

Chairman Robinson called the meeting to order at 2:00 p.m. in Room 200.

MEMBERS PRESENT: Mr. Bennett  
Mr. Brady  
Mr. Bremner  
Mr. Chaney (Late-excused)  
Mr. Dini  
Mr. DuBois  
Mr. Kovacs  
Mr. Prengaman  
Mr. Rusk  
Dr. Robinson

MEMBERS ABSENT: Mr. Jeffrey (Excused)

GUESTS PRESENT: See Attached Guest List

As the first order of business, Dr. Robinson explained that the the Committee had received a request for a Joint Resolution on Generic Drugs from Assemblyman Steve Coulter, EXHIBIT A.

A MOTION TO REQUEST A JOINT RESOLUTION ON GENERIC DRUGS WAS MADE BY MR. RUSK AND SECONDED BY MR. DINI. THE MOTION CARRIED.

The second item on the agenda was a request to have the Committee request a bill pertaining to legal money.

A MOTION WAS MADE BY MR. DINI TO NOT MAKE A COMMITTEE REQUEST FOR SUCH A BILL. THE MOTION WAS SECONDED BY MR. RUSK AND CARRIED.

Dr. Robinson then requested that the Committee take action on A.B. 190.

A.B. 190: REMOVES REQUIREMENTS FOR EVIDENCE OF INSURANCE AND ASSOCIATED PENALTIES.

Dr. Robinson stated that the hearing pertaining to this bill, which was held on March 11, 1981, seemed to indicate that the consensus of the Committee and the persons testifying that the current laws should be strengthened rather than eliminated.

Mr. Dick Garrod stated that copies of the State of Oregon's insurance plan had been given to the Department of Motor Vehicles and to the Department of Insurance, and both of these departments were working on a proposed amendment.

Dr. Robinson remarked that the Committee would defer taking action on A.B. 190 until the amendment or amendments were received. Mr. Garrod commented that he would have something to the Committee within a week.

The Chairman reminded the Committee that there were quite a num-



Ms. Sherman stated that she was speaking in favor of the bill and that she wanted to propose several amendments on behalf of the Dental Hygienists' Association. Her suggested amendments are attached and marked "EXHIBIT E." Ms. Sherman indicated that the second two amendments she was going to propose had already been discussed by Dr. Digrazia.

Ann Hett, a dental hygienist and a consultant to the Nevada State Board of Dental Examiners, testified that the passage of A.B. 344 had her complete support and approval, particularly in the placement of the two dental hygienists to the Board of Dental Examiners. She add that she hoped the position would be expanded to include full voting privilege in the future.

Dr. J.B. Libke, representing the Nevada Dental Association, testified that the amendment proposed by the Nevada Dental Hygienists' Association, which added the words "who has shown evidence of an approved radiation protection course," to Page 4, line 39 following the word "technician," was more applicable to A.B. 268 instead of A.B. 344. He added that the Dental Association would be against that particular change to A.B. 344.

Marian Orr then came forward to offer her personal opinion to the Committee concerning A.B. 344. Ms Orr recommended that a stipulation be added to Section 7, page 5 that would require a list of candidates from appropriate professional societies to be submitted to assist the Governor in making appointments. She stressed that the Governor would be under no obligation to choose the board member from the list.

Ms. Orr also suggested the Committee consider making an adjustment relating to percentage of income for renewal fees based on the fact that a hygienist does not have the earning capacity that a dentist has. She added that she felt there should be some distinction made between active and inactive practitioners.

Ms. Orr stated that "active practice" was not adequately defined as used in line 1, page 7, and that this term could be discriminatory against a professional woman who wished to raise a family.

Jody Sherman returned to the witness table and indicated that she wished to give her rationale for the proposed amendment made by the Nevada Dental Hygienists' Association which added the term "who has shown evidence of an approved radiation protection course" to Section 4 of A.B. 344. She said that hygienists were not covered under A.B. 268 and, therefore, felt that it was appropriate to add that language to A.B. 344.

The last person to testify on behalf of A.B. 344 was Dr. Raymond Rawson, representing the Clark County Community College Dental Hygiene Program Advisory Board. Dr. Rawson indicated that the Advisory Board had a number of suggested changes to the bill. The proposed changes are attached and marked "EXHIBIT F."

There being no further testimony on A.B. 344, Chairman Robinson opened the hearing on A.B. 268.

A.B. 268: PROVIDES FOR LICENSING AND REGULATION OF RADIOLOGICAL TECHNICIANS.

Assemblyman John DuBois, from District 2 in Clark County, testified on behalf of A.B. 268. Mr. DuBois began his remarks by giving the Committee some background information on radiation. Some facts that he presented were:

1. Public exposure to radiation in the healing arts accounts for 90% of the annual dosage from man-made sources.
2. 30% of the above exposure is unnecessary.
3. The annual direct cost from unnecessary exposure is estimated to be between one and one half to two billion dollars.
4. There is considerable evidence that current procedures result in greater risks than necessary.
5. Eleven states now provide for licensing and regulation of x-ray technicians and several other states are considering such laws.
6. Only 80% of those operating x-ray equipment have demonstrated their competency.

Mr. DuBois then read from a list prepared by the research department indicating the different types of occupations which are licensed in Nevada. Mr. DuBois mentioned that the bill drafter had neglected to give a definition of "board" and that he had an amendment to cover the oversight. He also stated that people involved in the dental fields were covered under other legislation and were, therefore, not addressed in A.B. 268 as it was amended.

Following Mr. DuBois' remarks, Dr. Robinson read a letter from Marianne R. Tortorici, Associate Professor and Chairperson of the Department of Radiologic Technology of the University of Nevada at Las Vegas. That letter is attached and marked "EXHIBIT G." He also mentioned that he had received correspondence which indicated that there was only one radiological physicist in Nevada, and that could pose a problem to the Board. Dr. Robinson went on to list several other suggestions that he had received:

1. Remove physicians from the committee.
2. Have committee members appointed by the Governor.
3. A fiscal note should be added because the board will need some sort of funding.
4. Monies generated by certifications should be identified as to allocation.

Mr. DuBois stated that during the afternoon's testimony, there

would be some suggestions concerning the makeup of the committee.

Dr. Robinson then mentioned that the fees mentioned on page 4 of the bill appeared to be insufficient.

The first witness to testify on A.B. 268 was Gary Crews, Audit Manager for the Legislative Counsel Bureau. Mr. Crews made several suggestions which are attached in the form of a letter and marked "EXHIBIT H."

Next to testify on behalf of A.B. 268 was Marianne Tortorici. Ms. Tortorici referred to the letter that Dr. Robinson had read earlier then read some additional comments. Those comments are attached as "EXHIBIT I."

Mr. Brady asked for an explanation on the amounts of radiation that a person receives from an average dental x-ray. Ms. Tortorici gave Mr. Brady an explanation on the measurements and the amounts of radiation that should not be exceeded.

The president of the Nevada State Board of Chiropractic Examiners addressed the Committee and stated that the Board wished to be removed from mention in A.B. 268 because it was the only Board that examined its doctors that are new to the state with respect to their knowledge on x-rays and x-ray equipment. He added that approximately 44% of the new doctors coming to Nevada are now passing the examinations and that chiropractors were also covered under NRS 634.

Dr. Joseph Libke, representing the Nevada Dental Association and the State Board of Health thanked Assemblyman DuBois for amending A.B. 268 to exempt persons doing diagnostic dental x-rays under the supervision of a dentist. He also said that he agreed that a fiscal note should be added. Dr. Libke stated that all of the x-ray machines in the state were now licensed by the Radiation Division of the Department of Human Resources.

Following Dr. Libke, was Adele Koot, an instructor of dental hygiene at Clark County Community College. Ms. Koot indicated that she was in agreement with A.B. 268's purpose and that she favored Amendment No. 347 (attached and marked "EXHIBIT J"). She presented some course materials to the Committee to emphasize her point. This material is attached and marked "EXHIBIT K." Ms. Koot added that dental assistants in Nevada are not licensed nor are they required to meet any educational standards. Because of this, she indicated that she would like to have them included in the regulations of A.B. 268 or in the Dental Practices Act. Ms. Koot remarked that as Amendment 347 is written, dental assistants would be exempted from the bill and that she would not be concerned with that deletion just as long as they were covered in some other bill.

Ms. Koot went on to give some data on the measurement of x-rays and the amounts considered to be safe for the average person.



She added that at this point there might be dangers caused by inexperienced or unqualified persons administering such x-rays.

Mr. Brady expressed concern over the possibility of regulating people as a way to limit the number of individuals in a certain occupation. Ms Koot emphasized that she was concerned with making sure that people who are administering x-rays are knowledgeable and using all of the known safety measures available. She said that, as an instructor, she felt there was potential danger for someone to perform x-rays when that person had not received formal training in x-ray procedures.

Dr. Duane Christian, President of the Nevada Dental Association, commented that the testimony of Ms Koot implied that the dentist was unconcerned in the area of supervising his assistants' use of x-rays. He stressed that this was not the case, that the dentists are concerned with their patients. He also said that more and more dental assistants were receiving training and becoming certified and the training covered radiology.

Speaking next was Mike Touhy, Administrator of St. Marys Hospital in Reno. Mr. Touhy stated that with the amendment, it appeared that the only persons who would be regulated under A.B. 268 would be radiological technicians in non-federal hospitals. He said that he protested that implication because the highest standards were set for radiologists practicing in hospitals.

Joel Glover, Secretary of the Board of Dental Examiners, stated that the State Board of Dental Examiners presently had means and mechanisms of control for radiological examinations and for the use of radiology within its present legislation. Mr. Glover stated that rather than creating a new board, the present regulations would be adequate.

Dr. Robinson asked Mr. Glover if the Dental Board presently had any rules and regulations governing the use of x-rays in the dentist's office. Mr. Glover stated that it was not specifically stipulated as to who could or could not take films, just as long as all x-rays were performed under the direct supervision of the dentist.

Dr. Robinson then asked if there was any record of either a patient or an employee in a dentist's office being injured by x-rays. Mr. Glover indicated that he had no knowledge of such an instance. Mr. Glover added that a state inspector actually inspected each x-ray machine at least once every two years to make sure that it was functioning properly and safely.

Mr. DuBois asked Mr. Glover if he had any suggestions on the makeup of the committee referred to in A.B. 268. Mr. Glover said that he felt there was a need for regulations to protect people from great amounts of radiation and that the legislation pertaining to such regulations in other states should be examined to determine who should be on the committee.

Pamela Thomas, State Legislative Chairman for the Nevada Hygienists' Association, informed the Committee that radiation had a cumulative affect and that there was no testing to see how much radiation the personnel working with x-ray machines were receiving. She said that she also had concerns over the fact that dental assistants would be exempted from the bill.

Rick Pugh, with the State Medical Association, indicated that he wished to make several comments on behalf of Dr. Mauvine Barnes, a radiologist in Reno. Mr. Pugh said that the State Medical Association was divided on its response to A.B. 268. He suggested that a subcommittee take a closer look at the bill, and volunteered to have one radiologist in favor of the bill and one in opposition to the bill work with the subcommittee.

Dr. Robinson then appointed Mr. DuBois as chairman of the subcommittee and asked Mr. Prengaman and Mr. Brady to serve on the subcommittee with Mr. DuBois. Dr. Robinson also asked those persons who would be interested in working with the subcommittee to contact Assemblyman DuBois.

Pat Canfield, representing the Nevada Society of Radiologic Technology, stated that the Society was in favor of licensing radiologic technologists; however, the Society would be unable to support the bill without the provisions that had been outlined in the letter from Marianne Tottorici. Ms. Canfield then passed out a fact sheet with information concerning x-rays. The fact sheet is attached and marked "EXHIBIT L."

The Supervisor of Radiological Health with the Division of Health came forward to answer questions from the Committee with respect to the licensing and examination of x-ray machines in Nevada. He indicated that 100% of the equipment being used was modern, and that there were no life-threatening problems. He did say that the foot x-ray machines that used to be found in shoe stores were hazardous if used repeatedly, and that these machines had been taken off of the market because of the dangers. He added that his Division inspects x-ray machines to insure that the equipment is operating properly and that approximately 10% of the machines in the state had some type of problems or malfunctions. The Supervisor indicated that this 10% represented no real danger as long as a person was not exposed to such equipment over a long period of time.

There was no further testimony on A.B. 268, so the Chairman opened hearings on S.B. 141.

S.B. 141:

PROVIDES THAT PHYSICIAN OR OSTEOPATHIC  
PHYSICIAN MAY SUPERVISE EACH OTHER'S  
ASSISTANT.

Testifying in favor of S.B. 141 was Dr. William Edwards, representing the Nevada Division of Health. Dr. Edwards informed the

Committee that although there were a few physician's assistants in Nevada, there were no osteopathic assistants. He indicated that there was a problem in the rural areas of the state because a physician actually had to travel to remote areas to supervise a physician's assistant even though an osteopathic physician might be in the area. Dr. Edwards gave Tonopah as an example.

Dr. Robinson asked Dr. Edwards of the Osteopathic Board had the authority to license osteopathic physician's assistants. Dr. Edwards answered, "Yes, they do."

Dr. Robinson then asked if the examination administered to osteopathic physician's assistants was similar to the examination administered to physician's assistants. Dr. Edwards indicated that it was.

Speaking in opposition to S.B. 141 was Dr. Kenneth MacLean, Secretary/Treasurer of the Nevada State Board of Medical Examiners. Dr. MacLean explained that the Board of Medical Examiners had developed full and complete rules and regulations regarding physician's assistants. He added that the Board had very high standards in relation to these assistants. Dr. MacLean gave a profile of the typical physician's assistant and outlined the educational requirements and examination requirements necessary for those assistants. He stressed that once the Board had licensed a physician's assistant, he was assigned to only one specific medical doctor who was licensed in Nevada. He indicated that by assigning the assistant to only one physician, the Board was able to maintain control over the actions of the assistant.

Dr. MacLean stated that the Osteopathic Board had a completely different set of rules and regulations, and that the Board of Medical Examiners had no jurisdiction over the actions of a osteopathic physician. If S.B. 141 were to pass, the Board of Medical Examiners would lose the control that they now have over physician's assistants. He added that the Osteopathic Board could have written a set of rules and regulations governing the licensing of osteopathic physician's assistants, but that they had not done so, and consequently had no osteopathic assistants.

Dr. MacLean added that when legislation had been passed to permit the licensing of physician's assistants it had been hoped that those assistants would work in the rural areas of the state where there were few or no doctors; however, other than one or two, most of the physician's assistants were located in either Reno or Las Vegas. Dr. MacLean indicated that a physician's assistant working in a rural area must have access to certain drugs and that legislation had been passed that allowed assistants working in satellite locations to have access to controlled substances and to administer those substances. He stressed that because of the drugs involved, The Board of Medical Examiners needed to have the control over the physician's assistants that they now have by assigning an



assistant to only one supervising physician. He added that the passage of S.B. 141 would remove that control element.

Dr. Robinson asked Dr. MacLean if he thought the Committee should request legislation that would remove the ability from the Osteopathic Board to license osteopathic physician's assistants. Dr. MacLean responded that he was not making a plea for such legislation. Instead, he indicated that he would like to see them write rules and regulations and begin licensing osteopathic physician's assistants.

Dr. Robinson then moved to open the hearings on A.B. 281.

A.B. 281: REQUIRES DEALERS IN COINS AND USED JEWELRY TO KEEP CERTAIN RECORDS.

There were no witnesses to testify on behalf of A.B. 281, so the Chairman called for opponents.

Speaking in opposition to the bill was James Joyce, representing Nevada Coin Mart. With Mr. Joyce was Elwin Leavitt also representing Nevada Coin Mart. Mr. Joyce stated that he was very concerned that the legislature had decided to include dealers in coins into this bill and said that he felt that reference should be deleted.

Mr. Leavitt gave the Committee a brief description of the coin market and explained how obtaining all of the information that would be required under A.B. 281 would be unreasonable to both the dealers and the customers. He also said that information collected by coin dealers was submitted to the police department and that thieves were able to obtain that information and go out and rob the collector/customer. Mr. Leavitt added that the four day waiting period that would be imposed on the coin dealers would force people who were in a hurry to sell coins to travel to dealers out of state.

In answer to a question from Mr. Dini, Jim Joyce indicated that he understood the intention of the bill was to stop the fencing of stolen materials. He went on to say that almost all coins were not identifiable--one 1979 quarter next to another 1979 quarter does not give you any indication which one might be the stolen one. Mr. Joyce also gave a description of all of the information that a coin dealer would have to obtain on a seller, which was quite extensive and very personal.

Dr. Robinson stated that as he understood Mr. Joyce, he was requesting that the reference to coin dealers be deleted from the bill. Mr. Joyce responded that this was correct and specified that the reference should be deleted from line 2, page 1 and line 8, page 2.

Dr. Robinson inquired if there were any persons that dealt exclusively

in used jewelry. Mr. Joyce responded that he was unable to answer that question.

There was no further testimony on A.B. 281, so Chairman Robinson opened the hearing on A.B. 363.

A.B. 363: REMOVES REQUIREMENT THAT SECONDHAND DEALER MAINTAIN RECORD OF SALES.

There was no one to testify either for or against the bill and the Chairman closed the hearing on it.

Dr. Robinson informed the Committee that the agenda for April the 9th had been changed, and there would be a meeting on that Thursday. He indicated that the meeting would begin at 1:00 on that day. He also excused Mr. Rusk and Mr. Brady from the meeting because of a conflict with a Taxation Committee meeting at the same time.

Dr. Robinson asked if Mr. Brady would handle the floor work on A.B. 344.

There being no further business, the meeting was adjourned.

Respectfully submitted,



Evelyn Edwards  
Committee Secretary

61st SESSION NEVADA LEGISLATURE

ASSEMBLY COMMERCE COMMITTEE

LEGISLATION ACTION

DATE 4/1/81

SUBJECT A.B. 191: Requires insurers to offer coverage for full replacement value of mobile homes.

MOTION:

Do Pass \_\_\_ Amend \_\_\_ Indefinitely Postpone X Reconsider \_\_\_

Moved By Mr. Dini Seconded By Mr. Bennett

AMENDMENT:

Moved By \_\_\_ Seconded By \_\_\_

AMENDMENT:

Moved By \_\_\_ Seconded By \_\_\_

VOTE:	MOTION		AMEND		AMEND	
	Yes	No	Yes	No	Yes	No
BENNETT	X					
BRADY	X					
BREMNER	Abstain					
CHANEY	X					
DINI	X					
DUBOIS	X					
JEFFREY	Absent					
KOVACS	X					
PRENGAMAN	X					
RUSK	X					
ROBINSON	X					
TALLY:	9	0				

ORIGINAL MOTION: Passed X Defeated \_\_\_ Withdrawn \_\_\_  
AMENDED & PASSED \_\_\_ AMENDED & DEFEATED \_\_\_  
AMENDED & PASSED \_\_\_ AMENDED & DEFEATED \_\_\_

GUEST LIST

487

DATE: 4-1-81

PLEASE PRINT YOUR NAME	PLEASE PRINT WHO YOU REPRESENT	I WISH TO SPEAK		
		FOR	AGAINST	BILL NO.
Ann M. Hett	New. St. ...	X		AB 344
GARY CREWS	LCB - Audit		X	AB 268
Jody Sherman	New. Dental ...	X		AB 344
ELWIN C. LEVITT	NEVADA ...		L	AB 281
DUANE CHRISTIAN	Pres. Man. Dist. Assn.			AB 344 <sup>+268</sup>
Peter M. DeRosa	Pres. New State ...	X		AB 344
MARIONNE TORTORICI	UNLU		X	AB 268
W M EDWARDS MD	State Health Div.	X		SB 141
Richard ...	CCC college	X		AB 344
Adele Root	CCC college Las Vegas	X		AB 268
J. ...	... ..		X	SB 141
Sam Dappinger	CCCC	X		AB <del>344</del>
Marian ...	private sector	X		AB 344
Larry Katzenberger	LVMIPD			AB 363
Randy D. Rawlin	CCC college	X		AB 344
Ch. ...	NDA	X	X	AB 268
Mr. R. ... M.D.	NSMA	X		AB 268





JOINT RESOLUTION ON GENERIC DRUGS

WHEREAS, Americans spend more than \$10 billion to purchase over two billion prescription drugs annually; and

WHEREAS, Persons with low or fixed incomes experience difficulty in acquiring the prescription drugs necessary to maintain proper health; and

WHEREAS, Persons 65 years of age and older account for 25 percent of the nation's increasingly expensive drug expenditures; and

WHEREAS, Generic drug laws encourage competition in the marketplace for drug products; and

WHEREAS, Both generic and brand name drugs must meet the same standards for safety, strength, purity and effectiveness established by the U.S. Food and Drug Administration; and

WHEREAS, In 1979, the Nevada legislature, joining 40 other states, enacted a generic drug law; and

WHEREAS, The Secretary of the U.S. Department of Health and Human Services has issued an agency order discontinuing approval of new generic drugs; and

WHEREAS, This order may restrict the availability of generic drugs; now, therefore, be it

RESOLVED BY THE \_\_\_\_\_, jointly, That the Nevada legislature opposes any unnecessary restrictions made on the availability of generic drugs to the consumer; and be it further

RESOLVED, That copies of this resolution be immediately transmitted by the legislative counsel to the Secretary of Health and Human Services, to the Vice President of the United States as presiding officer of the Senate, to the Speaker of the House of Representatives and to all members of the Nevada congressional delegation.

EXHIBIT A

PETER M. DIGRAZIA, D.M.D., F.A.G.D.  
1625 LAKESIDE DRIVE  
RENO, NEVADA 89500

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I AM PRESIDENT OF THE NSBDE AS WELL AS VICE-PRESIDENT OF THE AMERICAN ASSOCIATION OF DENTAL EXAMINERS. I HAVE BEEN A MEMBER OF THIS BOARD FOR 8 YEARS. I WOULD LIKE TO EXPLAIN THE NEED TO PASS AB344.

THE NSBDE EXISTS TO PROTECT THE PEOPLE OF OUR STATE FROM POOR QUALITY AND ILLEGAL DENTAL PRACTICES. WE ACCOMPLISH THIS FUNCTION THROUGH TWO MAJOR AVENUES. ONE IS OUR BOARD EXAMINATIONS GIVEN TWICE YEARLY TO DENTAL AND HYGIENE CANDIDATES IN DENTAL SCHOOLS IN CALIFORNIA. SECONDLY WE MUST INVESTIGATE CLAIMS OF MALPRACTICE AND OTHER VIOLATIONS OF OUR PRACTICE ACT.

WITH PRESENT LEGISLATION AND FEE STRUCTURES SET IN 1961 WE FIND IT IMPOSSIBLE TO ADEQUATELY PERFORM OUR FUNCTIONS. OUR FINANCES ARE SUCH THAT AT THE PRESENT LEVEL OF ACTIVITY, WE WOULD BE SOME \$15,000.00 IN THE RED BY NEXT YEAR. AS YOU ARE AWARE, THE NSBDE IS SELF SUPPORTING AND WITH THE PASSAGE OF AB344 NOT ONLY WILL WE REMAIN SELF SUPPORTING BUT WE WILL AGAIN HAVE THE ABILITY TO PROPERLY CONDUCT OUR BUSINESSES AND POLICE THE DENTAL PROFESSION. OUR SECRETARY-TREASURER JOEL GLOVER IS IN

EXHIBIT B

ATTENDANCE AND EITHER HE OR I WILL BE HAPPY TO ANSWER ANY OF YOUR QUESTIONS. YOU HAVE BEFORE YOU OUR BUDGET AND FUTURE PROPOSALS.

IN ADDITION, THE BILL WOULD GIVE US INCREASED PENALTIES FOR THE ILLEGAL PRACTICE OF DENTISTRY AND ADD TWO HYGIENISTS TO THE BOARD OF DENTAL EXAMINERS. I AM PLEASED TO REPORT ALL OF ORGANIZED DENTISTRY IS IN FAVOR OF AB<sup>344</sup> WITH THE FOLLOWING SUGGESTED AMENDMENTS. ON PAGE 3 LINE 3 CHANGE WILLFUL TO REPEATED. ON PAGE 5 LINE 25 TO READ PARTICIPATE AND VOTE. ✓ ON PAGE 5 LINE 38 READ 4 INSTEAD OF 3. PAGE 5 LINE 40 READ 1 INSTEAD OF 2. ON PAGE 6 LINE 40 TO READ NOT TO EXCEED \$75.00. WITH THE AMENDMENTS SUGGESTED WE ENTHUSIASTIKLY ASK YOU TO RECOMMEND A DO PASS RESOLUTION.

THANK YOU



# Nevada State Board of Dental Examiners



Peter M. DiGrazia, D.M.D.  
President

Joel F. Glover, D.D.S.  
Secretary-Treasurer

3605 Grant Drive  
Reno, Nevada 89509  
(702) 825-3230

## BUDGETING NEEDS N.S.B.D.E.

Jan. 1, 1981 thru July 1, 1982

1.	Examiners Salaries (12 days at 60/day - 10 persons)	\$ 7,200.00
2.	Secretarial (part-time \$5.50/hr. - 15 hr. week)	3,960.00
3.	Office Expenses	1,800.00
4.	Telephone & answering service	1,500.00
5.	Printing	800.00
6.	Postage	600.00
7.	Bond	150.00
8.	N.I.C.	160.00
9.	Audit	1,000.00
10.	Exams costs (3)	15,000.00
11.	Bd. Meetings (4)	2,600.00
12.	W.C.D.E. & A.A.D.E.	\$ <u>800.00</u>
		<b>\$35,570.00</b>

No funding for Legal & Investigative fees -

Thus far in 1980 - 81

\$7,523.06

Minimum Legal fees anticipated - \$12,000.00

Thus - \$35,570.00 - anticipated expenses

12,000.00 - Legal fees

\$47,570.00 - Total

\$15,533.81 - Less cash on hand

\$32,036.19

Request \$15,000.00 Now -

EXHIBIT C

PROPOSED BUDGET - N.S.B.D.E. - JULY 1, 1981 THROUGH JUNE 30, 1982

Income

Renewal Fees			
	Dentist Active - \$200.00/year (300)		\$60,000.00
	Dentist Inactive - \$100.00/year (158)		15,800.00
	Hygiene Active - \$75/year (140)		10,500.00
	Hygiene Inactive - \$35.00/year (100)		3,500.00
Exam Fees			
	Dental at \$150.00 (60)	9,000.00	9,000.00
	Hygiene at \$75.00 (60)		4,500.00
Specialty Applications			
	Dental at \$200.00 (15)		<u>1,000.00</u>
Total			\$104,300.00/year

Expense

	Examiners Salaries (\$200.00/day)		\$24,000.00
	Secretarial Salary (full time)		11,520.00
	Office Expence		4,000.00
	Telephone and Answering Service		1,500.00
	W.C.D.E, A.A.D.E., dues and meetings		800.00
	Printing		800.00
	Postage		600.00
	Bond		150.00
	N.I.C.		160.00
	Audit		1,000.00
	Exam Cost (2)		15,000.00
	Board Meetings (2)		2,600.00
	Legal and Investigative fees		<u>35,000.00</u>
Total			\$96,530.00/year

1961 Last Renewal Fee Adjustment \$50.00/ 2 years

If 10% increase every two years since 1961 - in 1981 dues would have reached 129.69.

In 1962 the N. D. A. began loaning monies to N. S. B. D. E. These loans have continued through December of 1979 for total loans of \$32,437.51

With Legislative renewal maximum at \$200.00 N. S. B. D. E. can work efficiently at a non deficit position and not have to borrow from N. D. A.

I feel after June 1981 renewal we could foresee budgetary surpluses and June 1982 renewal could drop back to where it would be if the renewal fee would have been increased at 5% a year since 1961, or \$136.17.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I HAVE THE PRIVILEGE OF REPRESENTING THE MEMBERS OF  
THE GENERAL PUBLIC ON THE STATE BOARD OF DENTAL EXAMINERS.

I CAN REPORT TO YOU THAT THE BOARD PERFORMED ITS DUTIES  
AND RESPONSIBILITIES IN A MOST EFFICIENT AND DEDICATED  
MANNER.

IT IS ABSOLUTELY NECESSARY THAT OUR CITIZENS BE GUARANTEED  
THAT THEY HAVE ACCESS TO THE BEST DENTAL CARE POSSIBLE.  
TO INSURE THIS THE BOARD OF DENTAL EXAMINERS MUST HAVE  
THE AUTHORITY AND THE FUNDING TO CONDUCT ADEQUATE AND  
COMPREHENSIVE EXAMINATIONS OF PROSPECTIVE PRACTITIONERS.

ADDITIONALLY, THE BOARD IS CHARGED WITH CONDUCTING IN-  
VESTIGATIONS AND HOLDING HEARINGS IN CONNCTION WITH  
VIOLATIONS OF THE DENTAL PRACTICE ACT. THE BOARD HAS  
BEEN EXTREMELY ACTIVE AND DILIGENT IN THIS RESPECT OVER  
THE PAST SEVERAL YEARS.

THE PROPOSED LEGISLATION, S.B. 344 WITH THE AMENDMENTS  
SUGGESTED, WILL PROVIDE FOR THESE NEEDS AND INSURE THAT  
THESE DUTIES CAN BE CARRIED OUT. I URGE THIS COMMITTEE  
TO GIVE THIS MEASURE ITS FAVORABLE CONSIDERATION.

THANK YOU.

Mrs. DOROTHY B. RAGGIO  
795 Robin Street  
Reno, Nevada 89509

EXHIBIT D

495





# Nevada Dental Hygienists' Association

## PROPOSED AMENDMENTS TO NEVADA DENTAL ACT AB 344

EXPLANATION - Underlined matter is new; matter in brackets ( ) is material to be deleted.

Nevada Dental Act should be amended as follows:

Section 2. 631.050 1. (j) - Page 2, line 36 - licensed or registered as a dentist or a dental hygienist to engage in the practice of dentistry or dental hygiene;

Section 4. 631.090 2. (a) - Page 4, line 39 - technician, who has shown evidence of an approved radiation protection course, from making . . .

Section 7. 631.130 2. - Page 5, line 26 - . . . and vote in . . .

Section 11. 631.210 1. - Page 6, line 40 - . . . for a dental hygienist, not to exceed

EXHIBIT E

CLARK COUNTY COMMUNITY COLLEGE  
DENTAL HYGIENE ADVISORY COMMITTEE

PROPOSED AMENDMENTS TO NEVADA DENTAL ACT

EXPLANATION - Underlined matter is new; matter in brackets []  
is material to be deleted.

Nevada Dental Act should be amended as follows:

Definitions: General Provisions

631.025 "Public member" defined. As used in this chapter means a person who is not a health professional (and who is not a parent, spouse, sibling, or child of a health professional or health professional student). For purposes of board membership, any person with a significant financial interest in a health service or profession, or any person who is associated in a professional or advisory capacity with a health professional, is not a public member.

"Practice of Dentistry" Defined.

631.090 2. Nothing in this section shall: (a) Prevent a dental assistant, dental hygienist or x-ray technician, who has shown evidence of an approved radiation protection course, from making radiograms or x-ray exposures for diagnostic purposes only upon the direction of a licensed dentist.

~~631.090 (f) Prevent a dental hygienist who has shown evidence of appropriate educational requirements as defined by the rules and regulations from administering local anesthetic agents under the direct supervision of a licensed dentist.~~

631.105 As used in this chapter, "Direct Supervision"  
means that the licensed dentist must be physically present and  
available for consultation in the place of practice.

631.106 As used in this chapter "General Supervision" means  
under the responsibility of, but not necessarily in the presence  
of a licensed dentist.

631.310 Dental Hygienists: Places of Practice and Supervision.

1. The holder of a license or current renewal certificate to practice dental hygiene shall have the right to be employed to practice dental hygiene in this state in the following places only:

~~(a) In the office of any licensed dentist under general supervision.~~

(b) In a clinic or in clinics in the public schools of this state [as an employee of the department of health, welfare, and rehabilitation] as an employee of that school district, under general supervision.

(c) In a clinic or in clinics in a [state] governmental institution as an employee of that institution, under general supervision.

(d) In a clinic established by a an accredited hospital [approved by the board] or licensed convalescent center as an employee of the [hospital] institution where service is rendered only to patients of such [hospital] institution, and under the [direct] general supervision of a member of the dental staff.

(e) In an accredited school of dentistry or dental hygiene, under general supervision.

(f) At the home of a bedridden patient, at the request of and under the general supervision of the patient's dentist.

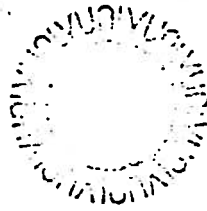
631.313 Dental Hygienists, dental assistants: assignment to perform intraoral tasks under supervision of dentist: limitations.

3. ~~No such assignment shall be permitted that requires~~

~~(d) Administration of a local anesthetic other than by a registered dental hygienist who has shown evidence of completion of an appropriate course as defined by Rules and Regulations.~~

631.317 3. These rules and regulations may not conflict with the letter or intent of the Nevada Dental Act.





COLLEGE OF ALLIED HEALTH PROFESSIONS  
Department of Radiologic Technology  
UNIVERSITY OF NEVADA, LAS VEGAS  
4505 MARYLAND PARKWAY • LAS VEGAS, NEVADA 89154 • (702) 739-3296

March 25, 1981

Assemblyman Robert E. Robinson  
Chairman, Committee on Commerce  
Nevada State Legislature  
Legislative Building  
Carson City, Nevada 89710

Dear Chairman Robinson:

I have recently become aware of Assembly Bill 268. As a radiographer and educator of radiologic technology for ten years, I read the bill with great interest. Part of my experience in radiography includes practicing x-ray in New York, which is a licensure state; also, as some of our graduates practice x-ray in California, this has mandated the need for me to become cognizant of the radiologic technology licensure bill in our neighboring State of California.

I have shared the content of AB 268 with Dean Mary Ann Michel. She has presented me with the current Nevada Laws regarding Nursing. After correlating the Nevada Nursing Law, California Licensure Bill for Radiologic Technology, New York's Licensure Bill for Radiologic Technology, and New Jersey's Licensure Bill for Radiologic Technology, and my personal experience to the Nevada Licensure Bill for Radiologic Technology, I would like to recommend that the following items be considered in order to strengthen the Nevada bill.

Item

Rationale

1. Change the term "radiologic technician" to "radiologic technologist."

1. Radiologic technician refers to radiographers only. In some states, a radiologic technician is an individual who aids the technologists, similar to a nurse's aide. California employs the term Radiologic Technologist.

EXHIBIT G

Item (Continued)

Rationale (Continued)

- |  |  |
|--|--|
| 2. Include Nuclear Medicine Technologists in Licensure   | 2. Nuclear Medicine Technologists work with and handle materials which are much more dangerous and hazardous to the public. Licensure States, such as California, originally omitted these individuals and have had to amend their bills to incorporate them.  |
| 3. Either this bill or a separate bill should establish licensure for dental hygienists or dental radiographers. | 3. The public is exposed to dental x-rays more often than hospital examinations. California makes provisions for licensure of dental radiographers under a separate chapter.   |
| 4. Training for technologists should be two years (24 months).   | 4. All other licensure states, and the major accrediting agency (American Medical Association) requires a minimum of 24 months (see Addendum A).   |
| 5. Number of times the examination is offered should be specified.   | 5. Current 90 day temporary permit implies an exam is given every three months, unless the temporary permit can be renewed. California offers their exam four times a year. I am not sure that the technological population of Nevada (449 radiographers; 25 nuclear medicine technologists) would warrant an exam every three months. Our current Nursing License in Nevada administers the exam twice a year. The exam correlates to times of graduation; February and July. |
| 6. Need to expand grandfather clause for technologist currently employed in x-ray.                               | 6. California's licensure provides for technologist practicing for 1-5 years need not meet educational standards, as specified by bill, but must take a written or practical exam (see Addendum B, Article 6).   |
| 7. Length of time for license needs to be defined.   | 7. New York, California, and New Jersey renew license every two years. Also Nevada Nursing License is renewed every two years.   |
| 8. Need to define "Board" and "Radiation Physicists."  | 8. California defines "Board" as State Board of Public Health. New York defines Health Physicist as person certified by the American Board of Health Physics or the American Board of Radiology in Physics (see Addendum C).   |

Item (Continued)

Rationale (Continued)

- |  |  |
|--|--|
| 9. Remove Physicians from Committee  | 9. Nevada Nursing Committee is composed of five Registered Nurses, two Licensed Practical Nurses, and one consumer. (See Addendum D, Sections 632.020-632.080 inclusive). X-ray should also be autonomous.   |
| 10. Committee members should be appointed by Governor.   | 10. Nevada Nursing Committee members are appointed by the Governor. To require three nominations for each portion of the committee would be very difficult for two reasons, (1) The number of professional societies can be limited to about three (depends if you include Health Physics Societies) and (2) The population of technologists is small compared to larger states. |
| 11. Probable need to have some sort of funding for the Board.                                  | 11. Current license fee of \$25. for all Radiologic Technologists in Nevada would amount to \$11,850. If licensure is biannually, this would be a budget of \$5925. per year. I am not sure that would cover the expenses of paperwork, travel, per diem, exam fees, certificate fees, etc.  |
| 12. Monies generated by certification should be identified as to where they will be allocated. | 12. Current Nevada Nursing Law indicates the monies generated be paid to the executive secretary of the board, who pays expenses of the board (see Addendum E).  |

I would be happy to discuss these items further, or the content of the bill and its possible impact on Nevada, with you.

Sincerely,

*Marianne Tortorici*

Marianne R. Tortorici, Ed.D., R.T.R.  
Associate Professor and Chairperson  
Department of Radiologic Technology  
University of Nevada, Las Vegas

Encls.

cc: M. A. Michel, Dean, College of Allied Health  
A. Bhuiya, RSO, University of Nevada System  
P. Canfield, President, Nevada Society of Rad. Techs.

LEGISLATIVE BUILDING  
CAPITOL COMPLEX  
CARSON CITY, NEVADA 89710



ARTHUR J. PALMER, *Director*  
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Arthur J. Palmer, *Director, Secretary*

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JOHN R. CROSSLEY, *Legislative Auditor* (702) 885-5620  
ANDREW P. GROSE, *Research Director* (702) 885-5637

March 6, 1981

Assemblyman Robert E. Robinson  
Chairman, Committee on Commerce  
Legislative Building - Room 200  
Carson City, Nevada 89710

Dear Assemblyman Robinson:

Assembly Bill 268, which provides for a licensing board for regulation of radiological technicians, is presently before your committee. For the purposes of audit, it might be desirable to treat this board in accordance with NRS 218.825, as are all other professional licensing boards.

Therefore, we would like to suggest that AB 268 be amended by adding a new section which would state that the provisions of NRS 218.825 apply to the board for regulation of radiological technicians.

We are available to discuss this with you at your convenience.

Sincerely yours,

JOHN R. CROSSLEY, C.P.A.  
LEGISLATIVE AUDITOR

By *Wm. Gary Crews*  
Wm. Gary Crews, C.P.A.  
Audit Manager

JRC:WGC:rie

~~Ladies and Gentlemen:~~

I would like to thank you for giving me the opportunity to speak at this hearing. Allow me to introduce myself. I am Marianne Tortorici, and I am an Associate Professor and Chairman of the Department of Radiologic Technology at the University of Nevada, Las Vegas. As a registered radiographer and educator, I have read the Nevada Assembly Bill 268 with great interest. Recent events, such as Three Mile Island, have brought to the attention of the American public the need to provide some form of regulations and guidelines for the purpose of protecting the American public and operators against accidental or unnecessary exposure to radiation. Nuclear Power plants, such as Three Mile Island, represent only a small portion of the potential radiation danger to the American public. By far, the greatest danger to the American public is the unnecessary radiation exposure received from medical practices.

It is for this reason that a need exists to establish regulations and guidelines to insure that the individuals energizing x-ray equipment or administering radioactive materials to the public are competent. Assembly Bill 268 attempts to address this issue. I strongly endorse the concept of such legislation; however, I cannot support Assembly Bill 268 in its present form for the following reasons:

1. By employing the term radiological technician, many individuals who are responsible for exposing the public to radiation, such as nuclear medicine technologists, are excluded from certification.
2. Training for technologists should be consistent with current nationally recognized standards and standards of other licensure states. These agencies identify a minimum of 24 months of training.
3. There is no provision in the bill to "grandfather in" current practicing technologists.
4. There is no definition of who composes the "Board."
5. The composition of the committee should be consistent with the Nevada Nursing Chapter. Thus, the committee should be composed of seven radiologic technologists representing the areas of radiography, nuclear medicine and radiation therapy, and one consumer. These members should be appointed by the Governor as in the Nevada Nursing Law.
6. The number of times the examination is offered and the length of time of certification should be defined. This is particularly important when determining how much money will be available to the Committee and Board for expenditures.
7. Monies generated from testing and certification should be allocated to the Board and Committee.
8. The bill is very general and needs to be much more explicit, especially in the areas of educational standards, members of the Board, and function of the Board.

Lastly, the Nevada Assembly should be advised that the United States House of Representatives and the United States Senate currently have legislation in Congress regarding minimum standards for Radiologic Technologists. These bills are H.R. 2457 and S.B. 646.

Thank you.



1981 REGULAR SESSION (61st)

ASSEMBLY ACTION	SENATE ACTION	Assembly	AMENDMENT BLANK
Adopted <input type="checkbox"/>	Adopted <input type="checkbox"/>	AMENDMENTS to <u>Assembly</u>	
Lost <input type="checkbox"/>	Lost <input type="checkbox"/>	Bill No. <u>268</u>	<u>Assembly</u>
Date: _____	Date: _____	BDR. <u>54-814</u>	<u>Resolution No.</u>
Initial: _____	Initial: _____	Proposed by <u>Committee on Commerce</u>	
Concurred in <input type="checkbox"/>	Concurred in <input type="checkbox"/>		
Not concurred in <input type="checkbox"/>	Not concurred in <input type="checkbox"/>		
Date: _____	Date: _____		
Initial: _____	Initial: _____		

Amendment N<sup>o</sup> 347

Replaces Amendment No. 217

Amend sec. 2, page 1, by inserting after line 4:

"1. "Board" means the state board of health."

Amend sec. 2, page 1, line 5, by deleting "1." and inserting "2."

Amend sec. 2, page 1, line 7, by deleting "2." and inserting "3."

Amend sec. 2, page 1, line 9, by deleting "3." and inserting "4."

Amend sec. 2, page 1, line 12, by deleting "4." and inserting "5."

Amend sec. 2, page 1, line 15, by deleting "5." and inserting "6."

Amend sec. 2, page 1, line 18, by deleting "6." and inserting "7."

Amend sec. 2, page 1, line 20, by deleting "7." and inserting "8."

Amend sec. 8, page 4, line 11, by deleting "or".

Amend sec. 8, page 4, line 13, by deleting "duties." and inserting "duties;".

Amend sec. 8, page 4, by inserting below line 13:

"(e) Persons employed by dental radiographic laboratories who operate X-ray machines for the purpose of making diagnostic photographs of patients' teeth and surrounding areas on the written order of a dentist or physician; or

(f) Persons operating X-ray machines for the purpose of making diagnostic photographs under the direct supervision of a physician, dentist or podiatrist."

EXHIBIT J

To: E & E  
LCB File  
Journal  
Engrossment  
Bill

Drafted by DS:ml Date 3-25-81

\*\*\*PHOTO PAGE 301 ACCOMPANIES THIS TEST BOOKLET\*\*\*

DENTAL HYGIENE NATIONAL BOARD

A80

RELEASED EXAMINATION

DO NOT OPEN THE TEST BOOKLET  
UNTIL INSTRUCTED TO DO SO

1. In addition to this booklet, you should have an answer sheet and a separate photo page numbered 301. If you are missing any of these items, raise your hand and a proctor will come to your assistance.
2. Use a number two pencil.
3. Enter your name and reference number below.

NAME \_\_\_\_\_  
Last
First
Middle

REFERENCE NUMBER

--	--	--	--	--	--

4. Enter your name and reference number on the *side of the answer sheet numbered 1 to 100*.
5. Blacken the spaces corresponding to each digit of your reference number on the answer sheet.
6. Blacken the space indicating "A.M." on the answer sheet.
7. Check to be sure you have completed each step above.
8. You are ready to begin. If the test item is a question or an incomplete statement followed by suggested answers or completions, decide which choice is correct and blacken the corresponding space on the answer sheet. If suggested answers are not listed, the question calls for a numerical answer. Blacken the space corresponding to this numerical answer.
9. You may write in the booklet to assist yourself in answering the questions; however, your score will depend upon the answers recorded on the answer sheet. Make no extra marks on the answer sheet. Extra marks cannot raise your score, but might lower your score because the optical scanner records the darkest mark in each question area.
10. Your score is based on the total number of correct answers you choose. There is no penalty for choosing an incorrect response. Therefore, you should answer each question.
11. Time limit for this examination booklet is 3½ hours.
12. The test booklet and the photo page, as well as the answer sheet, must be returned. If the booklet or any part of the booklet is not returned, or if you fail to return your test materials immediately at the request of the test administrator, your scores will be voided. The use of scratch paper, notes and books is not permitted. No test items are to be copied or notes taken. Infraction of either of these rules will also result in your scores being voided.

COMMISSION ON NATIONAL DENTAL EXAMINATIONS  
211 EAST CHICAGO AVENUE, CHICAGO, ILLINOIS 60611

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AMERICAN DENTAL ASSOCIATION

EXHIBIT K

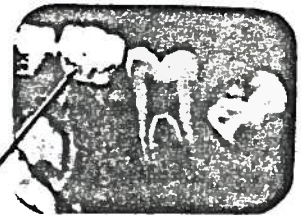
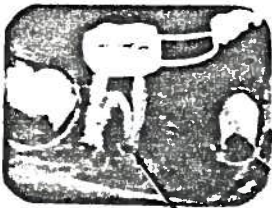
DENTAL HYGIENE NATIONAL BOARD

Test items 1-14 refer to these radiographs.



R

L



D

A

B

Test items 15-20 refer to these radiographs.



R

L



**TEST ITEMS 1-14 REFER TO THE FOLLOWING CASE HISTORY AND THE RADIOGRAPHS ON THE SEPARATE PHOTO PAGE NUMBERED 301.**

During a routine dental examination, a 9-year-old boy states that his "gums bleed when he brushes" and that he is "very displeased with the greenish stains on his teeth." His health history includes chronic tonsillitis and otitis media until a tonsillectomy and an adenoidectomy were performed at age 8. His dental history includes annual dental check-ups and operative treatment. Dental records indicate previous caries activity resulting in frequent restorations, stainless steel crowns on primary mandibular left molars and extraction of the mandibular right second molar.

1. Periodontal examination shows intermittent gingival bleeding, loss of stippling, rolled gingival margins and a sulcus depth of 2-4 mm. These symptoms are indicative of
  1. marginal gingivitis.
  2. juvenile periodontitis.
  3. herpetic gingivostomatitis.
  4. hyperplastic gingivitis related to puberty.
  
2. Examination of the radiographs shows congenital absence of which of the following teeth?
  - (a) Maxillary right lateral incisor
  - (b) Maxillary left lateral incisor
  - (c) Maxillary right first premolar
  - (d) Maxillary left first premolar
  - (e) Maxillary right second premolar
  - (f) Maxillary left second premolar
  - (g) Mandibular right first premolar
  - (h) Mandibular left first premolar
  - (i) Mandibular right second premolar
  - (j) Mandibular left second premolar
  1. (a), (b), (e), (f), (i) and (j)
  2. (a), (b), (i) and (j) only
  3. (c), (d), (e), (f), (i) and (j)
  4. (c), (d), (g) and (h)
  5. (e), (f), (i) and (j) only
  
3. Periapical pathology is evident radiographically at the apex of which of the following teeth?
  1. Maxillary right central incisor
  2. Maxillary left central incisor
  3. Primary maxillary right first molar
  4. Primary mandibular left second molar
  5. Permanent mandibular right first molar
  6. Permanent mandibular left first molar
  
4. The radiopaque area indicated by the arrow labeled A is
  1. a full cast crown.
  2. an orthodontic band.
  3. an amalgam restoration.
  4. a composite restoration.
  5. a stainless steel crown.
  
5. Evaluation of the radiographs confirms delayed formation of the
  1. mandibular left first molar.
  2. maxillary right lateral incisor.
  3. maxillary right first premolar.
  4. mandibular right second premolar.
  5. mandibular right second molar.
  
6. The green stains on the cervical thirds of this patient's teeth are indicative of
  - (a) ingestion of tetracycline some time within the first two years of life.
  - (b) inadequate oral hygiene.
  - (c) high caries susceptibility.
  - (d) chromogenic bacteria attached to the secondary cuticle.
  1. (a) and (b)
  2. (a), (c) and (d)
  3. (b) and (c) only
  4. (b), (c) and (d)
  5. (b) and (d) only
  
7. The radiolucent line indicated by the arrow labeled B was caused by
  1. movement of the film packet during exposure.
  2. bending the edge of the film packet before film placement.
  3. improper alignment of the x-ray cone in relation to the film.
  4. static electricity generated when the film packet was opened.
  5. fixing solution that came in contact with the unprocessed film.
  
8. Microscopic examination of tissue obtained from the radiolucency indicated by the arrow labeled C would reveal
  1. an epithelial cyst.
  2. osteoporotic bone.
  3. a stage I cementoma.
  4. granulation tissue with chronic inflammation.
  5. cellular fibrous tissue and Hertwig's sheath.

9. If the *only* treatment rendered by the dental hygienist were an oral prophylaxis, what soft tissue response could be expected three weeks after treatment?

1. Elimination of bleeding
2. Elimination of marginal inflammation
3. An increased zone of attached gingiva
4. More coronal positioning of the epithelial attachment
5. None of the above. No significant change would occur.

*correct answer → 5.  
only 15% of our students answered correctly*

10. Following toothbrushing instruction, the dental hygienist notes that the patient demonstrates good manual dexterity and that he thoroughly removes disclosed cervical plaque without traumatizing gingival tissue. In light of these observations, the dental hygienist should

1. determine if the child knows the relation between his plaque, green stain and bleeding gingiva and his brushing.
2. speak to the parent and recommend parental supervision of brushing to ensure adequate plaque removal.
3. have the child increase brushing frequency to three times daily to reduce stain formation.
4. have the child modify his "scrub brushing" method to a more acceptable sulcular cleansing technique.

11. At what point in his oral hygiene education should flossing be introduced to this child?

1. At this appointment, with a parent present in the operatory
2. At this appointment, with no parent present in the operatory
3. At a future appointment, when all permanent teeth have erupted
4. At a future appointment, after demonstrating adequate plaque removal using a toothbrush

12. The space maintainer on the mandibular right first molar can be expected to remain functional until age

1. 11.
2. 14.
3. 16.
4. 18.

13. In this child, congenital absence of permanent teeth is most likely the result of

1. heredity.
2. otitis media.
3. tetracycline therapy.
4. all of the above.
5. only (1) and (2) above.

14. The radiopaque area indicated by the arrow labeled D is best described as

1. a nutrient canal.
2. a periapical cyst.
3. a periapical abscess.
4. the mandibular canal.
5. a periapical cementoma.
6. none of the above.

TEST ITEMS 15-20 REFER TO THE FOLLOWING CASE HISTORY AND THE RADIOGRAPHS ON THE SEPARATE PHOTO PAGE NUMBERED 301.

A 25-year-old male patient has pain and swelling beneath his right eye involving the lower eyelid.

MEDICAL HISTORY: He has no significant medical history, but is trying to cut down on his smoking because of a persistent cough for the past several months. He also complains of night sweating for a similar period of time.

DENTAL HISTORY: The patient has had infrequent and irregular dental care.

EXTRAORAL AND INTRAORAL FINDINGS: The patient has a hard swelling on the right side of the nose extending to a soft swelling in the right lower eyelid. There is lymphadenopathy in submandibular lymph nodes. The patient's face appears flushed and he has an oral temperature of 100° F.

The mucolabial fold beneath the right eye is distended and purple-red. Maxillary anterior teeth have Class II mobility. Gentle palpation of the teeth elicits varying amounts of pain, with the greatest pain being in the maxillary right canine.

15. During examination, the patient coughed and expectorated a small amount of blood. In view of his medical history, this finding suggests that the patient may have

1. pleuritis.
2. emphysema.
- 3. tuberculosis.
4. cystic fibrosis.

61. Upon examination of a new patient, moderate amounts of plaque are noted. Gingival contour is normal; no bleeding occurs upon flossing or probing. Which of the following characterizes this patient's oral hygiene habits?

1. The patient brushes regularly, but does not floss.
2. The patient flosses regularly, but does not brush.
3. The patient does not use disclosing tablets.
4. The patient routinely uses a hydrotherapy device.
5. The patient has not cleaned his mouth within the past 24 hours.

62. Evaluation of a patient's oral hygiene status reveals his failure to achieve improvement. He has a cooperative attitude and verbally communicates a good understanding of the goals and methods of achieving a cleaner mouth. Which of the following is the most likely reason for failure?

1. Poor neuromuscular coordination
2. An endocrine disturbance causing excessive dextran formation
3. A nutritional imbalance favoring plaque accumulation
4. The presence of unusually virulent plaque-forming filamentous microorganisms

63. A new patient states that he brushes twice a day. Upon staining, plaque is noted adjacent to the gingival margins on most teeth, especially molars, and on most proximal surfaces. The method of toothbrushing that this patient employs is most likely the

- 
1. roll.
  2. sulcular.
  3. Charters'.
  4. Modified Stillman's.

64. In taking radiographs, gagging is usually caused when

1. bitewings are taken.
2. the film is held by the patient.
3. the film is moved across the soft palate.
4. the film impinges on the floor of the mouth.

65. If a shorter radiographic exposure time is needed, the dental hygienist may

1. increase the kVp.
2. use a long cone.
3. decrease the ma.
4. remove the filter.
5. remove the lead diaphragm.

66. A radiograph that is too light may have been

1. overexposed.
2. overdeveloped.
3. exposed through lead backing.
4. exposed to unsafe illumination in the darkroom.
5. processed in a developing solution that was too warm.

67. Penumbra formation is diagnostically related to

1. detail.
2. density.
3. fogging.
4. contrast.
5. all of the above.

68. Which of the following may be caused by using excessive vertical angulation when taking a radiograph?

1. Cone cutting
2. Elongated images
3. Overlapping images
4. Foreshortened images

69. The paralleling radiographic technique produces an image with

1. more contrast.
2. decreased density.
3. increased density.
4. decreased distortion.
5. less radiation at the tip of the cone.

70. Image magnification may be minimized by

- (a) using a long cone.
- (b) using a short cone.
- (c) placing the film as close to the tooth as possible.
- (d) shortening exposure time.

1. (a) and (c) only
2. (a), (c) and (d)
3. (b) and (c) only
4. (b), (c) and (d)
5. (b) and (d) only



71. Which of the following errors may result in a totally clear film?
- Fixation before developing
  - Forgetting to turn on the machine
  - Reversing the film packet
- (a) and (b)
  - (a) and (c)
  - (b) and (c)
  - All of the above
72. For intraoral radiography, the diameter of the useful beam at the end of the cone should *NOT* exceed
- 1.5 inches.
  - 2.75 inches.
  - 3.25 inches.
  - 4.0 inches.
  - 5.0 inches.
73. Which of the following kVp settings will produce the greatest contrast among images on a radiograph?
- 65 kVp
  - 75 kVp
  - 80 kVp
  - 90 kVp
74. Of the following, panoramic radiographs are *least* useful in detecting
- fractures.
  - osseous tumors.
  - interproximal bone loss.
  - impacted maxillary canines.
  - impacted mandibular molars.
75. The most dangerous time for a fetus to be exposed to x-radiation is during the
- first trimester.
  - second trimester.
  - third trimester.
  - last month of pregnancy.
  - None of the above. All times are equally dangerous to the fetus.
76. An early clinical sign of excessive exposure to radiation is
- jaundice.
  - erythema.
  - bleeding.
  - hair loss.
  - osteoradionecrosis.
77. Which of the following characteristics of body tissue determines its sensitivity to radiation?
- Blood flow
  - Mitotic rate
  - Iron content
  - Oxyhemoglobin concentration
  - None of the above
78. In x-radiation, ionization has occurred when
- cell death takes place.
  - photons penetrate matter.
  - radiant energy is converted to heat.
  - an electron is displaced from an orbit of an atom.
  - All of the above
79. Use of which of the following results in the greatest reduction in radiation to the patient?
- A long cone
  - Low kilovoltage
  - A short developing time
  - A film with fast emulsion speed
  - A broad primary beam of radiation
80. The rays that are most apt to be absorbed by the skin and cause x-ray injury are
- deep, penetrating x-rays.
  - aluminum-filtered x-rays.
  - x-rays of long wavelength.
  - x-rays of short wavelength.
81. When matter is irradiated by x-rays, which of the following phenomena is produced?
- Heat
  - Leakage radiation
  - Primary radiation
  - Diverging radiation
  - Secondary radiation
82. "Radiation caries," a condition frequently found in oral cancer patients receiving radiation therapy, results primarily from
- patient's neglecting their home care because of soreness and pain.
  - excessive radiation to the dentition, thereby increasing enamel porosity.
  - dysfunction of the salivary glands, thereby causing reduced salivary flow.
  - enamel adjacent to the target area becoming brittle and fracturing easily with mastication.

83. Which of the following tissues is most radioresistant?

- 
1. Nerve
  2. Gland
  3. Muscle
  4. Young bone

84. Both the milliamperage setting and the exposure time determine the

1. degree of film fog.
2. number of x-rays produced.
3. energy of the radiation produced.
4. amount of scatter radiation produced.
5. penetrating ability of the radiation produced.

85. Use of which of the following causes unnecessary secondary radiation to the patient?

1. Speed D film
2. Plastic pointed cone
3. Kilovoltage under 70 kVp
4. Aluminum filtration over 2.0 mm.
5. Short (8") target-film distance

86. An aluminum filter in a dental x-ray unit functions to

1. reduce exposure time.
2. filter the cathode stream.
3. restrict the area of radiation.
4. absorb x-rays of long wavelength.
5. focus the primary x-ray beam.
6. All of the above
7. None of the above

87. In radiographs, a lead diaphragm is used to

1. direct the central ray.
2. focus the cathode electrons.
3. produce a homogeneous x-ray beam.
4. limit the diameter of the x-ray beam.
5. reduce the number of long wavelength x-rays.
6. All of the above
7. None of the above

88. The brown discoloration of a radiographic film processed four months ago was caused by

1. overdevelopment.
2. underdevelopment.
3. using outdated film.
4. incomplete fixation.
5. using processing solutions that were too warm.

89. Film exposed to light during development will be

1. dark.
2. clear.
3. light.
4. blurred.
5. reticulated.

90. Use of exhausted developer will produce a

1. dark image.
2. dense radiograph.
3. thin, faded image.
4. yellow-brown image.

91. The primary difference between automatic and manual processing of radiographs is that automatic processing

1. provides better quality films.
2. allows more latitude in exposure techniques.
3. requires special solutions at higher temperatures.
4. None of the above

92. Which of the following landmarks is commonly seen in radiographs of mandibular central incisors?

1. Mental foramen
2. Lingual foramen
3. Infraorbital foramen
4. Anterior palatine foramen

93. Which of the following landmarks can *NOT* be seen in radiographs of mandibular molars?

1. Mandibular canal
2. Mandibular foramen
3. Submandibular fossa
4. Internal oblique ridge
5. External oblique ridge

94. The facial aspect of an intraoral film is determined by the

1. position of teeth.
2. anatomic landmarks.
3. curvature of the arch.
4. concavity of the embossed dot.
5. convexity of the embossed dot.

95. When mounting a full mouth survey, radiographs of which of the following teeth should be mounted first for orientation?

1. Maxillary central incisors
2. Mandibular central incisors
3. Maxillary right and left molars
4. Mandibular right and left molars
5. Right and left bitewings

96. Which of the following appears radiopaque in a radiograph?

1. Early cementoma
2. Condensing osteitis
3. Periapical granuloma
4. Apical periodontal cyst
5. Chronic periapical abscess

97. A radiolucent mass having a well-defined radiographic border is causing tooth displacement. This mass is most probably

1. a cyst.
2. a solid tumor.
3. an infiltrative process.
4. a slow-growing process.
5. a rapidly growing process.

98. Protecting other patients and the operator from disease transmittal is important when treating a patient with a recent history of

- (a) infectious mononucleosis.
- (b) necrotizing ulcerative gingivitis.
- (c) syphilis.
- (d) hepatitis.
- (e) rheumatic fever.

1. (a), (b) or (c)
2. (a), (c) or (d)
3. (a), (c) or (e)
4. (b), (c) or (d)
5. (b), (d) or (e)
6. (c), (d) or (e)

99. The most common cause for a high basal metabolic rate is a high level of

1. thyroid activity.
2. circulating estrogen.
3. carbohydrate oxidation.
4. circulating hydrocortisone.
5. parathyroid activity.

100. A patient with a history of which of the following conditions may require antibiotic premedication before an explorer, a probe or a scaling instrument is used in the oral cavity?

- (a) Rheumatic fever
- (b) Congenital heart disease
- (c) Valvular prosthesis
- (d) Hepatitis

1. (a), (b) or (c)
2. (a), (b) or (d)
3. (a) or (d) only
4. (b) or (c) only
5. Any of the above

---

You should have finished *at least* this much of the examination by 11:00 a.m.

---

BEFORE PROCEEDING:

1. Turn your answer sheet over to the side numbered 101 to 200.
  2. Enter your name on the second side of the answer sheet.
  3. Blacken the space indicating "A.M." on the answer sheet.
  4. Check to be sure you have completed each step above.
  5. Proceed with the examination.
- 

101. A blood pressure cuff placed around the arm and inflated compresses which of the following arteries?

1. Ulnar
2. Radial
3. Brachial
4. Axillary
5. Subclavian

102. Following administration of a local anesthetic agent, the patient displays irregular breathing, muscle rigidity, uncontrolled body movement and pallor. Blood pressure readings remain stable. The patient is most likely experiencing

1. cardiac arrest.
2. hyperventilation.
3. respiratory arrest.
4. cerebral vascular accident.

# DENTAL HYGIENE NATIONAL BOARD

5A

## RELEASED EXAMINATION

**DO NOT OPEN THE TEST BOOKLET  
UNTIL INSTRUCTED TO DO SO**

1. Use a number two pencil.
2. Enter your name and reference number below.

NAME \_\_\_\_\_

Last                      First                      Middle

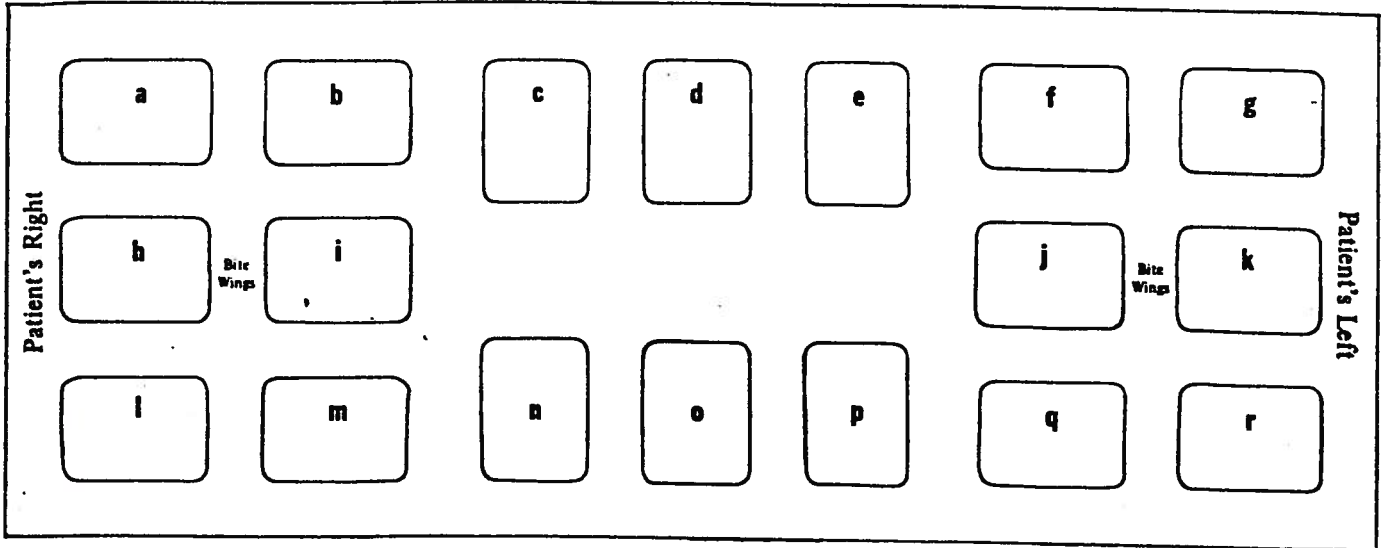
REFERENCE NUMBER 

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3. Enter your name and reference number on the *side of the answer sheet numbered 1 to 100.*
4. Blacken the spaces corresponding to each digit of your reference number on the answer sheet.
5. Blacken the space indicating "A.M." on the answer sheet.
6. Check to be sure you have completed each step above.
7. You are ready to begin. If the test item is a question or incomplete statement followed by suggested answers or completions, decide which choice is correct and blacken the corresponding space on the answer sheet. If suggested answers are not listed, the question calls for a numerical answer. Blacken the space corresponding to this numerical answer.
8. You may write in the booklet to assist yourself in answering the questions. However, your score will depend upon the answers recorded on the answer sheet. Make no extra marks on the answer sheet. Extra marks cannot raise your score, but might lower your score because the optical scanner records the darkest mark in each question area.
9. The test booklet, as well as the answer sheet, must be returned. If the booklet or any part of the booklet is not returned, you will be recorded as a complete failure. No test items are to be copied or notes taken. Infraction of this rule also subjects you to complete failure.

**COUNCIL OF NATIONAL BOARD OF DENTAL EXAMINERS  
211 EAST CHICAGO AVENUE, CHICAGO, ILLINOIS 60611**

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AMERICAN DENTAL ASSOCIATION**



Above is a simulation of an x-ray mount with each space assigned a letter. Below are radiographs to be mounted, with suggested spaces for mounting each radiograph. Select the correct placement and blacken the appropriate space on your answer sheet.

**PLEASE NOTE:** The raised dot on each film is toward you.

- 1**
1. c
  2. d
  3. e
  4. n
  5. o
  6. p



- 3**
1. a
  2. b
  3. f
  4. g
  5. l
  6. m
  7. q
  8. r



- 2**
1. a
  2. b
  3. f
  4. g
  5. l
  6. m
  7. q
  8. r

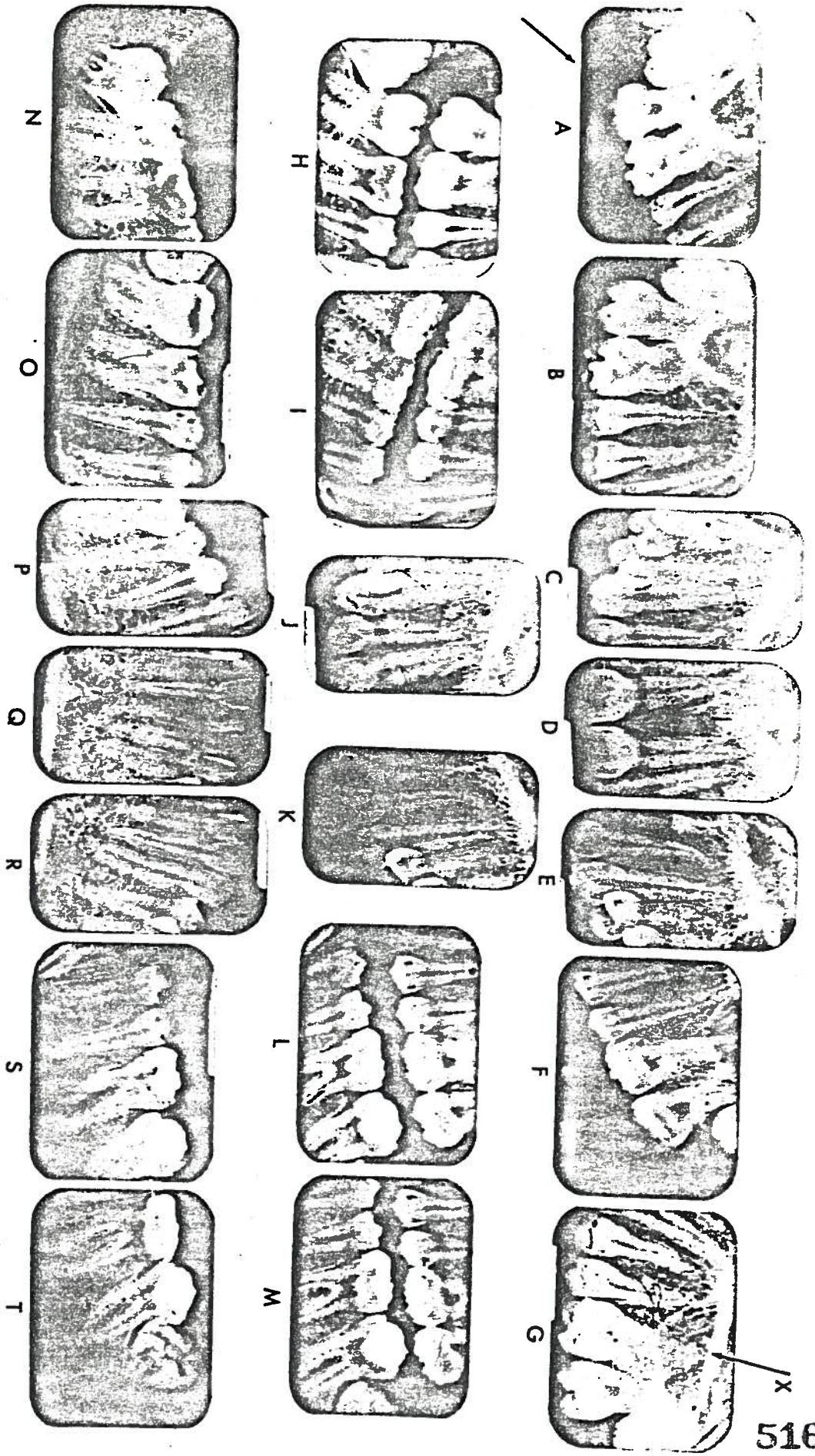


- 4**
1. h
  2. i
  3. j
  4. k





R L





Test items 5 through 21 relate to a 17 year old female who complains of a hypersensitive tooth and a sore tongue. Her health history reveals kidney infection requiring hospitalization 6 months ago. She is currently recovering from a "sore throat".

5 What precautions should be taken in view of the patient's history of kidney infection?

1. Patient should be medicated to prevent recurrence of nephritis.
2. Hygienist should wear gloves to prevent being infected.
3. Special sterilizing procedures should be employed for all instruments used.
4. Difficulty in healing is likely to occur.
5. Both (2) and (3) above
6. All of the above
7. None of the above. Kidney infection does not require alteration of normal dental hygiene procedures.

6 Upon clinical examination, the oropharyngeal area demonstrated slight inflammation.

Which of the following lymph nodes might be involved as a result of the patient's sore throat?

1. Submental
2. Preauricular
3. Postauricular
4. Occipital
5. Axillary
6. Submandibular
7. None of the above are related to lymphatic drainage of the oropharyngeal area.

7 The oral inspection revealed multiple discrete yellow areas located in the mucosa of the lower lip, corners of the mouth and bilaterally in the mucosa of the cheek area which were asymptomatic. This condition is most likely associated with

1. occluded minor salivary gland ducts.
2. incipient mucoceles.
3. ectopic sebaceous glands.
4. nonfunctioning hair follicles.
5. Koplik's spots.
6. lack of vitamin C in diet.

8 Examination of the tongue revealed a reddish area which was denuded of epithelium on the right lateral border at the junction of the anterior 2/3 and posterior 1/3. By use of information in the patient's history, oral examination and radiographs, this area may represent a (an)

1. irritation of misplaced foramen cecum.
2. malformed junction of anterior 2/3 with posterior 1/3 of tongue.
3. inflammatory response of tongue due to irritation of broken-down crown of tooth.
4. reddish denuded area characteristically associated with geographic tongue.
5. enlarged vallate papilla whose epithelial surface has become keratinized.

9 Patient complained of hypersensitivity in left maxillary premolar area. By use of information gained from patient's history and radiographs, this hypersensitivity most likely is due to

1. gingival recession with exposure of cervical cementum of premolar teeth.
2. exposure of pain nerve endings as consequence of gingival recession.
3. leakage and recurrent caries around restoration in first molar tooth.
4. dental caries in the premolars.
5. loss of alveolar crest bone between premolar teeth.

10 Area X on left maxillary molar radiograph (G) represents

1. an osseous spicule projecting into the maxillary sinus.
2. an artifact that has been caused by improper placement of film.
3. the floor of the nose which consists largely of compact bone.
4. a wall of a cyst into which the lingual root of tooth 14 projects.
5. embryologic malformation in this area.

11 Examination of tooth 32 on the right mandibular molar radiograph reveals that

1. coronal part of tooth is encased by cyst wall.
2. root resorption has taken place due to impacted condition of tooth.
3. impacted condition of tooth has caused distal resorption on tooth 31.
4. apical portion of tooth 32 has yet to be formed.
5. present apex of tooth 32 is in mandibular canal.
6. apical area of tooth is encased by cyst wall.

- ✓
- 12** Examination of the right maxillary molar radiograph shows an osseous projection of the mandible. This process is
1. the condyle to which the medial pterygoid muscle attaches.
  2. the lingua mandibularis to which the sphenomandibular ligament attaches.
  3. the place of attachment of the temporalis muscle which is innervated by V-3.
  4. formed by having internal and external oblique lines fused to yield the osseous projection.
  5. the posterior boundary of the mandibular notch through which branches of V-3 pass to innervate the muscles of mastication.
- 13** The small rounded radiolucent area located near the apex of tooth 12 in left premolar bite-wing very likely is evidence of
1. raised identification dot on film.
  2. small area of internal resorption.
  3. early stage of apical cyst.
  4. true pulp stone.
  5. fixer contamination prior to film development.
- 14** The radiolucent area shown on tooth 30 in the right molar bite-wing radiograph most likely represents
1. dentinogenesis imperfecta.
  2. fibrosis of dental pulp.
  3. internal resorption.
  4. false pulp stones.
  5. proximal dental caries.
  6. recurrent dental caries.
- 15** Study of area between the roots of tooth 10 and tooth 11 reveals
1. a fully-developed globulomaxillary cyst.
  2. vertical loss of lamina dura on distal of lateral incisor.
  3. lateral root cysts involving lateral incisors as well as canines.
  4. an area in which the cancellous bone structure is not well shown radiographically.
  5. an apical cyst probably induced by dilaceration of the lateral incisor.
- 16** Apical cysts that appear as radiolucencies at apices of lower teeth are characterized by
1. possessing stratified squamous epithelial lining that derived from most apical portion of epithelial cuff.
  2. lacking an epithelial lining, but having content of degenerated blood and other material.
  3. causing bone around cyst to be resorbed, this resorption being instituted by multinucleated osteoclasts.
  4. epithelial lining, if present as apical cyst component, derives from cell rests of Malassez composed of ameloblastic cells.
- 17** Which radiographs should be retaken?
1. A, D and E
  2. A, D and G
  3. A, E and Q
  4. D, E and P
  5. G, I and P
  6. G, I and Q
  7. I, P and Q
- 18** Which of the following errors are exhibited in the left maxillary premolar exposure (radiograph F)?
- (a) Horizontal angulation
  - (b) Vertical angulation
  - (c) Patient movement during exposure
  - (d) Film placement
  - (e) X-ray tube movement during exposure
  - (f) Underdevelopment
1. (a) or (b)
  2. (a) or (e)
  3. (a) and (e)
  4. (b) or (d)
  5. (b) or (e)
  6. (b) or (f)
  7. (c) or (d)
  8. (c) or (e)
- 19** Incorrect horizontal angulation is manifested best in which of the following exposures?
1. Right maxillary canine
  2. Left maxillary premolar
  3. Left mandibular premolar
  4. Right premolar bite-wing
  5. Right molar bite-wing

- 61 The color of supragingival and subgingival calculus is different. This is related to
1. smoking.
  2. lipochromes.
  3. mouth breathing.
  4. leukocyte migration.
  5. hemolysis of erythrocytes.
  6. excessive tea consumption.
- 62 Deposition of salivary calculus may be initiated by filamentous bacteria which produce a proteinaceous matrix about which is chiefly deposited
1. calcium oxalate.
  2. calcium phosphate.
  3. ammonium phosphate.
  4. magnesium carbonate.
- 63 Accumulation of food in the left vestibule might suggest malfunction of the
1. buccinator.
  2. risorius.
  3. orbicularis oris.
  4. medial pterygoid.
  5. levator anguli oris.
- 64 A patient complained of pain in the floor of the mouth. The patient noted a swelling that arises in this area while eating. This condition is most likely associated with
1. an inflammatory reaction.
  2. salivary duct calculi.
  3. a malfunctioning gland.
  4. a malignancy.
  5. mumps.
- 65 In evaluating the cleanliness of a patient's mouth, the hygienist determines
- (a) amount of plaque present.
  - (b) amount of calcified deposits present.
  - (c) brushing frequency.
  - (d) flossing frequency.
1. (a) and (b) only
  2. (a), (b) and (c)
  3. (a) and (c) only
  4. (a), (c) and (d)
  5. (b) and (c) only
  6. (c) and (d) only
- 66 You have performed a thorough prophylaxis on a patient and asked him to return the following day for further oral hygiene instruction. Upon staining, you note plaque between his teeth and near the gingival margins though he had brushed and flossed within 6 hours. Which of the following possibilities might explain why plaque is present on his teeth?
1. He missed some areas in flossing.
  2. He missed some areas in brushing.
  3. He has developed new plaque since brushing and flossing.
  4. Both (1) and (2) above
  5. All of the above
- 67 Regardless of the target-film distance employed, incorrect horizontal angulation will cause
1. an elongation of the x-ray image.
  2. a foreshortening of the x-ray image.
  3. no significant change in the x-ray image.
  4. an overlapping of teeth in the x-ray image.
- 68 The periodontal ligament space of an unerupted tooth compared with that of a normal functioning tooth is
1. wider.
  2. narrower.
  3. the same.
  4. not comparable since an unerupted tooth does not have a periodontal ligament.
- 69 Alveolar crest bone resorption is best detected in the
1. panograph.
  2. laminograph.
  3. bite-wing film.
  4. occlusal film.
  5. periapical film.
- 70 To increase the penetrating quality of the x-ray beam, which adjustment is necessary?
1. Increase milliamperage
  2. Increase kilovoltage
  3. Add aluminum filter
  4. Collimate x-ray beam
  5. Increase exposure time
  6. Both (2) and (4) above
  7. Both (2) and (5) above

- 71 A herringbone appearance on a radiograph is indicative of
1. static discharge.
  2. incorrect film placement.
  3. contaminated developing solution.
  4. movement of cone during exposure.
  5. significant temperature differences between developing and fixing solutions.
- 72 Increasing the milliamperage while maintaining kilovoltage, exposure time and film speed will result in
1. increased penetration of the generated x rays.
  2. shortened wavelength of generated x rays.
  3. increased quantity of generated x rays.
  4. increased generation of secondary radiation.
  5. increased contrast in radiographic image.
- 73 The National Bureau of Standards Committee on Radiation Protection specifies the tolerance dose for people who work near radiation not to exceed
1. 1 rem in a year.
  2. 3 rem in a year.
  3. 5 rem in a year.
  4. 8 rem in a year.
  5. 10 rem in a year.
- 74 A radiation detecting badge is essential for use in the dental office to
1. protect the x-ray machine from damage caused by overheating.
  2. estimate the radiation absorbed by the wearer.
  3. reduce the exposure of the patient to radiation.
  4. protect the wearer from radiation exposure
  5. All of the above
- 75 The latent period related to radiation biology is that period of time between
1. exposure of the film and development of the images.
  2. exposure to x-radiation and clinical symptoms.
  3. the states of cell rest and cell mitosis.
  4. subsequent doses of x-radiation.
- 76 The collimator functions to
1. reduce the volume of tissue exposed.
  2. direct the path of x rays produced at the target.
  3. dissipate heat produced during x-ray production.
  4. harden the x-ray beam.
  5. Both (1) and (4) above
  6. Both (2) and (3) above
- 77 Secondary radiation originates when
1. x rays strike matter.
  2. the filament is heated.
  3. photons hit the tungsten target.
  4. All of the above
  5. None of the above
- 78 The inherent filtration of an x-ray machine includes
- (a) oil.
  - (b) an aluminum filter.
  - (c) the lead collimator.
  - (d) the x-ray tube head encasement.
  - (e) the glass of the x-ray tube.
1. (a), (b) and (c)
  2. (a), (c) and (d)
  3. (a), (d) and (e)
  4. (b), (c) and (d)
  5. (c), (d) and (e)
  6. All of the above
- 79 When the filament of an x-ray machine is heated
1. x rays are produced.
  2. an electron cloud is formed around the filament.
  3. electrons bombard the tungsten target.
  4. Both (1) and (2) above
  5. All of the above
- 80 Children are more susceptible to damage from equal doses of x-radiation than are adults because
1. children are more active.
  2. a child has less bone tissue.
  3. a child's cells are reproducing more rapidly.
  4. their epithelium is more sensitive and repair is less rapid.
  5. None of the above. Children are not actually more susceptible.
- 81 A filter is inserted in the path of the direct x-ray beam to
1. reduce the exposure time.
  2. absorb long wave radiation.
  3. limit the area of exposure.
  4. absorb backscatter radiation.
  5. permit the use of higher kilovoltage for improving image quality.
- 82 The biologic effect of ionizing radiation is related to the
1. region exposed.
  2. rate of absorption.
  3. total amount absorbed.
  4. Both (2) and (3) above
  5. All of the above

PLEASE PROTECT OUR PATIENTS FROM OVER EXPOSURE TO X-RAY

- FACT: It is estimated that over 40% of the people administering ionizing radiation have not received any formal education in radiologic technology.
- FACT: Licensure of Radiologic Technologists in other states has shown reduced hospital costs due to the fact that the qualified Radiologic Technologist has fewer repeat films than does a person who is unqualified.
- FACT: Over 90% of all radiation the general public receives is from medical x-ray examinations, less than 10% of the radiation the general public receives is from nuclear power plants, nuclear fallout, and research accidents.
- FACT: A patient receives more radiation from an x-ray examination of the stomach than the exposed public of the Three-Mile Island accident.
- FACT: There is no law to protect the consumer-patient in Nevada from unqualified operators of x-ray equipment, anyone can be and is being pulled off the streets to administer potentially deadly radiation.
- FACT: Studies have shown that the consumer-patient receives as much as 100 times more radiation for the same x-ray examination in one institution as in another because of unqualified operators of x-ray equipment.
- FACT: Excessive low dose radiation from x-ray examinations can cause fetal mutations and shorten the life span of an individual.

PLEASE SUPPORT LICENSING OF X-RAY MACHINE OPERATORS

EXHIBIT L