

CDC Tools to Estimate School Sealant Program Cost and Benefit

Susan O. Griffin, PhD
Health Economist
CDC Division of Oral Health

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SOME PRELIMINARIES

School Sealant Program (SSP) Return on Investment (ROI)



Economics 101

- **Calculations vary by perspective**
 - Societal includes productivity losses and uses resource costs
 - Payer (e.g., Medicaid) uses fees for restorations and sealants
- **Discount future costs and outcomes**
- **Benefit = averted cavities * cost per cavity**
 - CDC SSP Excel **Benefit Tool**
- **SSP Cost = SSP cost per student/tooth**
 - ***CDC SEALS Cost Calculator Web App***

SSP BENEFIT TOOL

Benefit = Averted Cavities * Cost per Cavity



Before



After

Per Child Data Collection Requirements *

- **Screening data prior to sealant placement**
 - Child's age
 - Presence of sealants
 - Number DF 1st Molars
- **At sealant placement**
 - Number 1M sealed
- **9 to 15 months after placement**
 - Number of program sealants retained

* Programs sealing 2nd molars need to collect number 2nd molars with DF, sealed and retained.

Excel Tool Calculation: Annual Attack Rate (AR)*

Age (1)	1M at risk (2)	DF1M (3)	AR (4)	Annual AR (5)
7	1000	100	10%	10%
8	1000	195	20%	10%
Average				10%

*Griffin et al., J Public Health Dent, 2015; Griffin et al., Health Affairs, 2016

Excel Tool Calculation: 1M Cavities w/o SSP*

Year	Sound	Cavities
0	3000	
1	2700	300
2	2430	570
3	2187	813
4	1968	1032
5	1771	1229
6	1594	1406
7	1435	1565
8	1291	1709
9	1162	1838

*Griffin et al. J Public Health Dent, 2015

Excel Tool Calculation: 1M Cavities with SSP*

Year	Sound Sealed	Sound Unsealed	Cavities
1	2670	297	33
2	2424	489	87
3	2230	615	156
4	2074	693	233
5	1948	737	315
6	1846	756	399
7	1761	756	483
8	1691	744	565
9	1632	722	645

*Griffin et al., J Public Health Dent, 2015

Excel Tool Calculation: Benefit


- **Averted Cavities** = $1838 - 645 = 1193$
- **Cost per cavity (Societal)***
 - Productivity losses = \$21
 - Restoration costs = \$139
 - Total = **\$160**
- **Benefit** = $1193 * \$160 = \$190,880$
 - Per child **\$191**

*Griffin et al., Health Affairs, 2016


SEALS WEB APP ESTIMATE SSP COSTS



Input Information on SSP Profile

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SEALS Event Data SEALS Event Data


Reports

Administration

- Manage Users
- Manage Schools
- Program Options
- Cost Options

State **Georgia** Program Name **Georgia Program** School year **2016-2017**


Event Date	School	Number of Children Screened	Event Options
8/7/2016	Georgia High	2	Edit Delete
2/6/2017	Georgia High	25	Edit Delete




Input or export data for each sealant event

Input names of program staff and schools served

Input Information on SSP Delivery Logistics

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SEALS Event Data
Reports

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- Cost Options



Program Options [Save](#) [Cancel](#)

Program

State: Georgia
Program Name: Georgia Program
School Year: 2016-2017

Schools

Available Schools [Add School](#)

School Name	Rural School	High Needs School	
Georgia High	Yes	Yes	Edit
Georgia elementary	Yes	Yes	Edit Remove

Options

Does your program ever reimburse labor for their travel time?
 Yes, labor is reimbursed for travel time
 No, labor is not reimbursed for travel time

Does your program ever reimburse labor for mileage?
 Yes, labor is reimbursed for mileage
 No, labor is not reimbursed for mileage

Does your program provide additional services (e.g. topical fluoride)?
 Yes, additional services are provided
 No, only sealants are provided

Does your program screen and seal at the same time?
 Yes, children are screened and sealed at the same time
 No, children are screened and sealed on separate occasions

Fluoride Varnish Program does not provide varnish

How many dentists are there per chair when you deliver fluoride varnish?

Input information on program sealant delivery logistics

Input or Accept Values for SS{ Costs_{per unit}

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Cost Options

Program

State: Georgia
Program Name: Georgia Program
School Year: 2016-2017

Labor Cost

What is the average hourly compensation paid to dentists?
 \$109.94 per hour (default)
 Custom Rate \$ 0.00 per hour

What is the average hourly compensation paid to dental hygienists?
 \$52.06 per hour (default)
 Custom Rate \$ 0.00 per hour

What is the average hourly compensation paid to dental assistants?
 \$25.91 per hour (default)
 Custom Rate \$ 0.00 per hour

What is the average hourly compensation paid to non-dental workers?
 \$26.05 per hour (default)
 Custom Rate \$ 0.00 per hour

Administrative Costs

What where your total Administrative cost? \$ 10.00 per year

Vehicle Costs

At what mileage rate do you cost out vehicles (e.g. depreciation and fuel) used to transport equipment?
 \$0.54 per mile (federal Rate)
 Custom Rate \$ 0.00 per mile

Input/accept information on program per unit resource costs

Input Information on Number of Resource Units Used

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SEALS Event Data **SEALS Event Data - Create New Event**

Reports [Done](#) [Cancel](#)

Administration

- Manage Users
- Manage Schools
- Program Options
- Cost Options

State: Georgia
 Program: Georgia Program
 Event Date(s): Available Dates: July 2016 - June 2017
 School:
 Consent Forms Distributed:

Labor

	Dentist	Dental Hygienist	Dental Assistant	Non-Dental Worker
School Time (hours)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Travel Time (hours)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Travel Distance(miles)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Vehicles

Number of Vehicles:

Miles (per vehicle):

Child Data

Number Screened:

Number Sealed:

Teeth Sealed:

Input information on resource units used at each school

SEALS Web App Output: Cost Report

SSP COST REPORT

Total Annual Cost \$65,000
Cost per Child \$65



PUTTING IT ALL TOGETHER

If $\text{Benefit} - \text{SSP Cost} > 0$, estimate cost-savings

If $\text{Benefit} - \text{SSP cost} < 0$, estimate cost-effectiveness ratio

SSP Cost Savings

“It is estimated that over 9 years, ABC Seals saved \$191 in associated dental treatment costs per student receiving sealants. After netting out sealant delivery costs of \$65 per child, ABC Seals **saved society \$126 per child sealed.**”





QUESTIONS?

Susan O. Griffin

sig1@cdc.gov