

A Root Cause Analysis Using Text Mining for Patient No-Shows: A Case Study in Primary Care Centers Serving Rural Areas

L Abu Lekham¹, Y Wang¹, E Hey², and M Khasawneh¹

¹Department of Systems Science and Industrial Engineering,
Watson college of Engineering and Applied Science
State University of New York at Binghamton
Binghamton, NY, USA

²Chief Quality Officer
Finger Lakes Community Health,
Rochester, NY, USA

Corresponding author's Email: labulek1@binghamton.edu

Abstract: Patient no-shows lead to a significant loss in the healthcare industry. Many researchers have focused on this problem in various healthcare settings using several methods. However, few studies used text mining as a tool to conduct a root cause analysis (RCA) and Pareto analysis related to patient no-shows at outpatient primary care settings serving rural areas. This study uses a text mining framework to investigate and analyze the factors and causes behind patient no-shows at Finger Lakes Community Health (FLCH), an outpatient primary care medical center serving rural areas in New York State. The dataset used in this study consists of 5400 telephone encounters notes/surveys with the patients who did not show up to their appointments. The framework was used to explore, analyze, and categorize the notes (surveys) of the telephone encounters. The framework is novel by using some lookup words that are weighted based on their order of appearance in a note to assign that note to a certain root cause. It was found that miscommunication, personal issues, and forgetfulness are key causes of patient no-shows. Also, it was found that almost 80% of the patient no-shows were caused by only six root causes. Based on this analysis, several interventions were proposed to reduce the incidence of patient no-shows.

Keywords: Community Health, Patient No-Shows, Pareto Analysis, Primary Care, Root Cause Analysis, Text Mining