



Clinical Safety & Effectiveness Cohort # 15

Spirometry Testing for COPD Patients



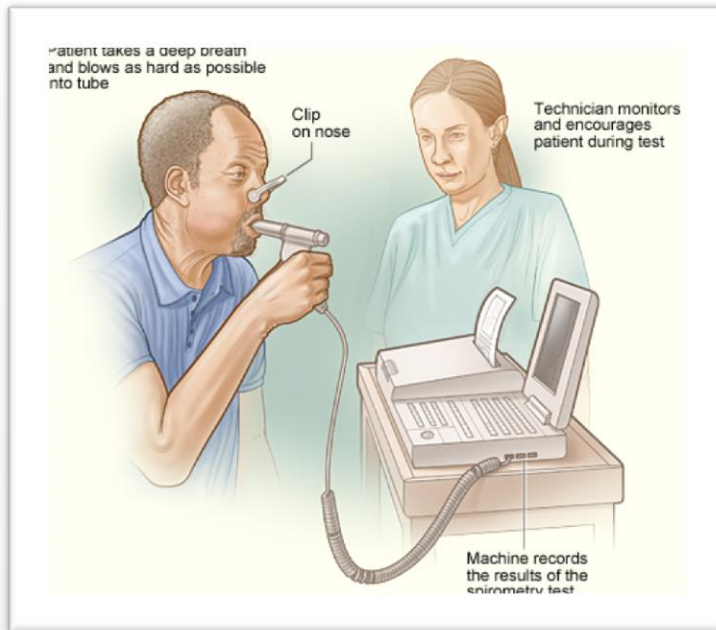
Educating for Quality Improvement & Patient Safety

The Team

- Division
 - Sandra Adams, MD, MS: Team Leader
 - Cynthia Castillo, MD
 - Lynn Young, BSN, RN
 - Mary Hart, RRT
 - Tamara Heflin, RN
 - COPD Patient
 - Letti Bresnahan, MBA: Facilitator
 - Erika Bowen, MA: Facilitator
- Sponsor Department:
 - Jan E. Patterson, MD, MS, Tim D. Barker, MD

AIM STATEMENT

By January 2015, at least 65% of COPD patients seen in University-based primary care clinics will have documentation of spirometry to confirm the diagnosis of COPD (represents an 18% increase from 55% currently)



Project Milestones

- **Team Created** 9/5/14
- **AIM statement created** 9/5/14
- **Regular Team Meetings** 9/15; 9/22; 10/10; 11/10
- **Background Data, Brainstorm Sessions** 9/5; 9/22; 10/04; 10/31
- **Workflow and Fishbone Analyses** 10/10/14
- **Interventions Implemented** 10/10/14~Still in progress
- **Data Analysis** 1/2015 - Ongoing
- **CS&E Presentation** 01/23/15

Background

- Chronic Obstructive Pulmonary Disease (COPD): 3rd leading cause of death in the US and is associated with high healthcare utilization
- Post-bronchodilator spirometry is **required** for the diagnosis
- Despite this fact, clinicians often treat/manage patients for COPD *without* ever having performed spirometry; thus, without confirming the diagnosis



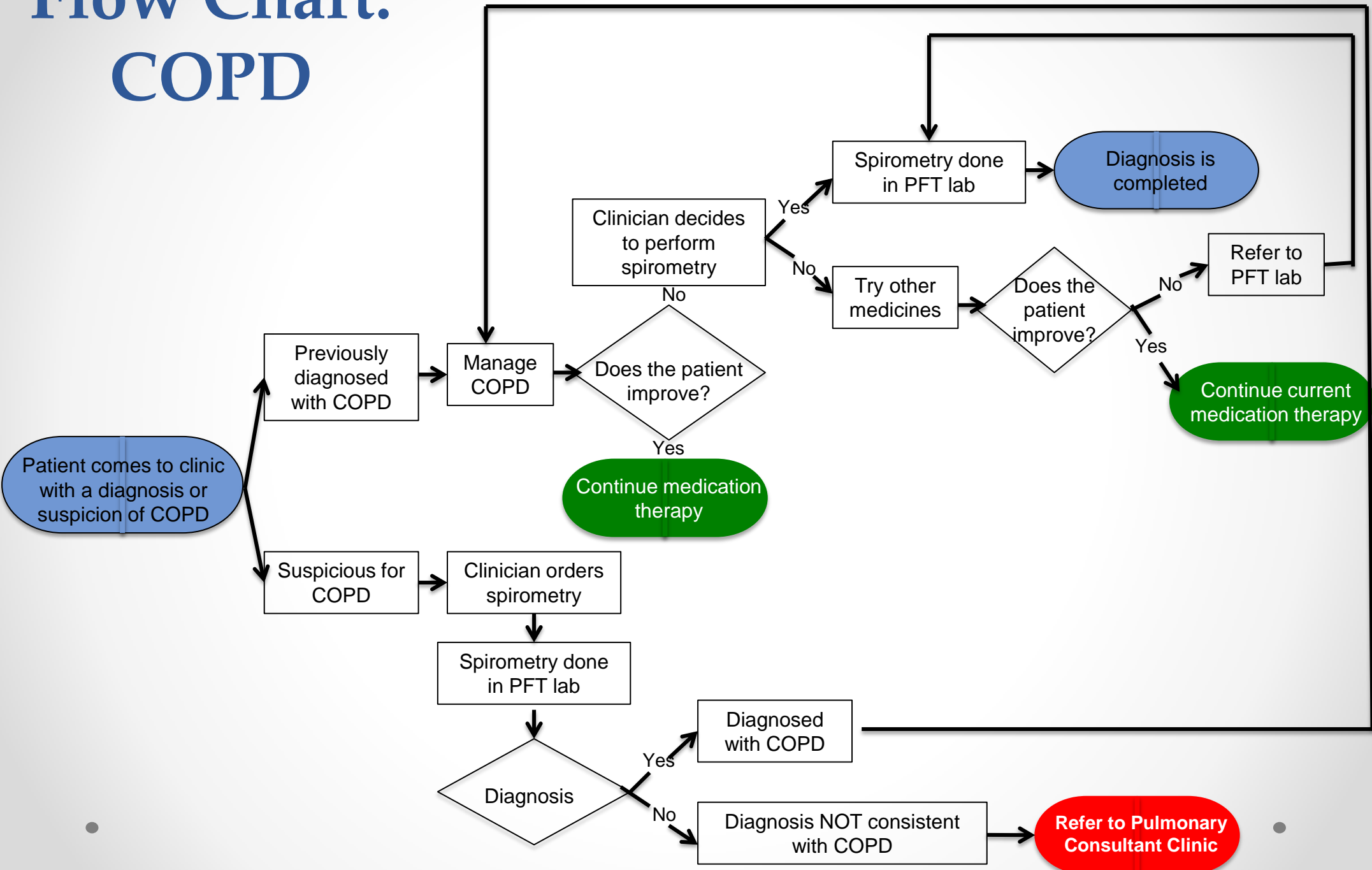
age 40-50

50-55

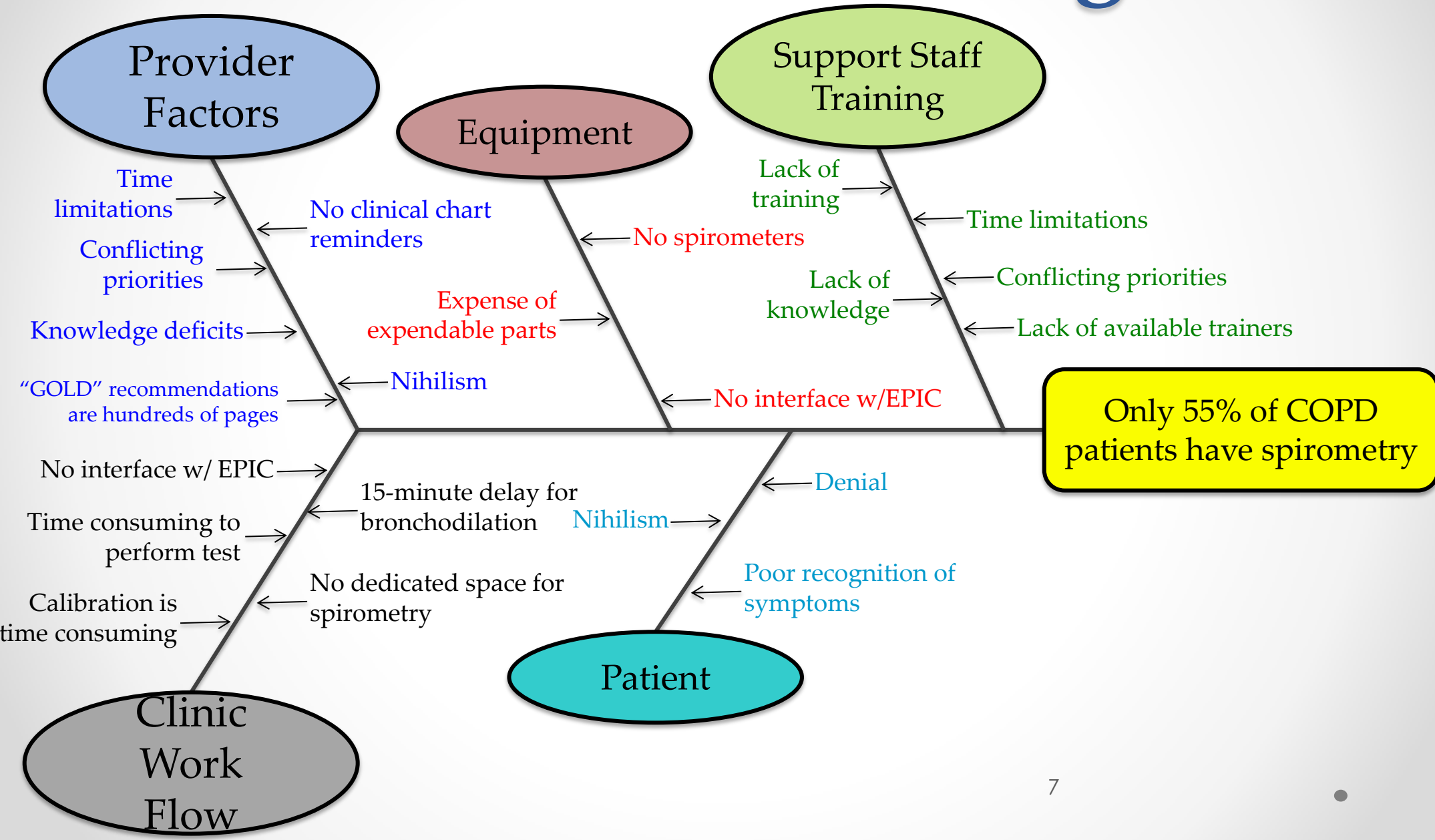
55-60

60-70

Flow Chart: COPD



Cause and Effect Diagram



Pre-intervention Baseline Data

The current baseline data criteria:

- Total number of unique patients (alive, age ≥ 40 years)
- Who have had one visit in one of the PCC clinics (MARC, Senior Health, Medical Drive and/or Westover Hills)
- Between 09/01/2013 and 08/31/14

Based on the criteria:

- 10,855 unique patients met criteria
- 493 patients had a diagnosis of COPD (by ICD-9 code)
- Prevalence = $493/10,855 = 4.5\%$
- 273/493 (55.3%) of patients had spirometry testing

Interventions

October 15, 2014

- Introductions and 1st meeting to start educating staff and clinicians
- IT changes: spirometry reminder added to all COPD patients' charts

November 4, 2014

- Provided access to the online WipeCOPD™ educational modules
- Assigned approximately one hour of education modules to provide the foundation for the “live” training sessions

November 10, 2014

- 2nd monthly meeting with MARC clinicians in order to reinforce the online education and to “live teach” topics such as recognition, diagnosis and optimal management of COPD

December 8, 2014

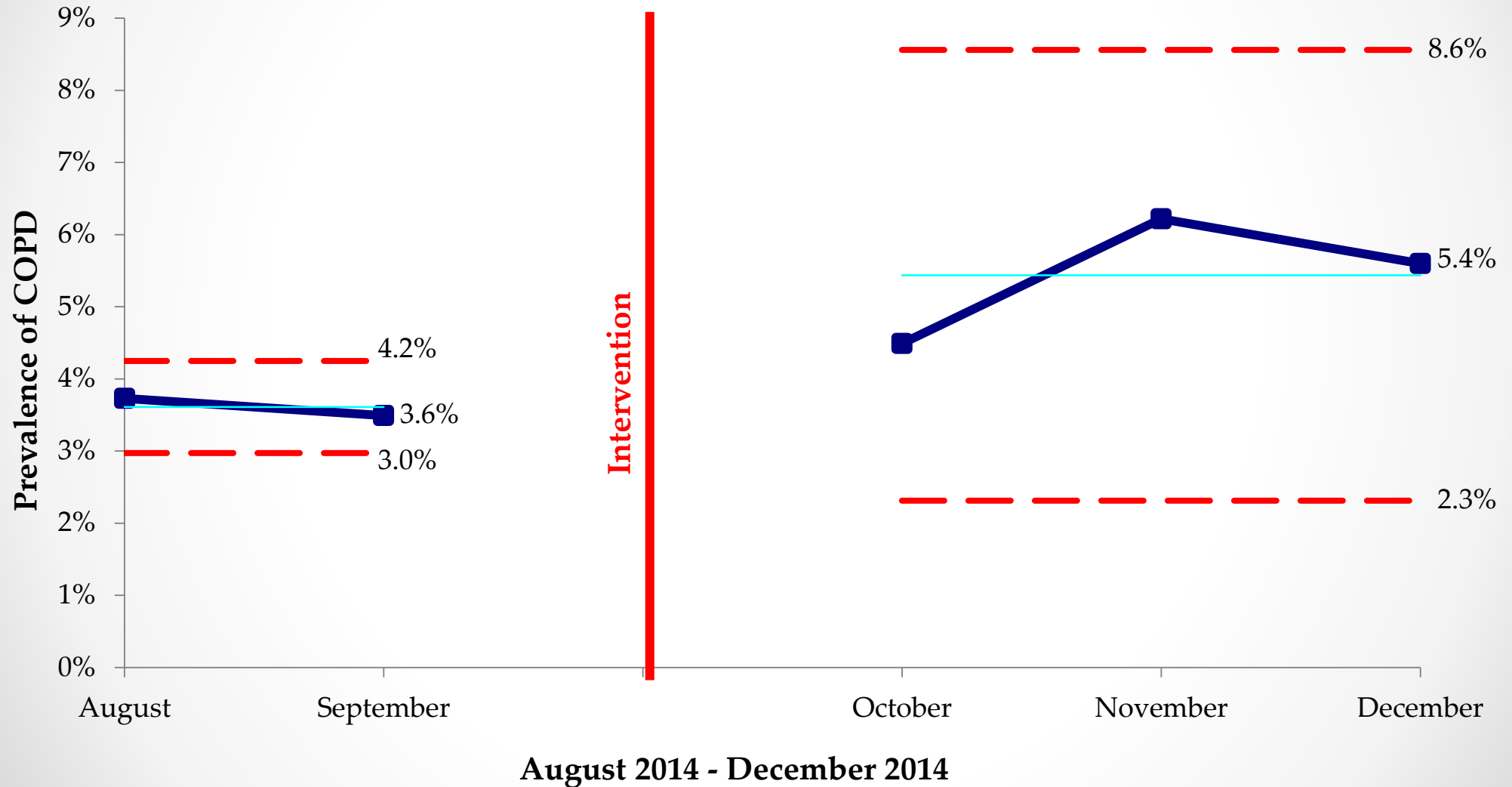
- 3rd monthly meeting with MARC clinicians in order to “live teach” topics such as spirometry interpretation, billing and comorbidities associated with COPD

Interventions - Continued

Ongoing / Future Interventions

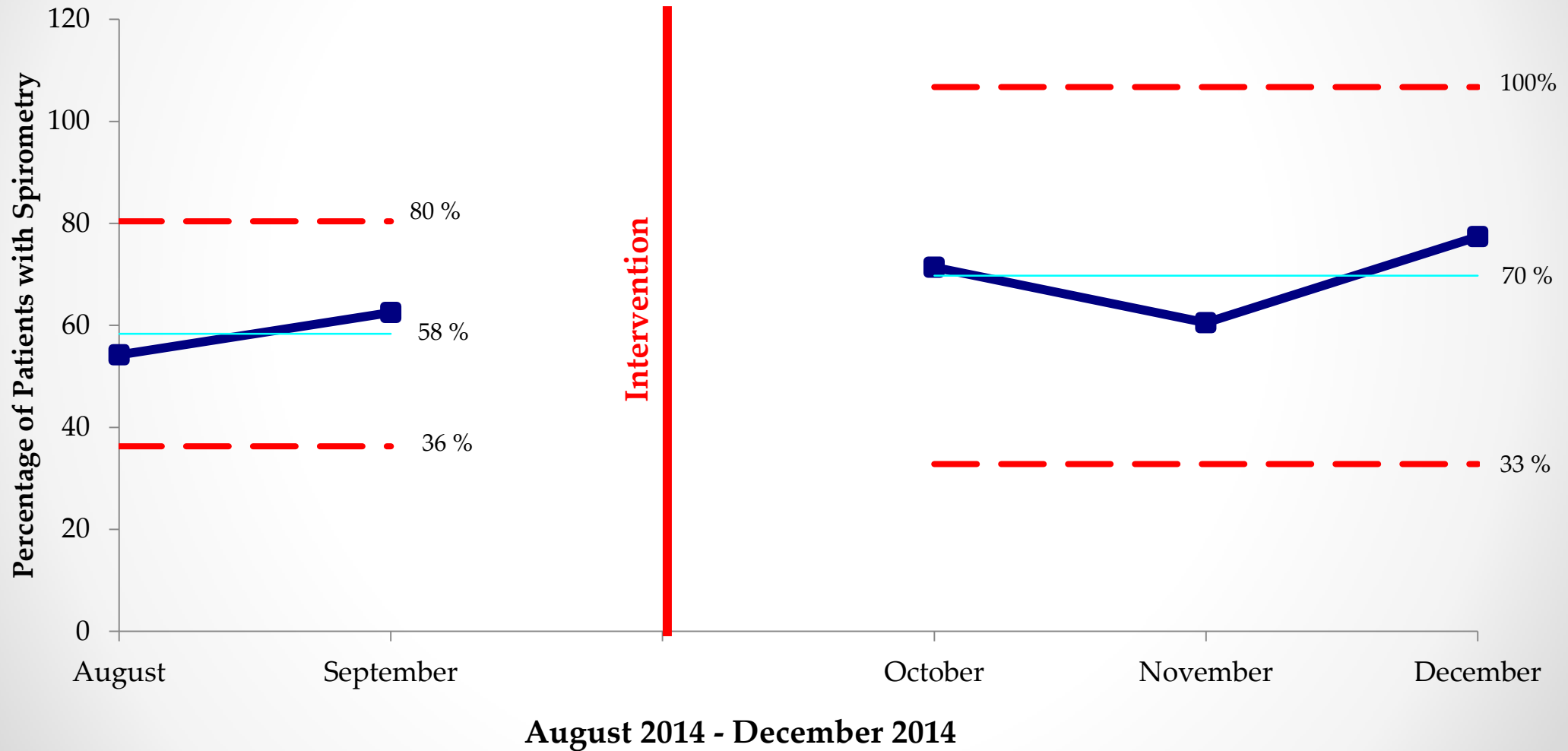
- Spirometers purchased for clinics to confirm COPD diagnosis
- Ongoing education / quality checks for spirometry interpretation
- IT interventions: COPD health maintenance plan/form
 - Place for spirometry values
 - Dyspnea score
 - Cough +/- sputum production
 - Number and severity of acute exacerbations of COPD
- Feedback to each provider

Results/Impact: Prevalence of COPD



Results/Impact:

Percentage of COPD Patients with Spirometry



ACT: Sustaining the Results

- Two-year grant to further implement improvements in the diagnosis and management of COPD in two other clinics
- The IT reminders and COPD Health Maintenance Form will be permanently in EPIC
- These “reminders” also serve to educate new providers on optimal evaluation and management of COPD patients
- The support staff are being evaluated at least annually to ensure competence in performing spirometry

Return on Investment

Reimbursement rate over the last year:

- 273 of 493 patients have had spirometry (within the last 10 years)
- $273 \times \$64.00/\text{per test} = \$17,472$

Reimbursement rate in current and future state:

- Based on the achieved aim, an additional 97 patients had spirometry in 4 months (September through December)
- $97 \times \$64 / \text{per test} = \$6,208$ (over this 4-month period)
- Approximately \$18,624 over the first year

Return on Investment

- Cost of equipment to do spirometry:
 - $\$2,148 \times 2 = \$4,296$
- Cost of spirettes and nose clips:
 - $\$1.86 \times 97 = \180
- ROI ratio = $\$6,208 / \$4,476 = 1.39$ (Cost for this particular aim over 4 months)
- Anticipated returns = $291 \times (\$64 - \$1.86) = \$18,083$
- **ROI ratio = $\$18,083 / \$4,476 = 4.04$**

Conclusion/What's Next

Final Conclusions

- CME plus IT reminders/prompts plus teamwork can improve the identification and appropriate diagnosis of patients with COPD

Future Goals

- Primary care clinics (MARC, Medical Drive and Westover Hills) will adopt/implement a Health Maintenance Plan specific to COPD
- More patients will be diagnosed: $493/10,085 = 4.5\%$ (prevalence), Texas prevalence is 5.5%, MARC prevalence is between 5.6%-6.2% (over the last 2 months)
- Better care / optimal care (currently 23% on long-acting bronchodilator therapy) → reducing hospitalizations for exacerbations



Thank you!



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