

## **CASE DEVELOPMENT GUIDE**

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### **NATIONAL BOARD DENTAL HYGIENE EXAMINATIONS**

*A publication of the Joint Commission on National Dental Examinations  
American Dental Association, 211 East Chicago Avenue  
Chicago, Illinois 60611-2637*

# **CASE DEVELOPMENT GUIDE**

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The Case Development Guide for Dental Hygiene is available on the ADA.org web site at

<http://www.ada.org/2287.aspx>

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## **BASIC STRUCTURE OF THE NATIONAL BOARD DENTAL HYGIENE EXAMINATION**

The current National Board Dental Hygiene Examination (NBDHE) consists of 350 test items. The discipline-based section (Component A) contains 200 items and the case-based section (Component B) includes 150 items based on 12 to 15 cases.

This *Guide* provides information to potential contributors of patient cases for the case-based component of the NBDHE. For information concerning Component A, see the *National Board Dental Hygiene Examination Specifications* and the *Test Item Development Guide* published annually by the Joint Commission on National Dental Examinations.

### **THE CASE-BASED COMPONENT**

Patient cases are included in the National Board Dental Hygiene Examinations because it is important to assess knowledge of the dental clinical disciplines as well as the ability to use this knowledge in solving patient problems. As such, case-based test items are interdisciplinary in nature. Hence, patient cases are designed to measure candidates' abilities to make appropriate judgments, when faced with situations requiring the integration of biomedical and clinical dental sciences. Since the focus of each case scenario should be the patient, test questions are centered on delivering quality care to the individual patient.

Each case should present as realistically as possible a situation that includes a patient, a set of conditions, and a presenting complaint or problem. Conditions should model those encountered in dental offices, and problems should represent an area of dental hygiene practice taught in accredited dental hygiene schools. Cases should test knowledge of the more important concepts required to deliver competent dental hygiene care.

Each case is presented with a patient history, dental chart, radiographs, clinical photographs, and photographs of casts, when appropriate. These materials are accompanied by eight to 15 test items addressing one or more of the following procedures of dental hygiene care delivery:

1. Assessing patient characteristics
2. Obtaining and interpreting radiographs
3. Planning and managing dental hygiene care
4. Performing periodontal procedures
5. Using preventive agents
6. Providing supportive treatment services
7. Professional responsibility

Each case is developed according to the major subcategories of Section II of the NBDHE Test Specifications: *Provision of Clinical Dental Hygiene Services*. However, the number of items allocated to each subcategory represent the number of discipline-based items (Component A), and are not specific requirements for the case-based section of the NBDHE.

It should be noted that test items on *Community Dental Health* under Section III of the NBDHE Test Specifications are excluded in the case-based section because of the independent nature of such items. However, community dental health items are included as testlets (item sets) in the first section (Component A) of the examination.

## **CATEGORIES OF PATIENTS**

The case-based questions are designed to address two categories of patients:

1. Adult — 80 percent of cases
2. Child — 20 percent of cases

For the 150 test items included in the case-based section, at least two cases must address the medical management of compromised patients. A compromised patient is one whose health status may require modification of standard treatment or special consideration.

Each examination should contain at least one case for each of the following patient types:

- Geriatric
- Adult-Periodontal
- Pediatric
- Special needs
- Medically compromised

## **COMPONENTS OF A CASE-BASED PROBLEM**

### *Patient Information*

Patient information should include age, gender, relevant physical characteristics, vital signs, medical and dental histories, relevant social history, and chief complaint. The case must contain a dental chart including intraoral and extraoral examination, hard tissue charting, and a periodontal examination. Case materials must include radiographs of diagnostic quality and free of technical errors, unless such errors serve an analytic purpose. Cases may contain intraoral and/or extraoral photographs (see next section for detailed requirements). Collectively, the case materials provide multiple views for consideration in responding to test items.

Cases may pertain to a patient's first visit, to a patient in the midst of treatment, or to a patient for whom treatment has been completed but who has returned with a possible complaint or for a maintenance visit. *Current Oral Hygiene Status* and *Supplemental Oral Examination Findings* may also be included. All information should be clear and concise. In general, cases should exclude irrelevant information.

### *Test Items*

Test items should be developed for a case based on a treatment plan that encompasses multiple disciplines in clinical dental hygiene. Each item must address the case and require candidates to select and use information from the case to answer it. The test construction committees strive to eliminate case-independent items. Additionally, the answer to one test item should not be contingent on knowing the correct answer to another test item. At the same time, items should be presented in a sequence appropriate for the delivery of care to the patient described in the case. Thus, as treatment in the case proceeds, new information might be given in subsequent items to guide candidates in making appropriate decisions.

There may be more than one acceptable treatment plan for a specific case. However, there should be only one correct or best answer to each item. This is done by stating in the item stem what has been done in the treatment to precipitate the next step, or by sequencing the items according to treatment plan procedures.

## **STANDARD ELEMENTS OF A PATIENT CASE**

All cases submitted to the Joint Commission for inclusion in the National Board Dental Examinations must include:

1. A treatment plan that draws upon multiple disciplines
2. The potential for generating at least eight multiple-choice items
3. Patient history (p8)
4. Dental chart (p9)
5. Radiographs\* - Digitized files in TIFF format at 300-600 dpi are preferred; images in JPEG format at 300-600 dpi are acceptable. (p10)
  - A. Complete series of good diagnostic quality images, including:
    - 2, or preferably 4 bitewings
    - molar views of all quadrants
    - premolar/bicuspid views of all quadrants
    - lateral incisor views for all quadrants
    - canine/cuspid views for all quadrants
    - upper and lower central incisor views
  - B. Panoramic film, if available

6. Color slides or photographs\* (p11)

- A. Intraoral and/or extraoral views
- B. Slides of study casts (for orthodontic and prosthodontics cases)
- C. Slides of lesions (for cases including oral pathology)

Photos should be clear with natural color and contrast, and free of extraneous elements, such as mirrors, retractors, instruments, and fingers.

Preferred views include:

- a full frontal view of both arches in centric occlusion
- right and left lateral views in centric occlusion
- a full occlusal view of the upper arch
- a full occlusal view of the lower arch
- other views, including close-ups of segments of a dental arch or quadrant, may be provided as long as appropriate views listed above are provided for orientation.

**\* The orientation (Left-Right) of radiographs and photographs must be clearly labeled.**

7. Case tracking form (p13)

8. Copyright Assignment (p17)

9. Sample Patient Release Form (p18)

You must secure and maintain a signed patient release form at your site. Materials must not include any personal information that identifies the patient, e.g. name, SSN.

*Standard Forms*

Forms used by the Joint Commission on National Dental Examinations to record a patient history, adult clinical examination chart, and pediatric clinical examination chart are appended. More extensive descriptions of appropriate test items are included in the *Test Item Development Guide*, published by the Joint Commission on National Dental Examinations.

Please submit all case materials to:

Joint Commission on National Dental Examinations  
Department of Testing Services – Test Development  
211 East Chicago Avenue, Suite 600  
Chicago, Illinois 60611-2637

Radiographs and color photographs can be submitted electronically in TIFF or JPEG file format at 300-600 dpi. Please orient radiographs and photographs properly (looking toward patient) by marking them as Left Side, Right Side, or L to R or R to L. The patient history and dental chart can be submitted in hard copy or by contacting us for an electronic files.

All submitted case materials are reviewed by the Case Selection Committee. If the committee determines that a case is suitable for use on the NBDHE, **an honorarium of \$500** will be sent to the case contributor.

## **RESPONSIBILITY FOR TEST SECURITY**

Any participation in examination development carries with it serious responsibilities relative to test security. This is especially true regarding high-stakes national examinations. The Joint Commission on National Dental Examinations emphasizes its expectations of case contributors in safeguarding the security and confidentiality of the case materials.

Each case contributor must be careful not to breach the security of test content through any activities associated with the case materials. A case contributor may not contribute to a publisher's book regarding a case he/she has helped to develop, nor may he/she use these case materials in his/her own teaching or review sessions.

**SAMPLE CASE**

<b>Age</b>	63	<b>YRS</b>
<b>Sex</b>	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Female	
<b>Height</b>	6' 2"	
<b>Weight</b>	215	<b>LBS</b>
<b>B/P</b>	136/80	
<b>Chief Complaint</b>	"I haven't been to the dentist for several years and I was encouraged to make an appointment today. I have a loose tooth."	

**Medical History**

The patient reports a history of diabetes for the past 6 years. In addition, his left carotid artery was blocked requiring surgery 2 years ago. He is allergic to bee and wasp stings.

**Current Medications**

glyburide (DiaBeta<sup>®</sup>) 20 mg qd  
metformin HCl (Glucophage<sup>®</sup>) 500 mg bid  
atorvastatin calcium (Lipitor<sup>®</sup>) 10mg qd  
aspirin 81 mg qd

**Dental History**

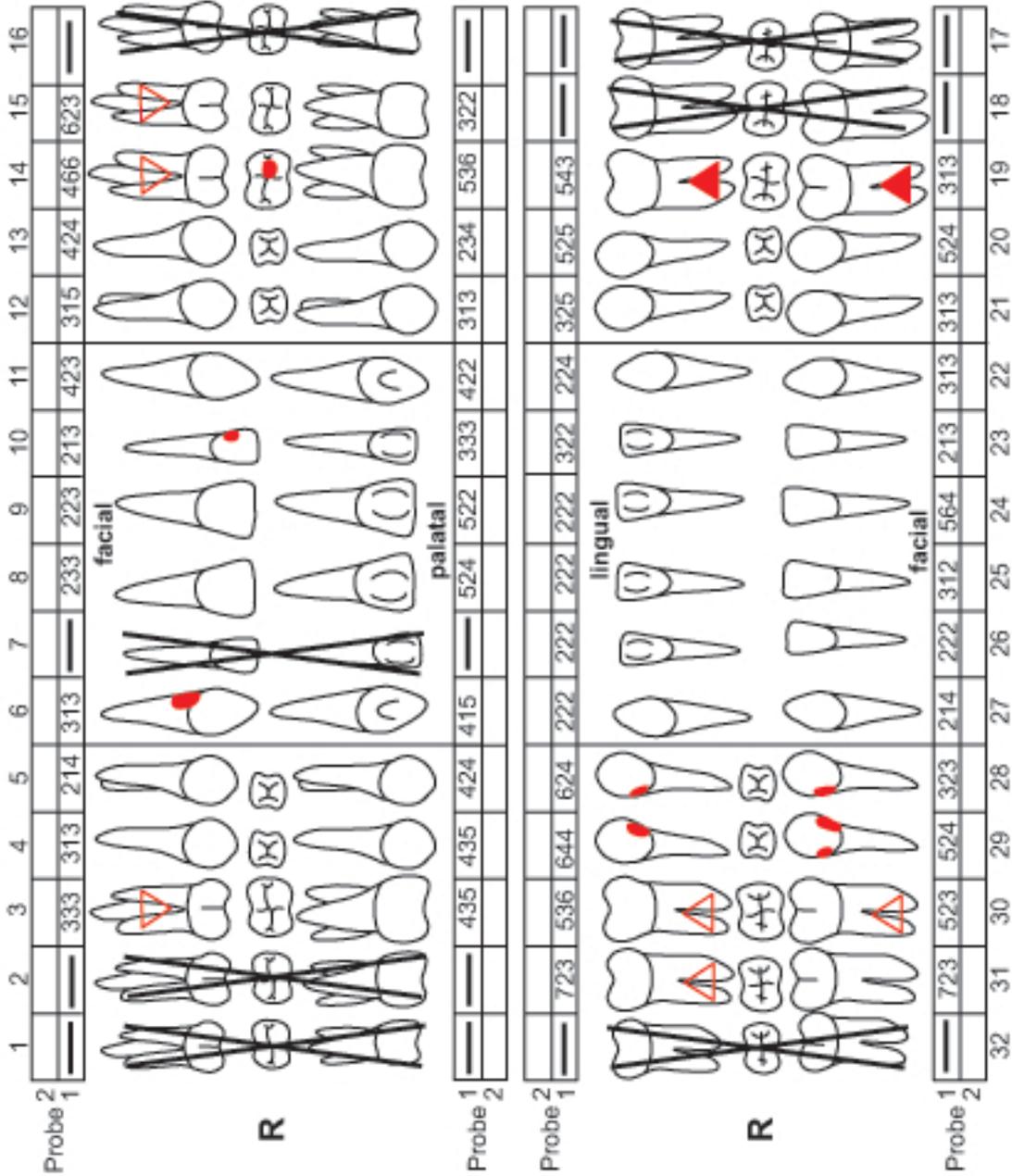
The patient does not seek routine dental care visits. His last visit was 2 years ago for an abscessed tooth.

**Social History**

The patient is married and works as a truck driver, who is on the road for several days at a time. He smokes 5-10 cigars a day and does not exercise regularly. He admits he has poor dietary habits.

# SAMPLE CASE

## ADULT CLINICAL EXAMINATION



### Current Oral Hygiene Status

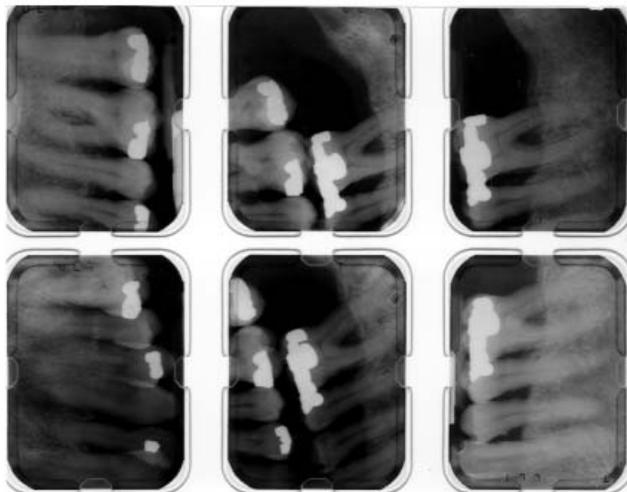
1. Poor
2. Generalized moderate to heavy supra and subgingival plaque and calculus
3. Generalized stain

### Supplemental Oral Examination Findings

1. Generalized gingival recession
2. Generalized gingival bleeding

	Clinically visible carious lesion
	Clinically missing tooth
	Furcation
	"Through and through" furcation
Probe 1:	initial probing depth
Probe 2:	probing depth 1 month after scaling and root planing

**SAMPLE CASE**

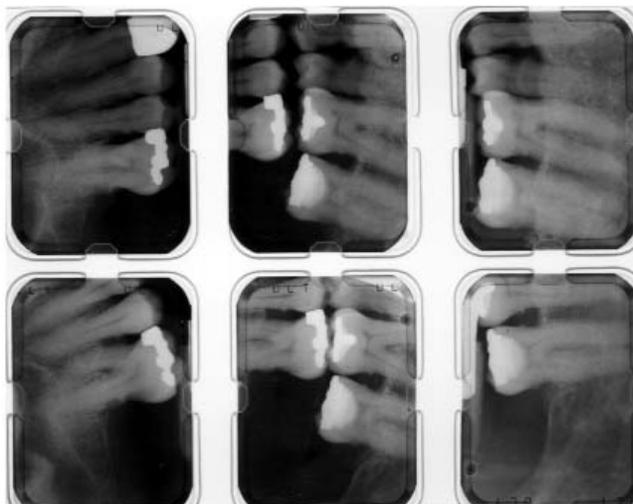


Left side



L

R



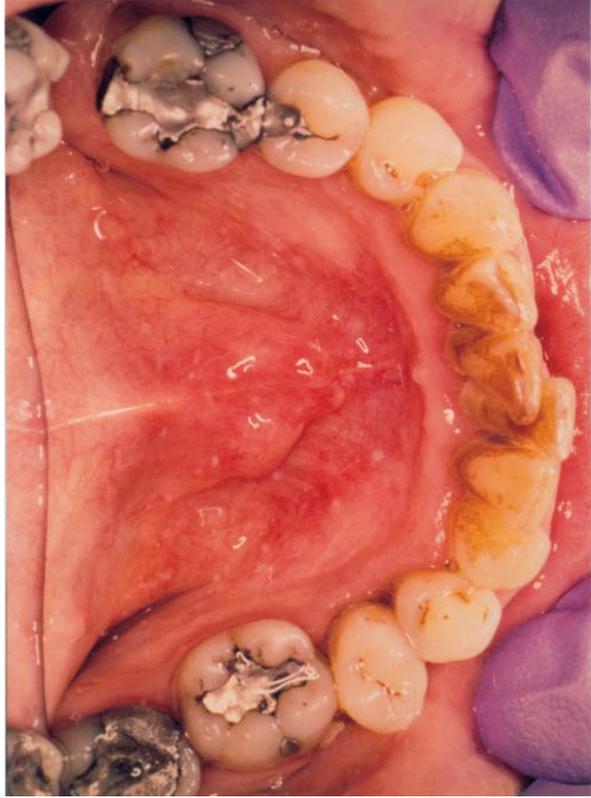
Right side

**SAMPLE CASE**



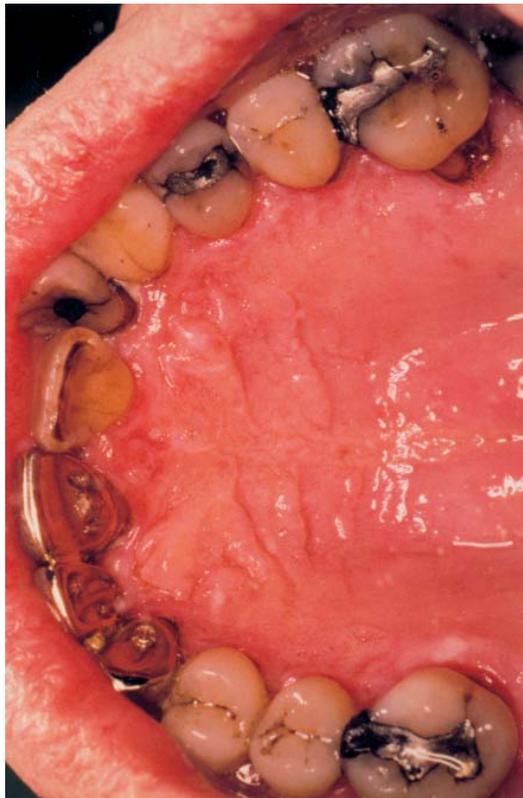
LEFT

RIGHT



LEFT

RIGHT



LEFT

RIGHT

To: Case Contributor for National Board Dental Examinations

From: Joint Commission on National Dental Examinations  
Department of Testing Services

Thank you for your interest in providing case materials for use in our National Board Dental Examinations. The document, *Case Development Guide for NBDHE*, is designed to assist you in the preparation of case materials. All forms and charts mentioned below are found in the *Case Development Guide* at [www.ada.org/2287.aspx](http://www.ada.org/2287.aspx). If you elect to submit case materials, the following components are required for each case:

- A complete series of radiographs, including bitewings, and a panoramic view, if possible
- Color photographs, slides, or digital images (intraoral and extraoral views, photos of study models, or other relevant case materials)
- Patient history
- Dental chart
- A signed patient release form must be maintained at your institution or office. Do not include patient names or other identifying information when submitting cases.
- Signed Copyright Assignment
- Case tracking form

Our main objective is to secure complete case materials of good diagnostic quality representing typical patients. As much as possible we prefer pretreatment case materials. When we receive the case materials, our Case Selection Committee will evaluate their appropriateness and value for our National Board examinations. After a determination is made, remuneration will be processed at \$500/case, and sent to you.

We prefer original digitized images. Radiographs and photographs can be submitted either as TIFF or JPEG files at 300 - 600 dpi. The dental chart and patient history can be sent to you in an electronic file.

We thank you for your interest and time to assist us in our examination development. If you have any additional questions, please contact Katy Burns, Coordinator of Test Development, at 800-621-8099, ext. 2936.

## *Appendix A*

### NATIONAL BOARD DENTAL HYGIENE CASE MATERIAL TRACKING SHEET

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Office Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

E-Mail: \_\_\_\_\_ Phone: \_\_\_\_\_

Directions: Please indicate in the **Type of Case** box if a submitted case is an adult, pediatric, or medically compromised case. If an adult case, please indicate if the case primarily focuses on endodontics, periodontics, oral maxillofacial, general, etc.

Case Categories	Type of Case	No. of Radiographs	Panoramic View	No. of Photographs	Patient History	Dental Chart
Adult Periodontal						
Geriatric						
Medically Compromised						
Pediatric						
Special Needs						

I have obtained a patient release form for this case. Yes  No   
 [The form will be maintained at my institution/office.]

**PLEASE RETURN THIS FORM WITH SUBMITTED CASE MATERIALS.  
 THANK YOU FOR YOUR CONTRIBUTION!**

**Appendix B**

<b>CASE</b>	<b>Age</b>	<b>YRS</b>	<b>Dental History</b>
	<b>Sex</b>	<input type="checkbox"/> Male <input type="checkbox"/> Female	
	<b>Height</b>		
	<b>Weight</b>	<b>LBS</b>	
	<b>B/P</b>		
	<b>Chief Complaint</b>		
	<b>Medical History</b>		
<b>Current Medications</b>		<b>Social History</b>	

**CASE**

**ADULT CLINICAL EXAMINATION**

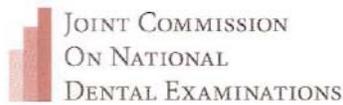
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Probe 2	<b>R</b>																
Probe 1	<b>R</b>																
Probe 2	<b>R</b>																
Probe 1	<b>R</b>																
Probe 2	<b>R</b>																

Current Oral Hygiene Status

Supplemental Oral Examination Findings

	Clinically visible carious lesion
	Clinically missing tooth
	Furcation
	"Through and through" furcation
	Probe 1: initial probing depth
	Probe 2: probing depth 1 month after scaling and root planing





## ***Copyright Assignment***

The undersigned, \_\_\_\_\_, whose address is \_\_\_\_\_  
\_\_\_\_\_ is involved in a special project for the American Dental Association that involves copyrighted or copyrightable materials. S/he acknowledges and agrees, individually and collectively, that all such materials belong solely to the American Dental Association, Joint Commission on National Dental Examinations, and that the Association holds any and all rights to obtain and retain ownership of copyrights for such materials in its own name. The undersigned represents that any and all contributions s/he makes to such materials will be original works, not copies in whole or in part of works of third parties. The undersigned hereby acknowledges and agrees that the American Dental Association is the sole owner of such materials, s/he has no ownership rights whatsoever in such materials, the Association has all rights to obtain copyrights for such materials, and such materials constitute "work made for hire" under copyright laws. The undersigned hereby assigns any and all ownership rights s/he may have to the American Dental Association, and s/he agrees that s/he will execute any additional documents necessary to effect this assignment to the Association upon request.

Name (print clearly) \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Appendix D**

**SAMPLE PATIENT RELEASE FORM**

I hereby authorize \_\_\_\_\_ to release the  
(dentist/dental hygienist's name)  
information in the dental records of \_\_\_\_\_ to  
(patient's name)  
the *American Dental Association*, Department of Testing Services. The records  
will include copies of current radiographs, intraoral and extraoral photographs – photos  
of dental casts and any relevant dental materials or appliances, dental chart, and a brief  
medical/dental history. These records will be used for purposes of educational  
assessment only. My name and personal identification information will not be included  
with these records. I understand that this authorization is effective on the date signed  
below and that a copy of this authorization will be received upon my request.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date