

Hospital-wide formulary conversion and implementation of extended infusion cefepime

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SERVICE / PROGRAM

- A multidisciplinary team was formed to implement the hospital-wide formulary conversion from ceftazidime (30-minute) infusion to cefepime (4-hour) infusion
- On the day of hospital-wide conversion:
 - “Splash screen” alert reminded prescribers of the new program
 - Cefepime orderables were activated
 - Ceftazidime orderables were de-activated
 - Smart pump drug libraries were activated to default to a 4 hour infusion rate

JUSTIFICATION / DOCUMENTATION

- Recent institutional antibiogram data (2013-2014) indicated that compared to ceftazidime, cefepime had better in vitro activity against *Enterobacter species*, and similar activity against *P. aeruginosa*, *E. coli*, and *K. pneumoniae*

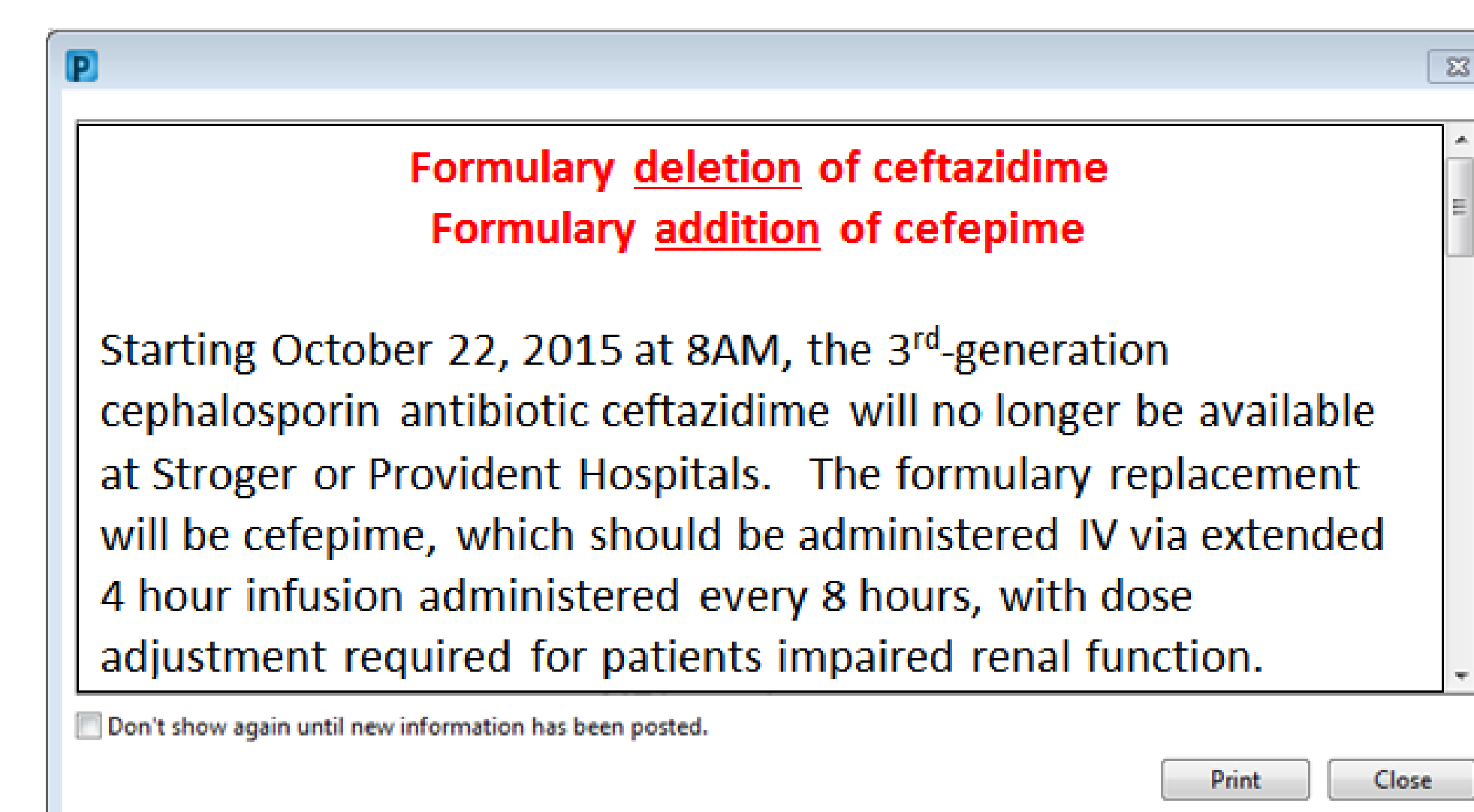
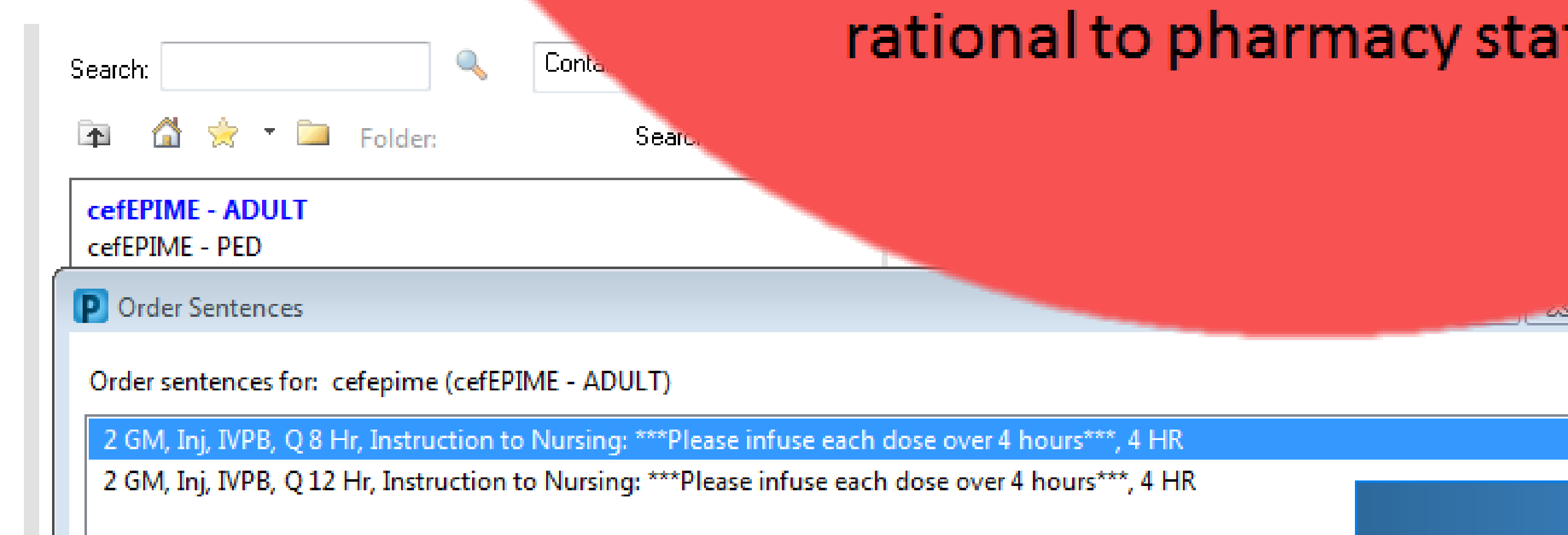
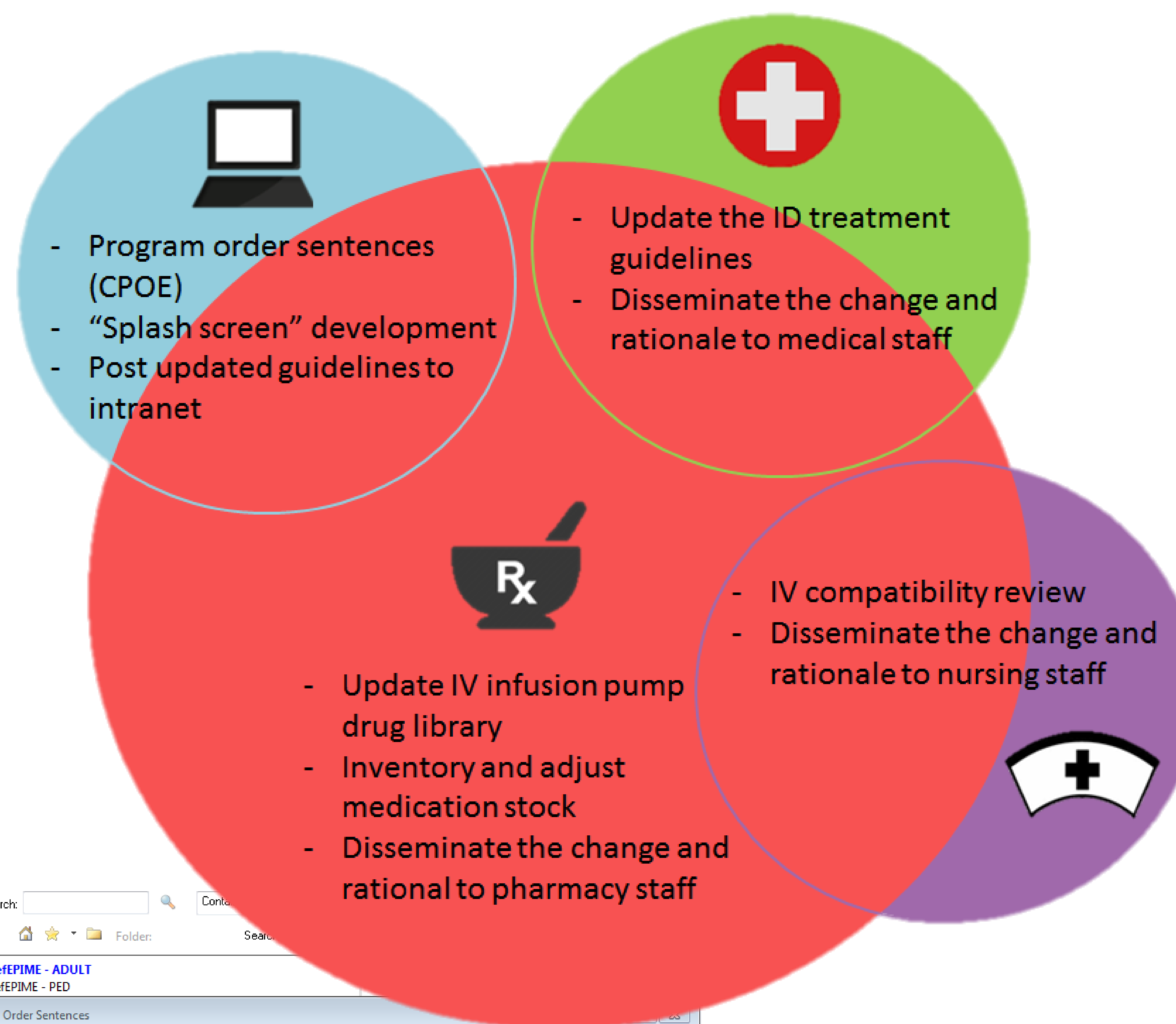
Hospital Acquired Gram Negative Organisms

Organism	Ceftazidime	Cefepime
Enterobacter cloacae	69	87
Enterobacter aerogenes	90	95
Proteus mirabilis	97	97
Serratia marcescens	69	100
Escherichia coli	87	88
Klebsiella pneumonia	92	91
Pseudomonas aeruginosa	75	Similar
Klebsiella oxytoca	86	83

7/1/2013-6/30/2014

- Time-dependent bactericidal activity of cefepime is enhanced when doses are administered over an extended, 4 hour infusion
- Extended infusion cefepime may be associated with lower mortality compared to a standard 30 minute infusion¹
- An ongoing, extended-infusion program for piperacillin/tazobactam at our institution was successfully implemented in 2009²

METHODS



LEGEND



SUMMARY OF STEPS

- 1) Programming CPOE, configuration of IV pumps
- 2) Multidisciplinary education
- 3) Adjust stock/inventory
- 4) “Go-live”
 - a) IT activation
 - b) Identification of patients with current ceftazidime orders

TRANSFERABILITY

Transition from a 30-minute infusion to an extended infusion program was seamlessly rolled out:

- Computerized-order entry of medications
- Defaulted order sentences:
 - Pediatrics & emergency room patients (30-minute infusion)
 - Other patients (4-hour infusion)
- Smart pump drug libraries to assure proper administration
- “Splash screen” informing of “Go-live” date

IMPACT

- A hospital-wide program for the administration of extended-infusion cefepime was safely and successfully implemented using a multi-disciplinary approach at an urban public teaching hospital
- Improved empiric coverage against susceptible aerobic gram-negative bacilli including *Enterobacter species* and *P. aeruginosa*
- Possibly better patient outcomes
- Building positive relationships between pharmacy and other departments

DISCLOSURES

Angela M. Plewa-Rusiecki, PharmD, BCPS: Nothing to disclose
Renee Xamplas, PharmD, BCPS: Nothing to disclose
Gail Itokazu, PharmD: Nothing to disclose

REFERENCES

1. Bauer. *Antimicrob Agents Chemother* 2013; 57:2907
2. Xamplas. *Am J Health-Syst Pharm* 2010; 67:662