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Transformation of the Unstructured Allergy Data to Optimize Clinical Decision Support for Medication Prescriptions

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Introduction

Unstructured allergy entry is free text record that can barely use for integration or effective communication between medical information systems. Statistics of patients' drug allergies created between Year 1999 to Oct 2017 revealed that more than 3,086 records are created in free text. These unstructured allergens which allergy checking cannot reach are easily overlooked during prescriptions. Innovative strategies are required to improve and automate data correction and presentation.

Objectives

In view of the situation, Corp Alert function decided to convert these documented unstructured entries automatically to coded and standardized data to facilitate drug allergy checking upon prescriptions. This aims to improve the medication decision support magnitude at the point-of-care.

Methodology

A thorough analysis had been conducted. The free text data was processed and categorised by health informatics, IT and the medication expert panel. By comparing the spelling (case insensitive) and drug names (trade/generic), a total of 1,399 rules are set up. With the endorsement from clinical users from various specialties, the rules were deployed to production in Oct 2017 night time to convert the unstructured record to the structured one. Top ten free text allergies / allergy group is tabulated.

Result

The conversion was performed in 5 phases and 86.39% of them changed to coded allergen and subsequent clinical decision support is feasible. Medication safety is

therefore promoted. Yet, there are about 13.6% of the unstructured records include Chinese characters, incorrect spelling, multiple items and incomprehensive terms that makes the conversion challenging. The grouping will be shown in charts, with the figures to support. System conversion is an automatic process that can transform free text allergen records to standardized data efficiently and streamlines the flow of prescription and optimize medication safety.