

# Prevalence of 25 Clinically Important Drug-drug Interactions



AMERICAN ACADEMY OF FAMILY PHYSICIANS  
National Ambulatory Primary Care Research and  
Education Conference on Patient Safety

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## Overview – Quantifying DDIs

- **Objective & research methodology**
- **Results**
- **Limitations**
- **Summary**



## Objective and Research Methodology

**Objective:** To quantify the prevalence of clinically significant drug-drug interactions

**Research methodology:**

- Data source, sample of **45,837,035**
- Retrospective, 25-month cross-sectional analysis
- Study definitions



## Study definitions

- **Event:** Claim submitted for a drug in a DDI combination
- **Individual:** Distinct combinations of member ID, DOB , and sex
- **Case:** Individual for whom a claim was submitted for both drugs in a DDI combo within 30 days
- **Prevalence:** Cases over individuals
- **Rate of interaction:** Number of cases per individual by drug
- **Aborted claim:** Submitted prescription not dispensed after a DDI warning was issued
- **Projection:** Application of prevalence rates from sample to the U.S. population- 2,507,063



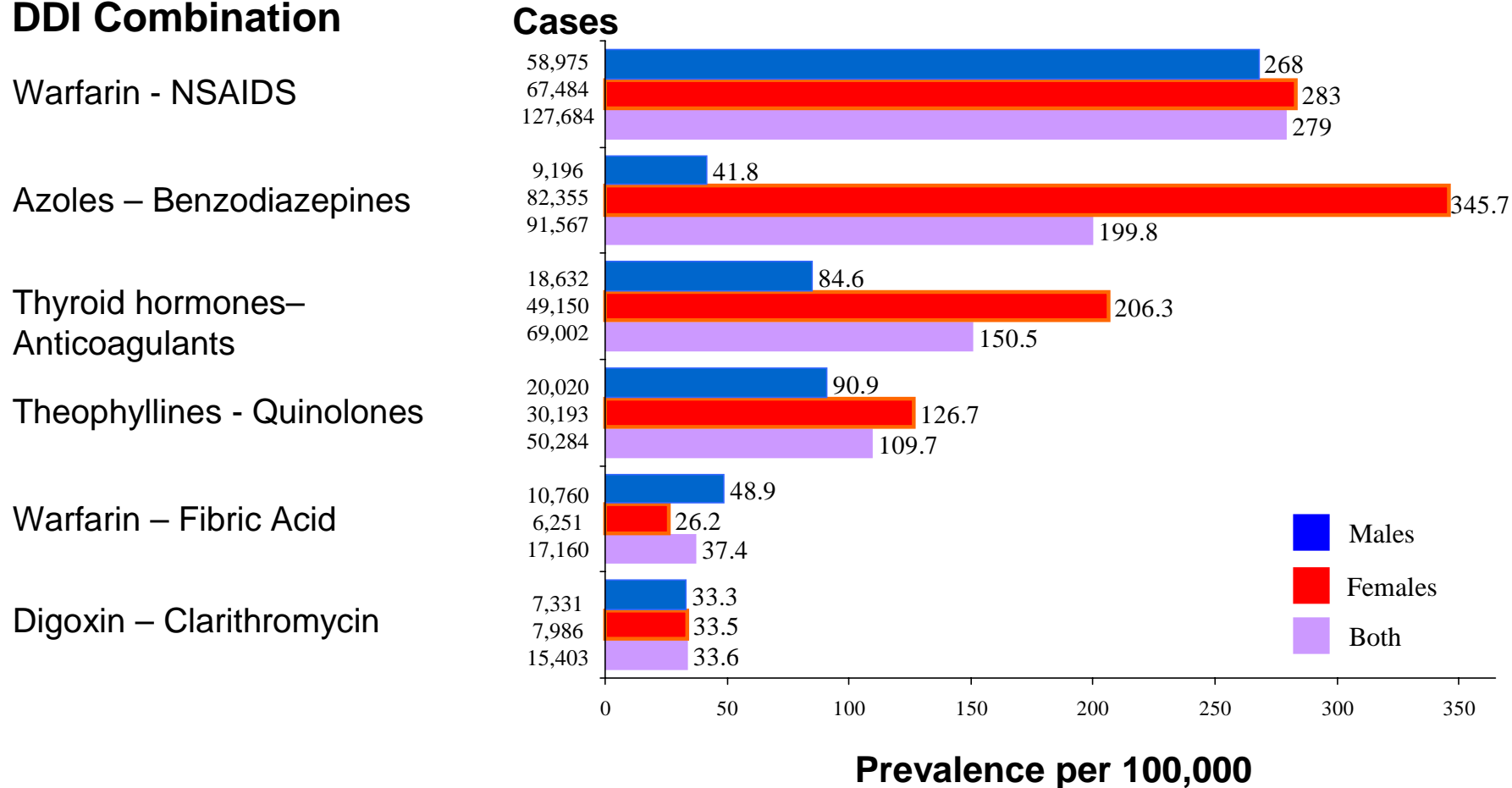
## Results

- **Prevalence**
- **Rates of interactions**
- **Aborted claims**



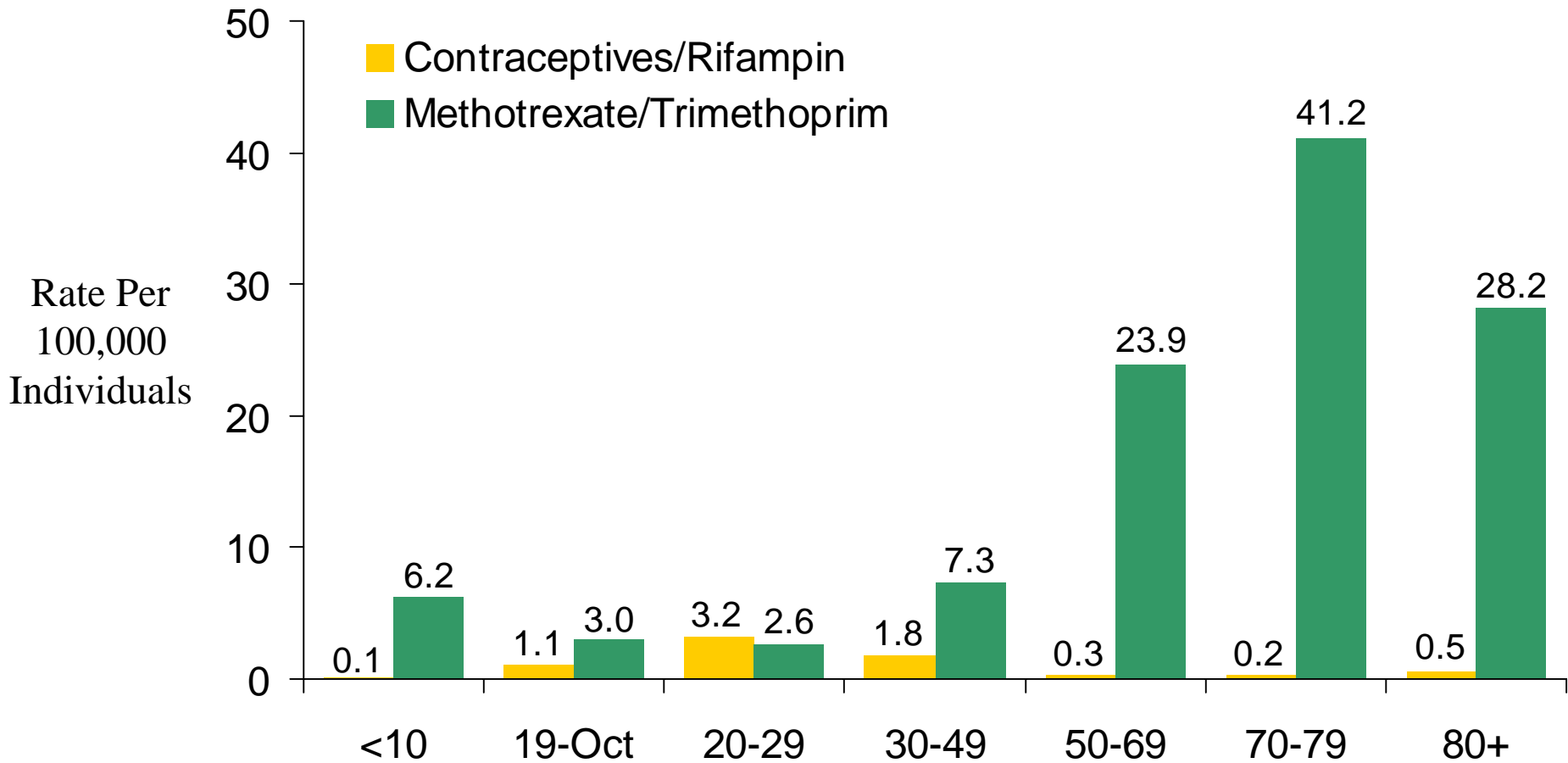
# Most Prevalent Drug-Drug Interactions

## DDI Combination



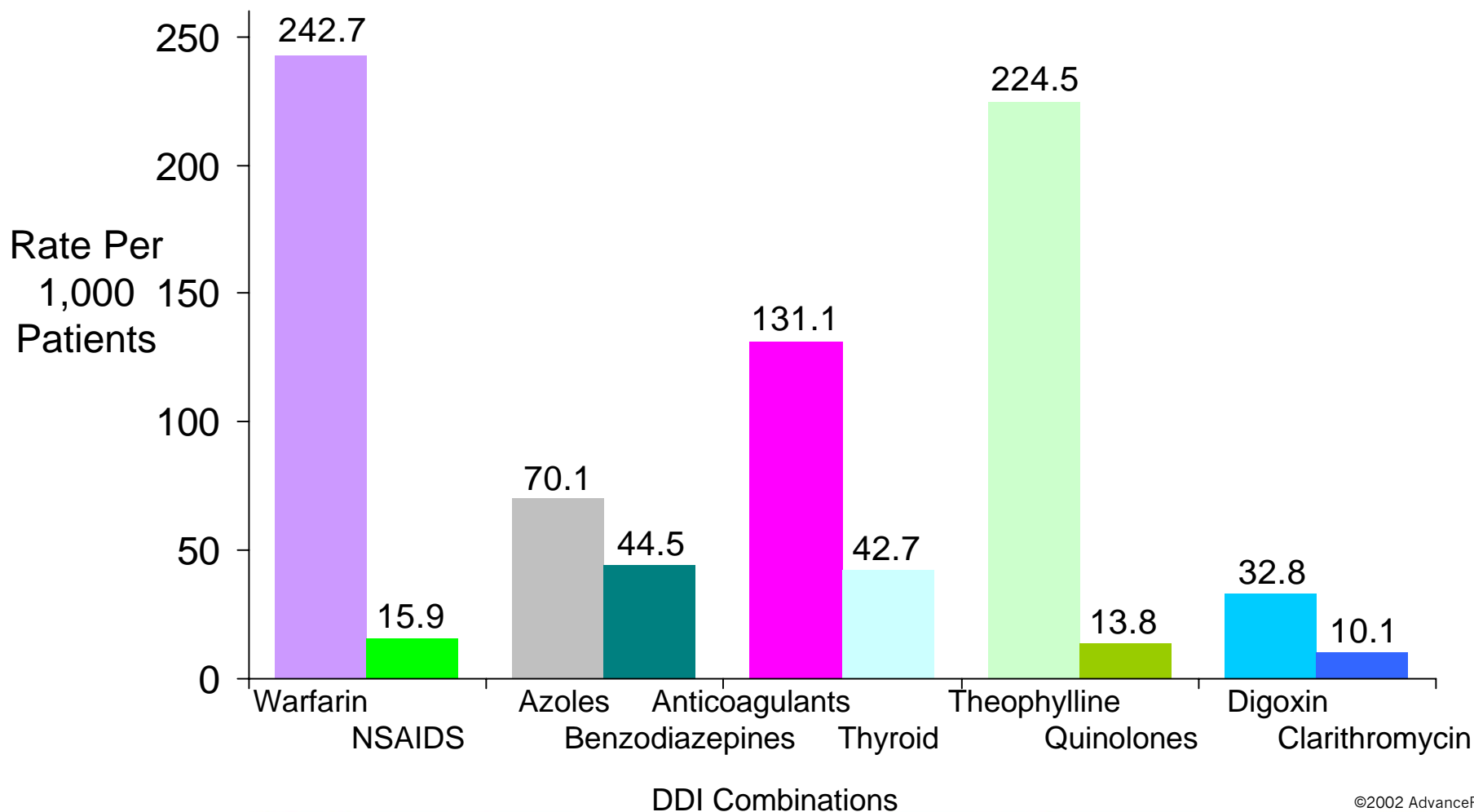


# Prevalence by Age



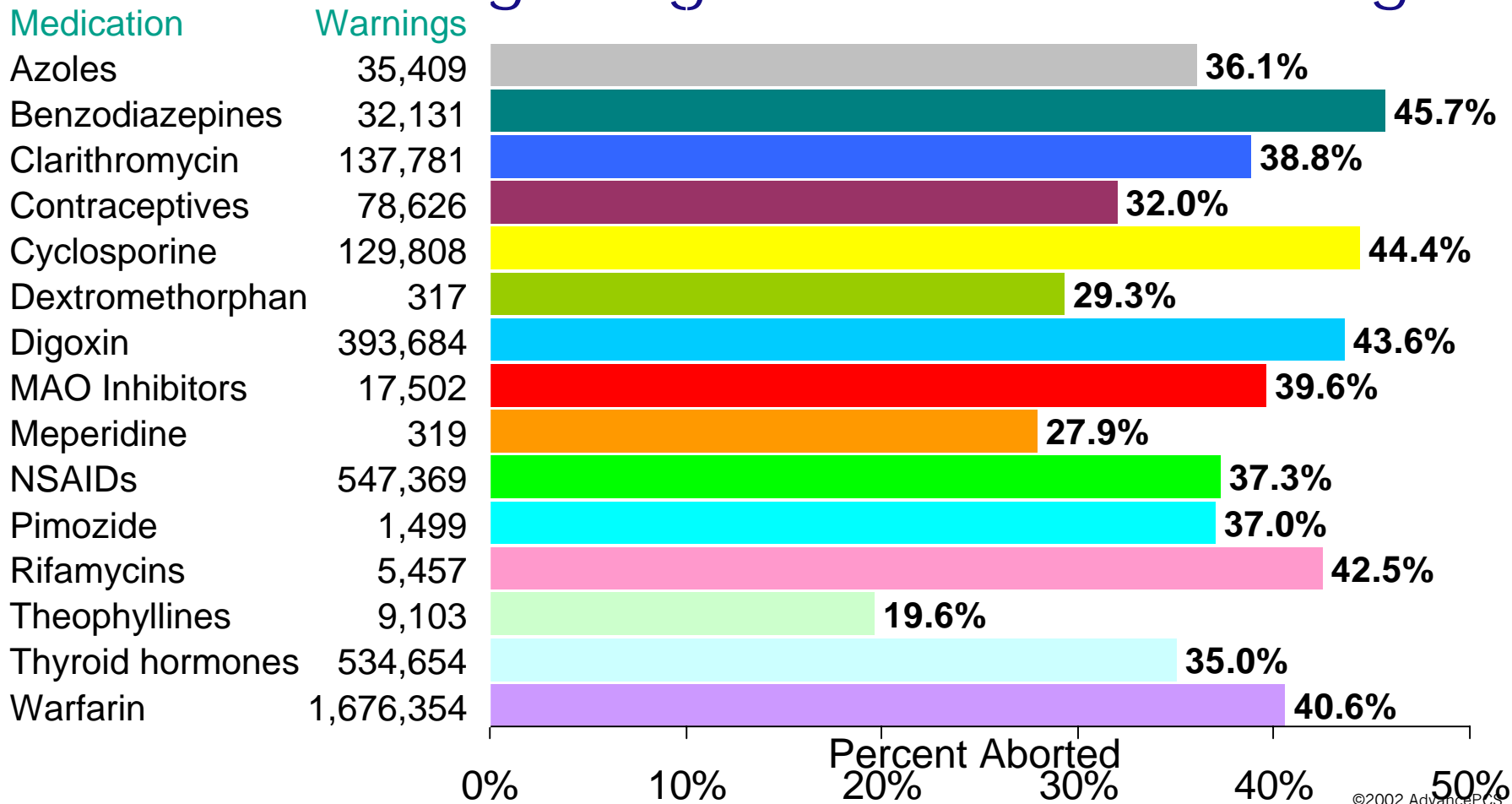


# Rate of Interaction by Medication





# Aborted Claims For Products With a Drug-Drug Interaction Warning





## Limitations

### ➤ Analysis of pharmacy claims

- Clinical relevance not examined, interaction may be already managed
- Doesn't assess provider awareness
  - Interactions caught before processing
  - Interactions examined after claims submitted
- Timing between identification and messaging not considered

### ➤ Potential sources of bias

- Population without pharmacy benefit not studied
- No information on OTC medication use
- Dual coverage (children)
- Other sources for obtaining medications



## Summary of findings

- **Claims for medications that interact are common**
  - 2.5 million persons in the U.S. exposed to one of these 25 drug-drug interactions
- **Age and gender differences exist**
- **Rates for individual medications differ**
- **Pharmacy systems appear to prevent many interactions**