The advantages of REFS include:
• empirically from data, without
• unobserved claim were categorized as a separate level or coded as 0 (6 months pre- and 12 months post-index).
• laboratory records from the Truven Health MarketScan 2008, and December 31, 2013, consisting of administrative claims and
• patient populations, and drug type and regimen used to treat patients.
• control needed to prevent diabetes complications.

– validation (25%, n = 139,738; hypoglycemia events 1%, n = 1,413)
– evaluation/testing (25%, n = 139,782; hypoglycemia events 1%, n = 3,007)
– training (50%, n = 279,443; hypoglycemia events 1%, n = 3,007) the relative impact of specific patient factors on clinical outcomes

Large number of patients) can also lead to severe hypoglycemia
• but treatment with other agents (including those that are typically hypoglycemia occurs most frequently with insulin and sulfonylureas,

From Data:

In the validation stage, hypoglycemia risk score was fixed to a 5% threshold
– ≤ 5% is 1.3%
– > 5%.

The mean risk estimate of patients with predicted risk
– of hypoglycemia (prior to index date)

The best logistic regression model from the REFS ensemble was the

The best logistic regression model chosen had a cross-validated AUC of

Further studies should be conducted to determine whether these
• that clinicians could consider for risk–benefit of antidiabetes therapies.
• Prevention and early identification of hypoglycemia is necessary to reduce
• the risk of developing hypoglycemia.
• The increasing risk across the risk strata demonstrates an incremental risk for hypoglycemia events via independent validation.
• We show that the prediction model for the hypoglycemia incidence rates performs moderately well via validation.
• This analysis presents a systematic procedure to quantify the risk for hypoglycemia and demonstrates an incremental risk of events following the first measurable antidiabetes use.
• The unique predictors identified in this study add new information that clinicians could consider for risk–benefit of antibiotics therapies.
• Further studies should be conducted to determine whether these findings are by-products or outcomes of the modeling and statistical analysis, and if they are of clinical relevance.