



REduction of Atherothrombosis  
for Continued Health

# **Two-year cardiovascular event rates of the cerebrovascular disease subpopulation within the REduction of Atherothrombosis for Continued Health (REACH) Registry**

**Joachim Röther \*, Germany**

**Mas J-L, France**

**Touzé E, France**

**Alberts MJ, USA**

**Hill MD, USA**

**P Gabriel Steg, France**

**Deepak L Bhatt, USA**

**Peter WF Wilson, USA**

**Franz Aichner, Austria**

**Shinya Goto, Japan**

**on behalf of the REACH Registry Investigators**

**Endorsed by the World Heart Federation**

**\* Department of Neurology, Klinikum Minden, Hannover Medical School, Germany**

**Please note that the results presented are interim data findings**

# Disclosures (1)

The REACH Registry is supported by sanofi-aventis and Bristol-Myers Squibb. (In Japan, this is supported by the Waksman Foundation.)

Author	Consulting Fees/Honoraria	Speaker's Bureau	Research Grants
Joachim Röther	sanofi-aventis, Boehringer Ingelheim, MSD, and Bristol-Myers Squibb.	sanofi-aventis, Boehringer Ingelheim, MSD, and Bristol-Myers Squibb.	
Jean-Louis Mas	sanofi-aventis, Servier, and Bristol-Myers Squibb		
Emmanuel Touze	none to declare	none to declare	none to declare
Mark Alberts	AGA Medical, AstraZeneca, Bayer, Bristol-Myers Squibb, Boehringer Ingelheim, diadexus, Eli Lilly & Co, Genentech, KOS, Medicines Company, Merck, Novo Nordisk, PDL Biopharma Inc, Pfizer, Photo Thera, sanofi-aventis, TAP Pharmaceuticals-DSMB, Schering Plough	AstraZeneca, Bristol-Myers Squibb, Boehringer Ingelheim, diadexus, Genentech, Medicines Company, Novo Nordisk, PDL Biopharma Inc, sanofi-aventis	AGA Medical, AstraZeneca, Bristol-Myers Squibb, Boehringer Ingelheim, Novo Nordisk, Photo Thera, sanofi-aventis, Schering Plough
Michael Hill	Dr. Hill is funded by the Heart & Stroke Foundation of Alberta, NWT, Nunavut and by the Alberta Heritage Foundation for Medical Research		

Please note that the results presented are interim data findings

## Disclosures (2)

The REACH Registry is supported by sanofi-aventis and Bristol-Myers Squibb. (In Japan, this is supported by the Waksman Foundation.)

Author	Consulting Fees/Honoraria	Speaker's Bureau	Research Grants
P Gabriel Steg	sanofi-aventis, Servier, BMS, AstraZeneca, Novartis	Boehringer-Ingelheim, BMS, GSK, MSD, Novartis, Nycomed, sanofi-aventis, Sankyo, Servier, ZLB-Behring	
Deepak L Bhatt	AstraZeneca, Bristol Myers Squibb, Cardax, Centocor, Daiichi- Sankyo, Eisai, Eli Lilly, Glaxo Smith Kline, Millennium, Otsuka, Paringenix, PDL, sanofi-aventis, Schering Plough, The Medicines Company, tns Healthcare	Bristol Myers Squibb, sanofi-aventis The Medicines Company	Heartscape, The Medicines Company, Bristol Myers Squibb, sanofi-aventis, Eisai, Ethicon
Peter W F Wilson			sanofi-aventis
Franz Aichner	Boehringer Ingelheim, Bristol-Myers Squibb, sanofi-aventis		
Shinya Goto	Astellas, AstraZeneca, Bayer, Bristol-Myers Squibb, Daiichi-Sankyo, Eisai, GlaxoSmithKline, Kowa, Novartis, Otsuka, sanofi-aventis, Schering-Plough, and Takeda		Eisai, Ono, sanofi-aventis, Astra Zeneca, Kowa, and Pfizer

Please note that the results presented are interim data findings

# Rationale

- **In most cases, the information available from previous datasets regarding the characteristics, management and outcomes of patients with, or at high risk of, atherothrombosis was limited to a:**
  - **single geographic locale (e.g. North America, Europe)**
  - **single subtype of patients (e.g. post myocardial infarction [MI], stroke)**
  - **in-patients or individuals in primary care**

# The REACH Registry

- **The REACH Registry has recruited outpatients who have had, or are at high risk of having, symptoms of atherothrombosis**
- **The REACH Registry studies a contemporary stable patient population from various regions of the world in order to:**
  - **describe the characteristics and management of these patients: total population and subgroups**
  - **assess the long-term risk of atherothrombotic events: total population and subgroup**
  - **assess the amount of “cross-risk” between subgroups**
  - **compare outcomes within different subject profiles**
  - **define predictors of risk for subsequent atherothrombotic events**
- **Follow-up planned at 12 and 21 months, extended to three and four years**

Please note that the results presented are interim data findings

# Inclusion criteria

## Must include:

Signed,  
written,  
informed  
consent

Patients: age  
≥45 years

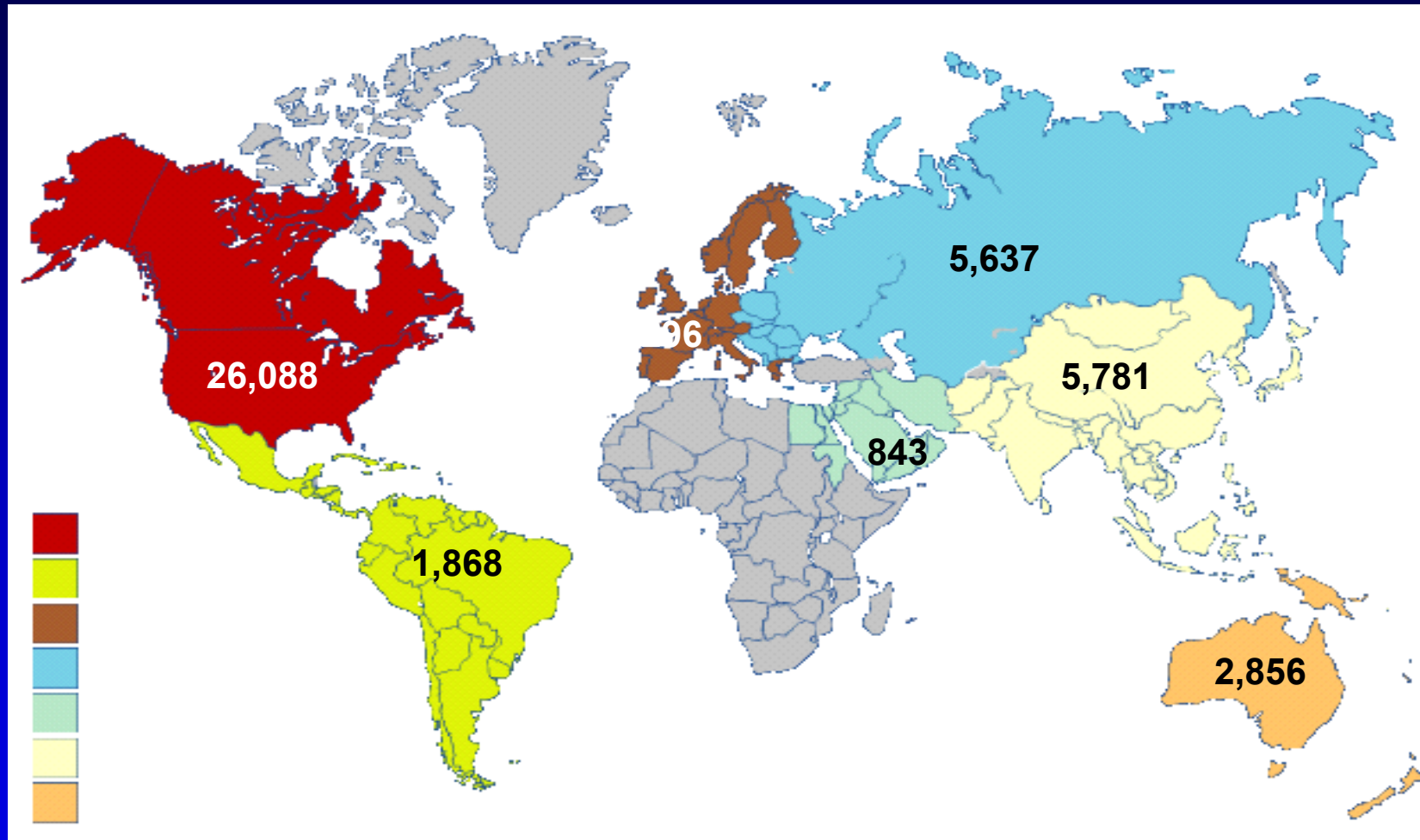
At least  
**1** of four  
criteria

- Documented CVD:  
**ischemic stroke or TIA**
- Documented CAD:  
**angina, MI, angioplasty/  
stent/bypass**
- Documented historical  
or current intermittent  
claudication associated  
with ABI <0.9

At least  
**3** atherothrombotic  
risk factors

- **Male ≥65 years  
or female ≥70 years**
- **Current smoking  
>15 cigarettes/day**
- **Type I or Type II  
diabetes**
- **Hypercholesterolemia**
- **Diabetic nephropathy**
- **Hypertension**
- **ABI <0.9 in either  
leg at rest**
- **ACAS ≥70%**
- **Presence of at least  
one carotid plaque**

# The REACH Registry at two years



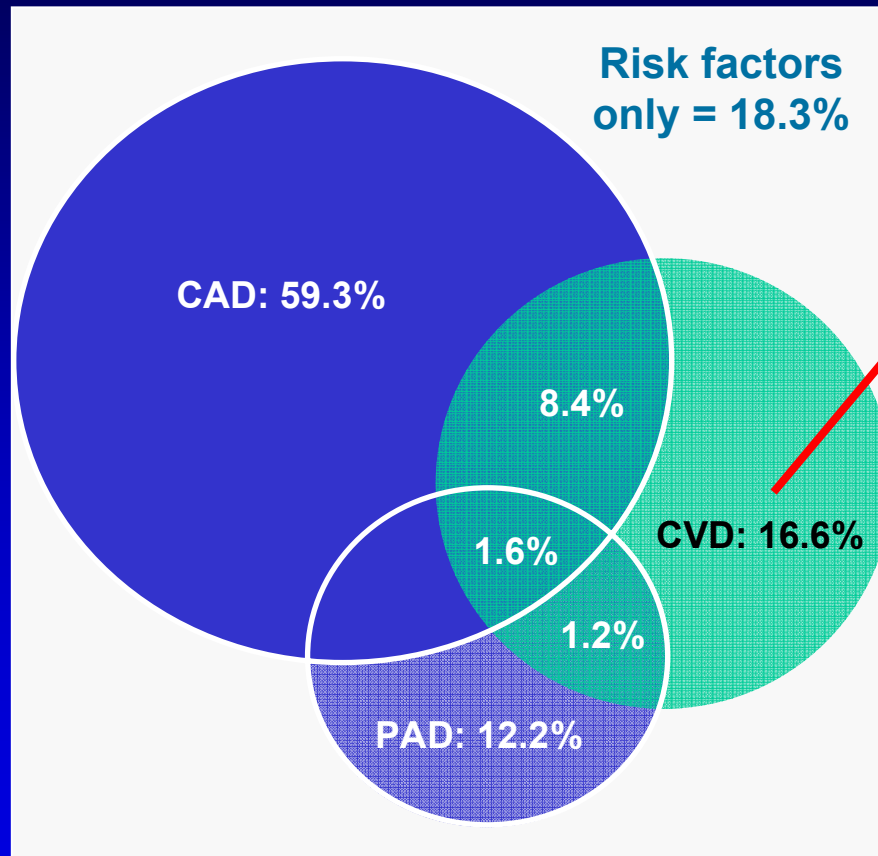
**>65,000 patients from 5,587 sites\* in 44 countries**

**\*up to 15 patients/site (up to 20 in the US)**

**Please note that the results presented are interim data findings**

# ~40% of patients with CVD have polyvascular disease

## Total population (%)



- Patients with CVD = 27.8% of the REACH Registry population
- Of the total CVD population:
  - 71% had a stroke
  - 51% had a TIA
  - 20% had both

CVD, cerebrovascular disease; TIA, transient ischemic disease

References: Bhatt DL. JAMA 2006; Röther et al., Cerebrovasc Disease 2008

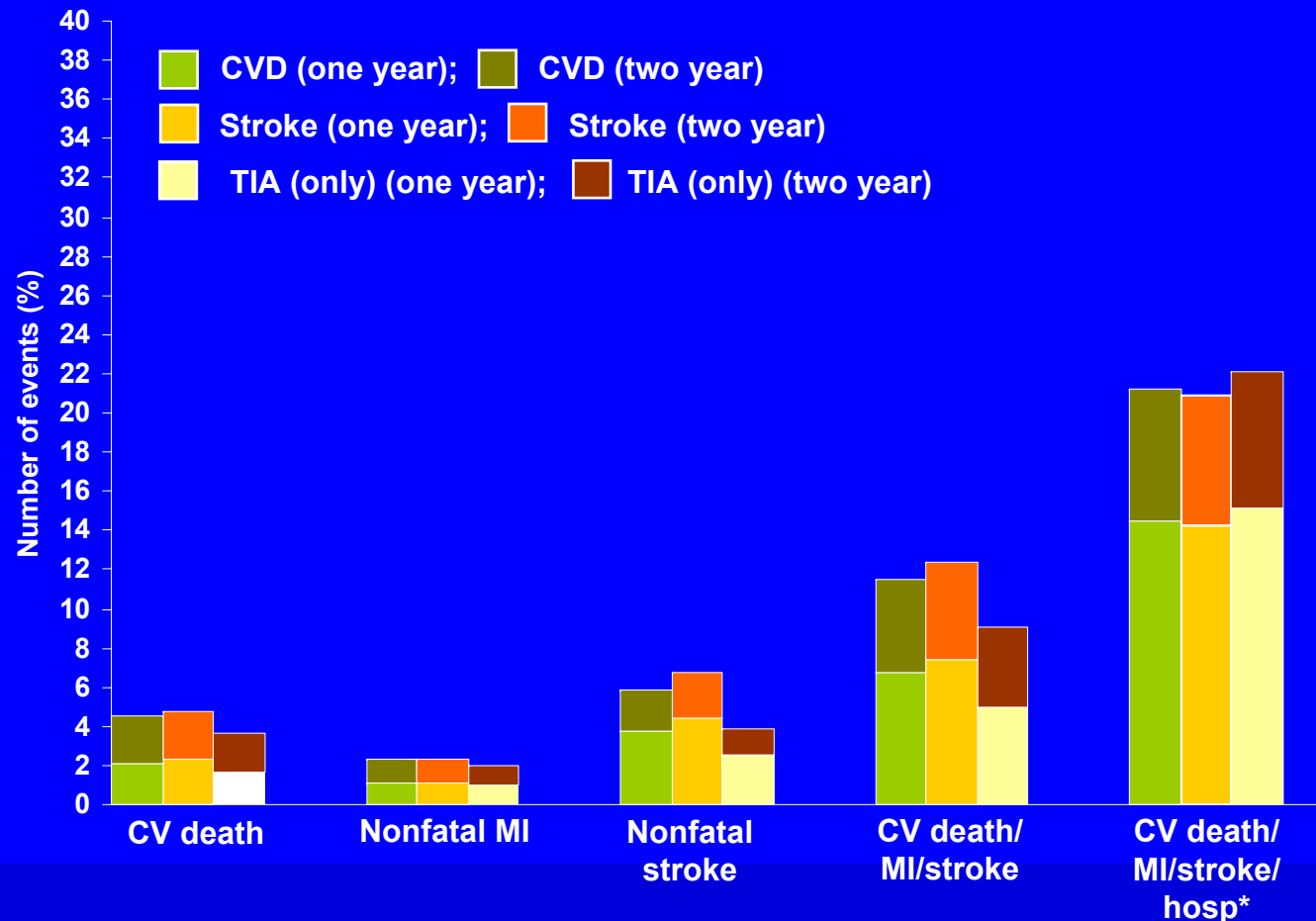
Please note that the results presented are interim data findings

# Risk factors of patients in two-year follow-up (symptomatic population)

	North America	Latin America	Western Europe	Eastern Europe	Middle East	Asia	Australia	Japan
Hypertension	87.4	78.0	82.2	87.6	82.8	80.9	79.0	74.4
Hyper-cholesterolemia	71.8	48.1	61.9	44.2	73.4	47.8	61.5	35.7
Diabetes	43.1	37.3	34.6	27.0	49.1	39.8	22.8	36.6
Obesity (BMI $\geq 30$ )	35.4	22.3	25.5	26.0	24.2	6.7	25.7	3.4
Current smoking	14.1	7.2	15.0	17.8	13.3	12.2	6.5	16.1

Please note that the results presented are interim data findings

# MACE: One- and two-year event rates in the CVD population (1)



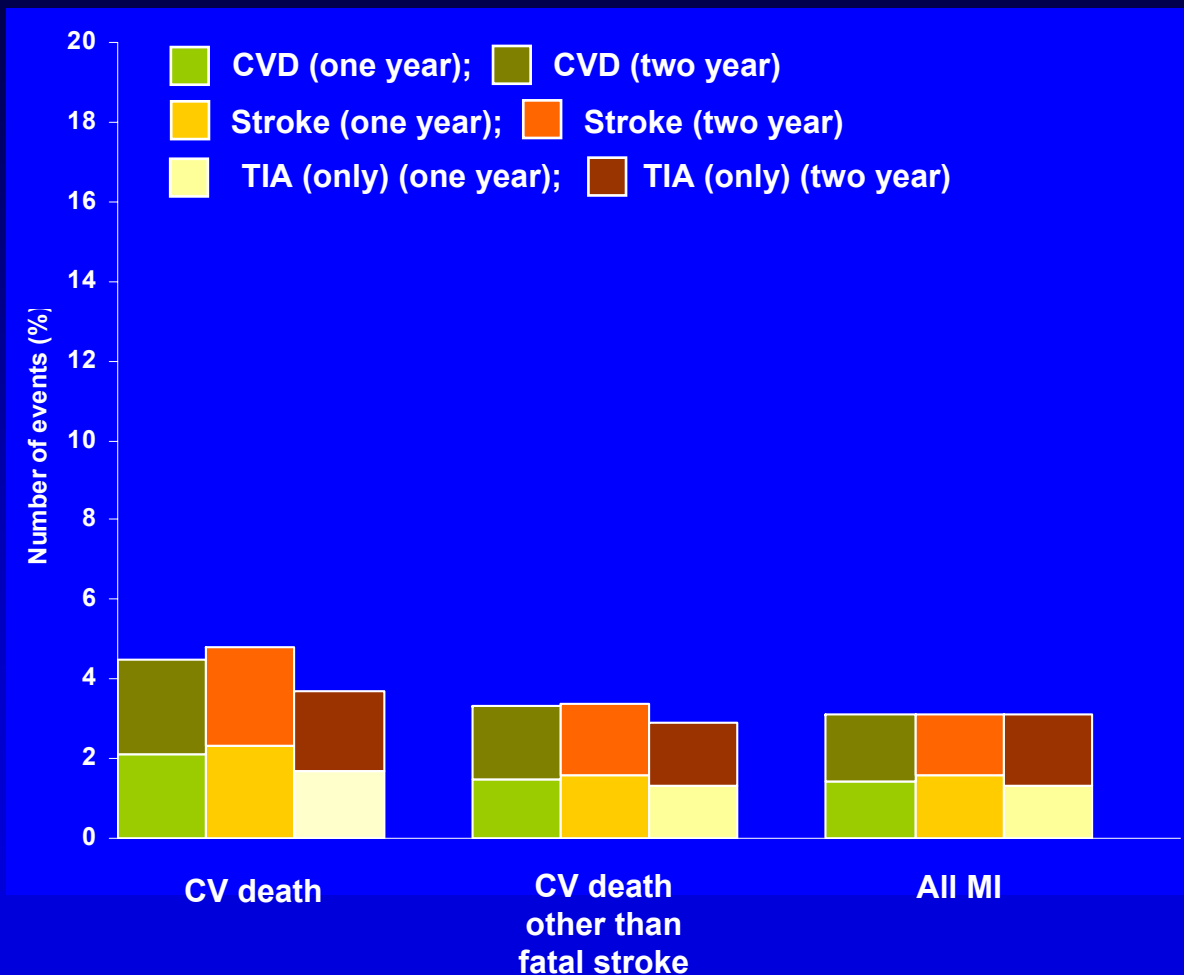
CV, cardiovascular; CVD, cerebrovascular disease; MACE, major adverse cardiovascular events; MI, myocardial infarction; TIA, transient ischemic attack

\* TIA, unstable angina, other ischemic arterial event including worsening of peripheral artery disease

Note: Rates adjusted for age and gender

Please note that the results presented are interim data findings

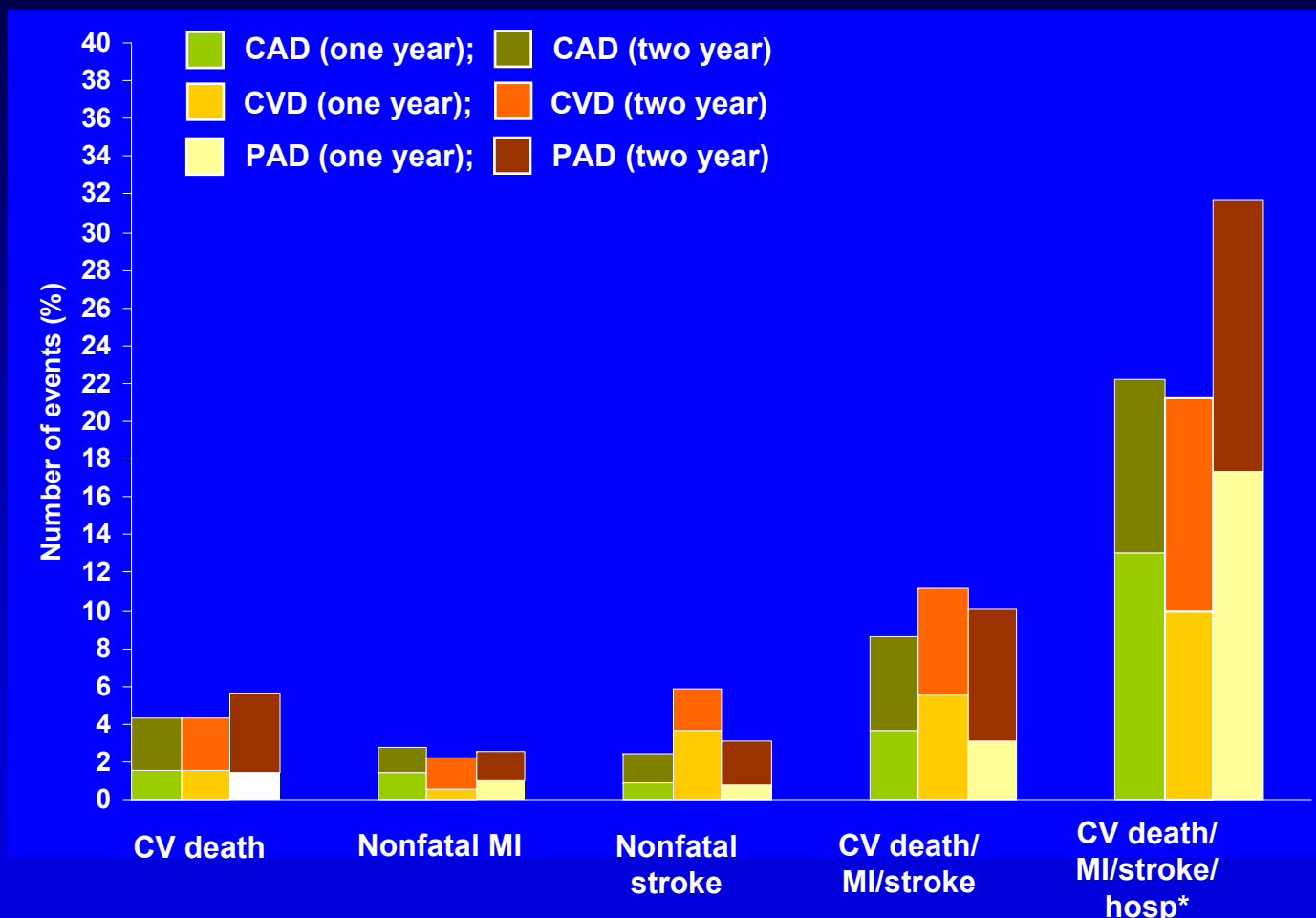
# MACE: One- and two-year event rates in the CVD population (2)



CV, cardiovascular; CVD, cerebrovascular disease; MACE, major adverse cardiovascular events; MI, myocardial infarction; TIA, transient ischemic attack  
 Note: Rates adjusted for age and gender

Please note that the results presented are interim data findings

# MACE: One- and two-year event rates in the symptomatic population



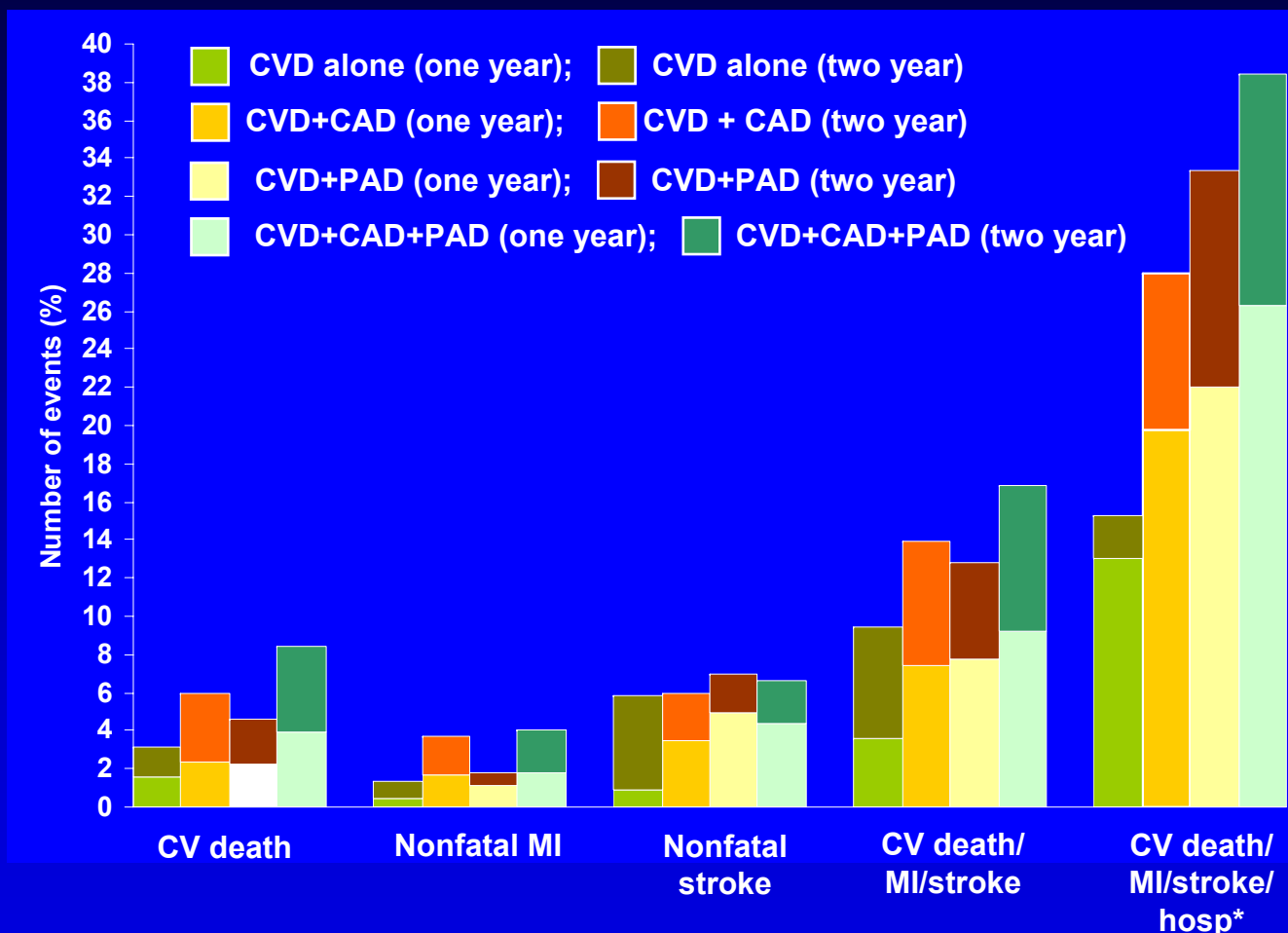
CAD, coronary artery disease; CVD, cerebrovascular disease; MACE, major adverse cardiovascular events; MI, myocardial infarction; PAD, peripheral artery disease

\* TIA, unstable angina, other ischemic arterial event including worsening of peripheral artery disease

Note: Rates adjusted for age and gender

Please note that the results presented are interim data findings

# CV outcomes (symptomatic disease): single arterial vs polyvascular diseases



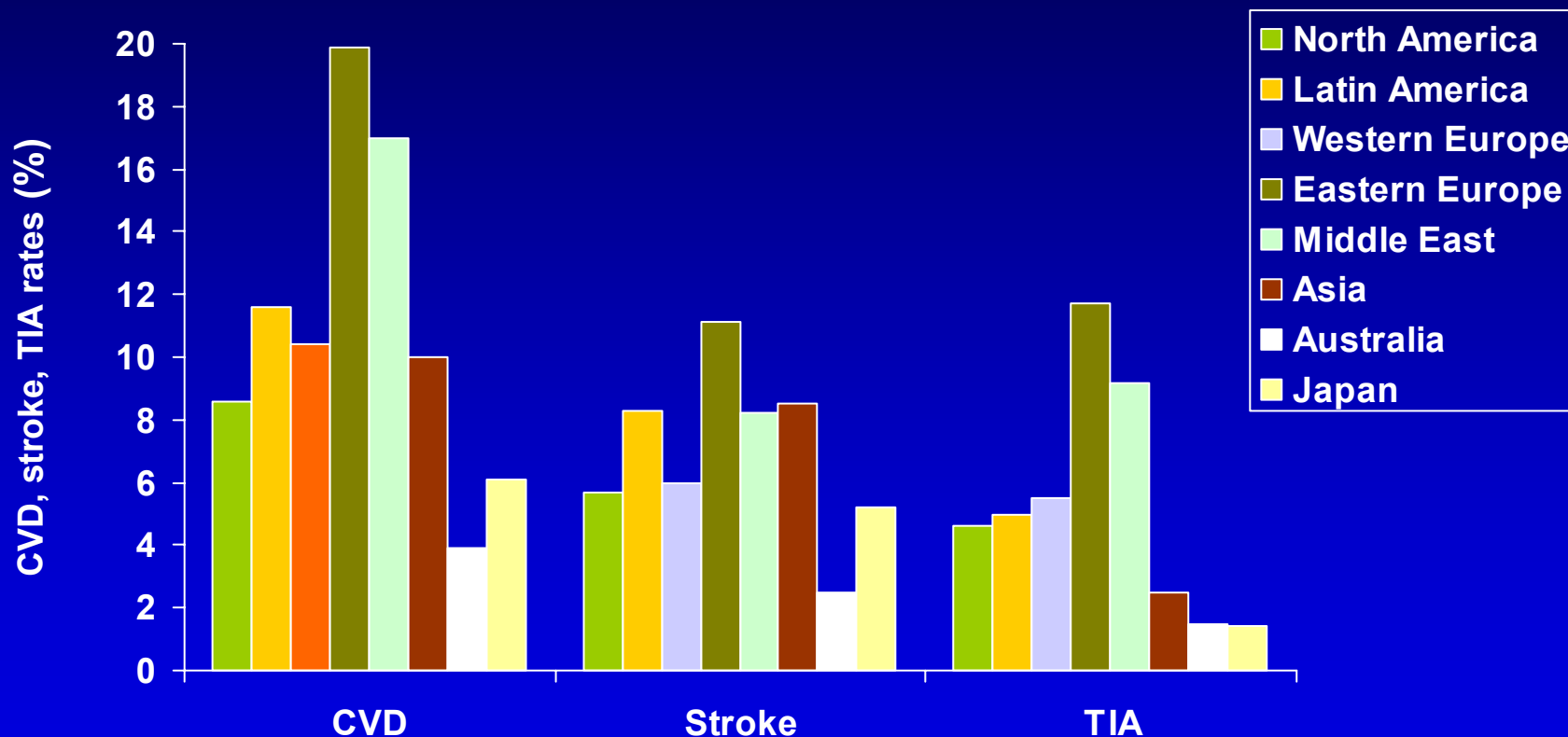
CVD, cerebrovascular disease; MACE, major adverse cardiovascular events; TIA, transient ischemic attack

\* TIA, unstable angina, other ischemic arterial event including worsening of peripheral artery disease

Note: Rates adjusted for age and gender

Please note that the results presented are interim data findings

# Geographical variation of CVD, stroke and TIA rates (two years)



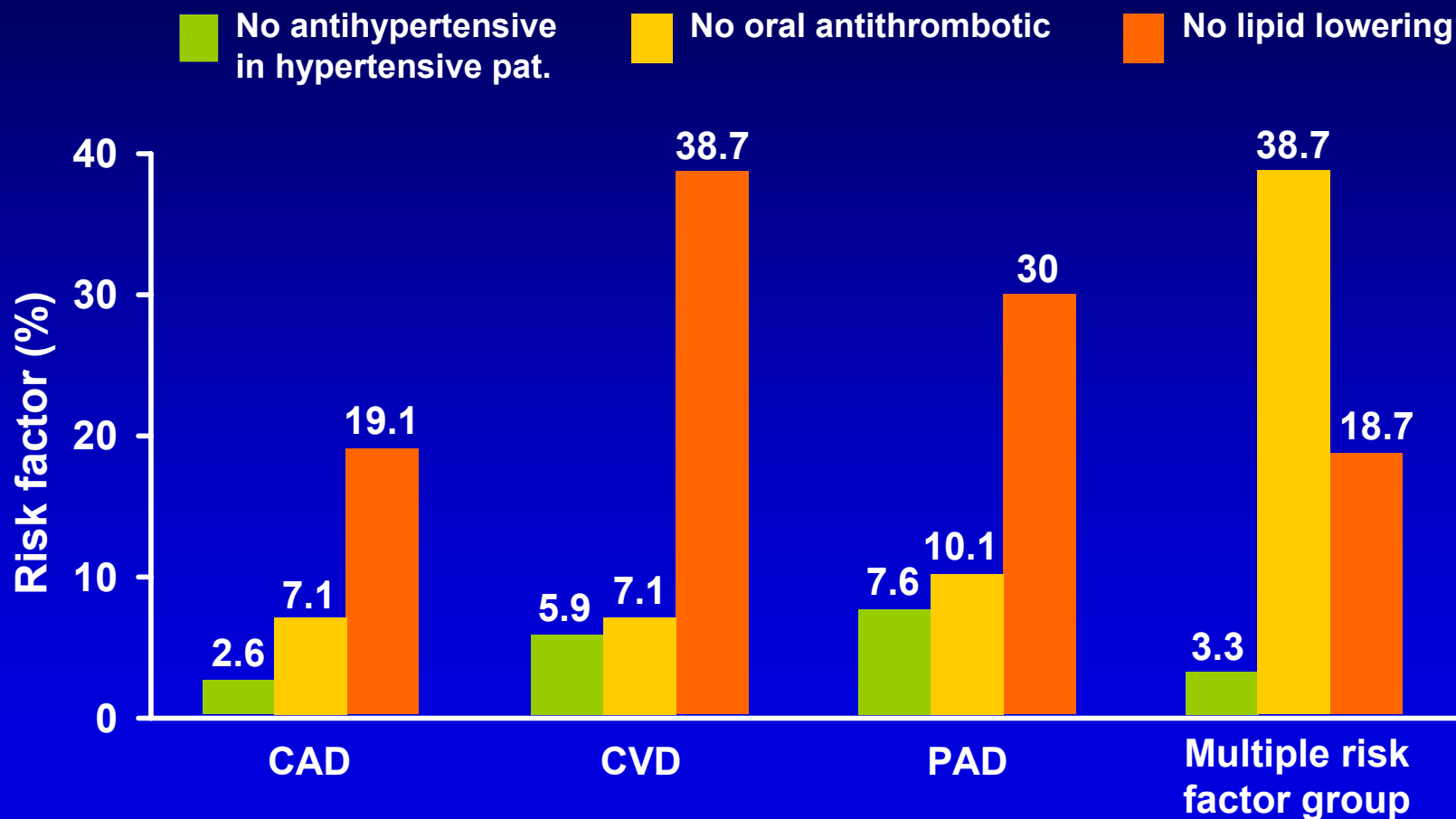
CVD, cerebrovascular disease; TIA, transient ischemic attack

Please note that the results presented are interim data findings

# Summary

- **The risk of major secondary ischemic events, including CV death, is very high in individuals with previous stroke and/or TIA**
- **Improved ischemic risk reduction management of CVD patients is required to prevent both morbid events and associated hospitalizations**

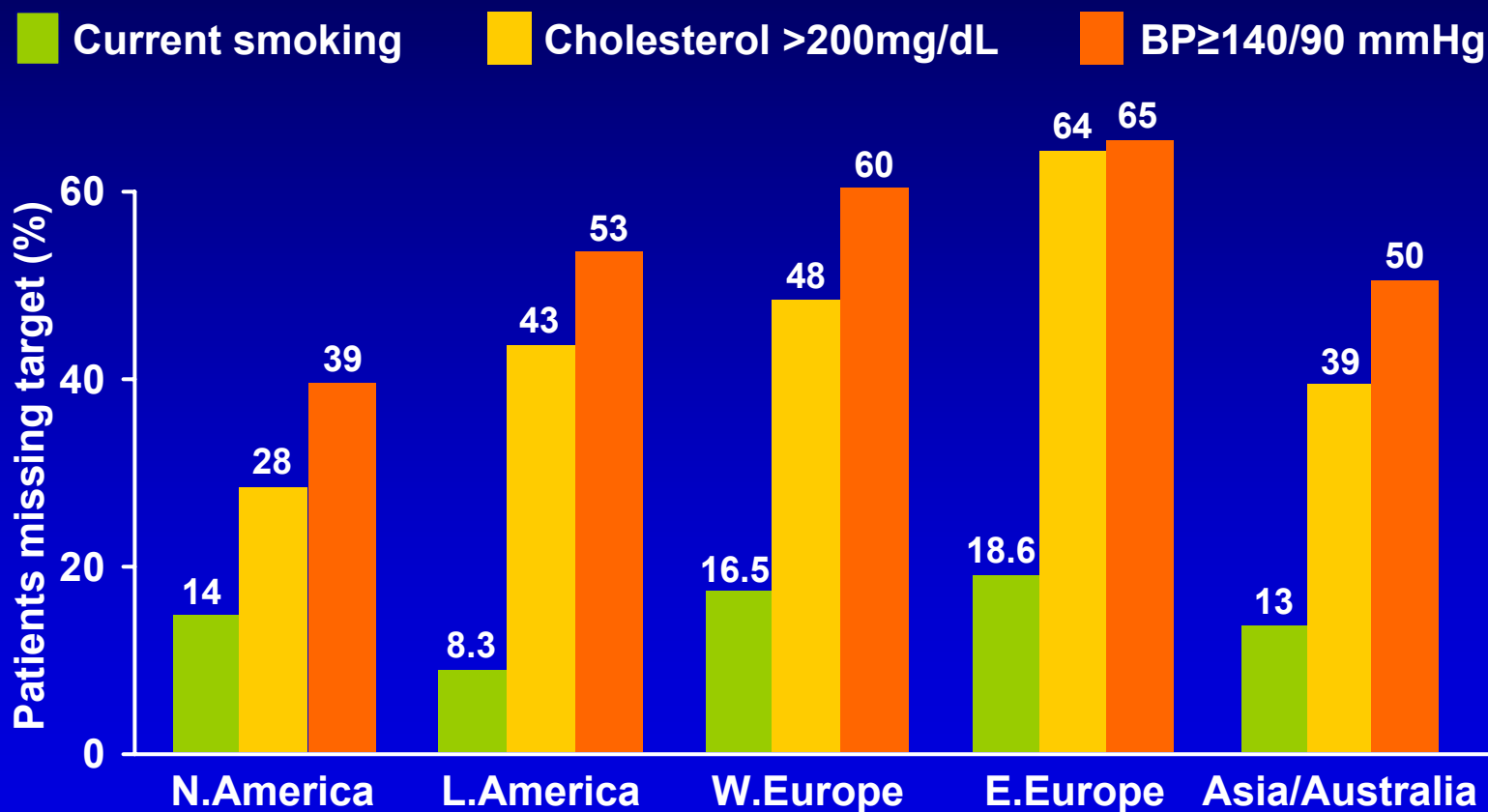
# Clinical implications: population undertreatment occurs in all populations



References: Bhatt D et al. *JAMA*. 2006; Ph. Gabriel Steg, Preliminary results, 1/2006

Please note that the results presented are interim data findings

# Clinical implications: treatment goals are not met worldwide (initial visit)



Reference: Bhatt D et al. *JAMA*. 2006.

Please note that the results presented are interim data findings

# National coordinators

Country	Coordinator(s)	Country	Coordinator(s)
Australia	C Reid	Lithuania	R Babarskiene
Austria	F Aichner, T Wascher	Malaysia	R Zambahari
Belgium	P Laloux	Mexico	E Gaxiola
Brazil	D Campos de Albuquerque	Netherlands	D Poldermans
Bulgaria	J Djorgova	Philippines	MTB Abola
Canada	EA Cohen	Portugal	V Gil
Chile	R Corbalan	Romania	C Popa
China	Chuanzhen LV, R Gao	Russia	Y Belenkov, E Panchenko
Denmark	P Hildebrandt	Saudi Arabia	H Chamsi-Pasha
Finland	I Tierala	Singapore	Yeo TC
France	J-L Mas, P Cacoub, G Montalescot	South Korea	Oh D-J
Germany	K Parhofer, U Zeymer, J Röther	Spain	C Suárez
Greece	M Elisaf	Switzerland	I Baumgartner
Guatemala	R López	Taiwan	C-S Liao
Hong Kong	J Chan	Thailand	P Sritara
Hungary	G Pfliegler	UAE	W Mahameed
Indonesia	B Sutrisna	UK	J Morrell
Israel	A Porath	Ukraine	V Tseluyko
Japan	Y Ikeda	USA	M Alberts, RM Califf, CP Cannon, K Eagle, AT Hirsch
Lebanon	I Khalil		

Please note that the results presented are interim data findings

# REACH Publication Committee

- Philippe Gabriel Steg, Hôpital Bichat-Claude Bernard, Paris, France
- Deepak L. Bhatt, Cleveland Clinic Foundation, Cleveland, USA
- Ralph D'Agostino, Boston University, Boston, MA, USA
- Shinya Goto, Tokai University School of Medicine, Isehara, Kanagawa, Japan
- Alan T Hirsch, University of Minnesota, Minneapolis, MN, USA
- Chiau-Suong Liao, National Taiwan University Hospital, Taipei, Taiwan
- Jean-Louis Mas, Centre Raymond Garcin, Hôpital Saint-Anne, Paris, France
- E. Magnus Ohman, Duke University, Durham, NC, USA
- Joachim Röther, Klinikum Minden, Hannover Medical School, Germany
- Peter F. Wilson, Emory University School of Medicine, Atlanta, GA, USA
- Kim Eagle, University of Michigan Health System, Ann Arbor, MI, USA
- Mark Alberts, Northwestern University Medical School, Chicago, IL, USA
- Sidney Smith, University of North Carolina, Chapel Hill, NC, USA

Find out more at:  
<http://www.REACHRegistry.org>

Endorsed by the World Heart Federation

The REACH Registry is jointly sponsored by  
sanofi-aventis and Bristol-Myer Squibb