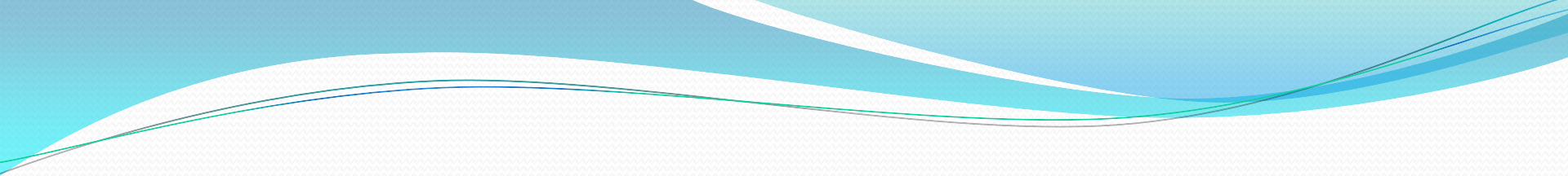


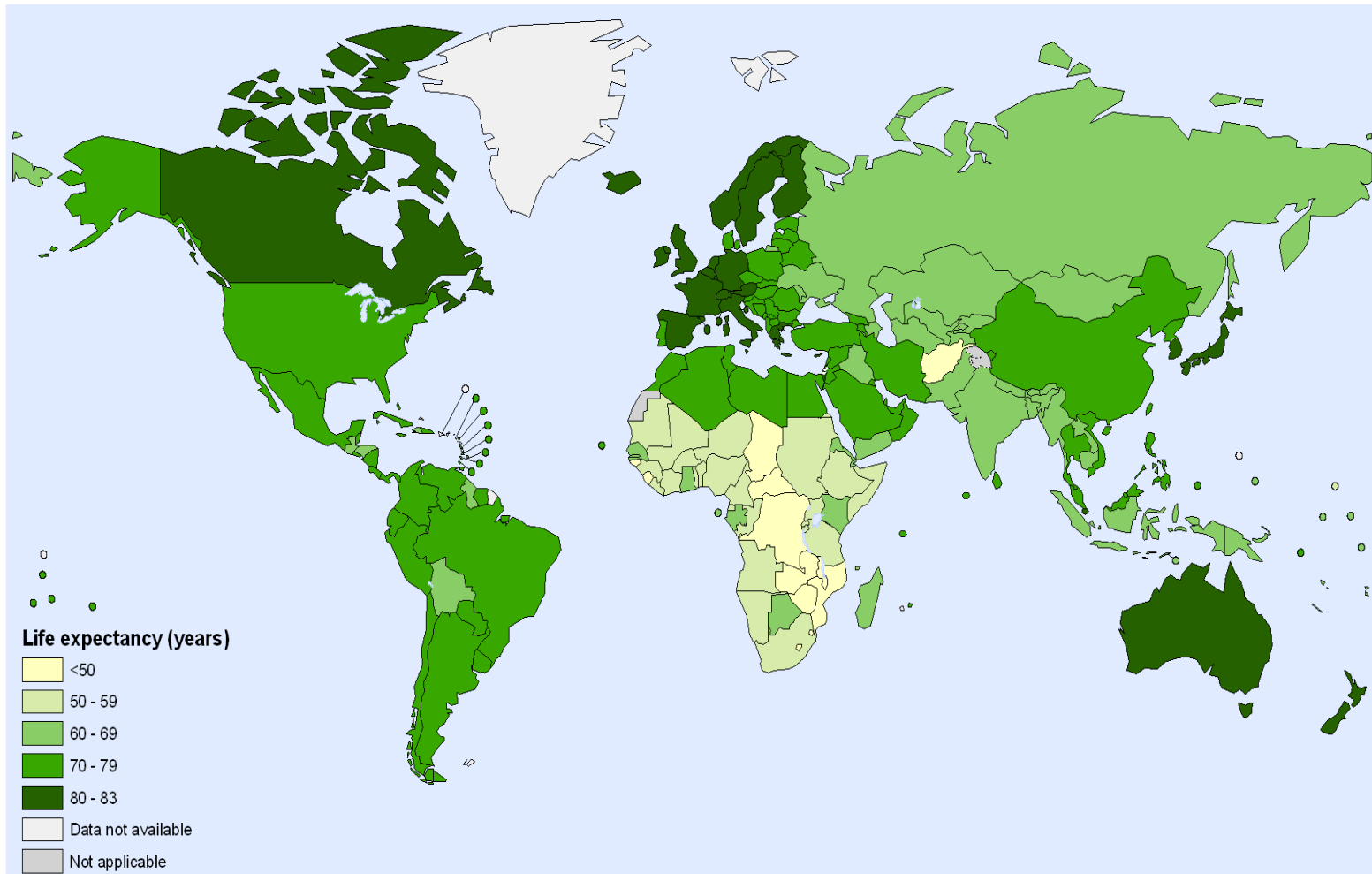
# MAGNITUD(EPIDEMIA?) DEL PROBLEMA DE FALLA CARDIACA EN AMERICA LATINA

ENFOQUE EPIDEMIOLOGICO

MONICA LOPEZ P  
CARDIOLOGO SERVICIO DE FALLA CARDIACA  
FCI

- 
- PANORAMA MUNDIAL
  - PANORAMA REGIONAL
  - DIFERENCIAS INTERREGIONALES
  - FACTORES CONTRIBUYENTES
  - CAUSAS? TIPOS ? TENDENCIAS?
  - CASOS ESPECIFICOS POR REGION

## Life expectancy at birth Both sexes, 2009



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Statistics 2011, WHO  
Map Production: Public Health Information  
and Geographic Information Systems (GIS)  
World Health Organization



© WHO 2011. All rights reserved.

# MUNDIAL

- AUMENTO EN PREVALENCIA
- AUMENTO EN RATA DE MORTALIDAD
- MAGNITUD ? Incidencia,  
Prevalencia,  
Pronostico
- Diferencia en definicion y metodos

# PREVALENCIA

- 6 metodologias signos y sintomas
- INTERROGATORIO, EXAMEN FISICO ,RX TX
- FALLA CARDIACA SINTOMATICA-FRAMINGHAM
- CON FE -DISMINUIDA SIN SINTOMAS
- CON FE PRESERVADA

## Modified Framingham clinical criteria for the diagnosis of heart failure

Major
Paroxysmal nocturnal dyspnea
Orthopnea
Elevated jugular venous pressure
Pulmonary rales
Third heart sound
Cardiomegaly on chest x-ray
Pulmonary edema on chest x-ray
Weight loss $\geq 4.5$ kg in five days in response to treatment of presumed heart failure
Minor
Bilateral leg edema
Nocturnal cough
Dyspnea on ordinary exertion
Hepatomegaly
Pleural effusion
Tachycardia (heart rate $\geq 120$ beats/min)
Weight loss $\geq 4.5$ kg in five days
Diagnosis
The diagnosis of heart failure requires that <b>2 major or 1 major and 2 minor criteria</b> cannot be attributed to another medical condition.

From Senni, M, Tribouilloy, CM, Rodeheffer, RJ, et al, *Circulation* 1998; 98:2282; adapted from McKee, PA, Castelli, WP, McNamara, PM, Kannel, WB. *N Engl J Med* 1971; 85:1441.

**Heart Disease and Stroke Statistics—2010 Update**  
**A Report From the American Heart Association Statistics Committee**  
**and Stroke Statistics Subcommittee**

**Circulation**  
JOURNAL OF THE AMERICAN HEART ASSOCIATION

- 5.8 millones de personas con falla cardiaca, 23 millones en el mundo
- Mayores de 65 a -----10 x 1000 (50 A 59- 8 /1000,
- 80 A 89- 66/1000)
- 75% con ant de HTA
- 40años- riesgo de 1 en 5 ( hombre y mujeres)
- 80 años –riesgo 1 en 9 hombre  
1 en 6 mujeres

Riesgo con PA mayor de 160/90 es doble que con PA menor a 140/90

# AUMENTO DE PREVALENCIA

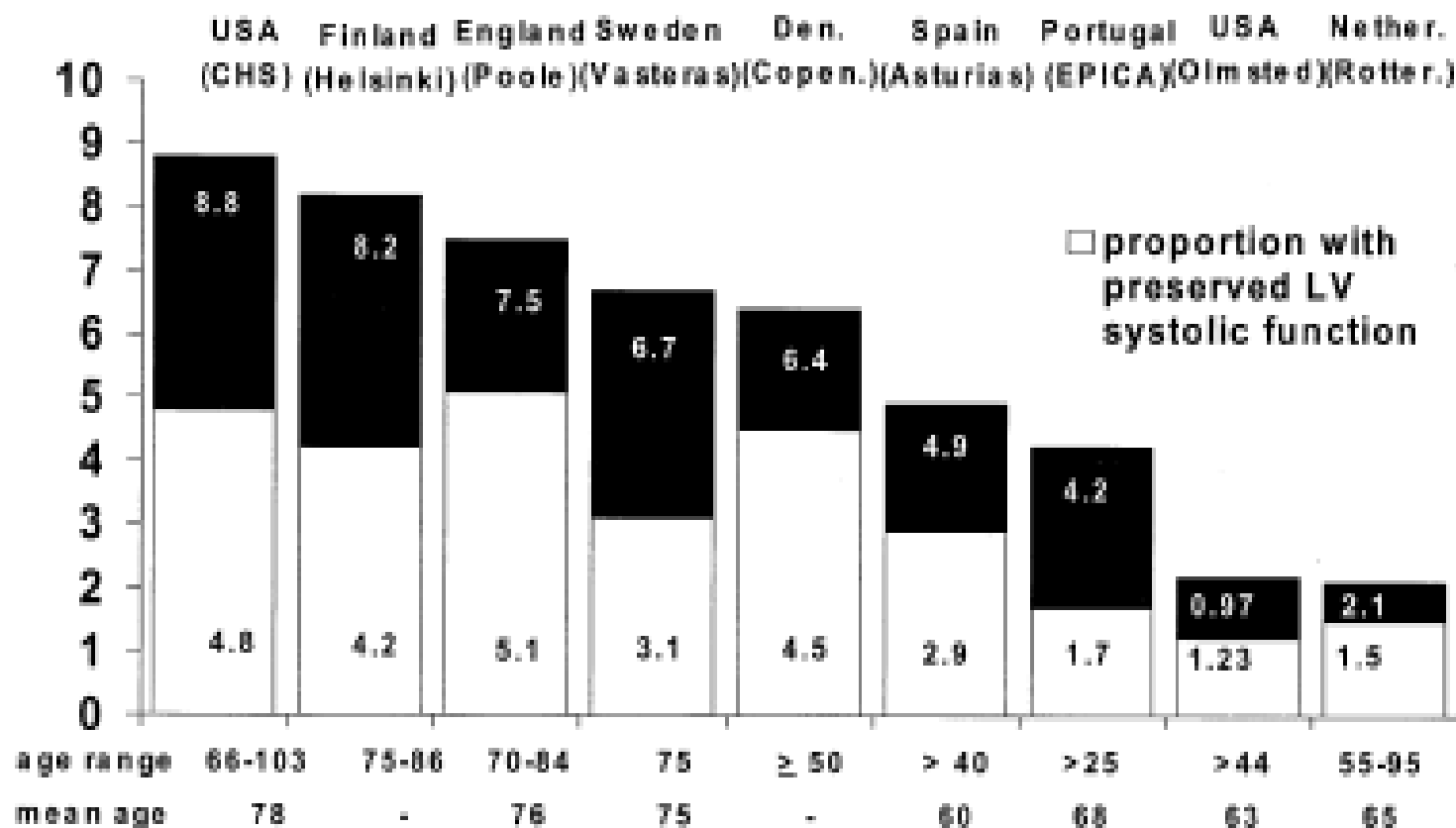
- 1989 A 1999—AUMENTO EN 1 X 1000
- 1971-2000- RATA DE HOSPITALIZACION 4 V MAYOR
- CAUSAS:
  - ENVEJECIMIENTO DE LA POBLACION
  - MEJORES TTO PARA ENF CORONARIA, VALVULAR E HIPERTENSIVA
  - PROYECCION A 2040 USA – AUMENTO A 772.000 CASOS X A.



# FALLA CARDIACA CON FE PRESERVADA

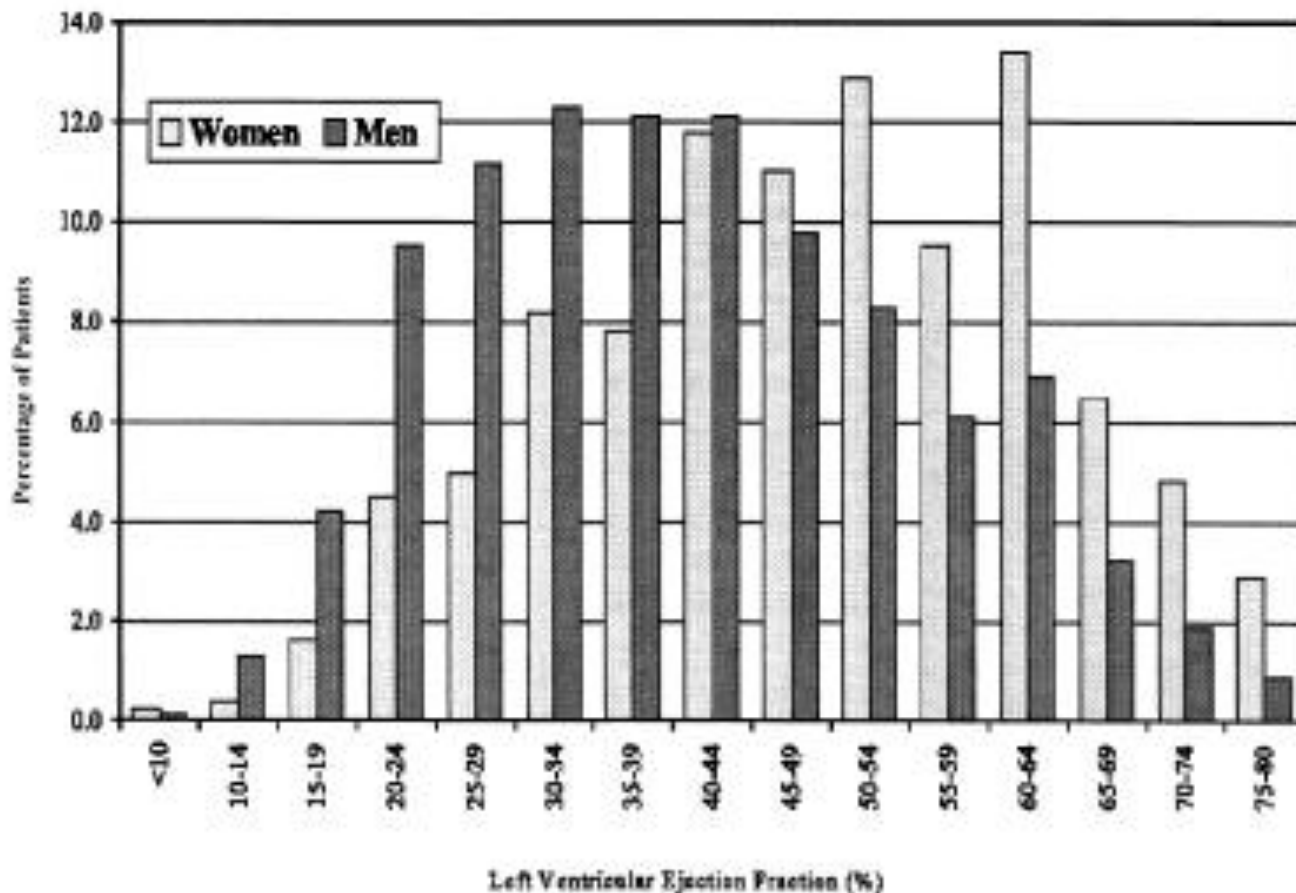
- DISFUNCION DIASTOLICA
- VARIABILIDAD – 13 A 74% DE PREVALENCIA  
Vasan, Rs ..Prevalence, clinical features and prognosis of diastolic heart failure :an epidemiologic perspective. J Am Coll Cardiol 1996;26-1565
- AUMENTA CON LA EDAD
- MEDICARE → 65 A---34% CON FE PRESERVADA Y 71% MUJERES

PREVALENCE OF HEART FAILURE



1. Prevalence of heart failure in cross-sectional, population-based, echocardiographic studies. Black bars show percent prevalence; lower portion bars show the proportion of cases associated with preserved systolic function. LV = left ventricular.

Heart Failure With Preserved LV Systolic Function



**Figure 4.** Distribution of left ventricular ejection fraction measured within 12 months of the survey among women (n = 2,048; 41% of total enrolled) and men (n = 3,249; 57% of total enrolled) enrolled in the EuroHeart Failure survey. Where more than one ejection fraction measurement was available, the most recent one was used. Fifty-one percent of men but only 28% of women had a left ventricular ejection fraction <40%.

## Incidence of heart failure in the Framingham study: 44-year follow-up of cohort and 20-year follow-up of offspring

Age	Average annual incidence per 1000	
	Men	Women
45 to 54	2	1
55 to 64	4	2
65 to 74	9	6
75 to 84	18	12
85 to 94	39	31

# INCIDENCIA

- EN ADULTOS MAYORES- HALLAZGOS NO CONCORDANTES FALLA C AJUSTADA POR EDAD
- FRAMINGHAM- 1950 a 1969 = 1990-1999  
Aumentó edad dx 63 a a 80 a
- MAYO CLINIC – 4537 pt no cambio entre 1979 y 2000
- KAISER – aumento de 14% 1970-1974 y 1990-1994
- MEDICARE- 622.789 pt -disminucion 1994 a 2003
- EN ADULTOS JOVENES – estudio CARDIA ,raza negra

# RIESGO DE POR VIDA

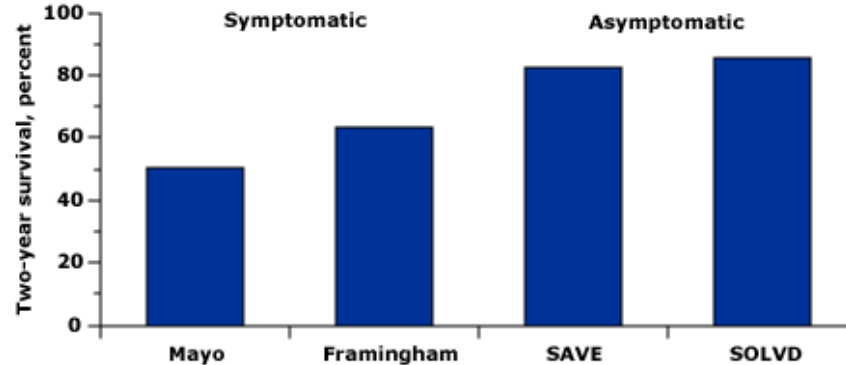
- FRAMINGHAM - a 40 años– 1 en 5  
sin infarto previo 1 en 9 mujeres  
1 en 6 hombre
- Physicians Health Study - 1 en 7 a los 40 años

# MORTALIDAD

- USA – 1970 5.8 x 1000 A 16.4 x 1000 1993
- A PESAR DE TENDENCIA DE DISMINUCION POR ENF CORONARIA
- A PARTIR DE 1980 MEJORIA SOBREVIVENCIA (FRAMINGHAM, MAYO, ESCOCIA)-
- POST A 1ª HOSPITALIZACION ---POBRE SOBREVIVENCIA  
2.3 años en hombres Y 1.7 Años en mujeres
- FC CON FE PRESERV - menor mortalidad 8-9% vs 19%
- METAANALISIS DE 25000 EN 17 ESTUDIOS  
MORTALIDAD ES MITAD DE FC CON FE DISMINUIDA  
(Somaratne, Eur J H Fail 2009,11: 855)

# SOBREVIDA EN FALLA CARDIACA

## Survival in HF and disease severity



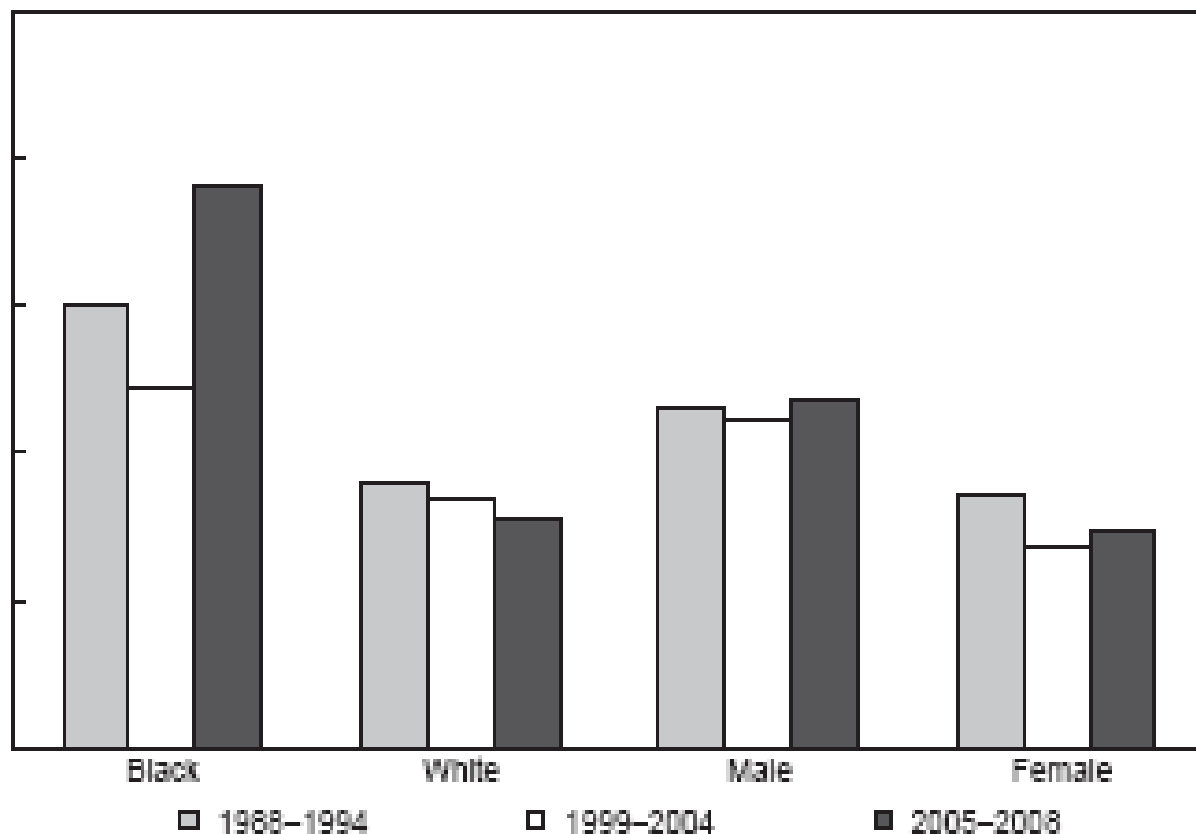
Impact of severity of disease on mortality in patients with heart failure. Patients with symptomatic heart failure had a two-year survival rate of 50 percent in the Mayo study and 63 percent in the Framingham study. In contrast, asymptomatic patients had survival rates of 82 percent in the SAVE trial and 85 percent in the SOLVD trial.

Data from: Rodeheffer RJ, Jacobsen SJ, Gersh BJ, et al. *Mayo Clinic Proc* 1993; 68:1143; Ho, KK, Anderson, KM, Kannel, WB, et al, *Circulation* 1993; 88:107; Pfeffer, MA, Braunwald, E, Moye, LA, et al, *N Engl J Med* 1992; 327:669; The SOLVD Investigators, *N Engl J Med* 1992; 327:685.



**Chart 3-37**  
**Age-Adjusted Prevalence of Heart Failure by Race and Sex,**  
**Ages 25-74, U.S., 1988-1994 to 2005-2008**

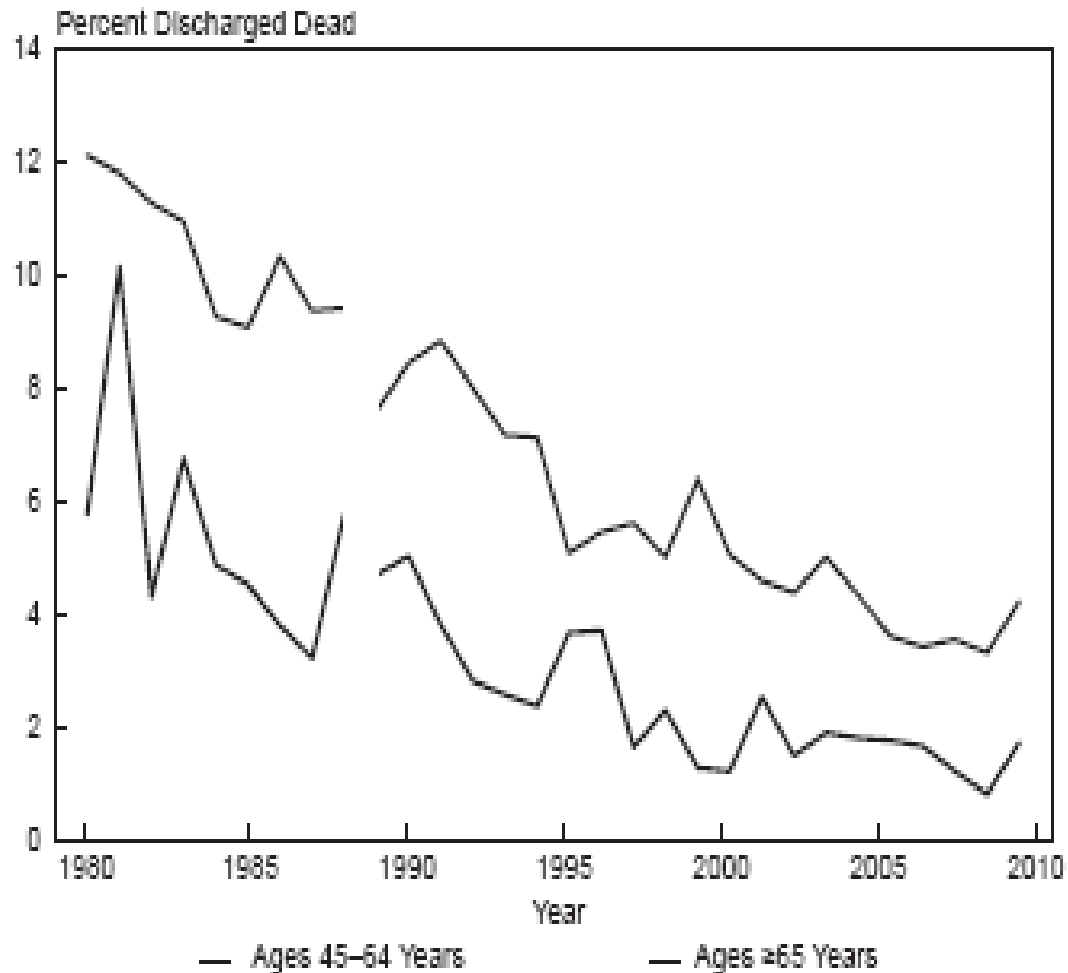
Percent of Population



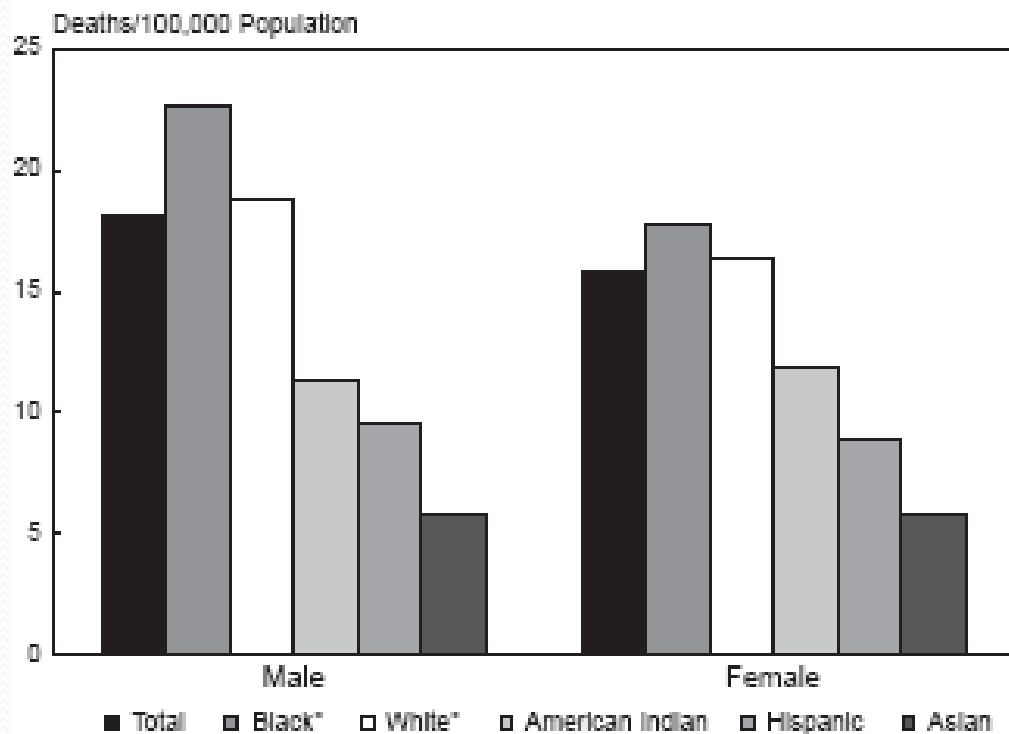
From 1988-1994 to 2005-2008, the prevalence of HF increased in blacks (except the decrease in 1999-2004) and decreased slightly in whites; it remained stable in males but decreased slightly in females.<sup>18</sup>

### Hospital Case-Fatality Rates for Heart Failure, Ages 45-64 and 65 and Older, U.S., 1980-2009

From 1980 to 2009, hospital case-fatality rates for HF were rather erratic for those aged 45-64 years and those aged 65 years and older; overall however, the rates declined appreciably for both groups during the period.<sup>32</sup>



**Chart 3-42**  
**Age-Adjusted Death Rates for Heart Failure as the Underlying Cause by Race/Ethnicity and Sex, U.S., 2008**



\* Non-Hispanic.

In 2008, death rates for HF as the underlying cause were slightly higher in males than in females. Within sex groups, death rates were highest in non-Hispanic blacks and non-Hispanic whites and lowest in Asians.<sup>31</sup>

# PREDISPONENTES

- HTA, ENF CORONARIA---1970S  
ENF CORONARIA----- DM

PAR (RIESGO ATRIBUIBLE A LA POBLACION)

- NHANES 13.643 PT A 19 AÑOS DE SEGUIMIENTO

E.CORONARIA- 62%

TABAQUISMO- 17%

HTA - 10%

SOBREPESO - 8%

DM -3 %

ENF VALVULAR - 2%

## ACC/AHA guideline summary: Prevention of chronic heart failure (HF): Patients at high risk of developing HF (stage A)

### **Class I - There is evidence and/or general agreement that the following approaches are effective in the management of patients at high risk of developing HF:**

- The following problems should be treated according to recommended guidelines:
  1. Systolic and diastolic hypertension.
  2. Lipid disorders.
  3. Blood glucose control in diabetes mellitus.
  4. The above and other secondary prevention measures in patients with atherosclerotic vascular disease.
  5. Thyroid disorders.
- Avoidance of behaviors that may increase the risk of HF, such as smoking, excessive alcohol consumption, and illicit drug use.
- The ventricular rate should be controlled or sinus rhythm restored in patients with supraventricular tachyarrhythmias.
- Periodic evaluation for signs and symptoms of HF.
- Noninvasive determination of left ventricular ejection fraction in patients with a strong family history of cardiomyopathy or those treated with cardiotoxic interventions.

### **Class IIa - The weight of evidence or opinion is in favor of the usefulness of the following approach for the management of patients at high risk of developing HF:**

- Angiotensin converting enzyme inhibitors or angiotensin II receptor blockers to prevent HF in patients at high risk for developing HF due to a history of atherosclerotic vascular disease, diabetes mellitus, or hypertension with associated cardiovascular risk factors.
- Angiotensin II receptor blockers can be useful to prevent HF in patients at high risk for developing HF who have a history of atherosclerotic vascular disease, diabetes mellitus, or hypertension with associated cardiovascular risk factors.

### **Class III - There is evidence and/or general agreement that the following approach is not useful or may be harmful in the management of patients at high risk of developing HF:**

- Routine use of nutritional supplements solely to prevent the development of structural heart disease.

*Data from Hunt, SA, Abraham, WT, Chin, MH, et al. ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure): developed in collaboration with the American College of Chest Physicians and the International Society for Heart and Lung Transplantation: endorsed by the Heart Rhythm Society. Circulation 2005; 112:e154.*

# AMERICA LATINA-EPIDEMIA DE FALLA CARDIACA

- EPIDEMIA-enfermedad que se disemina en una poblacion a una rata progresivamente creciente,
- SINDEMIA- multifactorial:dos o mas afecciones que actuan de forma sinergista y contribuyen a una mayor carga de la enf en una poblacion

# AMERICA LATINA

TRANSICION EPIDEMIOLOGICA Y DEMOGRAFICA

ENF CARDIOVASCULAR -3<sup>a</sup> CAUSA MAS COMUN DE  
HOSPITALIZACION

743.763 ADMISIONES HOSPIT --39.4% REL CON FC, Y  
EN MAYORES DE 60 A—70%

Bocchi et al, Cardiomyopathy, adult valve disease and heart failure in South America.

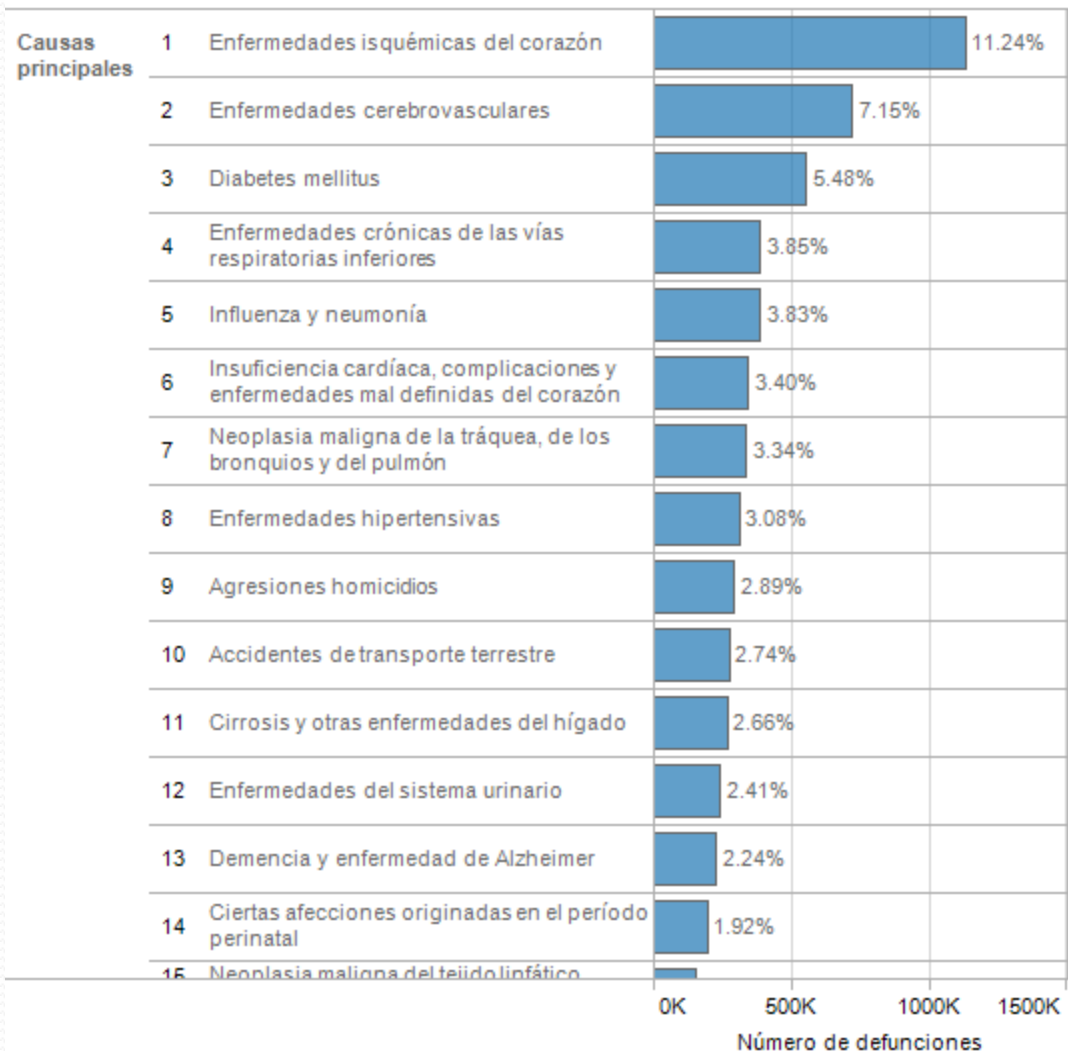
Heart 2009;95:181-9

# FACTORES CONTRIBUYENTES

- 1950—1987 ENF CORONARIA –
- 1950s- 22%
- 1960s- 36%
- 1970s- 53%
- 1980s- 67%
- Diabetes, (20% aumento en cada decada , disminuciòn enf. valvular, aumento de obesidad, HTA



## Causas principales de mortalidad en las Américas



	No.	%
Causas principales	8,670,460	86.06%
Resto de las causas	946,958	9.40%
Causas mal definidas	457,211	4.54%
<b>Grand Total</b>	<b>10,074,629</b>	<b>100.00%</b>

**Seleccione el año**

- 1995
- 1996
- 1997
- 1998
- 1999

**Seleccione el país**

- Anguila
- Antigua y Barbuda
- Antillas Neerlandesas
- Argentina
- Aruba

**Seleccione el sexo**

- Femenino
- Masculino

**Grupo de edad**

- < 1 yr
- 1-4 yr
- 5-9 yr
- 10-14 yr
- 15-19 yr

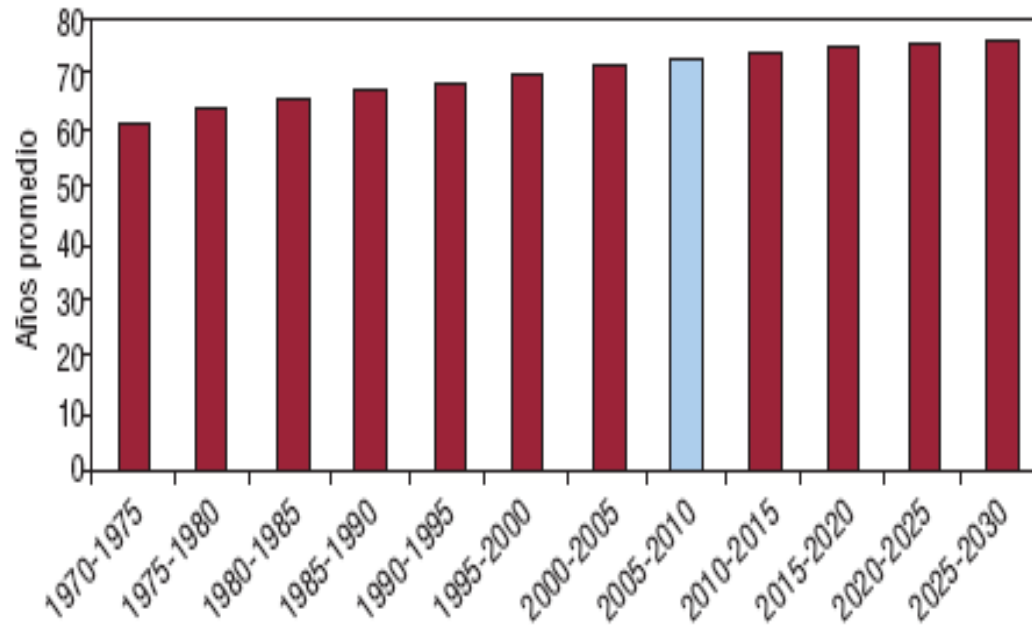
# CAUSAS

- EXPECTATIVA DE VIDA

# EXPECTATIVA DE VIDA EN AMERICA LATINA

E. Hernández-Leiva / Rev Esp Cardiol, 2011;64(Supl 2):34-43

41



**Figura 8.** Estadísticas de la Organización Mundial de la Salud (1970-2030) demuestran que la expectativa de vida en Latinoamérica ha venido aumentando gradualmente en los últimos años. Esto es uno de los principales factores relacionados con la epidemia de insuficiencia cardíaca en Latinoamérica.

# CAUSAS

- CAMBIOS ESTILOS DE VIDA
- ALTA PREVALENCIA DE FACTORES DE RIESGO  
(enf cardiovascular/infecciosa relacion de 1.1 a 4.75 –  
1985 a 2015)
- FACTORES INFECCIOSOS (chagas, reumatica)

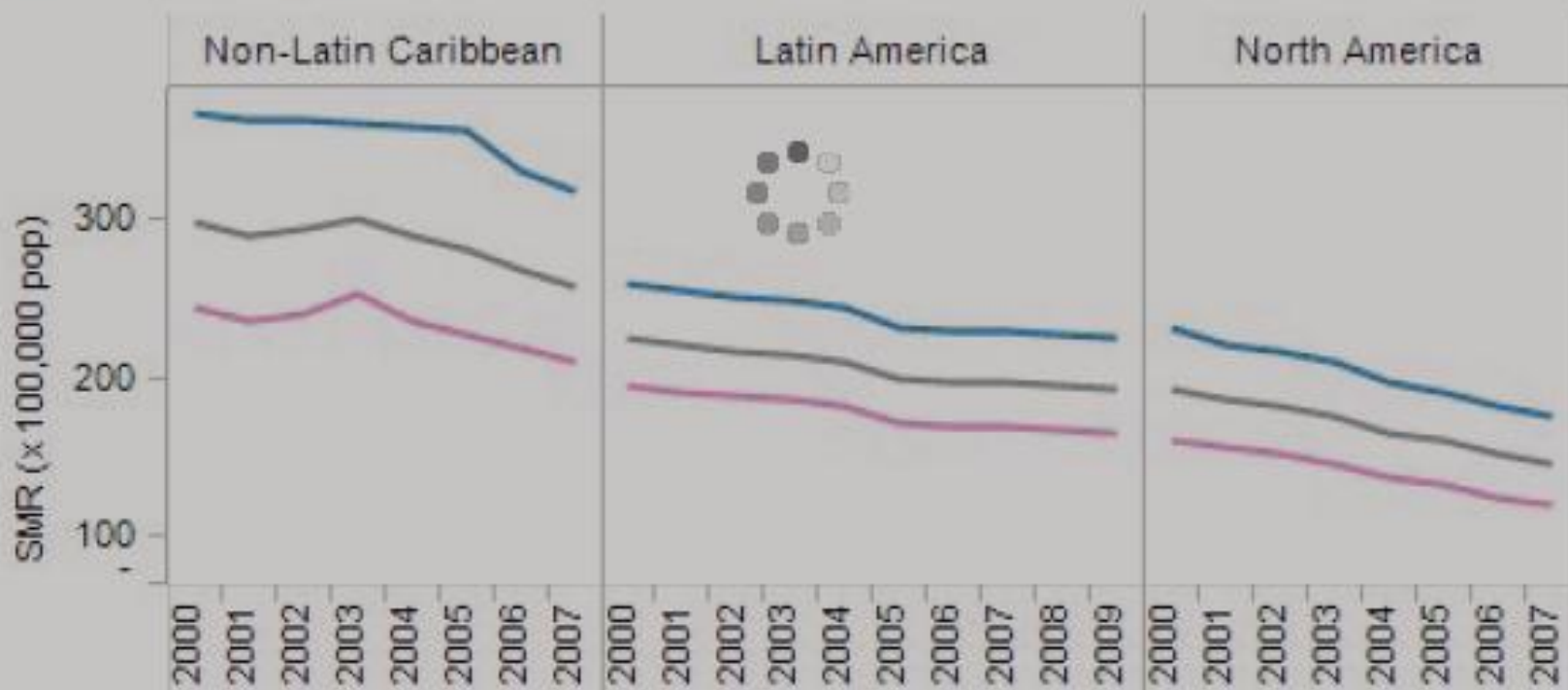
# Cardiovascular Diseases. Situation and trend

Legend: Sex

Female Male Total

Select year

2007



# PERFIL DE RIESGO CARDIOVASCULAR

- CARMELA- 11550 PT EN 7 CIUDADES LA  
(BARQUISIMETO,BOGOTA,BUENOS AIRES,LIMA, C DE MEXICO,QUITO ,SANTIAGO)
- DIABETES- MAYOR EN MUJERES(EXCEPTO BUENOS AIRES)
- 5% LIMA -8% -BOGOTA
- CIUDAD DE MEXICO- 9%,S. METABOLICO- 27%, OBESIDAD 31%
- DISLIPIDEMIA 14%      6 %BARQUISIMETO -QUITO 20%

# CARMELA-HIPERTENSION

- BARQUISIMETO 25%
- BUENOS AIRES 29%
- SANTIAGO 24%
- LIMA 13%
- C. DE MEXICO 12%
- BOGOTA 13%
- QUITO 9%

# CARMELA - TABAQUISMO

- SANTIAGO – 42% IGUAL HOMBRES
- BUENOS AIRES- 39% Y MUJERES
- RESTO CIUDADES MENOR EN MUJERES –QUITO –  
RELACION 11/49 MUJERES - HOMBRES



# PERFIL DE RIESGO CV -TABACO

- TABACO
- HOMBRES MAYOR QUE MUJERES.
- Hombres adultos 17,0% a 42,9% Cuba con 42,9% y Chile con 42,0%
- Mujeres adultas 2.,8% a 33,8 ,Chile -33,8% y Cuba 29,3% . Adolescentes varones - 10,5% a 34,5%, Barbados + alta con el 34,5%
- Mujeres- 6,5% a 39,8, Chile 39,8%. Argentina - 29,7% , México 28,5% y Colombia 27,8%.
- PAHO

# INTERHEART

- OBESIDAD, DISLIPIDEMIA Y TABAQUISMO
- SON RESPONSABLES DE 78% DE CONTRIBUCION A RIESGO DE IAM, RIESGO ATRIBUIBLE A POBLACION EN AMERICA LATINA

LANAS, INTERHEART LATIN American Study *Circulation*, 2007;115:1067-1074

# CHAGAS

- 100 millones de personas están en riesgo de infectarse, unos 8 millones infectadas, con 56.000 nuevos casos anuales por todas las formas de transmisión, motivando 12 .000 muertes anuales.
- 20-30% AFECCION CARDIACA
- COLOMBIA 1.3 MILLONES INFECTADOS

Freitas. Brazil-1220 pt fue el principal determinante de mortalidad.

Bocchi et al, Cardiomyopathy, adult valve disease and heart failure in South America.  
Heart 2009;95:181-9

# FIEBRE REUMATICA

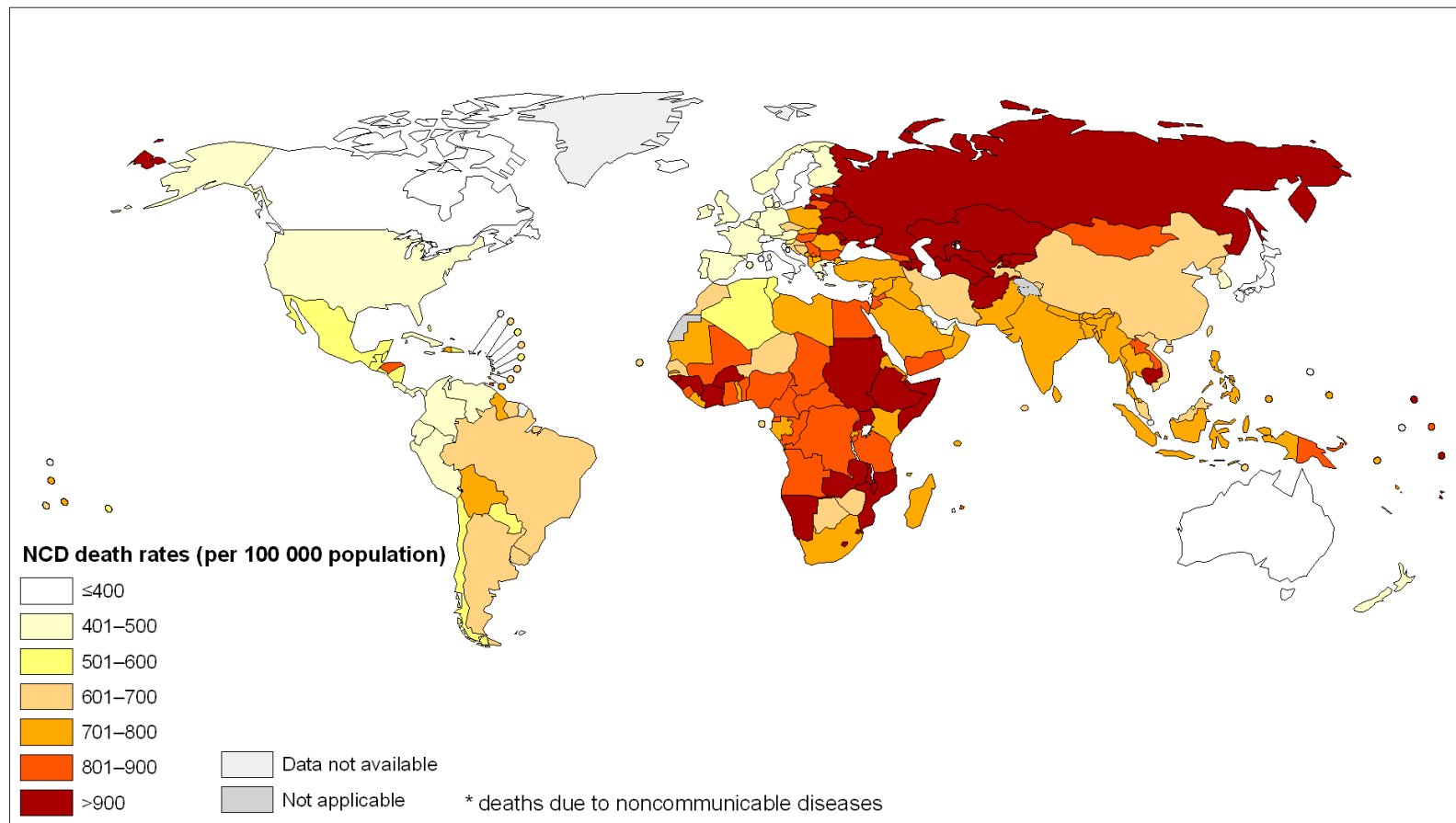
- PREVALENCIA 3-5% BRASIL EN NIÑOS
- 90% CX CV EN NIÑOS Y 30% ADULTOS
- VARIABLES ESTADISTICAS-7.9 X 1000 EN BOLIVIA -  
--2.9/1000 EN CUBA
- 2003- 101.822 NIÑOS CARDIOPATIA REUMATICA

Bocchi et al, Cardiomyopathy, adult valve disease and heart failure in South America.  
Heart 2009;95:181-9

	Pacientes	Edad	Etiología (%)				
			Enfermedad coronaria	Valvulopatías	HTA	Chagas	Miocardiopatía idiopática
Barreto <sup>42</sup>	903	53	34	22	7	6	26
Perna <sup>43</sup>	2.974	65	27-38	16-22	18-32	1,3-8,4	1,3-14
Freitas <sup>44</sup>	1.220	46	17	-	14	20	37

**Figura 9.** Resumen de algunos de los estudios de insuficiencia cardiaca en Latinoamérica. Se destaca una edad promedio menor que en series internacionales y una alta frecuencia relativa de etiología chagásica. HTA: hipertensión arterial.

## Total NCD death rates\*, age standardized Males, 2008



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization  
Map Production: Public Health Information  
and Geographic Information Systems (GIS)  
World Health Organization



© WHO 2011. All rights reserved.

# MORTALIDAD FC AMERICAS

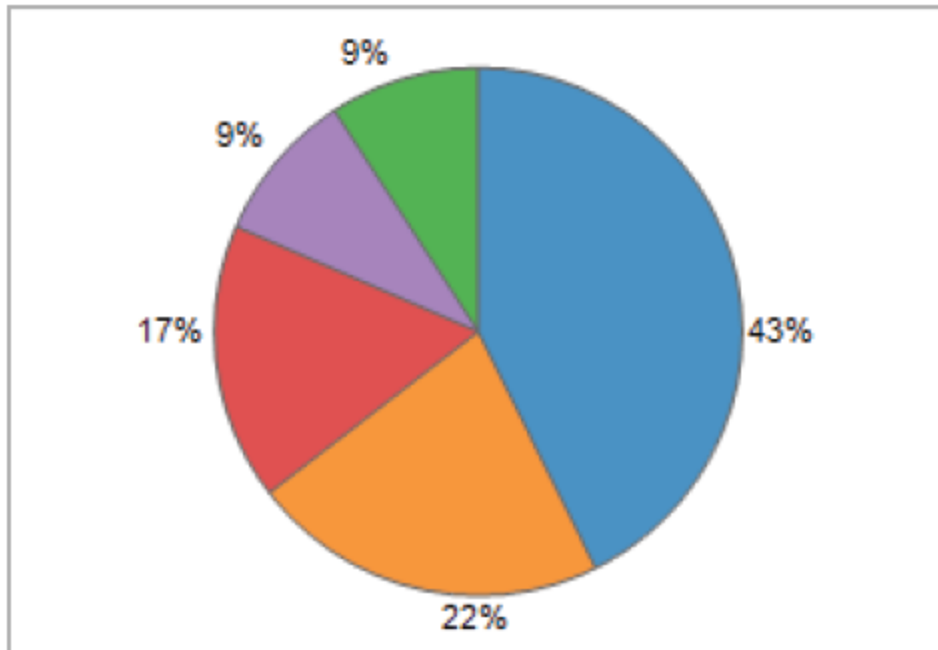
- 2007, CVD- 1,6 MILLONES MUERTES
- 790,997 HOMBRES, 785, 598 MUJERES
- 30% 30-69 years.
  
- 2000 to 2007 DE TODAS LAS MUERTES CV
- ENF ISQUEMICA -43%
- ENF CEREBROVASCULAR- 22%
- FALLA CARDIACA 9%
- ENF HIPERTENSIVA 9%
- OTRAS CVDs --17%
  
- OPS

# MORTALIDAD EN A LATINA

- 3 PRINCIPALES CAUSAS DE MUERTE EN LAS AMERICAS EN 2008:
- Cardiopatía Isquémica 9%
- Enfermedad Cerebrovascular 8%
- Diabetes mellitus 6%



## Cardiovascular Diseases mortality by major groups of causes



### Groups of CVD causes of deaths

- Ischaemic heart diseases (I20-I25)
- Cerebrovascular diseases (I60-I69)
- Others (I00-I09, I26-I45, I46, I47-I49, I51, I70, I71-I99)
- Heart failure (I50)
- Hypertensive diseases (I10-I14)

### Select year

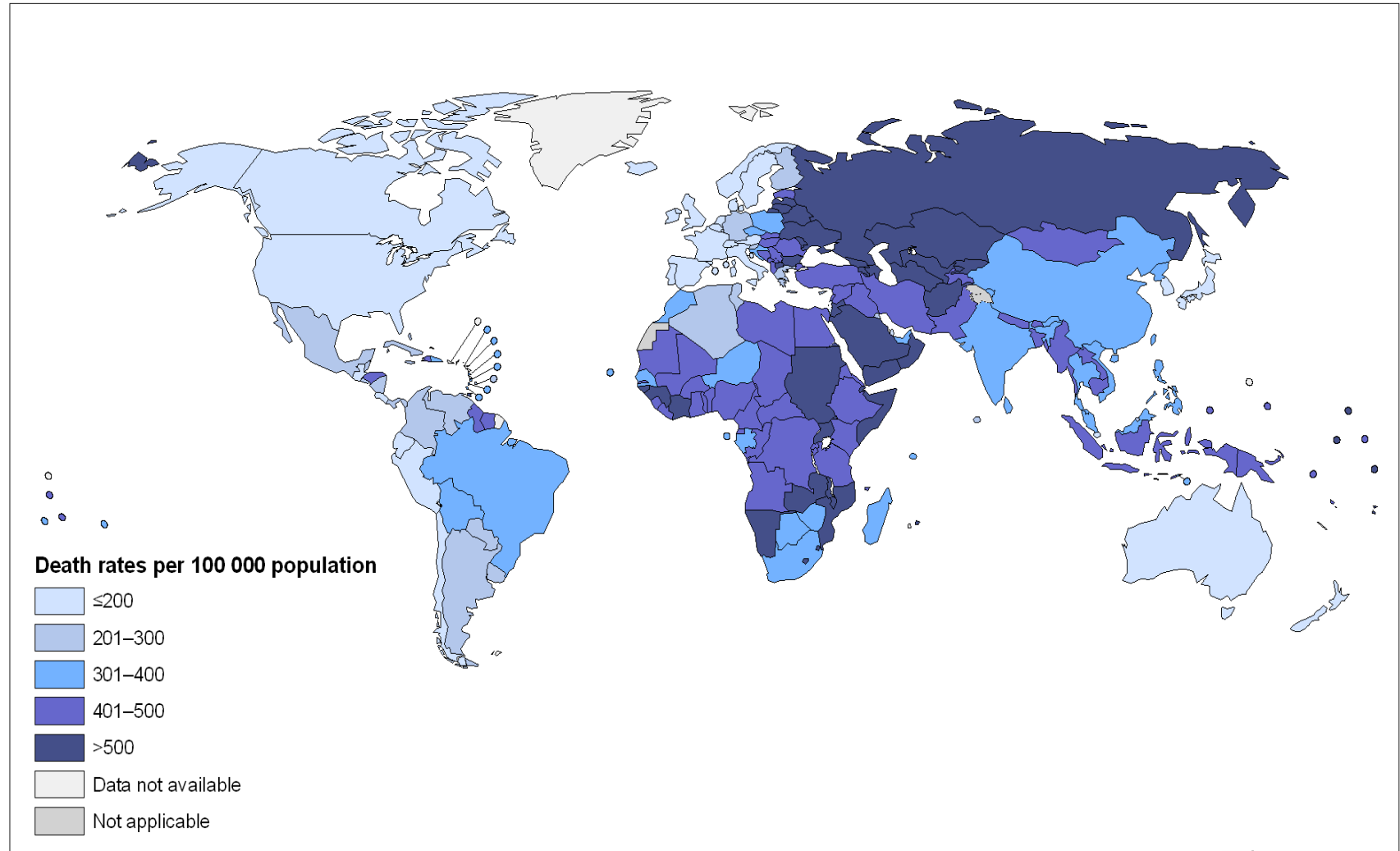
2007

### Select countries

- (All)
- Antigua and Barbuda
- Argentina
- Aruba
- Bahamas
- Barbados
- Belize
- Bermuda
- Brazil
- Cayman Islands
- Chile
- Colombia
- Costa Rica
- Cuba
- Dominica

Source: Regional Mortality Information System, 2012. Regional Health Observatory. Pan American Health Organization (PAHO-WHO).

# Cardiovascular diseases and diabetes, death rates per 100 000 population, age standardized Males, 2008



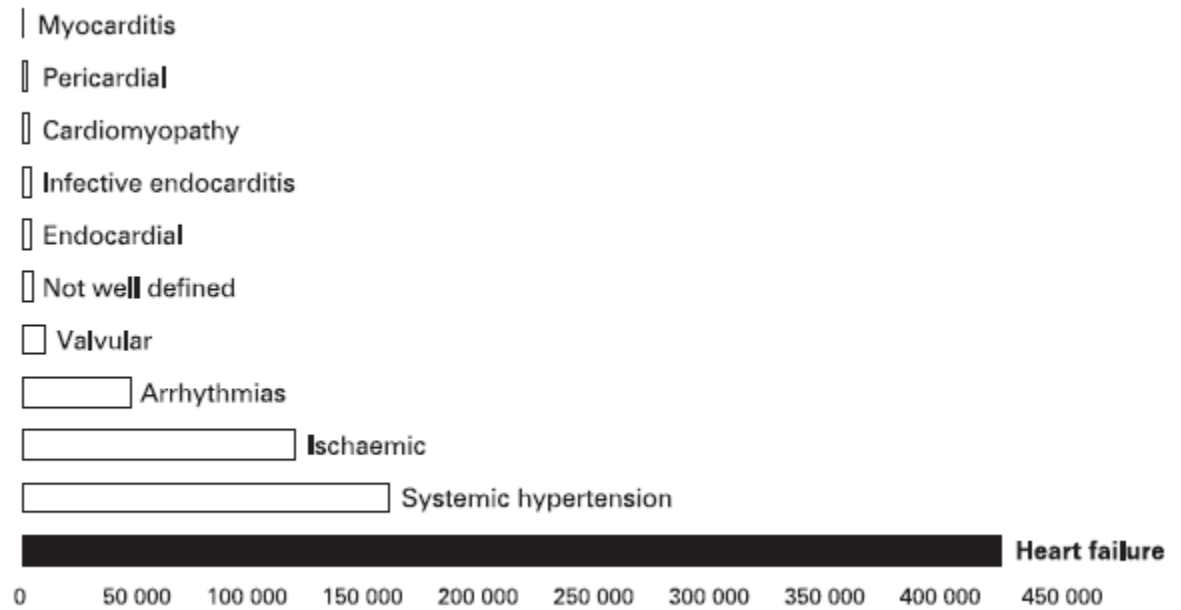
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization  
Map Production: Public Health Information  
and Geographic Information Systems (GIS)  
World Health Organization

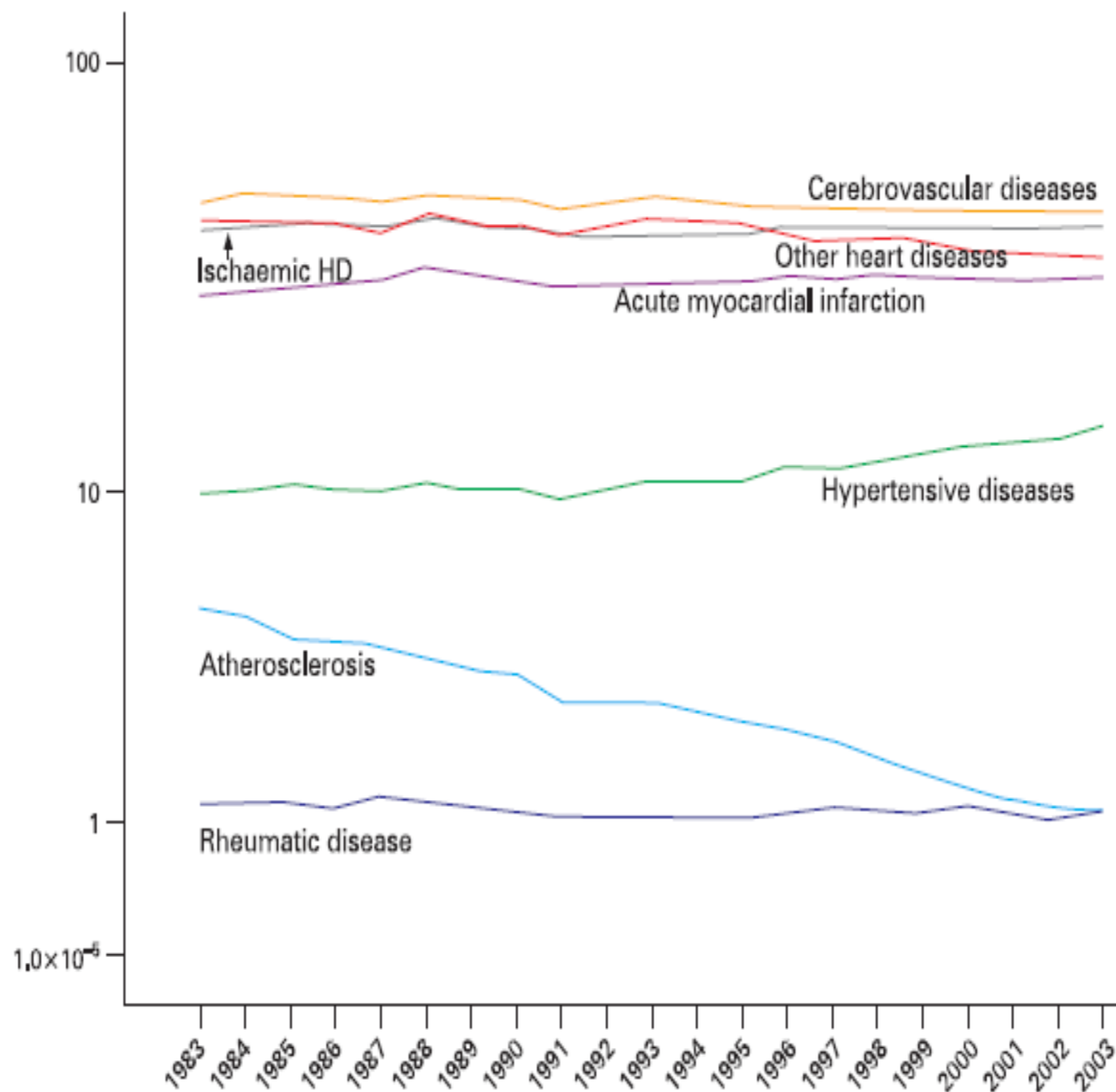


© WHO 2011. All rights reserved.

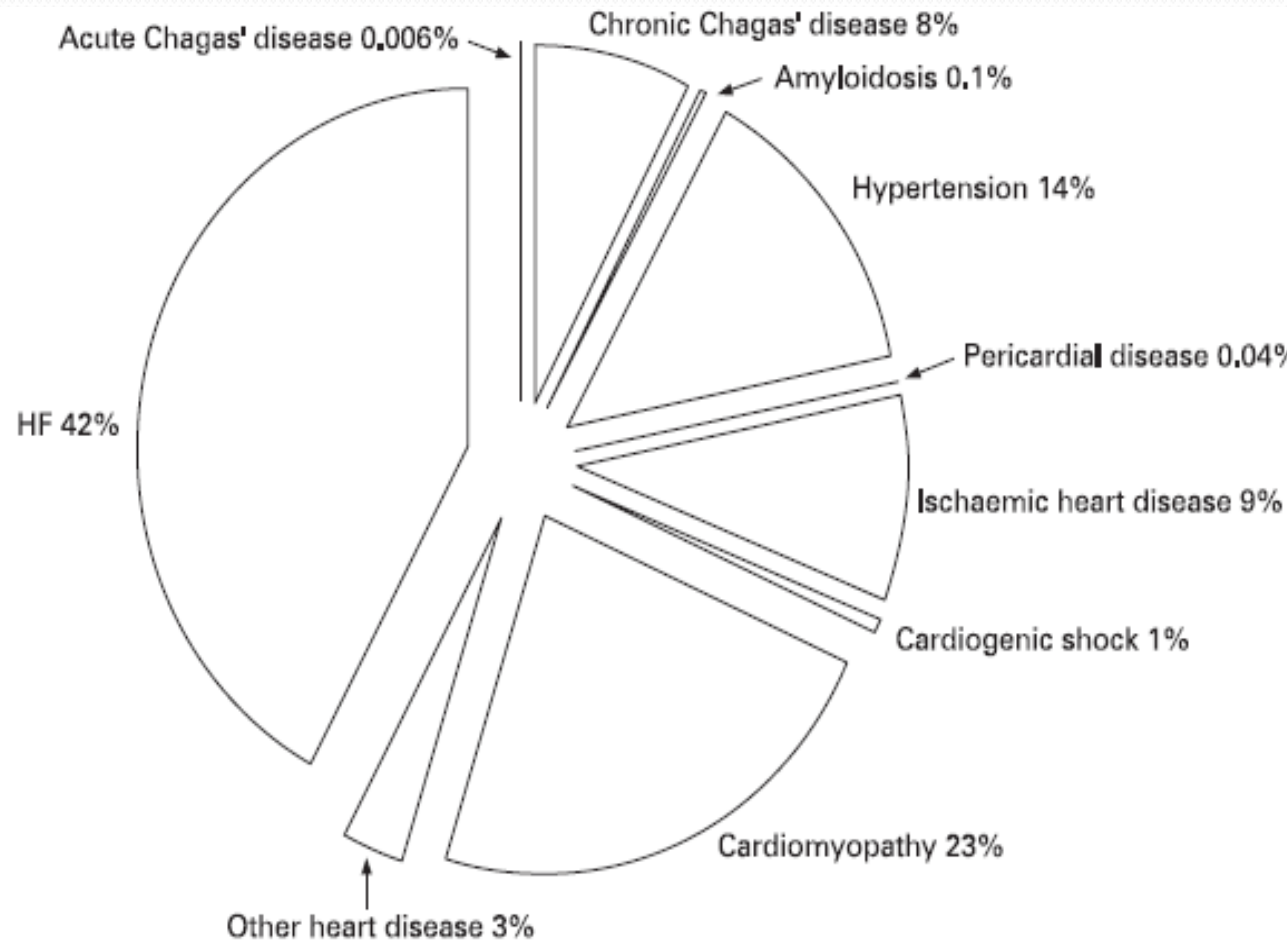
**Figure 4** Cardiovascular causes of hospitalisation in Brazil.



**Figure 1** Cardiovascular causes of death from 1983 to 2003 in Brazil. Yearly rates (per 100 000 subjects) are shown on a logarithmic scale. HD, heart disease.

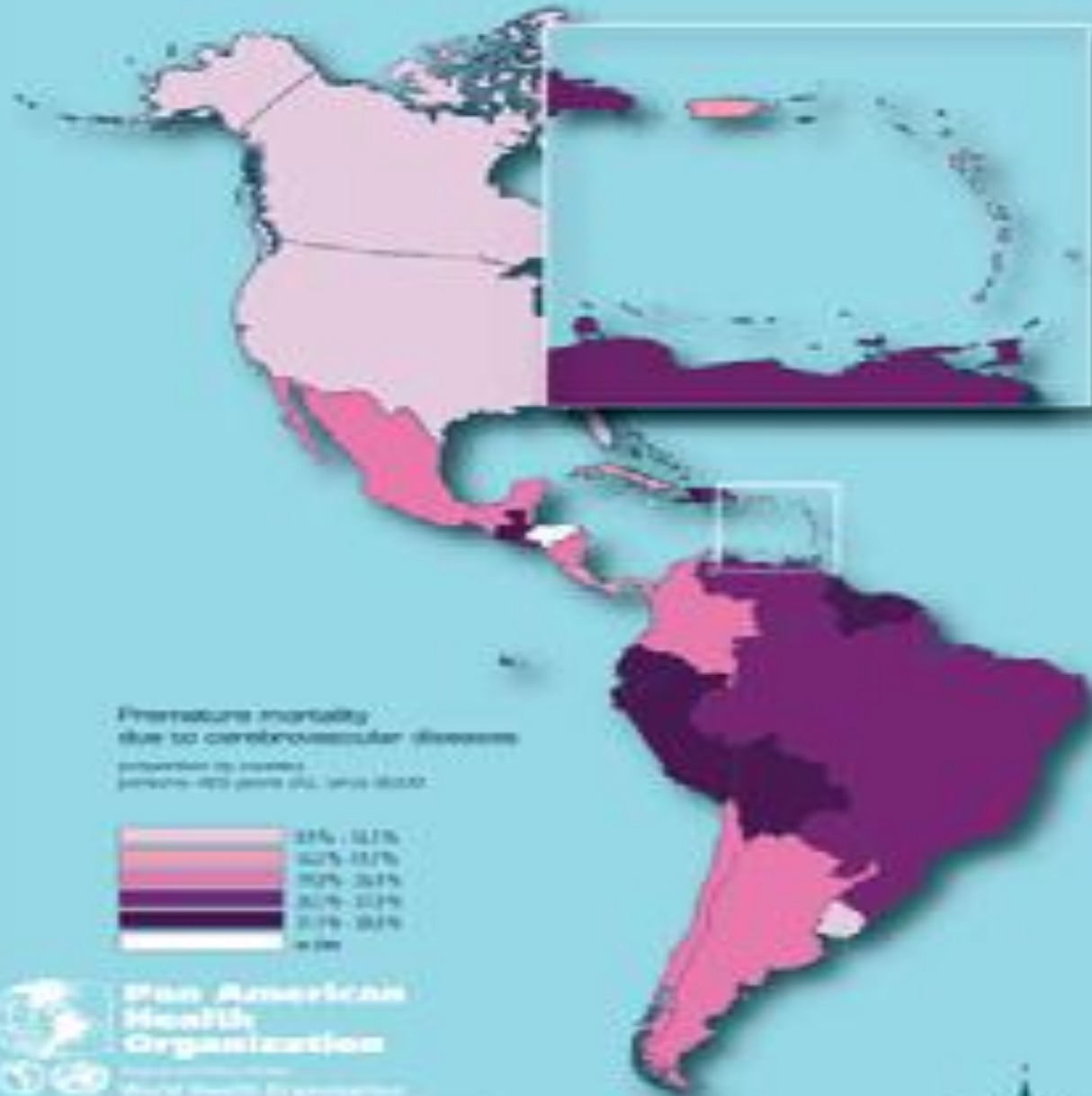


**Figure 2** Causes of death during 2006 in the São Paulo State (Brazil) for aetiologies associated with heart failure (HF) or HF itself. Data were obtained from the SEADE Foundation. The estimated population of the São Paulo State is 41 654 020 and the number of deaths was 242 832 with 15 336 (6.3%) related to HF or aetiologies associated with HF.

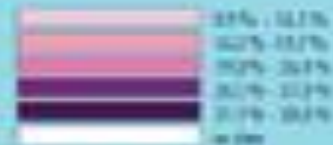


# DIFERENCIAS SEGÚN REGION

- USA-50% DE MUERTES CV X ENF ISQUEMICA. OTROS PAISES X ECV, Brazil (31%).
- 
- ARGENTINA – FALLA CARDIACA 34%



Premature mortality  
due to cerebrovascular diseases  
provided by country  
1990-2008 (est. 2009)



**Pan American  
Health  
Organization**

Regional Office of the  
World Health Organization

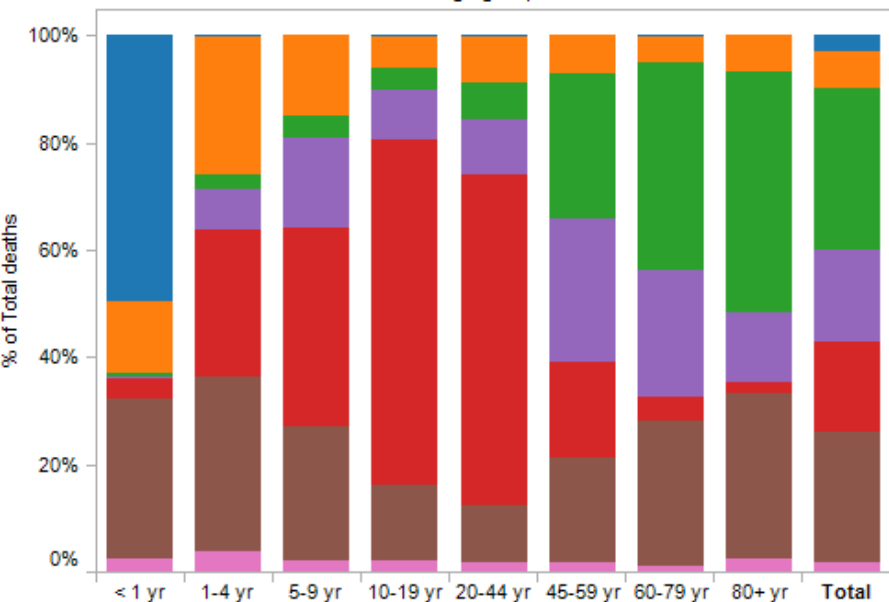
Washington, DC, USA  
5050 Woodmont Avenue, Washington, DC 20015, USA  
Buenos Aires, Argentina and Mexico



# Proportional mortality by broad groups of causes of death

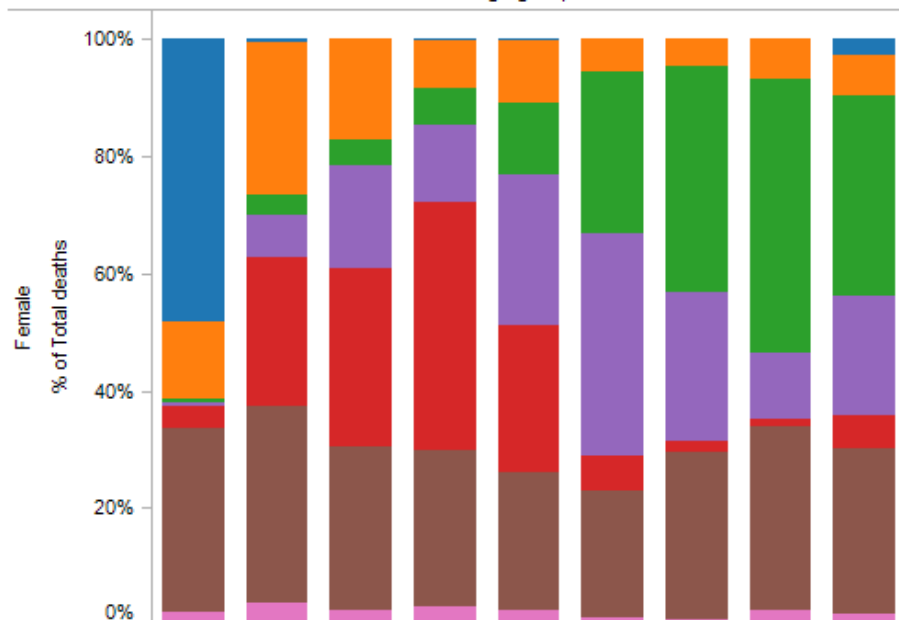
Colombia

Age groups



Distribution by sex, Colombia

Age groups



Broad groups of causes (List PAHO 6/67)

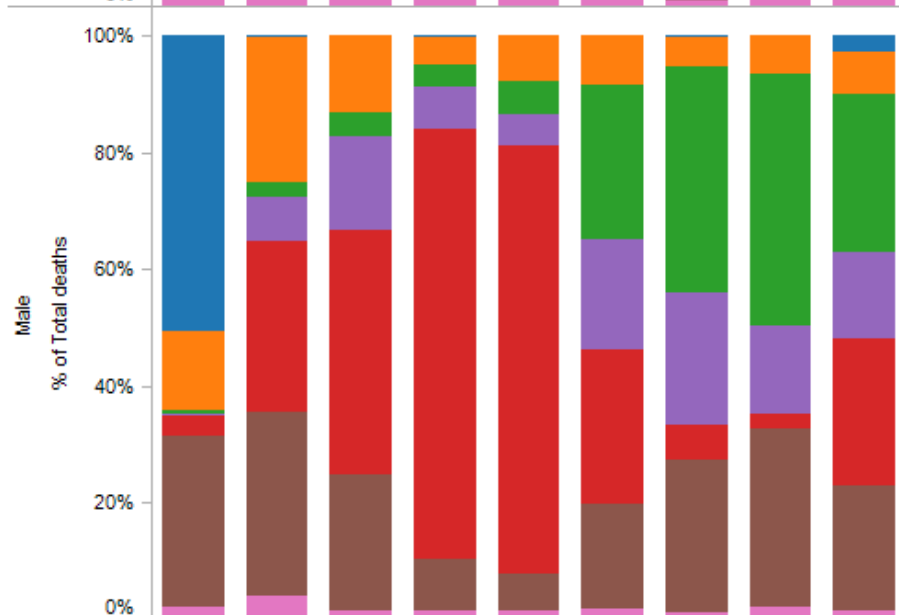
- Certain affections of perinatal period
- Communicable diseases
- Diseases of Circulatory system
- Neoplasms
- External causes (Injuries)
- Other diseases
- Symptoms, signs and ill-defined conditions

Select country

Colombia

Select years

- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009





## Basic Indicators Country Profile: Colombia

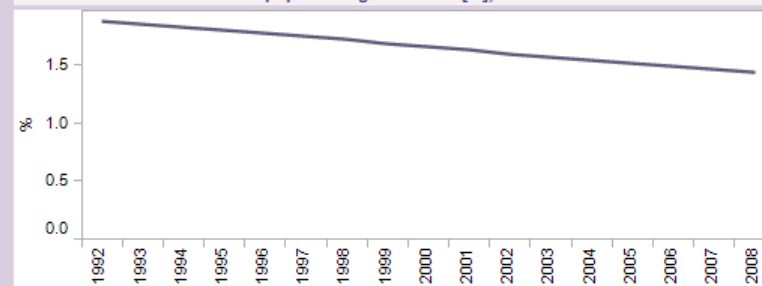
Select Country  
Colombia

Selected indicators, Colombia, 1990, 2000 y 2005

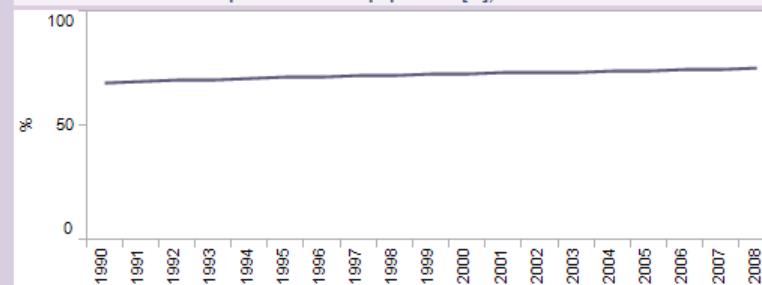
	1990	2000	2005	
Demographics	Annual population growth rate [%]	2	2	
	Crude birth rate [per 1,000 pop.]	27	23	21
	Crude death rate [per 1,000 pop.]	6	6	6
	Life expectancy at birth [Years]	68	71	72
	Life expectancy at birth [Years] (Female)	73	75	76
	Life expectancy at birth [Years] (Male)	64	67	69
	Population [Thousands]		39,764	43,041
	Proportion of population 60 years and older [%]		7	8
	Proportion of urban population [%]	68	72	74
	Total fertility rate [child/woman]	3	3	2
Morbidity and Risk Factors	AIDS incidence [Per 100,000 population]	1	1	
	Number of registered cases of malaria [Cases]	99,489	105,063	140,721
	Ratio of male to female AIDS cases [Ratio]		4	3
	Tuberculosis incidence [per 100,000 pop.]		29	24
Mortality	Estimated general mortality rate [per 1,000 pop.]		5	5
	Estimated mortality rate from communicable diseases [per 100,000 pop.]		41	46
	Estimated mortality rate from diseases of the circulatory system [per 100,000 pop.]		154	152
	Estimated mortality rate from external causes [per 100,000 pop.]		128	105
	Estimated mortality rate from malignant neoplasms [per 100,000 pop.]		81	87
	Infant mortality rate [per 1,000 lb] (Reported less than 1 year)	37	26	22
	Maternal mortality ratio, reported [per 100,000 lb]		105	73
Under-5 mortality, estimated [per 1,000 lb]	41	30	27	
Resources, Services and Coverage	Proportion of deliveries attended by trained personnel [%]		94	97
	Proportion of population of 1 year of age immunized against measles [%] (one year)	82	75	89
	Proportion of under-1 population immunized against diphtheria, pertussis, and tetanu..	88	74	87
Socioeconomics	Annual GDP growth rate [%]	6	4	5
	Gross National Income (GNI), per capita, international \$(PPP-adjusted) [US\$]	4,180	5,730	7,030
	Literacy rate [%]			93

### Selected Indicators

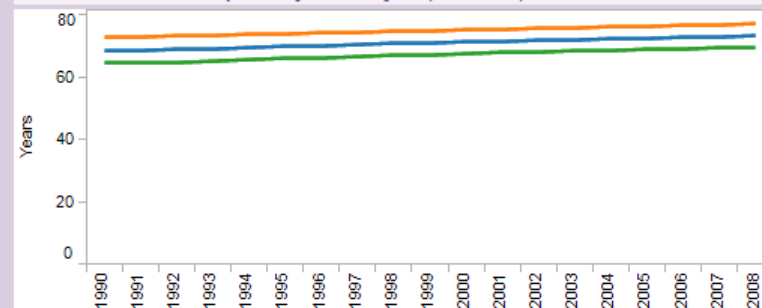
Annual population growth rate [%], Colombia



Proportion of urban population [%], Colombia



Life expectancy at birth by sex, Colombia, 1990-2008



- Life expectancy at birth [Years]
- Life expectancy at birth [Years] (Female)
- Life expectancy at birth [Years] (Male)

Source: Health Indicator database, Regional Initiative of Health Indicator, Pan American Health Organization (PAHO), 2009.

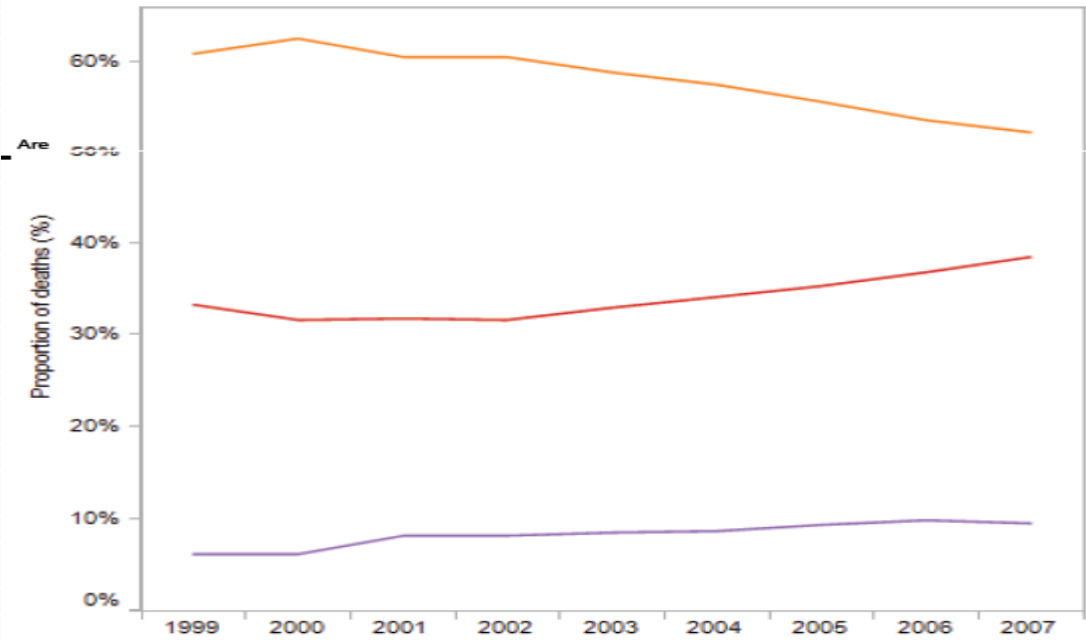


**Pan American Health Organization**

Regional Office of the World Health Organization

### Proportion of CVD deaths by Income

Cardiovascular diseases. Select subgroup of causes of deaths  
(All)



- Income (group)**
- High income
  - Upper-middle income
  - Low & Lower-middle income

Source: Region Mortality Information System, Regional Health Observatory, Pan American Health Organization (PHO-WHO), 2012.

# FALLA CARDIACA EN AL

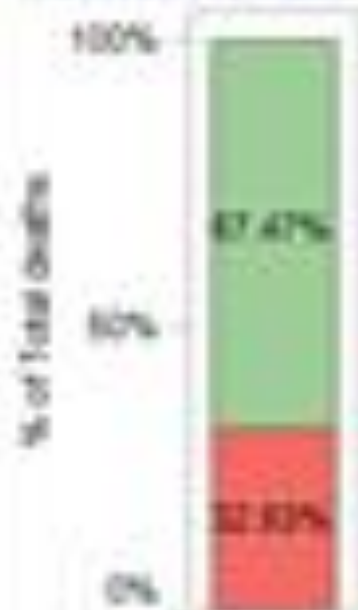
- IMPORTANTE PROBLEMA DE SALUD PUBLICA
- MULTIFACTORIAL
- FACTORES PREVENIBLES
- REQUIEREN MEJORES ESTUDIOS EPIDEMIOLOGICOS
- MEJORES ESTRATEGIAS DE PREVENCION Y TTO
- DIFERENTES FRENTES

**GRACIAS**



# Non Communicable Diseases (NCD) causes of deaths Income groups of countries in the Americas Proportion of total death (%)

## Deaths by age



### Age group

- < 70 yr
- 70+ yr

## Groups of causes of death



### Group of causes of death

- Communicable, maternal, perinatal
- Noncommunicable diseases
- Injuries
- Ill-defined causes

## Slide or select year

← 2007 →



## Select income group

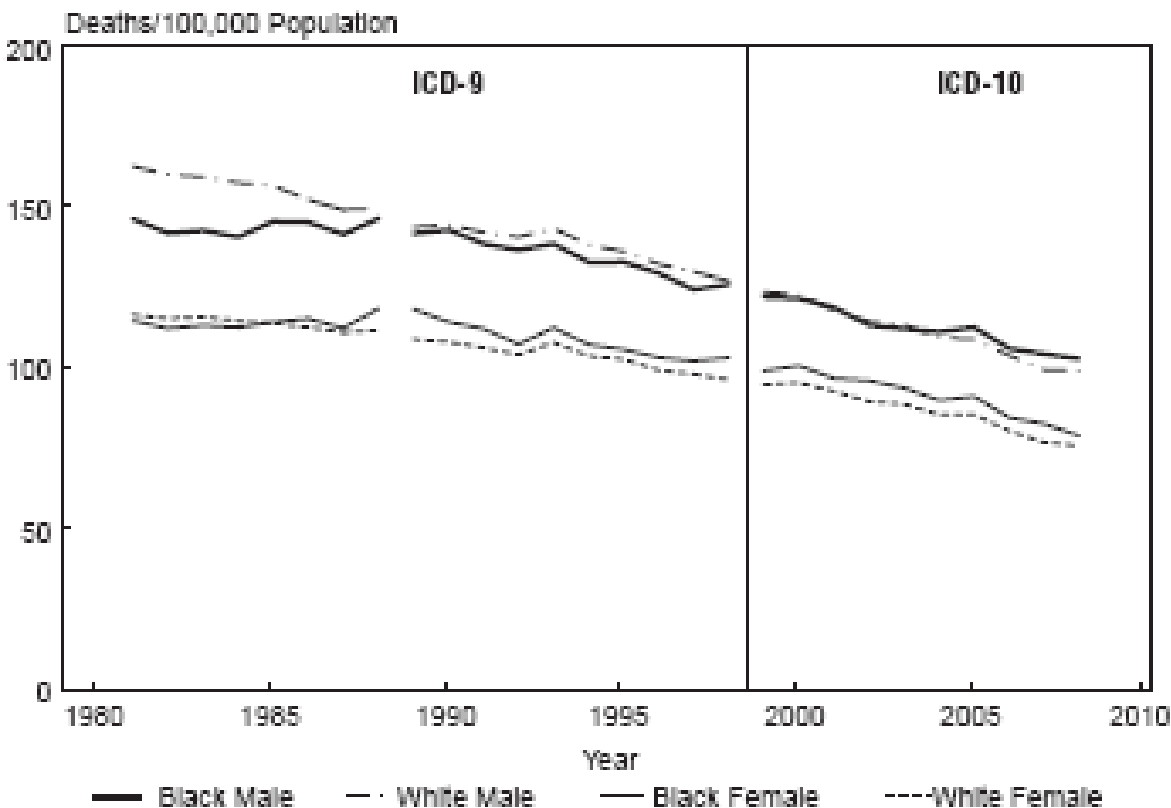
(All)

Not defined: Economies not classified by World Bank  
Includes:  
Anguilla  
Montserrat  
Turks & Caicos Islands, and  
Virgin Islands, U.K.

## See

(All)

## Age-Adjusted Death Rates for Any Mention of Heart Failure by Race and Sex, U.S., 1981–2008



From 1989 to 2008, death rates with any mention of HF on the death certificate declined in blacks and whites, for both males and females. During this period, within sex groups, the rates were similar for blacks and whites.<sup>30, 31</sup> This is in contrast to HF solely as the underlying cause (see Chart 3-40).