

# Pre-entry TB screening

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International Organization for Migration  
Tokyo, February 2019*

# OUTLINE

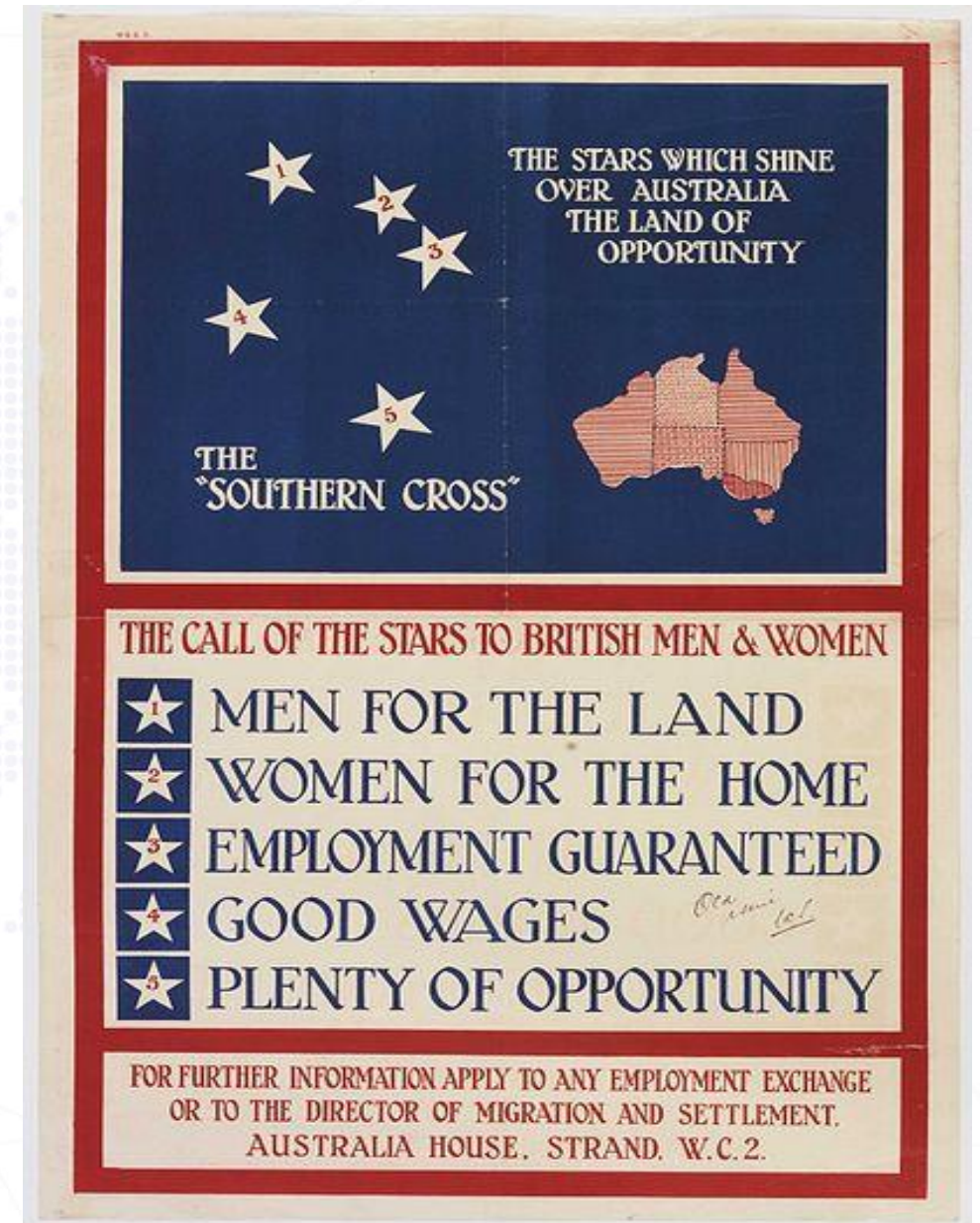
- Australia's experience
- IOM and Migration Health Assessments
- Major issues in TB screening pre-entry





# AUSTRALIAN MIGRATION HISTORY

- Began around 50,000 years ago via the islands of the Malay Archipelago and New Guinea
- Europeans first landed in the 17th and 18th centuries (Dutch, English, French)
- Colonisation by the British (and TB) started in 1788.
- Australia's population in 2018 was 25 million (7 000 000 in 1945)
- Population growth 1.6%
- Nearly 1 in 3 residents (29%) are born outside Australia (6 900 000 in 2018)
- 30% increase from 2007
- One international migrant every 2 minutes



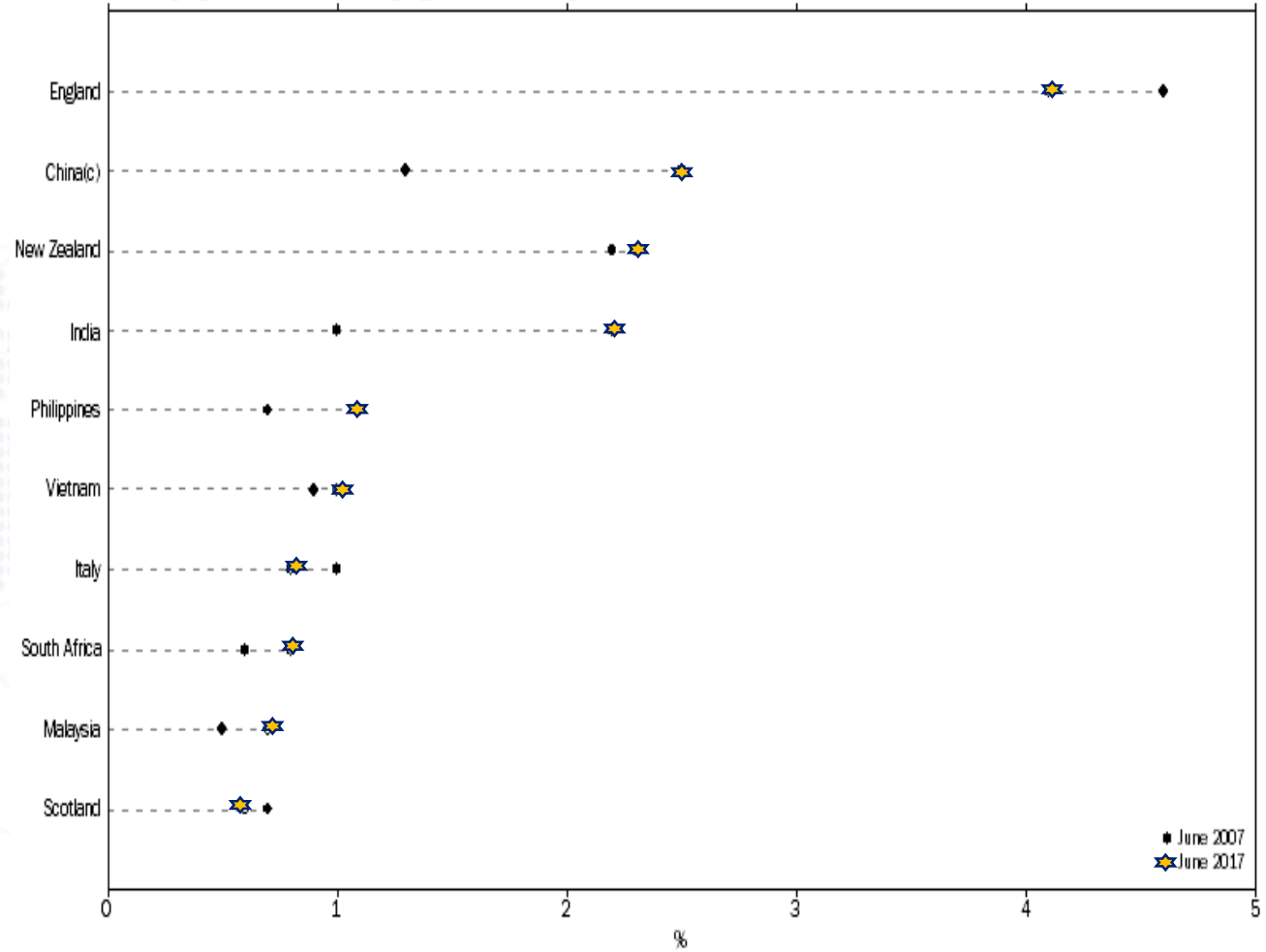
# AUSTRALIA'S EXPERIENCE

## AUSTRALIA'S POPULATION BORN OVERSEAS<sup>a,b</sup>



(a) Census years only until 1981. Post 1981 based on estimated resident population at 30 June.  
 (b) Estimates for 2011-16 are rebased, 2017 are preliminary — see paragraph 9 of the Explanatory Notes.

## COUNTRY OF BIRTH, PROPORTION OF AUSTRALIA'S POPULATION



(a) Based on the top 10 countries of birth (excluding Australia) at 30 June 2017.  
 (b) Estimates for 2011-16 are rebased, 2017 are preliminary — see paragraphs 9 of the Explanatory Notes.  
 (c) China (excludes SARs and Taiwan)



# AUSTRALIA MIGRATION LEGISLATION

- Immigration Restriction Act 1901; revised to Immigration Act 1912
- Supported by the Quarantine Act 1908
  - In 1912 pulmonary TB was listed as quarantinable disease, along with dangerous and loathsome diseases like trachoma and scabies!
  - In 1917 addition of all cases of TB
- Premigration screening from 1901, where 'ship's Masters or medical officers on board certified through a medical exam that passengers were physically and mentally fit.
- Formalised under the Immigration Act (1912) and in 1926 a passenger questionnaire was added
- The Migration Act 1958 – TB is the only disease specifically identified to be screened.



# AUSTRALIA MIGRATION LEGISLATION

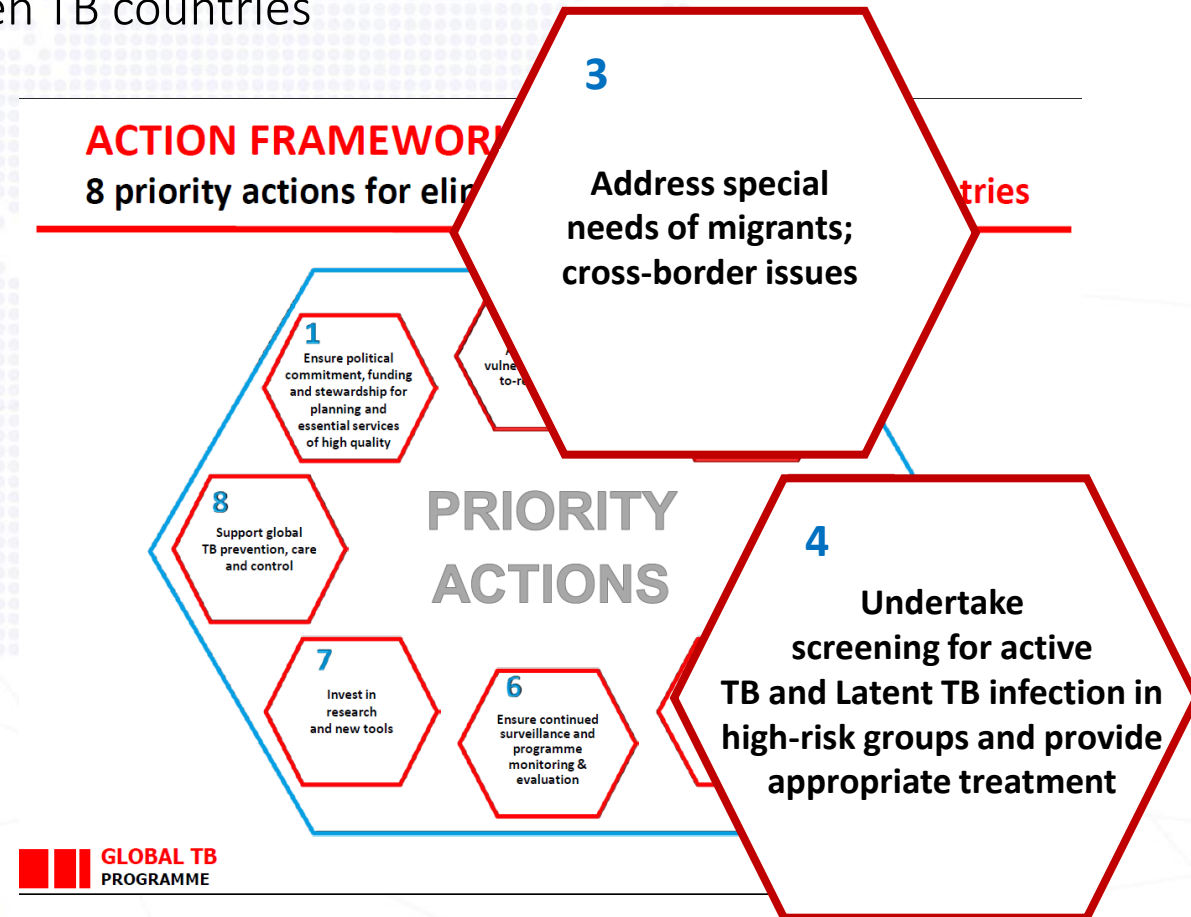
- Australia has a **universal visa system** for all non-citizens
- A visa is a permission for the holder to travel to and enter Australia or remain in Australia.
- Health PICs
  - Be free from tuberculosis (active);
  - Be free from a disease or condition that would result in a threat to public health or danger to the Australian community; and
  - Not have a disease or condition that is likely to:
    - require health care or community services while in Australia;
    - result in significant costs to the Australian community;
    - or prejudice the access of an Australian citizen or permanent resident to health care or community services.
- Health Undertakings





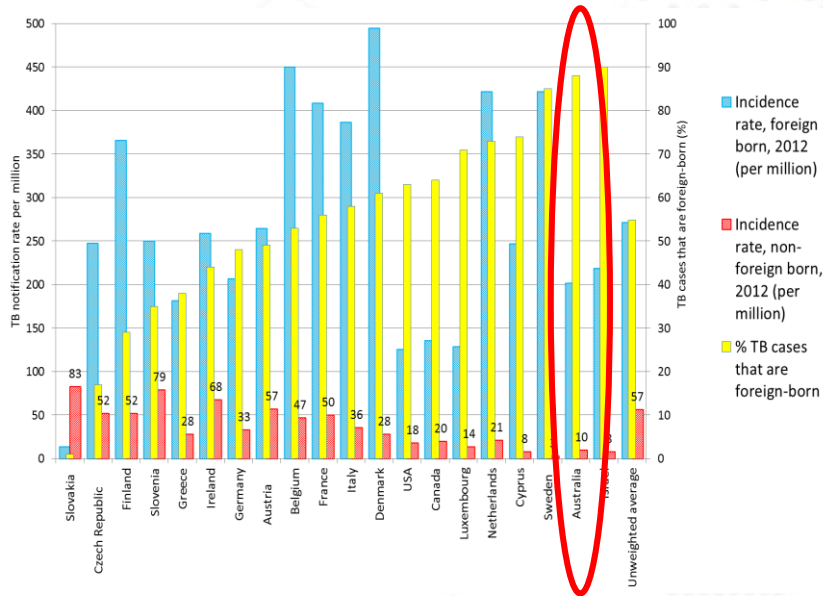
# WHY DOES AUSTRALIA SCREEN FOR TB?

- Legislative requirement
- Health is a human right and healthy migration contributes to development
- A country of migrants, particularly from high burden TB countries
- Low native born TB rates
- To eliminate TB – need to prioritise



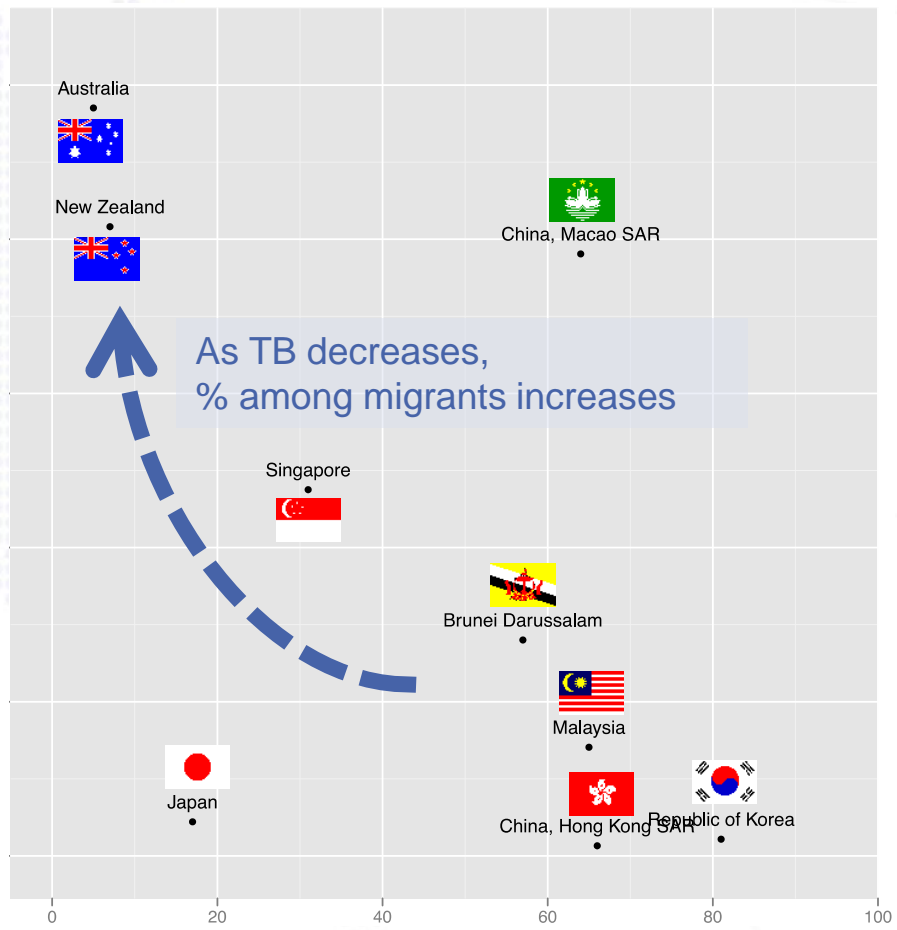
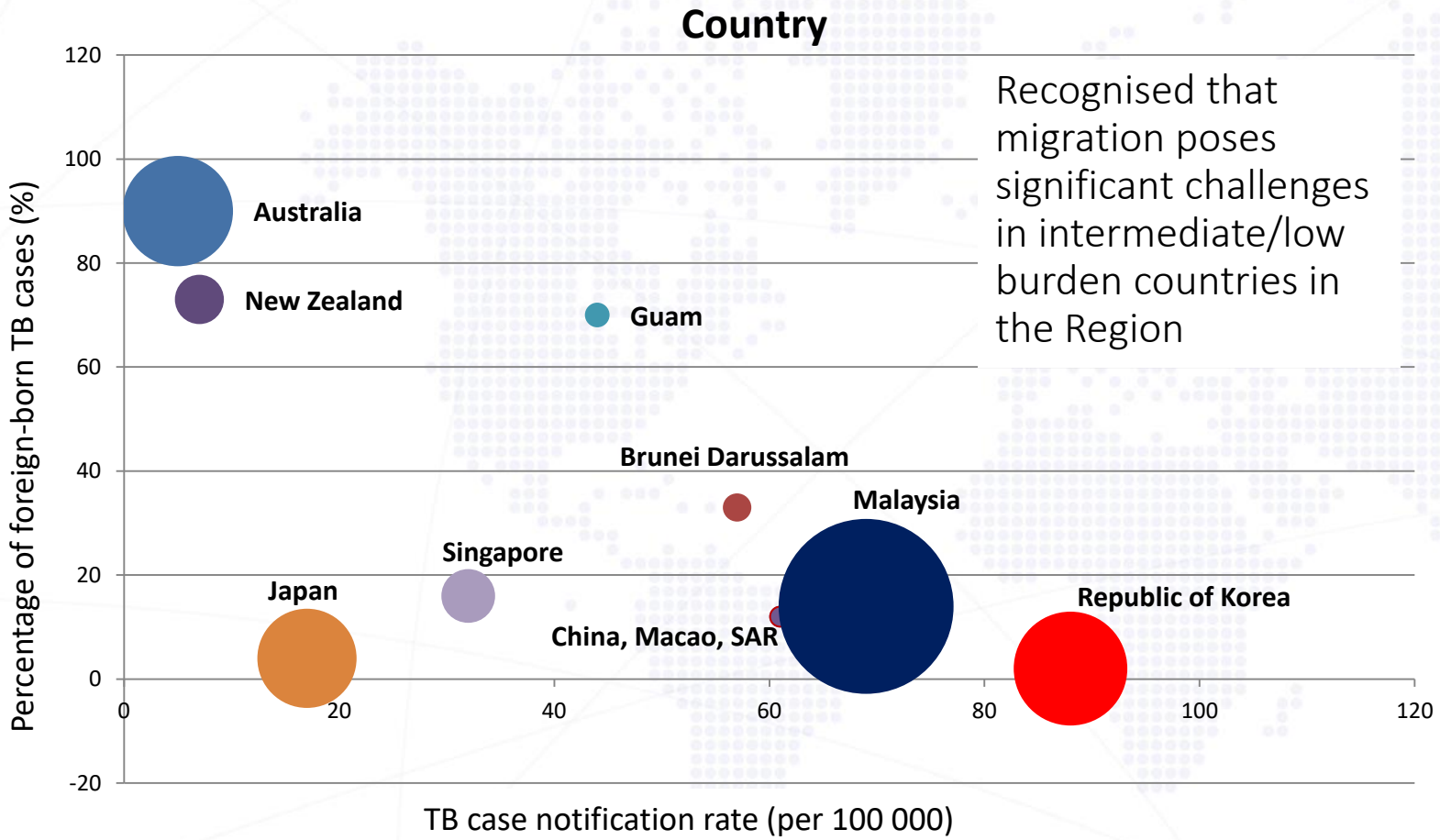


# WHY DOES AUSTRALIA SCREEN FOR TB?



Country	Year	% overseas born	Rate in country born	Rate in o/s born per 100K (difference)
New Zealand	1995	47.5%		
	2005	76.3%	3.7	31.3 (8.4x)
Australia	1994	66.4%		
	2010	90.1%	0.7	24.2 (34.6x)
Canada	1994	57%		
	2010	67%	0.7	14.2 (20.3x)
UK	1998	45%		
	2010	73%	4	82 (20.5x)
USA	1993	29%		
	2012	63%	1.4	14.2 (10.1x)

# TB IN MIGRANTS IN WPRO LOW BURDEN COUNTRIES, 2010

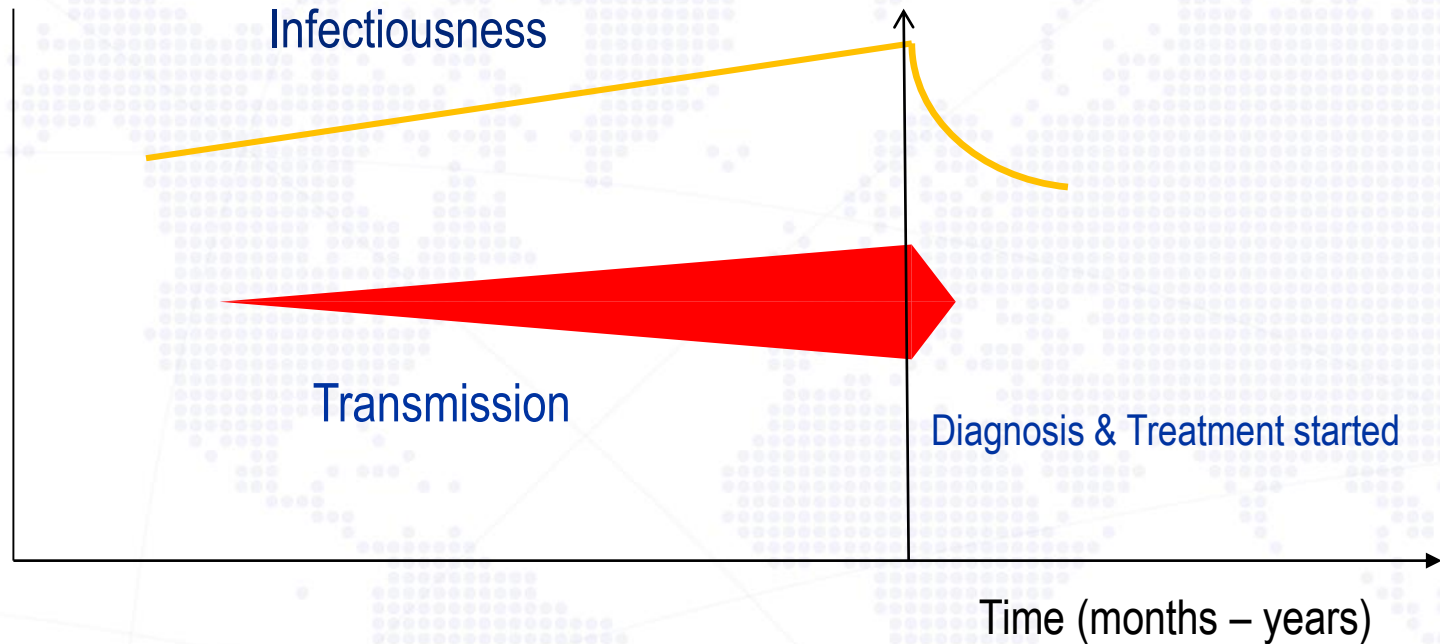


### Australia:

- Low incidence – 6 per 100K (Global average ~120/100K)
- Australian born 0.7 per 100K
- 88-92% TB cases in overseas-born

# WHY DOES AUSTRALIA SCREEN FOR TB?

The key to TB control is early diagnosis and effective treatment



Most important (public health) priorities for TB control and prevention are:

- Timely identification and treatment
- Detection of new infections in contacts
- Targeted screening in high risk groups



## LINKS BETWEEN TB AND MIGRATION



- Susceptibility to transmission and infection
  - Living, working, transit conditions
- Exclusion from awareness and health education
- Lack of access to health services
  - legal status, cost, distance, language, discrimination
- Less likely to seek timely and appropriate care
  - leads to late diagnosis which can result in
    - further transmission
    - increased catastrophic costs
  - often return to origin health system
- Risk of default

# Drug-resistant TB reaches Australian shores

Updated Mon Mar 18, 2013 7:26pm AEDT

A young woman from Papua New Guinea has become the first person to die from a largely untreatable form of tuberculosis on Australian soil. Her death has renewed concerns about the increasing incidence of drug-resistant TB in PNG's Western Highlands. How can we prevent it moving south.

Katie Hamann



Asylum seekers at a detention center.

An analysis of incoming passenger cards since January last year shows that just under 3,700 foreigners

## Tuberculosis: Inadequate TB screening for immigrants

The "rest cure" – an extended stay in a sanatorium, or TB hospital, away from home and family – was the only hope for tuberculosis patients in the first half of the 20th century. Then came a cure for the dreaded lung disease: powerful antibiotics that made the sanatorium a thing of the past. But TB was far from eradicated, and new drug-resistant strains surfaced in the 1980s, threatening vulnerable groups such as the urban poor and northern aboriginals. Now, over half of new TB cases in Canada are found in newcomers, and Canadian scientists are at the forefront of new treatments for the disease

### CBC Digital Archives 2013

"Probably is identify

COU

NEWS

Breaking | Loc

Students | classmate

Anthony Goug

MORE than | tuberculosis

The students | department

Last week stu | undergo a ch

Queensland | His

close contacts | "extremely low

She said only c | "It's important t

Selvey said. | QUT university

the contact det | "The university

minimal," she s | Urban develop

before receivin | "The letter just

tested," he said. | "I'd actually never

heard of it until mum explained to me wh

He said that, although the letter had made him "uneasy", he

contracting TB was low.

KARIN BARLOW: And what is the status of these particular people that have contact? Are t

VIDICK SHEPPARD: Yes. Now they are still going through the process of assessment. They

They get a specialist assessment including a chest X-ray and review by respiratory physician

KARIN BARLOW: Is there any Health Department concerns about further infections? Is there any reason to panic?

VIDICK SHEPPARD: Yeah, well an important message is that the children are not infectious and the children are not sick. They need assessment and treatment to make sure that the disease is properly managed and does not pro

of the children and they don't spread. There is no ongoing risk at the school or in that community.

PETER CAVE: Dr Vicki Sheppard speaking to Karin Barlow.

However, a senior source from the Indonesian National Police has confirmed that details about

the man were passed on to the AFP.

Tube

Updated T

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"There is babies,"

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## Incurable TB forces wave of refugees to flee

Friday, October 19, 2012 © The Cairns Post

MEDICAL refugee Catherina Abraham, 20, of Daru Island, is one of Australia's first cases in an outbreak of a new, highly-lethal, mutated variant of the killer disease tuberculosis.

Experts warn the Papua New Guinean girl is one of six confirmed cases and the first in a predicted wave of medical refugees fleeing an outbreak of the untreatable, incurable form of the deadly illness, known as XDR-TB.

Australian and Papua New Guinean authorities are trying to contain XDR-TB (Extensively Drug Resistant TB) to the disease-ridden, shanty towns of PNG's Daru Island, near the mouth of the Fly River, off the tip of Cape York.

But TB medical experts warn the outbreak of a highly contagious mutated form of TB, also known as sneezing or coughing disease, is a "public health disaster" likely to spread

speaking from her se Hospital.

ll of coughing."

before a friend in fares to make the , to Port Moresby,

for five months, nd is likely to stay ears.

s scrambling to find hundreds or Queenslanders who may have contracted a highly infectious strain of potentially lethal tuberculosis.

original man - recently diagnosed at Mossman, north of Cairns, after travelling he state - has been identified as the source of the outbreak. TB experts have sought to ill GPs in far north Queensland, warning the case could develop into an epidemic of lly catastrophic consequences" if not contained early.

Queensland's Chief Health Officer Jeannette Young yesterday said there was little

More

efies drugs



Isolated: Catherina Abraham has fled from PNG to seek treatment in Cairns for a new deadly strain of drug-resistant, incurable TB. Picture: MARC McCORMACK

### ALSO IN LOCAL NEWS

#### Cairns Regional Council stashes millions for budget



BOB Manning's razor gang has slashed nearly \$5.2 million from the council's spending this year, putting the Mayor and his thrifty team in prime position to finally get big-ticket projects into the







# PRE ENTRY HEALTH ASSESSMENT PROCESSES & PROTOCOLS

- Who requires it?
- Who does it?
- When is it done?
- What is done?
- How it is done?
- What is done with it?



# HEALTH ASSESSMENT PROCESSES & PROTOCOLS

## Who requires it?

- Immigration Medical Exams (IMEs) may be required based on:
  - type of visa application;
  - purpose of the visit to the country;
  - age;
  - intended length of stay; and/or
  - country of origin (TB incidence)

## Who performs it?

- “Panel Physicians”
- Complete according to instructions (from country of destination)
  - Have to meet quality of standards
  - Process of certification and review



That is – it should not be a ‘one size fits all model’



# HEALTH ASSESSMENT PROCESSES & PROTOCOLS

What is required?

- Medical History
- Physical Exam
- Urinalysis
- Radiology
- Pathology\*:
  - Syphilis
  - BBV
  - Creatinine/HbA1c/FBE
- Further TB Screening
- Mental Health
- Vaccinations.....

\*dependent on comorbidities and risk





# THE HEALTH PROCESS – FRONT END

1. Exams generated by visa officer or my health declarations and client attends clinic with HAP ID & letter



Search for a case

Reference Number (TRN/HRU/HAP ID)

Passport Number

Date of Birth  Day  Month  Year

Family Name

Given Name

Note: (Passport Number or Date of Birth is mandatory when searching to assign a new health case using #HAPID or #HS)

2. Clinic searches for health case using ID provided

3. Clinic uploads digital photo, confirms identity & answers medical history questions



4. Clinic uploads digital x-ray

5. Radiologist records examination results, findings & submits (or forwards to panel physician)

8. Panel physician records findings and submits to DIBP

7. Panel physician (or clinic staff to confirm identity & record health examination results



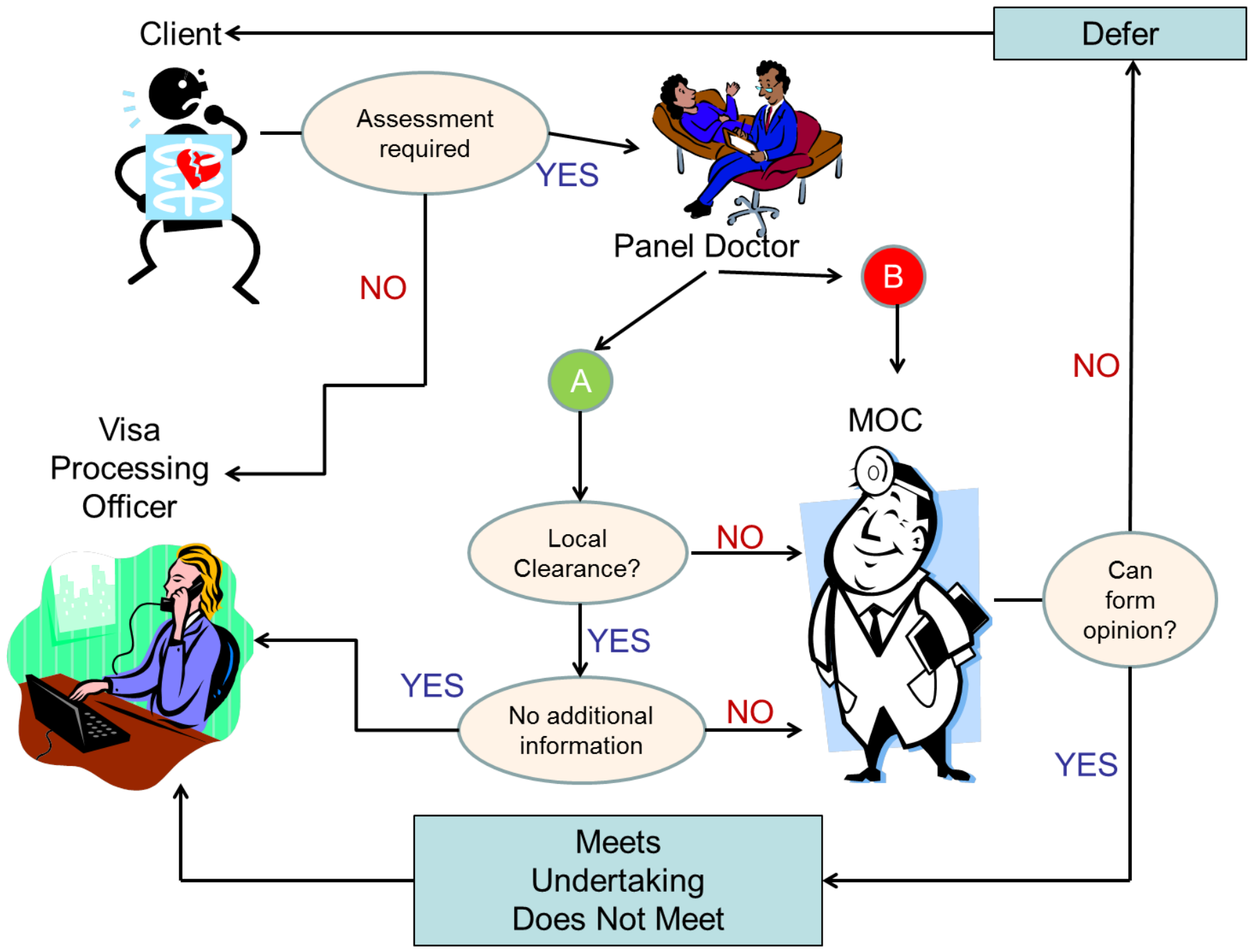
6. Panel physician to review radiology findings.

# HEALTH ASSESSMENT PROCESSES & PROTOCOLS

- What is done with it?
- Submission and grading – based on instructions
- Inadmissibility (role of UHC)
- Waiver
- Onshore linkage

	treatment details.
BMI – body mass index	'A' Grade: Stable weight, or obesity without complications 'B' Grade: Unexplained weight loss, or obesity with complications known or suspected. Provide details, relevant test results, and estimation of treatment needs.
Cancer	'A' Grade: No recurrence ≥ five years post -treatment. 'B' Grade: New diagnosis, recurrence exists, or if < five years since treatment. Recent specialist report required.
Cardiac murmur	'A' Grade: Asymptomatic, healthy applicant with normal x-ray. 'B' Grade: Symptomatic or evidence of cardiac failure. Cardiology opinion and echocardiography required.
Chest x-ray changes	'A' Grade: Anatomical variations and benign changes as per Attachment 6. 'B' Grade: All pathological, infectious, or post-infectious changes.
Diabetes	'A' Grade: If stable with no evidence of end-organ damage. 'B' Grade: End-organ complications known or suspected, especially renal impairment. Provide relevant investigation results. Specialist report not required unless requested.
Elderly	'A' Grade: Reasonably fit with no cognitive or functional impairment. 'B' Grade: Evidence of cognitive or functional impairment. ADL assessment/MMSE required. Document medical issues and treatment needs.
Hearing	'A' Grade: Reasonable hearing with or without hearing aids. 'B' Grade: Hearing loss affects daily function and is uncorrected by hearing aids. Obsolete specialist report for children and young adults including comment on whether cochlear implant may be required.
Liver function tests	'A' Grade: All cases: Perform LFT's and Hepatitis C test. 'B' Grade: Abnormal liver function test results require on-site specialist report.







## FOR AUSTRALIA, A COMPREHENSIVE TB EVALUATION INCLUDES...

- Physical exam and medical history (symptom check, exposure history)
- TST or IGRA (children; contacts)
- Chest X-Ray
- Sputum testing
- HIV testing (if positive)

### And ...

- Stipulated lab requirements - 3 consecutive days, early morning, fasting specimens under direct observation
- Smears PLUS cultures

### As well as ...

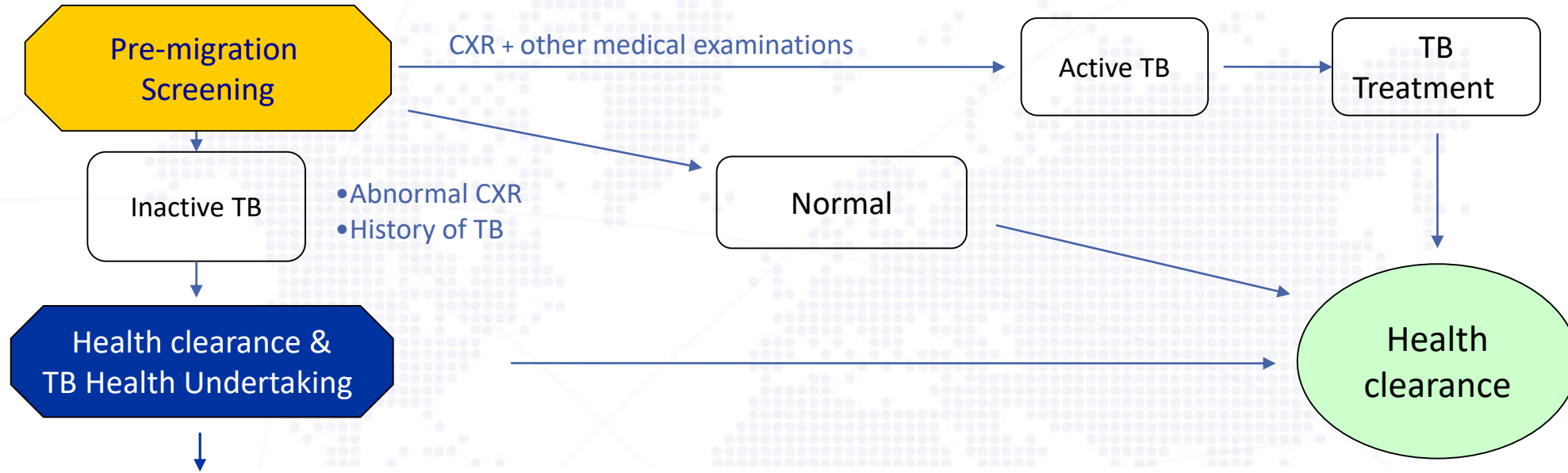
- Drug Susceptibility Testing (DST) of positive culture isolates
- Directly Observed Therapy (DOT) if treatment indicated

# PANEL PHYSICIAN PREMIGRATION TB INSTRUCTIONS

- Who to screen with x-ray and if abnormal....
- Investigation prescriptive - 3 x early morning observed collections for smear (auramine), culture (liquid and solid) and DST (if required); molecular testing on all positive smears.
- Transport and laboratory processes (including EQA)
- Protocols for management of TB:
  - Pretreatment work-up
  - Sputum and chest x-ray monitoring
  - Completion of treatment & clearance
  - DOT
  - Contact tracing
- Need to link premigration cases to country National TB Programmes & contact tracing

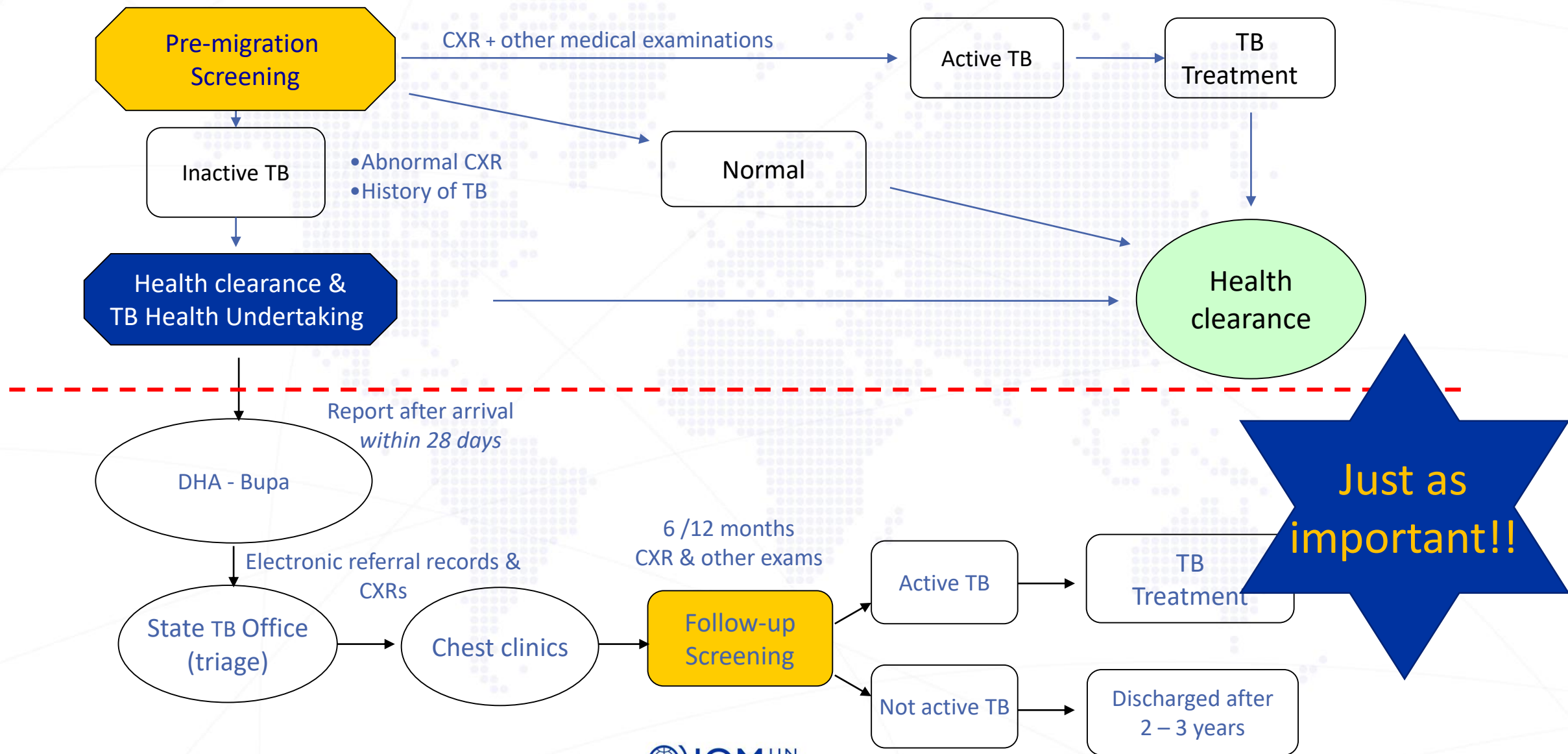


# TB SCREENING FOR MIGRANTS TO AUSTRALIA - IMPORTANCE OF POST ARRIVAL FOLLOW-UP





# TB SCREENING FOR MIGRANTS TO AUSTRALIA - IMPORTANCE OF POST ARRIVAL FOLLOW-UP



**Just as important!!**

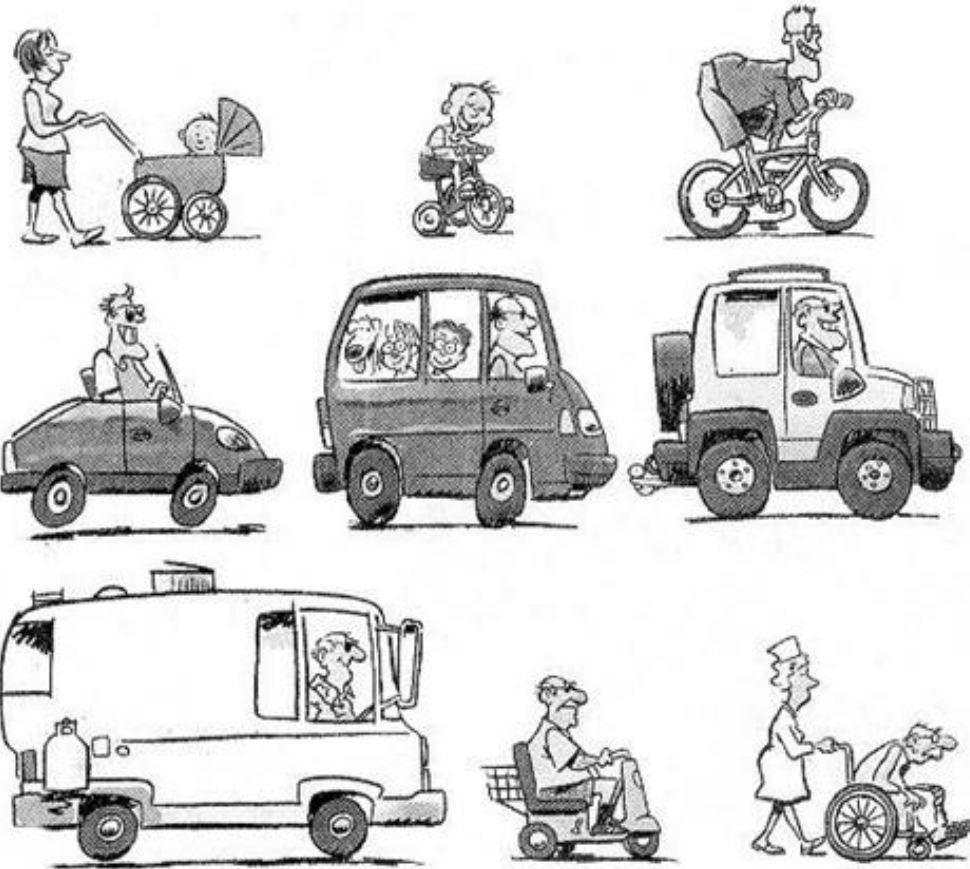
# CONTINUITY OF CARE

- Post arrival surveillance - Australia's Health Undertaking Process
- Agreement to attend a designated health clinic in Australia upon arrival to follow-up on health condition
- Requested by a Medical Officer of the Commonwealth
- Prerequisite to meeting the health requirement
- Used for conditions that are not an immediate public health threat:
  - LTBI and inactive TB (active TB excluded) on CXR
  - HIV
  - Hepatitis B or C
  - Treated leprosy
- In 2016 – 7006 undertakings (0.8% of assessments) – with 96% compliance
- TB (6114); HBV (699); HCV (89); HIV (90)
- Clinics access information through portal directly from eMedical



# VARIATIONS

## The Wheels of Life





# SCREENING STRATEGIES

## International Comparisons\*

- Countries selected on:
  - Top 20 immigrant countries OR
  - Migration screening results published in peer review journal AND
  - Low domestic TB Incidence (< 15/100 000)
- Compared USA, Germany, France, Canada, UK, Switzerland, Australia, UAE, Israel, NZ, Jordan, Netherlands, Norway, Sweden, & Japan, Spain, Italy (final three - no screening programme)
- No two countries had a common approach and programmes could be made more evidence-based
- Temporary residents represent a significant TB source
- Cooperation between countries in research would be advantageous
- High-income countries prioritise screening for active TB (86.2%) rather than latent TB (55.1%)<sup>2</sup>
- Screening yields for active tuberculosis on arrival relatively low (0.11%)<sup>3</sup>
- Pre-arrival screening yields for active tuberculosis generally higher (0.96%)<sup>4, 5</sup>

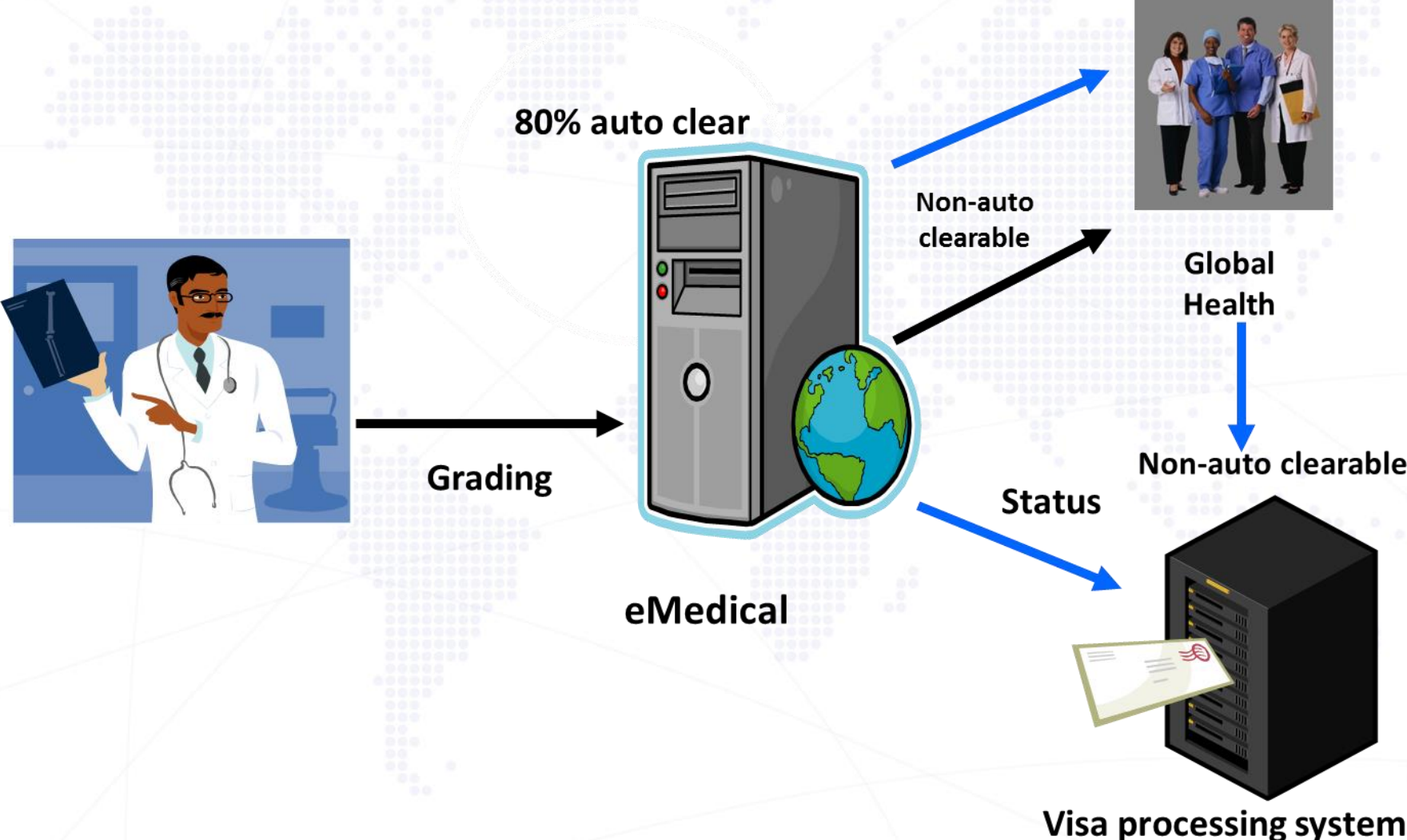
<sup>1</sup>Alvarez et al., 2011, <sup>2</sup>Pareek et al 2012, <sup>3</sup>Arshad et al 2010, <sup>4</sup>Aldridge et al 2014, <sup>5</sup>Liu et al 2009

# VARIATIONS IN PROCESSES – SCREENING YIELDS FOR TB\* IN MIGRANTS

- In European Union:
  - mandatory screening gave broader coverage (91% vs 49%) but lower yield (0.28% vs 0.4%)
  - migrants lower yield than asylum seeker (0.17% vs 0.35%)
  
- Same study compared non-EU (US, Can, Australia, Japan)
  - Coverage similar – 85%
  - Yield higher – 0.51%
  - Premigration higher – 1.21% (focus on Asia)

\*2011; Klinkenberg et al., ERJ, Nov 1 2009, vol 34. no 5

# THE HEALTH PROCESS – BACK END





# HEALTH ASSESSMENT PROCESS TOOLS

## eMedical – an electronic health processing system

- Improved client service
- Promotes standardisation
- Improved integrity
- Secure document information transmission
- Efficient and convenient
- Submitted in real time
- Can be accessed from anywhere via the internet
- Permanent storage system
- Links for continuity of care post arrival - Information is available electronically to onshore health providers through eMedical

## eMedical

Radiologist records chest x-ray examination and gives recommendation 'A' or 'B'.

If a 'B' grading is recorded, a comment must be provided

044S10DR01 Royal Brompton Hospital  
Ex: 1  
1962 May 17 M 08/24450  
Se: 0/1 Acc: 1204690  
Im: 1/1 2008 Oct 20  
Acq Tm: 10:19:06.349000

CHEST  
Mag: 0.2x  
LOBBY (13.5:1)

**Recommendation ?**

Consider the information you have provided about the presence of tuberculosis (TB) or other significant findings and their potential future health impact.

This is not a rating of whether the applicant will meet the health requirements for entry to Australia.

**A** No evidence of active TB, or changes suggestive of other significant findings.

**B** Evidence of active TB, or changes suggestive of other significant findings. If a 'B' grading is recorded, a comment must be provided.

**Declaration ?**

This radiology examination was conducted in accordance with the requirements for the examination of Australian visa applicants.

Completed by **Dr South Korea Radiology Appro**

I declare that this report for this applicant is a true and correct record of my findings.

No  Yes

[← go back](#) [next →](#)

**Services > Awaiting review > Health case ?**

Name	THEFAMILY, Thegiven
TRN	E9M1UT5075
Date of birth	05/05/1985
Passport number	HK12378 6
Passport country	HONG KONG SAR
Health case reference number	05REF005001B
Visa subclass	417
File number	E=E9M1UT5075

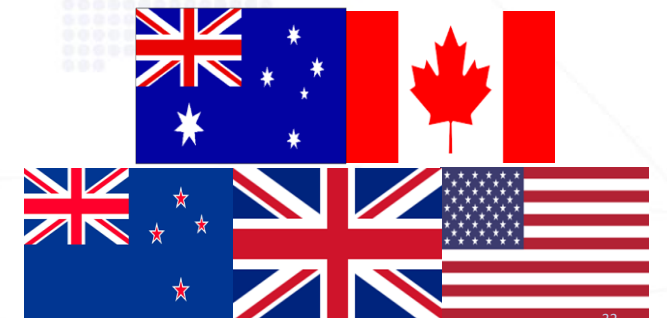
[View contact details](#)

**Health requirements ?**

Health requirement	Status	Outcome	Actions
➔ 502 - Chest x-ray examination	Received	A Graded	<a href="#">View examination Attachment (1E / H)</a> <a href="#">View x-ray image</a>

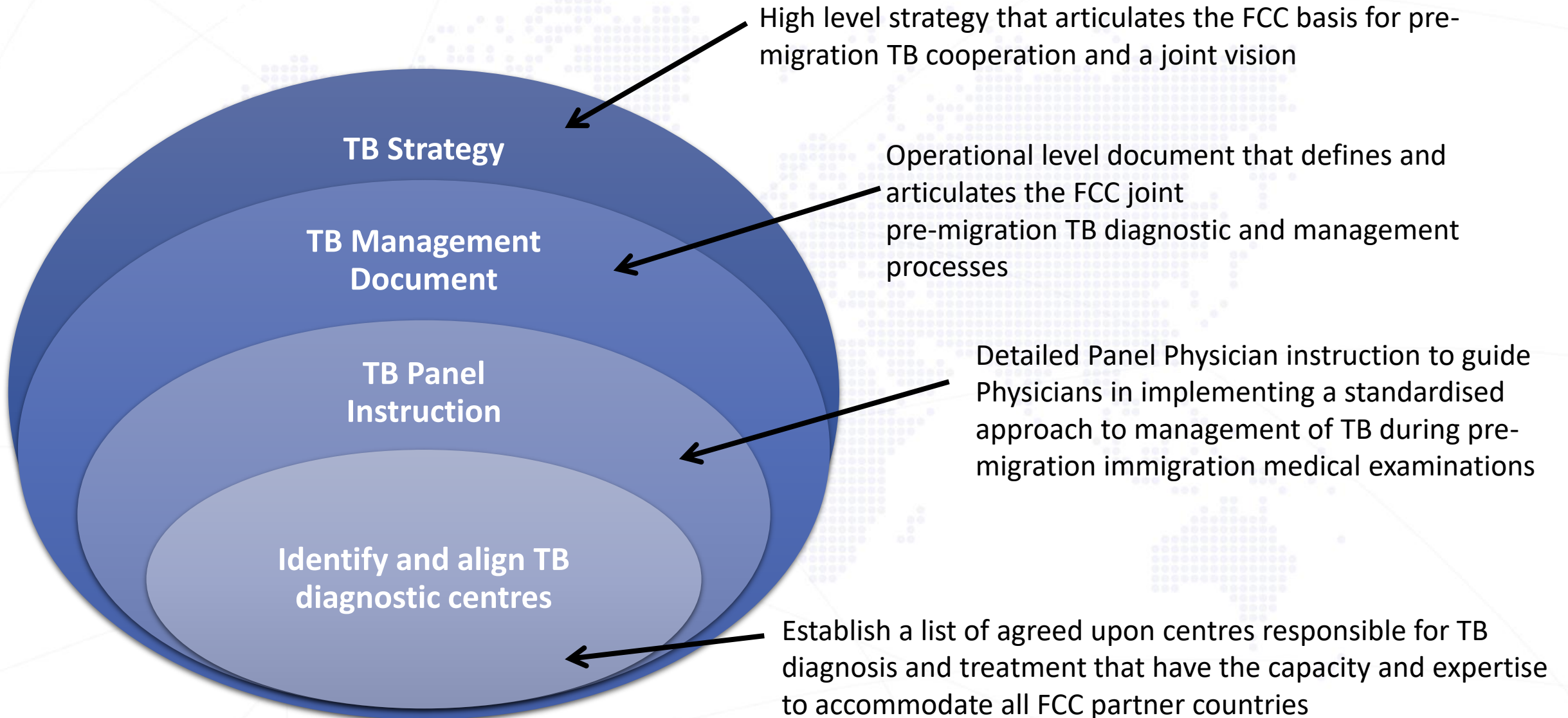
# PARTNERSHIPS AND COLLABORATION - IMMIGRATION REFUGEE & HEALTH WORKING GROUP (IRHWG)

- Brought together by IOM in 2005 to look at consistency in pre-entry screening approaches
- Includes Australia, Canada, New Zealand, UK, USA
- The IRHWG undertakes collaboration on issues of shared importance in migration health.
- Recent and current priorities include:
  - Working with stakeholders common to all partner countries (e.g. IOM) to take advantage of economies of scale and enhance health screening outcomes
  - Aligning networks of migration medical examiners and related management processes
  - Strengthening TB and refugee health management in the client population
  - Sharing information on migration and global public health and migration medical examiner QA (audits, evaluations)
  - Sharing information on migrant and refugee health screening policies and practices
  - Joint examiner (panel physician) training
  - Exploring opportunities to leverage country technologies (Australia's e-Medical)



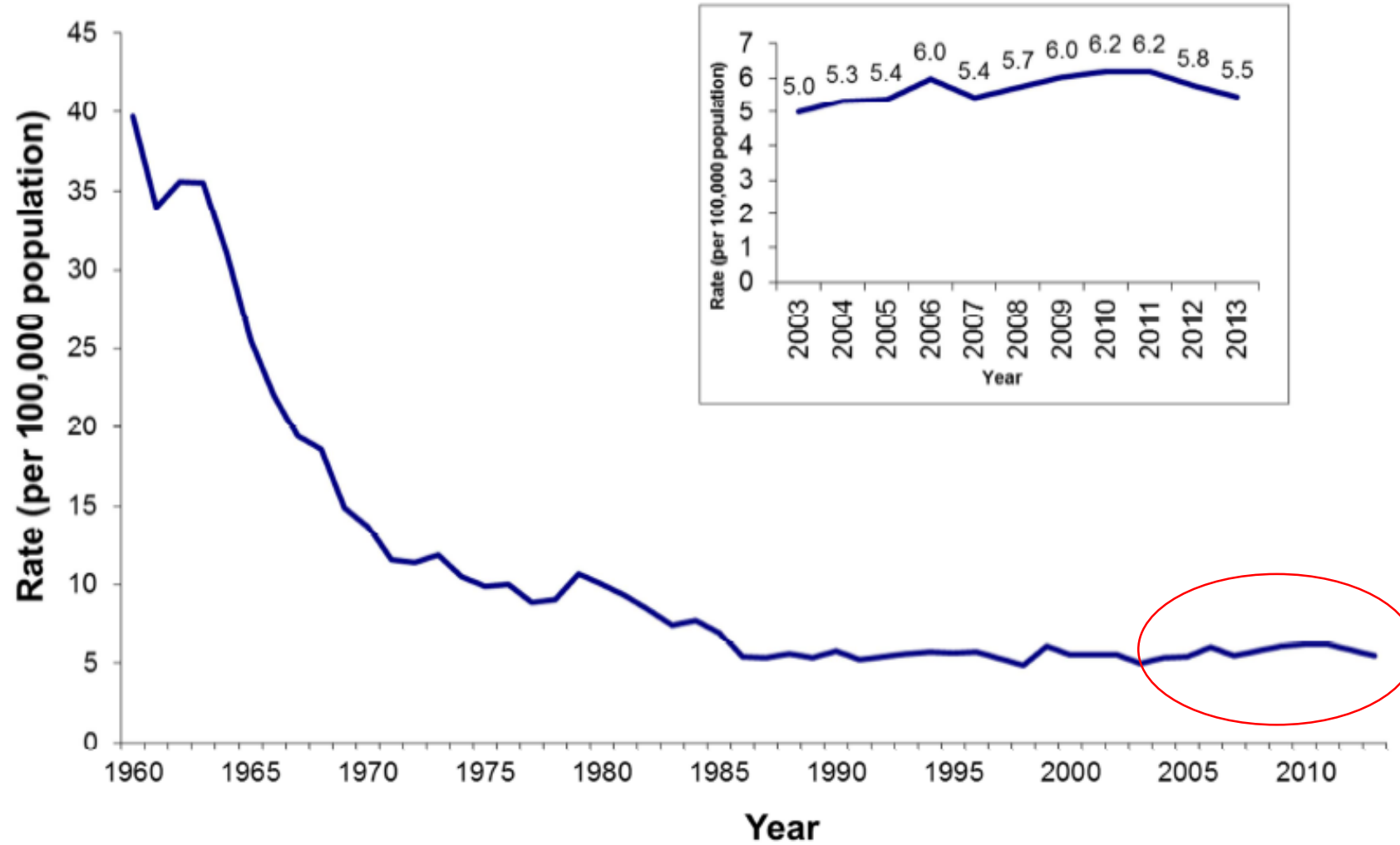


# IRHWG PRE-MIGRATION TUBERCULOSIS STRATEGY FOR 2020 AND BEYOND



# AUSTRALIA'S EXPERIENCE

Figure 1: Notification rates of tuberculosis, Australia, 1960 to 2013



Toms C et al. Tuberculosis Notifications in Australia, 2012 and 2013. *Commun Dis Intell.*

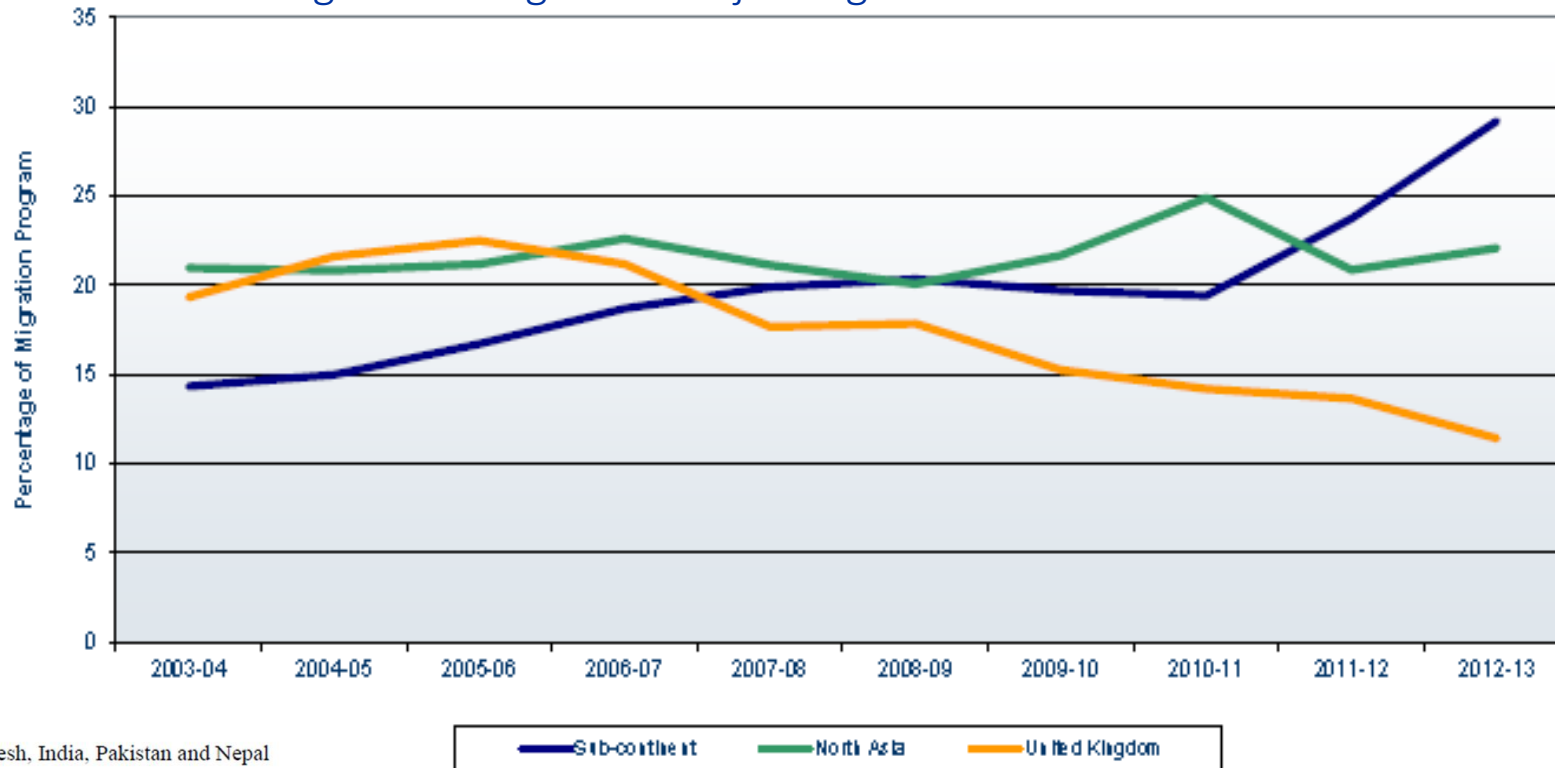
# MIGRATION SCREENING

## Pre-migration screening detection

- 487 offshore cases of active TB in 2013 (~90 per 100K)<sup>i</sup>
- Rates in first 6 months of Health Undertaking onshore – 505 per 100K<sup>ii</sup>
- Doesn't systematically find LTBI – so TB reactivation risk continues

i. Toms, CDI, 2015; ii. Flynn, IJTL, 2012

### Migration Program – Major Regions from 2003-04 to 2012-13

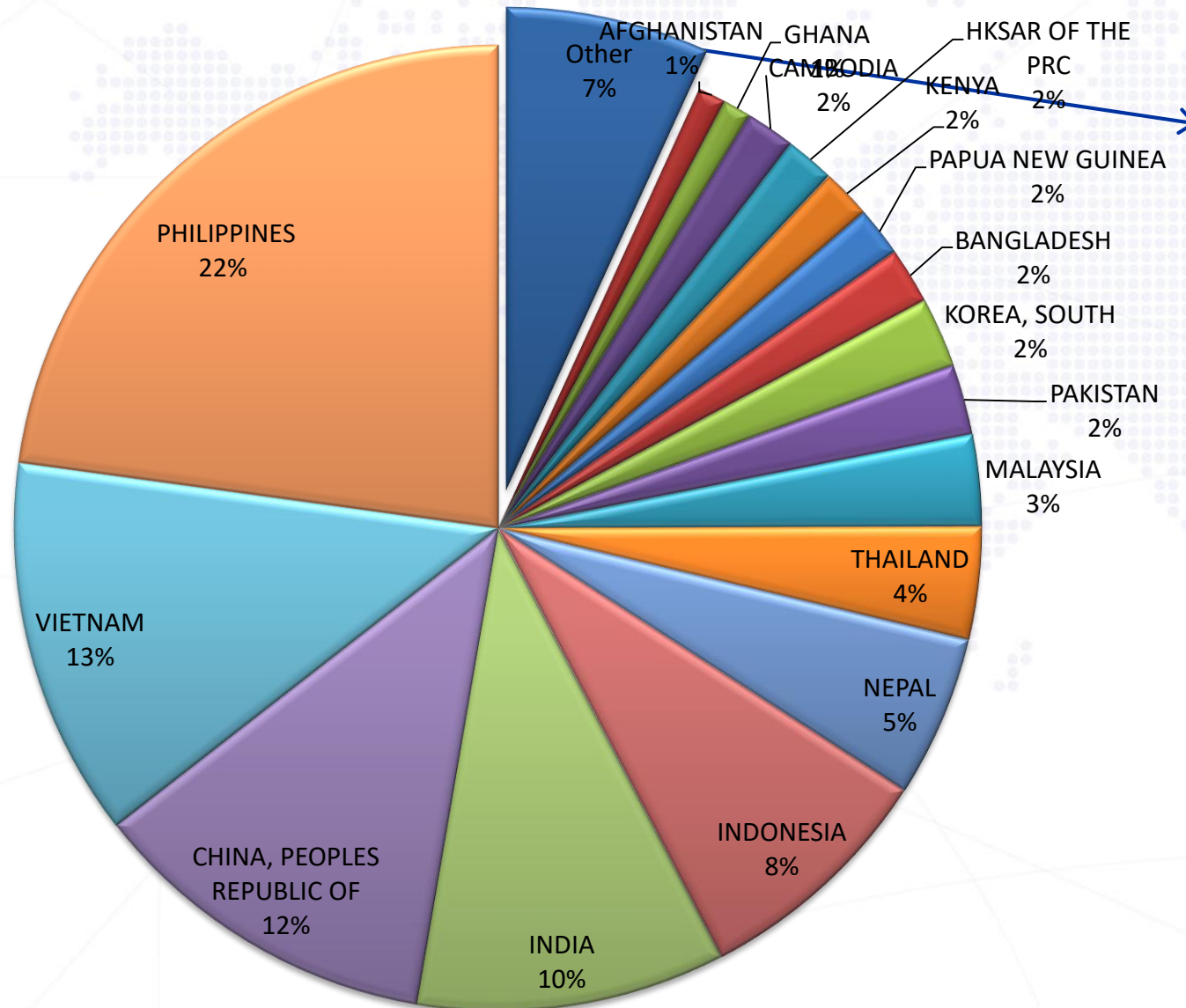


<sup>1</sup> Includes Sri Lanka, Bangladesh, India, Pakistan and Nepal

<sup>2</sup> Includes China, Republic of Korea, Hong Kong, Japan, Vietnam and Taiwan.



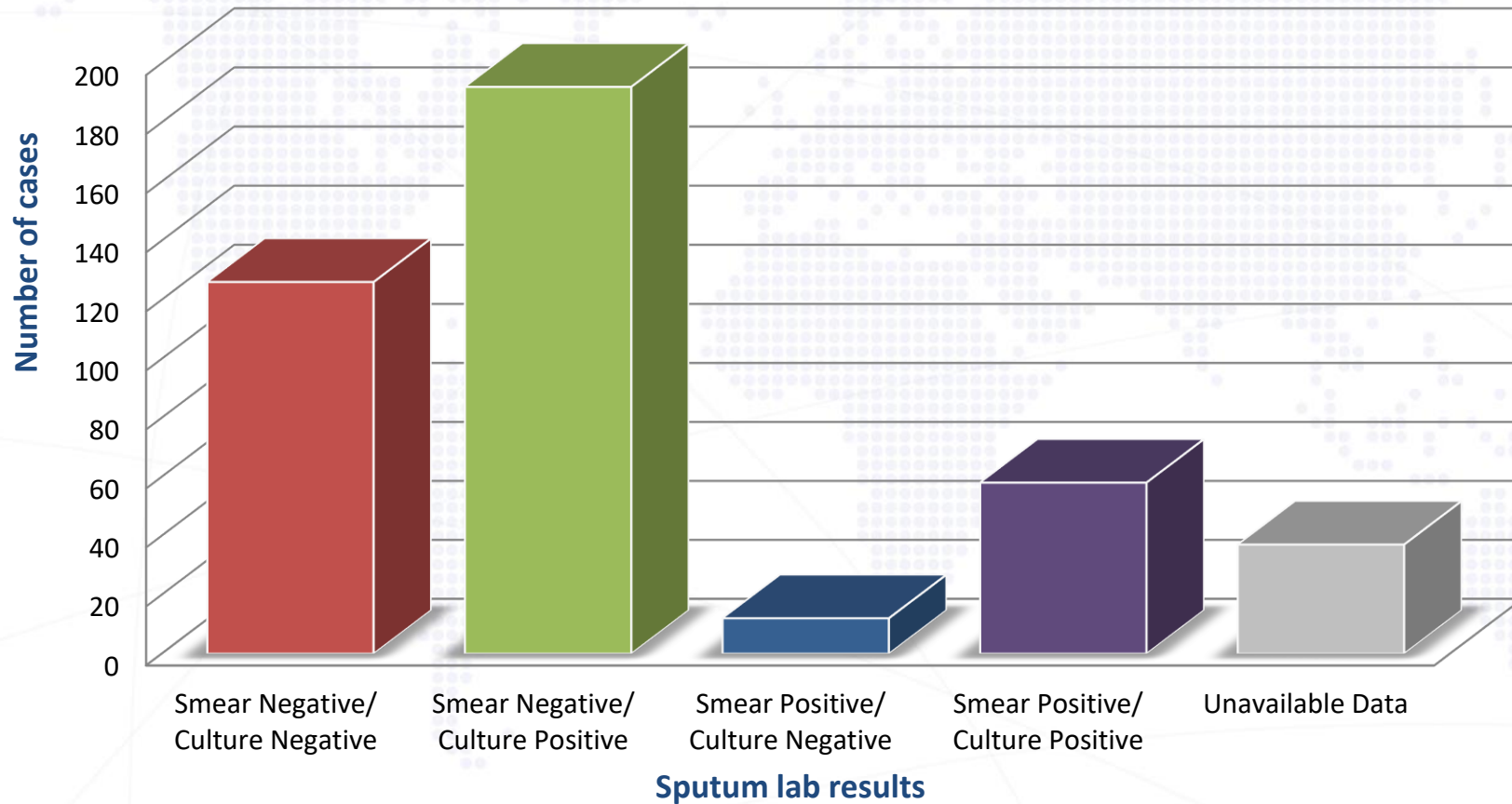
# TB CASES BY COUNTRY OF ORIGIN – PRE ENTRY, AUSTRALIA 2014



Other Countries	Percentage of total TB cases
Iran	0.8%
Myanmar	0.8%
Macau	0.5%
Singapore	0.5%
Turkey	0.5%
United kingdom	0.5%
Zimbabwe	0.5%
Egypt	0.2%
Ethiopia	0.2%
Japan	0.2%
Kazakhstan	0.2%
Laos, People's Democratic Republic	0.2%
Mongolia	0.2%
Nigeria	0.2%
Samoa	0.2%
South Africa	0.2%
Sudan	0.2%
Syrian Arab Republic	0.2%
Uganda	0.2%
United Arab Emirates	0.2%

# TB DIAGNOSTICS 2014 PRE-ENTRY

## TB Sputum Examination Results



## DRUG RESISTANT TUBERCULOSIS (DR – TB), 2014

Country	Number of MDR-TB cases in 2014	MDR-TB rate in 2014	Number of drug resistance cases in 2014	Drug resistance rate in 2014
India	8	31%	16	62%
Vietnam	4	11%	14	35%
China	1	3%	5	17%
Malaysia	1	14%	4	57%
Philippines	3	9%	6	17%
Indonesia	1	9%	4	36%
PNG	1	33%	1	33%
<b>Total program number</b>	<b>19</b>	<b>8.5%</b>	<b>58</b>	<b>25.9%</b>

*Note: This table lists all cases of MDR-TB detected at the Immigration Medical Examination.*



# PREMIGRATION OUTCOMES (AUSTRALIA)

AND LABORATORY PERFORMANCE 2009 - 2014

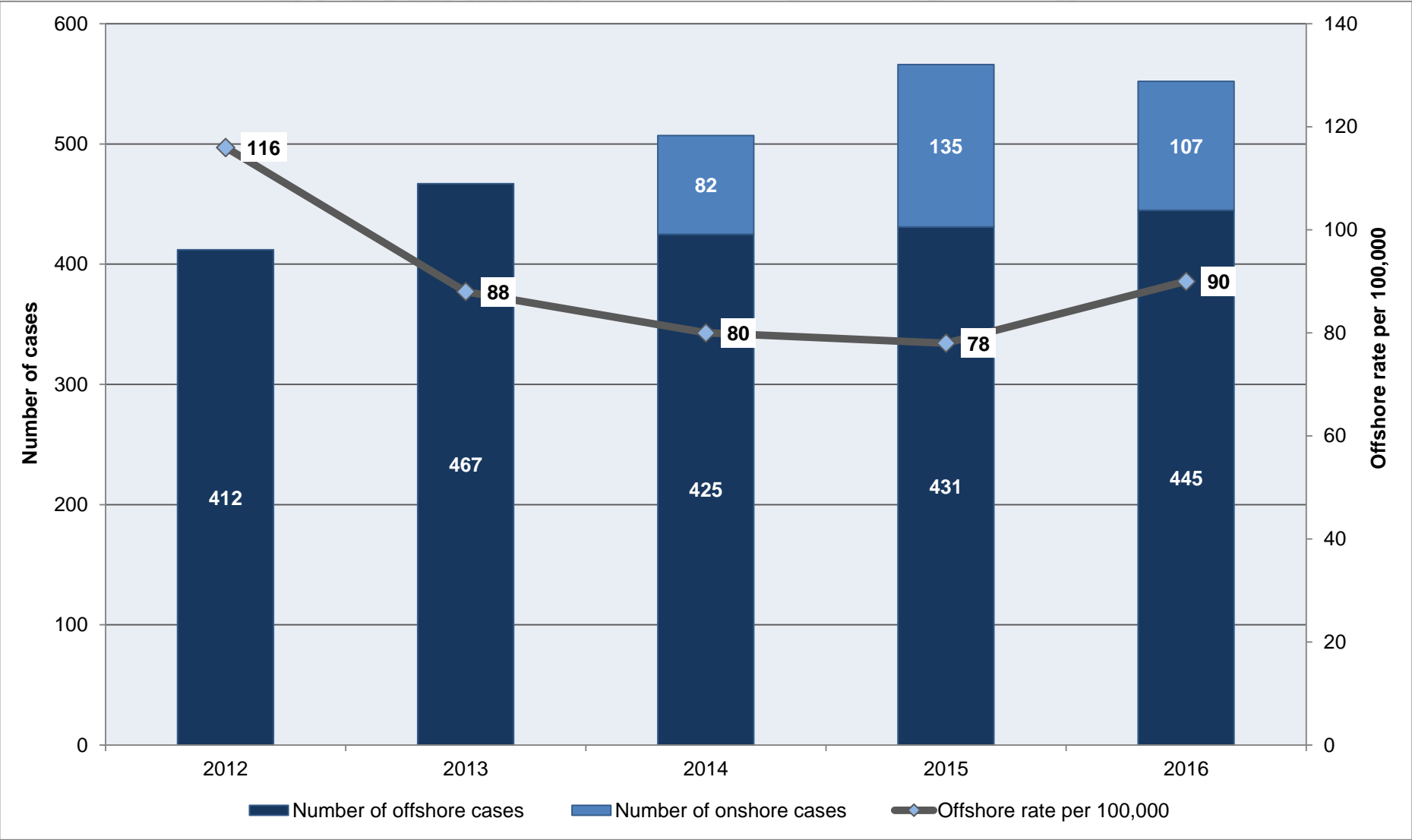
	<b>2009</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014*</b>
<b>Numbers</b>	519	287	412	476	425*
<b>Prevalence per 100K</b>	112.2	80.2	92.7	89.4	80.2
<b>Lab diagnosis</b>	49.7%	50.5%	64.1%	65.5%	71.3%
<b>Culture positive</b>	44.5%	44.3%	56.8%	58.6%	60.0%
<b>DST availability</b>	41.1%	58.3%	65.4%	60.9%	87.0%
<b>Drug resistance</b>	13.6%	21.1%	20.7%	26.0%	26.0%
<b>MDRTB rate</b>	5.3%	1.4%	5.2%	13.5%	8.5%

\* Different recording process

# SUMMARY OF RESULTS

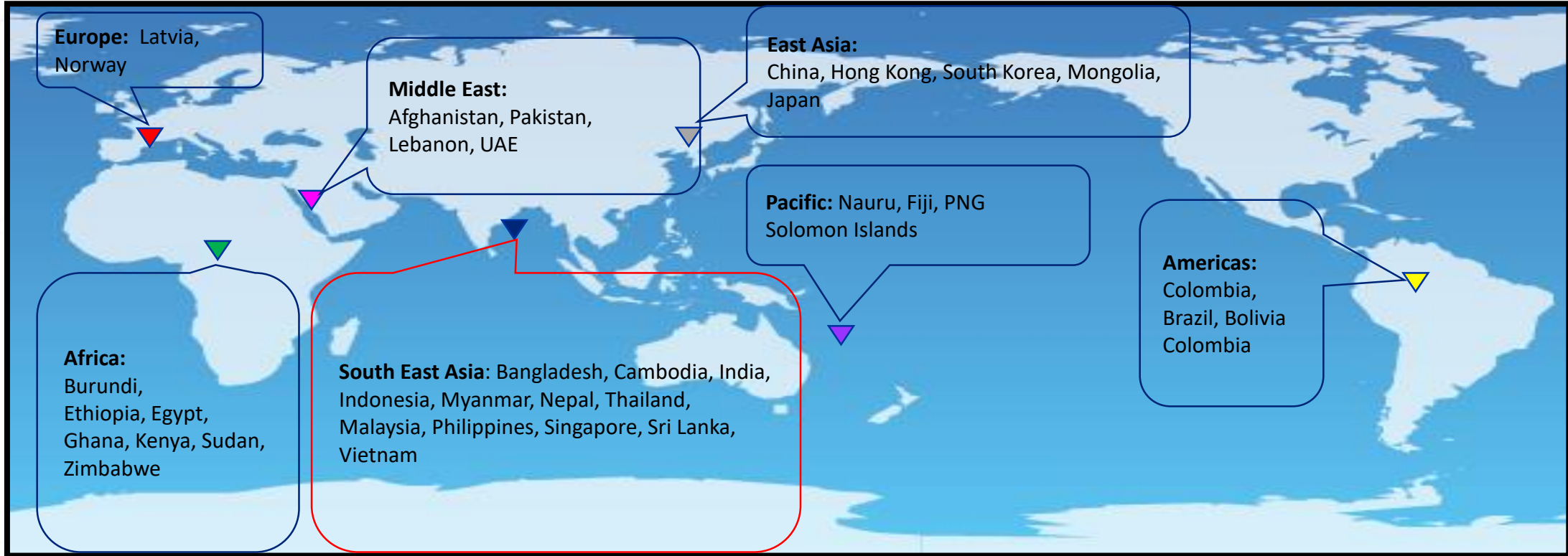
- From 1st January to 31st December 2014, a total of 425 cases of TB were detected offshore, across 37 countries, representing a TB incident rate of 80/100,000, which was slight reduction on the 2013 rate, of 89/100,000
- Highest rates of TB detection were in the refugee and humanitarian caseload (permanent visa applicants), with a rate of 372/100,000.
- Majority of TB cases were identified in temporary visa applicants, accounting for 76%
- Some form of drug resistance was recorded in 26% of all TB cases.
- Multi-drug resistant tuberculosis (MDR-TB) was identified in 8.5% of all TB cases

# TB CASES AND RATES – PREMIGRATION 2012-16





# TB CASES BY REGION – PRE-ENTRY 2016



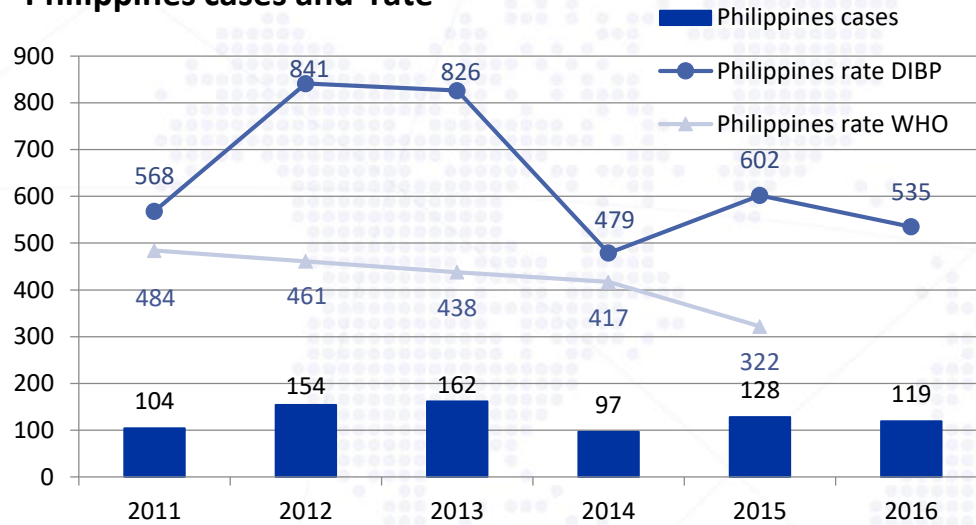
Region	Offshore TB Cases	Onshore TB Cases
Americas	1	4
Africa	17	3
East Asia	60	12
Europe	2	0
Middle East	22	2
Pacific	8	6
South East Asia	335	80
<b>Total</b>	<b>445</b>	<b>107</b>

# OFFSHORE TB CASES BY COUNTRY

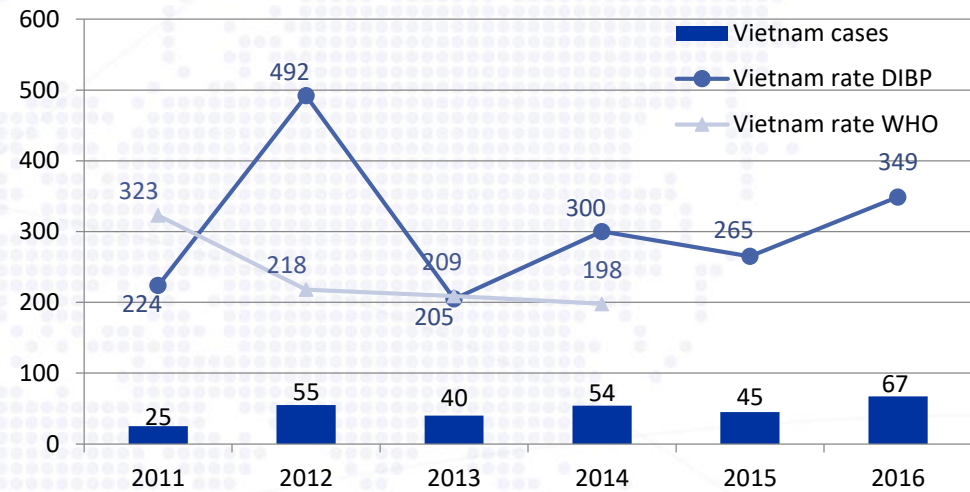
Country	Count	Caseload	Pre-entry DIBP Rate per 100,000	WHO Rate per 100,000
Philippines	119	22241	535↑	322
Vietnam	67	19182	349↑	137
India	55	126171	44↓	217
China	41	141506	29↓	67
Thailand	23	16678	138↓	172
Indonesia	21	11917	176	395
Malaysia	17	12135	140	89
Pakistan	16	15703	102	270
Nepal	15	20234	74	156
South Korea	11	25734	43	80
Kenya	8	3380	237	233
Papua New Guinea	6	1954	307	432
Singapore	5	10035	50	44
Cambodia	4	2389	167	380
Myanmar	4	977	409	365
Ghana	3	902	333	160
Lebanon	3	10198	29	31
Sri Lanka	3	12109	25	65
Afghanistan	2	943	212	189
Bangladesh	2	7748	26	225
Ethiopia	2	815	245	192
Zimbabwe	2	1522	131	242
Countries with a single case detected:	Colombia, Egypt, Japan, Latvia, Norway, Solomon Islands, Sudan UAE			

# TOP FOUR COUNTRIES WITH THE HIGHEST TB CASES DETECTED 2011 - 2016

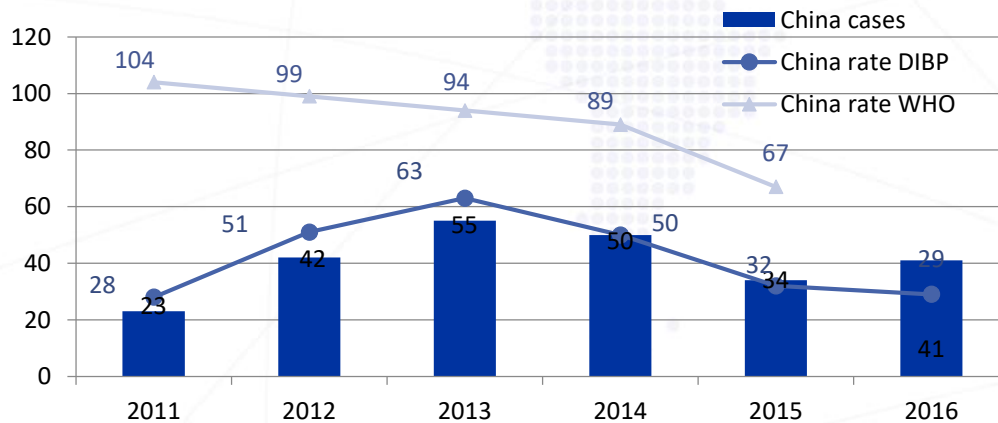
## Philippines cases and rate



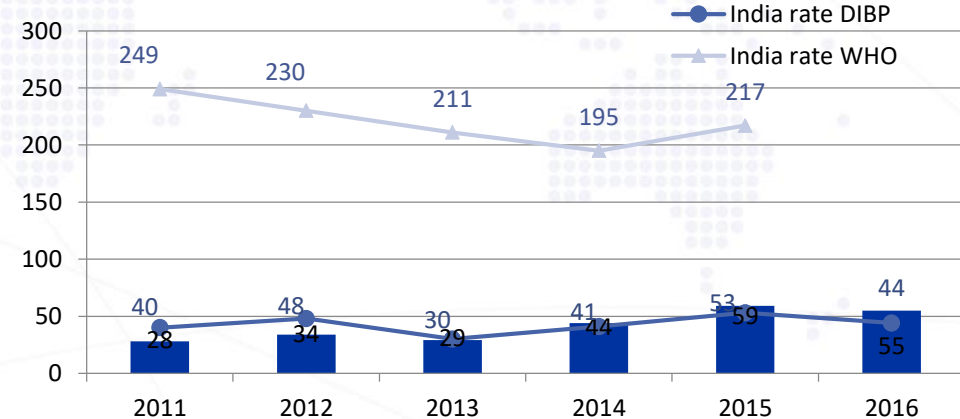
## Vietnam cases and rate



## China cases and rate

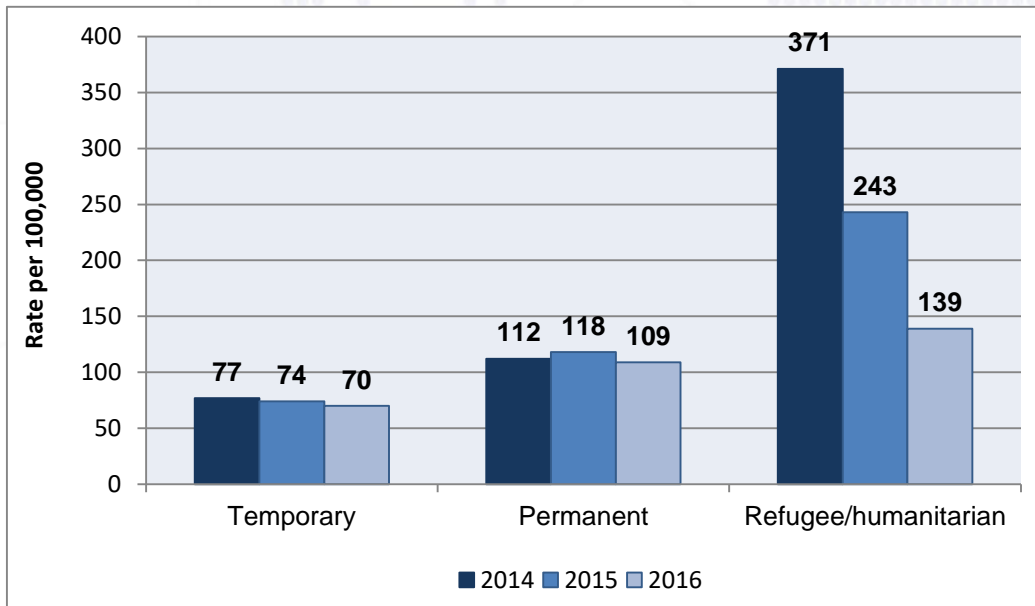
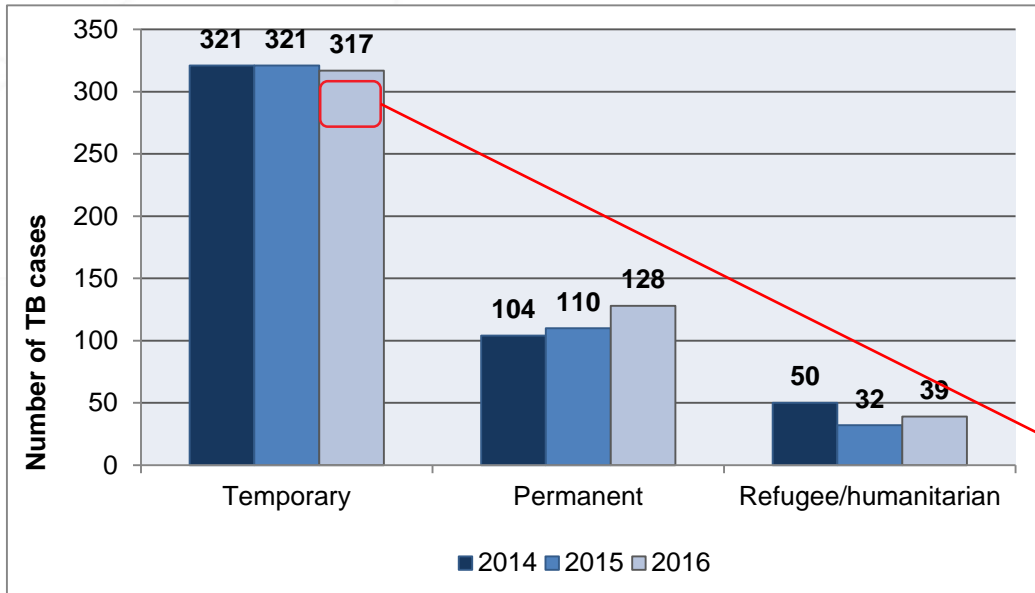


## India cases and rate

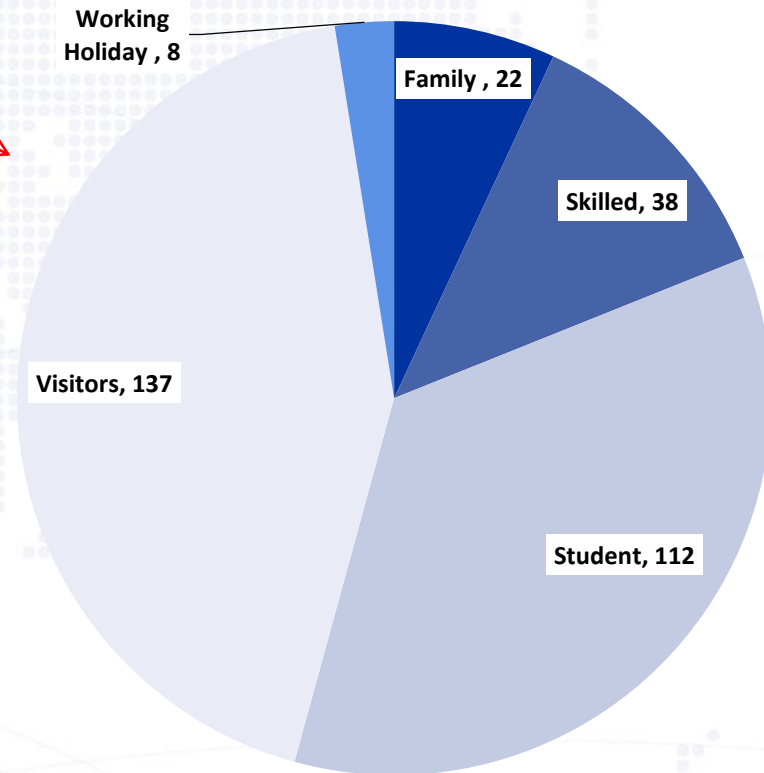




# TB CASES BY VISA TYPES



TB cases, 2016, by temporary visa subclass type



## MIGRANTS WITH LTBI AUSTRALIA – PRE-ENTRY SCREENING 2017

WHO rate	Total LTBI	% positive	TST	% positive	IGRA	% positive
<b>Overall</b>	20840	4%	9854	6%	10985	2%
<b>&gt;300/100K</b>	5542	7% (1-17%)	3330	9% (0-33%)	2212	3% (0-5%)
<b>200-300/100K</b>	7667	4% (2-14%)	3402	5% (2-14%)	4264	2% (0-4%)
<b>100-200/100K</b>	3304	3% (0-15%)	2024	4% (0-30%)	1280	1% (0-1%)*
<b>40-100/100K</b>	4327	3% (0-17%)	1098	5% (0-18%)	3229	2% (0-3%)#

\* Russian Federation 5% IGRA positive; # Lithuania 25% IGRA positive

- WHO TB >300 per 100,000
  - Pakistan, PNG, Cambodia, South Africa (1%); Bangladesh (7%) Myanmar (9%), Philippines (17%)
- WHO TB 200-300 per 100,000
  - Vietnam (3%); India, Indonesia, Kenya (4%); Ethiopia, Sudan (14%)
- WHO TB 100-200 per 100,000
  - Fiji, Korea, Syria, Thailand (1%); Sri Lanka (2%); Malaysia (4%); Ukraine (11%); Russia (15%, [30% TST])
- WHO TB 40-100 per 100,000
  - Brazil (1%); Hong Kong (2%); China (3%); Taiwan (4%); Singapore (5%); Lithuania (17%)

## 2014 PREMIGRATION SCREENING OUTCOME DATA IRHWG COMPARISON - TOP 5 COUNTRIES BY RATE PER 100 000

<b>Australia</b>	<b>Canada</b>	<b>UK</b>	<b>USA</b>
Philippines (479)	Philippines (560)	Philippines (843)	Philippines (1174)
Papua New Guinea (415)	Nepal (526)	Nepal (621)	Vietnam (999)
Cambodia (348)	Vietnam (303)	China (251)	Malaysia (787)
Indonesia (340)	Pakistan (139)	India (242)	Myanmar (678)
Vietnam (300)	India (97)	Thailand (230)	Thailand (527)

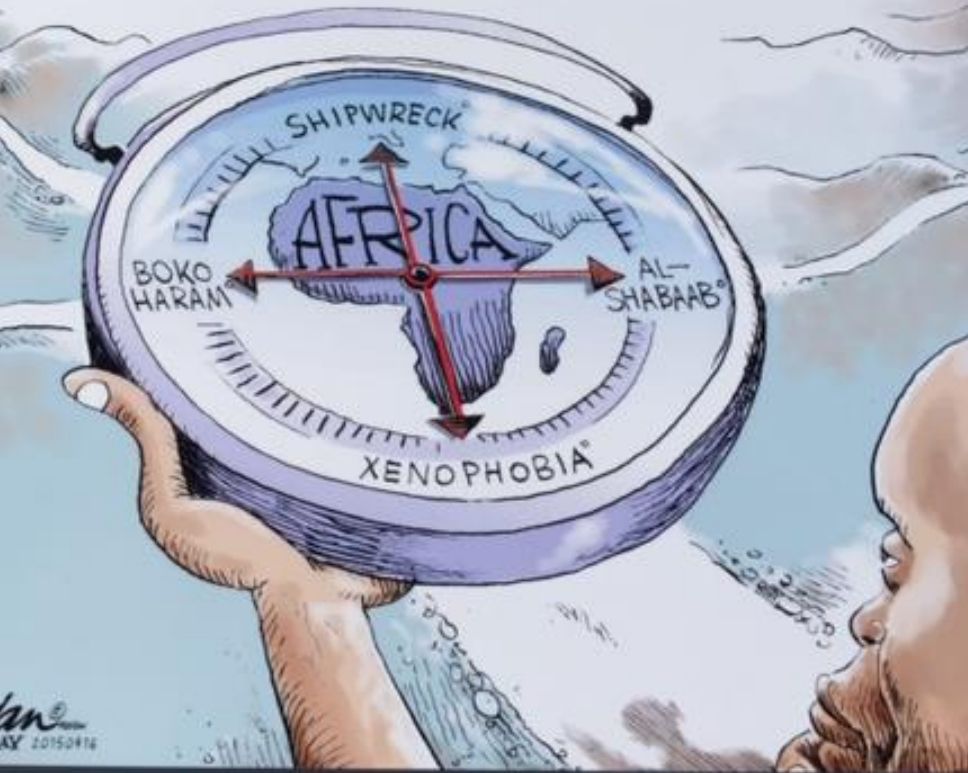


## 2014 PREMIGRATION SCREENING OUTCOME DATA IRHWG COMPARISON

	<b>Australia</b>	<b>Canada</b>	<b>UK</b>	<b>USA</b>
Rates per 100K	80	119	159	230
Number of cases	425	593	369	1450
Drug resistance	26%		18%	19%
MDRTB	8%	3%	3%	3%
# Countries TB diagnosed	37	36	54	49

EXOD

The Migrant's Compass...



# AUSTRALIA PRE-ENTRY TB SCREENING WHERE DO WE WANT TO GO?

---

- Future issues – LTBI
- Visitors
- Post-arrival screening



## Session 2 International Organization for Migration





# INTERNATIONAL ORGANIZATION FOR MIGRATION – THE UN MIGRATION AGENCY

***“Dignified, orderly, and safe migration for the benefit of all”***

As the leading international organisation for migration, IOM acts with its partners in the international community to:

- Assist in meeting the growing operational challenges of migration management
- Advance understanding of migration issues
- Encourage social and economic development through migration
- Uphold the human dignity and well-being of migrants



# IOM - HOW WE GOT STARTED

**1951**

Founded as the Provisional Intergovernmental Committee for the Movement of Migrants from Europe (PICMME) following WWII

**1952**

PICMME becomes the Intergovernmental Committee for European Migration (ICEM)



**1980**

ICEM becomes the Intergovernmental Committee for Migration (ICM) during the Indochinese refugee crisis

**1989**

ICM becomes the International Organization for Migration (IOM)

# LEGAL FRAMEWORK

- **IOM's Constitution Art 1.1 (c)** :*“to provide, at the request of and in agreement with the States concerned, migration services such as (...) **medical examination**, (...) and other assistance as is in accord with the aims of the Organization.”*
- **IOM's 12 Point Strategy** outlined in Council Resolution 1150 (XCIII) and adopted by the IOM Council during its 93<sup>rd</sup> meeting: *delivering of services which: “are secure, reliable, flexible and cost-effective”* (point 1),
  - *“enhance the humane and orderly management of migration and the effective respect for the human rights of migrants in accordance with international law”* (point 2), *“serve as a “reference point for migration information, research, best practices, data collection, compatibility and sharing”* (point 6) and *“support [...] States in the area of labour migration [...]”* (point 12)

## Constitution and Basic Texts of the Governing Bodies



International Organization for Migration (IOM)



# IOM AND THE MIGRATION HEALTH DIVISION (MHD), IN BRIEF

## IOM

### **Numbers**

- Established in 1951
- Inter-governmental
- 169 member states
- 393 offices in 150 countries
- 10,000+ staff worldwide

### **4 broad areas**

1. Migration Development
2. Facilitating Migration
3. Regulating Migration
4. Forced Migration

### **Cross-cutting activities**

1. Promotion of international migration law
2. Policy debate and guidance
3. Protection of migrants' rights
4. Migration health
5. Women and child protection

## MHD

- >230 projects
- > 200 project locations
- > 1,200 MHD Staff
- Nearly 2/3 of projects in Africa, Asia and Oceania





# IOM'S MIGRATION HEALTH DIVISION (MHD)

## Migration Health Assessment & Travel Health Assistance



- for various categories of migrants, including resettling **refugees, immigrants, temporary migrants, labour migrants and displaced persons**, either before departure or upon arrival

## Health Promotion & Assistance for Migrants



- promoting migrant sensitive health systems (focus especially on **labour and irregular migrants** and host communities) by advocating for migrant-inclusive health policies, delivering technical assistance and enhancing capacities

## Migration Health Assistance for Crisis Affected Populations



- especially in natural disasters, IOM assists **crisis-affected populations**, governments and host communities to strengthen and re-establish primary health care systems

# HEALTH ASSESSMENTS AND TRAVEL HEALTH ASSISTANCE

Health Assessments are evaluations of the physical and mental health status of migrants made either prior to departure or upon arrival for purposes of:

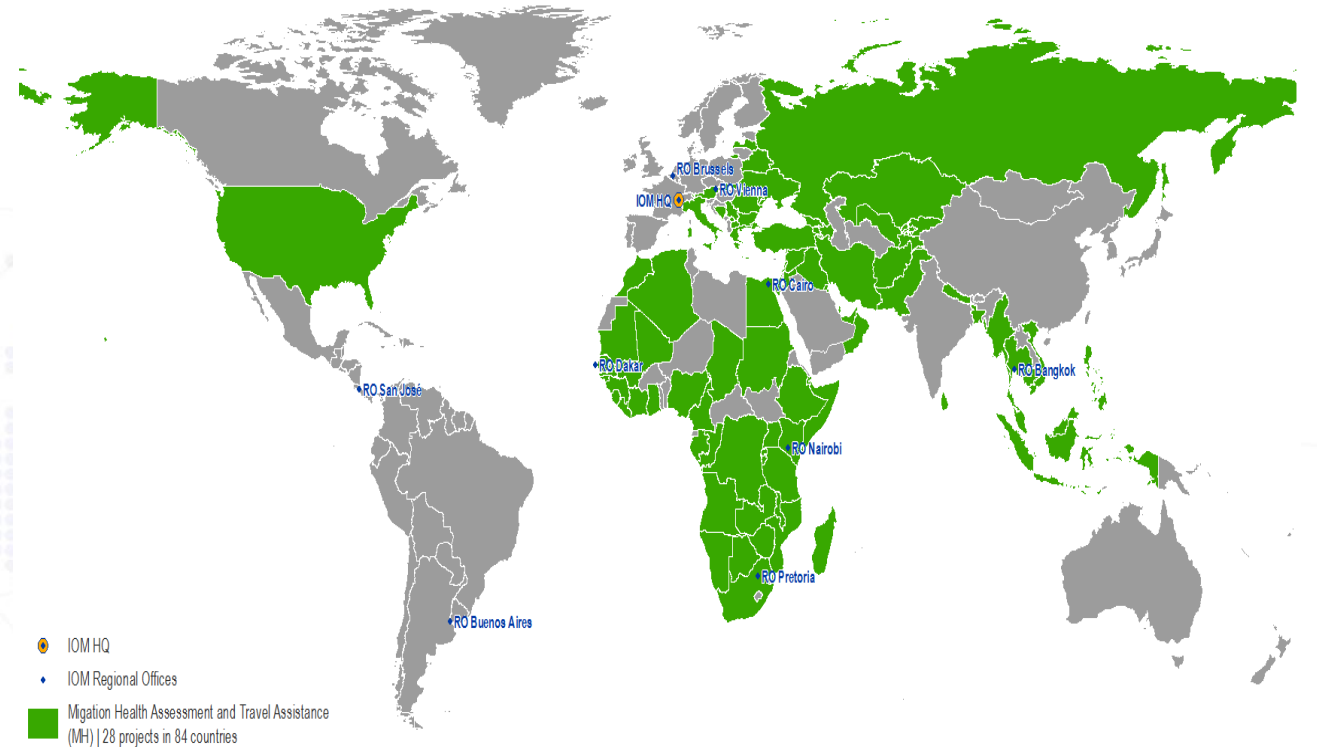
- Resettlement (refugees)
- For obtaining a temporary or permanent visa (immigrants, students)
- International employment (labour migration)
- Enrolment in specific migrant assistance programmes (e.g. Assisted Voluntary Return, irregular migrants, trafficked persons)
- Activities include treatment or referrals for treatment for certain conditions, immunizations, fitness-to-travel checks and medical escorting where needed.



*A health provider looks at radiology films in Nepal, as part of an IOM health assessment*

# OPERATIONAL CONTEXT

With nearly **400,000 migration health assessments** provided in approximately 90 countries every year, IOM is the major global provider of pre-departure health assessment services. IOM's experience and capacity in this domain is extensive. As of 2018, IOM operated through **65 Migration Health Assessment Centres (MHACs) in 46 countries** more than in Africa, Asia, Europe and the Middle East, most with their own radiology units; mobile teams for refugee processing in remote areas; over **20 internal laboratories**, performing a wide range of tests, including blood, urine and microbiological tests for tuberculosis, the latter requiring biosafety equipment; and a large network of service providers and cooperating centres.



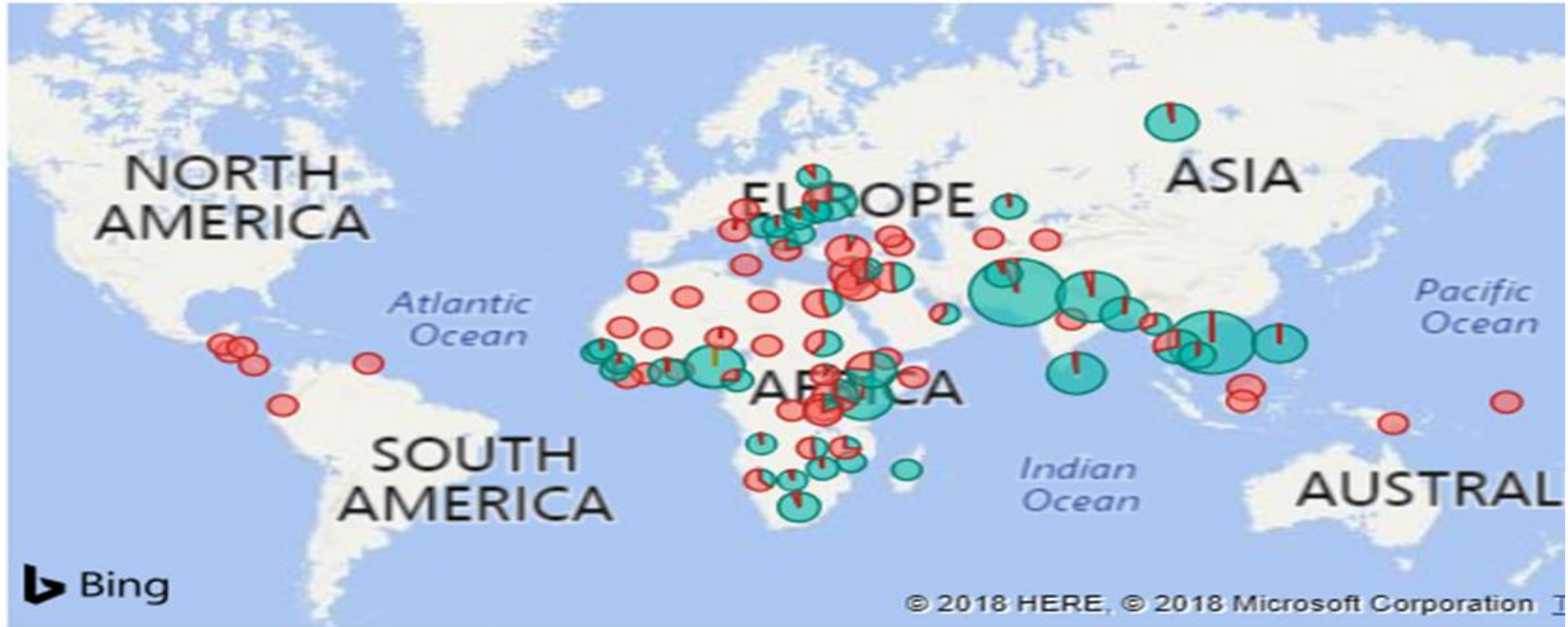
The IOM health assessment workforce across GHAP for 2018 included approximately **171 medical doctors, more than 650 nurses, laboratory and radiology technicians and other health professionals**, and provides HAs and/or related support to external physicians in **approximately 90 countries**.



# Health Assessments BY COUNTRY AND MIGRANT TYPE

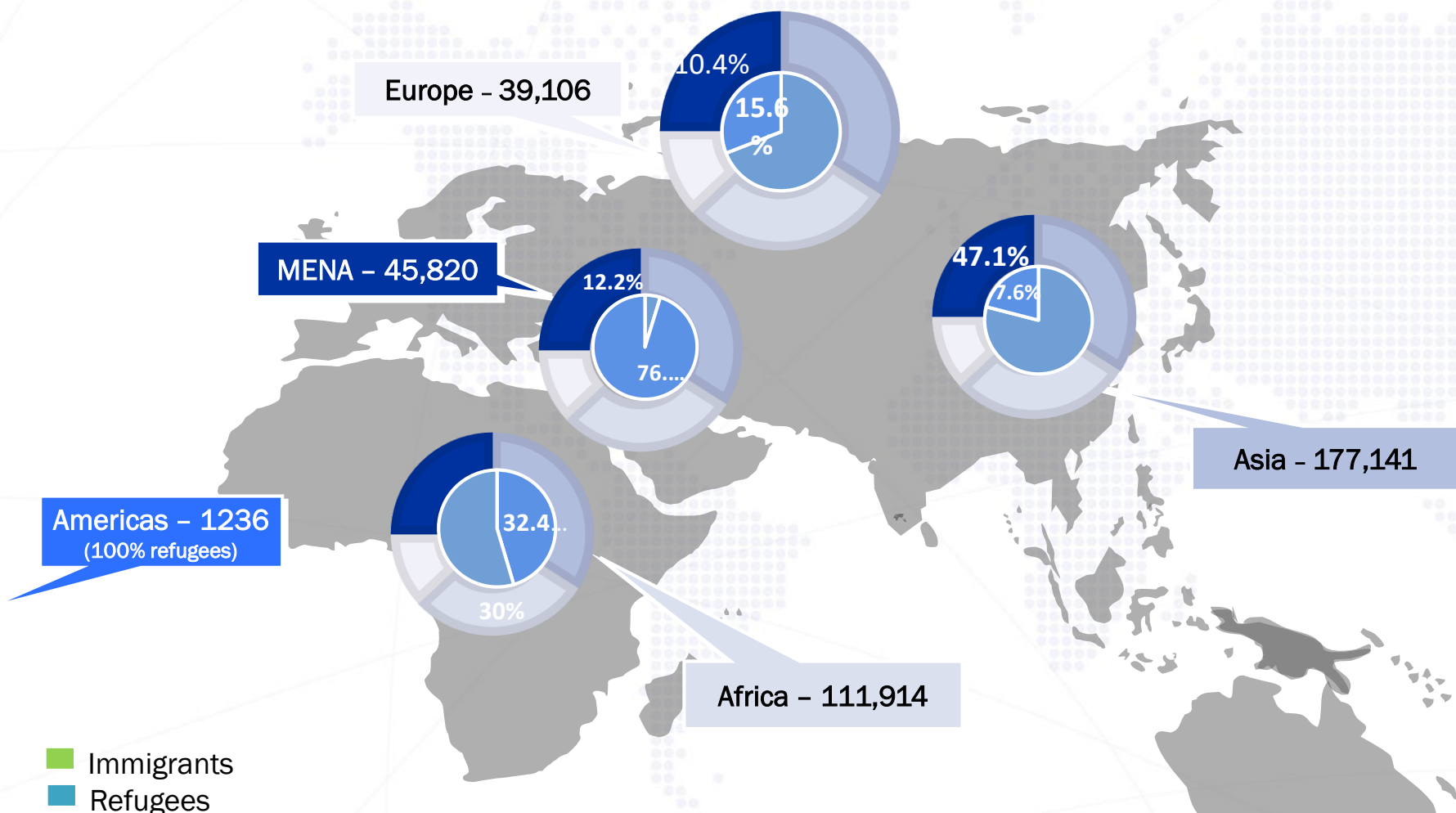
IOM MIGRATION HEALTH PRESENCE, 2018

MigrantType ● Imm ● NULL ● Ref





# IOM HEALTH ASSESSMENTS WORLDWIDE, 2018

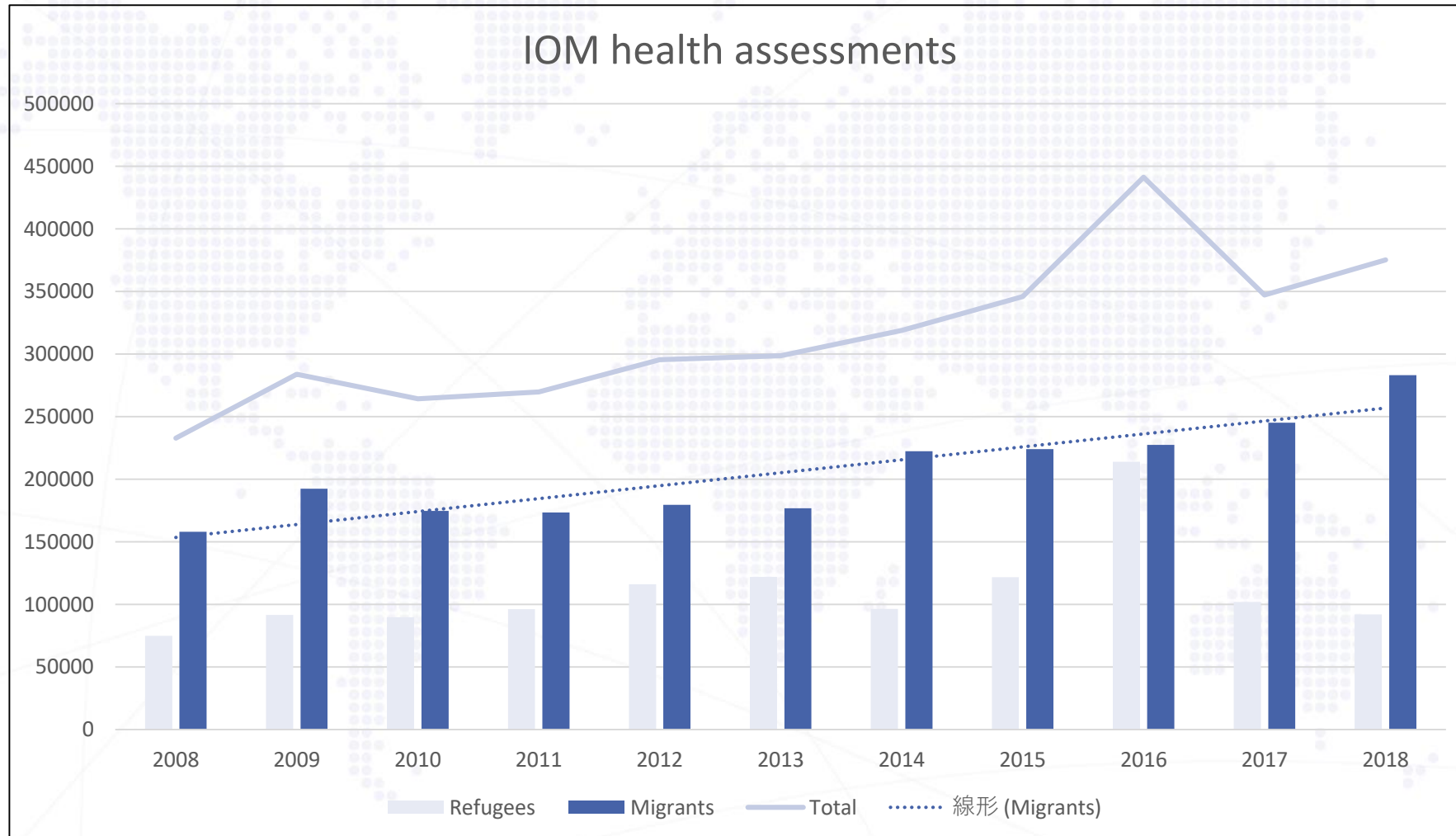


■ Immigrants  
■ Refugees

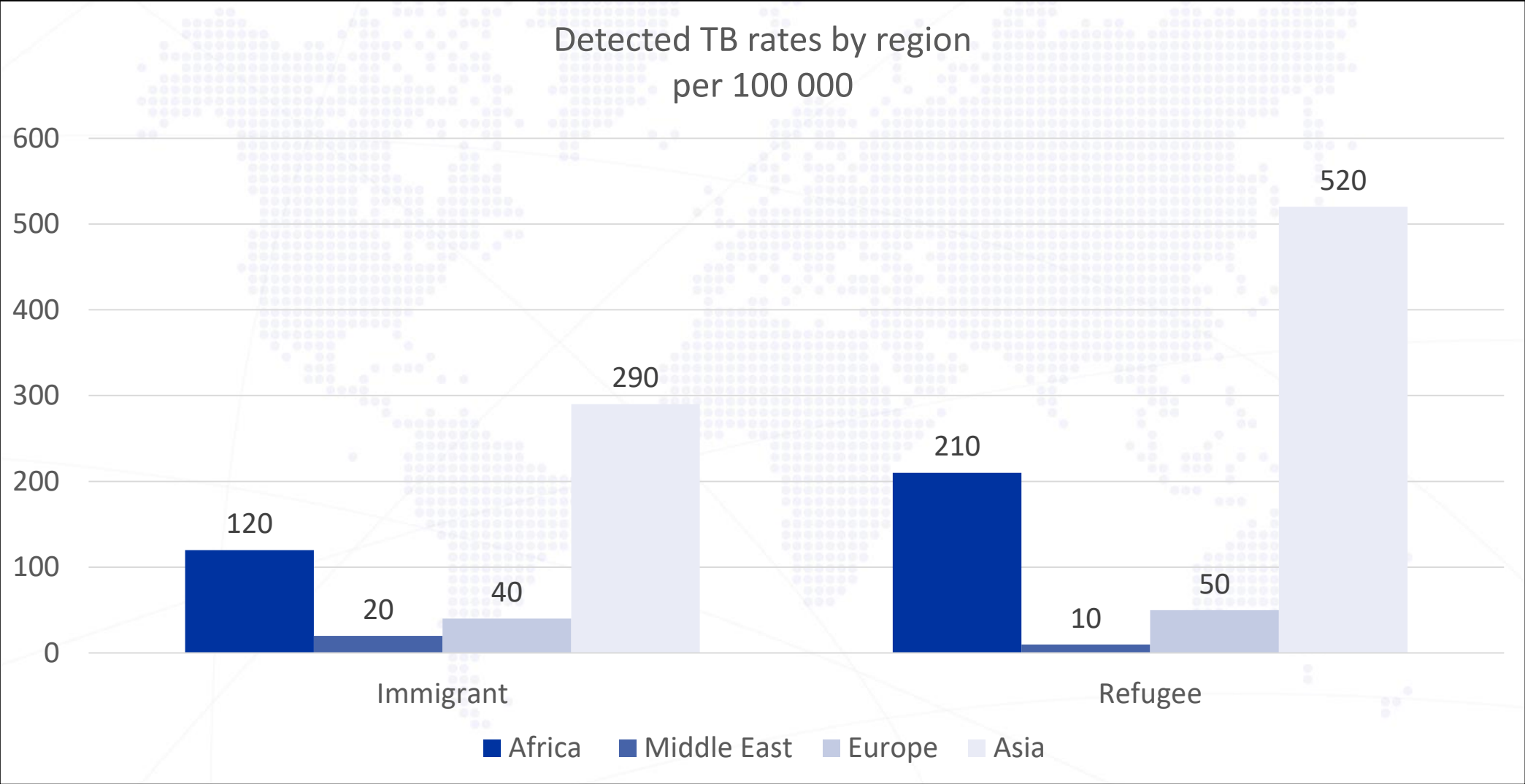
- **Programmes**  
Resettlement and Immigration to USA, UK, Canada, Australia, New Zealand, Malaysia, EU and other countries
- **Assisted Population**  
**376,453** refugees and immigrants (32.5% refugees) worldwide, 2018
- **Locations (coverage)**  
**93** countries worldwide
- **Locations (presence)**  
**67** clinics across **48** countries

*From 2000 to 2018, IOM has performed nearly 4 million health assessments worldwide*

# IOM HEALTH ASSESSMENTS WORLDWIDE, 2018



# TB DETECTION BY REGION AND MIGRANT TYPE 2017

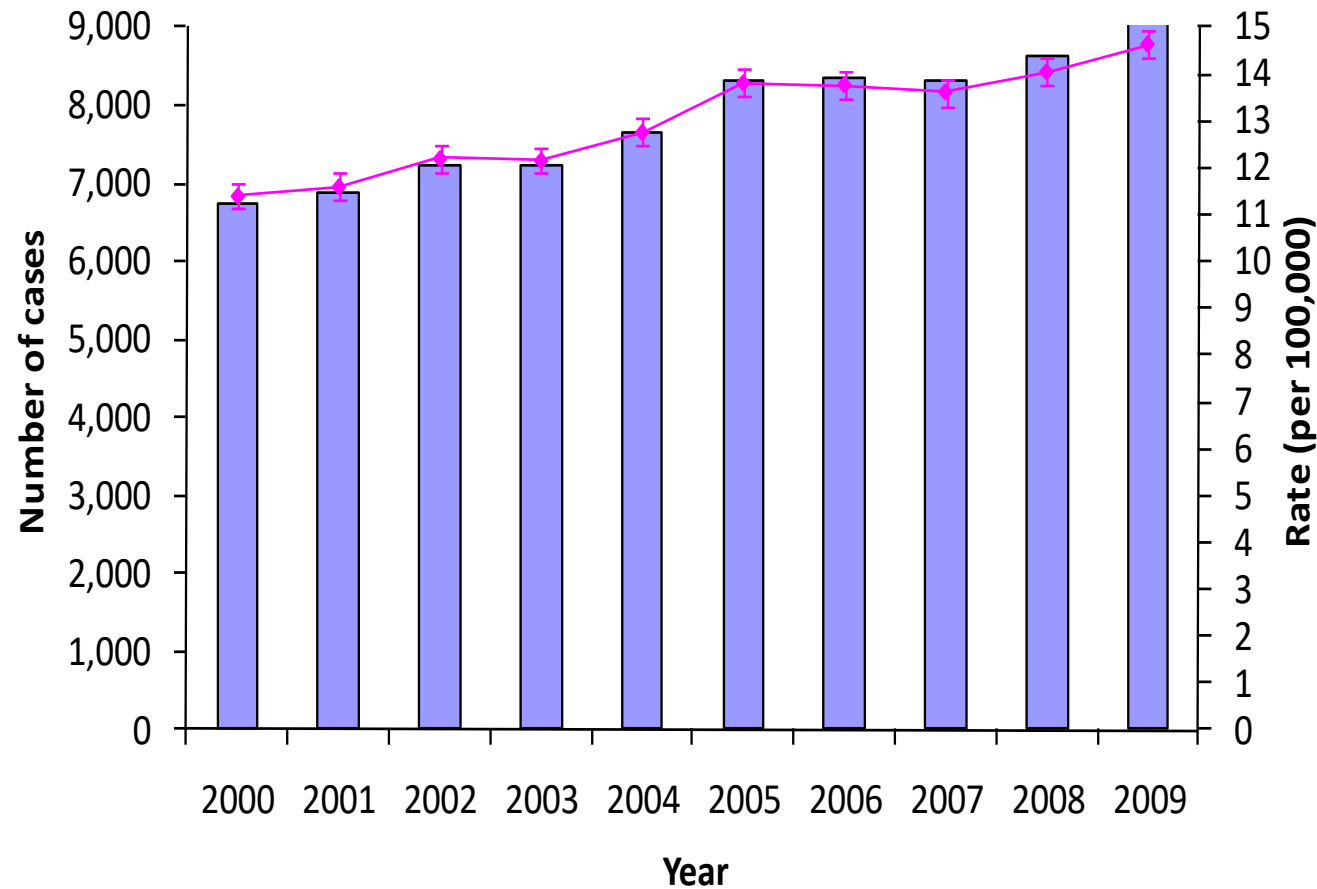


# IOM UK TB SCREENING



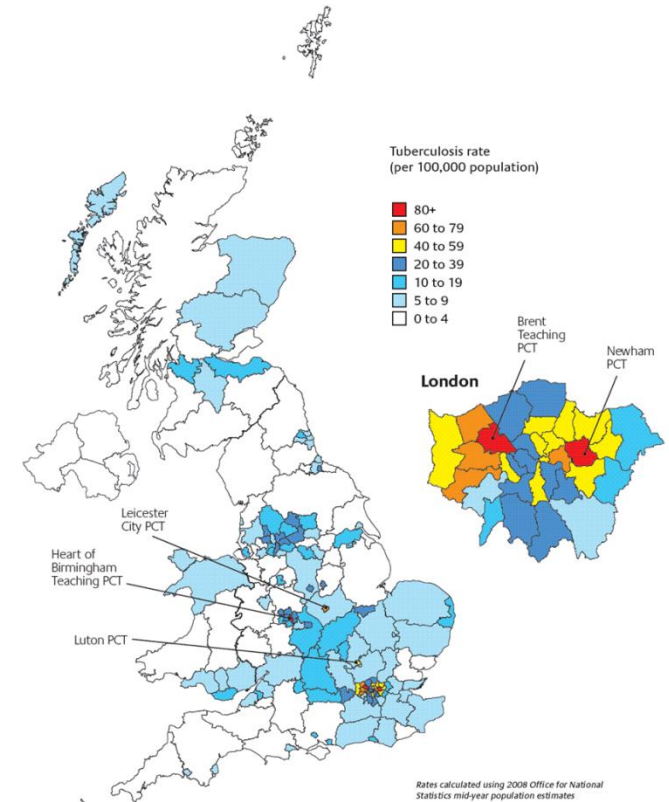


# UK TB PROGRAMME TUBERCULOSIS RATES, UK, 2000-2009



■ Number of cases    ◆ Rate per 100,000 and 95% CI

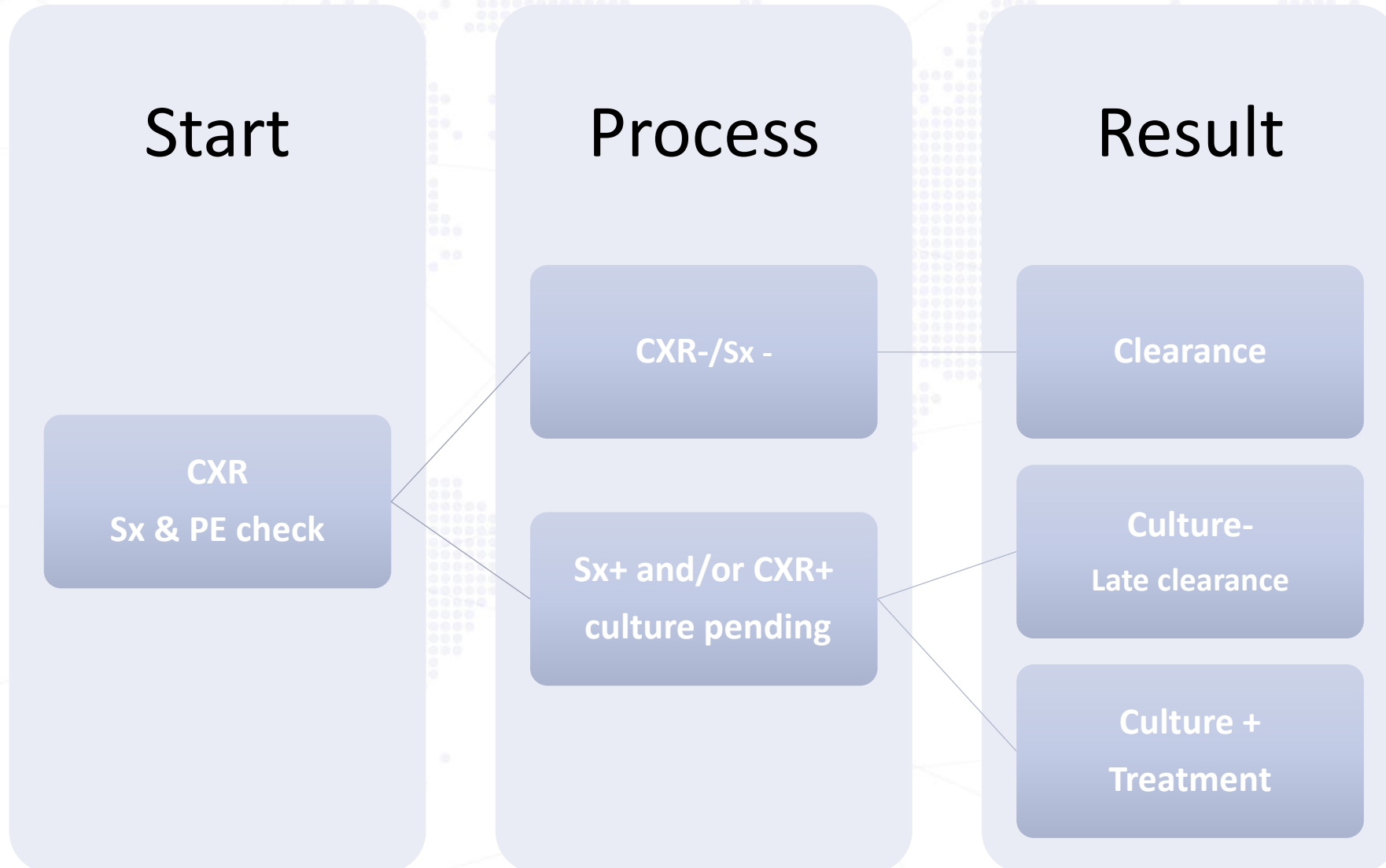
Three-year average TB case rates by primary care organisation, UK, 2007-2009



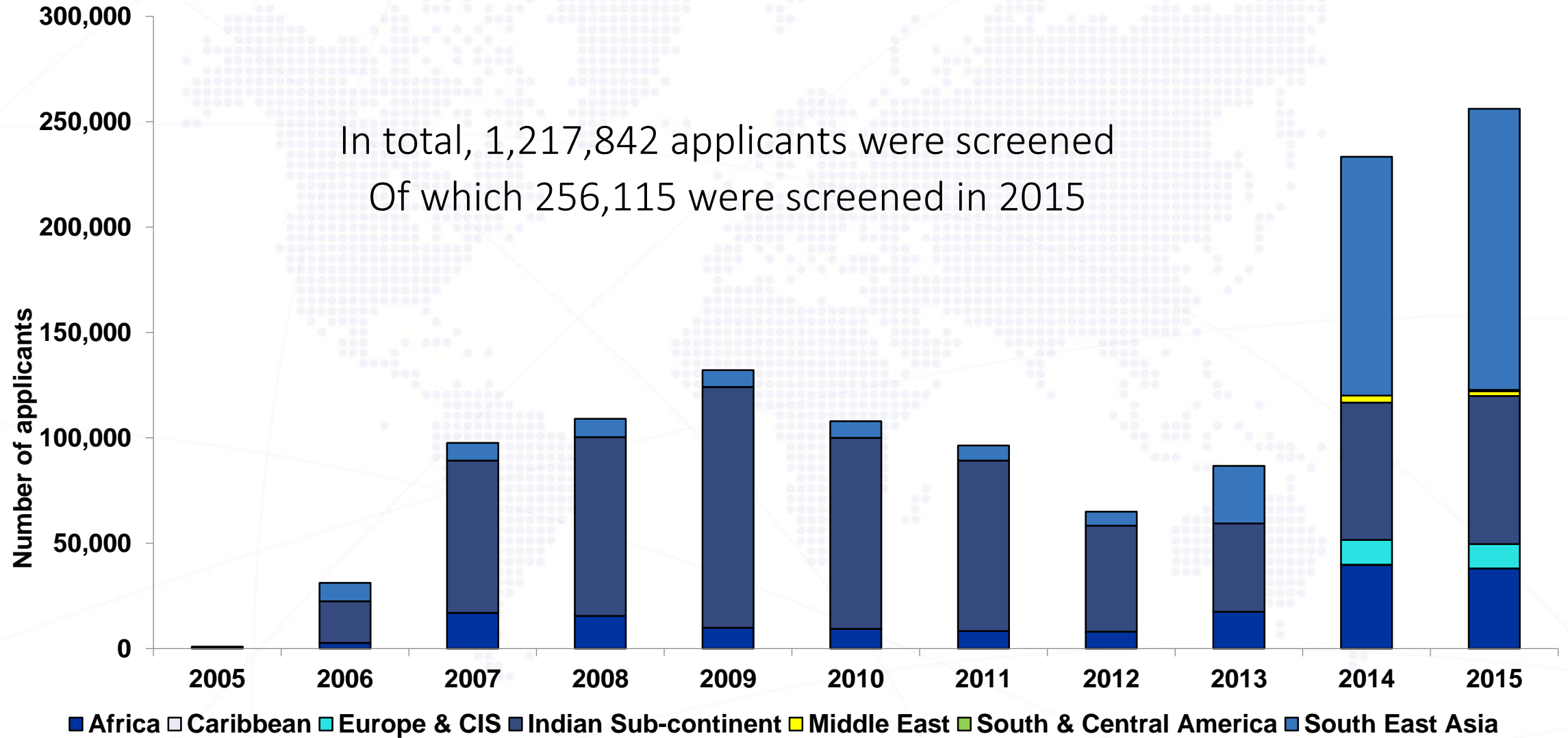
# LOCATION OF PRE-ENTRY SCREENING SITES GLOBALLY - UK



# UK TECHNICAL INSTRUCTION “SIMPLIFIED”

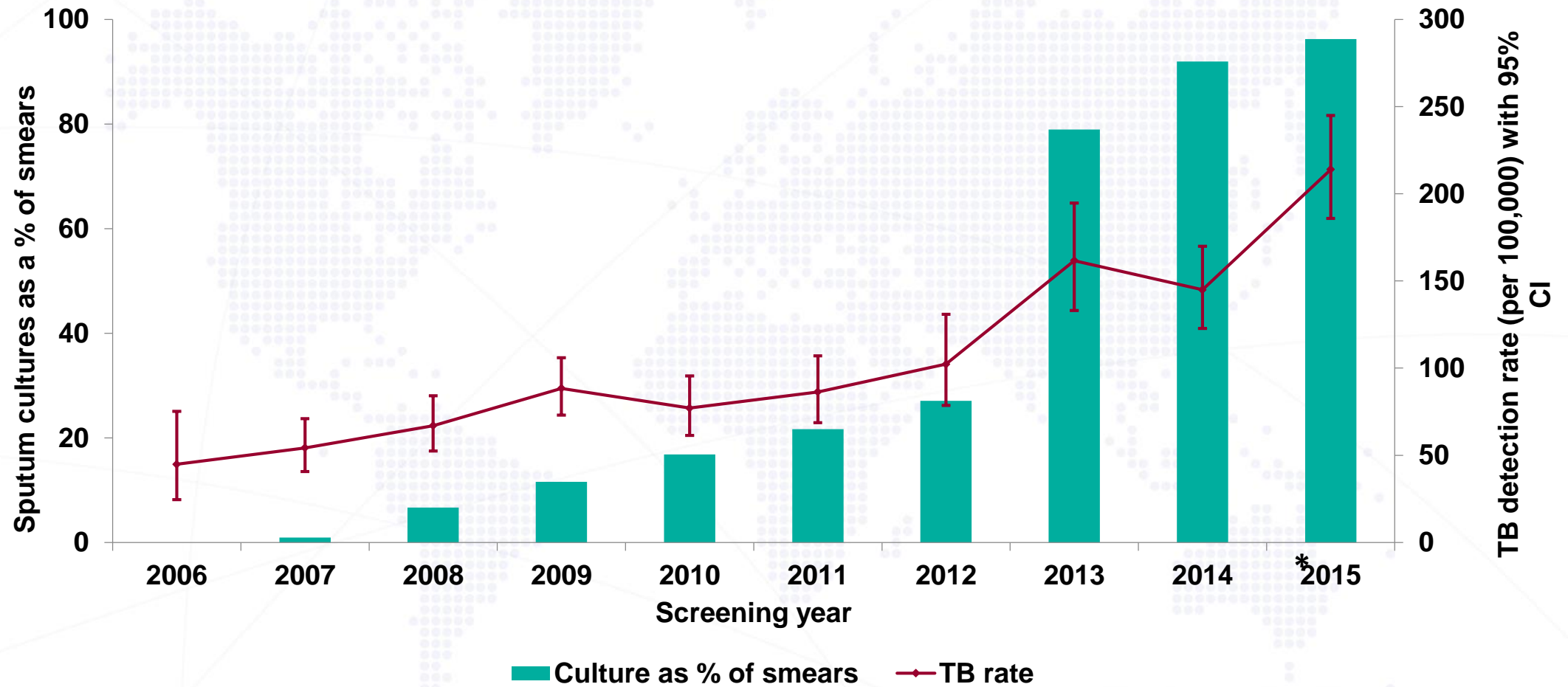


# APPLICANTS SCREENED FOR UK 2005-2015





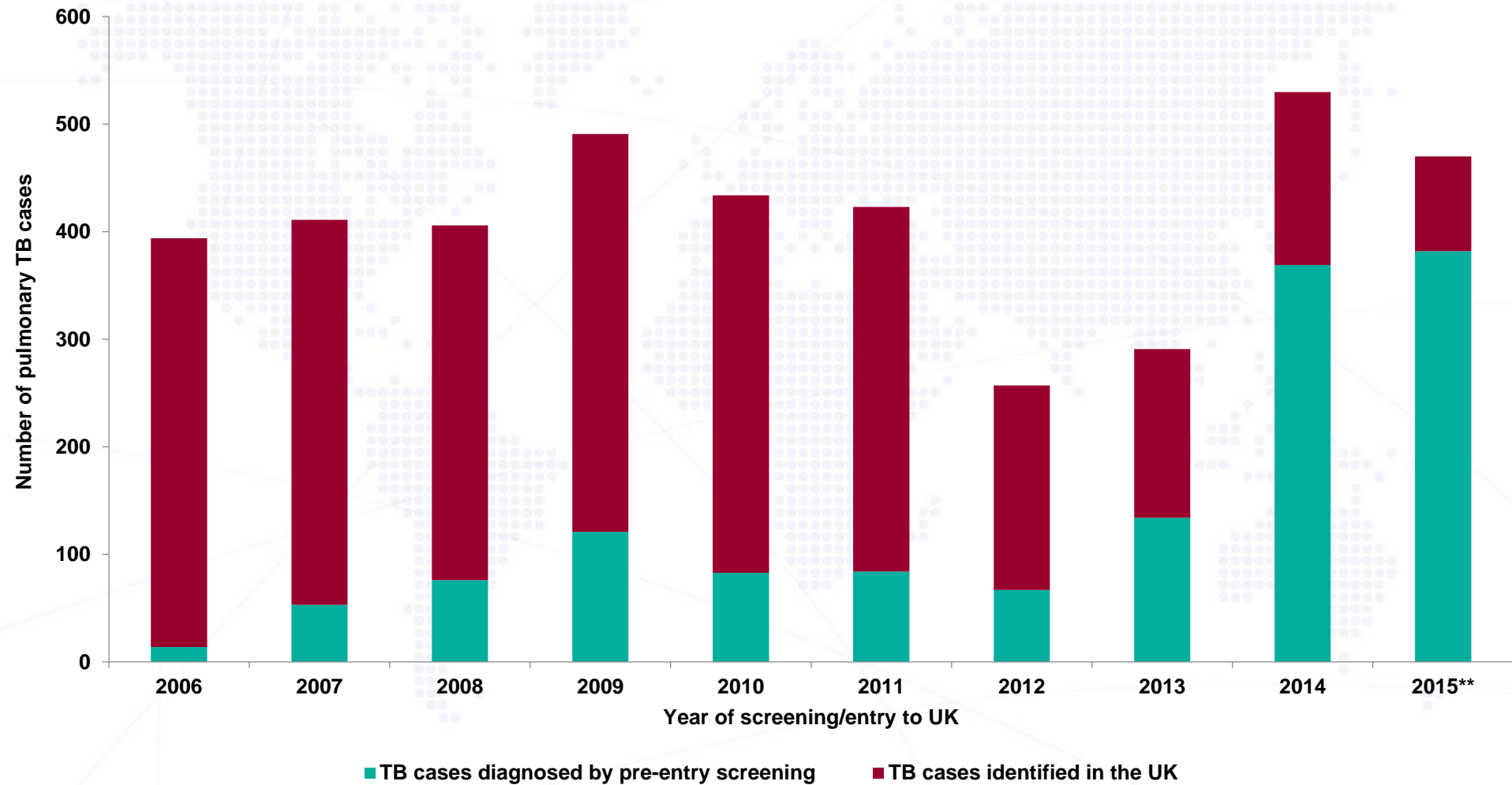
# TB RATE IN RELATION TO CULTURE CONFIRMATION - UK



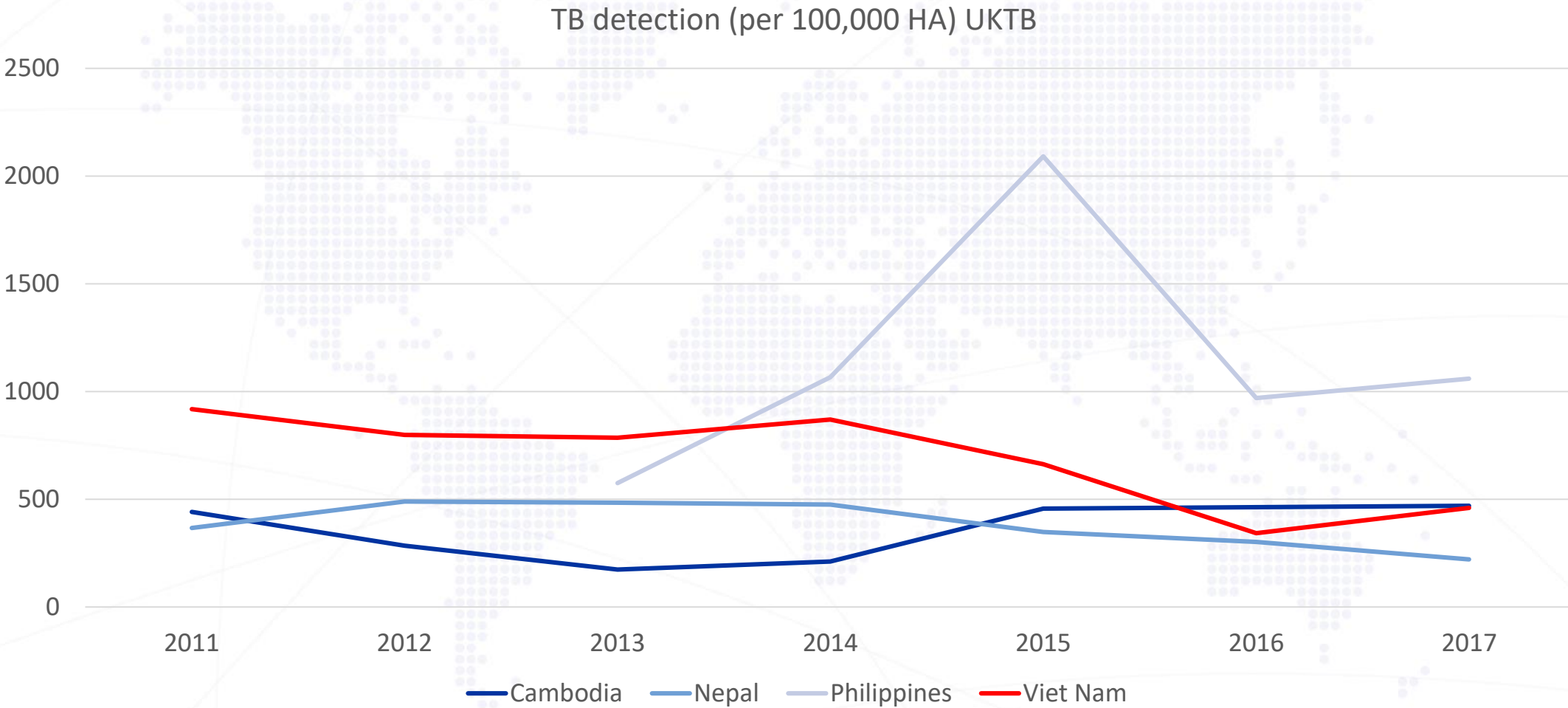
\* Rate may increase as some samples are pending

TB detection yield (per 100,000) and the proportion of cultures amongst all samples ('smears'), amongst all countries with IOM providers (n=40) by year of screening

# Number of pulmonary TB cases diagnosed by pre-entry screening and identified within one year of UK entry from the high TB incidence countries, 2006 to 2014\*




# TB DETECTION IN ASIAN REGION FOR UKTB PROGRAMME SELECTED COUNTRIES



N.B. screening for The Philippines commenced in 2013

# HA data collection tools

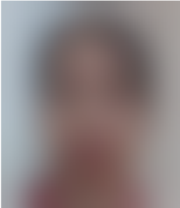
IOM Website Contact Us English



## UK TUBERCULOSIS DETECTION PROGRAMME

INTERNATIONAL ORGANIZATION FOR MIGRATION

- Home
- Applications
- Status Tracking
- Payments
- CXR Assignment
- Reports
- Reports(Admin)
- Data Migration Tool
- User Administration
- System Parameters
- Change Password
- Expert/QA Mode
- Online Help
- Quick Search



Ref ID: PHMNL0100028430  
 Name: [REDACTED]  
 Gender: F  
 Birthdate: 08-Feb-1977

Appointment Date: 08-Nov-2018  
 Exam Date: 08-Nov-2018  
 Passport: EC5029569  
 Status: CXR Interpreted, SC Scheduled, Application Paid

Biodata
Schedules
CXR
CXR Interpretation
Smear and Culture
History/Physical

**Summary**

Position	Standard	Free	Error
PA	1	0	0
Extra PA	1	0	0
Apicolordotic	1	0	0
Lateral	0	0	0
Spot	0	0	0
Decubitus	0	0	0
AP	0	0	0
Other	0	0	0

**Chest X-ray List**

Status	Date Done	Radiographer	Hospital	Positioning	Type	Certified By	Date and Time Verified
<a href="#">Done</a>	08-Nov-2018	USMAN, Beltran	IOM Manila	Extra PA	Standard	USMAN, Beltran	08-Nov-2018 03:04:17
<a href="#">Done</a>	08-Nov-2018	USMAN, Beltran	IOM Manila	Apicolordotic	Standard	USMAN, Beltran	08-Nov-2018 02:40:04
<a href="#">Done</a>	08-Nov-2018	USMAN, Beltran	IOM Manila	PA	Standard	USMAN, Beltran	08-Nov-2018 02:18:33

Search

Show Tools

F /UK


19770208  
20181108  
DX

CHEST

R

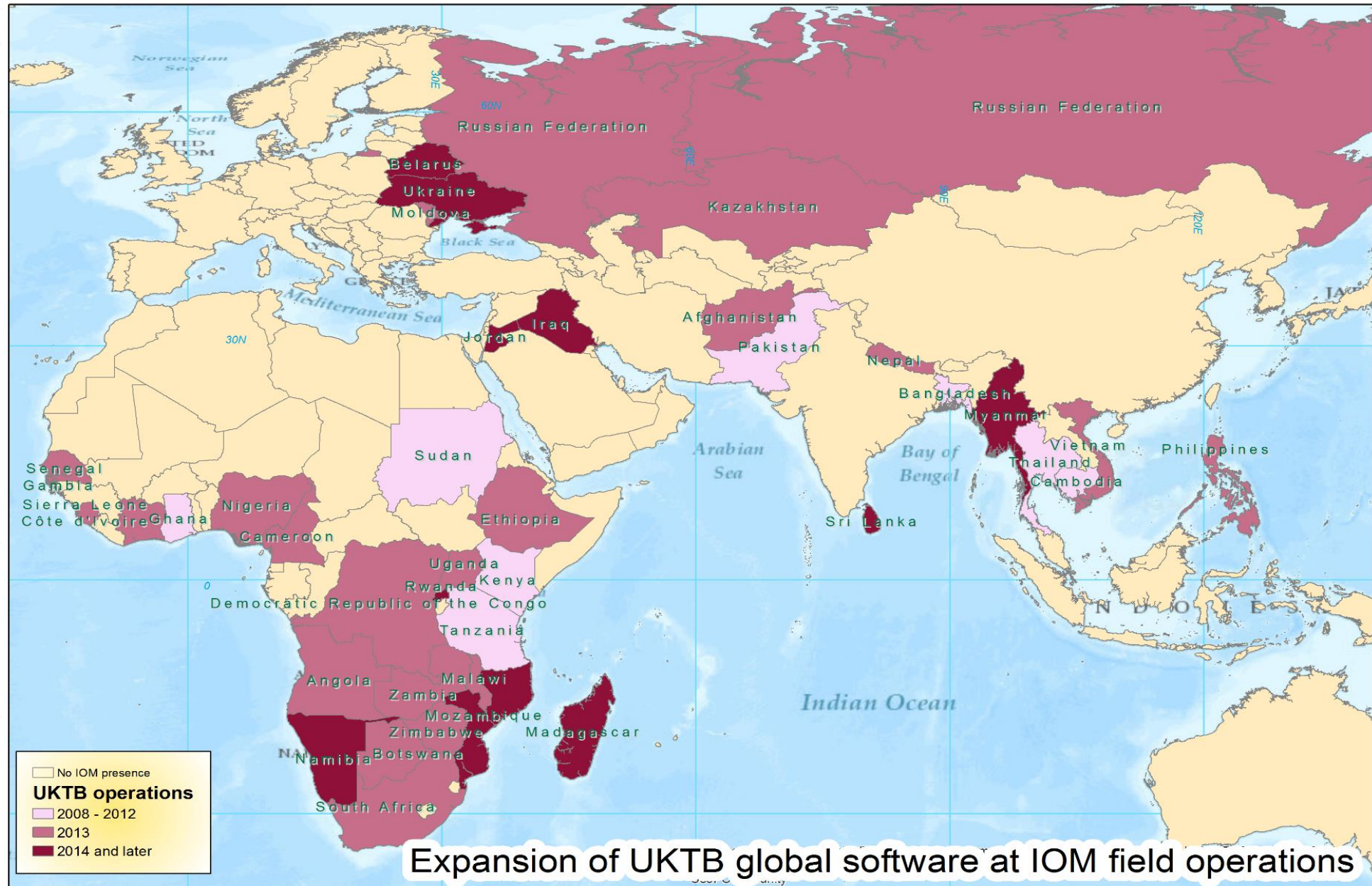
CHEST PA

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# UKTB GLOBAL SOFTWARE COVERAGE



Expansion of UKTB global software at IOM field operations

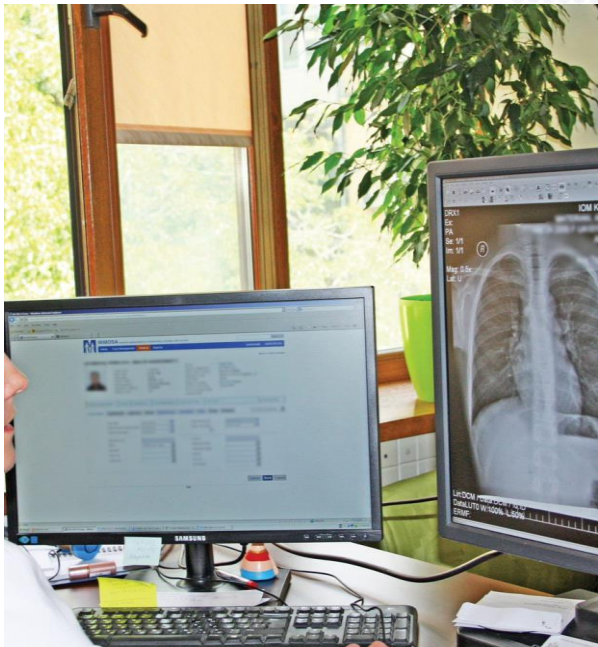
# IOM TYPICAL IOM CLINIC







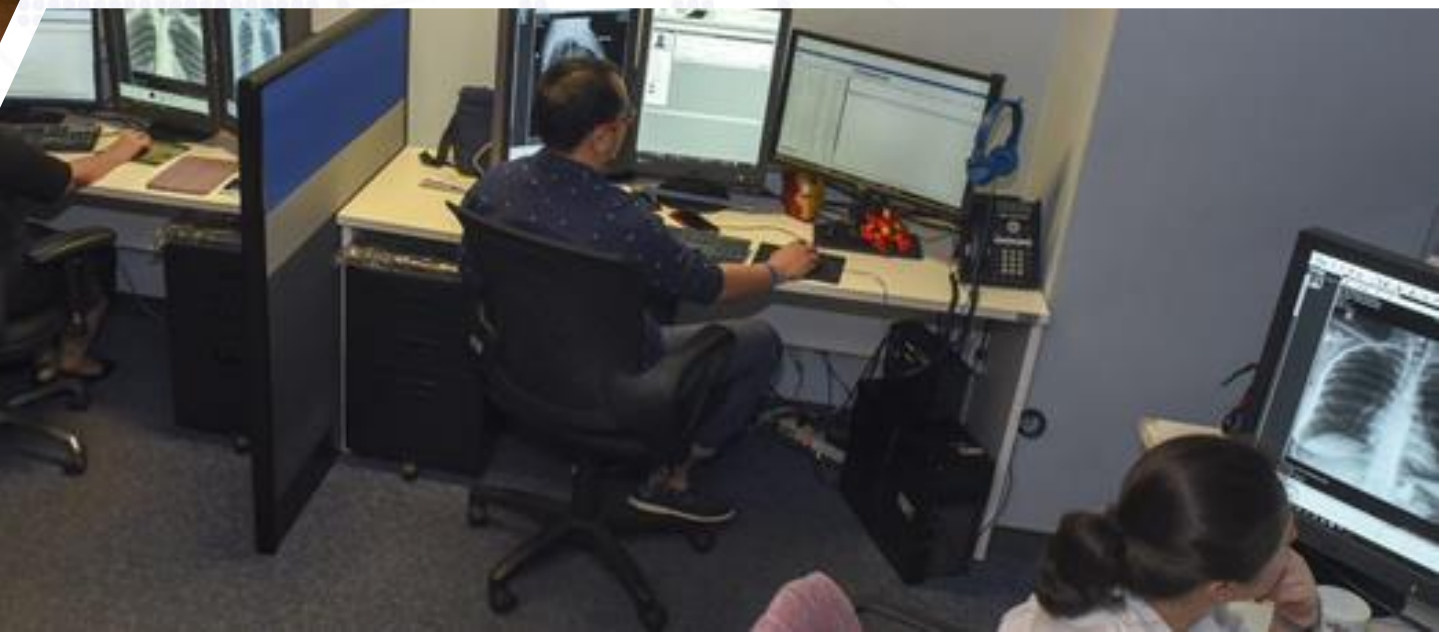
















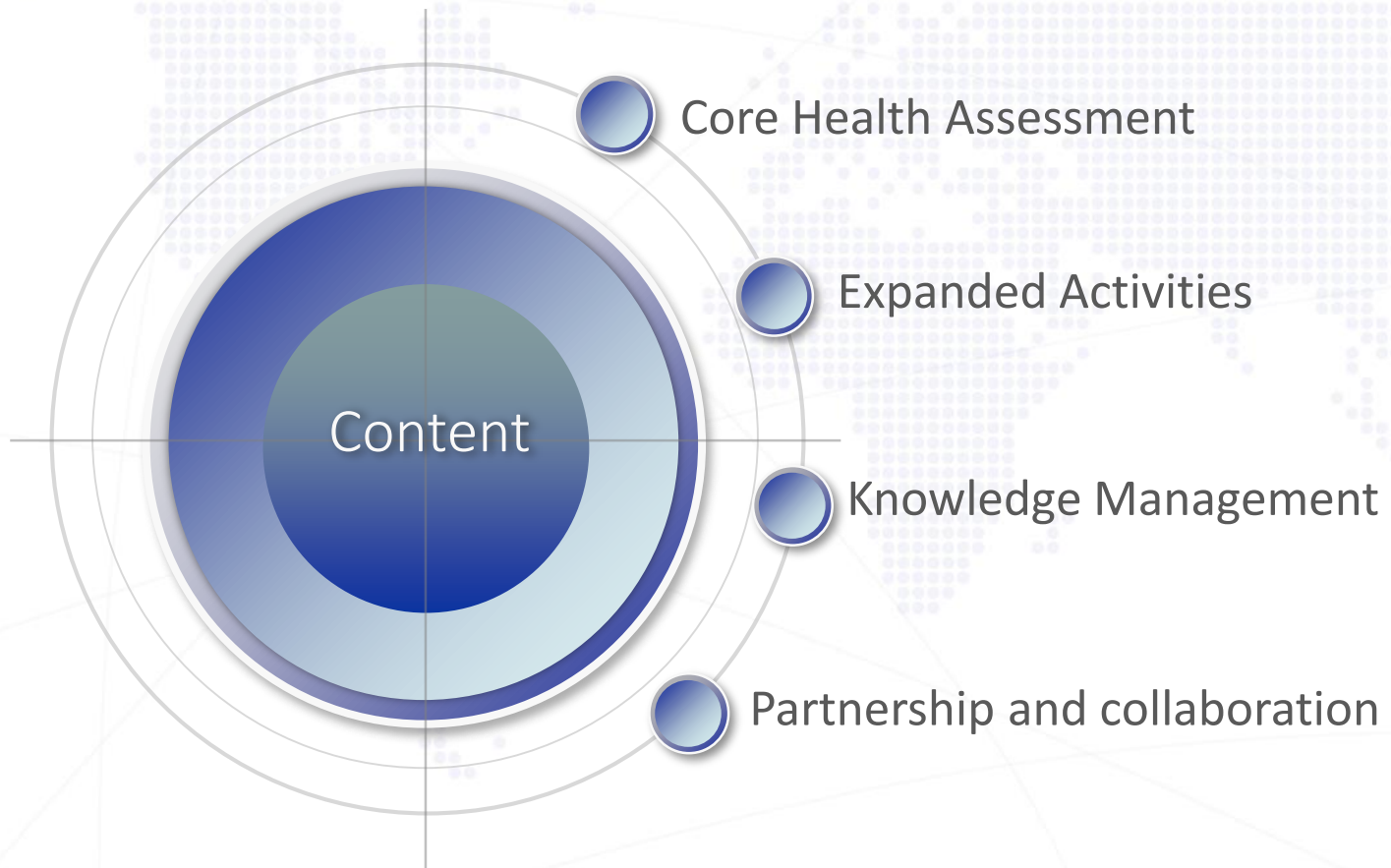








# THE EVOLVING NATURE OF MHA's





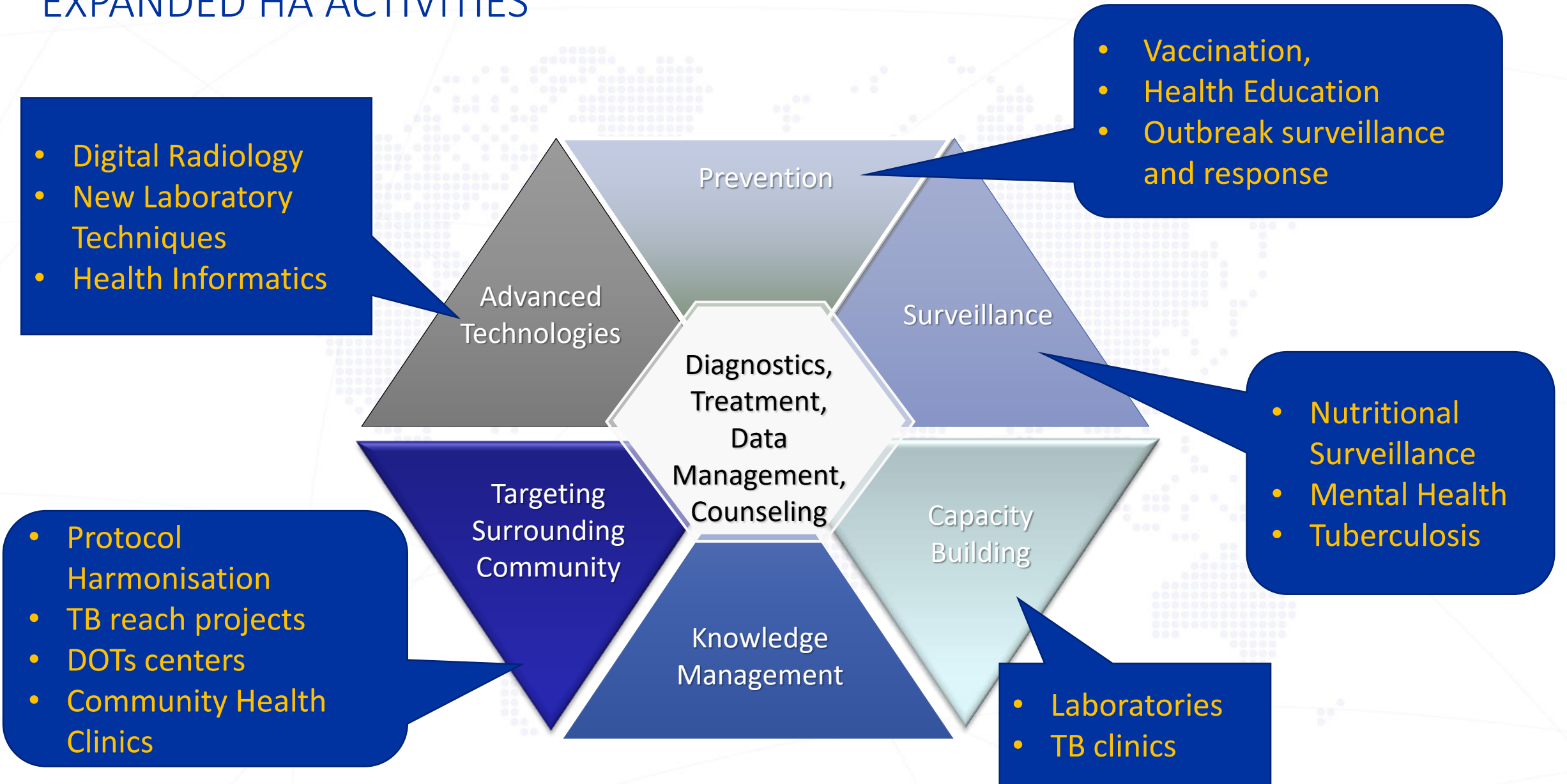
# IOM HEALTH ASSESSMENT PROGRAMMES

- One of IOM's most well-established migration management services
- Provided at the request of receiving country governments, they consist of physical and mental health evaluations for the purpose of resettlement, international employment, temporary or permanent visas,
- Reflecting national differences in immigration policies and practices, HA requirements and protocols vary among receiving countries

**Health assessments (HAs) may include some or all of the following:**

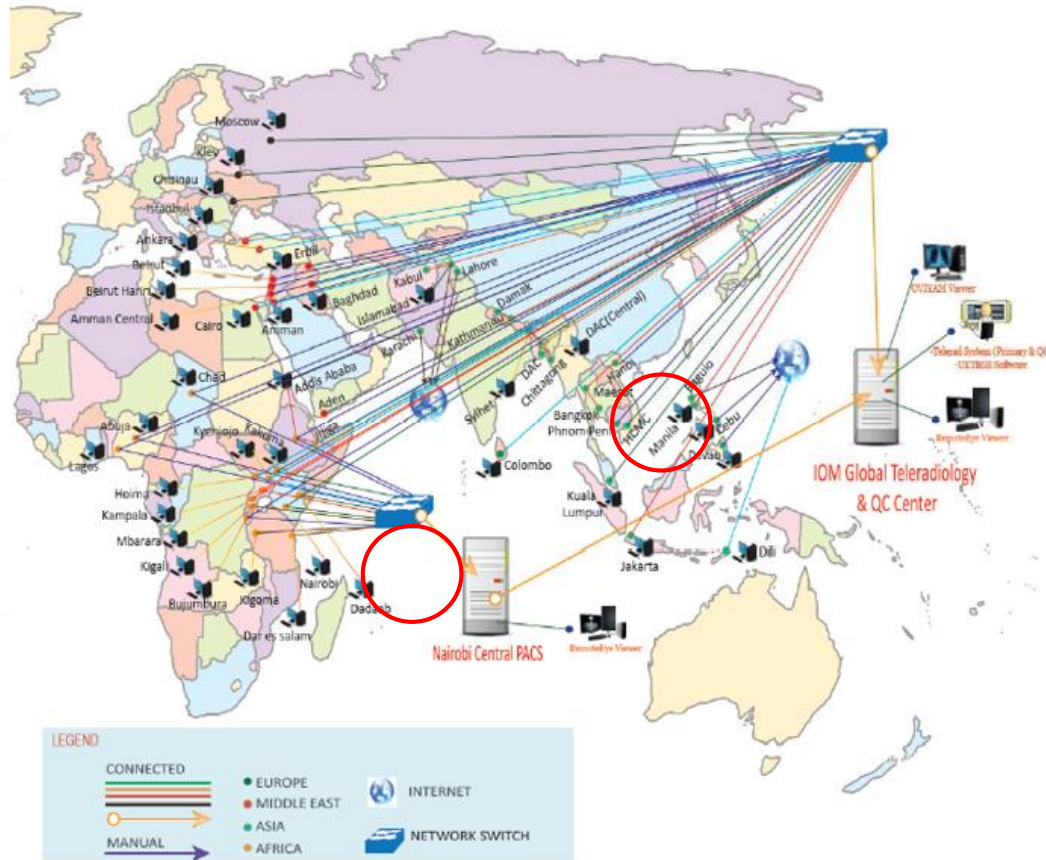
- Review of medical history
- Detailed physical examination
- Mental health evaluation
- Clinical or laboratory investigations
- Pre- and post-test counselling
- Referral for consultation with a specialist
- Health education
- Pre-embarkation/fitness-to-travel checks (PECs)
- Pre-departure medical procedures (PDMPs)
- Vaccinations
- Provision of, or referral for treatment
- Documentation of findings and preparation of required immigration health documentation
- Confidential transfer of relevant information or documentation to appropriate receiving authorities
- Disease surveillance and outbreak response
- Provision of medical escorts and special arrangements for travel

# EXPANDED HA ACTIVITIES





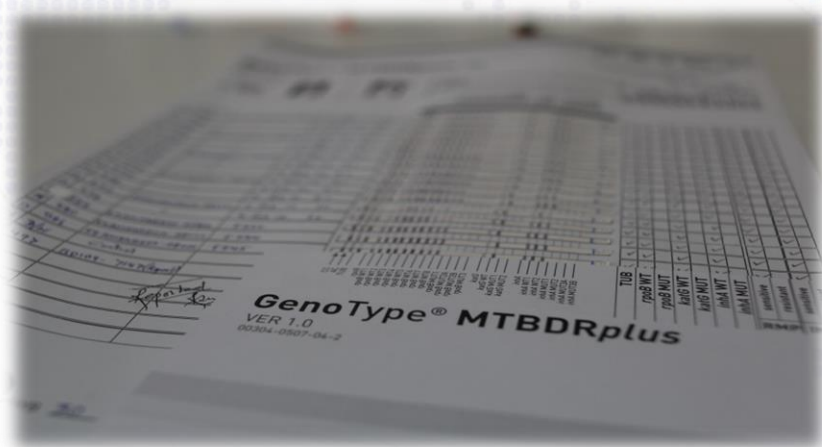
# TELERADIOLOGY



# TB LABORATORIES

➤ 20 BSL-2+ or 3 laboratories:

- Sputum microscopy
- Sputum cultures
- Identification to MTB complex
- DST to first and second line drugs
- Molecular methods





# IOM TB TREATMENT PROGRAMMES

## Challenges:

- Logistics: remote locations, difficult access
- Patient-related:
  - Screening is perceived as a “threat” to resettlement
  - Active case detection: some are asymptomatic and unwilling to take treatment
  - Drug and alcohol abuse
- Programmatic: absence of true DOT in some countries, lack of medications, licenses, communication



# TB TREATMENT OUTCOMES-IOM, 2016

Outcome	N	%
Cured or completed	327	95.6
Defaulted	2	0.6
Discontinued	1	0.3
Transferred out	2	0.6
Pending	10	2.9
Died	0	0
Total	342	100



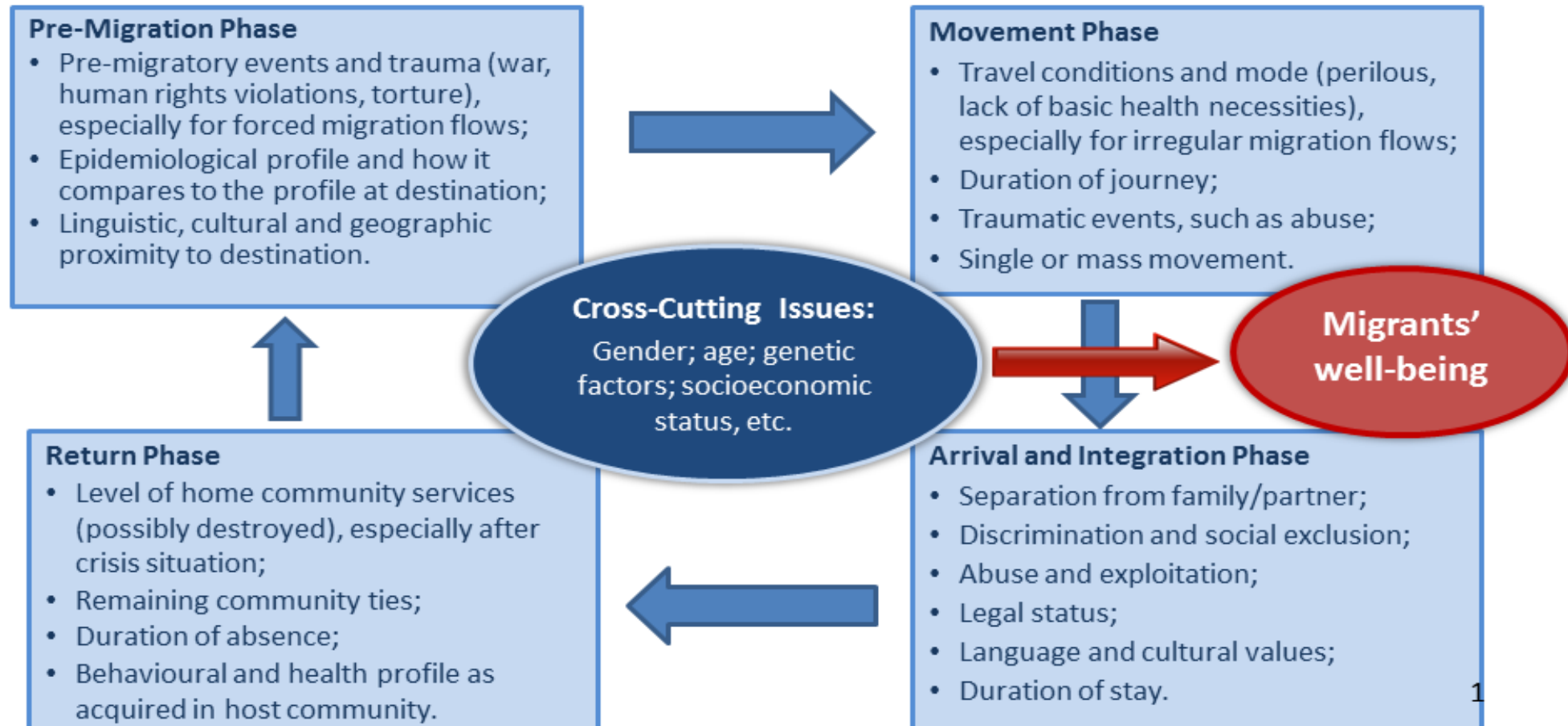
# MAJOR ISSUES IN PRE-ENTRY TB SCREENING PROGRAMMES

- International criticisms – mandatory nature is a “human rights violation”
- Real or perceived discrimination\*
- Complexity and diversity of migrations means that do not find all cases
  - Manifestation of disease is dependent on complex matrix based on the populations themselves and variety of social determinants
  - Circulatory migration
- Role of latency (missed or delayed cases)\* and importance of post-arrival processes
- Ensuring NTP links and clients are treated
- Potential corruption (fear of rejection)\*
- Fraud by panel or their staff
- Capacity and capability of panel
- Panel management and assurance is costly

\*Carballo, M., TB screening of migrants and implications for Europe, ICMHD, June 2012

# THE MIGRATION PROCESS AFFECTS WELL-BEING

Factors affecting the well-being of migrants during the four phases of the process of migration



# MAJOR ISSUES – CIRCULATORY MIGRATION/VISITORS

Reinfection from overseas travel

- Migrants travel frequently (~70% in 5 years<sup>1</sup>)
- But the risk of TB infection for short-term travellers is low
  - Peace Corps <1 TST conversion per year in highest risk countries
- If re-infection occurs, there is less risk of progression to active disease - 80% protection?<sup>2</sup>

Repeat post migration (or post long-term visa) screening of high-risk groups is likely to identify additional cases<sup>3</sup>

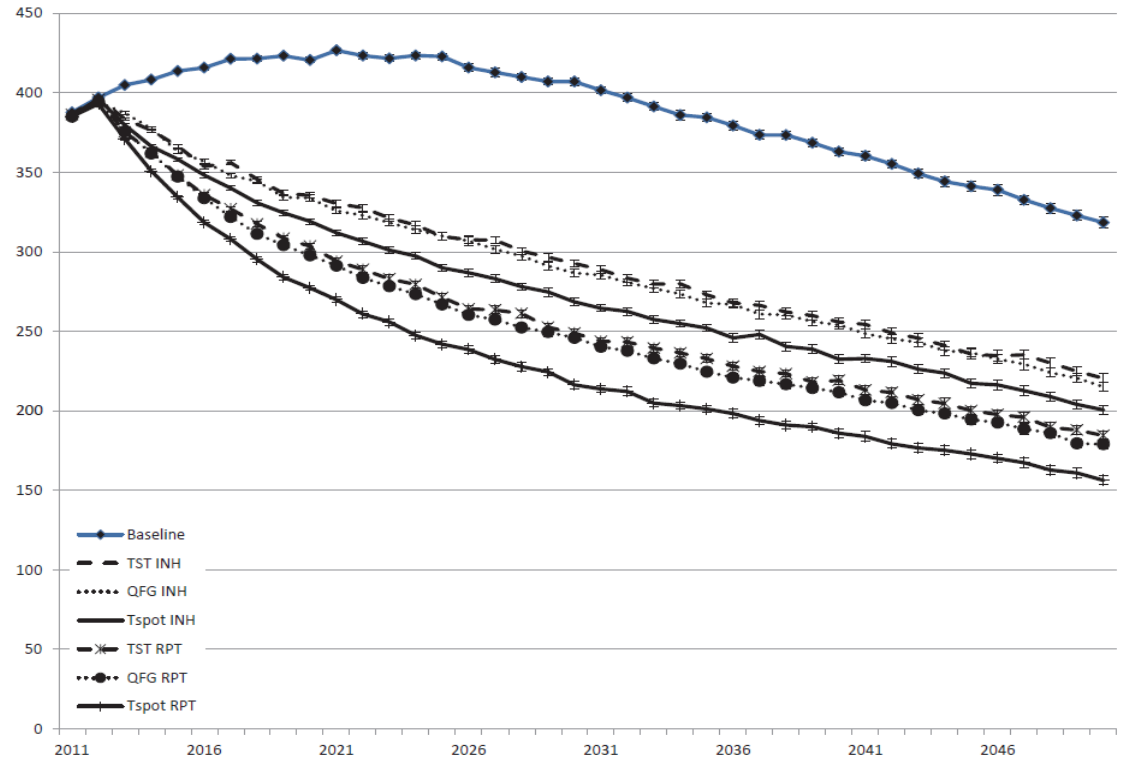
- Hypothetical cohort of 100,000 migrants entering Australia from China and India (assumes spend 3 months per year in Australia, 9 months in country of origin, each year over the 10 year period)<sup>4</sup>
- Screened every two years for active TB
- Would identify >1200 cases – 60% reduction in expected cases
- Saving TB treatment costs in Australia of \$60 million.



# MAJOR ISSUES – LATENT TB

- LTBI potential further risk stratification<sup>1</sup>
  - NSW migrant cohort TB rate 76 per 100K over 10 year period (1984-94)
    - If TST +ve TB rate 213 per 100K for first 3 years,
    - Then for next 10 years 122 per 100K
    - If TST –ve 35 per 100K
  - Comorbidities:
    - Smoking, diabetes (2-3x risk)
    - HIV infection (~60x risk)
  
- LTBI screening for all migrants in Australia<sup>2</sup>
  - Would reduce TB incidence 34.5 per 100K to 17-23 per 100K
  - Need to screen 136 – 427 new arrivals for each case prevented
  - 6055 of 14 700 TB (>40%) cases prevented over 37 years

Figure 3: Expected number (95%CI) of annual tuberculosis cases in Victoria, 2011-2050, following introduction of various screening and treatment interventions for all new permanent arrivals. INH = 9 months of isoniazid, RPT = 3 months of isoniazid+rifapentine, TST = tuberculin skin test, QFG= Quantiferon Gold, Tspot = Tspot TB.



# MAJOR ISSUES – TREATMENT and NTPs

- Ensuring NTP links and clients are treated
  - Often poor communication
  - Private physicians often do not refer cases<sup>1</sup>
  - Required for TB control
  - Contact tracing



1. Putra et al, [BMC Health Serv Res.](#) 2013; 13: 445

# MAJOR ISSUES – FRAUD

## WHY DOES IT EXIST?

- Applicant misunderstanding requirements
  - “Anything that shows past TB bars me.”
  - Lack of knowledge about process or ill-informed
- Motivations
  - Personal gain
  - Family pressure (head of household)
  - Professional fraud rings
- Motivation exists for applicants to (examples):
  - Substitute another person for part or all of exam (urine, blood)
  - Bribe employees to alter tests or test results (commonly lab and x-ray)
  - Purchase outside chest images or lab results
  - “Pre-treat” for TB
- When a client visits more than one medical examiner to complete their examination
- They are seeking a more favourable result at a second medical examination
- One of the key reasons many receiving countries limit the number of panel clinics

## Examples:

1. DNA samples
2. Malaysia education programme
3. Chinese students
4. NCD – Fiji
5. HIV Australia





## MAJOR ISSUES – MANAGING CONCERNS WITH PANEL

- Consistency
- Technical expertise
- Costs to oversee/manage
- Presentation (face of the new country)
- Complaints
- Fees
- Fraud
- Human resource processes – registration, licensing, insurance etc.
- Centralised policies and instructions
- Regular communication, newsletters
- Training
- Complaints management
- Panel performance reporting
- Quality assurance of programmes – audit processes (desktop and physical)/logistics



# SUMMARY

- More people died from TB in 2017 than any year in history (1.6 M)
- Premigration TB Screening is an effective public health instrument that:
  - reduces morbidity & mortality among migrants and
  - prevents the introduction, transmission, & spread of communicable diseases through regulation, science, research, preparedness
- It can also be used as a **global** public health good— where along with statutory relevance, pre-entry TB screening provides an opportunity to initiate curative and/or preventive interventions that, left untreated, could have a negative impact on the migrants' overall health status as well as on the public health of the host and receiving communities
- But there is huge variation between these processes and protocols despite the examination being mostly homogenous meaning.....
- There is great benefit in standardising not just the process and instructions and continuity of care



# SUMMARY

- Migration is a key component of the globalisation process
- International migration is a positive force for development, both in countries of origin and in countries of destination
- It is also an opportunity for public health intervention benefitting the migrant and countries of origin and destination
- Migrants make up 15% of the world's population.
- Addressing TB in migrants could identify 1.5million cases annually (based on WHO est.)
- Issues for TB and migration are potentially even more important in higher burden populations who house the overwhelming majority of the most vulnerable migrants.
- Exchange of information that transcends systems, programmes and funding is essential
- TB is an international problem and yet.....

*we still tackle such global problems with a mindset centred on nationalism and self-interest.....*



Immigration first and foremost, though, should be about managing people's lives with care.

Thank you

*Any questions?*

