

Deep neck space infections of dental origin a health economic study

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Study population



Total COI including direct and indirect costs related to DNSI diagnosis in 2019 for DNSI patients. The costs are presented in SEK and euros (€).

	Cost component	Mean CPP (SEK)	Total cost all patients (SEK)	Mean CPP (€)	Total cost all patients (€)	% of total COI
Direct costs	Prescription drug use (antibiotics)	715	105 755	67	9987	0.4
	Outpatient healthcare use (visits ENT)	778	115 163	73	10 876	0.5
	Inpatient healthcare use	112 601	16 665 008	10634	1 573 843	68.9
	Fixed cost surgery intervention	37 440	5 541 060	3536	523 298	22.9
	Total direct costs	151 534	22 426 986	14 311	2 118 005	92.7
Indirect costs	Production loss >14 days	9 056	1 340 313	855	126 579	5.5
	Production loss 14 first days of sick leave	2 821	417 522	266	39 431	1.7
	Total indirect costs	11 877	1 757 835	1122	166 010	7.3
Cost-of-illness	Total COI 2019	163 411	24 184 821	15 433	2 284 014	100.0

Background:

Deep neck space infection (DNSI) of dental origin is a rare but potentially severe complication to dental disease and dental procedures that can be prevented.

The health economic costs are potentially significant but have not been thoroughly investigated.

Purpose

To estimate the total cost of illness (COI) for patients hospitalized with DNSI of dental origin

Study design

This is a cross-sectional register based study from the region **Västra Götaland (VGR)** - the second largest region in Sweden, population 1.7 million.

All patients aged <18 years hospitalized with DNSI of dental origin in 2019 were identified from the regional health care data base VEGA, based on the ICD-codes for DNSI and dental disease.

Specific Cost Per Patient (CPP) was extracted (including all related outpatient and inpatient care).

Also data on prescribed medication from the Digitalis data base and data on social benefits due to **sick leave** from Försäkringskassan.

Direct and indirect costs and the total COI were calculated.

Calculations was made in collaboration with Research Support Office (RSO), Gothia Forum

Results

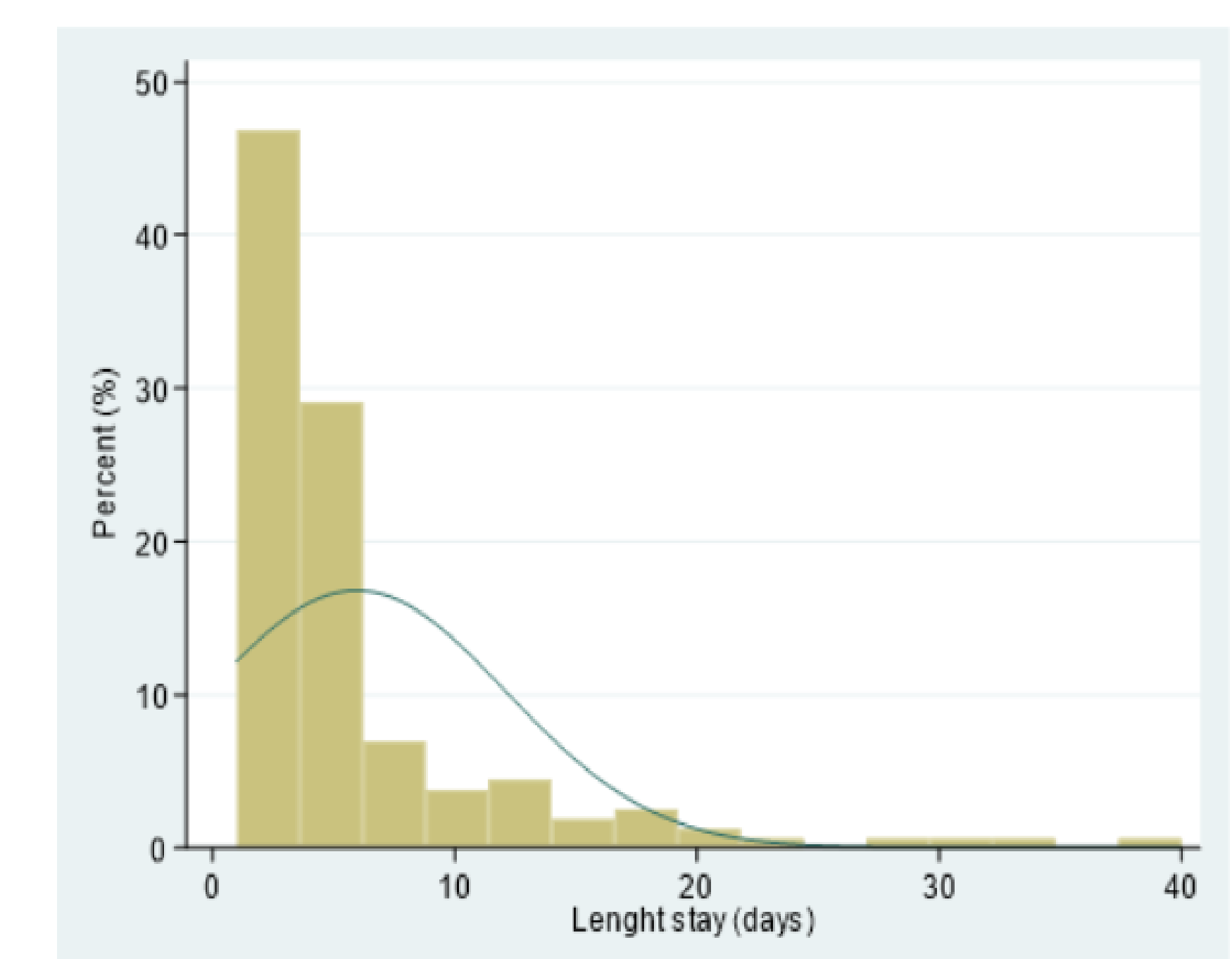
A total of **148 patients** were included.

The average length of hospital stay was 6 days (1 to 40 days).

The total cost of illness was estimated at 163 411 SEK (15 400 €) per patient and for **whole population** approximately **24 million SEK (2.28 million €)**.

Direct costs, including both inpatient and outpatient care, accounted for 93% of the overall resource use, while indirect costs related to lost productivity represented 7%.

The average length of hospital stay for DNSI-related hospitalizations is 6 days, ranging from 1 to 40 days. The distribution of the number of days is shown in the figure below



Conclusion

Preventing DNSI of dental origin can save substantial costs for the specialized health care and save significant health impact on the patient.

The mean COI per patient for DNSI patients of dental origin were **6 times higher compared with the average healthcare cost** per resident in VGR in 2019.

In addition to being a potentially preventable severe complication to dental diseases and procedures, DNSI of dental origin had a total COI for the 148 patients of approximately 24 million SEK (2.28 million €).

DNSI of dental origin impose substantial costs on the health care system