

# **The Burden of Heart Failure in the Asia Pacific**

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**Q1. The most prevalent risk factor for heart failure in the asia pacific region is:**

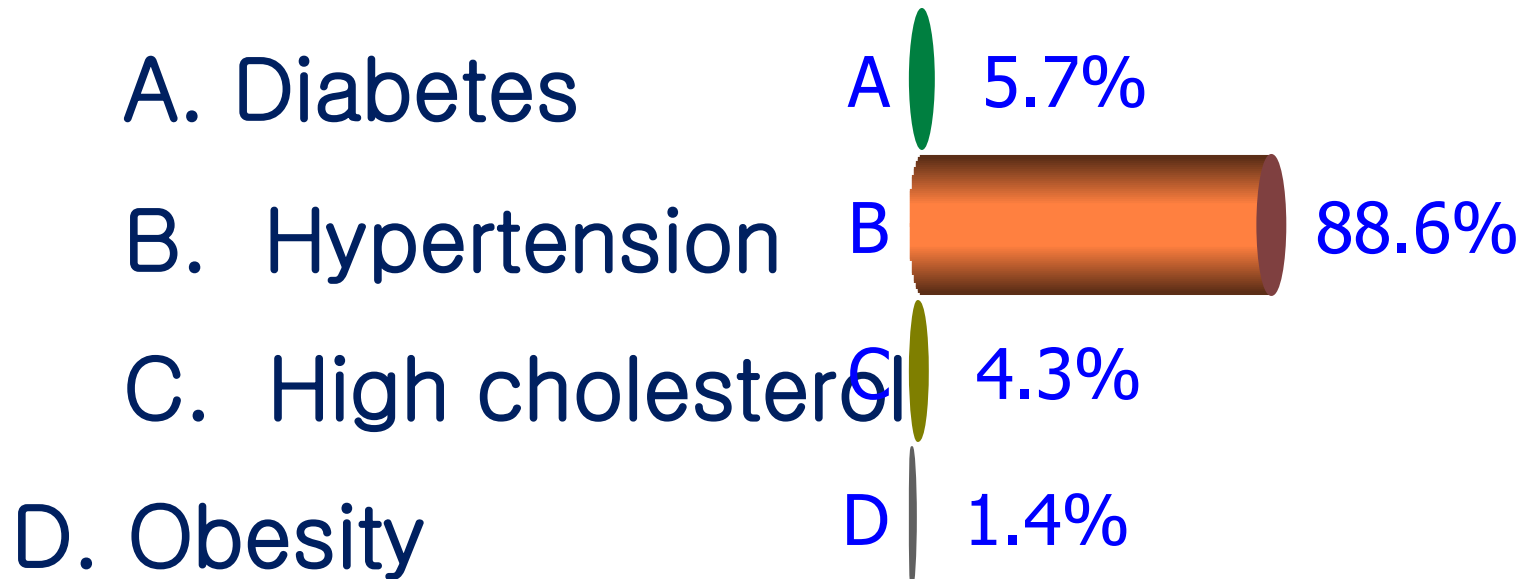
**A. Diabetes**

**B. Hypertension**

**C. High cholesterol**

**D. Obesity**

Q1. The most prevalent risk factor for heart failure in the asia pacific region is:



**Q2. The most common etiology of heart failure in the asia-pacific region is:**

**A. Rheumatic Heart Disease**

**B. Viral myocarditis**

**C. Ischemic Heart Disease**

**D. Hypertensive Heart Disease**

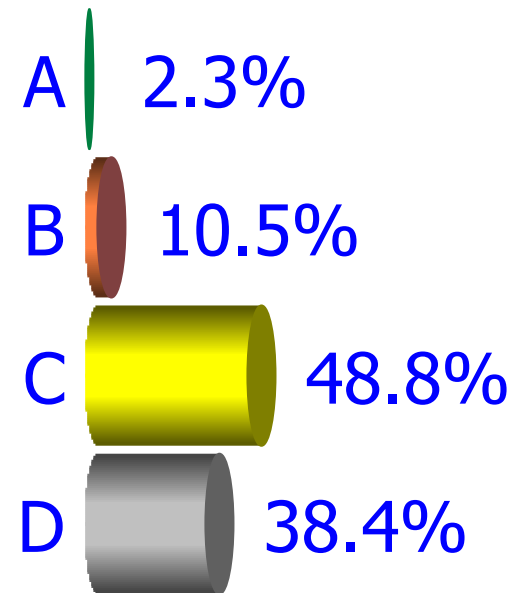
Q2. The most common etiology of heart failure in the asia-pacific region is:

A. Rheumatic Heart Disease

B. Viral myocarditis

C. Ischemic Heart Disease

D. Hypertensive Heart Disease



**Q3. The drug for heart failure with the lowest utilization rate in the asia pacific region is**

**A. ACE inhibitors**

**B. Beta blockers**

**C. Angiotensin receptor blockers**

**D. Digitalis**

Q3. The drug for heart failure with the lowest utilization rate in the asia pacific region is

A. ACE inhibitors

A | 2.9%

B. Beta blockers

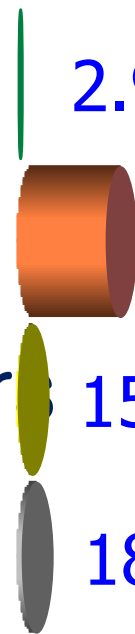
B | 62.9%

C. Angiotensin receptor blocker

C | 15.7%

D. Digitalis

D | 18.6%



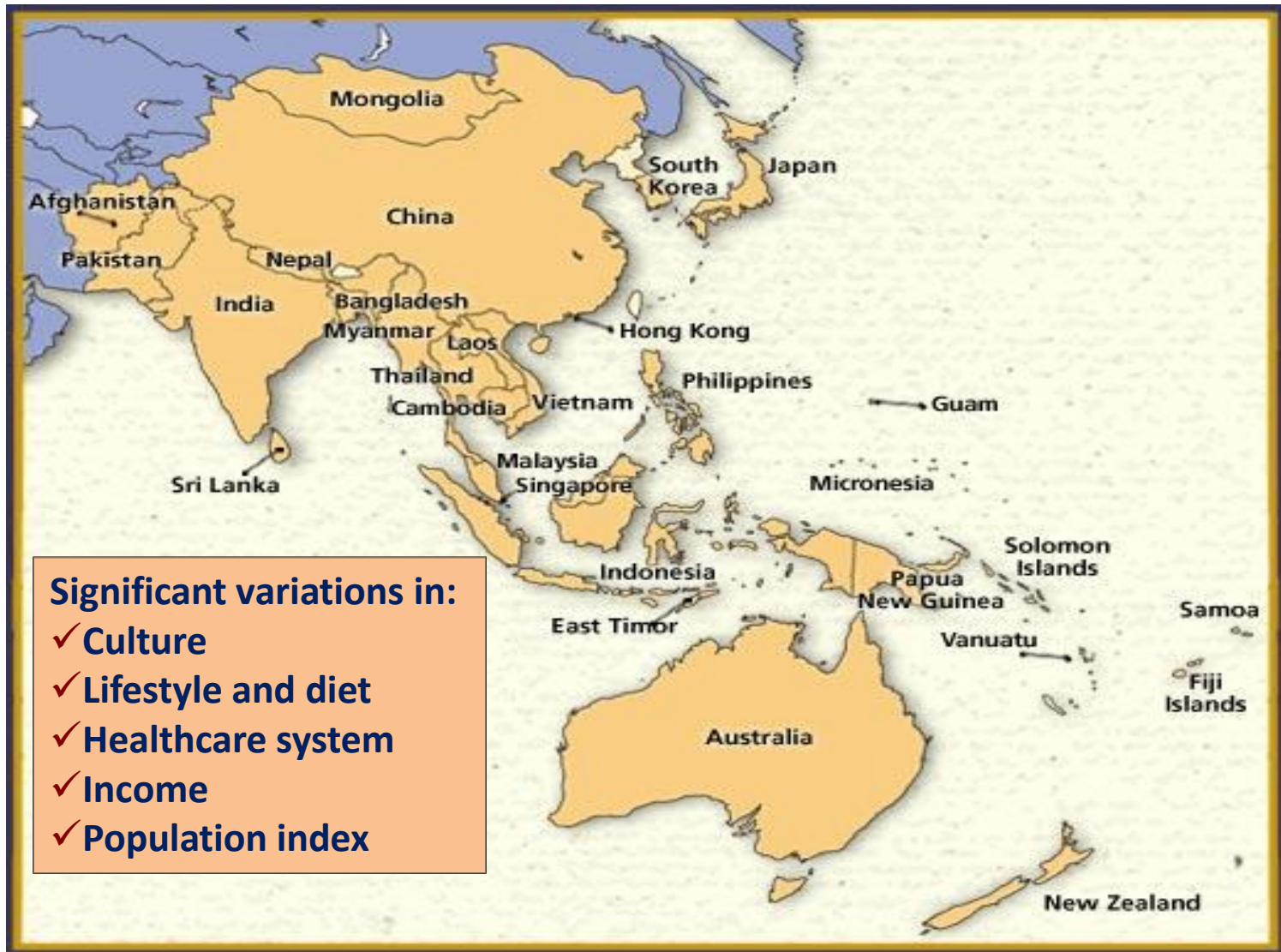
# Objectives

- 1. Enumerate and define the measures of disease burden**
- 2. Present and discuss the available measures of disease burden for Heart Failure in the Asia Pacific region**

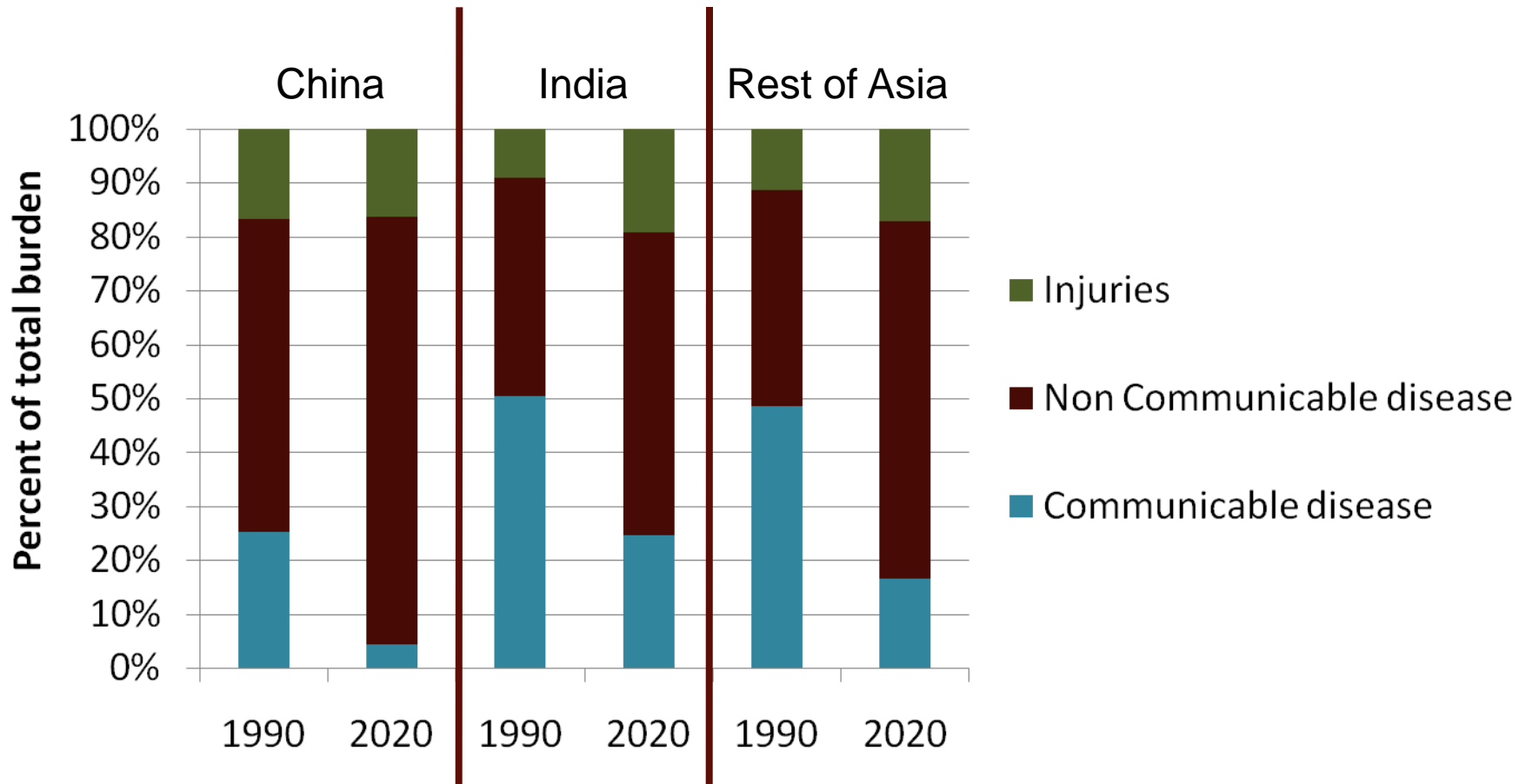
# Methods

- **Medline search**
  - Heart failure cohorts
  - Heart failure registries
    - multiple hospitals, single region, single center
  - National statistics
  - APAC countries
- **Review of publications**
- **Data Extractions**
- **Extrapolations were avoided**

# APAC- East Asia, Southeast Asia, and Oceania



# Epidemiologic transition



the transition appears to progress at varying speeds and to different extents spatially

# Measures of Disease Burden

1. Prevalence and Incidence rates
2. Death rate
3. Morbidity rate (Complications)
4. Hospitalization rate
5. Productivity loss
6. Cost
7. Quality of life
8. DALY

YLL (years of life lost) as a result of premature mortality combined with disability due to premature mortality and years of life lost due to time spent in states of disability, full adjusted birth levels

# Measures of Disease Burden

1. Prevalence and Incidence ✓

2. Death ✓

3. Morbidity (Complications) ✓

4. Hospitalization ✓

5. Productivity loss ✓

6. Cost ✓

7. Quality of life ✓

8. DALY ✓

# Prevalence and Incidence of Heart Failure

Country	Prevalence	Incidence
South Korea 2004	--	1/1000
Japan 2004	1.6%	--
Hong Kong	0.5%	3.4/1000
China	--	--
Taiwan	5.5%	2.7/1000
Thailand	--	--
Philippines	--	--
Indonesia	--	--
Malaysia	6.7%	--
Singapore		
Australia 2005	6.3%	30,000 /year

# Incidence (millions) by WHO Region, 2004

<b>Region</b>	<b>New cases in millions / year</b>
<b>Africa</b>	<b>0.5 M</b>
<b>America</b>	<b>0.8 M</b>
<b>Mediterranean</b>	<b>0.4 M</b>
<b>Europe</b>	<b>1.3 M</b>
<b>Southeast Asia</b>	<b>1.4 M</b>
<b>West Pacific</b>	<b>1.3 M</b>
<b>World</b>	<b>5.7 M</b>

Incidence of congestive heart failure due to rheumatic heart disease, hypertensive heart disease, ischemic heart disease or inflammatory heart diseases

## Disability classes for the GBD study, with examples of long-term disease and injury sequelae falling in each class

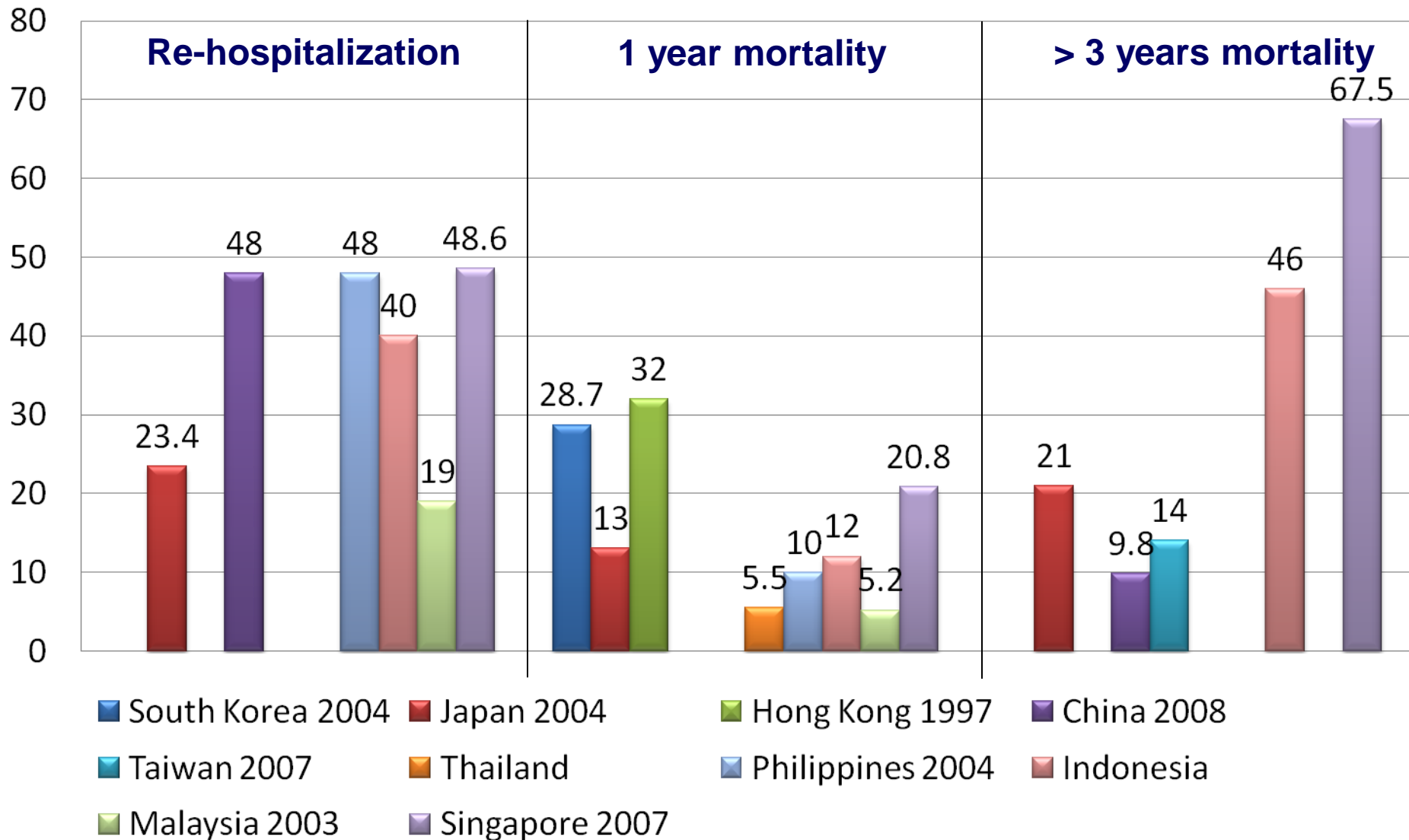
Disability class	Severity weights	Conditions <sup>b</sup>
I	0.00–0.02	Stunting due to malnutrition, schistosomiasis infection, long-term scarring due to burns (less than 20% of body)
II	0.02–0.12	Amputated finger, asthma case, edentulism, mastectomy, severe anaemia, stress incontinence
III	0.12–0.24	Angina, HIV not progressed to AIDS, infertility, alcohol dependence and problem use, low vision (<6/18, >3/60), rheumatoid arthritis
IV	0.24–0.36	Amputated arm, congestive heart failure, deafness, drug dependence, Parkinson disease, tuberculosis
V	0.36–0.50	Bipolar affective disorder, mild mental retardation, neurological sequelae of malaria, recto-vaginal fistula
VI	0.50–0.70	AIDS cases not on antiretroviral drugs, Alzheimer and other dementias, blindness, Down syndrome
VII	0.70–1.00	Active psychosis, severe depression, severe migraine, quadriplegia, terminal stage cancer

# Hospitalization and Death due to Heart Failure

Country	Re-hospitalization rate	Death	
		1 year	≥ 3 years
South Korea 2004	---	28.7%	NA
Japan 2004	23.4%	7.3% (13)	21%
Hong Kong 1997	---	32 %	---
China 2008	48 %	---	9.8%
Taiwan 2007	---	---	14%
Thailand	---	5.5%	---
Philippines 2004	48 %	10%	---
Indonesia 2006	40 %	12%	46.0%
Malaysia 2003	19 %	5.2%	---
Singapore 2007	48.6%	20.8%	67.5%

Derived from available registries in each country

# Hospitalization and Death among patients with heart failure in selected countries (APAC)

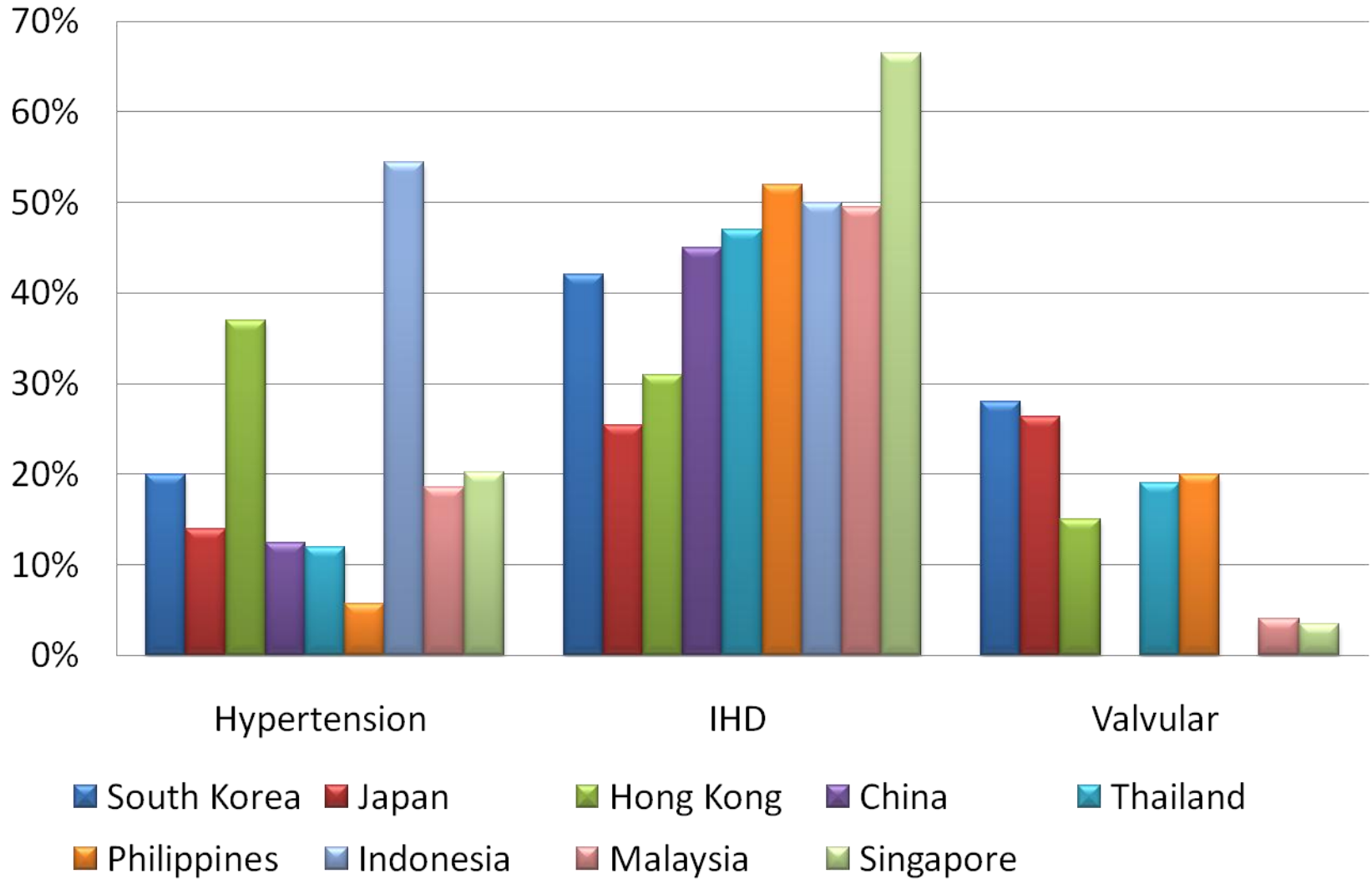


# Etiology of Heart Failure

Country	Hypertension	IHD	Valvular
South Korea	20 %	42 %	28 %
Japan	14 %	25.4%	26.4%
Hong Kong	37 %	31 %	15 %
China	12.4%	45 %	--
Thailand	12 %	47 %	19 %
Philippines	5.7 %	52 %	20 %
Indonesia	54.4%	50 %	--
Malaysia	18.6%	49.5%	4.1%
Singapore	20.2%	66.5%	3.5%
Australia			

-- not indicated or cannot be extrapolated

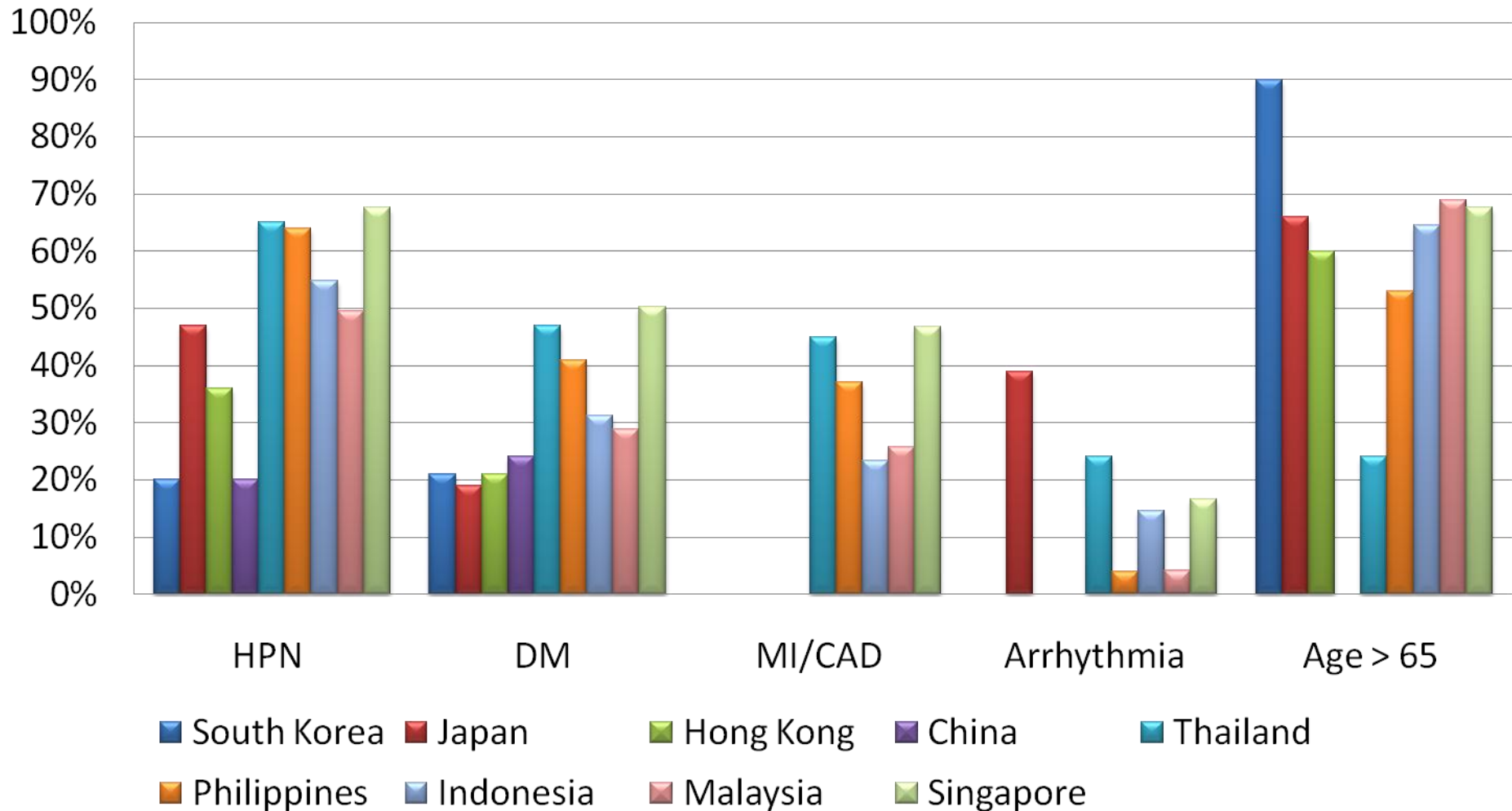
# Etiology of Heart Failure



# Prevalence of Risk factors for Heart Failure

Country	HPN	DM	MI/CAD	Arrhythmia	Age > 65
South Korea	20 %	21 %			90 %
Japan	47 %	19 %		39 %	66 %
Hong Kong	36 %	21 %			60 %
China	20 %	24 %			
Thailand	65 %	47 %	45 %	24 %	24 %
Philippines	64 %	41 %	37 %	4%	53 %
Indonesia	54.8%	31.2%	23.3%	14.6%	64.5%
Malaysia	49.5%	28.9%	25.8%	4.1%	69 %
Singapore	67.6%	50.3%	46.8%	16.5%	67.6%

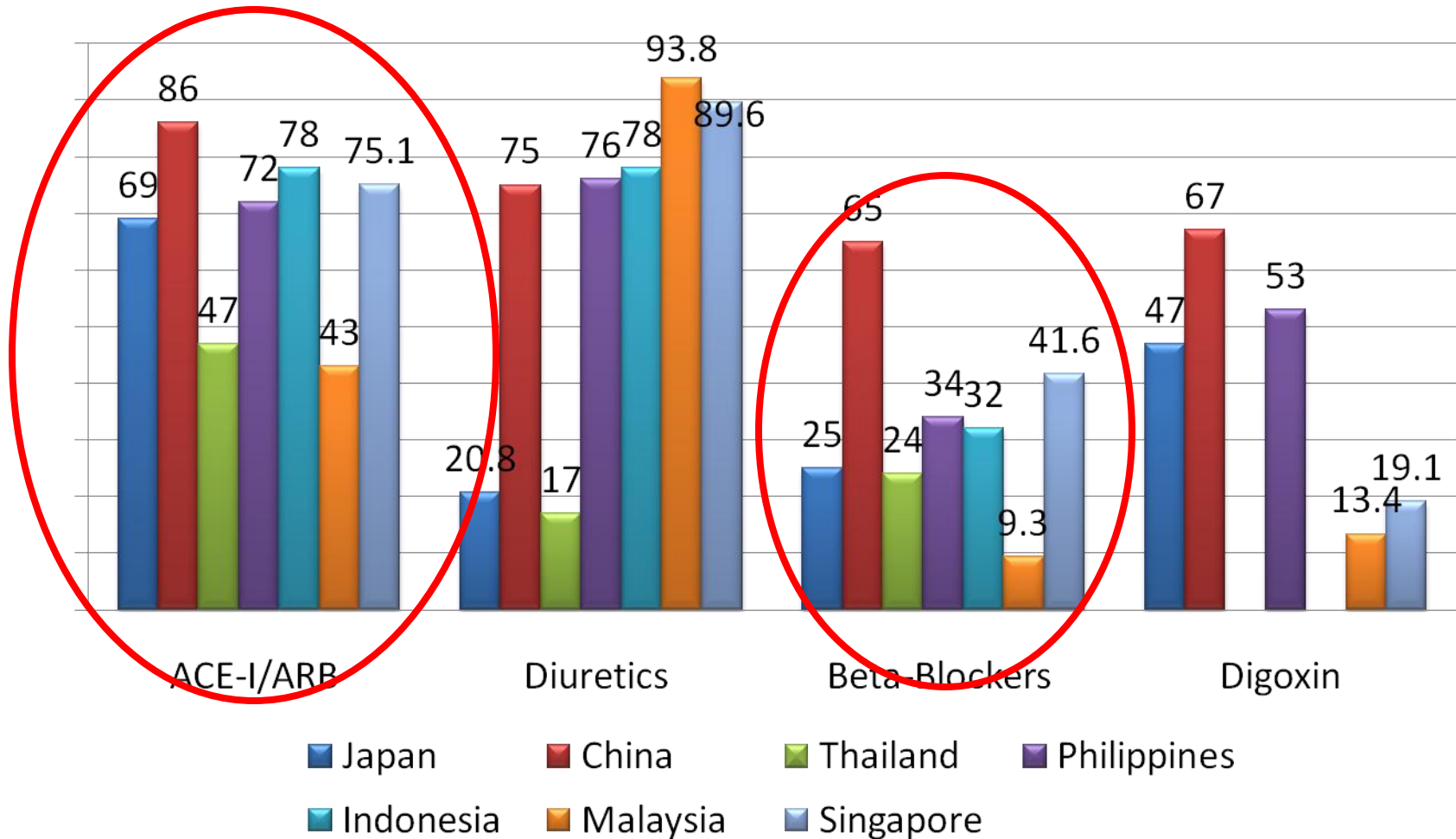
# Prevalence of risk factors among patients with CHF



# Utilization rate of drugs for Heart Failure

Country	ACE-I/ARB	Diuretics	Beta-Blockers	Digoxin
Japan	69	20.8	25	47
China	86	75	65	67
Thailand	47	17	24	
Philippines	72	76	34	53
Indonesia	78	78	32	
Malaysia	43	93.8	9.3	13.4
Singapore	75.1	89.6	41.6	19.1

# Utilization rate of drugs for Heart Failure in selected APAC countries



# **COST of Heart Failure**

## **THE AGE- AND SEX-SPECIFIC INCIDENCE AND MEDICAL EXPENSES OF HEART FAILURE HOSPITALIZATION IN 2005 IN TAIWAN**

- **NHI covered 98% of the population in taiwan**
- **Random selection of 1,000,000 hospitalization**
- **Computerized database**
- **Included 2,712 1<sup>st</sup> time admissions for heart failure**
- **Expense for hospitalization was computed.**
- **Maintenance medications and follow-up care not included**

<b>AGE</b>	<b>N</b>	<b>n</b>	<b>Incidence</b>	<b>%</b>	<b>Expense</b>
0-4	55,262	12	21.7	5.5	0.8
5-9	65,636	0	0.0	6.6	0.0
10-14	69,464	2	2.9	6.9	0.1
15-19	68,584	6	8.7	6.9	0.2
20-24	79,568	4	5.0	8.0	0.3
25-29	91,019	10	11.0	9.1	0.5
30-34	82,213	11	13.4	8.2	0.2
35-39	83,445	37	44.3	8.3	1.5
40-44	84,120	49	58.2	8.4	1.8
45-49	77,098	84	108.9	7.7	1.6
50-54	68,318	100	146.4	6.8	2.3
55-59	43,249	127	293.6	4.3	4.7
60-64	34,592	145	419.2	3.5	4.6
65-69	31,305	278	888.0	3.1	9.0
70-74	25,837	416	1,610.1	2.6	13.3
≥ 75	40,290	1,431	3,551.7	4.0	58.8
	1,000,000	<b>2,712</b>	271.2	100.0	<b>275,488,239</b>

# Conclusion

- **The burden of heart failure in the Asia-pacific region is huge in terms of prevalence, incidence, mortality, disability and cost**
- **The prognosis remains poor despite advances in pharmacologic intervention**
- **Risk factors for heart failure are prevalent**
- **The most prevalent risk factor is HPN**
- **The most common etiology of heart failure is Ischemic Heart Disease**
- **A problem in knowledge translation exists (significant proportion of CHF patients are not receiving optimal therapy with ACE-inhibitors and Beta-Blockers)**