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Original Article

DataOps Strategies for Automating HEDIS Compliance

Justin Pathrose James

LA Care Health Plan, Los Angeles, US.

Corresponding Author : injustjam@gmail.com

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Abstract - *This paper talks about how Data Ops concepts can be utilized in creating survey questions like HEDIS. The Data Ops principles, like Structured Data Pipeline, Automation, and Governance, are applied with the clinical rigor of HEDIS measures. Since DataOps can be applied to any business process or analytic solution that involves extracting, a time-consuming process like creating and collecting HEDIS data will have much scope for automation.*

Keywords *- DataOps, Artificial Intelligence (AI), HealthCare, HEDIS, Data Analytics, NCQA.*

1. Introduction

The various HEDIS measures will be examined to determine where the principles of Data Ops can be implemented. This review aims to ascertain which measures are pertinent to your population (for instance, diabetes care, cancer screening, immunizations). Each measure encompasses technical specifications: eligible population, data sources, and definitions of numerator and denominator. DataOps is regarded as an advancement in data analytics, aimed at generating enhanced business value from big data by integrating methodologies such as DevOps, Agile, Lean, and Total Quality Management (TQM) to manage data in accordance with business objectives. DataOps can be utilized in any business process or analytical solution that entails extraction, ingestion, cleansing, movement, storage, transformation, integration, or aggregation of data.

2. Health Plan Quality Measures

2.1. Category of Measures

2.1.1. Patient Safety

The selection of improvement initiatives, evaluation of the effectiveness of safety improvement efforts, increased transparency through public reporting, organizational accreditation, and even contracting and reimbursement are just a few uses for patient safety data. As the number of applications for patient safety data has grown, so has the significance of data.

2.1.2. Effectiveness

The percentage of health plan participants who receive the right care is an evaluation or treatment for a specific medical condition. The majority of current interventions target mental health, musculoskeletal conditions, diabetes, cardiovascular disease, or respiratory problems. The percentage of health plan participants receiving preventive care, including flu shots, immunizations, assistance in quitting smoking, and counseling on managing obesity. The percentage of health plan participants getting screenings for obesity, glaucoma, chlamydia, lead exposure, and cancer.

2.1.3. Evaluating Person-Centered Care

Input from health insurance members about the treatment and support that they got from the health insurance and the related doctors and nurses. The number of complaints or appeals made by health plan members regarding coverage decisions.

2.1.4. Timeliness

The measures evaluate how quickly the patients can get appointments. It includes an annual visit with a PCP or dental provider. Another example is how quickly pregnant women are getting prenatal care

2.1.5. Descriptive Measures

These Measures include:-

Board certification: The portion of doctors who have the board certificate.

Staffing ratios: The ratio of nurses to patients. Accreditation: The health plan's status regarding accreditation.

Technology use: The utilization of electronic patient medical records or systems for prescription ordering.

3. HEDIS Measures

3.1. Use of Measures

3.1.1. Significance of HEDIS

The Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by more than 90 percent of U.S. health plans to measure performance on important dimensions of

care and service. These measures address a range of health issues, including asthma medication use; persistence of beta-blocker treatment after a heart attack; controlling high blood pressure; comprehensive diabetes care; breast cancer screening; chlamydia screening; antidepressant medication management; immunization status; and advising smokers to quit.

HEDIS includes more than 90 measures across 6 areas of care:

- Effectiveness of Care.
- Access/Availability of Care.
- Utilization and Risk-Adjusted Utilization.
- Health Plan Descriptive Information.
- Measures Reported Using Electronic Clinical Data Systems

3.1.2. NCQA Guidelines

NCQA collaborates with health care organizations, vendors, consultants, and federal and state agencies that wish to integrate HEDIS measure specifications into products, programs, or services. All use of NCQA's HEDIS measure specifications, along with all NCQA-owned and copyrighted intellectual property, requires a proper licensing agreement with NCQA. This license agreement will identify the purpose of use of the HEDIS measure specifications, such as Rules for Allowable Adjustments compliance and fulfillment of NCQA's Measure Certification program, if relevant. Any applicable license fees are predicated on the use of HEDIS measure specifications.

4. Automation by Data Ops

To assess HEDIS quality metrics through the application of DataOps principles, one can utilize scalable workflows based on Python that conform to NCQA specifications.

Various steps involved in this process are:-

4.1. Data Collection

4.1.1. Survey creation

Import survey template as st

```
# Title and intro
st.title("HEDIS Quality Survey")
st.write("Please answer the following questions to help us assess care gaps based on HEDIS measures.")

# Breast Cancer Screening (BCS-E)
st.subheader("Breast Cancer Screening")
bcs = st.radio("Have you had a mammogram in the past 2 years?", ["Yes", "No", "Prefer not to say"])

# Diabetes Care (CDC)
st.subheader("Diabetes Care")
a1c = st.radio("Have you had an HbA1c test in the past 12 months?", ["Yes", "No", "Not sure"])
meds = st.radio("Are you currently taking prescribed diabetes medication?", ["Yes", "No", "Not applicable"])

# Colorectal Cancer Screening (COL-E)
st.subheader("Colorectal Cancer Screening")
col = st.radio("Have you had a colonoscopy or stool test in the past 10 years?", ["Yes", "No", "Prefer not to say"])

# Immunizations (CIS)
st.subheader("Childhood Immunizations")
cis = st.radio("Has your child received the MMR vaccine?", ["Yes", "No", "Not applicable"])

# Submit
if st.button("Submit Survey"):
  st.success("Thank you! Your responses have been recorded.")
```

4.2. Data Reporting

4.2.1. Data Load

Loads a validated HEDIS measure engine (for instance, HBD for diabetes management).

```
From Hedis.load_engine import load_engine
engine = load_engine("HBD")
```

4.2.2. Format Conversion

Converts internal data into the necessary JSON format.

```
member_data = {"member_id": "12345",
"dob": "1970-06-15", "gender": "F",
"encounters": [
{"date": "2024-05-01", "code": "83036", "type": "lab"},
{"date": "2024-11-15", "code": "99213", "type": "office"}
],
"my": "2024"  # Measurement Year
}
```

4.2.3. Adherence to the Measures

Assesses adherence to the chosen HEDIS measure

```
result = engine.get_measure(member=member_data)
```

4.2.4. Adherence to the Measure

Produces organized results suitable for reporting or dashboard integration from pprint import pprint

```
pprint(result)
```

5. Results and Outcome

5.1. Data Reporting

The Survey results will show the effectiveness of a Healthcare organization in various Quality Metrics maintained by NCQA.

5.1.1. HEDIS Summary Reports

NCQA publishes 3 years of results in a reporting tool called Quality Compass. Through this online platform, the health plan HEDIS® and CAHPS® performance data are made available along with the benchmarking at the national, state, and regional levels. By providing such a resource, organizations are enabled to carry out the evaluation of their

own and competitors' performance, to identify the areas where they can improve, and to set the quality goals.

5.1.2. Quality Reports

The Health Care Quality Report displays condensed performance information of the crucial HEDIS® and CAHPS® measures from the previous year. This report shows the performance of the trends over time, and it also keeps an eye on the differences in healthcare quality. The State of Health Care Report from the homepage of the NCQA Website.

5.1.3. Health Plan Ratings

The annual Health Plan Ratings by NCQA include findings for health insurance plans that are either Accredited or non-Accredited. The ratings are on a scale of 0 to 5 and are increased by 0.5 at a time. This similar rating system is compared to the CMS Five-Star Quality Rating System. Please note that the data years used are mentioned in the measure list and methodology for every related Ratings year.

Fig. 1 CMS Five-Star Rating

6. Release of Survey Results

6.1.1. Data Availability

Organizations publish the HEDIS results in their portal or in a dashboard, which will be available to the public.

In the sample dashboard, the percentage of adults who have gone through exams and testing is shown.

The data compares the Minimum performance level and the high-performance level.

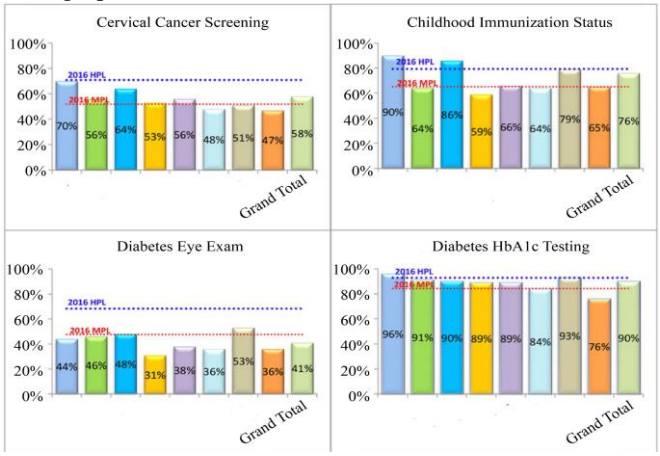

Fig. 2 Sample Dashboard

6.1.2. Benefits

A comprehensive suite of solutions and services designed to standardize, compare, optimize, report, and enhance HEDIS capabilities

Pre-established HEDIS measures that also support the development of measures for other quality programs, such as ACO, MIPS, PQRS, etc.

Integrated workflows that promote collaborative efforts between providers and payers to identify and close gaps in care

Provision for tailored clinical and non-clinical measures to track progress across a diverse range of populations

Detailed member-level analysis to enhance health effectiveness and acknowledge members for improvements in HEDIS and other quality programs

Ready-made dashboards and reports for analyzing and assessing specific measures across various dimensions, providing actionable insights and decision support

Self-Service Business Intelligence for effortless data manipulation and the creation of analytical reports with minimal input from the IT team

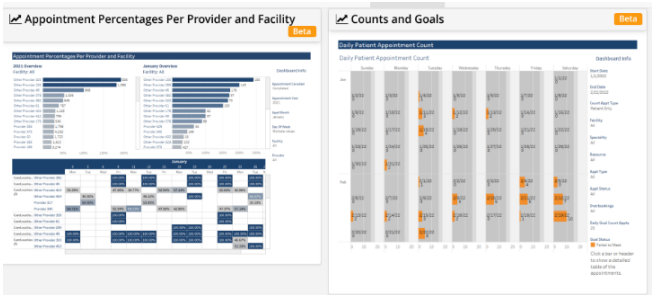

Fig. 3 Business Intelligence Reports

Fig. 4 Analysis Reports

6.1.3. Comparative Studies

The Health Plan Organizations consider the ratings as a corrective measure, and to appreciate the good work that the providers are doing. Many Organizations have introduced incentive systems to reward high-performing providers. Quality Dashboards are designed to display the complete data.

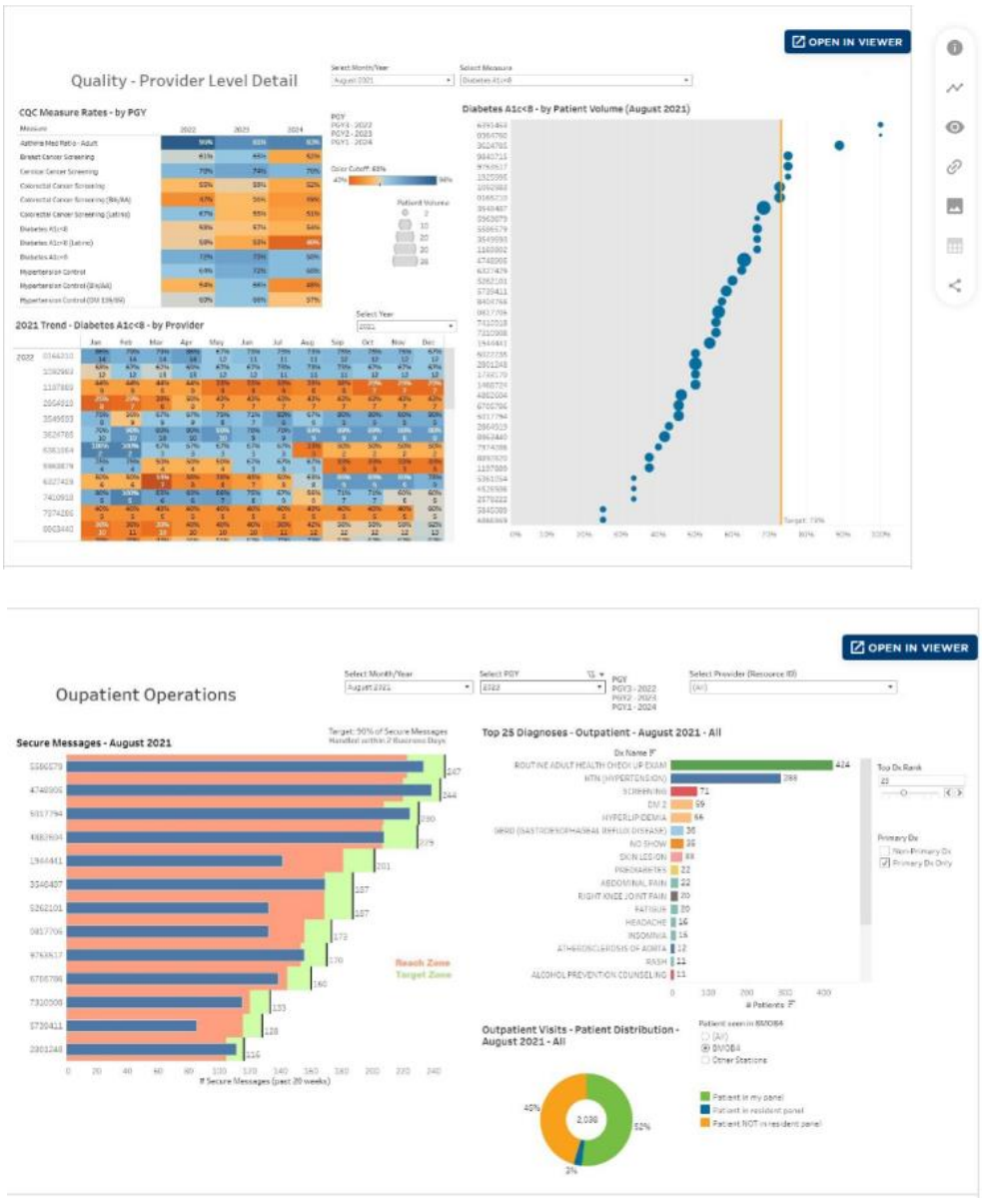

Fig. 5 Performance reports

7. Conclusion

NCQA is directing resources towards both innovative and established products that assess and improve data quality, while also reducing the burdens of manual data verification. The primary focus is on utilizing automated data quality evaluations to build trust in the data exchanged through interoperable formats and to assist in the HEDIS audit process. It is anticipated that organizations will develop solutions enabling AI practices to automate these measures completely.

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