

The Need for Dental Care by the Medicare Population

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32 Co-authors

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Data Sources

NHANES – “National Health and Nutrition Examination Survey”

Bureau of Census “Population Estimates and Projections”

National Institute on Aging “New England Elders Dental Study”

Methods

Operative Dentistry Total Need (TN)

$$TN = \sum [t_i \times c_i \times 0.5] + \sum [t_i \times f_i \times 0.1 \times 0.5]$$

Fixed and Removable Partial Dentures (TN)

$$TN = n(\%N)(pt)$$

$$TUN = TN - AS \text{ (annual supply)}$$

Full Dentures TN (edentulous arches)

$$TN = n \times (\%N) \times 10 \text{ year decline} \times \%util$$

Periodontal Treatment – Need (periodontal index)

$$\text{Conservative (SRP)} = n \times (\%N) \text{ PI score} \leq 2$$

$$\text{Treatment for Pocketing} = n \times (\%N) \text{ PI score} > 2$$

Results

Millions of Hours of Restorative Need

	1990	2030
Age		
65-84	14.4	35.3
85+	1.1	3.9
TOTAL	15.5	39.2

Assumes reduction in caries incidence

Projected Need for FPD and RPDs

(in millions of hours)

Year	FPDs	+ RPDs	= TN	- AS	= TUN
2005	363.1	+ 172.3	= 535.4	- 46.7	= 488.7
2010	378.2	+ 185.3	= 563.5	- 47.8	= 516.7
2020	402.5	+ 207.0	= 609.4	- 49.2	= 560.2

Table IV (Denture Paper)

With the rates of edentulism decreasing, and the number of seniors increasing, what is the need for full dentures

Table IV. Number of U.S. adults (in thousands) who need 1 or 2 dentures

Age group (y)	1991	2000	2010	2020
25-34	858	670	613	601
35-44	3,770	3,841	2,928	2,614
45-54	5,612	7,332	7,711	5,050
55-64	7,667	7,836	10,232	10,595
65-74	7,675	6,837	7,054	9,164
75-84	6,166	6,613	5,934	6,381
85+	1,900	2,287	2,654	2,681
Total number of adults	33,648	35,416	37,126	37,886
Demand at 90% utilization	30,283	31,874	33,413	34,097
Total number of edentulous arches	53,839	56,493	59,265	61,043

Periodontal Treatment Need

“Consequently, the improvement in tooth retention coupled with the increasing number of older individuals has resulted in an actual rise in the number of elderly adults who have advanced periodontal disease. Therefore, for the older population the need for professional periodontal therapy seems likely to increase...”

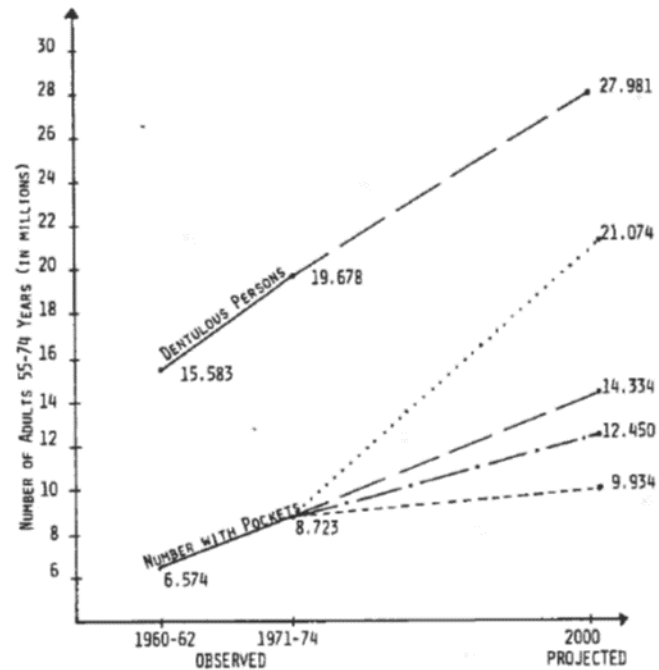


Figure 9. Projected increase in numbers of persons with pockets by 2000.

-, women's (65-75) rate of change = 141.6%
- , same age specific rate change = 64.3%
- - - , zero rate change = 42.7%
- - - -, cohort rate change = 13.9%.

Current Validity

Population Trends for 65+

Previous projected population – underestimated

Affected by birth rates, death rates, immigration net

- Birth rates are different for different ethnic groups
- Life expectancy has increased
- Immigration was underestimated

Current Validity (cont.)

Disease Trends for 65+

Teeth: Large increase

Caries: DFT – no change in rates (Rozier et al. citing Dye et al.)

	1988-94	1999-2004
Overall	9.19	9.14

DMFT declined from 19.11 to 17.96 due to fewer missing teeth

Perio for 65+ “Found no trend”

2009-12 Prevalence 46% Advanced perio 8.9%

Converting Need into Demand

Consequences of Success: Do More Teeth Translate into More Disease and Utilization? Joshi A et al.

New England Elders probability sample

Elders who retained more teeth

- Have more periodontal disease and dental caries experience
- Visit the dentist more frequently

Dye B et al. Cover Story: Tooth loss in older adults

Conclusions: “With an aging population experiencing less edentulism and greater tooth retention, older adults may need more regular oral health care and prevention services to address concerns such as root caries and periodontal disease.”

Conclusions

1. **Unmet dental treatment needs are substantial and increasing in the Medicare population**
2. **Periodontal treatment needs are significant and may be related to several systemic conditions.**
3. **The number of elders is increasing.**
4. **The burden of disease falls more heavily on lower income groups.**