WHF Emerging Leaders Think Tank Seminar

Universidad Peruana Cayetano Heredia, Lima, Peru

How to Scale up CVD Prevention and Control for "25 x 25": a national Emerging Leaders Program in Brazil

Álvaro Avezum, MD, PhD, FESC
São Paulo, Brazil

- Director, Research Division, Dante Pazzanese Institute of Cardiology (IDPC)
- Associated Professor, PhD Program IDPC/São Paulo University
- International Associate Researcher, PHRI, McMaster University, Hamilton, Canada

AGENDA

- Why Collaborative Research is needed
- Examples of Efficient Collaboration in Brazil
- Brazilian CVD Landscape
- Emerging Leaders platform in Brazil

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Why do we need global collaborative research?

1. Efficiency on recruitment
2. External validity of study results
3. Opportunity for regional scientific questions
4. More robust, reliable and unbiased study results
5. Connectivity Era
6. Global vision of the world (global change for local impact)

Benefits from Collaboration

1. Opportunity for sharing/exchange knowledge
2. Capacity building in all research related areas
3. Efficiency for conducting studies (RCTs & Epi studies)
4. Opportunity for publication in high impact journals
5. Tool for improving clinical care
6. Broader questions may be reliably evaluated

Benefits from Collaboration from a Brazilian Perspective

1. Brazilian population of 200 M + Ethnic diversity
2. Well-established CV research network
3. MI & Stroke (#1 and #2 cause of death)
4. Heart Failure as main cause of hospitalization
5. Epidemic increase on obesity, hypertension, DM
6. Young population with non-trivial CV risk
7. Need for answering local/regional scientific questions

Next Steps for Collaboration

1. Strength long-term collaborative efforts
2. Continue capacity building process
3. Simplify regulatory barriers
4. Linkage between epi/clinical research+implementation science
5. Shift from selected population to broader communities for research questions and utilization of new technologies
6. Continuing seek for new model of research and new paradigms for preventing CV diseases
7. Patient advocacy (pt associations, pt-oriented medicine)
8. Shift from Collaboration to True Partnership

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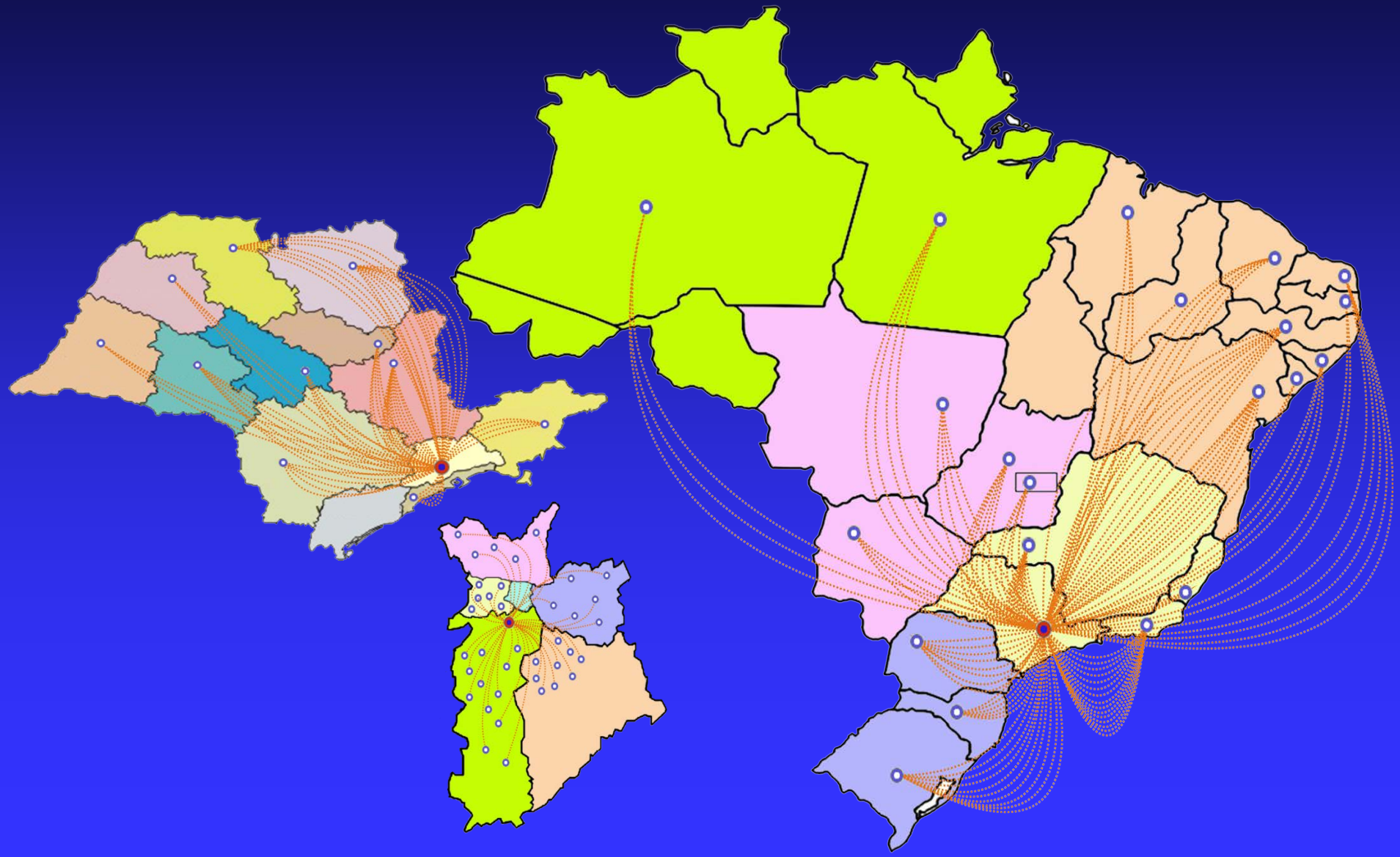
Facts behind Collaboration (from 1989 to 2015)

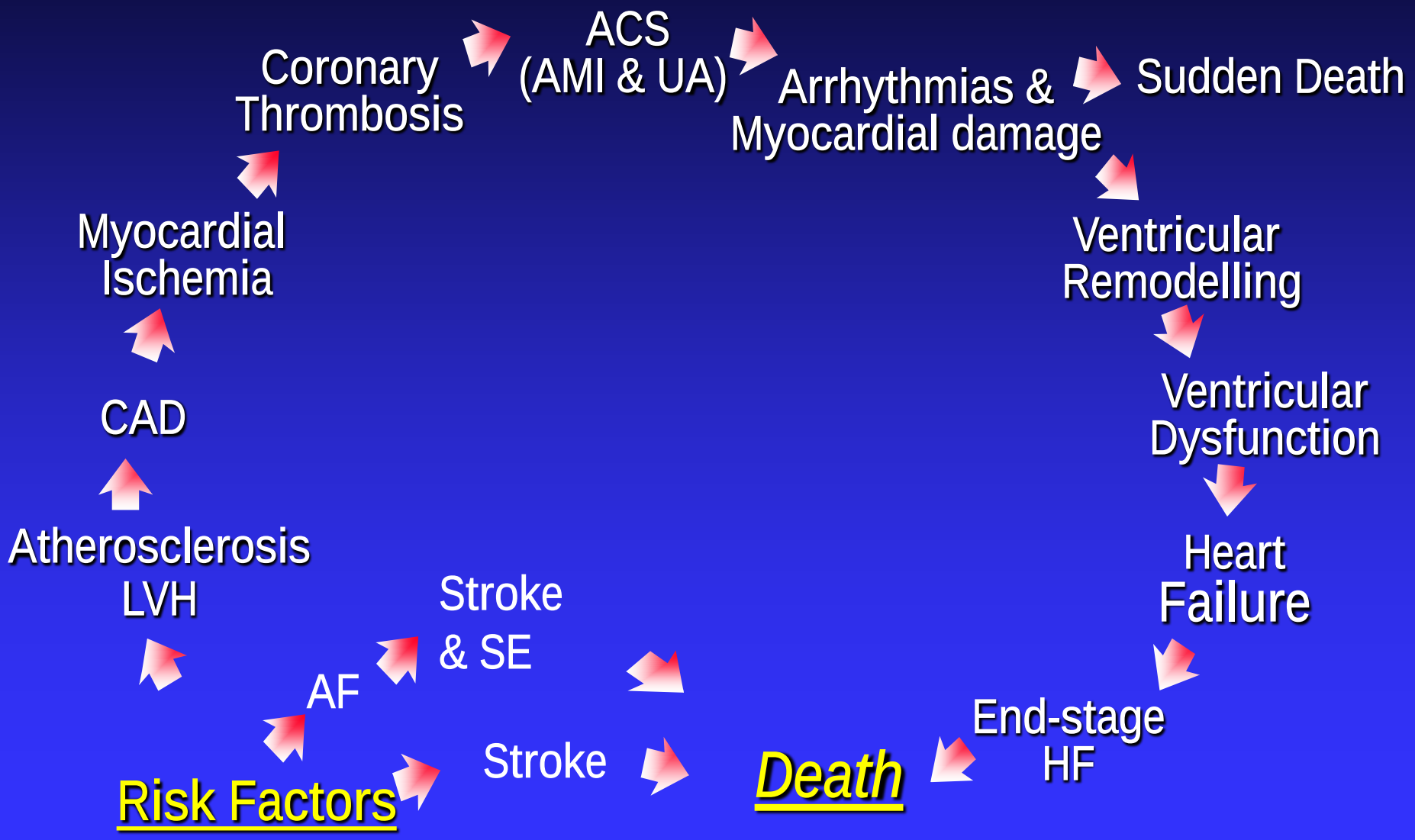
1. EMERAS/ISIS-4 Trials (89-92)
2. Formal training was required
3. 2-year training at PHRI (MSc courses and real-life research exposure: 93-95)
4. Expansion of Brazilian CV Research Network
5. Long-term collaboration based on clinical relevant research questions (RCTs & Epi studies)
6. Sustainable and continuous research cooperation based on commitment and friendship (truly defined)
7. Continuous re-evaluation of model for research collaboration

Brazilian Cardiovascular Network

Age: 25 yr; States: 22; Cities: 60; Sites: 250



Cardiovascular Disease Chain
Link between Research and Clinical Practice



TOTAL

FUTURA/OASIS-8

REWIND

Hope-Too

AVERROES

Apixaban VERsus Acetylsalicylic Acid (ASA) to PRevent St

RELY Study of stroke prevention in atrial fibrillation

INTERSTROKE

PURE

The MICHELANGELO Studies

CURRENT

SIRS

TOTAL

ACTIVE

Atrial Fibrillation Clopidogrel Trial with Irbesartan for prevention of Vascular Events

COMPASS

POISE

Hope

CURE

RESOLVD Pilot Study

TIDE

Hope-3

OASIS

Organization to Assess Strategies for Ischemic Syndromes

DREAM

COMPLETE

TIMACS

RIVAL

ΩRIGIN

PALLAS

EpiDREAM

POLYCAD

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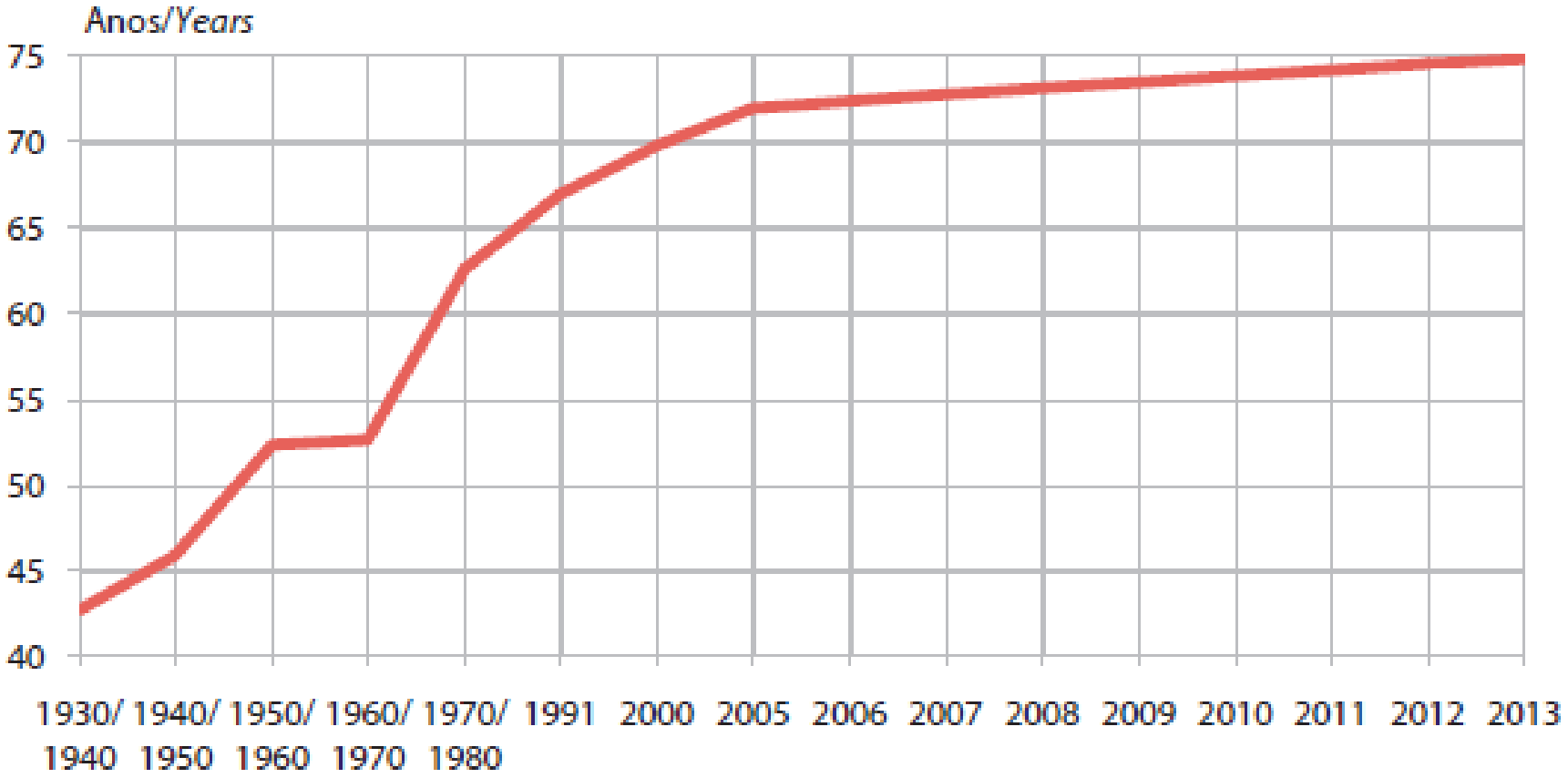
Life Expectancy at birth - 1930/2013

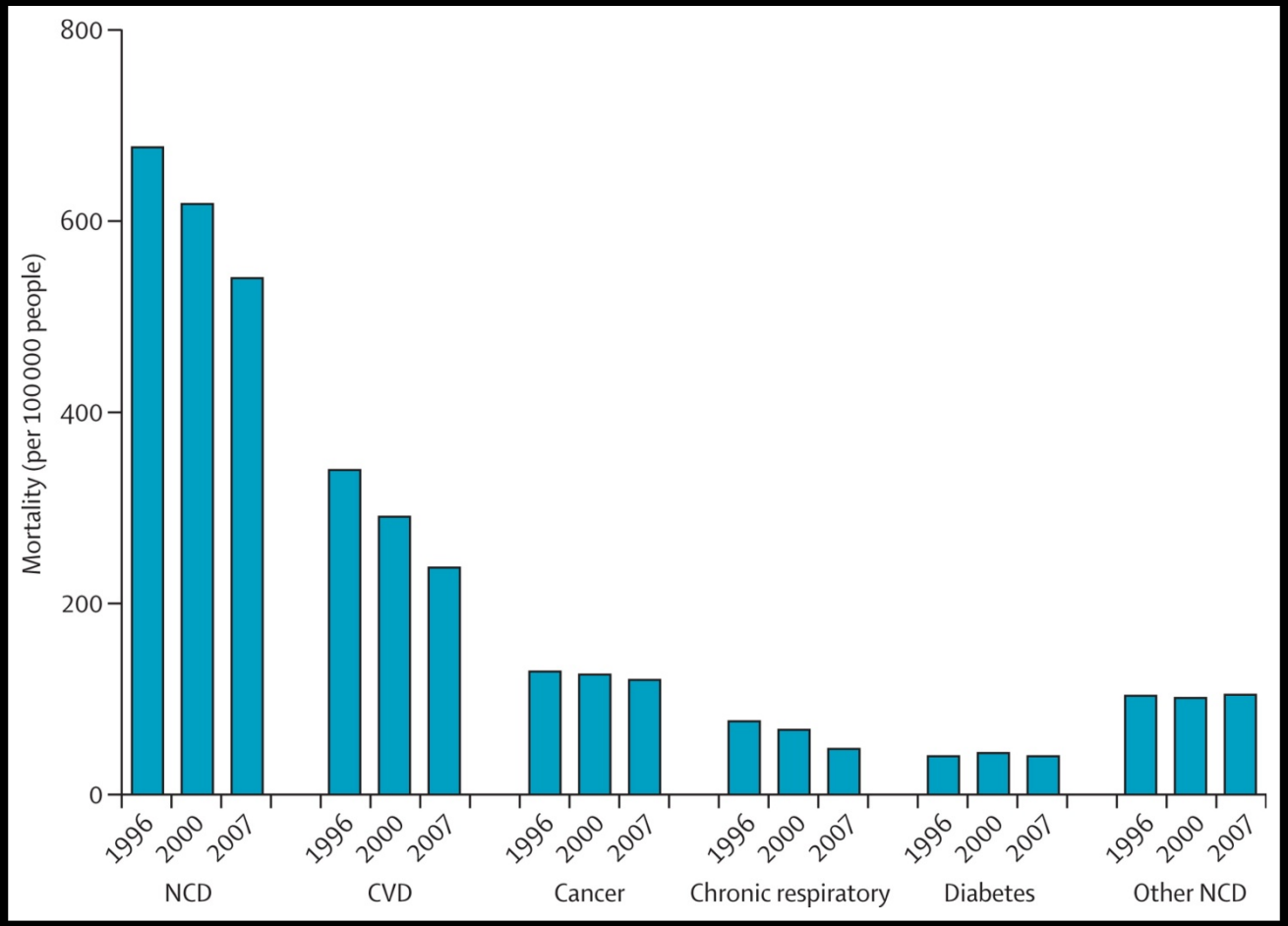


Fonte/*Source*: IBGE, Diretoria de Pesquisas, Coordenação de População e Indicadores Sociais, Projeção da população do Brasil por sexo e idade para o período 2000-2060 - Revisão 2013.

Deaths by Cause and by Gender - 2013

Causes of death	Total (1)	%	Male	%	Female	
Total/ Total	1170498	100%	665551	100%	504415	100%
Algumas doenças infecciosas e parasitárias/Certain infectious and parasitic diseases	49175	4,20%	28347	4,26%	20816	4,13%
Neoplasmas (tumores)/neoplasms	184384	15,75%	98444	14,79%	85931	17,04%
Doenças endócrinas, nutricionais e metabólicas/Endocrine, nutritional and metabolic diseases	73929	6,32%	33296	5,00%	40625	8,05%
Cardiovascular Diseases	335213	28,64%	175254	26,33%	159923	31,70%
Doenças do aparelho respiratório/Doenças do aparelho respiratório/	126693	10,82%	66443	9,98%	60220	11,94%
Doenças do aparelho digestivo/Diseases of the digestive system	59707	5,10%	38019	5,71%	21677	4,30%
Algumas afecções originadas no período perinatal/Certain conditions originating in the perinatal period	23579	2,01%	13340	2,00%	10144	2,01%
Causas externas/External causes	145842	12,46%	119947	18,02%	25738	5,10%
Outras/Others	171976	14,69%	92461	13,89%	79341	15,73%

Chronic non-communicable diseases in Brazil: burden and current challenges



Source: The Lancet 2011; 377:1949-1961

InterHeart Latin America

RF associated with AMI (Clinical Impact - PAR)

Risk Factor	% of Controls		PAR (95% CI)	
	LA	IH Global	LA	IH Global
ApoB/ApoA1	42	32	40,8(30,3-52,2)	44,2(41,3-47,1)
Smoking	48,1	48,1	38,4(32,8-44,4)	35,3(33,3-37,4)
Diabetes Mellitus	9,54	7,2	12,9(10,3-16,1)	12,2(11,3-13,1)
Hipertension	29,1	20,8	32,9(28,7-37,5)	22,0(20,7-23,4)
Waist-Hip Ratio	48,6	31,2	45,8(35,8-56,2)	30,2(27,4-33,2)
Depression	28,9	15,8	4,7(1,4-13,9)	8,4(7,3-9,7)
Permanent Stress	6,8	3,9	28,1(18,5-40,3)	7,8(4,6-13,1)
Physical Activity	22	18,9	28,0(17,7-41,3)	24,8(20,6-29,6)
Alcohol	19,4	11,9	-3,2(-18-11,7)	16,3(12,7-20,6)
Fruits/Vegetables daily	15	16,3	6,9(3,35-10,5)	4,1(2,69-5,3)
All Combined			88,1(82,3-93,8)	85,1(82,9-87,2)

Lanas F, Avezum A, Bautista L, Yusuf S, et al. Circulation 2007;115:1067-1074

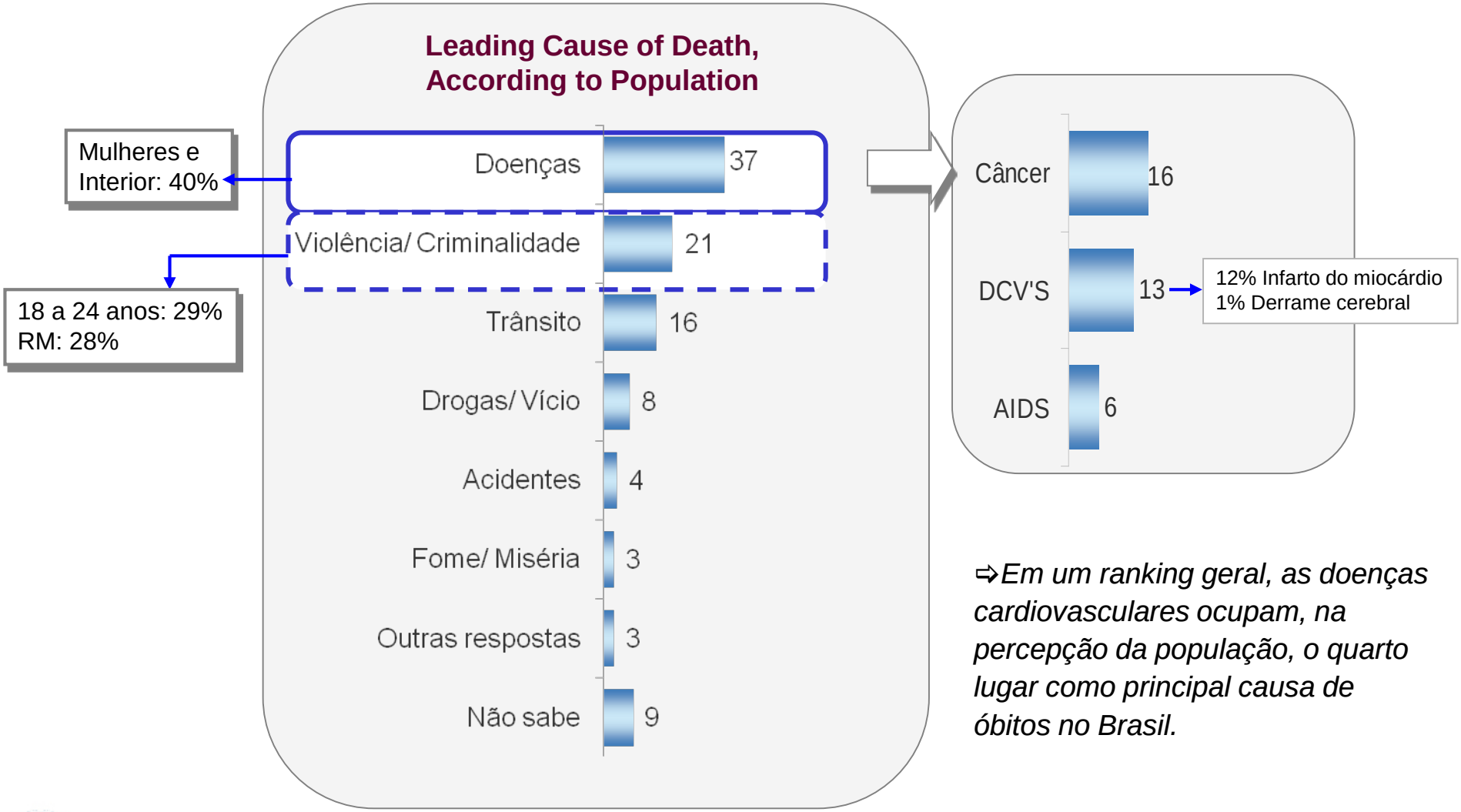
Two Cities Metropolitan Area Cross-Sectional Study: 97,502 individuals - São Paulo/Campinas, SP, Brazil

RISK LEVELS (5)						
VERY LOW	15000	16,35%	11186	18,33%	3814	12,41%
LOW	21249	23,16%	14844	24,33%	6405	20,84%
INTERMEDIATE	24575	26,78%	17223	28,23%	7352	23,92%
HIGH	17829	19,43%	11316	18,55%	6513	21,19%
VERY HIGH	13104	14,28%	6449	10,57%	6655	21,65%
Total # individuals	91757		61018		30739	
RISK LEVELS (3)						
LOW	36249	39,51%	26030	42,66%	10219	33,24%
INTERMEDIATE	24575	26,78%	17223	28,23%	7352	23,92%
HIGH	30933	33,71%	17765	29,11%	13168	42,84%
Total # individuals	91757		61018		30739	

Avezum A, et al. Brazilian Cardiology Society meeting, 2013

Population Awareness: #1 Death Cause in Brazil (2007)

(Espontânea e única, em %)



⇨*Em um ranking geral, as doenças cardiovasculares ocupam, na percepção da população, o quarto lugar como principal causa de óbitos no Brasil.*

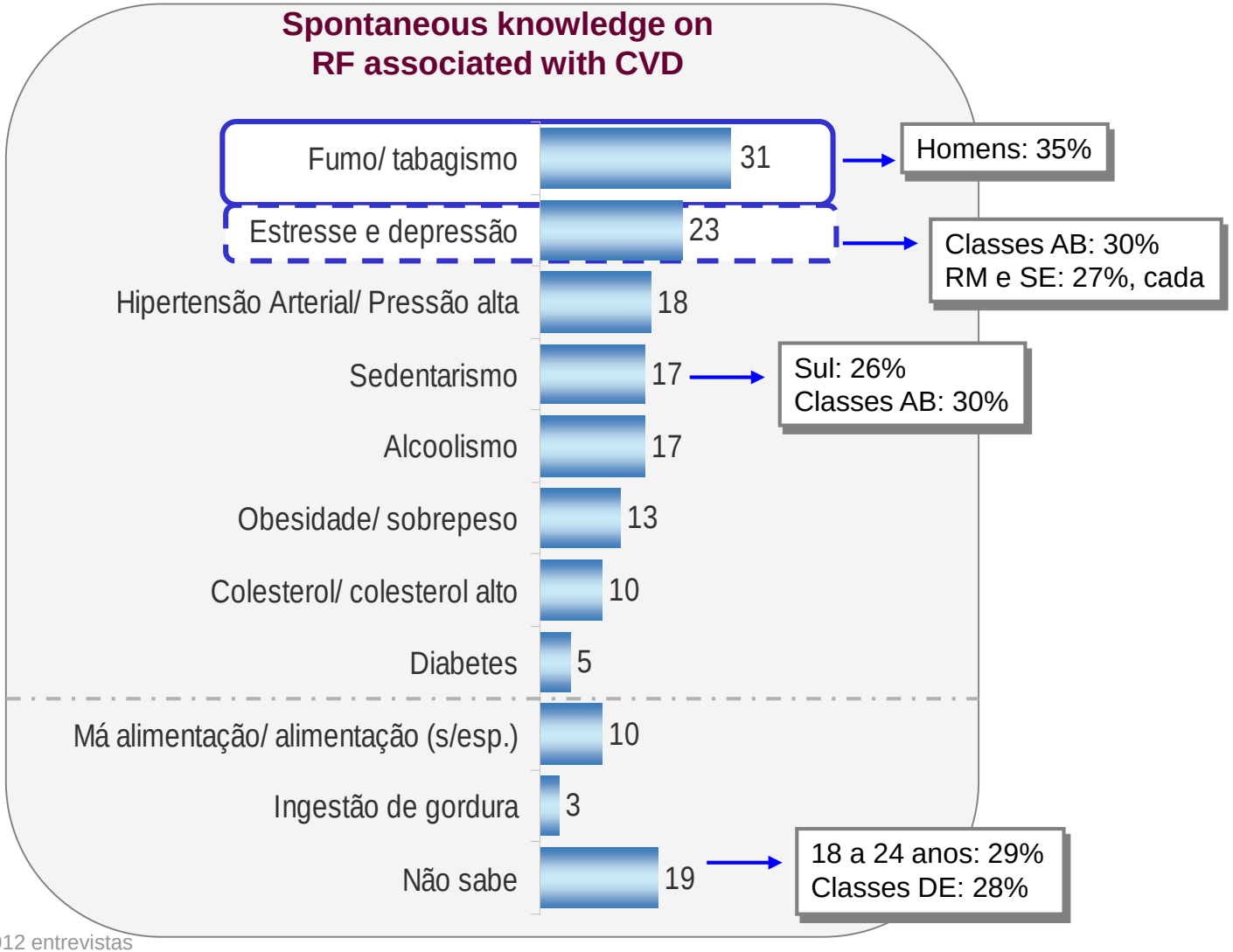
Base: Total da amostra 2.012 entrevistas

Fonte: P1.Pelo que você sabe ou já ouviu falar, qual é a principal causa de morte no Brasil?

Datafolha INSTITUTO DE PESQUISAS

Population Awareness: CV Risk Factors (2007)

(Espontânea e múltipla, em %)



Base: Total da amostra 2.012 entrevistas

Fonte: P2. **Pelo que você sabe ou já ouviu falar, quais são os fatores que aumentam os riscos de uma pessoa ter doenças cardiovasculares, como infarto do derrame cerebral?Quais outros? Algum outro?/ P3. Pelo que você sabe ou já ouviu falar,___aumentam os riscos de uma pessoa ter um infarto do coração o**

Children and Adolescents Task Force

- Children and adolescents between 7 -18 years, both gender, 11 public schools from Campinas, SP, 2011.
- Cross-sectional study, 4699 students (47,1% male, mean age 11,1±2,9 yr).
- Questionnaire, antropometric measurements and lipid profile.
- Results:
  - Physical activity: 1.5h – PC/TV/VG: 4,2h
  - LDL-c>110 mg/dL: 15%,
  - HDL <40 mg/dL: 58%,
  - TG > 150 mg/dL: 28%
  - Obesity/Overweight: 32%
  - Hypertension/pre-hypertension: 20%

Avezum A. Preventive Cardiology Congress, Montreal 2013

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Components of an Effective Leader of Change in CVD Prevention

- Clear Commitment
- Time Dedication
- Previous Formal Training
- Long-term Mentorship
- Environmental Exposure
- Continuous “training”
- Local ARO
- Natl. leadership & Intl. influential KOL

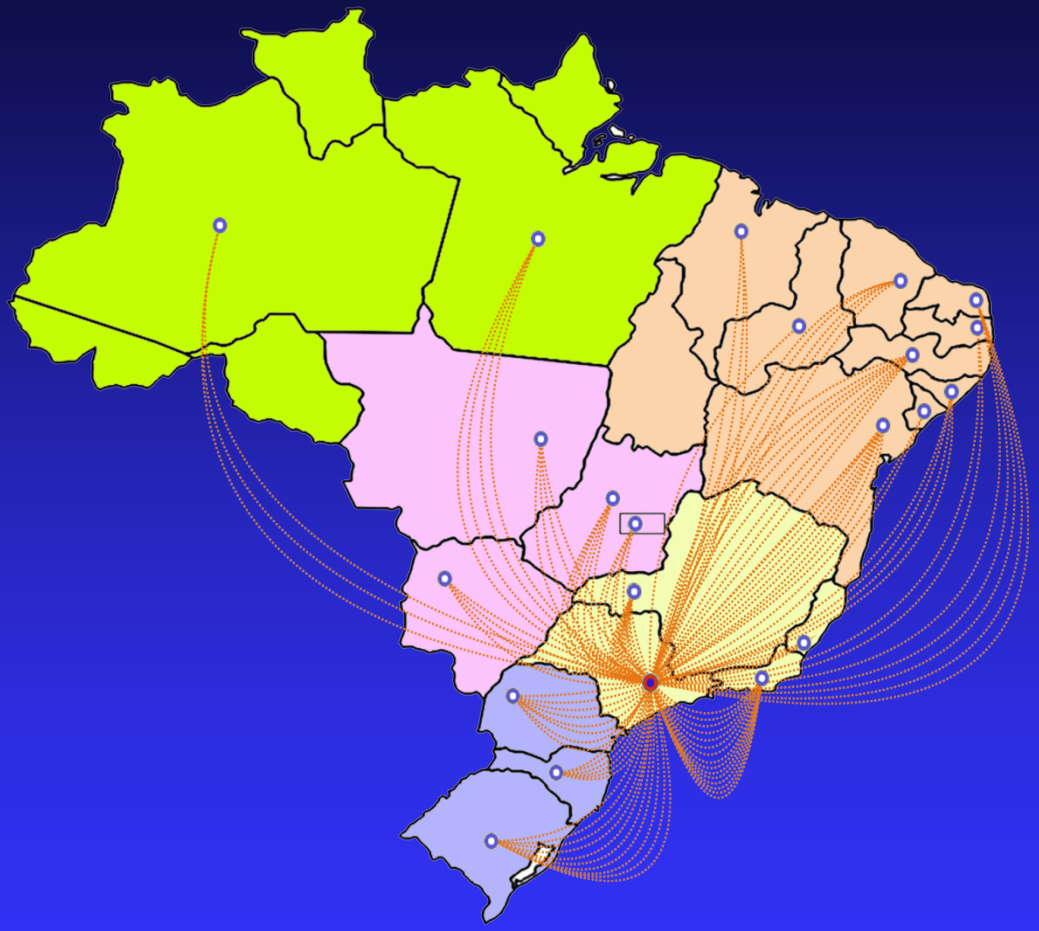
Effective Leader of Change in CVD Prevention - Key Steps I

- Identify high quality ELs (Solid training with tangible academic biography, who are actively working on CV prevention and control)
- Provide formal research training (WHF Seminar)
- Extensive and comprehensive exposure on CVD prevention (either local or through PHRI training)
- Reassure an efficient network for collaboration at the country or region level
- Academic-oriented collaboration

Effective Leader of Change in CVD Prevention - Key Steps II

- Simple/efficient academic research organization (project office)
- Understanding of local health system, local barriers for care improvement and evidence-based CV prevention and treatment implementation
- Government interface (ex. Brazil)
- National Co-Funding strategy making clear relevance/ impact of the CVD prevention project for the country
- Community cluster randomized trials
-

National Emerging Leader Program - Brazil



2 Els – WHF seminar

10 BELs – Brazil training

22 Research Investigators (State Level Network)

250 Research Investigators (City Level Network)

+/- 5000 cities Family Health Program (60% Brazilian Population coverage)

In The Continua Of Care

An Important Gap

Best care ≠ usual care

population outcomes are **not** reflecting trials' results

population
effectiveness

clinical trial
efficacy

basic science
promise

The value of proven therapies are **not** optimally realized by physicians, payers and patients