Place of Birth, Training and Migration Dynamics

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Prepared for the UNFPA & OECD Conference
Mobilizing Migrant Skills for Development in MENA Region
Tunis 13-14 May, 2013

Introduction

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Great progress made in the last decade on skilled migration data...

Yet we are still far from answering the fundamental questions on...

Patterns of migration in terms of location of birth, training and age of migration

Motivation – Story of Three Professors in the US

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We have some idea about each dimension separately but,
NOT JOINTLY!!!

Case: Physicians in the US
from Sub-Saharan and North Africa

joint work with David Phillips – Georgetown University

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Combine two data sources:

American Medical Association (AMA):

- complete administrative data on ALL physicians
- location of training, personal data and incomplete place of birth

American Community Survey (ACS)

- Annual census – nationally representative sample
- Personal data, place of birth, age of migration but no place of training

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3-stage propensity score matching algorithm to merge the two datasets:

- First, from AMA data, determine probability of being in born in "b" if educated in "e" for each doctor "i" in the AMA data

$$\hat{p}_{ibe} = \Pr[B_i = b | E_i = e, X_i] = \sum_{j|E_j=E_i, M_j=0} \frac{w_{ij} D_{jbe}}{\sum_j w_{ij}}$$

- Second, from ACS data, determine probability of being in educated in "e" if born in "b" for each doctor "i" in the ACSdata

$$\hat{p}_{ibe} = \Pr[E_i = e | B_i = b, X_i] = \sum_{j|B_j=B_i, ACS_j=0} \frac{w_{ij} D_{jbe}}{\sum_j w_{ij}}$$

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3-stage propensity score matching algorithm to merge the two datasets:

- Finally, from the merged dataset, determine the probability of having migrated at age "a" if born in "b" and educated in "e" for each doctor "i"

$$\Pr[A_i = a | B_i = b, \widehat{E_i = e}, z_0 \leq Z_i \leq z_1] = \frac{\sum_{i|E_i=e, z_0 \leq Z_i \leq z_j} \tilde{m}_{ai} * \Pr[\widehat{B_i = b}]}{\sum_{i|E_i=e, z_0 \leq Z_i \leq z_j} \Pr[\widehat{B_i = b}]}$$

Egyptian Doctors

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- In Egypt: 225,000 (according to WHO Global health Observatory in 2011)
- Density: 2.83 physicians per 1000 people

Egyptian Doctors

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- Density: 2.83 physicians per 1000 people

- United Kingdom: 2.74
- United States: 2.42
- Canada: 2.06

- So maybe not such a great loss for Egypt!! But not true for most countries in Sub-Saharan Africa

Egyptian Doctors in the US

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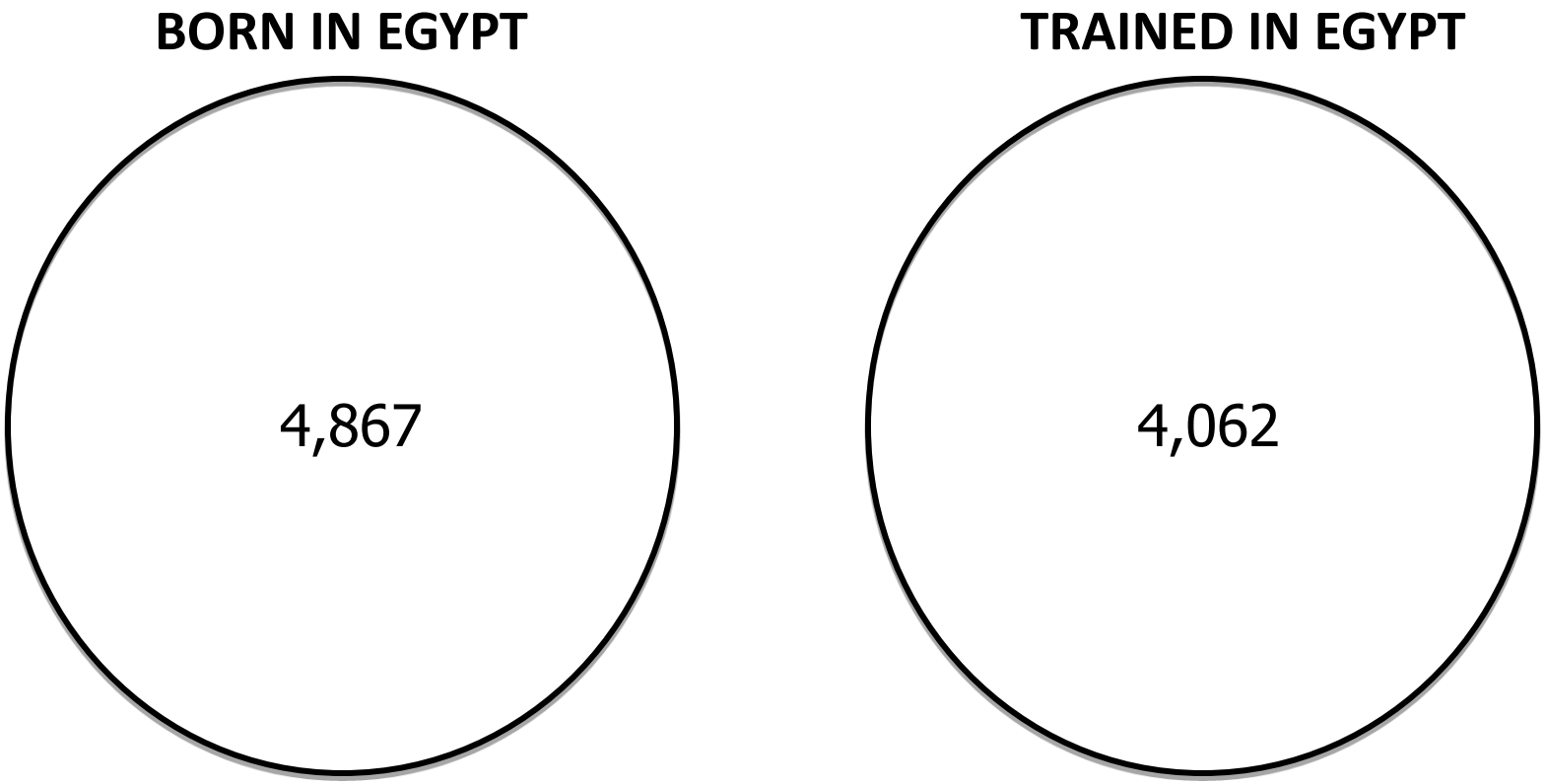

Egyptian Doctors in the US

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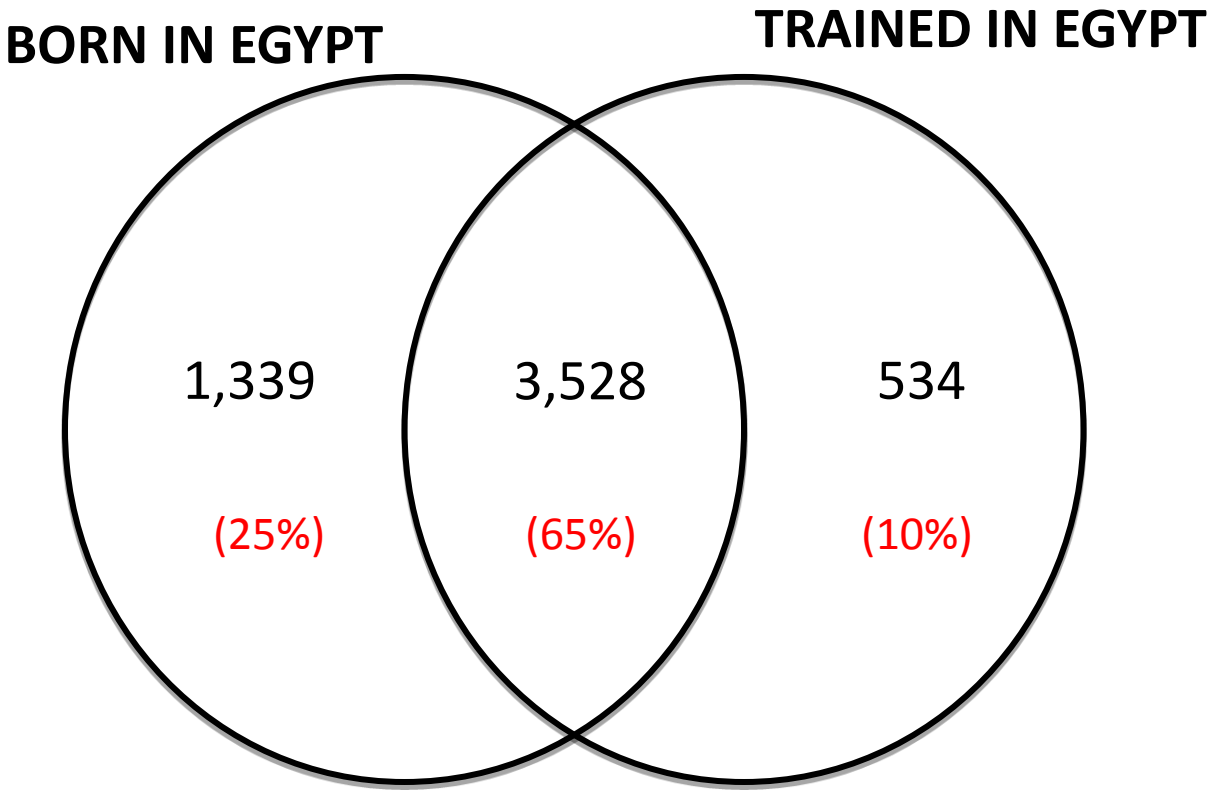

TOTAL NUMBER OF "EGYPTIAN" DOCTORS IN THE US: 5,401

Egyptian Doctors in the US

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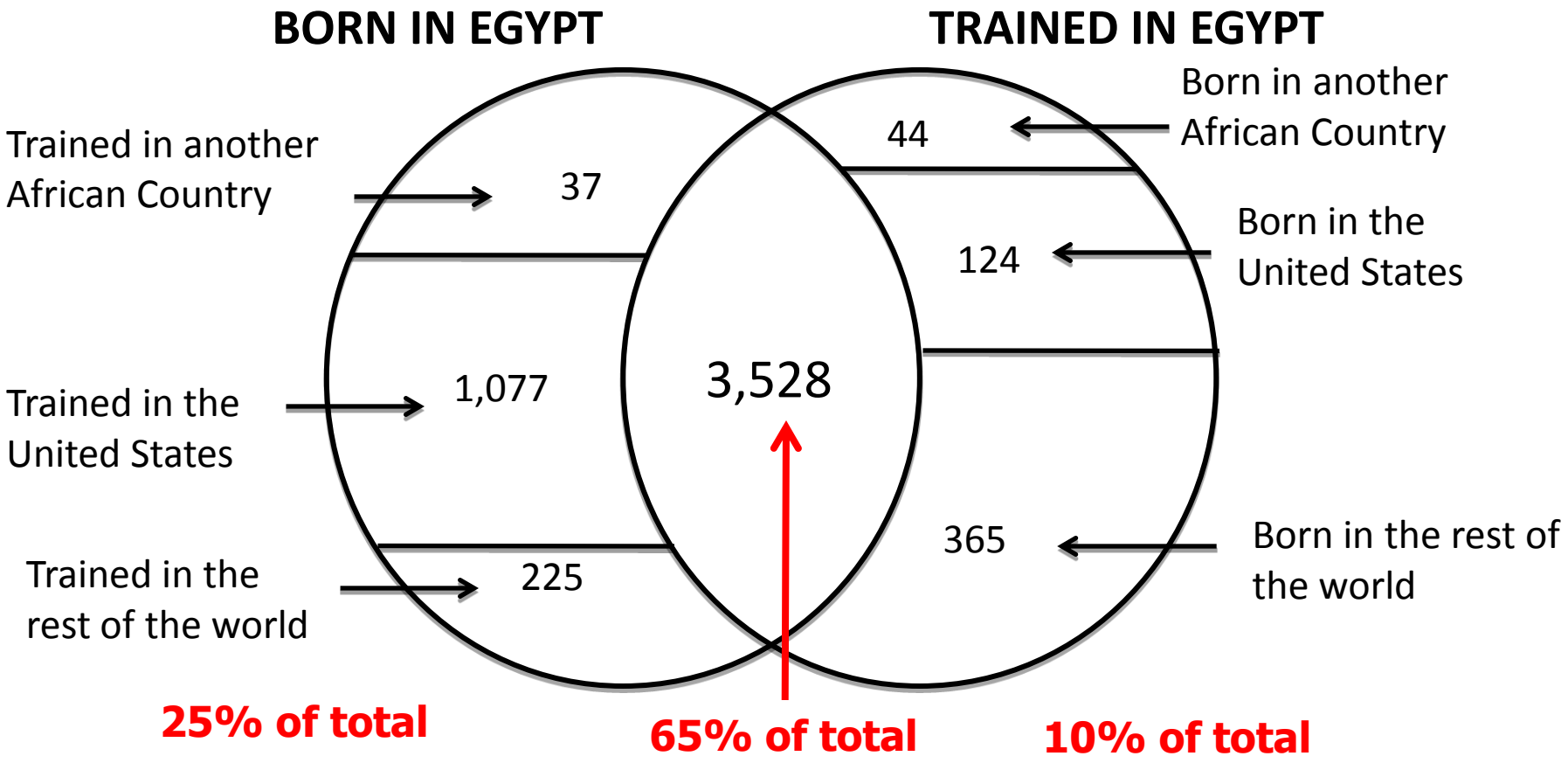

South African Doctors in the US

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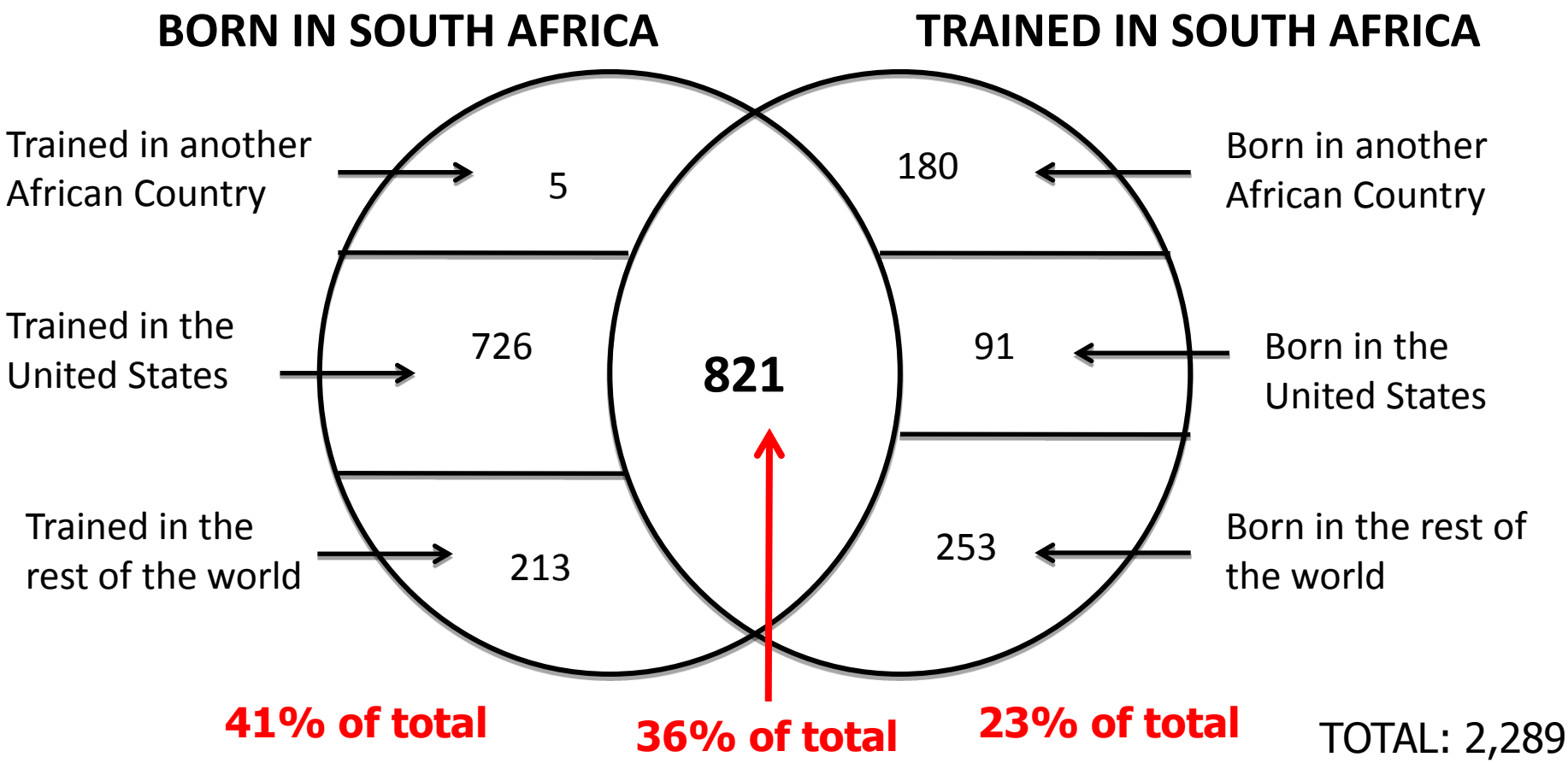

TOTAL: 2,289

North African Doctors in the US (excluding Egyptians)

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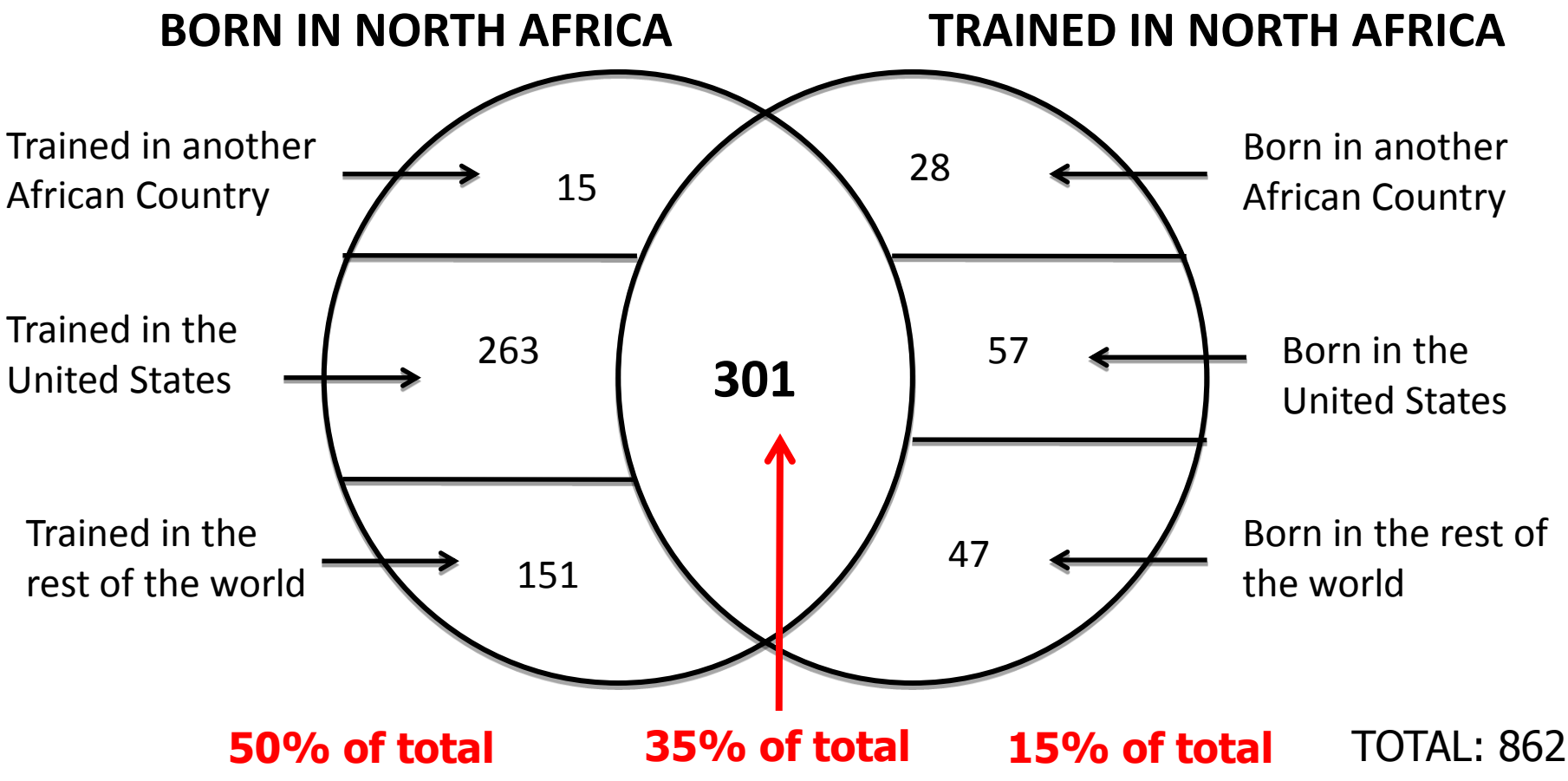

When do Egyptian doctors migrate?

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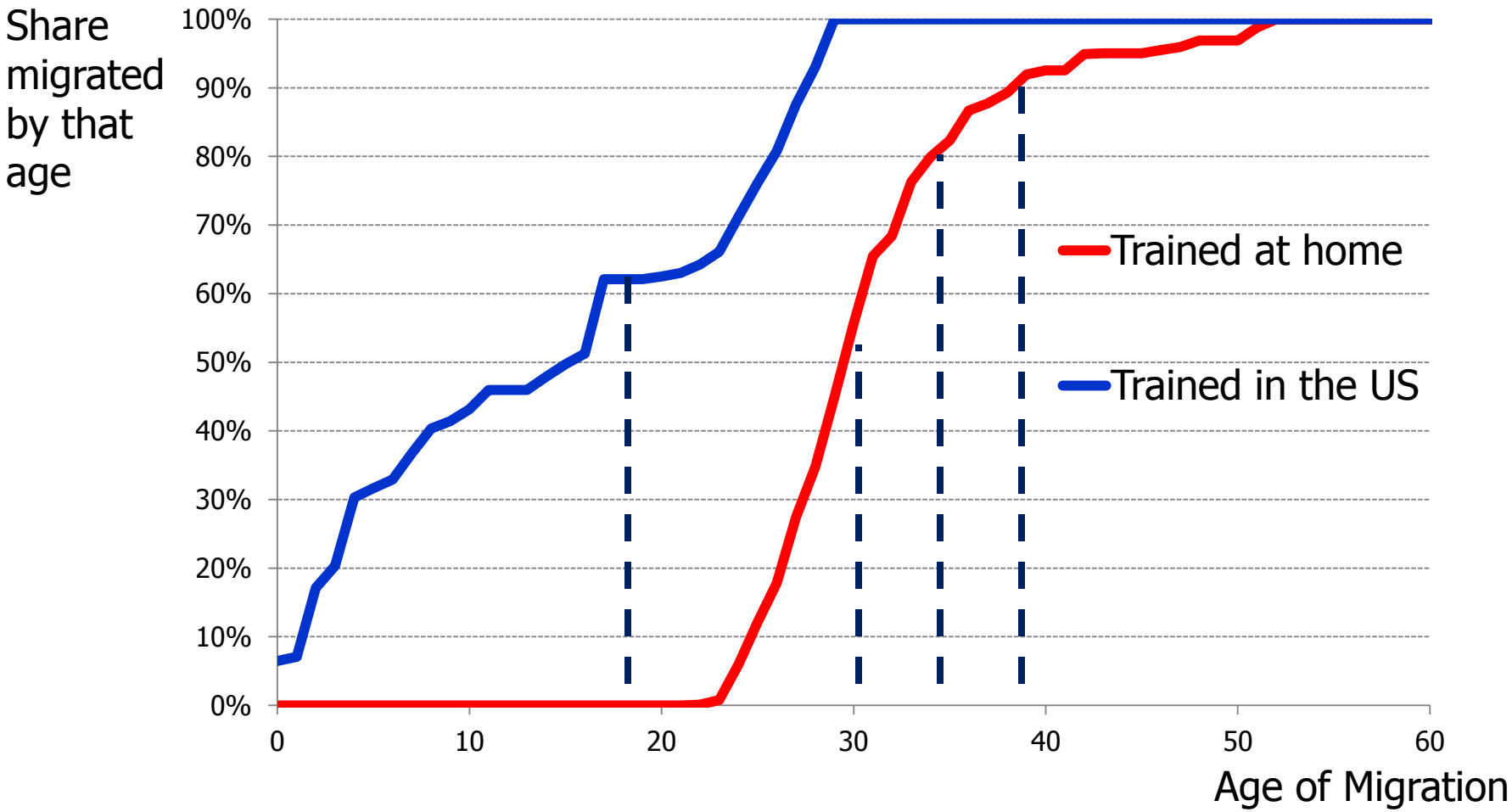

Why go through the trouble?

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- We need to be very careful when we use the word "loss" or "brain drain"
  - Not every Egyptian (or Tunisian or Ethiopian or Nigerian) doctor studied at home
  - There are slightly over 20,000 Sub-Saharan + North African doctors in the United States
  - 45% of studied at home
  - 45% studied outside the region – two-third in the US

Why go through the trouble?

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- We need to be very careful when we use the word "loss" or "brain drain"
  - Not every doctor trained in Egypt is actually Egyptian!!!
  - 10% were born outside but were trained in Sub-Saharan + North African countries!!

Why go through the trouble?

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- Global human capital markets are more complicated and integrated than we realize. The flows are not uni-directional but resemble a multi-dimensional network.
- Policymakers are BEHIND the curve!!
- Life would have been easier if AMA collected better data but I would not have much to talk about.

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Thank You !!!

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