Healthcare Plans and Patient Satisfaction

Health, Medicine, & Science group:

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We are a healthcare-oriented research firm that has been tasked by a major hospital system the role of examining the role healthcare insurance on recent hospital patient satisfaction. With the ever-changing healthcare insurance landscape and the focus on patient-first medical care, this would provide transparency to patient satisfaction through the lens of various insurance types. Since the early 1980, patient satisfaction has been an important variable for healthcare providers (AMA, 2013). Historically, the aim of these surveys is to provide feedback that may improve patient experience and outcomes, boost productivity and efficiency while maximizing patient retention and quality of care. These improvements would encompass various categories, including but not limited to (a) patient physician interpersonal relationships, (b) quality of care, (c) timeliness of appointments, (d) clinic atmosphere (cleanliness, adequate waiting rooms, etc.), and (e) adequate diagnosis and treatment. Subjective surveys have revealed that patient satisfaction may not be determined solely by the physician encounter. The aim of this current study is to evaluate if a relationship exists between the type of insurance of an individual and their perceived satisfaction. For the purposes of this study we will limit measures of satisfaction specifically to quality of care, and physician interaction. We hypothesize that high deductible healthcare plans predispose patients to decreased patient satisfaction for medical care.

There are many factors impacting the cost of healthcare: individual’s insurance plan, copays, or deductibles, as well as huge variability in their coverage in-network and out-of-network providers. Insurance companies offer a variety of insurance plans types to serve the patient needs; however not all options may be extended to healthcare consumers as a majority of consumers receive their health insurance through employer sponsored plans. The Kaiser Family Foundation, a nonprofit organization which tracks attitudes and policy for healthcare related issues has noted a four-fold increase in the insurance premiums for those covered by employer-based plans over the last decade (Kaiser Family Foundation, 2019). Also, on the rise since the institution of the affordable care act is the prevalence of high deductible health plans, HDHP (Kaiser Family Foundation, 2016). It has been hypothesized (AAFP, 2019) that consumers have been opting for HDHPs because of its lower upfront premiums; however, the high deductibles may negatively impact patients’ willingness to seek preventative and even, necessary medical care.

The distribution of health plans amongst our hospital system and, for comparative purposes, Illinois and the United States as a whole (Kaiser Family Foundation,2017) are listed below in Table 1. The distribution of private employer provided insurance is compared in Table 2 (Kaiser Family Foundation, 2016).

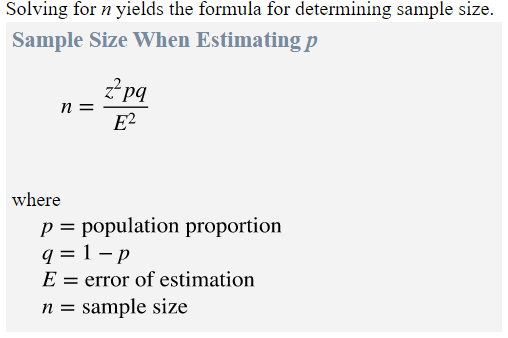
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| Table 1  Distribution of private and public health plans. | | | | | |
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| Location | Employer Provided | Non Group | Medicare & Medicaid | Other Public | Non Insured |
| National | 49 | 7 | 35 | 1 | 9 |
| Illinois | 53 | 6 | 33 | 1 | 7 |
| Our Hospital | 52 | 4 | 37 | 1 | 6 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table 2  Distribution of private insurance plans by type. | | | | | |
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| Location | Conventional | HMO | PPO | POS | HDHP |
| National | <1 | 15 | 48 | 9 | 29 |
| Our Hospital | 2 | 18 | 42 | 12 | 26 |

Knowing the existence of the above distributions a simple random sampling of individuals is almost destined to produce biased results that cannot be generalized to our patient population. Because of this we would suggest a stratification of the patient population based upon the type of plan for which individuals carry. As such there will be 9 total groups consisting of the following plan types (a) conventional, (b) HMO, (c) PPO, (d) POS, (e) HDHP, (f) non-group, (g) Medicare and Medicaid, (h) Other public, and (i) Non-insured. Additionally, to confront this apparent confounder, identifiable groups may be stratified prior to collection to examine specific distributions. A common marker variable will also be used to provide additional confidence in the responses (Eichhorn, 2014).

The mode of survey distribution will include a sealed envelope which has an invitation concealed within. The invitation to participate in the survey will include a brief description of the survey goals without divulging the research question. A barcode/ID number will be used to identify and track the department of origin while keeping. The envelope will also include five dollar gift card to Applebee's which is activated upon the form's submission and is potentially adjustable as the program demands. The invitation will provide a link to the survey accessible with smartphones, iPhones, and all types of PC's with a web browser. According to a Leichtman Research Group study in 2018, 82% of households maintain internet access, therefore should have the ability to respond to our survey invitation (Marketing Charts, 2018).

As per Gallup news (Reinhart, 2018), when asked about the quality of healthcare patients receive, 77% of the American public rated their personal healthcare as "excellent" or "good". Based on that prior study, considering population proportion p as 77% the following sample size formula is used -



Assuming confidence level of 95%, z = 1.96, and error of estimation E = 0.03,

n = 1.962\*0.77\*(1 – 0.77) = 755.94

0.032

A sample size of 756 has to be maintained to be 95% confident in the results and maintain an error of 0.03, or 3%. Response rates in the literature seem to indicate a decrease in the last decade from around 30% (AMA, 2013) to 26.7% (Godden, Paseka, Gnida & Inguanzo, 2019). Based on that expected response rate, at least 3024 patients must be asked to take the survey to account for a realistic sample size.

It is our expectation, as in most surveys, that the measurement of the sample will not be 100% successful. However, we hope the added monetary incentive would entice a larger proportion to complete their survey. As previously noted, this incentive could be modified to garner more responses. Having the participants fill in an online survey will eliminate the possibility of missing data and thus the need for implementation of further weighting and imputation methods. The online survey could only be submitted once all of the survey questions have been answered by the respondent. On the other hand, as mentioned above, the online form of the survey will add the possibility of undercoverage bias. Individuals with no access to internet, smartphones, or the ones intimidated by internet technologies most likely will not participate. With the added stratification sampling, any confounding secondary to the lack of internet access would be accounted for with the health plans. Another concern is the observed fact in the "systematic differences between respondents and nonrespondents." “The relatively high correlation between response rate and mean patient satisfaction rating in the real dataset analyzed here suggests that in this instance more satisfied patients were more likely to respond than those who were less satisfied.” (Mazor, Clauser, Field, Yood, Gurwitz, 2002) Giving a monetary incentive might reflect a certain level of correction of this bias as the incentive will motivate satisfied and unsatisfied respondents.

Through this survey, our firm aims to qualify the correlation between patient insurance type and their satisfaction with medical care. If the hypothesis is supported, the results would be used to make targeted efforts by the hospital system on particular insurance groups for improved patient satisfaction. The efforts could be focused on patient education, increased involvement with social care, and/or provider empathy. If the null hypothesis is supported, insurance would not be an affecter in patient satisfaction and additional support for high deductible patients would not be warranted.

References

American Academy of Family Physicians (AAFP). (May 28, 2019). *Taking aim at the high deductibles that drive off patients*. [blog post] Accessed from <https://www.aafp.org/news/blogs/inthetrenches/entry/20190528itt-consumersfirst.html>

Black, K. (2013). *Business statistics: For contemporary decision making, 9th Edition.* Hoboken, NJ: John Wiley & Sons, Inc.

Deshpande, S. P. (2017). The impact of race on patient satisfaction with primary care physicians. *The Health Care Manager*, *36*(1), 29–38. doi: 10.1097/hcm.0000000000000128

Eichhorn B. (2014) Common method variance techniques. Retrieved Nov 11, 2019, from https://www.mwsug.org/proceedings/2014/AA/MWSUG-2014-AA11.pdf.

Godden, E., Paseka, A., Gnida, J., & Inguanzo, J. (2019). The impact of response rate on Hospital Consumer Assessment of Healthcare Providers and System (HCAHPS) dimension scores. *Patient Experience Journal, 6*(1), 105-114. Retrieved from <https://pxjournal.org/cgi/viewcontent.cgi?article=1357&context=journal>

Internet World Stats (2019). World internet usage and population statistics 2019 mid-year estimates. Retrieved from <https://www.internetworldstats.com/stats.htm>

Kaiser Family Foundation. (2019, September 25). Premiums and worker contributions among workers covered by employer-sponsored coverage, 1999-2019.Accessed from <https://www.kff.org/interactive/premiums-and-worker-contributions-among-workers-covered-by-employer-sponsored-coverage-1999-2019/>

Kaiser Family Foundation. (2016, September 14). *2016 employer health benefits survey*.Retrieved from <https://www.kff.org/health-costs/report/2016-employer-health-benefits-survey/>

Marketing Charts. (2018, January 4). *Broadband internet penetration pegged At 82% of US households.* Retrieved from <https://www.marketingcharts.com/digital-81804>.

Mazor, K. M., Clauser, B. E., Field, T., Yood, R. A., & Gurwitz, J. H. (2002). A demonstration of the impact of response bias on the results of patient satisfaction surveys. *Health Services Research*, *37*(5), 1403–1417. doi: 10.1111/1475-6773.11194

Newport, F. (2014, March 17). *In U.S., 66% satisfied health system works for them*. Retrieved from <https://news.gallup.com/poll/167951/satisfied-health-system-works.aspx>

Pascoe, G. C. (1983). Patient satisfaction in primary health care: a literature review and analysis. *Evaluation and program planning*, *6*(3-4), 185-210.

Reinhart, R.J. (2018, February 2). *In the news: Americans' satisfaction with their healthcare.* Retrieved from <https://news.gallup.com/poll/226607/news-americans-satisfaction-healthcare.aspx>

Siegrist Jr, R. B. (2013). Patient satisfaction: history, myths, and misperceptions. *AMA Journal of Ethics*, *15*(11), 982-987.

Appendix A

Survey Questionnaire

