

# Use of Hydroxyethyl Starch Solutions in Taiwan

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## Disclosure

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## Background

Recent data have indicated that hydroxyethyl starch (HES) solutions are associated with an increased risk of mortality and renal injury requiring dialysis when used in critically ill patients including those with sepsis, and those admitted to the ICU. The EMA and U.S FDA therefore warned against the use of HES solutions in these clinical scenarios.

## Objective

To explore the prescription patterns of HES solutions and to estimate the risk associated with HES uses in contraindicated conditions in Taiwan.

## Methods

We used the longitudinal cohort dataset of one-million insurants that randomly sampled in 2005 from Taiwan National Health Insurance Research Database (NHIRD) to describe usage patterns of HES solution between 2005 and 2011. HES solutions were categorized by molecular weight (MW, kDa) and degree of substitution (DS) [200/0.5; 130/0.4; 70/0.5]. ICU admission episodes were defined as inpatient ICU claims where two claims with an interruption <3 days were considered as one episode. Sepsis conditions were identified using ICD-9-CM diagnostic code (038) or defined as any IV antibiotic uses >7 days during hospitalization. The usage of HES solutions was thereafter calculated based on the above clinical settings.

## Results

We identified 5,760 patients received 7,154 HES solution prescriptions in 2011. 59% of the HES solutions were prescribed in medical centers. HES 130/0.4 were prescribed most frequently (78%), followed by HES 200/0.5 (20%) and HES 70/0.5 (2%). We also observed a slightly increasing trend of HES solutions usage during the 7 years observational period. During the observational period, 53% of HES solutions were prescribed while patient was admitted to ICU; 26% of HES solutions were prescribed under sepsis conditions.

Figure 1. Annual prescriptions of HES solutions

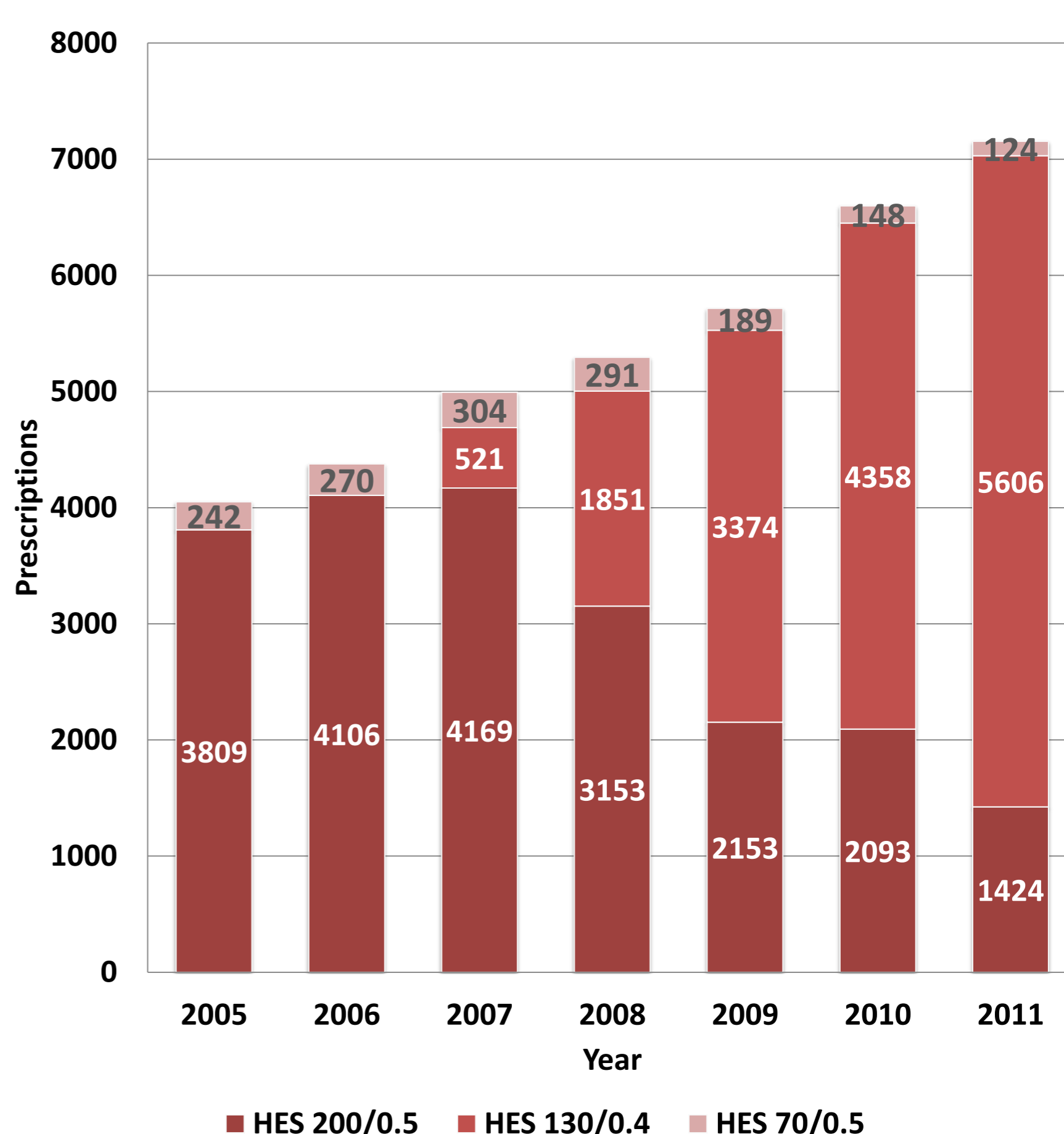
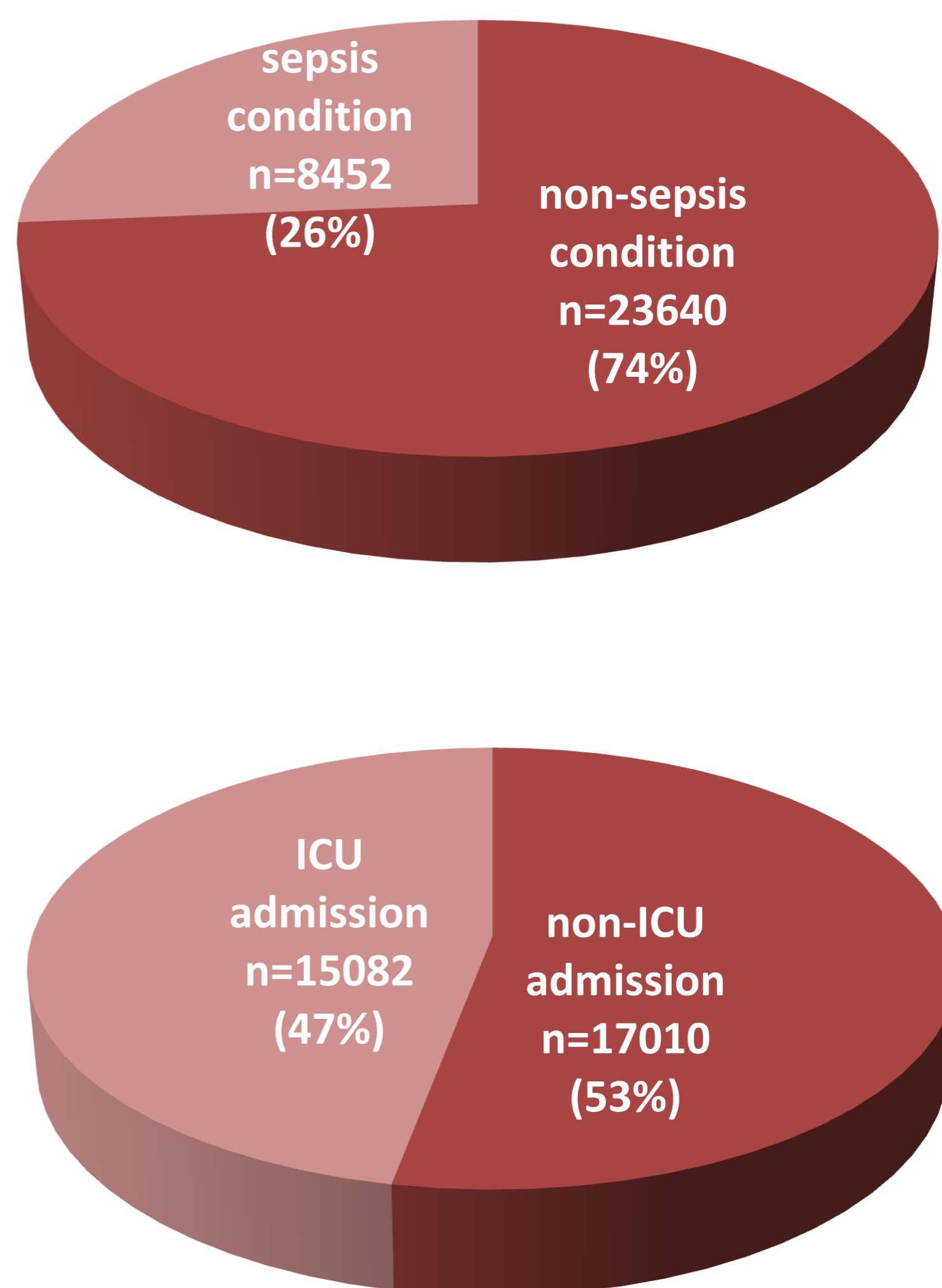


Figure 2. Prescription patterns in different conditions/settings



## Conclusions

The findings suggest that HES solutions were commonly prescribed for ICU patients under sepsis conditions in clinical practice in Taiwan. Cautions should be addressed to health care professionals and further domestic regulatory actions should be taken for this potential risk.