



Orthopedic trauma in Africa

The silent epidemic



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Africa Emerging Markets Forum
Abidjan, Côte d'Ivoire
27.03.2017

What epidemic?



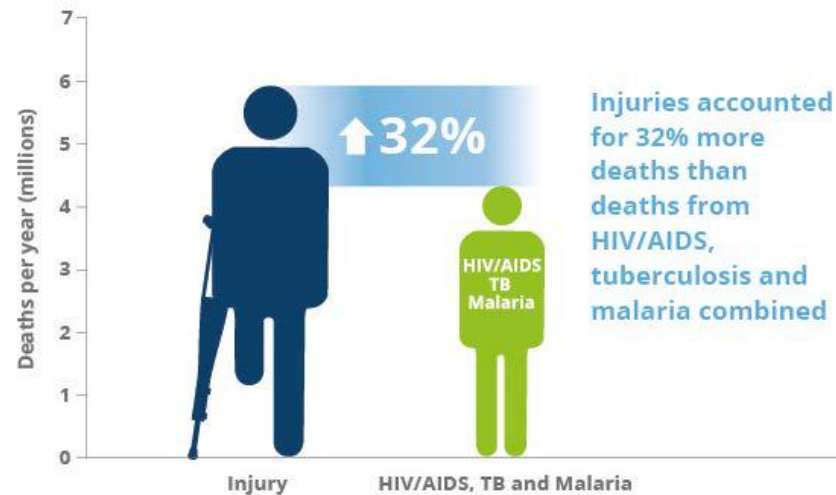
Immediate



Late



Injuries and violence – the facts (WHO, GBD)



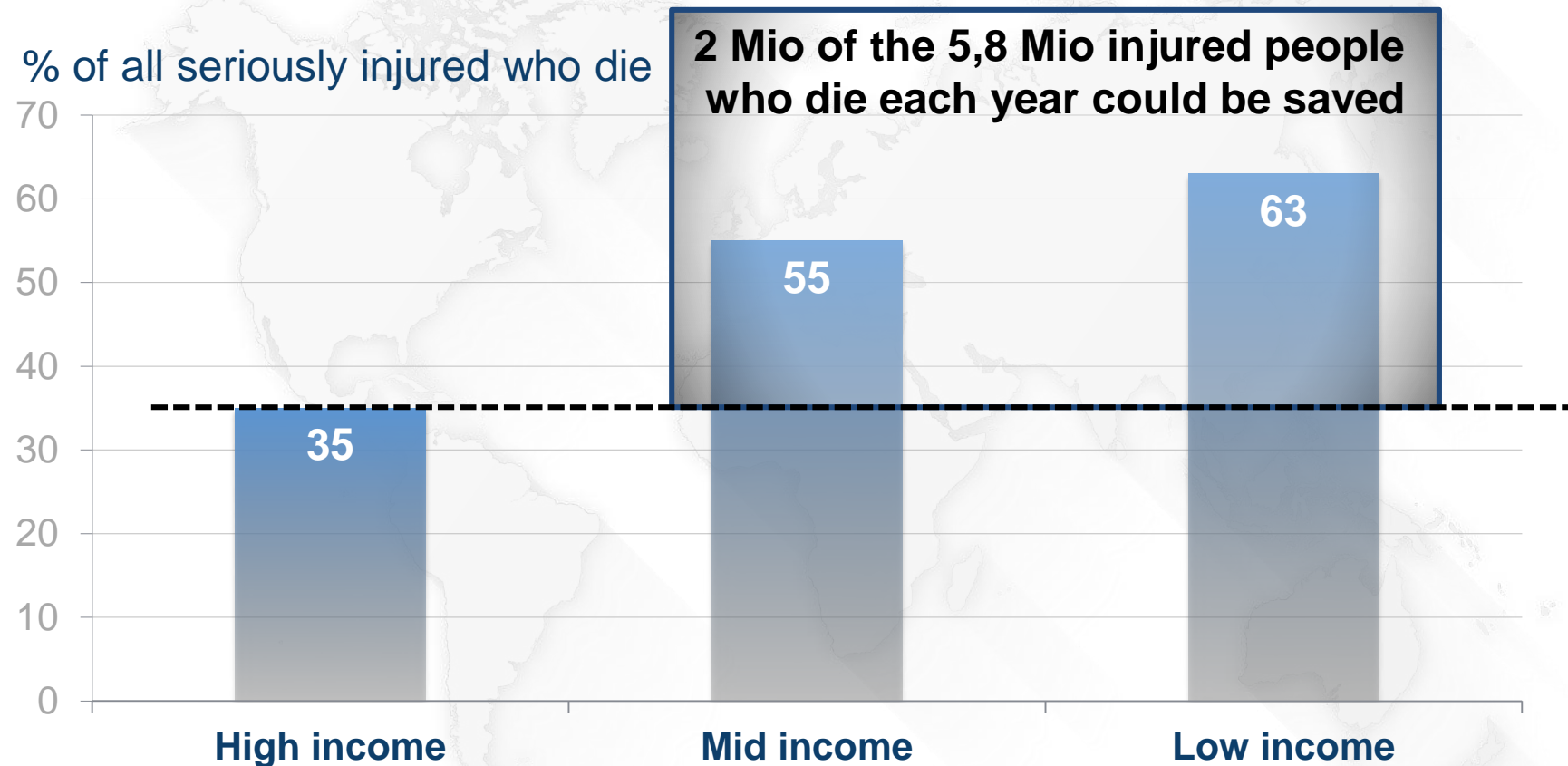
- 90% of all trauma-related deaths occur in LMICs
- Trauma accounts for 40% of deaths among young people
- For every death, there are 10 to 50 others living with a trauma-related disability

2015		
Rank	Cause	% deaths
1	Ischaemic heart disease	13.2
2	Stroke	11.7
3	Lower respiratory infections	5.6
4	Chronic obstructive pulmonary disease	5.6
5	Diarrhoeal diseases	3.2
6	HIV/AIDS	2.9
7	Trachea, bronchus, lung cancers	2.9
8	Diabetes mellitus	2.7
9	Road injury	2.5
10	Hypertensive heart disease	2.0

2030		
Rank	Cause	% deaths
1	Ischaemic heart disease	13.2
2	Stroke	12.2
3	Chronic obstructive pulmonary disease	6.5
4	Lower respiratory infections	5.0
5	Diabetes mellitus	3.5
6	Trachea, bronchus, lung cancers	3.4
7	Road injury	2.6
8	HIV/AIDS	2.6
9	Diarrhoeal diseases	2.3
10	Hypertensive heart disease	2.1



Percent of all seriously injured who die



World J Surgery, 2012: May 2012, Volume 36, Issue 5, pp. 959-963



Approach to global health problems

Obstetrics/safe motherhood



Global orthopedic trauma care



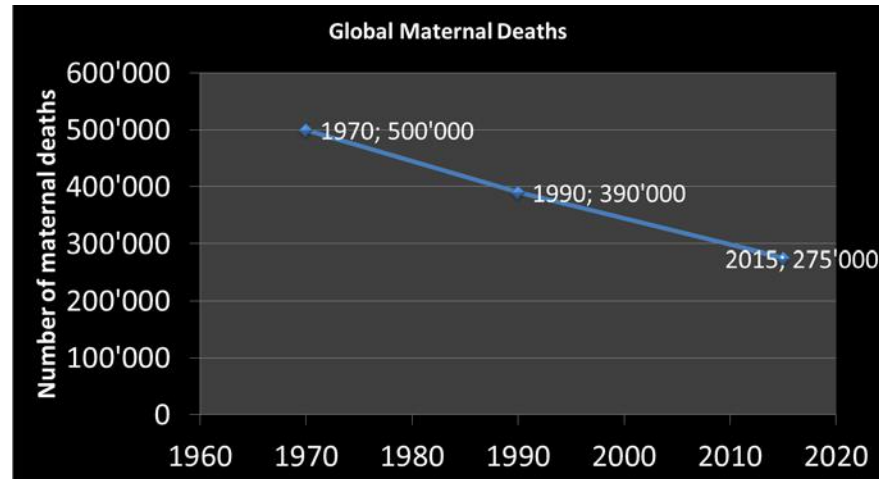
Recipe for success

1. Define and collect data
2. Define essential services required
3. Measure availability and quality of services
4. Focus on population needs
5. Get political
6. Apply the solutions

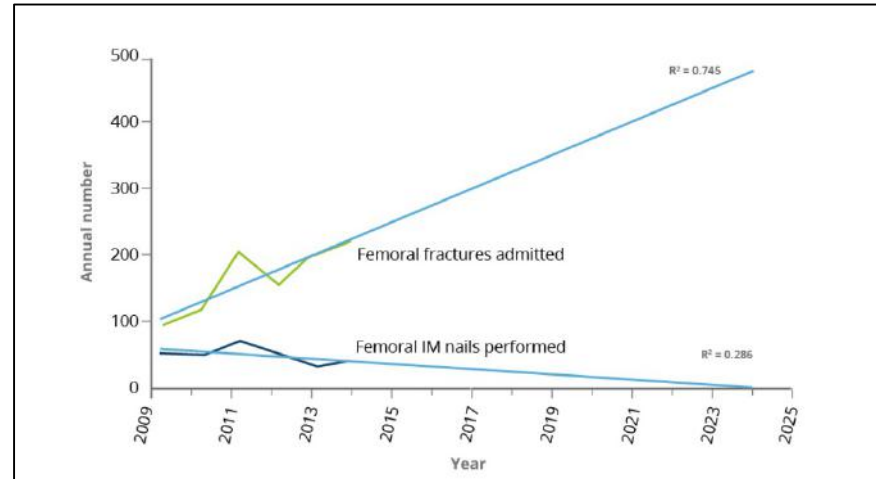


A world of opposites

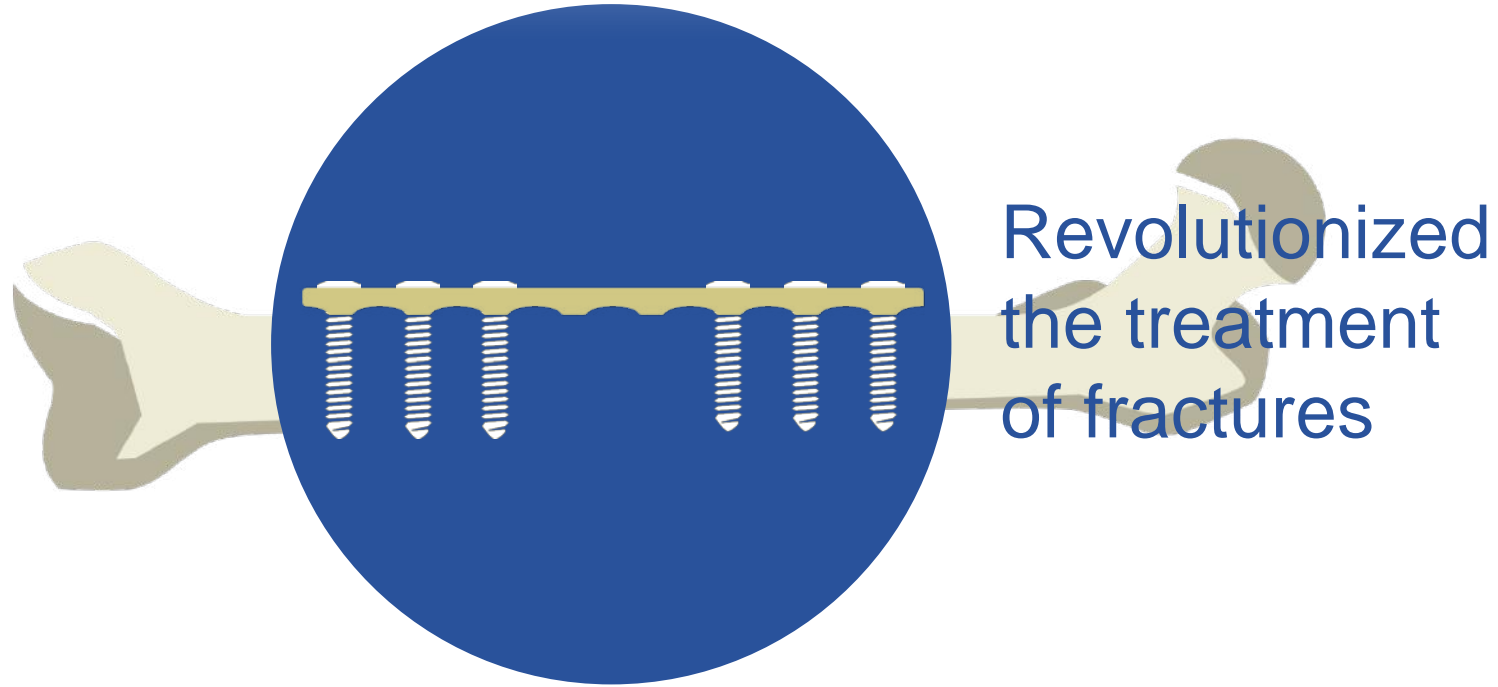
Obstetrics/safe motherhood



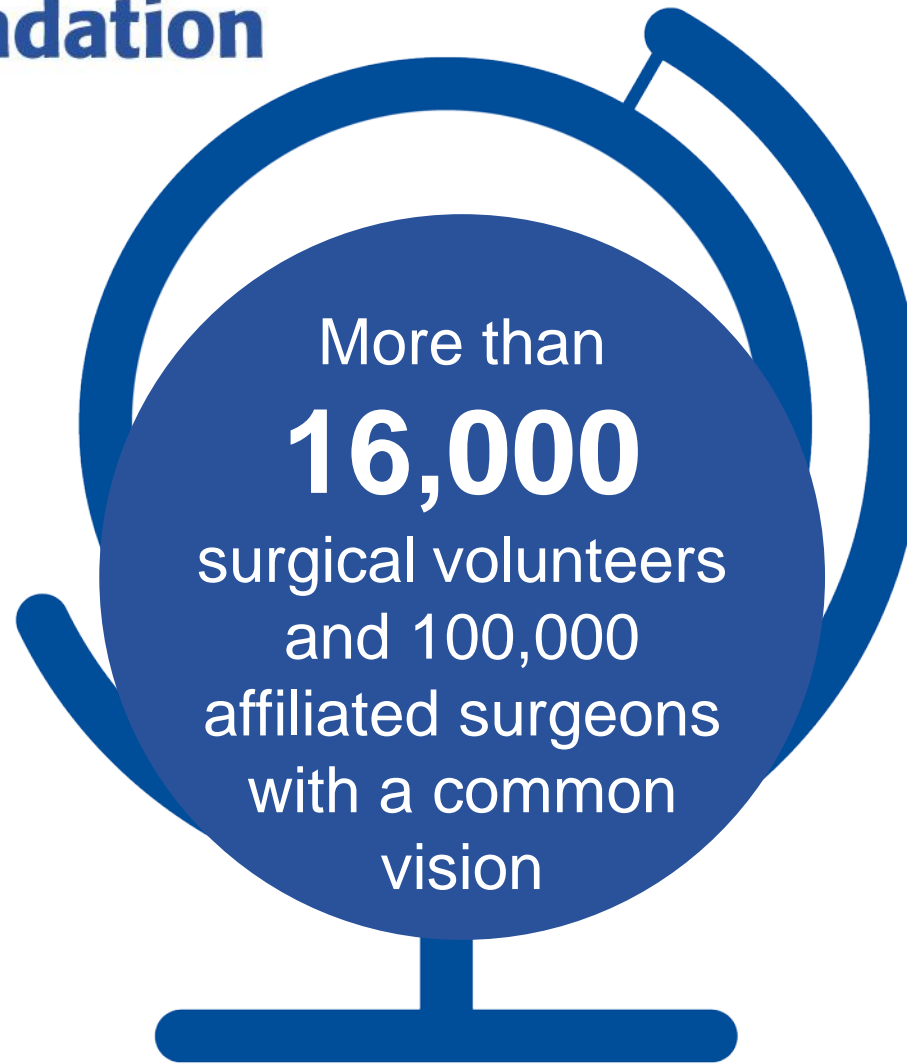
Global orthopedic trauma care



The AO Founders AO Foundation



It is only 60 years since this revolution begun in Switzerland



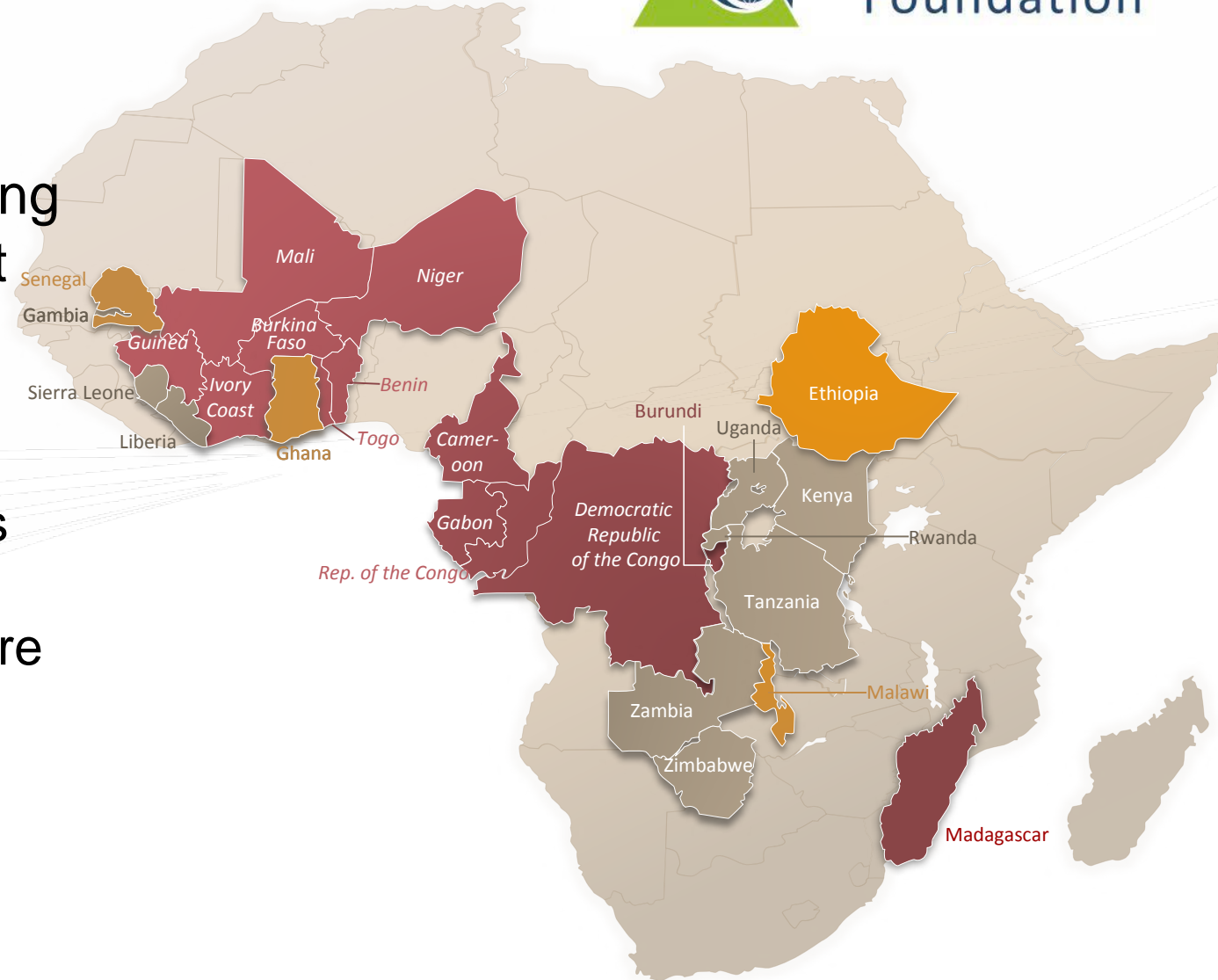
*This is the result of a private-private partnership
with no government funding*

AO Alliance activities in Africa

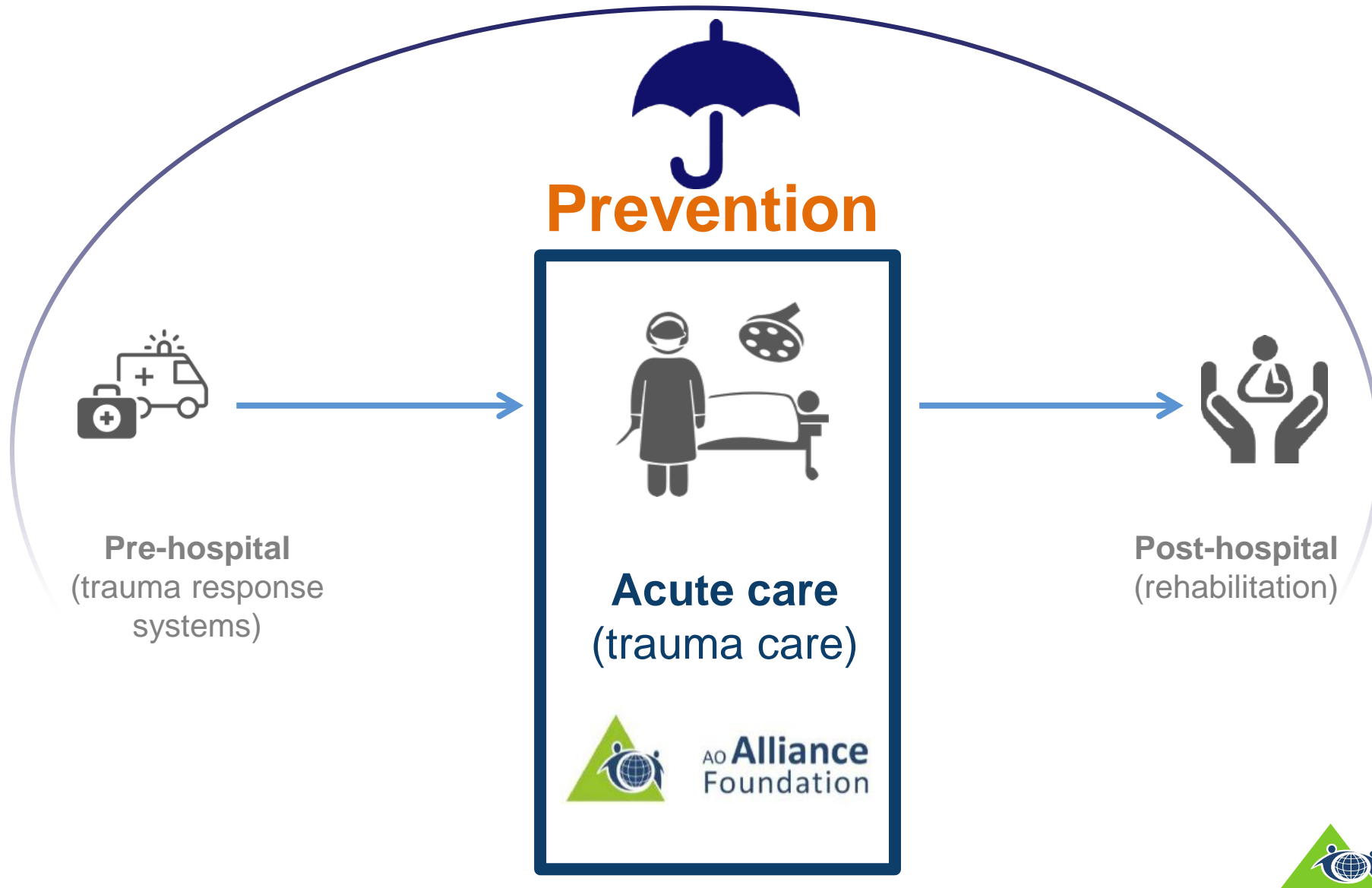


AO Alliance
Foundation

- Network of faculty expanding
- No government money
- Activities in:
 1. Education
 2. Fellowships
 3. Research
 4. Infrastructure

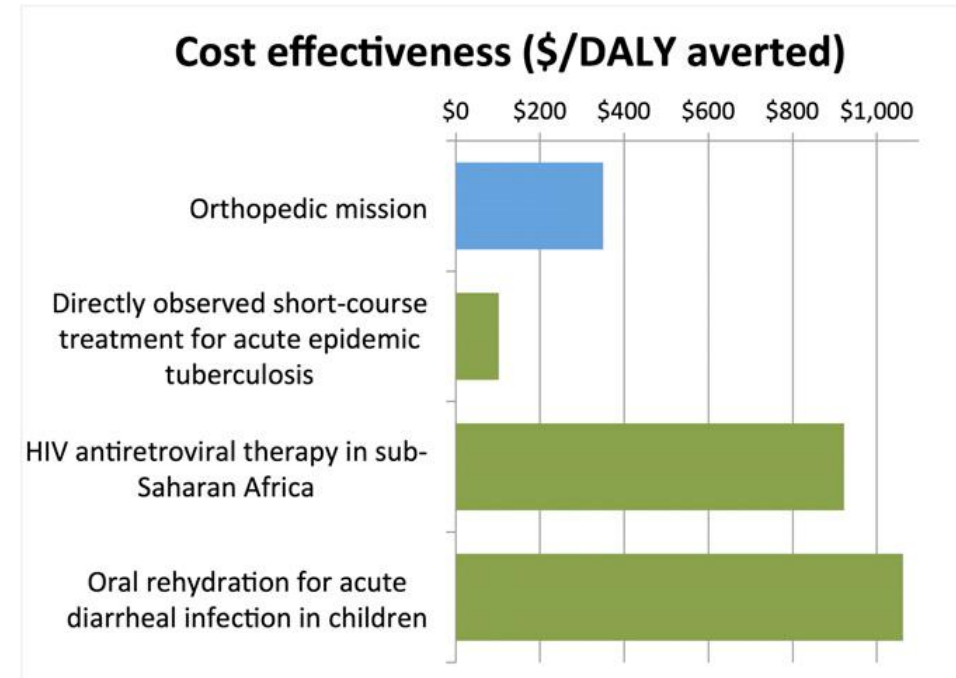


Care of the injured in Africa



DALY (Disability-Adjusted Life-Year)

- One DALY = loss of 1 year of healthy life
- 2 dimensions of health:
 - Mortality → QUANTITY OF LIFE (YLL)
 - Morbidity → QUALITY OF LIFE (YLD)
- $DALY = YLL + YLD$



J Bone Joint Surg Am. 2016;98:1844-53



Cost-effectiveness: not only for HICs

International Orthopaedics (SICOT) (2009) 33:1445–1448
DOI 10.1007/s00264-009-0798-x

ORIGINAL PAPER

Cost-effectiveness of replacing skeletal traction by interlocked intramedullary nailing for femoral shaft fractures in a provincial trauma hospital in Cambodia

Richard A. Gosselin · Merja Heitto · Lew Zirkle

Traction \$1,107 / DALY averted
Nail \$888 / DALY averted/better results

*Traction requires bed stays of around **84 days**,
where operative treatment requires stays of **5 days**.*



What are the cost savings?

- WHO estimates yearly GDP costs of treating injuries worldwide at \$550 billion
 - If \$50 billion is invested in injury prevention / treatment and this decreases burden and costs by 10% (conservative)
 - Annual savings: \$55 billion (>100% ROI)

Could industry and philanthropic partners fund a transformation in care of the injured in Africa?

A network of African surgeons and nurses is already developing with motivation and skills to deliver this transformation.



The panel

- **Abdoulie Janneh**, President, African Governance Institute, former Executive Secretary, UN Economic Commission for Africa
- **Manjul Joshipura**, Consultant Orthopedic and Trauma Surgeon and Director, Academy of Traumatology in India, former WHO scientist (VIP Unit)
- **Jim Harrison**, Consultant Orthopedic and Trauma Surgeon, Chester, UK and AO Alliance Africa Regional Director
- **Samba Koné**, Trauma Orthopedic Surgeon, CHU Cocody - University Hospital
- **Jacob Plange-Rhule**, Rector, College of Physicians and Surgeons of Ghana

