Problem Statement Worksheet (Hypothesis Formation)

By the end of Q1 2025, determine the impact of smoking status, average glucose level, and BMI on the incidence of stroke, focusing on individuals within the age brackets of 18–44, 45–64, and 65 and older, to reduce stroke incidences by 12%, particularly in individuals aged 45 and above.

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1 Context

The rising incidence of stroke among individuals aged 45 and above necessitates targeted intervention. Smoking status, average glucose level, and BMI are key risk factors influencing stroke occurrence. This study aims to analyze these factors across different age groups to identify trends and correlations. The goal is to provide actionable insights for reducing stroke incidences by 12% by Q1 2025.

2 Criteria for success

Success will be determined by identifying key correlations between smoking status, glucose level, BMI, and stroke incidence, while developing effective recommendations to mitigate these risks. Engaging stakeholders to validate findings and influence policy is crucial, with the ultimate goal of achieving a 12% reduction in stroke incidence within the target population.

3 Scope of solution space

The solution involves analyzing the provided dataset to uncover risk factor patterns and segmenting the population into age groups of 18-44, 45-64, and 65+. Statistical and machine learning models will be applied to assess risk correlations, leading to recommendations for preventive health measures based on the findings..

4 Constraints within solution space

- Limited dataset coverage, with potential gaps in missing BMI values.
- Variability in lifestyle factors not captured within the dataset.
- Ethical considerations regarding data privacy and reporting.
- Time constraints to achieve a measurable impact by Q1 2025.

5 Stakeholders to provide key insight

1. Healthcare professionals (doctors, epidemiologists) for medical validation.
2. Public health officials for policy and intervention strategies.
3. Data analysts and statisticians for technical assessment and modeling.
4. Patients and advocacy groups to provide practical insights on risk factors.
5. Insurance companies for economic impact assessment and support initiatives.

6 Key data sources

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