

**The North Carolina State Board of Dental  
Examiners**

**Annual Report to**

**The Secretary of State, the Attorney General, The  
Office of State Budget and Management,**

**And**

**The Joint Legislative Administrative Procedure  
Oversight Committee**

**Submitted  
October 29, 2022**

The North Carolina State Board of Dental Examiners submits the following information as required by N.C. Gen. Stat. §93B-2.

**Section 1: Board Members and Officers, August 2021 – July 2022**

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**Section 1(a): Total number of licensees as of 1 Oct. 2022**

Dentists:	7228
Dental Hygienists:	8617

**Section 2: Number of persons who applied for examination**

The North Carolina State Board of Dental Examiners is a member of the American Dental Examination (ADEX) which has developed a clinical examination for dentistry and dental hygiene that is accepted in 48 states. Candidates for dental/dental hygiene licensure do not apply or pay any examination fees directly to the North Carolina State Board Dental Examiners for admission to the examination. Several thousand graduates of dental and dental hygiene schools throughout the United States are eligible to apply for licensure in NC upon passing the examination.

The ADEX clinical dental and dental hygiene examinations are offered by regional testing agencies that recently merged to form CDCA-WREB-CITA. Passing rates and other statistics from this agency are attached as Appendix A.

**Section 3: The number refused examination**

Applicants are not allowed to apply for the examination until all educational prerequisites are met. Therefore, no applicants were refused admission to the ADEX dental and dental hygiene examinations.

**Section 4: The number who took the examination**

See latest reports from CDCA-WREB-CITA attached as Appendix A.

**Section 5: Number to whom initial licenses were issued**

In 2022, 327 applicants applied for a dental license in North Carolina. All 327 were granted a dental license. Three hundred eighty-seven [387] applicants applied for a dental hygiene license. All 387 were granted a dental hygiene license

**Section 5(a): Number who failed the examination**

See attached reports from CDCA-WREB-CITA testing agency that offers the ADEX dental and dental hygiene examinations. (Appendix A)

## **Section 6: Application for License by credentials**

Licensure by credentials is the process through which licensees in other states may apply for a North Carolina license based on their experience and a safe practice record. No additional clinical examination is required for those who qualify. In 2022, 142 dentists and 123 dental hygienists from other states applied for licensure by credentials.

## **Section 7: License by Credentials Issued**

In 2022, the Board licensed 142 dentists and 123 dental hygienists from other states through the credentialing process. No applicants for licensure by credentials were denied.

### **Section 7(a): Number of Official complaints involving licensed and unlicensed activity**

364 complaints were received in 2021.

### **Section 7(b): Number of disciplinary actions against licensees or non-licensees, including injunctive relief.**

24 Consent Orders entered  
3 licensees suspended  
17 licensees placed on probation  
1 license revoked  
2 official reprimands issued  
6 licensees summarily suspended

The Board filed two cases seeking injunctive relief against individuals engaged in the unauthorized/unlicensed practice of dentistry.

## **Section 8: Number of licenses suspended or revoked**

Number of Licenses Suspended: 9 (includes summary suspensions)  
Number of Licenses Revoked: 1

## **Section 9: Licensees terminated for any reason other than failure to renew**

No licensee voluntarily surrendered his/her license in 2021.

**Section (9a):** Number of applicants for a dental license: 327  
Number granted a dental license: 327  
Number of applicants for a dental hygiene license: 387  
Number of applicants granted a dental hygiene license: 387

**Section (9b):** Number of applicants with a conviction record: 21  
Number of applicants with a conviction record granted a license: 21  
Number of applicants with a conviction recorded denied a license  
For any reason: 0  
Number of applicants denied a license because of a conviction: 0

**Section (9c):** Number of applicants with military training: 38  
Number of applicants with military training granted a license: 38  
Number of military applicants denied a license: 0  
Summary of reasons for denial attached as Appendix B (if applicable).

**Section (9d):** Number of applicants who are military spouses: 9  
Number of military spouse applicants granted a license: 9  
Number of military spouse applicants denied a license: 0  
Summary of reasons for denial attached as Appendix C (if applicable).

**Section 10: Substance of any anticipated statutory amendment**

The Board is considering what statutory changes would be necessary to allow applicants for a dental license to choose between clinical testing on a live patient or a manikin. The current statute requires testing on a live patient.

**Section 11: Substance of any anticipated rule changes or adoption.**

The Board is proposing changes to the Sedation and General Anesthesia rules to increase the margin of safety for patients.

**Financial Reports were previously submitted directly from the audit firm of Bernard Robinson on or about April 30, 2020.**

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Bobby D. White".

Bobby D. White  
Chief Executive Officer

# **Appendix A**

## **Reports from Regional Testing Agencies**



# Examination Overview and Candidate Performance, 2022

Dr. Benjamin Wall, Director of Examinations

Ms. Kimber Cobb, RDH, Director of Dental Hygiene Examinations

Dr. Sharon Osborn Popp, CDCA-WREB Psychometrician

# **Dental Class of 2022**

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# Candidates	Initial Attempt Passing Percentage
5,839	89.3%

Most Common Errors Contributing to Failure		
Cast Metal Crown	PFM Crown	Ceramic Crown
Occlusal Reduction (under)	Occlusal Reduction (under)	Axial/Lingual Tissue Reduction (overprep)
Occlusal Reduction (over)	Axial Tissue Removal (over)	Condition of Adjacent Teeth
Axial Tissue Removal (over)	Taper	Axial/Lingual Tissue Reduction (underprep)

**Occlusal and Axial Reduction - most common errors**

# Candidates	Initial Attempt Passing Percentage
5,650	86.8%

<b>Most Common Errors Contributing to Failure</b>	
Anterior	Posterior
Size (marginal ridges)	Size
Overfill/Underfill	Size (mesial extent)
Size (from incisal)	Size (distal extent)
Size (pulp horn removal)	Any part of the tooth is perforated

Access Size (too large or small) - most common errors

# Dental Class of 2022

Periodontal  
92% Simulated Patient



Exam Format	# Candidates	Initial Attempt Passing Percentage	
Simulated Patient	4,204	99.5%	99.5%
Patient	364	99.2%	

Most Common Errors Contributing to Failure
Tissue Management
Calculus Removal

Consistency Across Formats

# Dental Class of 2022

## Anterior Restorative 92% CompeDont™



Exam Format	# Candidates	Initial Attempt Passing Percentage	
CompeDont™	4,369	93.5%	93.8%
Patient	400	98.3%	

Most Common Errors Contributing to Failure	
PREPARATION	RESTORATION
Caries	Interproximal Contact (open/irregular)
Adjacent Tooth Damage	Margin Excess
Outline Extension	Margin Deficiency

CompeDont™ designed to evaluate clinical skills and judgement similar to a patient but with standardized lesions of moderate size and complexity

Exam Format	# Candidates	Initial Attempt Passing Percentage	
CompeDont™	4,363	89.3%	89.7%
Patient	408	94.4%	

Most Common Errors Contributing to Failure	
PREPARATION	RESTORATION
Caries	Interproximal Contact (open/irregular)
Adjacent Tooth Damage	Margin Excess
Outline Extension	Margin Deficiency

CompeDont™ designed to evaluate clinical skills and judgement similar to a patient but with standardized lesions of moderate size and complexity

**Diagnostic Skills Examination  
(DSE OSCE)  
5,001 Candidates**

Number of Test items	146
Maximum Possible Points	100
High Score	99
Low Score	53
Average Score	89.50
Passing Percentage	99.4%

Case-based clinical scenarios presented to evaluate  
patient management, clinical judgement and decision-making

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# **Dental Periodontal and Restorative Exams Patient and Simulated Patient Examination Formats**

***Comparing Candidate Performance***

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## Periodontal

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# Periodontal: 2019 Patient and 2021 Simulated Patient Pass/Fail Outcome No Significant Difference



	# Exam Attempts	Passing Percentage
Periodontal 2019 (Patient-based)	3,629	99.06%
Periodontal 2021 (Manikin-based)	4,692	98.83%

Chi-square:  $\chi^2$  ( $N=8,321$ ;  $df=1$ ;  $\alpha=0.05$ ) = 1.07;  $p_{\text{Exact}} = 0.33$ ;  $V = 0.01$

Consistency Across Formats

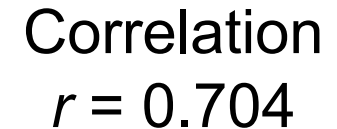
# Periodontal: 2019 Patient and 2021 Simulated Patient Final Examination Score



	# Candidate Attempts	Average Score (SD)
Periodontal 2019 (Patient-based)	3,629	98.12 (5.44)
Periodontal 2021 (Manikin-based)	4,692	98.46 (9.07)

Consistency Across Formats

**CDCA WREB**



## Detailed data analysis reveals high fidelity and correlation when comparing formats

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## Restorative

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# Passing Percentages 2019 to 2022 Year To Date (July 1)

## Initial Attempts by Current Graduates



### ANTERIOR

### POSTERIOR

Year	% Patient	Candidates	Pass %
2019	100%	3,465	94.9%
2020	30%	3,686	94.4%
2021	5%	4,775	93.2%
2022 YTD	8%	4,770	93.8%

Year	% Patient	Candidates	Pass %
2019	100%	3,444	94.5%
2020	30%	3,687	94.1%
2021	5%	4,784	89.5%
2022 YTD	8%	4,771	89.7%

Significant shift from 100% Patient-based  
to predominantly CompeDont™

# Anterior Restorative

## Most Common Errors: PREPARATION



<b>2019</b> N = 3,920 100% Patient	<b>2021</b> N = 5,620 95% CompeDont™	<b>2022 YTD</b> N = 4,985 92% CompeDont™
Caries	Caries	Caries
Outline Extension	Outline Extension	Adjacent Tooth Damage
Unrecognized Exposure	Adjacent Tooth Damage	Outline Extension
Adjacent Tooth Damage	Wrong Tooth/Surface Treated	Axial Walls
Axial Walls	Axial Walls	Wrong Tooth/Surface Treated

Consistency across formats and from year to year

# Anterior Restorative Most Common Errors: RESTORATION



2019 N = 3,920 100% Patient	2021 N = 5,620 95% CompeDont™	2022 YTD N = 4,985 92% CompeDont™
Interproximal Contact (open/irregular)	Interproximal Contact (open/irregular)	Interproximal Contact (open/irregular)
Margin Excess	Margin Excess	Margin Excess
Margin Deficiency	Margin Deficiency	Margin Deficiency
Restoration is debonded and/or movable...	Adjacent Tooth Damage	Adjacent Tooth Damage
Adjacent Tooth Damage	Soft Tissue Damage	Soft Tissue Damage

Consistency across formats and from year to year

# Posterior Restorative

## Most Common Errors: PREPARATION

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<b>2019</b> N = 3,920 100% Patient	<b>2021</b> N = 5,620 95% CompeDont™	<b>2022 YTD</b> N = 4,985 92% CompeDont™
Caries	Caries	Caries
Adjacent Tooth Damage	Adjacent Tooth Damage	Axial Walls
Gingival Contact	Unrecognized Exposure	Adjacent Tooth Damage
Wrong Tooth/Surface Treated	Gingival Contact	Gingival Contact
Outline Shape/ Continuity/Extension	Pulpal Floor	Pulpal Floor

Consistency across formats and from year to year

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# Posterior Restorative

## Most Common Errors: RESTORATION



<b>2019</b> N = 3,920 100% Patient	<b>2021</b> N = 5,620 95% CompeDont™	<b>2022 YTD</b> N = 4,985 92% CompeDont™
Interproximal Contact (open/irregular)	Interproximal Contact (open/irregular)	Interproximal Contact (open/irregular)
Margin Excess	Margin Deficiency	Margin Excess
Margin Deficiency	Margin Excess	Margin Deficiency
Restoration is debonded and/or movable...	Adjacent Tooth Damage	Soft Tissue Damage
Soft Tissue Damage	Soft Tissue Damage	Adjacent Tooth Damage

Consistency across formats and from year to year

# Percentage of Candidate Attempts with One or More Modification Requests



## ANTERIOR

Year	One or More Modification Requests		
	ALL	Patient	CompeDont™
2021	74.6%	46.2%	76.3%
2022 YTD	60.0%	33.9%	62.2%

## POSTERIOR

Year	One or More Modification Requests		
	ALL	Patient	CompeDont™
2021	85.5%	33.0%	88.6%
2022 YTD	68.8%	20.0%	73.1%

CompeDont™ developed to require demonstration of clinical skills and judgement through treatment of standardized lesions of moderate size and complexity

# **Dental Hygiene Class of 2022**

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**Computer Simulated Clinical Examination  
(CSCE OSCE)  
2,855 Candidates**

Number of Test items	96
Maximum Possible Points	100
High Score	99
Low Score	57
Average Score	88.43
Passing Percentage	98.5%

Case-based clinical scenarios presented to evaluate  
patient management, clinical judgement and decision-making

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# Dental Hygiene Class of 2022

97% Simulated Patient



Exam Format	# Candidates	Initial Attempt Passing Percentage	
STCE (Sim)	2,858	87.3%	87.3%
PTCE (Patient)	95	85.3%	

Most Common Errors Contributing to Failure
Calculus Removal
Final Case Presentation
Calculus Detection

Dramatic Shift from 100% Patient-based  
to nearly 100% Simulated Patient

# **Dental Hygiene Patient and Simulated Patient Examination Formats**

***Comparing Candidate Performance***

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# Dental Hygiene: 2019 Patient and 2021 Simulated Patient Pass/Fail Outcome No Significant Difference



	# Exam Attempts	Passing Percentage
PTCE 2019 (Patient-based)	4,055	3,678 (90.70%)
STCE 2021 (Simulated Patient utilizing the SimProDH™)	4,301	3,937 (91.54%)

Chi-square:  $\chi^2$  ( $N=8,356$ ;  $df=1$ ;  $\alpha=0.05$ ) = 1.80;  $p_{\text{Exact}} = 0.19$ ;  $V = 0.02$

Consistency Across Formats

# Dental Hygiene: 2019 Patient and 2021 Simulated Patient Final Examination Score

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	# Candidate Attempts	Average Score (SD)
PTCE 2019	4,055	89.14 (11.02)
STCE 2021 (Simulated Patient utilizing the SimProDH™)	4,301	89.57 (11.87)

Consistency Across Formats

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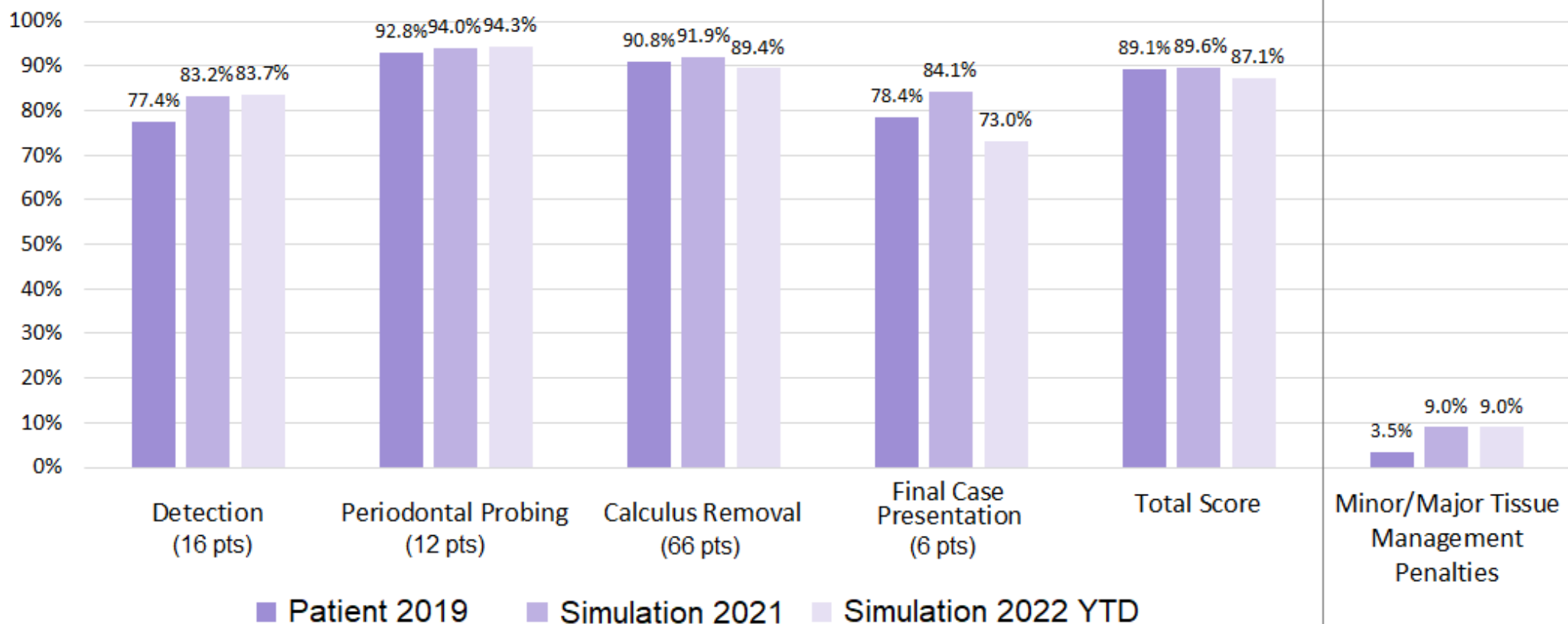


# Dental Hygiene Component Score Comparison



Average Percentage Correct  
Per Dental Hygiene Component

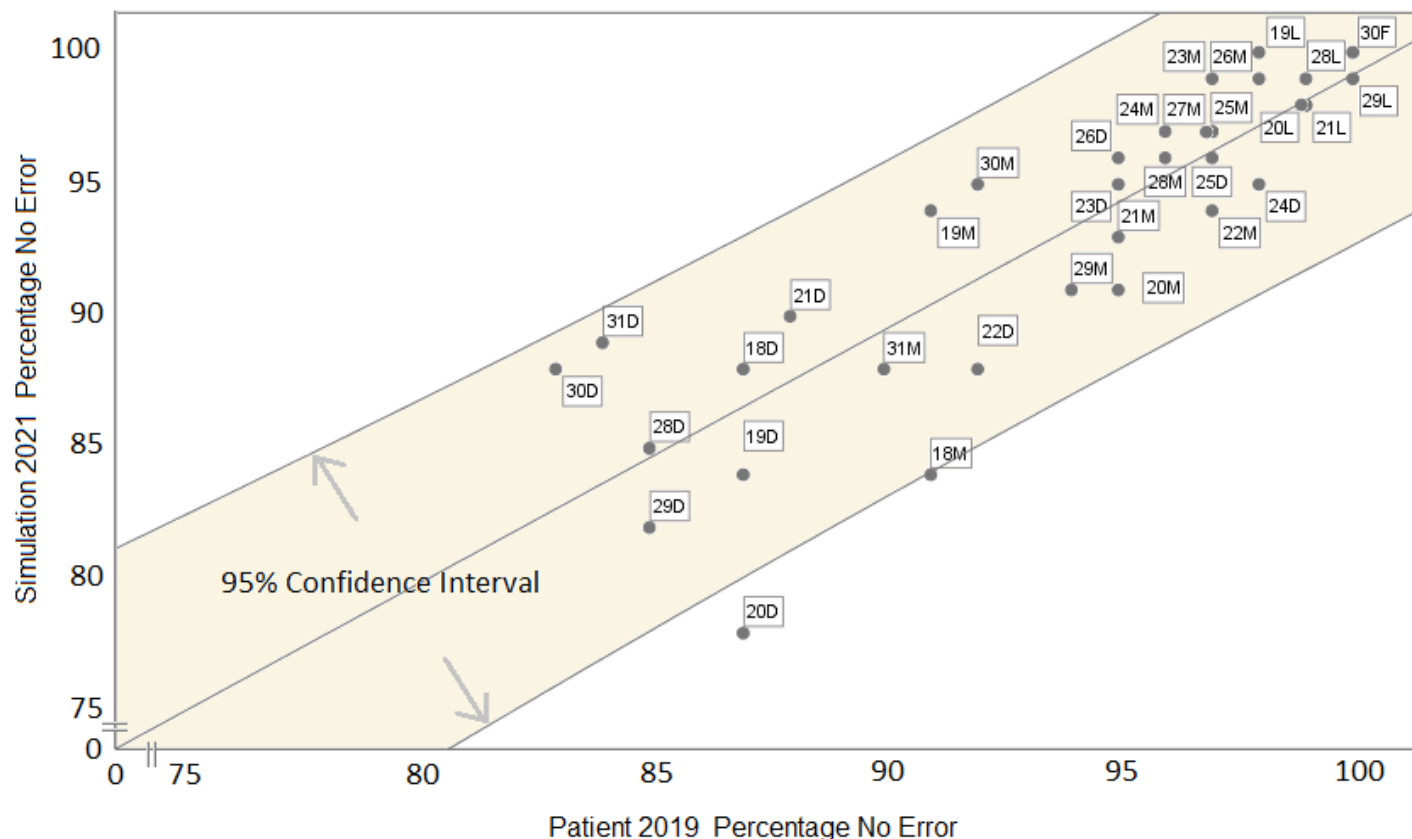
Percentage of  
Exam Attempts



Detailed data analysis reveals consistency across formats & exam sections over time

Dental Hygiene 2019: 100% Patient; 2021: 92% Simulation; 2022 YTD: 97% Simulation

# Dental Hygiene 2019 Patient and 2021 Simulated Patient Calculus Removal Surfaces: Percentage No Error Degree of Difficulty is Highly Similar at Surface Level



Correlation  
 $r = 0.876$

Two Surfaces (20D & 18M) are slightly more difficult than expected on the Simulated Exam

Facial and Lingual surfaces less challenging; Distal surfaces more challenging

Detailed data analysis reveals high fidelity and correlation when comparing formats, even to the per surface level

33 Surfaces; Correlation:  $r (df=31) = 0.876, p < 0.001$ ; Linear regression ;  $r^2 = 0.767, F(1,31) = 102.32 p < 0.001$