, or sent to a physician or vision expert, will correctly complete the appropriate form.
II-D	*Medical Advisory Board* By the end of this unit, the trainee will be able to answer correctly the following questions: 1. Which of the following does the Medical Advisory Board in this state do: a. Advise the Commissioner on medical standards that relate to the safe operation of motor vehicles. b. Perform physical examinations of individuals who have been identified as having medical problems that could interfere with driving. c. Evaluate individual problem cases that do not fall within the guidelines they have set up. d. Interview all drivers who have been referred to it for medical reasons by the licensing agency. 2. How can a license examiner initiate the process to bring an individual case to the attention of the Board?

FIGURE 3. (Continued)

UNITS	TITLE AND OBJECTIVES FOR UNIT
II-E	*License Restrictions* By the end of this unit, the trainee: 1. Given a list of license restrictions, some of which cannot be applied in the examiner's state, will be able to indicate those that can be applied in his state. 2. Given a set of problems, each of which describes an applicant in terms of observable or determinable medical limitations, will be able to state correctly whether a license restriction should be imposed and, if so, which restriction is indicated.
II-F	*Review and Evaluation* By the end of this unit, the trainee will be able to accomplish all of the course objectives to an acceptable level of proficiency.

FIGURE 3. (Continued)

DEVELOPMENT OF THE INSTRUCTIONAL MATERIALS

The Training Program for Driver Licensing Screening for Medical Impairment was prepared in three parts: the Course Guide (45), the Instructor Lesson Plans (46), and the Student Study Guide (47).

The Course Guide, designed for use by training administrators, includes detailed information on course administration and course planning. It also contains instructions for adapting the course to local and state needs and for evaluating the course. Planning topics covered in the Course Guide include Instructor Qualifications, Student Qualifications, Class Size, Training Resources, and Scheduling Considerations. The section on customizing the course to satisfy local requirements describes how to choose the appropriate content from within the instructional program and how to augment the instructional content when necessary. The final section of the Course Guide includes a discussion of techniques for monitoring and evaluating the course to ensure that the program maintains a high level of quality over time.

The Instructor Lesson Plans were prepared to assist the instructor in conducting the course. They were designed to become the instructor's basic teaching reference. Each unit of the course includes a specification of the objectives for the unit, requirements for instructor preparation, practice exercises, and review questions. The lesson plans also contain instructor guidelines indicating:

1. Ways in which feedback should be provided to the students.

2. Ways and places in the instructional program where remedial assistance should be provided.

3. Places to use locally developed media or training aids.

4. Places the materials may need to be adapted to reflect local policies and conditions.

It also contains a Course Evaluation Instrument, which the instructor may use to evaluate the students' grasp of the instructional content. By administering the Instrument before and after training, a "gain" score may be obtained.

The Student Study Guide serves as the basic text for the trainees. It contains materials which the trainees read and discuss in class. It also contains practice exercises and review questions which the students use to evaluate their own grasp of the course content. Thus, they can evaluate their achievement of the criterion objectives. Spaces have been left for student note taking throughout the Student Study Guide. This is an important feature of the Guide, in that the students build their own reference document. They take notes concerning local policies and conditions, and other "enrichment" materials provided by the instructor. The Student Study Guide is given to the students to keep. Thus, they will have at their work stations a reference book to be consulted when problems arise. In the process of making notes and working the exercises, the students maintain an active involvement in the instructional process.

PILOT TESTING

The training program for Driver Licensing Screening for Medical Impairment was pilot tested at Madison, Wisconsin, by personnel from the Wisconsin Division of Motor Vehicles. It was conducted on January 25, 26, and 27, 1977. Course instructors were Dale Allen and William Raske of the Wisconsin D.M.V. Medical Evaluation Unit. Milo Hodgson, Chief of Driver Examination, and Allen Bailey, Driver License Program Manager, set up and managed the course administration.

Seventeen trainees were provided for the pilot test by the Wisconsin Division of Motor Vehicles. Eight of these trainees were aides with less than one year of experience in driver licensing. Three were Driver Improvement Analysts. The remainder were examiners and supervisors who ranged in experience from eight months to seventeen years.

The course was well administered and considerable learning took place. A Course Evaluation Instrument was administered before the beginning of training and again at the end of training. This test was the Course Evaluation Instrument which appears in the Instructor Lesson Plans (Appendix B).

In designing this instrument, two criteria were applied:

1. The discriminations included in the test were designed to be as difficult as these discriminations would be on the job.

2. The questions were designed in such a way that an individual who was skillful at screening for medical limitations would score high on the test, even without having taken the course.

Before the training, the students averaged 17 of 35 questions correctly answered. After the training, they were able to answer 24 of the 35 correctly. Thus, the gain resulting from training was seven right answers. This means that they answered correctly 20 percent more of the 35 questions or, to look at it another way, they improved 41 percent (7/17) over their initial level of knowledge.

A few minor problems were encountered and overcome during course administration:

1. The motion picture projector broke down and had to be replaced.

2. Reproduction of some locally generated case study exercises was delayed. They were ready a few minutes after they were needed in the course.

3. Insufficient copies of the Medical Evaluation Checklist were prepared for each student to be able to work independently on one of the exercises. The students worked this exercise in small groups.

A more serious problem was that the instructors did not have much free time to prepare for administering the course. The press of their normal duties in the weeks preceding course administration hampered their preparation. A week of uninterrupted preparation would have been optimal. Coaching by the INNOVATRIX staff members on the day preceding the course and in the evening between course sessions helped to alleviate this problem.

At the end of the course, students were asked to write suggestions for course improvement (Appendix D). Although they were only asked for suggestions for change (not evaluations), a majority of the trainees wrote favorable comments. Opinion was divided on how long the course should be. Most said that more time should be devoted to specific topics. Others felt that the course could be shortened.

One way of shortening the course that was mentioned was to eliminate the second showing of the "Screening for Driver Limitation" films. Of those who mentioned this topic, a majority felt that one showing would be enough. However, the students who scored higher on the Course Evaluation Instrument tended to say that they picked up a considerable amount of additional information on the second showing. The following data confirmed this opinion. During the first showing, the students were asked to check off in the Student Study Guide the signs and symptoms that were covered by the films. They were asked to make a different mark beside the new signs and symptoms that they noticed during the second showing of the films. An examination of their Student Study Guides showed that most students gained a great deal from the second showing. A few picked up half of their list during the second showing. Showing the films only once would cut half a day from the course. However, this would result in some weakening of its effectiveness.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The set of films entitled "Screening for Driver Limitation," developed by the American Association of Motor Vehicle Administrators and the American Medical Association, in cooperation with the National Highway Traffic Safety Administration, provide an excellent description of the medical signs and symptoms that can point to safety-related medical conditions. These films formed the foundation for the first half of the subject course.

2. INNOVATRIX found that the following additional training materials had to be provided in order to create a coherent training presentation:

a. A discussion of the examiner's role in the detection of medical impairments, the role being one of identifying signs and symptoms of medical problems and deciding whether or not applicants should be examined by a physician or vision specialist.

b. A discussion of how severe each sign or symptom must be before it is considered in the medical referral decision.

c. The identification of certain significant signs and symptoms which, whenever they are detected, indicate that an applicant should be examined by a physician before licensing.

d. A glossary of signs and symptoms.

e. Review exercises which provide practice in using the information that is conveyed.

f. An easily applied procedure for deciding, on the basis of any signs or symptoms that may have been observed, whether a medical referral is warranted.

g. A consideration of interview methods, to be applied in the occasional instances when additional information needs to be elicited before the medical referral decision can be made.

h. A discussion of how existing records can provide clues to possibly hazardous medical conditions, and how the examiner is to record the relevant facts, observations, and decisions.

i. An opportunity to discuss the State Medical Advisory Board, its composition, methods of operation, and its relationship to driver examiners.

j. A discussion of the relationship between certain forms of driver limitations and the restrictions that may be imposed either to compensate for the limitation or to limit the hours, speeds, or traffic conditions under which the operator may drive, or the type of vehicle to be driven.

k. A summary unit for reemphasizing the major points, clarifying any points of confusion, and providing additional practice which gives the trainees an opportunity to integrate the skills and information that have been acquired.

Recommendations

1. The administration of the subject training course has a dual objective:

a. To maximize the frequency of detection of individuals with significant, safety-related physical or mental problems, and

b. To minimize the frequency of inappropriate medical referrals.

An experiment needs to be conducted to establish the extent to which this dual objective is met by the course. The design for the experiment should include the following steps:

a. Select a subject population (a state or some portion of a state).

b. For the subject population, establish:

(1) Current rate of medical referral

(2) Current proportion of referrals that result in license denial or revocation, or the imposition of restrictions for medical reasons.

c. Customize the course and administer it to examiners serving the subject population.

d. For the first, sixth, and twelfth month after training administration, again establish:

(1) Rate of medical referral

(2) Proportion of referrals that result in license denial or revocation, or the imposition of restrictions for medical reasons.

2. The procedure for deciding, on the basis of any signs or symptoms that may have been observed, whether a medical referral is justified is presented in this course through the use of a Medical Evaluation Checklist (MEC). The MEC in its present form is more than adequate as an instructional aid for teaching examiners to make the medical referral decision. It helps to teach them what kinds of people physicians would like to see because they are apt to have safety-related medical problems, and what kinds of people are apt to get a clean bill of health as far as driving is concerned, if given a medical examination. At the same time, the MEC is not presently adequate as a standard form to be used by driver examiners for recording their observations of signs and symptoms on a day-to-day basis.

We recommend that a state be encouraged to adopt the MEC as a standard form on a trial basis. Before this can happen, however, the MEC needs to be refined in two ways:

a. It needs to be condensed to a manageable size. As a training aid, the MEC covers eight pages. However, with proper coding of the questions and the signs and symptoms, it could easily be condensed to a page or less. In this form, it would be accompanied by a few pages of instructions that would have to be consulted periodically until the examiner is thoroughly familiar with the form.

b. It needs to receive the sanction and approval of the State Medical Advisory Board (MAB). This means that it will have to be revised in accordance with recommendations of the MAB. The MEC may be viewed as a means of communication between physicians and examiners. Through the MEC, the physicians of a state can tell the driver examiners who should be sent for a physical examination before a driver's license is granted. Before approving

the MEC, the state MAB is likely to suggest revisions such as adding or deleting certain signs and symptoms, changing their categorization, rewording the questions, etc.

Once the MEC is condensed, revised, and approved by the MAB, it should be adopted on a trial basis to see:

a. Whether examiners encounter any problems in using it, and

b. Whether physicians are beginning to receive too many referrals of individuals who have no medical problems that could interfere with driving.

If examiners encounter problems, the form or the procedure should be altered. If physicians begin to see too many patients with trivial sign and symptoms, the MEC and the accompanying decision rules should be altered. For example, the signs and symptoms used to make the referral decision for those who turn out to be in adequate health for driving should be deleted or rewritten. Additional signs or symptoms should be incorporated to promote a finer discrimination between those who need to be referred and those who do not.

Under the presently taught system, some signs or symptoms are called "automatic." The presence of one "automatic" is sufficient to indicate that an examinee should be referred. If a person has no "automatics," it takes three "non-automatics" in a single column of the MEC (Part II) to indicate the need for a referral. If physicians are receiving too many referrals of healthy individuals in several categories of medical problems (e.g., mental, cardiovascular, musculo-skeletal, metabolic), the decision rule of three "non-automatics" could be revised to read: four "non-automatics."

Thus through experimentation and refinement the MEC can be "fine-tuned" to yield a maximum number of truly impaired individuals and a minimum number of individuals who can safely drive.

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PART II

TRAINING PROGRAM FOR APPLICANT IDENTITY CHECK (DETECTION OF FALSE IDENTIFICATION)

($11,977)

TRAINING PROGRAM FOR APPLICANT IDENTITY CHECK (DETECTION OF FALSE IDENTIFICATION)

On September 30, 1976, a modification to the subject contract was issued. Under this modification, INNOVATRIX agreed to produce, test, and deliver curriculum materials designed to train driver examiners in the detection of false identification documents. The work was accomplished by performing the tasks discussed below.

Examine Existing Training Packages for Coverage of the Topic.

The training materials were to be written to fit into the existing Department of Transportation curricula for Driver License Examiner and Driver License Examiner Supervisor. Thus, these curricula were examined to see where the newly developed materials would fit and to learn the format of these curricula, so that the format could be matched exactly.

Neither curriculum was found to have an appropriate place for the new materials. It was decided to create the new materials as appendices to both curricula. The format of the Driver License Examiner Instructor's Lesson Plans and Trainee Study Guide were adopted as format models.

Research the Training Content.

The first step in researching the content area was to contact key members of the Federal Advisory Committee on False Identification. The following members were contacted initially:

David J. Muchow
Chairman
Federal Advisory Committee on False Identification
Department of Justice
Washington, D. C.

Douglas Westbrook
Co-Chairman
Federal Advisory Committee on False Identification
Department of Justice
Washington, D. C.

Emil Schroeder
Secretary
Federal Advisory Committee on False Identification
Federal Bureau of Investigation
Washington, D. C.

Hollis Bowers
Co-Chairman, Commercial Transactions Task Force
Federal Advisory Committee on False Identification
American Bankers Association; Director, Insurance and Protection Division
Washington, D. C.

Dr. Thomas Kabaservice
Staff Project Leader
Federal Advisory Committee on False Identification
The MITRE Corporation
Bedford, Mass.

Loren Chancellor
Chairman, State and Local Identification Documents Task Force
Federal Advisory Committee on False Identification
Registration Methods Branch Chief
Division of Vital Statistics, DHEW
Washington, D. C.

William Duggan
Chairman, Federal Identification Documents Task Force
Federal Advisory Committee on False Identification
Department of State Passport Office
Washington, D. C.

These gentlemen were asked for suggestions concerning vital areas to be covered by the course. They were also asked whether they were aware of any existing training or literature that touched upon topics relevant to false identification.

During this initial stage, the following documents were obtained and read:

Collins, L. G., Kabaservice, T. P., Lowell, C. F., & Selvin, M. A program for reducing the abuse of birth certificates and driver's licenses as false identification documents. Bedford, Mass.: Mitre Corporation, July 1976. (Mitre Technical Report No. MTR-3287)

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U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service, Assistance Payments Administration. How they do it: bank distribution systems for assistance payments. Washington, D. C.: Author, March 1974. (SRS-74-21213)

Moves to curb false ID papers proposed by U.S. panel; National card is opposed. The Wall Street Journal, June 15, 1976, p. 16.

New plan to combat false-identity frauds. U.S. News and World Report, June 28, 1976.

Driver License Guide Company, Drivers license guide 1976. Redwood City, CA: Author 1976.

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Department of Justice. Crimes involving the use of false identification. Memo No. 838. Washington, D. C.: Author, December 7, 1976.

In December, 1976, the voluminous final report of the Federal Advisory Committee on False Identification was received. It was found to contain a good deal of useful material, and it became a basic reference for the new curriculum materials.

The Department of State, Passport Office, was found to have developed several training programs that contained relevant materials. Arrangements were made through Mr. John O'Dowd of that office to examine these materials. Mr. Carl Rosapepe of the Passport Office, who had prepared the training materials, helped a great deal by showing several tape-slide presentations dealing with fraudulent passports and by permitting the copying of some of his slides.

At the FBI, we visited the Document Section of the Science and Technical Services Division. There, we interviewed its Director, William Herndon. We also spoke at length with Mr. James Lyle and Mr. Emil Schroeder. A great many techniques for spotting fraudulent documents were learned.

INNOVATRIX also visited the Department of Investigations, New York State Department of Motor Vehicles, in Albany. The purpose of this visit was to learn about their methods for

detecting false operator's licenses and title registrations. A great deal of useful information was obtained from Mr. Thomas McGraw, Supervisor of Investigations, and Investigator Seymour G. Saul. On this visit, INNOVATRIX viewed their slide presentation and reviewed with these two gentlemen a first draft version of the curriculum materials we had prepared. We were shown a great many fraudulent documents that had been detected in New York State and we discussed methods for detecting these counterfeits.

Design the Examiner's Task.

A method for false identification detection by driver license examiners was devised. The method:

1. Takes little time and is easy to learn.

2. Requires no special equipment, such as a microscope, ultra-violet light or chemicals.

3. Emphasizes that identity is a composite of many factors, and that clues to false identity should be considered as "flags" that should trigger closer examination of the documents and further investigation and questioning of the applicant.

The method has two basic principles:

1. "If everything you see and hear is consistent with your expectations for this person, and if all of your observations are consistent with each other, you should not be suspicious. You should accept this person's identity at face value."

2. "If something is not as you might expect, investigate further. If one item is out of focus, it is cause for looking carefully at the others."

The training program focuses on building expectations concerning observable characteristics of genuine documents and of applicants who are who they claim to be. When these expectations are not met, the examiner is cautioned to be more careful.

On the other side of the coin, the examiner is repeatedly reminded in the training program that many genuine documents and people have some of the characteristics of fraudulent ones. Thus, the examiner is cautioned to remain courteous and not to alarm the applicant when suspicions are aroused.

If suspicions persist after further investigation, the examiner is instructed to ask the applicant to wait, to retain all identification documents, and to summon the supervisor. The supervisor will then decide whether or not to call in police or the FBI.

Preparing the Training Materials.

A coherent unit of training was prepared in the format of the existing Driver License Examiner program Instructor's Lesson Plans and Trainee Study Guide. The objectives of each lesson content topic are listed below:

1.1 INTRODUCTION

OBJECTIVE: Establish that the use of false identification by criminals is widespread and describe the objectives of this lesson.

1.2 SCOPE OF THE FALSE ID PROBLEM

OBJECTIVE: Establish the economic consequences of various crimes in which false identification plays a major role.

1.3 THE FEDERAL ADVISORY COMMITTEE ON FALSE IDENTIFICATION (FACFI)

OBJECTIVE: To describe the findings and recommendations of the FACFI as they relate to driver licensing.

1.4 IMPORTANCE OF ESTABLISHING IDENTITY

OBJECTIVE: To emphasize the importance of establishing the identity of driver's license applicants.

2.1 INTRODUCTION TO SPOTTING FRAUDULENT IDENTITY

OBJECTIVE: To describe, in general terms, the method herein recommended.

2.2 WHAT SHOULD THE EXAMINER EXPECT?

OBJECTIVE: To establish a set of expectations which, when not fulfilled, would alert the examiner to be suspicious.

2.3 SUMMARY

OBJECTIVE: To summarize the content of the training, tie together loose ends, clear up any remaining misconceptions or questions.

The training was designed: (a) to establish a strong rationale for driver license examiners to be concerned about the topic of false identification and strong motivation to scrutinize carefully any identification documents they may encounter on the job, and (b) to teach an efficient, effective technique for detection of impostors and of documents that have been counterfeited or altered.

Pilot Testing

The pilot testing of these materials was originally planned to take place under the auspices of the Division of Motor Vehicles of the Commonwealth of Virginia. It was to be pilot tested along with the second pilot test of the program for training examiners to screen for medical limitations. Unfortunately, the pilot test originally scheduled to begin on April 5, 1977, was cancelled by Virginia on March 23, 1977.

APPENDIX A

JOB PERFORMANCE REQUIREMENTS

TRAINING PROGRAM FOR
DRIVER LICENSING SCREENING
FOR MEDICAL IMPAIRMENT

Contract No. DOT HS-6-01337

NOTE: This process starts when an examinee appears at the examining station (for new, renewal, or special examination) and ends when he or she leaves. Any prior or subsequent activity by the examiner is intentionally omitted.

June 1976

FUNCTION A: Review available records for indications of possible examinee physical or mental deficiencies.

1. Examine records that examinee brings to the examiner. The records could include the following:

   a. An application.

   b. A letter requesting appearance at an examination station.

   c. Physician's report or vision expert's report.

   d. A self-report medical questionnaire.

2. Examine records locally available at the examining station. These records could include the following:

   a. Copy of physician's report.

   b. Correspondence concerning the examinee.

   c. Computer display or printout from the state's Automated Driver License File or the National Driver Register.

3. On the basis of the examination of records:

   a. Tentatively conclude that this individual should not be licensed. Go to step 4.

   b. Ask the individual to perform an additional step and return to the examination station.

   c. Continue with the examination process, keeping in mind any indications of physical or mental impairments that may have been found. Go to step 5.

4. If an indication is found that this individual should not be licensed:

   a. Interview the individual for clarification.

   b. Make a firm decision to disqualify the individual or to proceed with the examination.

   c. If individual is disqualified, communicate the decision to the individual, explain as much as advisable, and inform about legal recourse.

   d. If individual is disqualified, complete the necessary forms.

5. Interview the examinee. If a decision is made to go on with the examination, examiner may want to obtain more facts about indicated possible deficiency. For example:

   a. Examinee's opinion of how much the deficiency might degrade his or her driving in the future.

   b. Whether the examinee is taking measures under close medical supervision to control the effects of his or her deficiency.

   c. Frequency of episodes which might interfere with driving.

   d. Attitude of examinee toward the deficiency and toward seeking medical attention.

FUNCTION B: Detect signs and symptoms of physical and mental deficiencies.

1. Observe the applicant during the various stages of the examination process and focus upon those signs and symptoms that are most reliably observed in each stage, e.g.:

   a. Entry - Observe gait, dress, build, signs of aging, etc.

   b. Greeting - Observe handshake, complexion, tremors, general alertness, odor of alcoholic beverage, etc.

   c. Vision testing - Observe drooping lids, redness of eyes or nose, tearing, protruding eyes, nystagmus, multiple pupils, etc.

   d. Walking to vehicle - Observe shortness of breath, gait, straightness of path, wincing, posture, sensitivity to temperature change or bright light.

   e. Driving test - Observe odor of breath, strength of grip (hands slipping on the wheel), needle marks in arms, excessive perspiration, etc.

   f. Knowledge test - Observe nervousness, slurred speech, intelligence and alertness, etc.

2. As they are noted, indicate signs and symptoms on a check list.

3. Administer vision test and other tests (if any) in such a way as to obtain accurate and reliable results.

   a. Make certain that the telebinocular instrument is clean and in good repair.

   b. Give directions in a standard way.

   c. Make certain examinee understands what he or she is supposed to do and see.

d. If applicant is borderline, use a second device to help make the decision. For example, an applicant who is borderline on the Titmus or Keystone machine should be tested with a Snellen chart.

4. Solicit additional information to confirm the validity of any detected signs and symptoms.

   a. Ask specific and reasonable questions.

   b. Be polite and tactful.

   c. Do not ask unnecessary or highly personal questions.

FUNCTION C: Select a course of action from among the following alternatives: (a) recommend a medical referral (b) recommend a license restriction (c) indicate that the examinee is not qualified to drive (d) no action required.

1. Recommend medical referral:

   a. For those individuals judged presently incapable of driving but possibly capable after medical treatment.

   b. For those individuals judged presently capable of driving but possibly incapable of safe driving when suffering an attack brought on by their medical or mental condition.

   c. For those individuals whose symptoms are sufficiently serious or numerous to suggest some degree of physical or mental deficiency, but for whom the examiner or Department of Motor Vehicles needs the advice of a doctor before determining a course of action.

2. Recommend a license restriction for those individuals whose disabilities can be adequately compensated for by the imposition of a restriction.

3. Indicate that the examinee is not qualified to drive for those individuals with handicaps that cannot be overcome by restrictions or medical treatment. For example, if an individual returns with new glasses, and still fails the vision examination, he or she is not qualified to drive.

4. Decide that no action is required for those individuals whose signs and symptoms are mild and unsupported by other indications.

5. If more information is needed to be able to choose one of the four alternatives, investigate until a determination can be made.

6. Communicate with the individual, when advisable, concerning measures he or she could take to compensate for the deficiency. This is done when the examiner decides to pass the individual.

FUNCTION D: Report signs and symptoms of physical or mental deficiencies that could interfere with safe driving.

1. Fill out the proper forms in the prescribed manner.

2. Describe deficiencies in sufficient detail

3. Explain the reason for any restriction imposed.

4. Explain to the applicant the status of the license, the next step in the process, and what legal recourse he or she has.

COMPLETE GLOSSARY OF SIGNS AND SYMPTOMS

1. Breathing difficulties (shortness of breath, wheezing). Breathing difficulties mean that breathing has become very hard work for the individual. Such difficulties may be detected as gasping or as an unusual sound when the individual breathes. Breathing difficulties may also be detected if an individual rests frequently from any other task, even walking, in order to concentrate effort on breathing.

2. Swelling of feet, ankles, legs. When the lower extremities swell it may indicate heart or blood vessel problems. It can also mean that fluids are retained because of a chemical imbalance in the body.

3. Bluish lips or fingernails. This discoloration is actually a discoloration of the blood which is related to poor blood flow or poor oxygenation of the blood. The blue color may be seen at the lips and fingernails because at these points a great number of blood vessels are near the skin surface. Bear in mind that skin pigmentation may interfere with detection.

4. Swollen neck veins. The veins appear unusually distended, or prominent at the side of the neck.

5. Nervousness, excitability, excessive sweating. Nervousness and excitability often occur when the testing situation creates anxiety or stress in the individual. The applicant may also be seen to carry himself rigidly or have sweaty palms. Applicants may also talk about their nervousness, lack of appetite, insomnia, etc. Some applicants may show their nervousness by constant talking about unrelated topics.

6. Slowed reactions, confusion. The applicant appears to have trouble comprehending or understanding, and may act bewildered or dazed.

7. Partial paralysis. In partial paralysis, the individual either has difficulty in moving part of his body, or has completely lost the ability to move some part of his body.

8. Loss of consciousness, stupor. In loss of consciousness, the individual totally loses awareness, as if he were asleep. When he "awakes," he is unaware of anything that occurred around him while he was unconscious. During loss of consciousness, the individual's body may be motionless or convulsing. Stupor means that the individual is partially unconscious.

9. Weakness in arms or legs. This may be seen as a sudden weakness, or as a long-standing weakness. The individual is unable to perform normal tasks without distortions of movement to overcome the weakness.

10. Pain in left arm, jaw, or chest. This may be an indication that a heart attach is occurring, and medical assistance should be summoned at once if you suspect a heart attack. The pain has been described as a tightness or crowding within the chest. The pain may spread into the left arm, neck, or jaw and even into the right side. Of course, a simple sore arm or other easily explained cause of pain does not fall under this heading. If a heart attack is occurring, the pain will be severe.

11. Choking, vomiting, or severe nausea. Choking is the interruption of breathing by an obstruction in the air-way. Vomiting is the forcible expulsion of the contents of the stomach through the mouth. Nausea has been described as a vague unpleasantness in the abdomen. In the case of nausea, an applicant might complain of feeling sick to the stomach or he might experience revulsion at the thought of eating.

12. Dizziness, staggering, lightheadedness, giddiness. The individual experiencing dizziness has the sensation that the world is moving around him or that he is moving. He may complain of a spinning sensation or unsteadiness. A severe attack of dizziness could be seen as staggering, i.e., the individual having difficulty in remaining erect while walking. There are many possible reasons for dizziness, including heart and middle-ear conditions. Each one, however, makes the individual a less-than-safe driver. A person may feel lightheaded or giddy when under the influence of certain drugs (including alcohol) or when experiencing a high fever. The individual may feel faint, out of touch with reality, weak, or unsteady. The individual may have a glazed look or may have difficulty walking straight.

13. Frequent stopping during walking. This is often associated with a breathing difficulty. Breathing is such hard work for the body that the individual must stop and rest frequently from all other activity just to keep up with the work of breathing. Frequent stopping could also be caused by an orthopedic problem. Whenever the examinee must pause while walking, the examiner should attempt to find out why.

14. Permanently stiff joints, back, or neck rigidity. This is a noticeable inflexibility in any part of the body (limbs, neck, or torso). One or more joints may be immobilized.

15. Anger, hostility, impulsiveness, lack of caution. When individuals tell you how mad they get at the system or the establishment, or when they "give you a hard time," you should try to evaluate, as impartially as you can, whether their actions and attitudes are justified. If they seem unreasonable, you should check this item. Impulsiveness means prone to act suddenly and without forethought; lack of caution means acting imprudently without considering the possible consequences of one's acts. This is especially serious when seen as overconfidence or carelessness behind the wheel.

16. Obesity. This is an increase in body weight beyond skeletal and physical requirements. Obesity should be recorded only if it appears to interfere with driving.

17. Severe reaction to sudden cold or heat. Normally, people shiver in the cold and sweat in the heat. If an applicant reacts in an extremely unusual manner to cold or heat, then this reaction may be considered severe. It is also worth noting when an individual shivers or sweats perceptibly in normal room temperature.

18. Tremors. This is an involuntary trembling or quivering. It cannot be stopped by the individual.

19. Blinking, jerking of arm or leg, short periods of unresponsiveness (blackout), stiffening. These are all examples of signs that may indicate epileptic problems. The individual may stare into space for a moment, or contract a muscle group (jerk), or temporarily lose muscle tone, i.e., go limp and recover. Unless they are quite obvious, you should ask about the frequency of these signs before recording them.

20. Poor coordination. Poor coordination means the muscles do not work together or they do not respond well to commands from the brain. This may be the result of damaged muscles or nerves. Because of the damage, the individual's body motions become less precise because he has to use other muscles and nerve pathways to compensate. There may also be occasions on which an applicant gives the appearance of poor coordination, but the problem may actually be due to poor vision or perception.

21. Distorted facial expression. This is sometimes caused by a partial paralysis of the face muscles, so that one side of the face can be controlled and "expressive" but the other cannot. Disfigurement from burns or scars does not fall into this caregory, although you should look for other permanent effects of the accident.

22. Obvious deformity of leg, arm, or back. This is a distortion or disfigurement in the normal body shape, as when a hand is not completely formed or when a spine is crooked.

23. Loss of bowel or bladder control. The individual does not have normal control over the emptying of his bowel or bladder. May be detected by odor and staining of clothes.

24. Falling asleep (unexplained). This is an unpredictable occurance in which the individual cannot keep himself from falling asleep. Falling asleep while waiting one's turn should be questioned. Falling asleep during any portion of the examination is a very serious sign, no matter what the cause.

25. Smacking of lips, rubbing of nose or face, plucking at clothes or hair, drooling. These may be signs of epilepsy. They may even result from a conscious effort on the part of the applicant to conceal an epileptic episode.

26. Epileptic attack. The individual experiences loss of consciousness. The observer sees violent, involuntary contractions of the voluntary muscles.

27. Loss of memory. Memory loss may be minor and temporary, as when keys are misplaced. It may also be major and permanent, as in senility. Unless one has very recently moved, failure to recall one's address is a significant sign of loss of memory. Not knowing such personal facts could mean that the person you are talking to is pretending to be someone else.

28. Painful joints, arthritis, or rheumatism. In a person suffering from these conditions, joints, muscle, and tissue become inflamed and painful. Deformity of the fingers is sometimes seen. When hands are affected, filling out forms becomes difficult.

29. Failure to pass visual acuity standards. The license examiner gives an eye examination to determine distances and (in a few states) peripheral vision. If the applicant fails the eye test, he is automatically referred for an eye exam by a vision expert before he may proceed with his driving exam.

30. Lapses of attention, short periods of unresponsiveness. This means that the applicant does not respond to conversation, or to other things he should have seen or heard, such as an obstacle or a stop sign.

31. Greatly slowed bodily motions. The individual moves more slowly than the majority of people would in the same situation. This may be seen in any situation, ranging from a small-muscle task like handwriting to a large-muscle task like walking.

32. Disorientation. This is related to loss of memory, or inability to recall, but it is more severe. The individual expresses confusion as to where he is, who he is, or when it is.

33. Jerking or oscillation of pupils. The eyeballs move involuntarily and this movement cannot be inhibited by the individual. The motion is rhythmical and may be side-to-side, up and down, in a circle, or in some combination. Doctors call this "nystagmus."

34. Pupils irregular in size, not round, multiple. The pupils may be seen to be irregular in many ways. The two pupils may have different sizes or be unusually small or large. A pupil may not be round, or there may seem to be more than one pupil in an eye. In making these evaluations, you should also look for irregularity in the shape of the iris, the colored membrane that surrounds the pupil.

35. Opacities (grayness, haziness, cloudiness). The eye looks steamy and without its normal luster. The applicant may be able to see well in a darkened room, but poorly in bright light.

36. Drooping upper or lower lids. Drooping upper lids make the individual seem sleepy. Drooping lower lids are usually seen in connection with an accumulation of fluid that weighs down the lower lids.

37. Drifting pupils. One eye may turn out or in, while the other remains fixed; both eyes may turn out or in. If an individual has trouble making both eyes point in the same direction, he may see double. The condition will be worse when the individual is tired (or drunk or drugged).

38. Congested or crusty eye surface or lids. Congestion is the abnormal accumulation of blood. A congested eye surface is familiar from the television commercials for eye drops. Crustiness can be hardened secretions from the eye or scales formed on the eye lid.

39. Evidence of eye surgery. Without sophisticated equipment for examining the eye, the only evidence will be external scars around the eye area, or the applicant's self-report.

40. Telescopic (bioptic) lenses. These are devices like binoculars that attach to regular glasses. Although they enable persons with very poor vision to pass the acuity test, they severely restrict peripheral vision thus making the wearer a serious hazard on the highway. If your state licenses telescopic lens wearers, even if they are not able to pass the acuity requirements without the device, each case must

be reviewed on an individual basis. In addition, the applicant should be certified by a vision specialist, reviewed by the state's medical advisory board, given a road test, and be required to be reevaluated on a regular periodic basis.

41. Severe reaction to bright light. If the pupils remain open in bright sun, the incoming flood of light will be painful and the individual will want to close the eyes or look away. Notice what happens when you go outside with the applicant. Ask older applicants or drivers whether they are unusually bothered by glare or bright lights at night.

42. Signs of fighting or falling (black eye, bruises, fresh scars). These may be seen on exposed parts of the body such as the face, neck, hands, and arms. Bruises, black eyes, and scars may have causes other than fighting or falling, but should be recorded in any case.

43. Wild, inappropriate, erratic behavior. This is any bizarre action that is extremely inappropriate to the serious business of taking a driving exam. Examples are threatening, shadow-boxing, and screaming.

44. Visual or auditory hallucinations. To hallucinate means to perceive things that are not really present. In visual hallucination, the individual thinks he sees something that is not present in reality. In auditory hallucination, the individual thinks he hears something that is not present in reality.

45. Preoccupation, self-absorption, indecision, indifference. Preoccupation is extreme or excessive concern with something other than the task at hand; self-absorption means being preoccupied with thoughts of oneself; indecision means extreme wavering between two or more courses of action; indifference means a lackadaisical, uncaring attitude. If an individual does not have his mind on the business at hand, he may be suffering from depression.

46. Reeks of alcoholic beverage. Odor of alcoholic beverage is present. An individual who comes in drunk shows little respect for society's normal conventions. He or she must be referred for medical evaluation.

47. Needle marks on arm. A person regularly using a drug administered by injection to the vein is likely to have a large number of blue-black dots or punctures on the forearm, between the elbow and the wrist.

48. Multiple tattoos. Since the process of tattooing is painful and defaces the body, it is assumed that an individual with multiple tattoos may be highly suggestible and uses alcohol to bring himself to a state of compliance.

49. Severe anxiety, apprehension, hand-washing behavior. Anxiety is a feeling of uncertainty and fear. Apprehension is used here to mean fear of something to happen in the future. Hand-washing behavior is seen in some cases of severe anxiety--the individual manipulates his hands as if washing them.

50. Prosthesis. This is an artificial substitute for a missing part, such as an arm, eye, leg, or denture. Of course false teeth have nothing to do with driving, and many persons with artificial arms or legs are excellent drivers. Sometimes, however, persons cannot drive well even with the best of artificial limbs. The driving test will tell the story.

51. A sign explained away as a reaction to a drug. The individual reports that his behavior is being caused by a drug. Such self-report might occur as a response to something the examiner says or it might simply be volunteered. If a drug is causing a sign that looks like something that might interfere with driving, the dosage needs to be reexamined by a physician.

MEDICAL EVALUATION CHECKLIST

Part I. Self Report Questions

		Yes	No
* 1.	Have you ever had blackout spells, loss of consciousness, epilepsy, seizures, or convulsions? If yes, when was the last date?	☐	☐
* 2.	Have you ever been a patient in a mental hospital?	☐	☐
* 3.	Have you ever been addicted to narcotic drugs or to liquor?	☐	☐
* 4.	Have you ever been advised by a physician to restrict your activity or to take medicine because of heart trouble?	☐	☐
* 5.	Have you had signs of heart trouble, such as chest pains, shortness of breath, dizziness, or fainting spells?	☐	☐
* 6.	Have you ever been told by a physician that you have diabetes?	☐	☐
* 7.	Have you ever suffered from stroke or paralysis?	☐	☐
* 8.	Have you ever had a temporary or sudden loss of vision in one eye or both eyes?	☐	☐
* 9.	Do you have any medical problem which you think might affect your driving ability? If yes, what is it?	☐	☐
*10.	Have you ever been convicted of driving under the influence of alcohol?	☐	☐
11.	Do you have any amputations or missing extremities?	☐	☐
12.	Do you have any permanent stiffness or weakness in any joints or muscles?	☐	☐

Part II
Signs and Symptoms

COLUMN

Entry and Greeting

		A	B	C	D	E	F
1.	Bluish lips or fingernails						
2.	Swollen neck veins						
3.	Slowed reactions and confusion						
4.	Tremors						
5.	Distorted facial expression						
6.	Obvious deformity of leg, arm, or back						
7.	Smacking of lips, rubbing face, plucking at clothes or hair, drooling						
8.	Greatly slowed bodily motions						
9.	Signs of fighting or falling (black eye, bruises, fresh scars)						
*10.	Wild, inappropriate, erratic behavior						
11.	Severe anxiety, apprehension, hand-washing behavior						
12.	Obesity						
13.	Prosthesis						

Vision Testing

14. Nervousness, excitability, excessive sweating

*15. Failure to pass visual acuity standards

16. Jerking or oscillation of pupils

17. Pupils irregular in size, not round, multiple

18. Opacities (grayness, haziness, cloudiness)

19. Drooping upper or lower lids

20. Drifting pupils

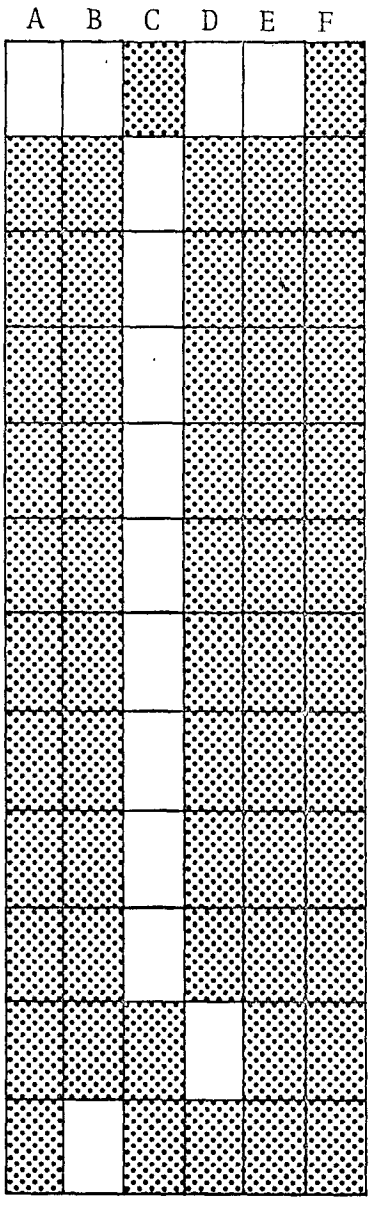
21. Congested or crusty eye surface or lid

22. Evidence of eye surgery

*23. Telescopic lenses

*24. Visual or auditory hallucinations

*25. Epileptic attack



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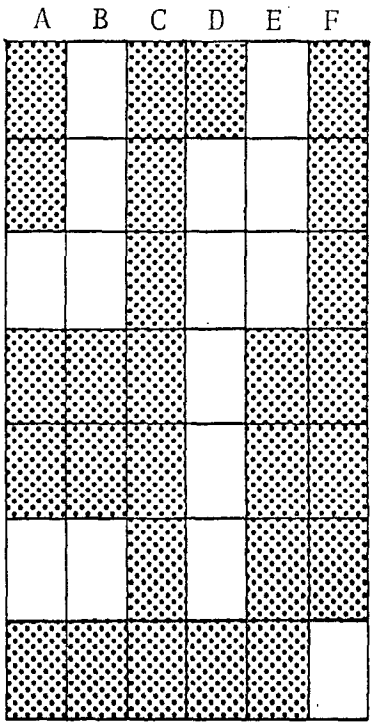


Knowledge Test

*26. Blinking, jerking of arm or leg, short blackout, stiffening

*27. Falling asleep (unexplained)

28. Lapses of attention, short periods of unresponsiveness

*29. Needle marks on arm

30. Multiple tattoos

31. Loss of memory

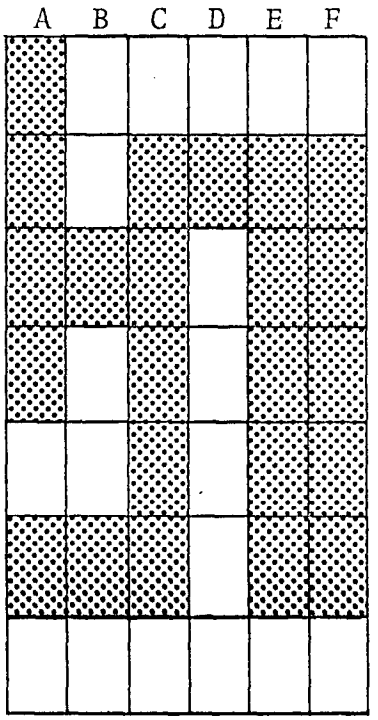
32. Painful joints, arthritis, or rheumatism

COLUMN

Walking to Vehicle

		A	B	C	D	E	F
33.	Breathing difficulties (shortness of breath, wheezing)		▒	▒	▒	▒	▒
34.	Swelling of feet, legs, ankles		▒	▒	▒		
35.	Partial paralysis			▒	▒	▒	
*36.	Loss of consciousness, stupor			▒			▒
37.	Weakness in arms or legs			▒	▒		
*38.	Pain in left arm, jaw, or chest (unexplained)		▒	▒	▒	▒	▒
*39.	Choking, vomiting, or severe nausea			▒		▒	▒
*40.	Dizziness, staggering, lightheadedness, giddiness			▒			▒
41.	Frequent stopping during walking		▒	▒	▒	▒	
42.	Permanently stiff joints, back, or neck rigidity	▒		▒	▒	▒	
43.	Severe reaction to bright light	▒	▒		▒	▒	▒
44.	Severe reaction to sudden cold or heat		▒	▒	▒	▒	▒

COLUMN



Driving Test

45. Poor coordination

*46. Loss of bowel or bladder control

*47. Disorientation

48. Preoccupation, self-absorption, indecision, indifference

49. Anger, hostility, impulsiveness, lack of caution

*50. Reeks of alcoholic beverage

51. A sign explained away as a reaction to a drug

UNIT TITLE		PAGE	

Part III
Follow Up Questions and Tests

	Referral Response	Refer
Column A		
Questions		
1. How many pillows do you use when sleeping?	3 or more	☐
2. Do you have any vericose veins?	Yes	☐
3. Do you find yourself becoming tired from the slightest exertion?	Yes	☐
4. Do you ever suffer severe headaches?	Yes	☐
Test		
1. Peripheral vision	140° temporally; both eyes	☐
Column B		
Questions		
1. Have you ever experienced numbness in your hands or feet?	Yes	☐
2. Do you ever suffer severe headaches?	Yes	☐
Tests		
1. Lock and unlock your car door.	Trouble fitting key to lock.	☐
2. Touch your index finger to the thumb of the same hand.	Trouble coordinating	☐
Column C		
Questions		
1. Do you have any problem with your vision that has not been corrected by glasses?	Yes	☐

UNIT TITLE		PAGE	

	Referral Response	Refer
2. Do your eyes have trouble adjusting to bright light, or to changes in lighting? Do you notice special difficulty at night?	Yes	☐
3. Have you had any eye surgery?	Yes	☐
Test		
1. Peripheral vision	140° temporally, both eyes	☐

Column D

Questions

1. During the last five years, has a physician told you you had a stomach ulcer?	Yes	☐
2. Do you suffer severe headaches?	Yes	☐

Column E

Questions

1. Do you ever experience what you think is excessive hunger or thirst?	Yes	☐
2. Do you ever experience what you think is excessive urination?	Yes	☐
3. Do you find yourself becoming tired from the slightest exertion?	Yes	☐

Column F

Questions

1. Do you wear any type of prosthesis?	Yes	☐

APPENDIX D

SUGGESTIONS FOR COURSE IMPROVEMENT

DRIVER LICENSE MEDICAL SCREENING

Biographical Data

Name: _____

Current Assignment: _____ How long?_____

Where: _____

Previous Assignment (if in DMV): _____

How long?_____

Suggestions for Course Improvement

We are quite anxious to receive your suggestions about how this course can be improved. Below is a list of the units in this course. Please take a few minutes to give us constructive suggestions for change. If something needs to be altered, deleted, or added to the Student Study Guide, please be specific about the page number where the change is suggested.

I-A. Introduction to Examiners Responsibilities and Roles with Respect to Medical Screening

_____

_____

_____

_____

_____

I-B. Cardiovascular System

_____

_____

_____

_____

_____

I-C. Neurological System

I-D. Ophthalmological System

I-E. Mental/Emotional System

I-F. Age-Related Signs and Symptoms

I-G. General Medicine and Review

II-A. Screening Methods for Different Phases of the Examination Process

II-B. Interview Methods

II-C. Using Records for Medical Screening

II-D. Medical Advisory Board

II-E. License Restrictions

II-F. Review and Evaluation

General Suggestions for the Total Course.