Comparison between Clinic attendance and unattended treatment in patients with COPD and Asthma

Soidao Hospital, 2015

November 19, 2015

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COPD

Chronic Obstructive Pulmonary Disease

World Health Organization

What is COPD?

- persistent airflow limitation that usually progressive and associated with an enhanced chronic inflammatory response to noxious particles or gases.
- Symptoms of COPD are breathlessness, or a 'need for air', excessive sputum production, and a chronic cough

- It is an under-diagnosed, life threatening lung disease that may progressively lead to death.
- The more familiar terms of chronic bronchitis and emphysema are no longer used

Causes of COPD

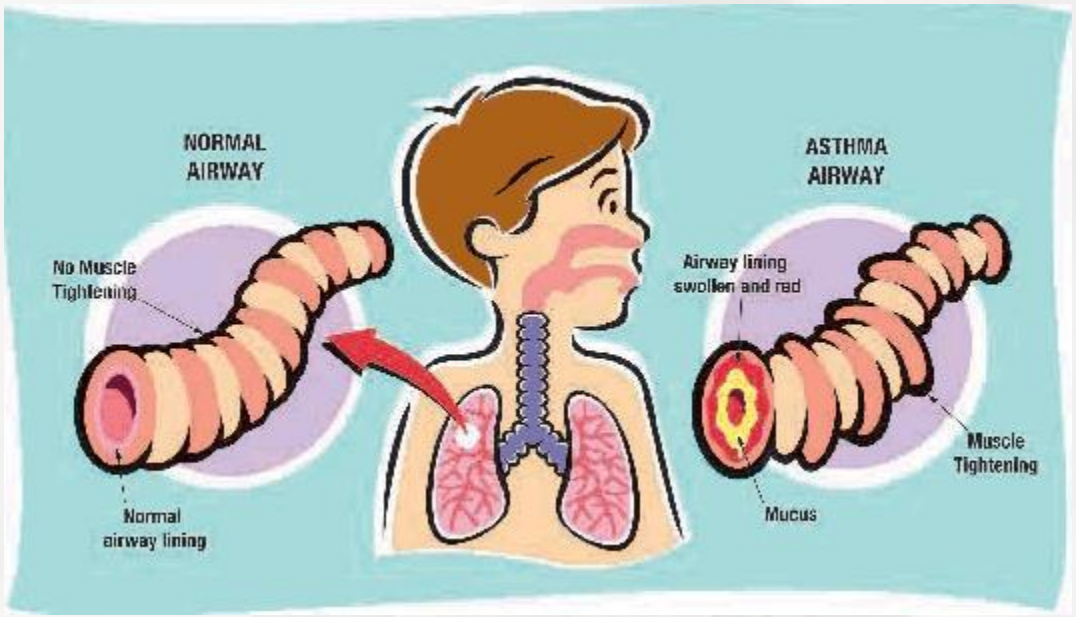
- **Smoking**
- Indoor air pollution
- Outdoor air pollution
- Occupational dusts and chemicals (vapours, irritants, and fumes)
- Frequent lower respiratory infections during childhood.

Burden of COPD

- The fourth leading cause of death in the world
- More than 3 million people died of COPD in 2012 (6% of all deaths globally that year)
- WHO predicts that COPD will become the third leading cause of death worldwide by 2030.
- More than 90% of COPD deaths occur in low- and middle-income countries.

- COPD is not curable, but treatment can slow the progress of the disease.
- Treatment of COPD is now aimed at immediately relieving and reducing impacts of symptoms, as well as reducing the risk of future exacerbations.
- Appropriate pharmacologic therapy can reduced COPD symptoms, exacerbation, and improve health status

Asthma



World Health Organization

What is asthma?

- A chronic disease characterized by recurrent attacks of breathlessness and wheezing, vary in severity and frequency from person to person.
- During an asthma attack, the lining of the bronchial tubes swell, causing the airways to narrow and reducing the flow of air into and out of the lungs.

- It is a common disease among children.
- Medication can control asthma. Avoiding asthma triggers can also reduce the severity of asthma.
- Appropriate management of asthma can enable people to enjoy a good quality of life.

Causes of asthma

- The fundamental causes of asthma are not completely understood.
- The strongest risk factors for developing asthma are a combination of genetic predisposition with environmental exposure to inhaled substances and particles

such as:

- Indoor allergens (for example, house dust mites in bedding, carpets and stuffed furniture, pollution and pet dander)
- Outdoor allergens (such as pollens and moulds)
- Tobacco smoke
- Chemical irritants in the workplace
- Air pollution.

Burden of Asthma

- Some 235 million people currently suffer from asthma.(November 2013)
- Most asthma-related deaths occur in low- and lower-middle income countries.
- Asthma has a relatively low fatality rate compared to other chronic diseases, but failure to use appropriate medications or to adhere to treatment can lead to death.

Twenty leading causes of DALY (thousands), 2004

Rank	Male				Female	
	Disease	DALY ('000)	%	%	DALY ('000)	Disease
1	HIV/AIDS	652	11.5	7.7	316	Stroke
2	Traffic accidents	592	10.5	7.2	295	HIV/AIDS
3	Stroke	336	6.0	7.1	293	Diabetes
4	Alcohol dependence/harmful use	333	5.9	4.6	191	Depression
5	Liver cancer	281	5.0	3.4	141	Ischaemic heart disease
6	Ischaemic heart disease	184	3.3	3.2	131	Osteoarthritis
7	COPD	183	3.2	3.1	126	Traffic accidents
8	Diabetes	181	3.2	3.1	126	Liver cancer
9	Cirrhosis	145	2.6	2.7	111	Deafness
10	Depression	137	2.4	2.6	109	COPD
11	Bronchus & Lung cancer	111	2.0	2.5	105	Anxiety disorders
12	Homicide and violence	108	1.9	2.3	94	Asthma
13	Deafness	108	1.9	2.3	94	Lower respiratory tract infections
14	Suicides	107	1.9	2.0	83	Dementia
15	Lower respiratory tract infections	105	1.9	2.0	82	Cataracts
16	Tuberculosis	88	1.5	1.8	76	Cervix uteri cancer
17	Asthma	87	1.5	1.8	75	Nephritis & nephrosis
18	Osteoarthritis	86	1.5	1.5	62	Breast cancer
19	Drownings	79	1.4	1.4	56	Cirrhosis
20	Drug dependence/harmful use	75	1.3	1.4	56	Low birth weight
	All causes	**5649**	**100**	**100**	**4121**	**All causes**

Note * DALY rate per 1,000 population

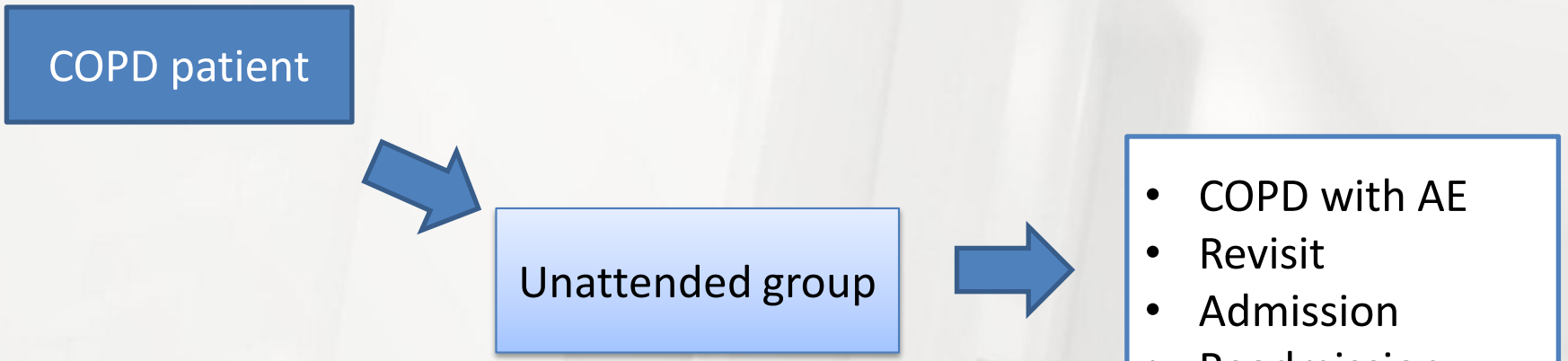
Burden of disease in Thailand: changes in health gap between 1999 and 2004 (http://www.biomedcentral.com/1471-2458/11/53)

Objectives

- To compare Exacerbation, Re-visit and Re-admission between Clinic attendance and unattended treatment in patients with COPD and Asthma

Study design

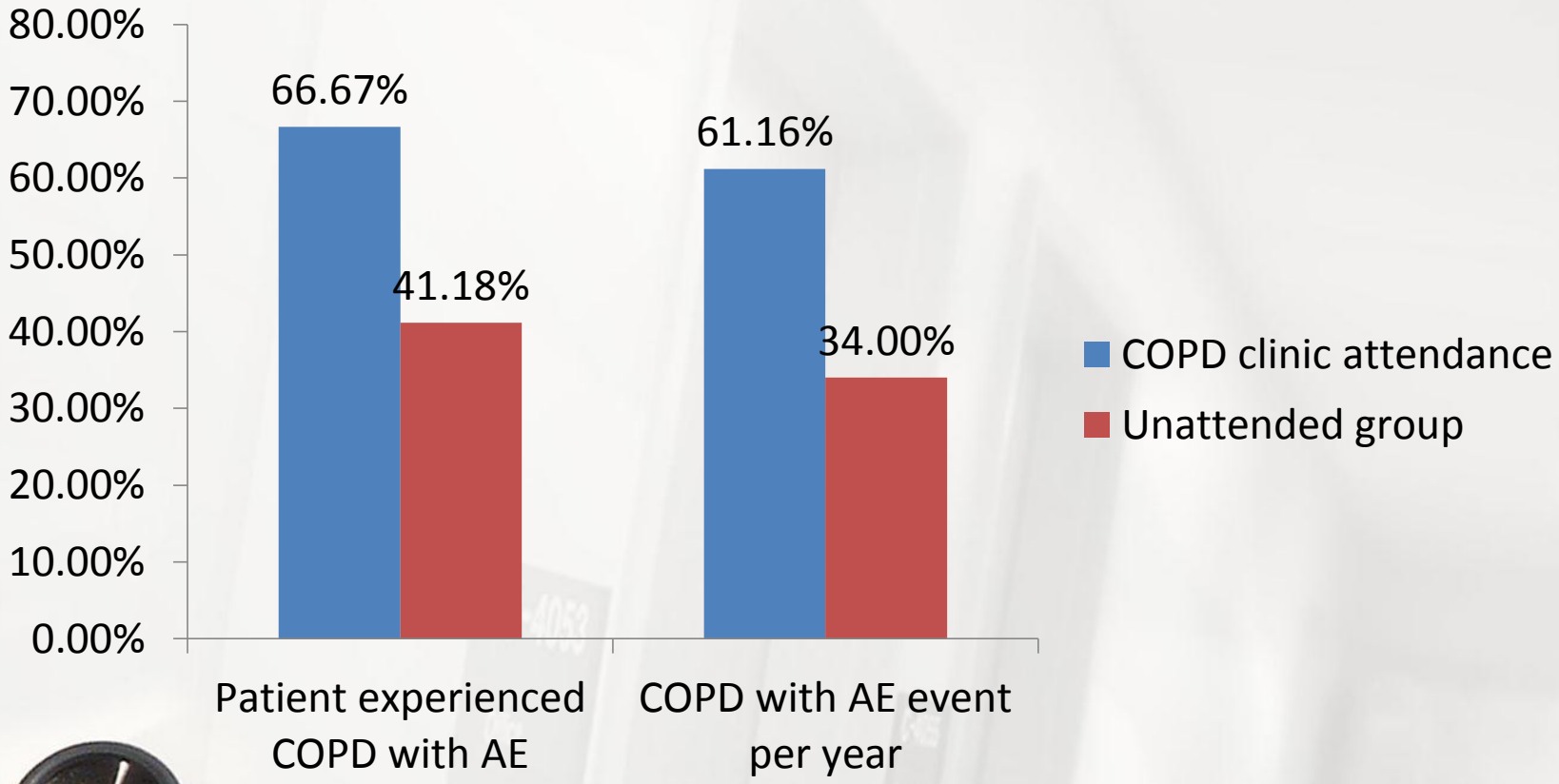
- Analytic study: Case-control study
- Duration: October 1,2014 – September 30,2015


COPD patient
COPD clinic attendance
Unattended group
COPD with AE
Revisit
Admission
Readmission
COPD with AE
Revisit
Admission
Readmission

COPD 180/593		
	COPD clinic attendance 129/502	Unattended group 51/91
COPD with AE	86/307	21/31
Revisit	16/46	2/2
Admission	80/141	30/41
Readmission	7/10	0/0

Number of patient/ Event per year

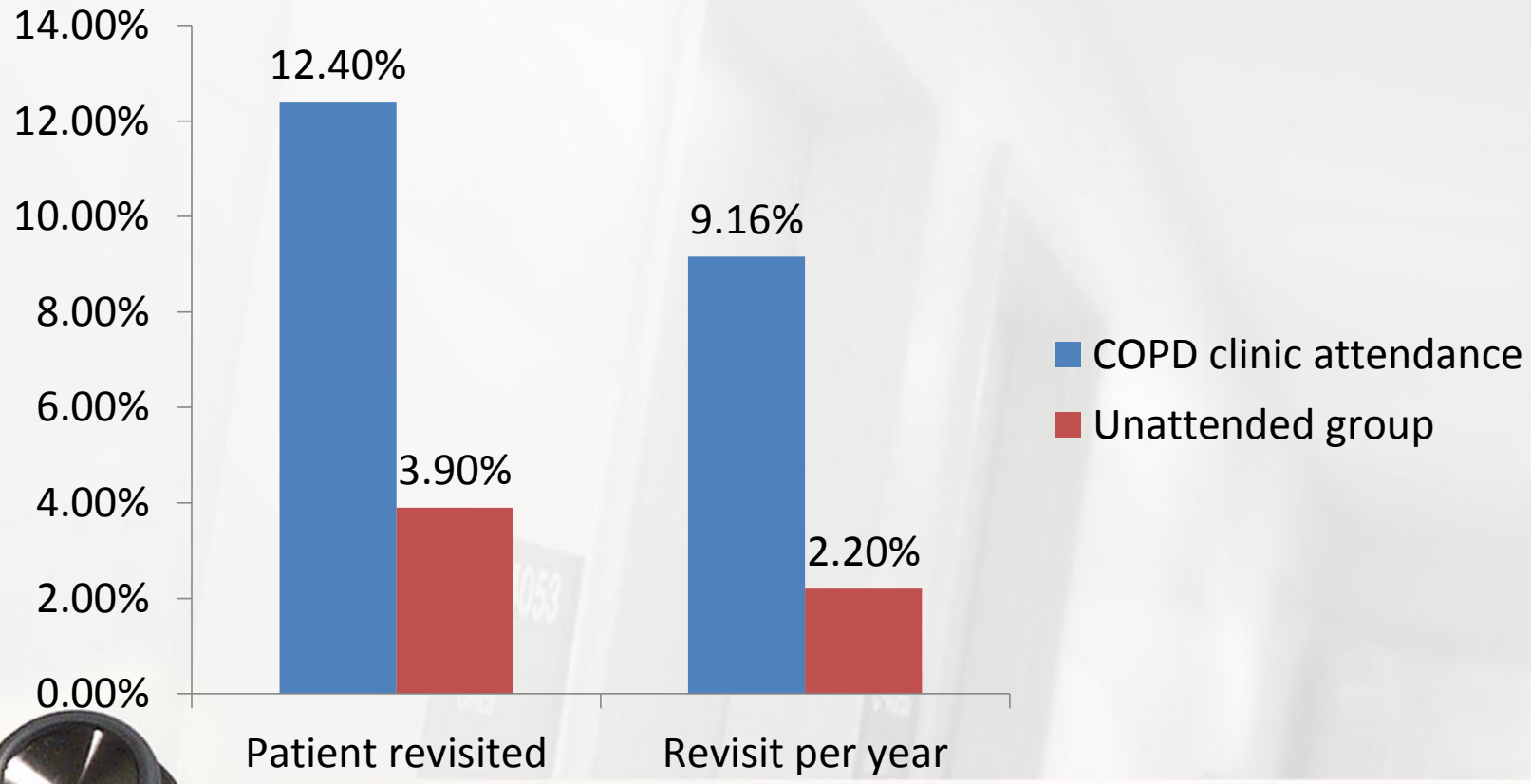
Bar graph show the comparison of COPD AE between COPD clinic attendance and unattended group



- Odd ratio = 2.86
- 95% CI = 1.47-5.57
- P value = 0.002

- Odd ratio = 3.05
- 95% CI = 1.9-4.87
- P value = <0.0001

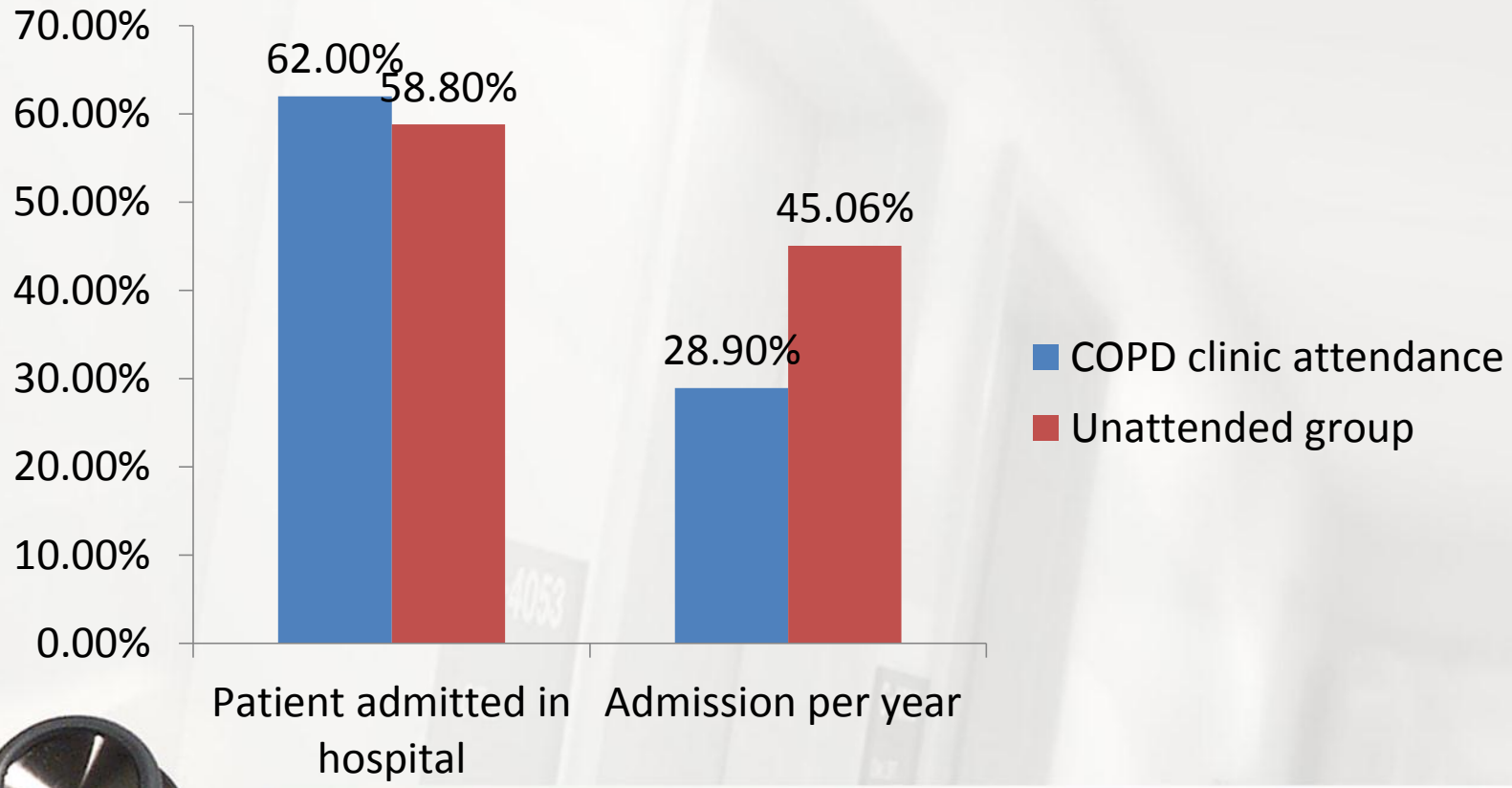
Bar graph show the comparison of the Re-visit between COPD clinic attendance and unattended group



- Odd ratio = 3.47
- 95% CI = 0.77-15.67
- P value = 0.11

- Odd ratio = 4.49
- 95% CI = 1.07-18.8
- P value = 0.04

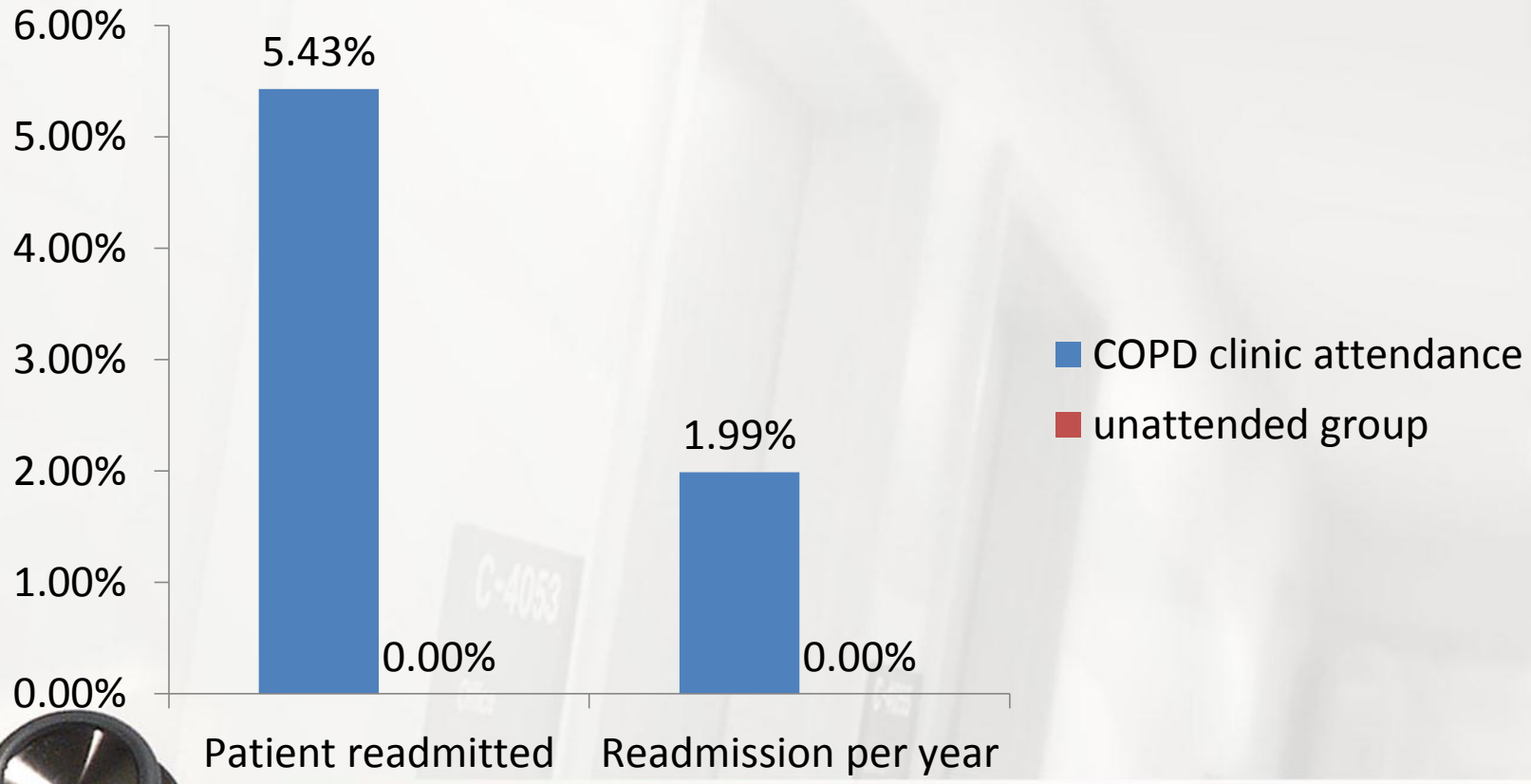
Bar graph show the comparison of the admission between COPD clinic attendance and unattended group



- Odd ratio = 1.14
- 95% CI = 0.59-2.21
- P value = 0.69

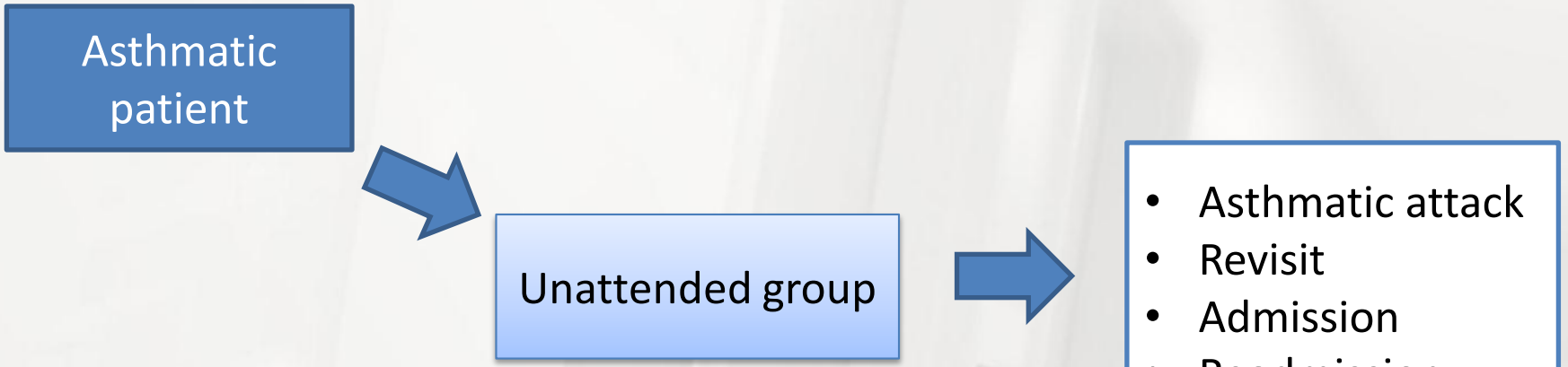
- Odd ratio = 0.48
- 95% CI = 0.30-0.75
- P value = 0.0015

Bar graph show the comparison of re-admission between COPD clinic attendance and unattended group



- Odd ratio = 6.3
- 95% CI = 0.35-112.5
- P value = 0.21

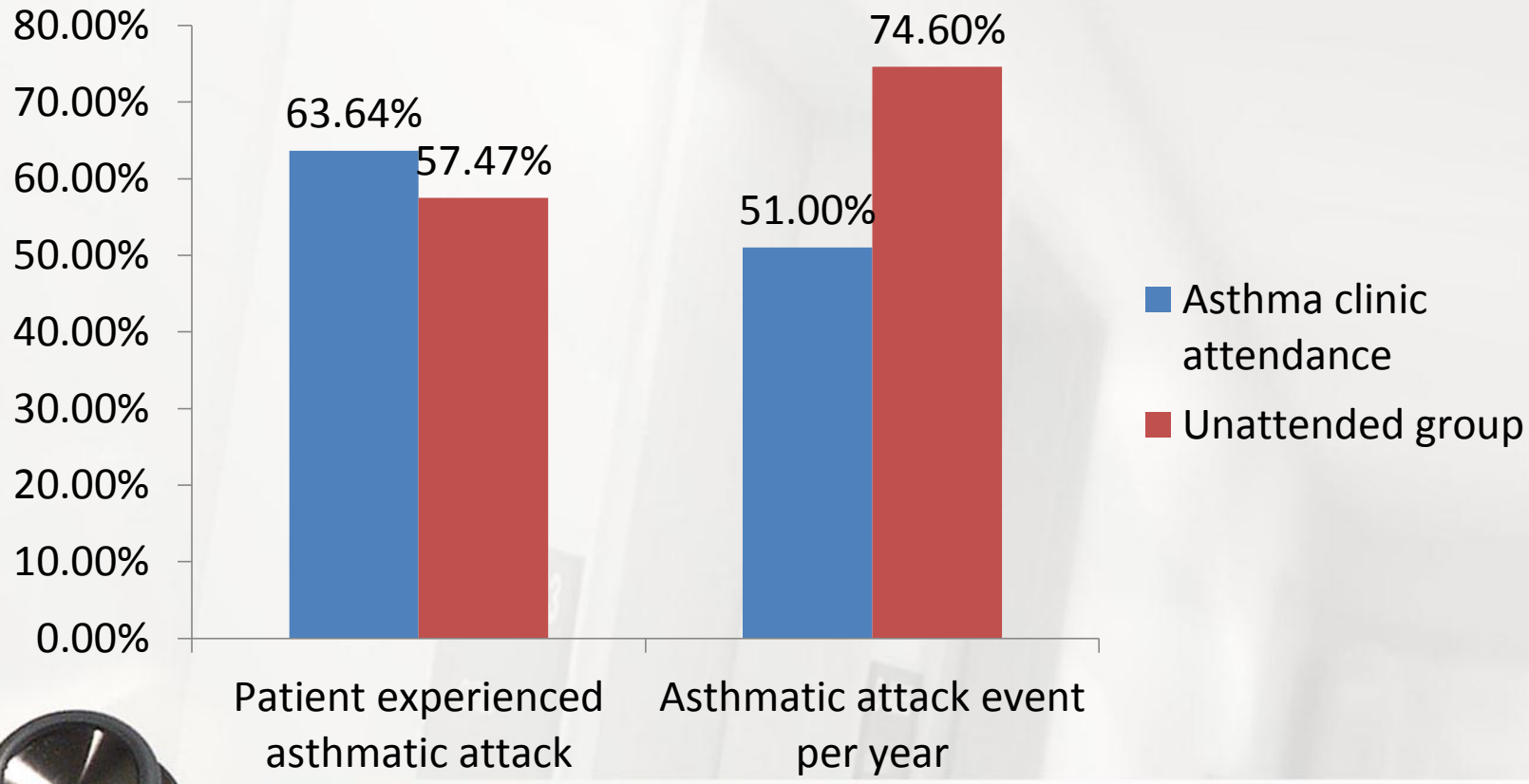
- Odd ratio = 3.9
- 95% CI = 0.23-67.2
- P value = 0.35


Asthmatic patient
Asthma clinic attendance
Unattended group
Asthmatic attack
Revisit
Admission
Readmission
Asthmatic attack
Revisit
Admission
Readmission

ASTHMA 208/477		
	Asthma clinic attendance 121/351	Unattended group 87/126
Asthmatic attack	77/179	50/94
Revisit	17/23	4/14
Admission	38/54	18/20
Readmission	0/0	3/5

Number of patient/ event per year

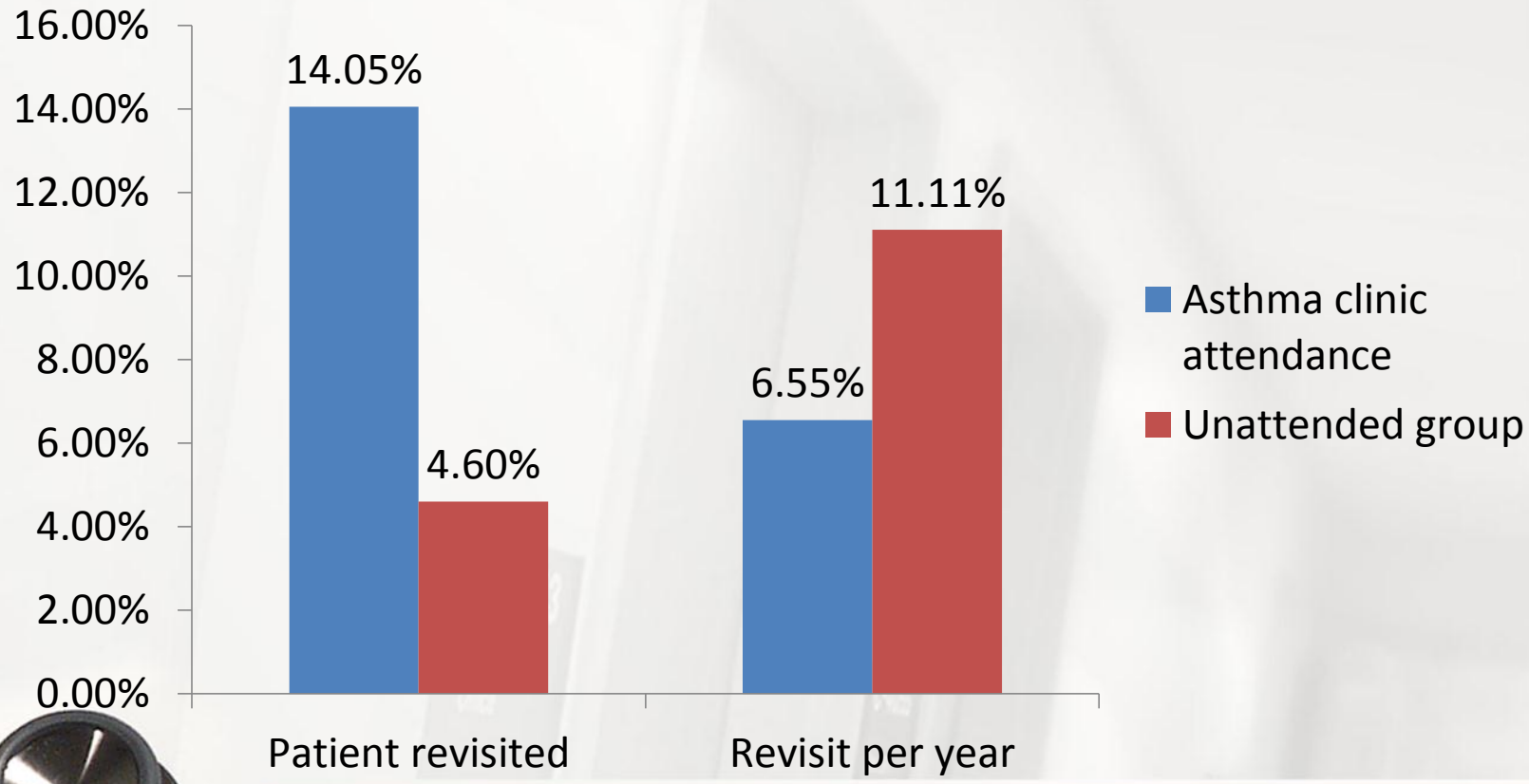
Bar graph show the comparison of asthmatic attack between asthma clinic attendance and unattended group



- Odd ratio = 1.3
- 95% CI = 0.74-2.27
- P value = 0.37

- Odd ratio = 0.35
- 95% CI = 0.26-0.56
- P value = <0.001

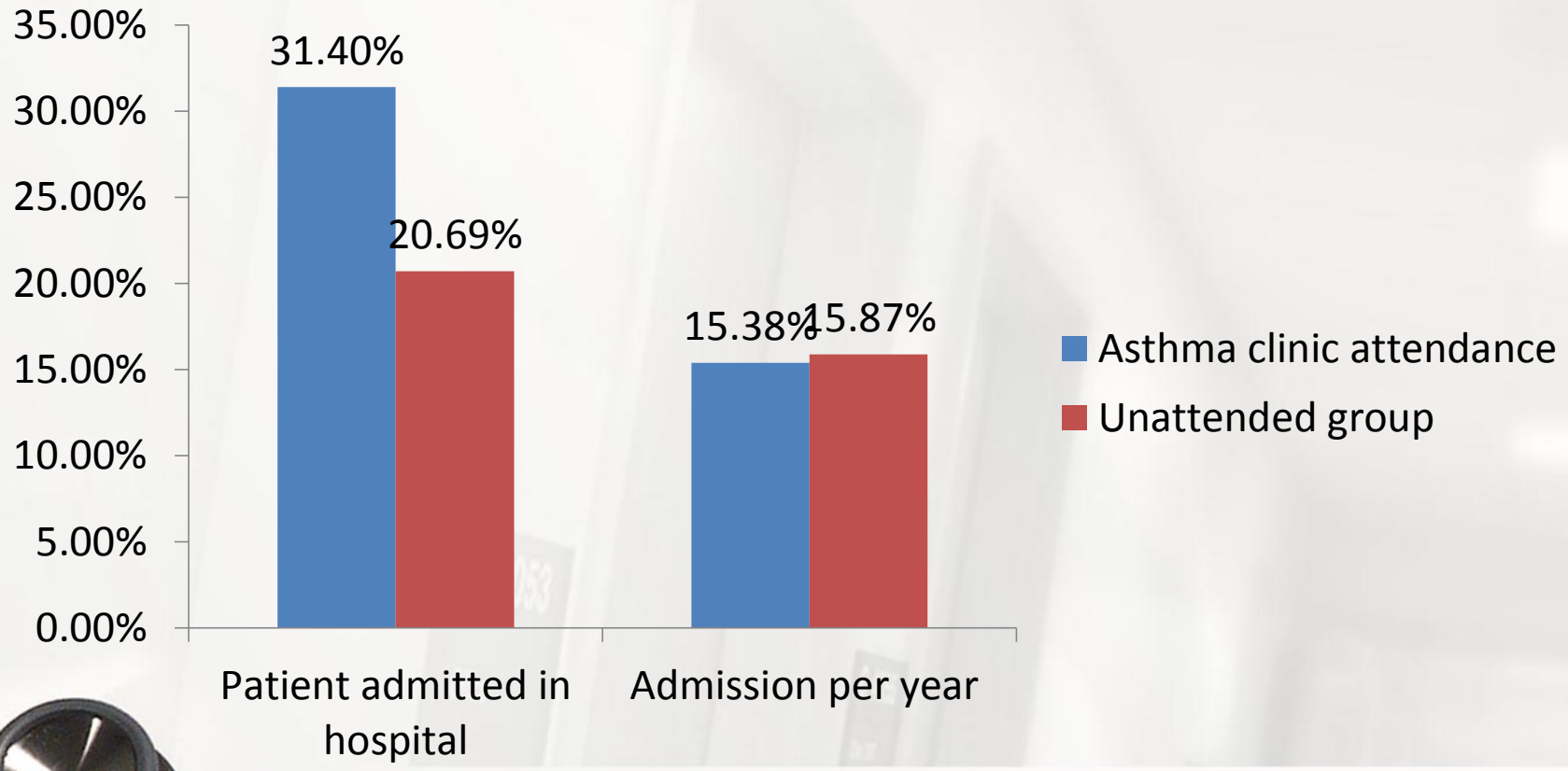
Bar graph show the comparison of the revisit between asthma clinic attendance and unattended group



- Odd ratio = 3.39
- 95% CI = 1.1-10.47
- P value = 0.03

- Odd ratio = 0.56
- 95% CI = 0.28-1.13
- P value = 0.1

Bar graph show the comparison of the admission between asthma clinic attendance and unattended group



- Odd ratio = 1.76
- 95% CI = 0.92-3.35
- P value = 0.09

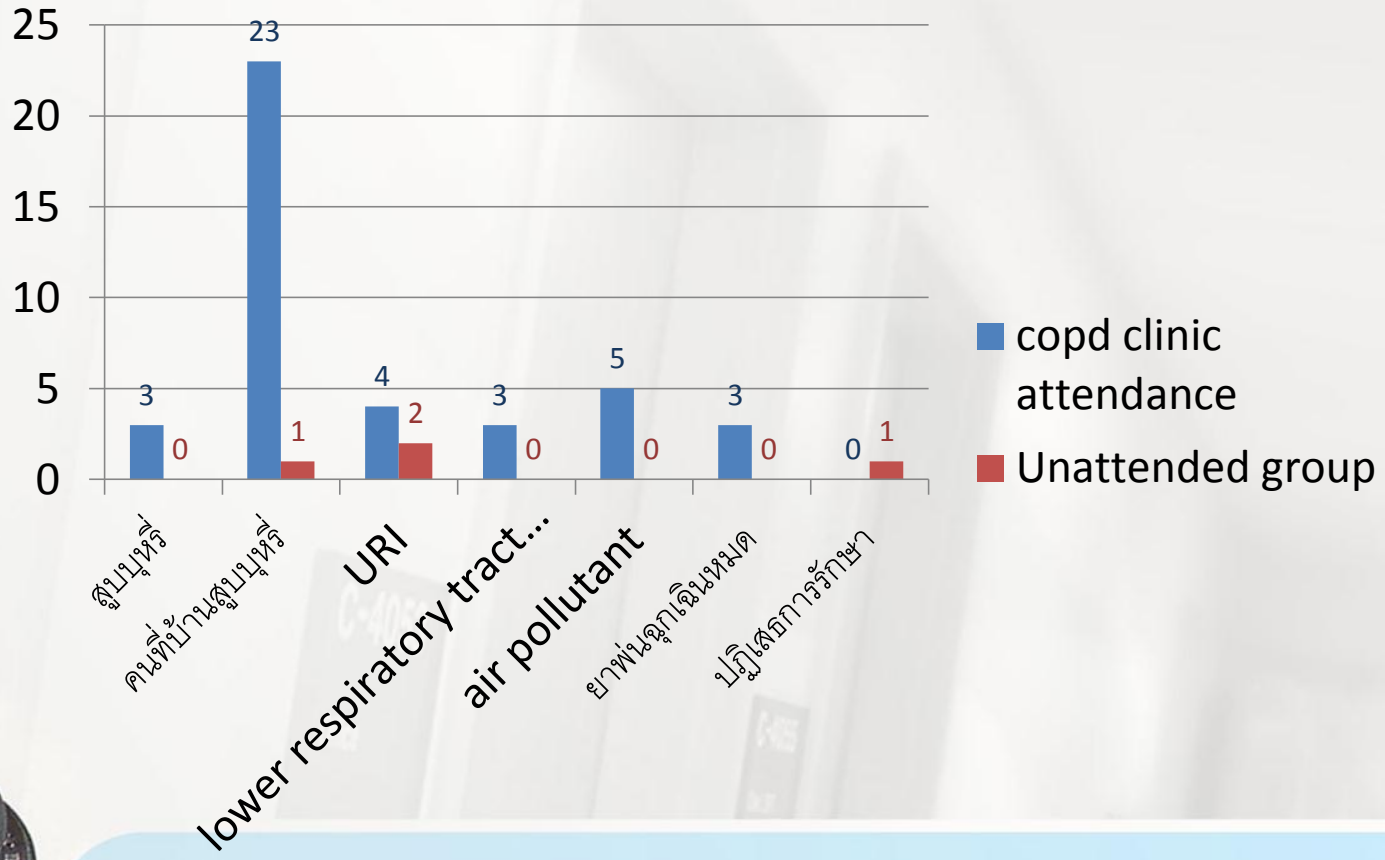
- Odd ratio = 0.96
- 95% CI = 0.55-1.69
- P value = 0.9

Bar graph show the comparison of readmission between asthma clinic attendance and unattended group

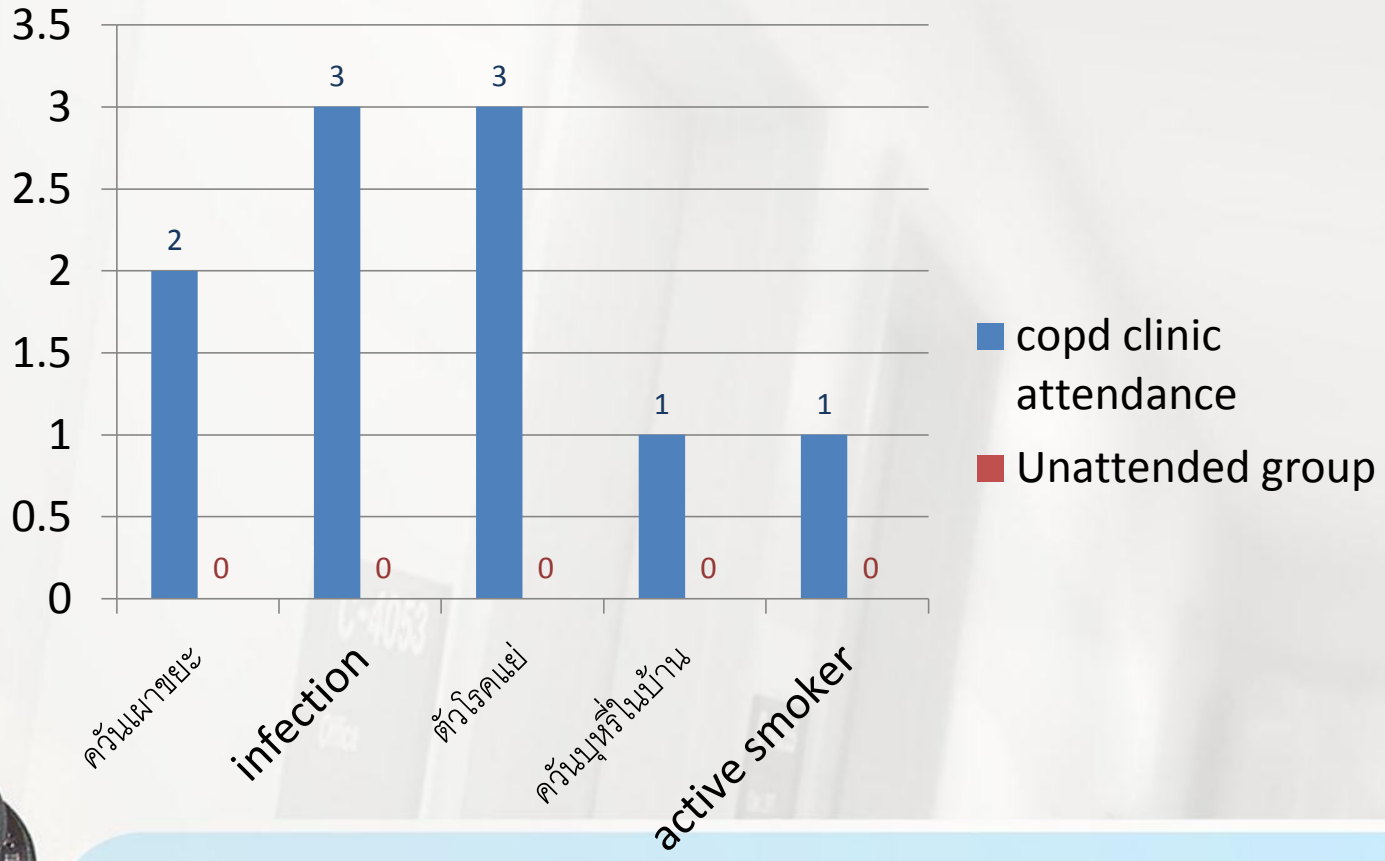
- Odd ratio = 0.1
- 95% CI = 0.05-1.95
- P value = 0.13

- Odd ratio = 0.03
- 95% CI = 0.002-0.57
- P value = 0.02

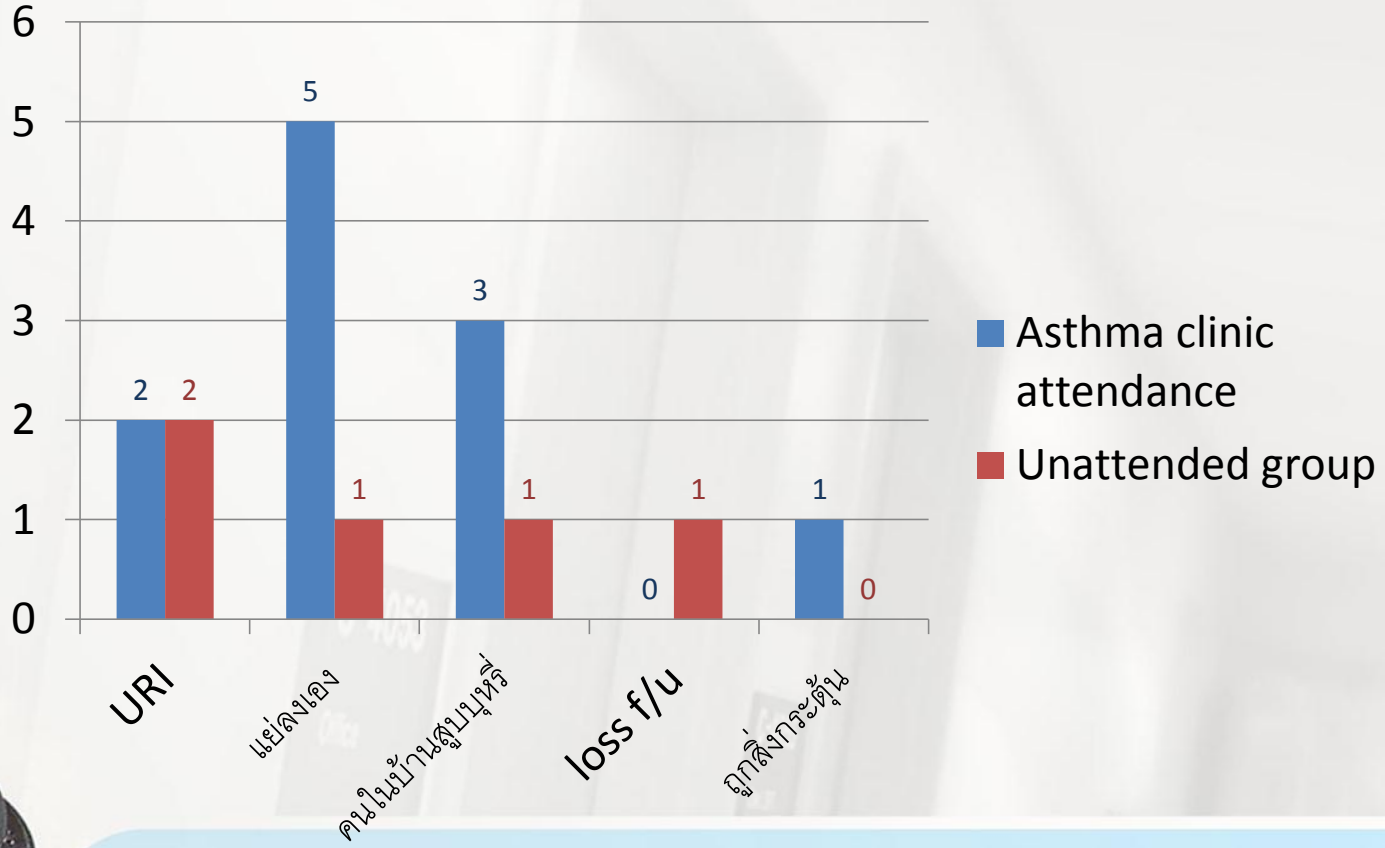
revisit ของผู้ป่วย COPD ในกลุ่ม clinic และ non-clinic



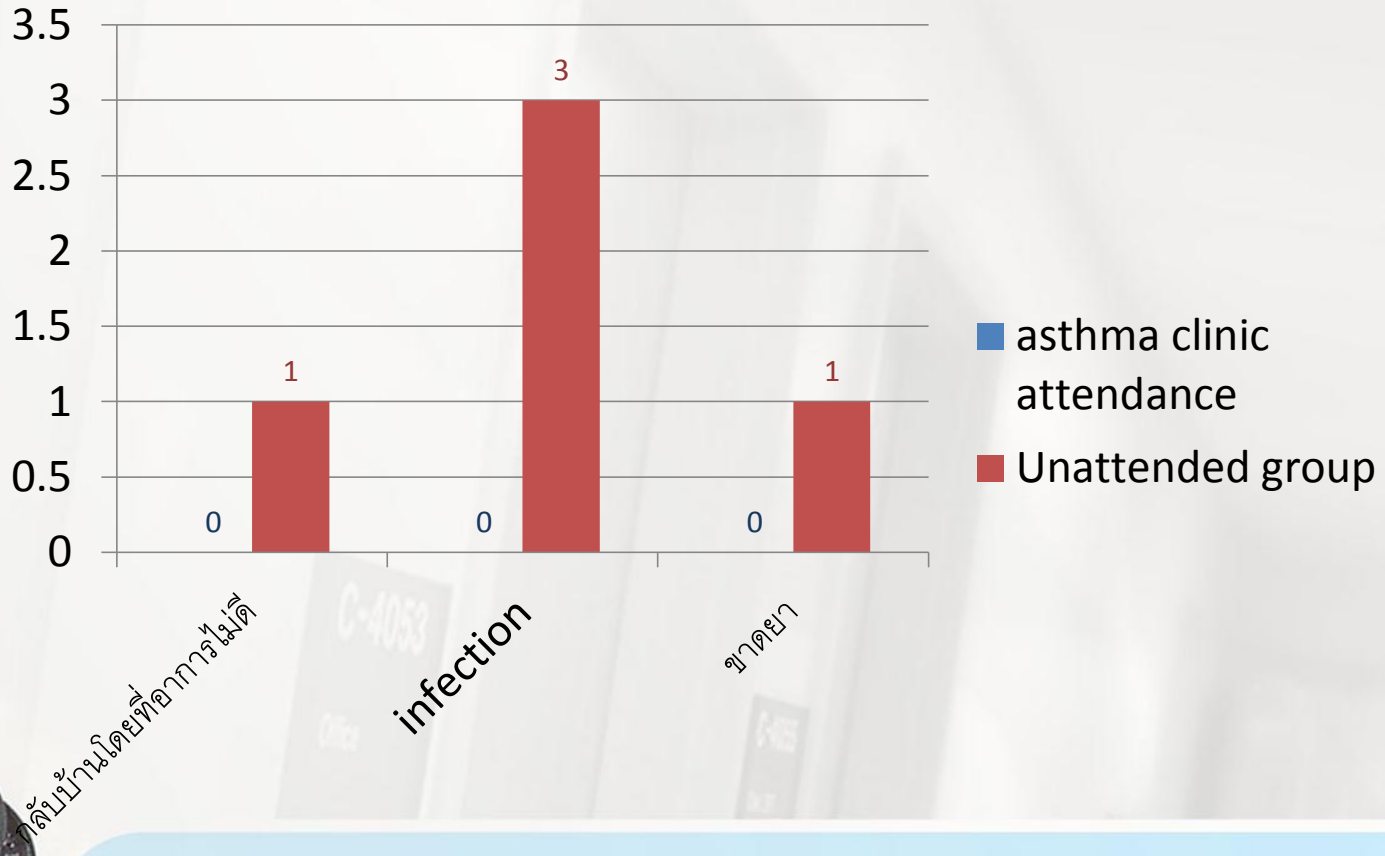
readmission ของผู้ป่วย COPD ในกลุ่ม clinic และ non-clinic



revisit ของผู้ป่วย asthma ในกลุ่ม clinic และ non-clinic



readmission ของผู้ป่วย asthma ในกลุ่ม clinic และ non-clinic



DISCUSSION

Discussion: COPD

	OR (clinic/non-clinic)	95%CI	P value
COPD c AE event	3.05	1.9-4.87	<0.0001
COPD c AE patient	2.86	1.47-5.57	0.002
COPD revisit event	4.49	1.07-18.8	0.04
COPD admission	0.48	0.30-0.75	0.0015

- better-controlled COPD in non-clinic group.

Discussion: Asthma

	OR (clinic/non-clinic)	95%CI	P value
asthmatic attack event	0.35	0.26-0.56	<0.001
Asthma revisit patient	3.39	1.1-10.47	0.03
Asthma readmit event	0.03	0.002-0.57	0.02

- better-controlled asthma in clinic group.

Discussion: COPD revisit

clinic	Non-clinic
คนที่บ้านสูบบุหรี่	Upper respiratory tract infection
air pollutant	คนที่บ้านสูบบุหรี่, ปฏิเสธการรักษา
Upper respiratory tract infection	

Discussion: COPD readmission

clinic	Non-clinic
Infection, ตัวโรคแย่	
ควันเผาขยะ	
ควันบุหรี่ในบ้าน, active smoker	

Discussion: Asthma revisit

clinic	Non-clinic
แย่ลงเอง	Upper respiratory tract infection
คนที่บ้านสูบบุหรี่	แย่ลงเอง, คนที่บ้านสูบบุหรี่, loss f/u
Upper respiratory tract infection	

Discussion: Asthma readmission

clinic	Non-clinic
	infection
	กลับบ้านโดยที่อาการไม่ดี, ขาดยา

Limitation

- Hos.xp >> not known the true cause of readmission/ revisit/ acute exacerbation
- Unknown %peak flow (asthma patient)
- Revisit for other causes
- Confounder
  - Poor-controlled COPD patient >> assigned to COPD clinic
  - Unknown compliance

Question ?