

3 P's
Pharmacist, Pills and PPDs

Mai P. Vu, PharmD
Veteran Affairs Medical Center (VAMC)
San Francisco

Introduction

- Clinical pharmacist intervention in primary care settings
 - Improve adherence rates
 - Enhance clinical outcomes in management of diabetes, hypertension, anticoagulation, HIV, etc.
- Completion of treatment of latent TB infection (LTBI) in primary care settings often hampered by lack of case management

Background

- Chart review indicated low completion rate of LTBI treatment at VAMC SF
- A study demonstrated education by a pharmacist led to an increase in adherence to TB treatment regimen
- Pharmacist-managed LTBI clinic for healthcare workers improved rates of treatment completion

Clark PM, et al. Am J Health Syst Pharm. 2007.

Tavitian SM, et al. Am J Health Syst Pharm. 2003.

Study of Impact of Pharmacist-managed LTBI Clinic

- Objectives
 - Implement and track case management for LTBI provided by a clinical pharmacist in a primary HIV/ID specialty care clinic
- Goals
 - Evaluate the impact of pharmacist-managed clinic on treatment adherence, completion rate and management of adverse effects

Project Description

- From 2008 to 2014 patients ruled out for TB in Infectious Diseases (ID) clinic were referred to LTBI clinic
- The LTBI clinic is a weekly half-day VAMC-based pharmacist-managed clinic
- Eligible patients for referral
 - Higher risk for nonadherence
 - Immunocompromised status
 - Higher risk for toxicity

Pharmacist's Scope of Practice

- Assess adherence
- Evaluate and manage treatment-related adverse drug reaction (ADR)
- Order laboratory testing for monitoring per standardized guidelines
- Facilitate medication refills
- Reinforce patient education on disease state, importance of adherence, and appropriate use of anti-TB medications

Management of ADR's

- Consult an ID provider or attending physician for abnormal laboratory monitoring parameters, evaluation of medication toxicity or need for change in regimen due to potential drug interactions
- Prescribe and change doses of medications after consultation

LTBI regimens: VAMC SF 2008-2013

	Isoniazid (INH)		Rifampin (RIF)	
	Pharmacist	Other*	Pharmacist	Other*
	n (%)	n (%)	n (%)	n (%)
Started	53	127	13	14
Completed	42 (79%)	64 (51%)	11 (85%)	8 (57%)
Adverse	2 (4%)	5 (4%)	0 (0%)	0 (0%)
Chose to Stop/Lost/Refused	5 (9%)	50 (39%)	2 (15%)	4 (25%)
Moved	2 (4%)	4 (3%)	0 (0%)	1 (7%)
Provider decision	2 (4%)	0 (0%)	0 (0%)	0 (0%)
Other	0 (0%)	4 (3%)	0 (0%)	1 (7%)

*Gen Med, Chest clinic, Rheumatology, Hemodialysis and ER

The NEW ENGLAND
JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

DECEMBER 8, 2011

VOL. 365 NO. 23

Three Months of Rifapentine and Isoniazid for Latent
Tuberculosis Infection

Timothy R. Sterling, M.D., M. Elsa Villarino, M.D., M.P.H., Andrey S. Borisov, M.D., M.P.H., Nong Shang, Ph.D.,
Fred Gordin, M.D., Erin Bliven-Sizemore, M.P.H., Judith Hackman, R.N., Carol Dukes Hamilton, M.D.,
Dick Menzies, M.D., Amy Kerrigan, R.N., M.S.N., Stephen E. Weis, D.O., Marc Weiner, M.D., Diane Wing, R.N.,
Marcus B. Conde, M.D., Lorna Bozeman, M.S., C. Robert Horsburgh, Jr., M.D., Richard E. Chaisson, M.D.,
for the TB Trials Consortium PREVENT TB Study Team*

Obstacles to Providing Isoniazid-Rifapentine (3-HP) at VAMC SF LTBI Clinic

- Rifapentine not on formulary at VAMC SF
- Ward stocks or prescribed medications
 - No automated medication dispenser in clinic
- Directly-observed-therapy (DOT) requirement

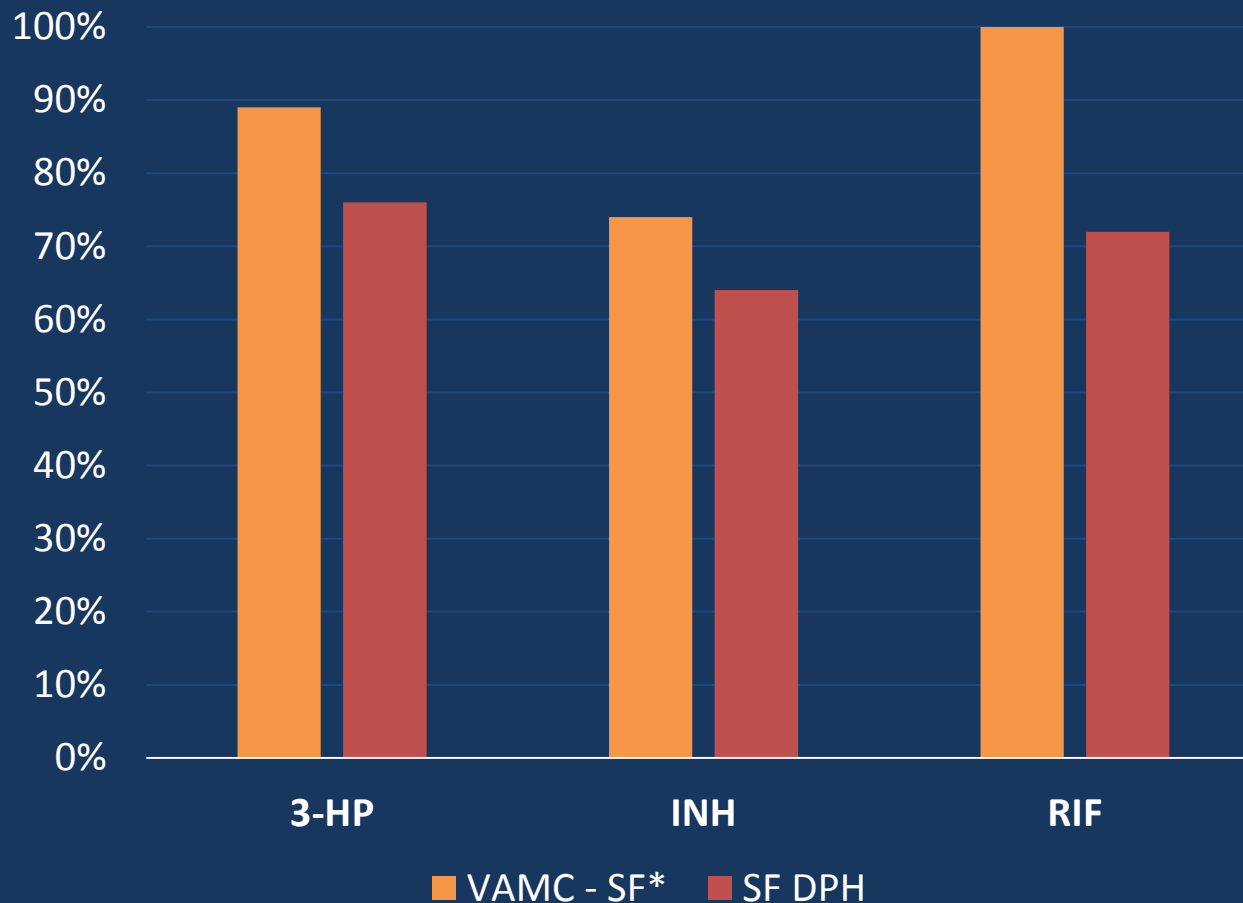
Solutions

- Rifapentine on formulary but with restriction to ID Clinic
- Per VAMC SF policy, all medications require a written order before administration
 - INH and Rifapentine will be prescribed and stored in the clinic
- Patients on 3-HP must come to clinic for DOT
- Pharmacist provides weekly DOT as well as the clinical monitoring, expanding the scope of practice

Pharmacist's Expanded Scope of Practice

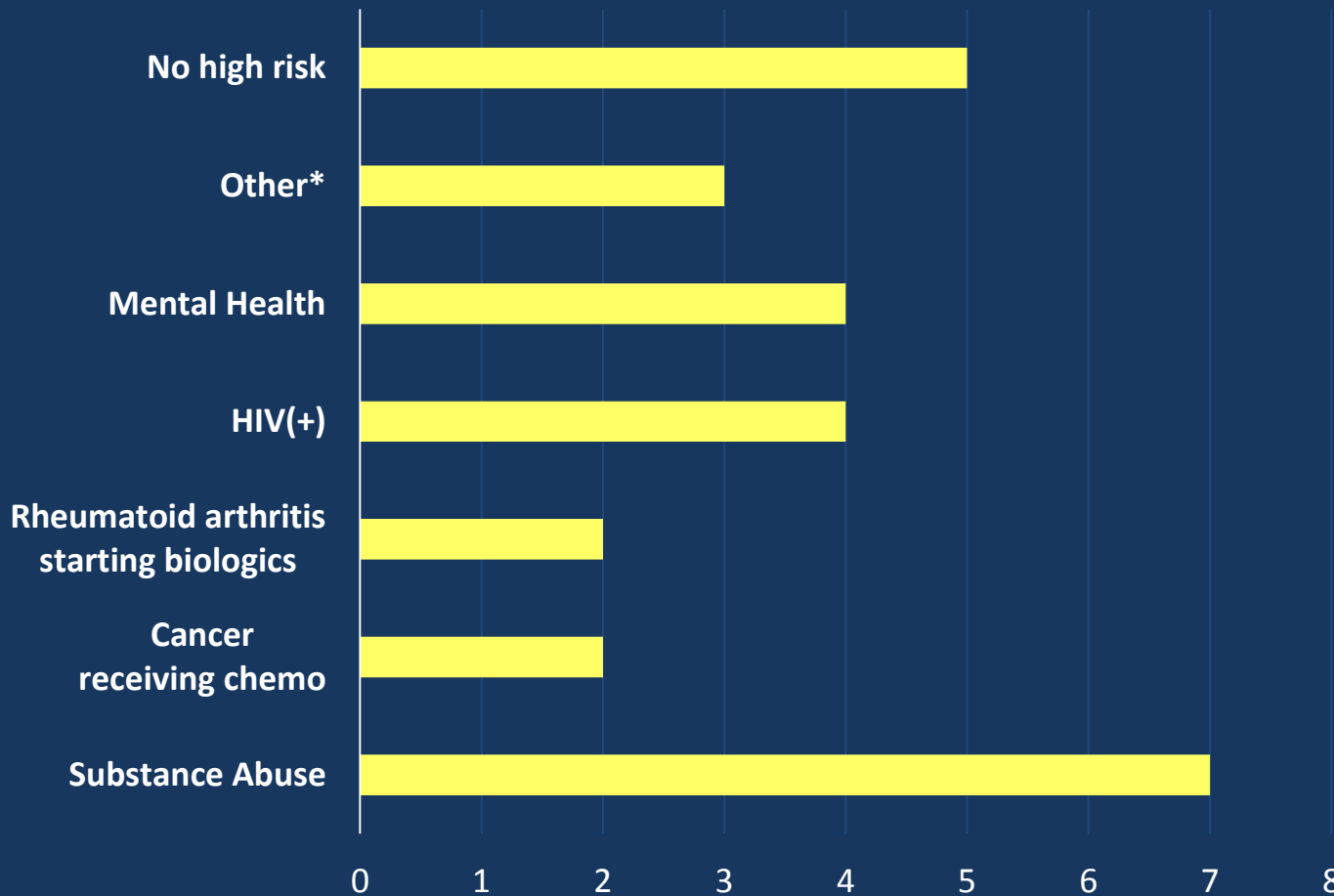
- Assess adherence
- Evaluate and manage treatment-related adverse effects
- Order laboratory testing for monitoring per standardized guidelines
- Facilitate medication refills
- Reinforce patient education on disease state, importance of adherence, and appropriate use of anti-TB medications
- **Provide weekly DOT for patients on 3-HP**

Treatment Completion Rate @ VAMC SF LTBI-clinic vs. San Francisco Dept. of Public Health (SF DPH) 2013-2014



*From May 2013 to December 2104

Number of VAMC SF High-Risk Patients Who Completed LTBI Treatment (n= 22)



- 22 out of 27 patients who completed LTBI had a high risk comorbidity
- Most common high risk comorbidity was substance abuse
- 5 out 7 patients with substance abuse received and completed 3-HP

*HD, pre-liver transplant, A-fib on anticoagulant
May 2013 to December 2014

Conclusions

- Case management of LTBI by clinical pharmacist resulted in high completion rate in all three different LTBI treatment regimens
- The outcomes achieved by the pharmacist are comparable to those achieved in public health settings
- 3-HP by DOT is feasible and a good option for high risk patients, especially those with substance abuse comorbidity

Challenges

- DOT requirement restricts the offering of 3-HP
- Drug-interaction(s) with Rifapentine less clear than with Rifampin
 - Methadone
 - Coumadin
 - HIV antiretrovirals

Future plans

- Program rollout to the San Francisco VA Downtown Clinic, a comprehensive homeless center, with an emphasis of making 3-HP available as a treatment option
- Case management and consultation services to primary care providers in rural communities via the Specialty Care Access Network Extension for Community Healthcare Outcomes (SCAN-ECHO)

Acknowledgement

- Dr. Julie Higashi
- Dr. Harry Lampiris
- Pharmacy residents