

# Session 6.4: Dr. Thomas Moultrie

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- ◆ BIO
- ◆ Abstract
- ◆ Paper





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## **Innovation in regional estimates of completeness of death registration**

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## ◆ Co-authors

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◆ Tanja Sejersen

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◆ UN Population Division

◆ ESCAP Statistics Division

## ◆ All the countries that contributed data

# Introduction

- ◆ Registration of death matters!
  - ◆ timely, accurate, and complete death registration is foundational to the planning and implementation of national health policies
    - ◆ essential in pandemic response and management
  - ◆ a key component of legal identity

# Introduction (2)

- ◆ Concerted efforts have been made in the Asia-Pacific CRVS Decade (2015-24) to expand the coverage and completeness of national CRVS data
  - ◆ But the completeness of death registration in many countries remains uncertain
- ◆ The project described here seeks to provide a set of cross-national estimates of completeness of death registration

# Methods

- ◆ Focus is on civil registration of deaths reported by countries
  - ◆ While health facility data offers an alternative data source, drawing comparisons across different types of collection systems, either nationally or regionally, is likely to introduce unpredictable error

# Methods (2)

- ◆ A questionnaire was sent to countries in the region in 2019, the mid-point of the Asia-Pacific CRVS Decade as part of a monitoring exercise
  - ◆ 45 of 58 countries responded
  - ◆ 40 countries provided data on death registration

# Methods (3)

- ◆ Data supplemented from other sources, including the UNSD Demographic Yearbook:

TABLE 1 DATA SOURCES FOR DEATH REGISTRATION USED IN THE ANALYSIS

Type of publisher	Data source	Number of countries
National	National statistical office regular publication	29
	Civil registration authority regular publication	1
	Ad-hoc vital statistics report	3
International	UNSD Demographic Yearbook <sup>7</sup>	6
	ESCAP baseline and midterm questionnaires <sup>8</sup>	14



# Methods (4)

- ◆ Data available for 2018 from 43 countries
  - ◆ alternative estimation procedures required for 5 countries

TABLE 2: LATEST YEAR WITH PUBLICLY AVAILABLE DATA ON DEATH REGISTRATION BY COUNTRY, AS OF AUGUST 2021

	Pre-2016	2016	2017	2018	Total	No public data, but completeness estimated for 2018
East and North-East Asia				7	7	China, DPRK
North Central Asia				9	9	Turkmenistan
South and South-West Asia	1		1	8	10	
South-East Asia			1	10	11	Indonesia
The Pacific	3	2	2	14	21	Solomon Islands
<b>TOTAL ASIA &amp; PACIFIC</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>48</b>	<b>58</b>	

# Completeness of death registration

- ◆ Estimation of completeness at a national level requires a counterfactual of the estimated number of ‘true’ deaths in a country’s population
  - ◆ UN Population Division’s World Population Prospects (2022 version) provided estimates of national deaths for the corresponding year
  - ◆ Estimates of completeness in excess of 100% were capped

# The five countries with no data

## ◆ DPRK; Solomon Islands; Turkmenistan

- ◆ Approach similar to that adopted by UNICEF for estimating completeness of birth registration adopted
  - ◆ Apply average completeness for other countries in that sub-region
- ◆ Each of the three countries represents a small proportion of deaths in their respective sub-regions
  - ◆ Impact of error likely immaterial at either a regional or a sub-regional level

# China

- ◆ Literature search revealed an estimate of completeness of 74.2% based on the China Cause of Death Reporting System
  - ◆ Zeng, Adair and Wang (2020)
- ◆ A moderate degree of uncertainty
  - ◆ Assumed completeness of death registration in China in 2018 ~  $U(0.65;0.80)$
  - ◆ Mean : 72.5%

# Indonesia

- ◆ Even less data available, with widely discrepant estimates and a strong indication that completeness in the country did not comport with the sub-regional average
- ◆ A high degree of uncertainty
  - ◆ Assumed completeness of death registration in Indonesia  $\sim U(0.40;0.65)$
  - ◆ Mean : 52.5%

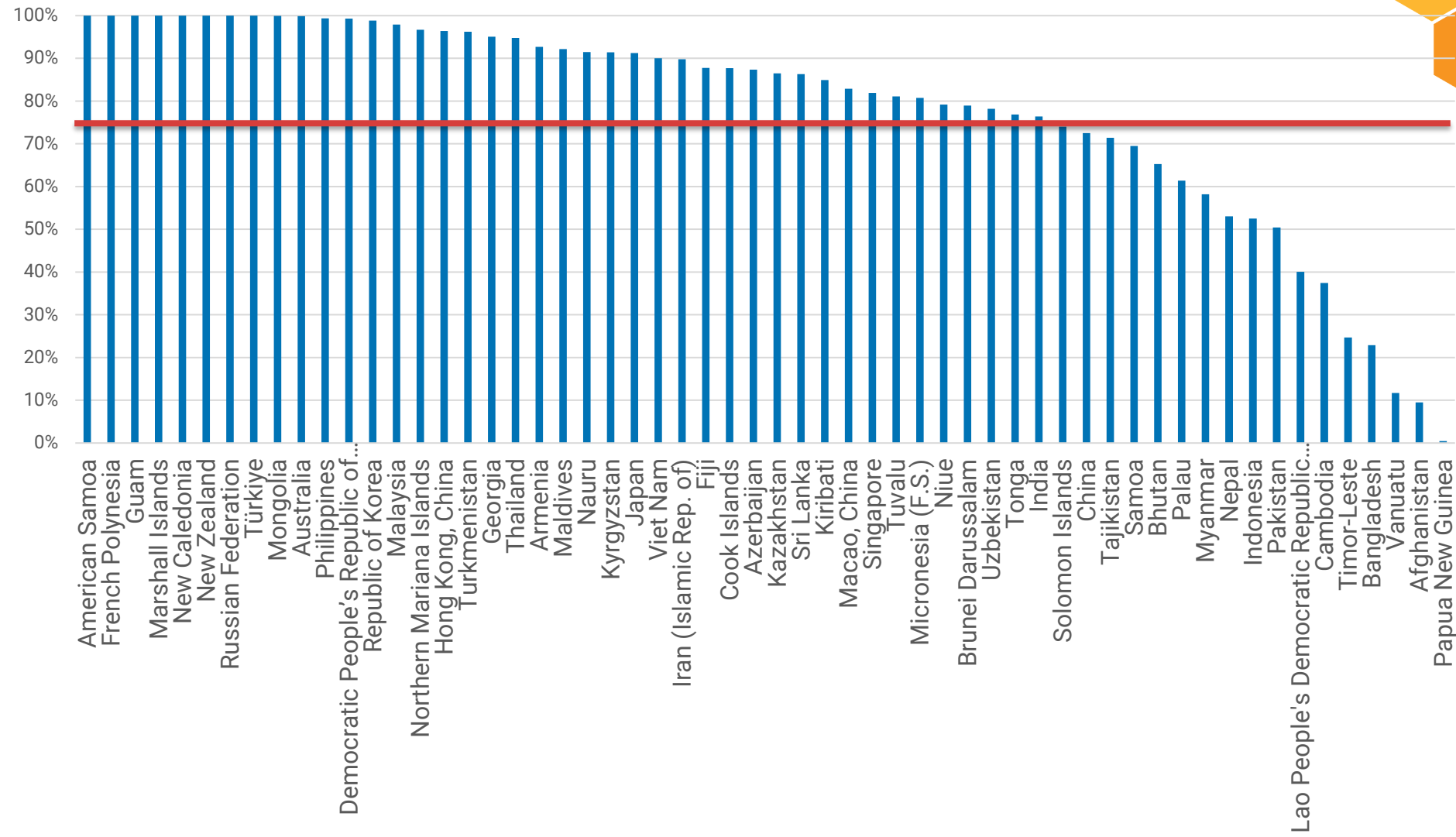
# Summary

- ◆ For the five countries without data, the following estimated levels of completeness were assumed

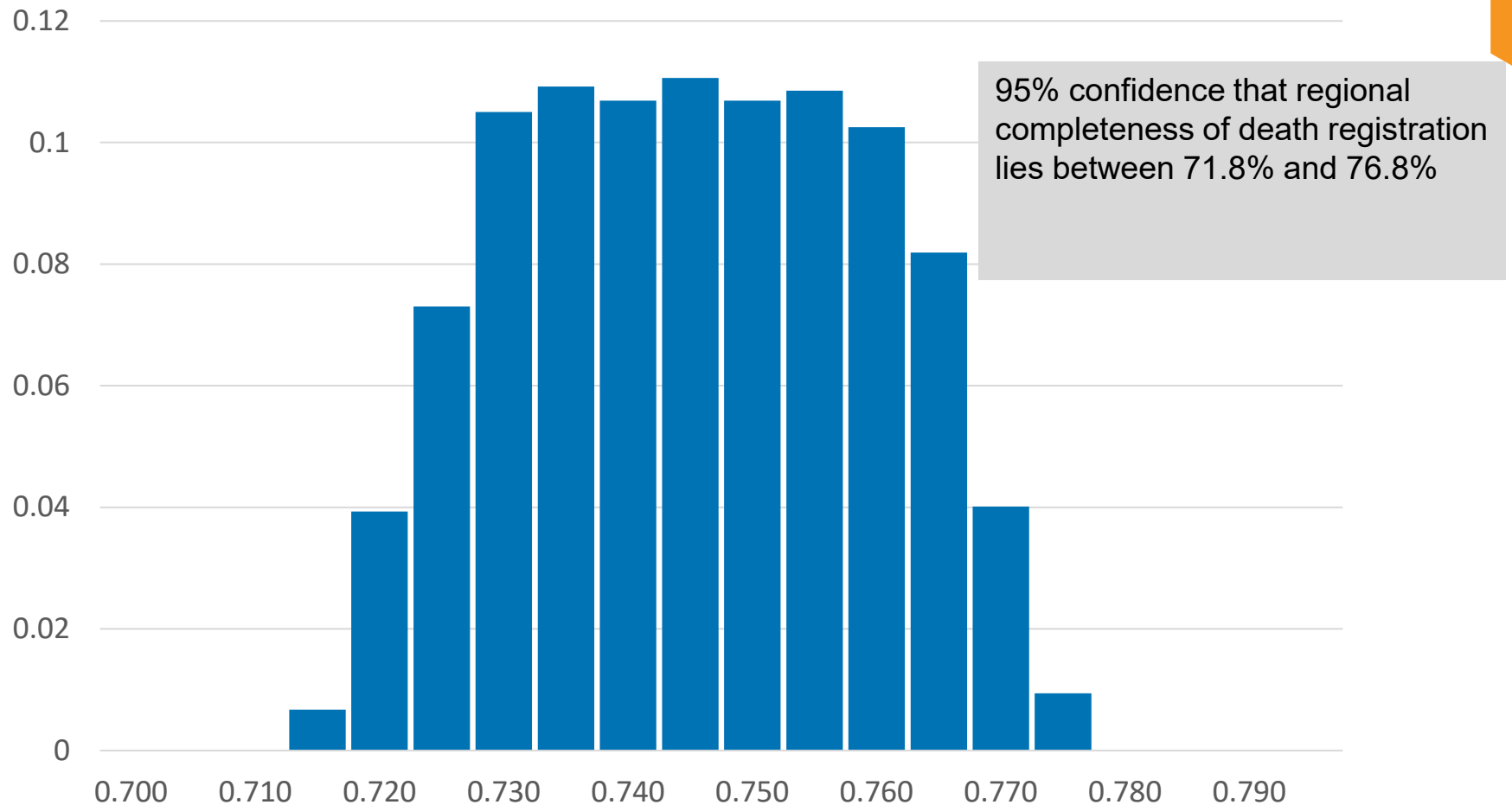
**TABLE 4: ESTIMATED LEVELS OF DEATH REGISTRATION COMPLETENESS IN 2018 FOR FIVE COUNTRIES WITHOUT DATA**

<b>Country</b>	<b>ESCAP Subregion</b>	<b>Assumed completeness rates (%)</b>
Democratic People's Republic of Korea	East and North-East Asia	99.3
Solomon Islands	The Pacific	74.0
Turkmenistan	North and Central Asia	96.2
People's Republic of China	North and Central Asia	72.5 (range 65-80%)
Indonesia	South and South-East Asia	52.5 (range 40-65%)

# Completeness of death registration, ESCAP, 2018\*



# Regional completeness of death, allowing for uncertainty





# Completeness and unregistered deaths

- ◆ Approximately 8.25 million unregistered deaths in the region in 2018
  - ◆ 87% (7.2m) of these in China, India, Indonesia, Pakistan and Bangladesh

TABLE 5: ESTIMATES OF COMPLETENESS OF DEATH REGISTRATION AND NUMBERS OF UNREGISTERED DEATHS, BY ESCAP SUBREGION

ESCAP subregion	Registered deaths	UNWPP deaths	Completeness (%)	Number of unregistered deaths (thousands)
East and North-East Asia	9 118 634	11 975 472	76	2 857
North and Central Asia	2 348 245	2 413 945	97	66
South and South-West Asia	8 957 570	12 896 592	66	3 939
South-East Asia	3 207 292	4 539 971	71	1 333
The Pacific	209 003	271 213	77	62
<b>TOTAL</b>	<b>23 840 743</b>	<b>32 097 193</b>	<b>74</b>	<b>8 256</b>

# Conclusions

- ◆ Clear indication of improvement in completeness of death registration in many countries in the region
- ◆ But 8 million unregistered deaths: has adverse consequences for
  - ◆ individuals and their families, especially the most vulnerable and marginalised who are more likely to be unregistered
  - ◆ pandemic response and preparedness
- ◆ Need to know whose deaths are not registered

# Towards a programme of action

- ◆ While completeness is improving, also need to assess quality of data being collected (by age, sex ...). To do this, we need
  - ◆ more targeted inequality assessments
  - ◆ analysis of late vs. current registrations of deaths
  - ◆ commitment to record deaths by date of death, not date of registration

# Report available:

- ◆ <https://www.unescap.org/kp/2023/reaching-regional-estimate-death-registration-completeness>

