

Vision Plans

After completing this section, students should be able to:

- Apply estimates of costs and probabilities to compute vision costs for different types of customers under different vision plans.
- Use expected value to compare vision insurance plans, under simplifying assumptions.

Introduction

In the simplified insurance examples from the previous lesson, what information did we need to know to evaluate the insurance plan from the customer's point of view? (PollEv)

Goal: apply the same sort of analysis to real examples, to help a consumer (like your instructor) decide whether to buy insurance and which insurance plan to get.

Vision Plans

UNC's Vision Plan provides three possible levels of coverage to UNC employees. The monthly charge is as follows. It is also possible to opt out and get no plan.

Coverage Level	Core Wellness Exam*	Basic	Enhanced
Employee Only	No charge	\$4.50	\$8.00

Health plan benefits are described here: <https://oshr.nc.gov/2022-ncflex-enrollment-guide-universities/open>

Benefit	Core	Basic	Enhanced
Eye exam (once per year)	\$20 copay	\$20 copay	\$20 copay
Contact lenses	Discount on conventional lenses	\$120 allowance (once every 12 months)	\$175 allowance (once every 12 months)
Frames	35% off retail	\$125 allowance (once every 24 months)	\$200 allowance (once every 12 months)
Single vision standard lens	You pay \$50	\$0 copay	\$0 copay
Standard progressive lens	You pay \$135	\$50 copay	\$50 copay
Premium progressive lens	20% off retail	\$70-\$95 copay	\$70-\$95 copay
Hearing Health Care from Amplifon Hearing Network	40% off hearing exams and a low-price guarantee on discounted hearing aids	40% off hearing exams and a low-price guarantee on discounted hearing aids	40% off hearing exams and a low-price guarantee on discounted hearing aids
LASIK or PRK from US laser network	15% off the retail price, or 5% off the promotional price, whichever you prefer	15% off the retail price, or 5% off the promotional price, whichever you prefer	15% off the retail price, or 5% off the promotional price, whichever you prefer

Note: the discount on contacts in the core plan is a 15% discount.

According to the website AllAboutVision and Very Well Helath. the average costs for standard vision care are as follows:

Item	Cost	Probability / Frequency
Eye exam	\$163	
Frames	\$150	
Single vision lenses	\$90	
Standard progressive lenses	\$150 - \$250	
Premium progressive lenses	\$600 - \$800	
Contacts	\$220 to \$260 per year	
LASIK surgery	\$2,246 per eye	

Suppose you make the following assumptions about yourself:

- You wear glasses (not contacts)
- You expect to get a vision exam and new glasses with standard lenses yearly.
- There are 700,000 LASIK surgeries done each year in the US¹, and so you estimate that the chance that you will get LASIK surgery in one year is about 700,000 in 331 million.
- You are young enough that you are unlikely to need progressive lenses or cataract surgery anytime soon.

Fill in the probability / frequency column in the spreadsheet template at tinyurl.com/math115unc to organize information.

¹LASIK: Know the Rewards and the Risks WebMD 2018

Which plan saves you more money? How much do you save over no plan?

Does your answer change if you wear contacts instead of glasses?

What if you don't wear glasses or contacts, and won't need LASIK anytime soon, but still like to get an eye exam every year?