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Go First Class and the Effect on the Army's Wellness: A Program Evaluation on the Effects of Combining Treatment to Increase the Fighting Strength

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May 2021

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THESIS APPROVAL PAGE FOR MASTER OF SCIENCE IN ORAL BIOLOGY

Title of Thesis: "Go First Class and the Effect on the Army's Wellness: A Program Evaluation on the Effects of Combining Treatment and Increasing the Fighting Strength""

Name of Candidate: Adrienne R. Rembert
Master of Science
Degree June 1, 2021

THESIS/MANUSCRIPT APPROVED: DATE:

MASTERSON.ROBERT.EDWARD.1300590302 Digitally signed by MASTERSON.ROBERT.EDWARD.1300590302 Date: 2021.05.27 09:56:14 -05'00'

27 May 2021

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Acknowledgments:

1. This study would not have been possible without the support of Dr. Michael Mansell, former Director, Fort Hood AEGD-2yr Residency.
2. Special thanks to Dr. Sheteka Ross-Goodlett, former Pedodontics mentor, Fort Hood AEGD-2yr Residency, for mentoring and advising throughout this project.
3. Special thanks to Dr. Robert Masterson, current Director, Fort Hood AEGD-2yr Residency, for mentoring and advising of this project.
4. Special thanks to Dr. John Kreider, current Assistant Director, Fort Hood AEGD 2 Year Residency, for mentoring and advising of this project.
5. Successful navigation through the eIRB process for this project was done with the assistance of Dr. Rachell Jones and Dr. Sheila Frankfurt, who furthermore provided guidance and advice during research design, statistical analysis, and Institutional Review.

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Go First Class and the Effect on the Army's Wellness: A Program Evaluation on the Effects of Combining Treatment to Increase the Fighting Strength

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ABSTRACT

Background. The purpose of this investigation was to determine if there was improvement in U.S. Army dental wellness (defined as Soldiers with no existing dental treatment needs), commonly referred to as Dental Readiness Classification (DRC) 1, in the direct aftermath of the Go First Class (GFC) initiative. The GFC initiative was implemented in 2013 with the intention of transforming Army Dentistry from a "healthcare system" to a "system for health". The null hypothesis of this study was that the implementation of the Army Dental Corps' GFC Initiative would not lead to a significant change in overall dental wellness as recorded by DRC1.

Methods. A dataset was gathered after de-identifying any personal information. The dataset included appointments for dental treatment facilities within the United States Army Dental Corps that contained the following dental treatment codes: D0120, D1110, D4355, D4341,D4342, D4910, and D2000-D2999. These codes were totaled for two years pre-implementation and two years post-implementation, 2011-2012 and 2014-2015. In addition, DRC was also analyzed following each appointment.

Results. After organizing datasets in Microsoft Excel by date, a total of 735, 674 patient encounters were reviewed to evaluate the effects of implementation. The averages for the two-year period pre- and post- implementation were analyzed in a paired t-test. There was found to be a statistically significant increase in the DRC 1 classifications following implementation of the GFC initiative.

Conclusion.
With an increase in total patient encounters post- implementation of GFC, it can be concluded the initiative may have been responsible for increased patient encounters. Post-implementation encounters more commonly led to DRC1 classifications as well, suggesting the initiative worked to increase treatment rendered at exam appointments. More research is needed to determine if the initiative was instrumental in improving dental oral health.

Key Words. DRC, dental readiness classification, Go First Class, GFC,

In an effort to streamline dental treatment and offer more efficient care while transitioning to an Operating Company Model, the Go First Class initiative was implemented in 2013.[1] Go

First Class (GFC) was an Army-wide initiative led by the former US Army Dental Command (DENCOM) that attempted to simultaneously address dental readiness, wellness and prevention. Theoretically, the time gained by combining dental appointments would be proportional to the additional time Soldiers would have available to complete missions with their respective units. Furthermore, the ability to provide an exam, prophylaxis, and restorative treatment, as needed, during the same visit would reduce the time needed to return the Soldier to Dental Readiness Class (DRC) 1 and would have an overall positive effect on the overall wellness of the Soldier's unit.

The current dental classification system is divided into four categories: **Dental readiness classification 1** describes wellness or no dental treatment needed. **Dental readiness classification** 2 describes readiness or dental treatment needed but the Soldier is deployable. **Dental readiness classification 3** describes dental treatment needed and a condition exists that is expected to require emergency treatment within 12 months. The Soldier is considered non-deployable in this classification. **Dental readiness classification 4** describes Soldiers who require a new or updated annual exam (or a Soldier with an unknown status); the Soldier is also non-deployable in this classification.[2]

Prior to 2013, according to data gathered, over 50% of Soldiers had dental caries. Also, 33% of Soldiers who were caries-free the year prior were diagnosed with restorative needs during their next annual exam.[1] These studies demonstrate the prevalence of oral disease within the Army and highlight the demand for efficient dental treatment.

When dental needs are not addressed in garrison, then the risk of dental disease leading to pain or incapacitation rises, possibly at the worst possible moment. The prevention of dental emergencies in theatre has long been a focus of military dentistry. The loss of a service member due to time spent in the dental chair during deployment is a sacrifice towards mission objectives that no combatant commander wants to endure. The ability to combine exam, hygiene, and restorative treatment needs as part of the GFC concept could possibly reduce this untoward scenario.

The purpose of this study was to determine if there was improvement in dental wellness after implementing the GFC initiative. The null hypothesis for this study is the that the implementation of the Army Dental Corps' GFC Initiative did not lead to a significant increase in overall wellness as recorded by DRC1.

MATERIALS AND METHODS

Design

The study design is a program evaluation that analyzed dental classifications and procedure coding for treatment encounters pre- and post-implementation of the GFC initiative and the change, if any, in encounter characteristics that would point toward improved dental wellness. Specific treatment codes were gathered for patient encounters during two separate two-year time spans, directly before and after the implementation of GFC. Those codes included all examination, hygiene and restorative procedures: D0120 (periodic oral evaluation-established patient), D1110 (prophylaxis-adult), D4355 (full mouth debridement to enable comprehensive oral evaluation and diagnosis on a subsequent visit), D4341 (periodontal scaling and root planing-four or more teeth per quadrant), D4342 (periodontal scaling and root planing-one to three teeth per quadrant), D4910 (periodontal maintenance), and D2000-D2999 (any restorative procedure to include amalgam and resin restorations, gold foil, inlays, onlays, crowns, core buildup, veneers, and any repairs of the above mentioned).

Alignment of datasets

A total of 735, 674 patient encounters were analyzed: 92,262 in 2011, 200,529 in 2012, 254,211 in 2014, and 188,672 in 2015. Data from 2013 was eliminated from consideration in this study in order to more evenly match two datasets for comparison. Despite the program roll-out during 2013 and it is unclear at which point each individual location began implementing changes, so to ensure maximum participation the post-implementation dataset was not initiated until 2014.

The number of encounters culminating in DRC1 classifications were tallied for each dataset and compared pre- and post- implementation. The prevalence of the codes listed above were also analyzed to check for trends related to dental wellness.

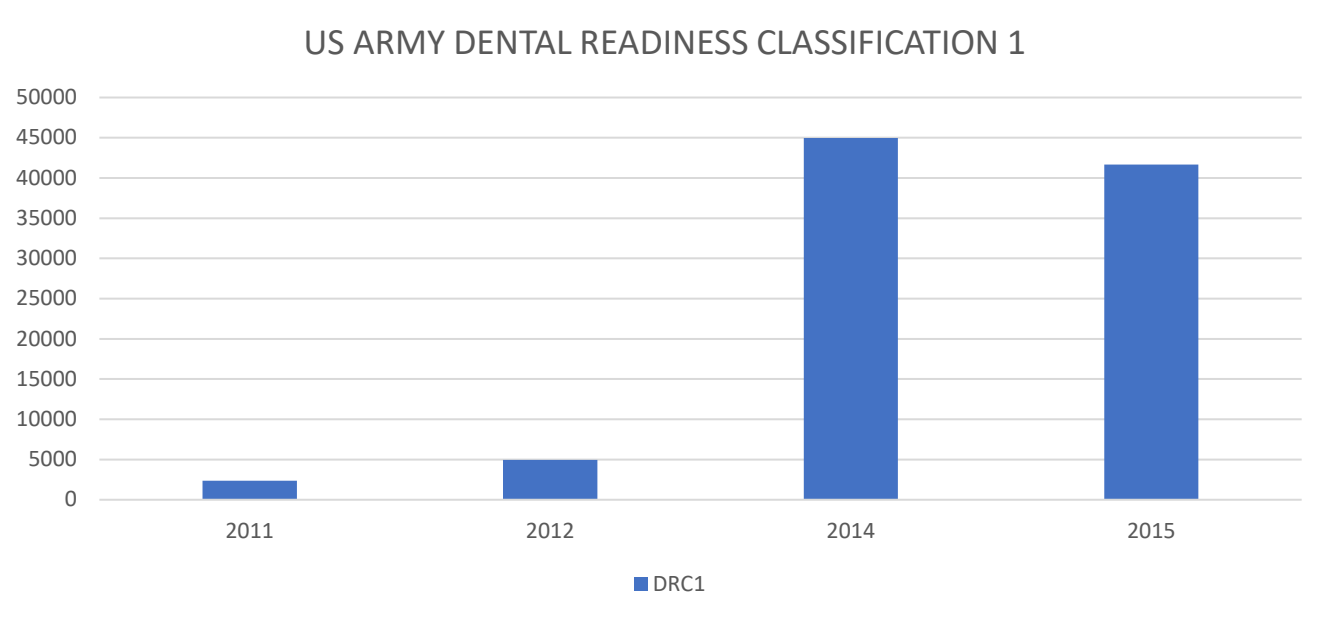

Figure1. This chart represents the number of Dental Readiness Classification (DRC1) for the following years: 2011(2381), 2012(4953), 2013(6340), 2014(44955), 2015(41660).

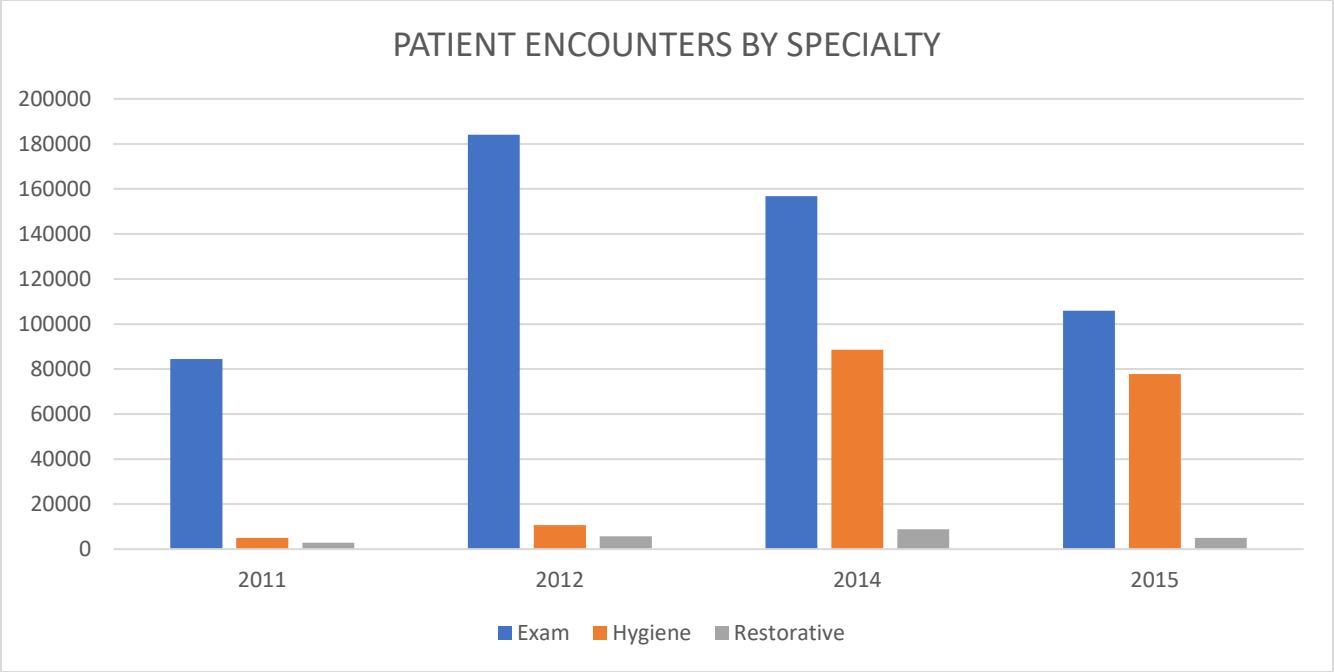

Figure 2. This chart represents the number of patient encounters categorized by specialty: 2011-Exams (84,444), Hygiene (4,915), Restorative (2,899); 2012-Exams (184,042), Hygiene (10,730), Restorative (5,753); 2014-Exams (156,798), Hygiene (88,623), Restorative (8,788); 2015-Exams (105,863), Hygiene (77,809), Restorative (4,998);

Statistical analysis

Using the mean values obtained from the first two years (2011 & 2012) and comparing to the mean values for the last two years (2014 & 2015), a paired samples t-test was performed using Windows Excel in order to assess the statistical difference between the two mean values. A p value <0.05 was established as the significance threshold. Figure 1, above, represents the total number of patients with DRC1 classification following dental treatment.

RESULTS

The mean averages for the DRC1 pre- and post- implementation were computed. The DRC1 values post- implementation (2014-2015) increased more than 1700% when compared to pre-implementation (2011-2012). The paired samples t-test resulted in a value of $p=0.00276824$ ($\alpha=0.05$); thus, the null hypothesis was rejected as there was a statistically significant effect on wellness after implementing the GFC initiative.

Figure 2 displays the encounters further broken into 3 categories: Exams, Hygiene and Restorative appointments. The number of exams decreased post-implementation with 268,486 exams pre- implementation and 262,661 exams post- implementation. Despite the smaller number of total examinations, there was a large increase in the amount of hygiene appointments post implementation: 15,645 hygiene appointments pre-implementation and 166,432 hygiene appointments post-implementation. Restorative encounters also increased post-implementation with 13,786 versus 8,652 pre-implementation.

DISCUSSION

Prior to GFC, Army dental treatment facilities were designed to be reactive which often led to only addressing treatment needs when dental emergencies arose. Following implementation of the GFC initiative, focus shifted to being more proactive—emphasizing disease control

appointments with the hope of preventing dental emergencies from ever occurring. An increase in hygiene appointments following implementation of GFC was possible as more patient encounters became multi-specialty. Combining exams, hygiene appointments, and restorative treatments in the same visit reduced the likelihood of Soldiers not returning for continued treatment and remaining in DRC2 and DRC3 classifications.

Within the limitations of this program evaluation, the GFC initiative seemed to show significant improvement in increasing DRC1 statuses, therefore improving dental wellness on at least an administrative level. One question that is not addressed with this project is whether the improved DRC1 designation rate was a byproduct of improved oral hygiene in the force, or simply a better accountability/documentation for the actual Soldier dental statuses presenting in the population. This study also does not attempt to address the myriad other circumstances that could affect military dental wellness (deployment cycles, reductions or increases in the force, etc.) so it is possible that there is an underlying variable not observed that contributed to the shifts described.

Another limitation was unequal sample sizes. When the datasets were collected, each year had a different number of appointments to compare. Because of the dynamic makeup of the patient population, due to ETS, PCS, and deployment cycles, the unequal data sizes were expected and prevented a more accurate comparison of patient encounters.

Lastly, there was not an exact "implementation date" to aid in creating accurate pre and post-implementation groups- it is possible that some dental treatment facilities did not begin utilizing the GFC scheduling model until after January of 2014. On the other hand, it is possible some locations were already utilizing a GFC model prior to the initiation of the program in 2013.

Further research is needed to determine to what degree combining dental treatment with the GFC initiative improves the actual dental wellness of the Soldier. The ability to track individual Soldiers over an extended time frame could aid in that assessment. More research on this topic could include dental emergency codes (D9110) to determine if there was a reduction in the total number of emergency visits which could suggest improvement in dental oral health as a result of the GFC initiative.

CONCLUSION

The GFC initiative rolled out with a goal in mind to increase Dental wellness, readiness and prevention. With more than 75,000 additional patient encounters each year post-implementation, it can be concluded that the GFC initiative worked to increase the number of Soldiers seen across the Dental Corps. Although it cannot be confidently stated that GFC is improving oral health, one can safely say the implementation worked to increase the number of patient encounters.

None of the authors reported any disclosures or conflict of interests.

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Mr. Brian Delfs, Chief of Dental Systems Division, for his vast knowledge base and efforts with compiling data for this project.
Ms. Candace Speed, current ADDP coordinator/GFC officer, Fort Stewart, GA.
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Dr. Rachael Jones and Dr. Sheila Frankfurt for support and guidance with this project.

Dr. Yann Rodenas, Advanced Education in General Dentistry 2-Year Program co-resident, for his statistical support and guidance.

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