Who are the health workers and where are they?

MICHAEL R.M. ABRIGO and DANICA A.P. ORTIZ

PIDS

Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

What do we know about health care workers?

Based on the literature, apparently not much.
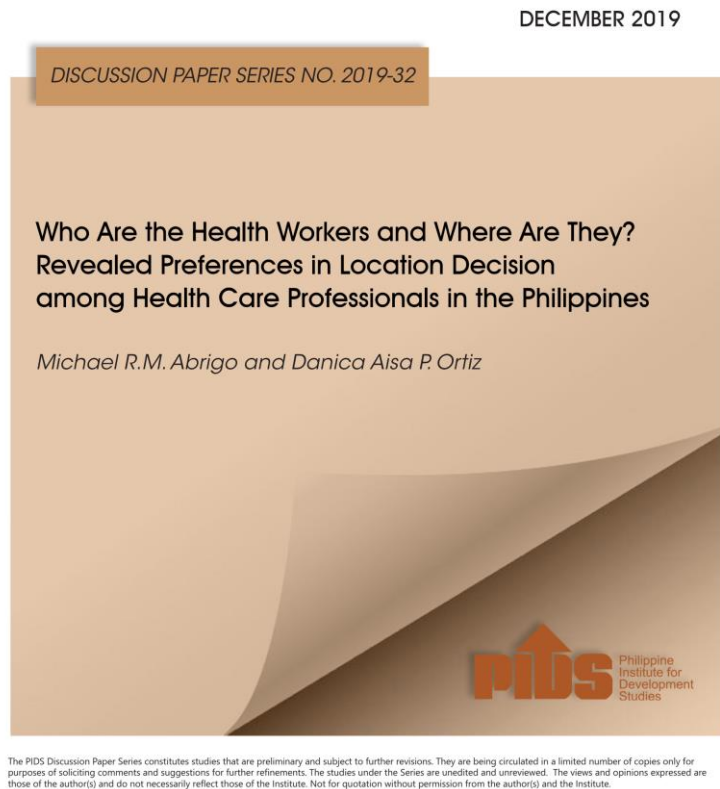
Research questions

1. Characterize the supply of health care workers in the Philippines

2. Analyze locational factors that influence the decision of health care workers

Main Results

- Health human resource (HHR) density appears to be sufficient based on national figures

- But when disaggregated, less than a quarter of LGUs reach the ideal density proposed by WHO

- There is increasing geographic concentration of HHR supply since 1990s

- Improving ethnic diversity among HHR appear to not improve supply in LGUs with higher ethnic concentration or with higher poverty rates

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Who Are the Health Workers and Where Are They?
Revealed Preferences in Location Decision
among Health Care Professionals in the Philippines

Michael R.M. Abrigo and Danica Aisa P. Ortiz

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CONTACT US:
RESEARCH INFORMATION DEPARTMENT
Philippine Institute for Development Studies

18th Floor, Three Cyberpod Centris - North Tower
EDSA corner Quezon Avenue, Quezon City, Philippines

publications@mail.pids.gov.ph
(+632) 8877-4000

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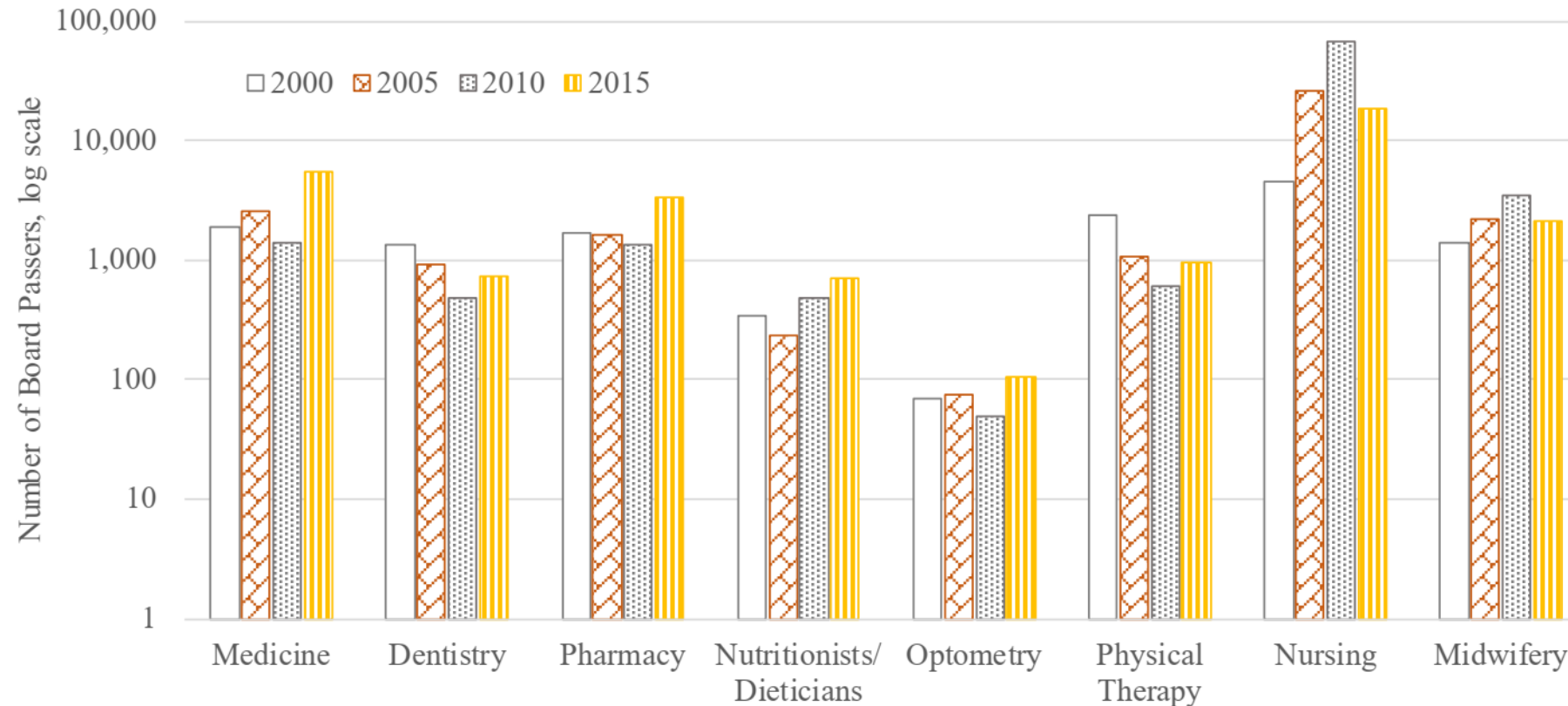
Presentation Outline

1. HHR Supply

2. Location decision

3. Implications

How many enter? Leave?

New board passers, 2000-2015

Figure 1. Number of board passer by health profession: Philippines, 2000-2015
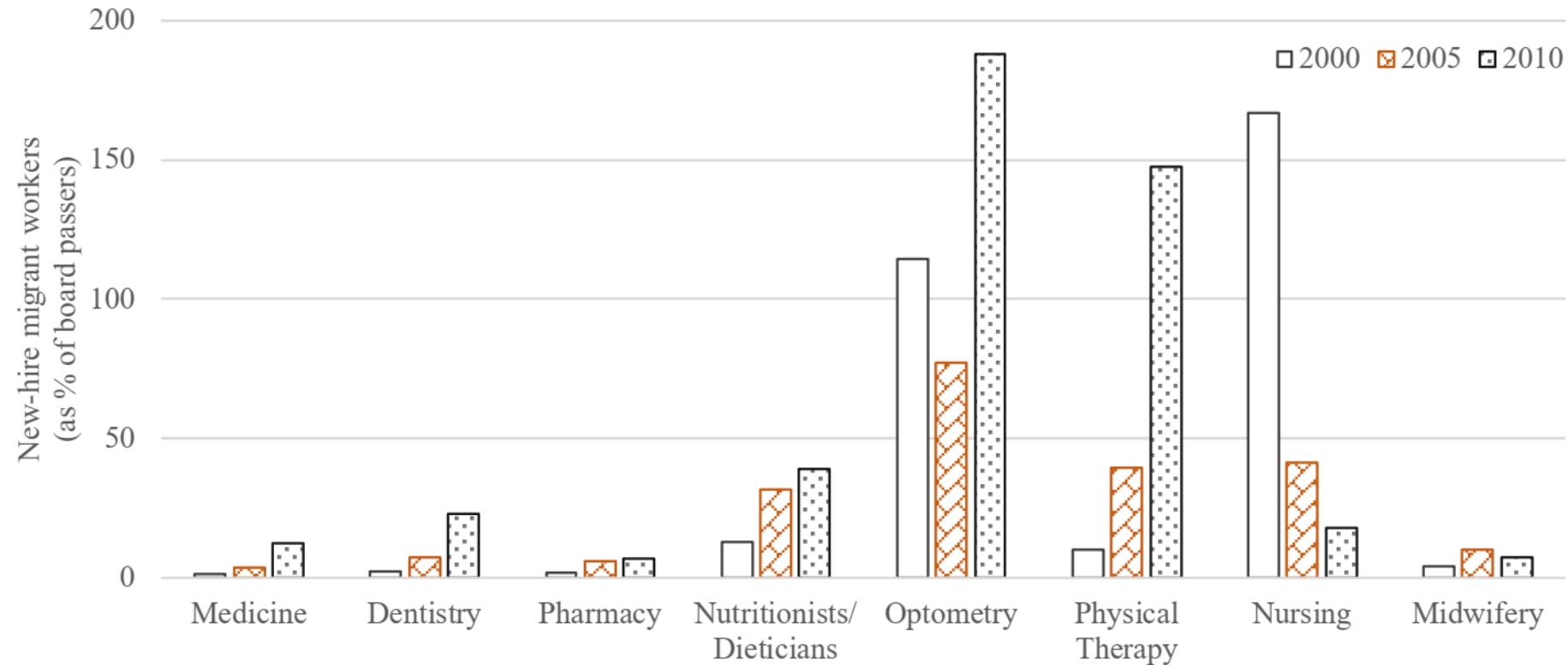

Source: Philippine Statistical Yearbook, NSCB (2001, 2006, 2011) and PSA (2016).

New migrant workers: 2000-2010

Figure 2. New-hire international migrant workers as share of new board passers by health care profession: Philippines, 2000-2010

Source: Philippine Statistical Yearbook, NSCB (2001, 2006, 2011), PSA (2016), and POEA (2016).

How many HHRs in total?

What is the ideal number of HHR?

Suggested HHR density (per 1,000 population)

- 2.3 (WHO, 2006)

- 3.4 (ILO, 2011)

- 4.1 (ILO, 2014)

- 4.5 (WHO, 2016)

HHR Stock: 1990-2015

Table 1. Health human resource (HHR) by type: Philippines, 1990-2015

|	Count (Thousands)			Rate (per 10,000 population)			Spatial disparity (Gini coefficient)		
	1990	2010	2015	1990	2010	2015	1990	2010	2015
Physicians	27.3	32.3	52.0	4.5	3.5	5.2	0.69	0.77	0.84
Dentists	15.1	23.6	23.9	2.5	2.6	2.4	0.63	0.73	0.79
Pharmacists	8.6	17.1	27.5	1.4	1.9	2.7	0.51	0.65	0.75
Nutritionists/Dieticians	4.4	3.7	4.6	0.7	0.4	0.5	0.43	0.55	0.68
Optometrists/Opticians	4.0	2.9	4.0	0.7	0.3	0.4	0.50	0.50	0.69
Physiotherapists	2.1	7.7	10.0	0.3	0.8	1.0	0.48	0.62	0.75
Professional Nurses	54.8	253.5	351.1	9.0	27.5	34.9	0.68	0.78	0.75
Professional Midwives	28.8	27.4	7.0	4.8	3.0	0.7	0.51	0.57	0.63
Medical/Pharmaceutical Technicians	15.0	44.7	43.5	2.5	4.9	4.3	0.56	0.73	0.77
Nursing/Midwifery Technicians	7.2	29.3	46.7	1.2	3.2	4.6	0.44	0.62	0.60

Note: Authors' estimates based on data from NSO (1992, 2012), and PSA (2016b). Estimates for 1990 and 2010 use the 1992 Philippine Standard Occupational Classification (PSOC), while the 2015 estimates are based on the 2012 PSOC. Also, the 1990 and 2010 estimates are calculated from the 10 percent sample-households of the population census, while the 2015 estimates are based on full enumeration data. Spatial Gini coefficients are calculated using cities and municipalities as observation units.
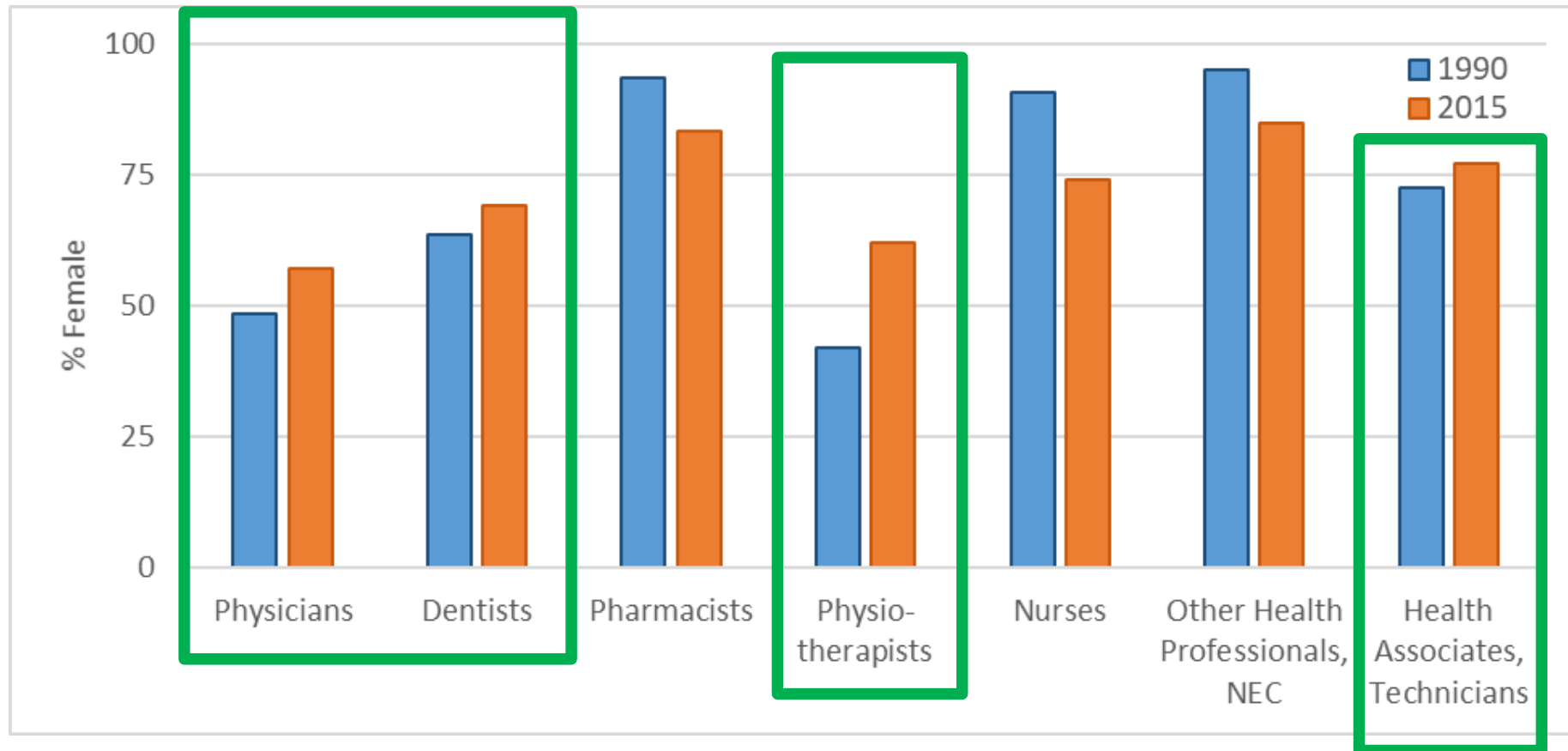
Who are the health workers?
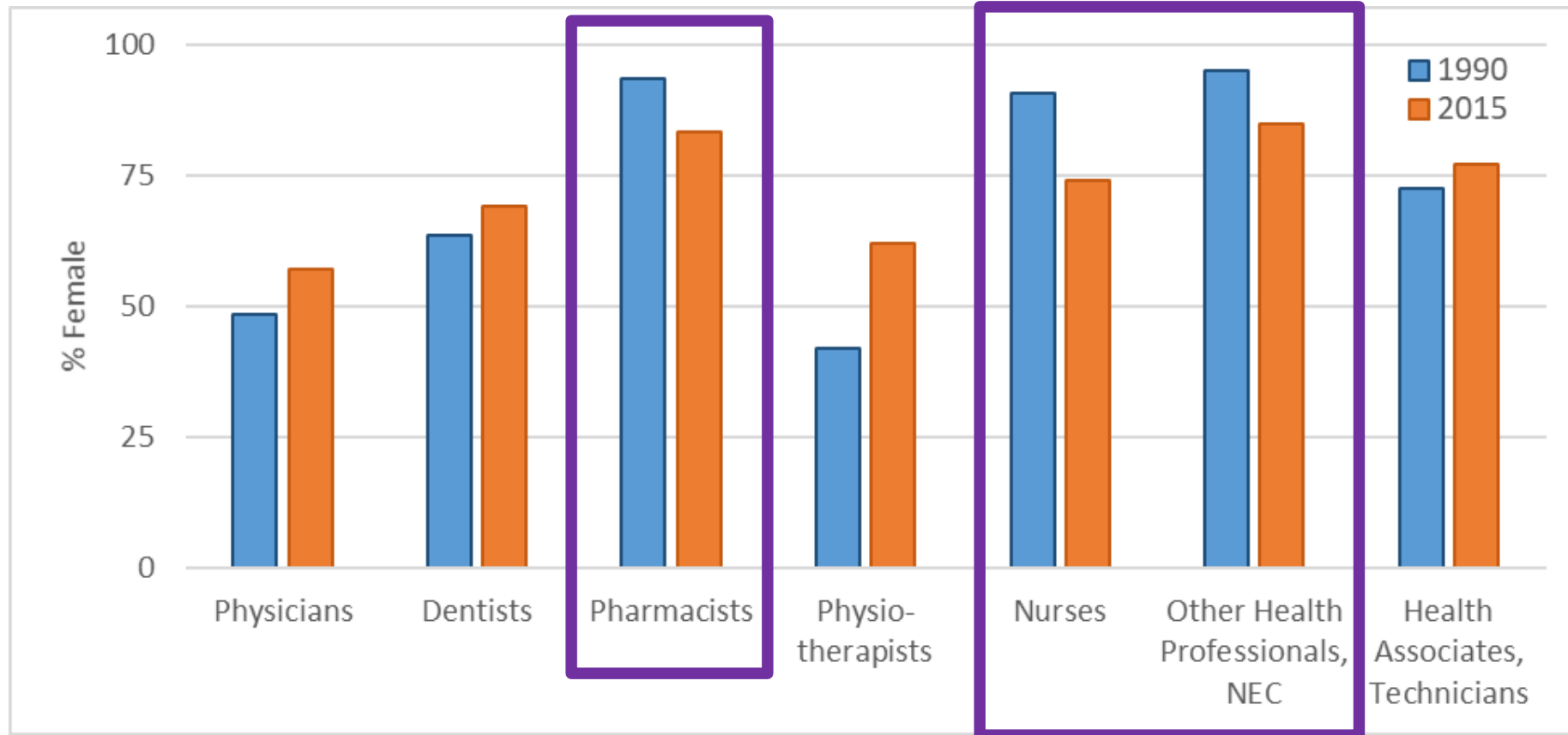
HHR by Sex

Local HHR supply is female-dominated
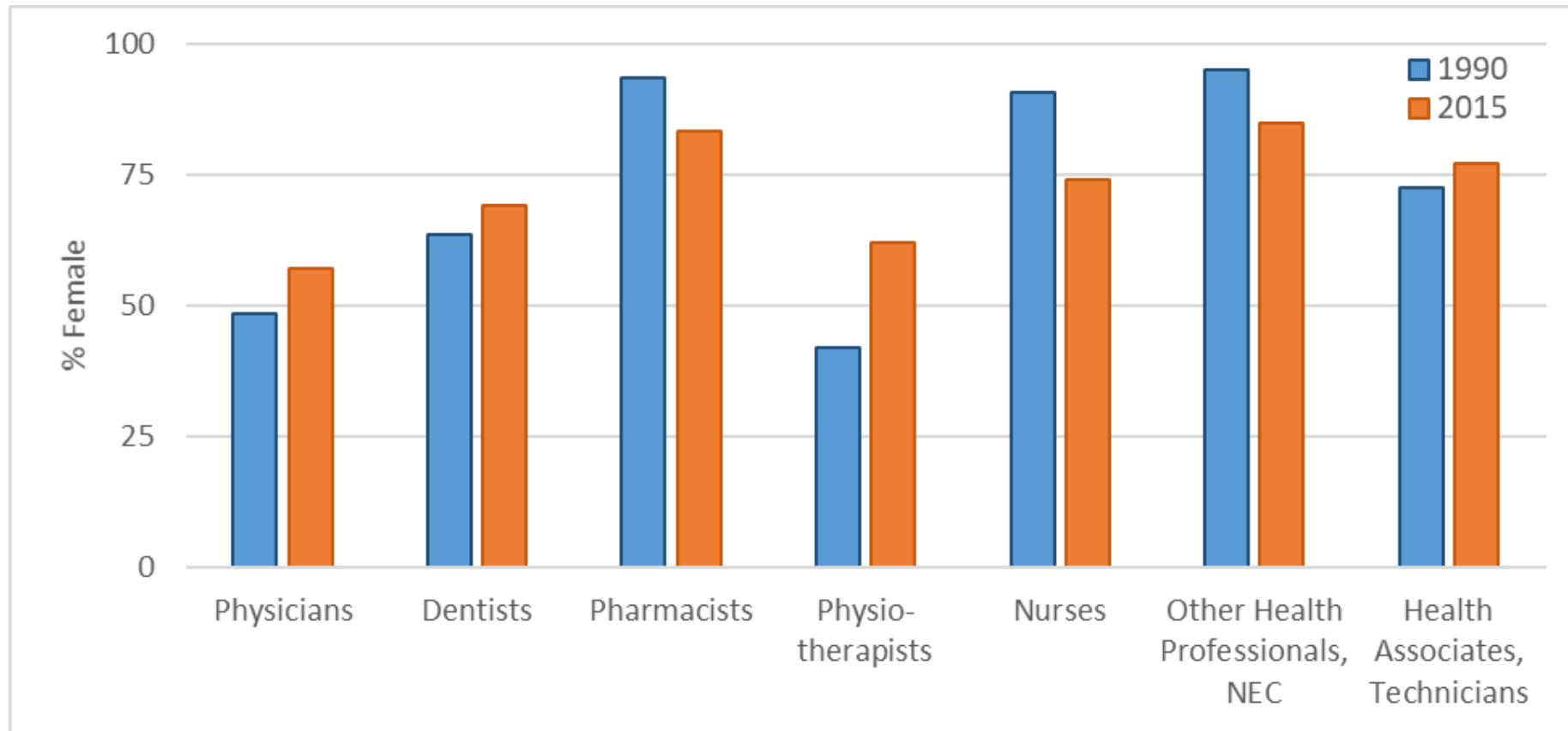
HHR by Sex

With increasing feminization

HHR by Sex
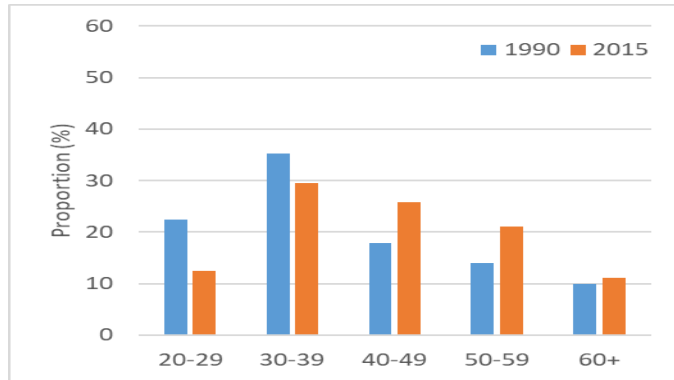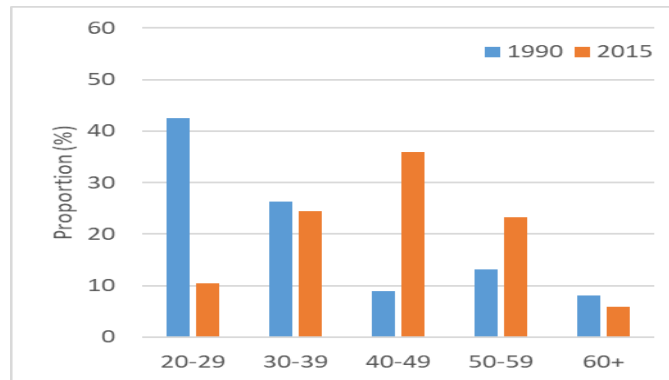
Female-dominated, but with some reversion
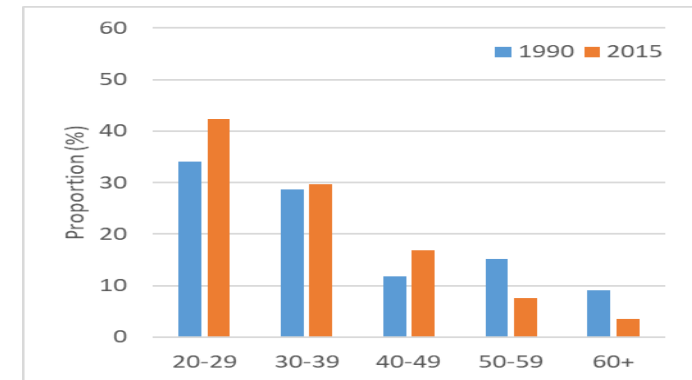
HHR by Age
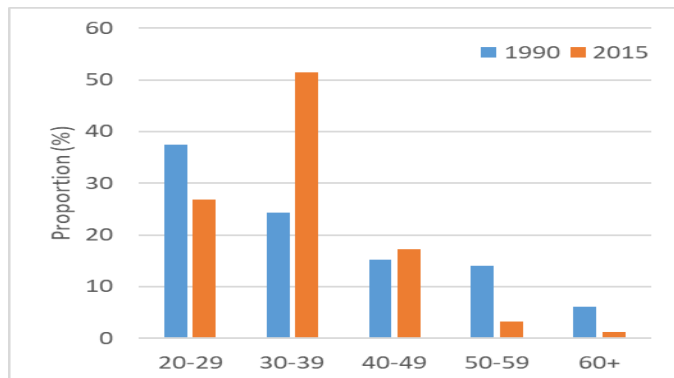
Generally young population…
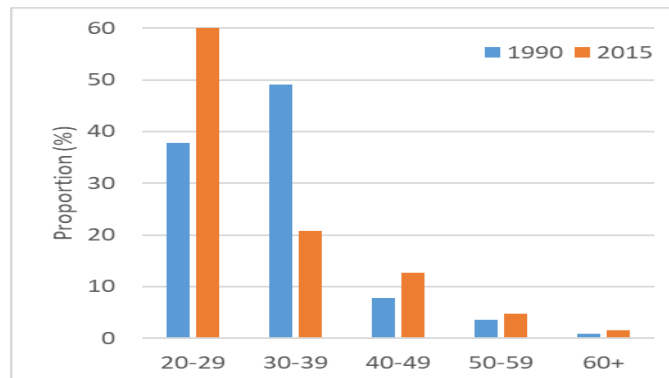
Physician

Dentist
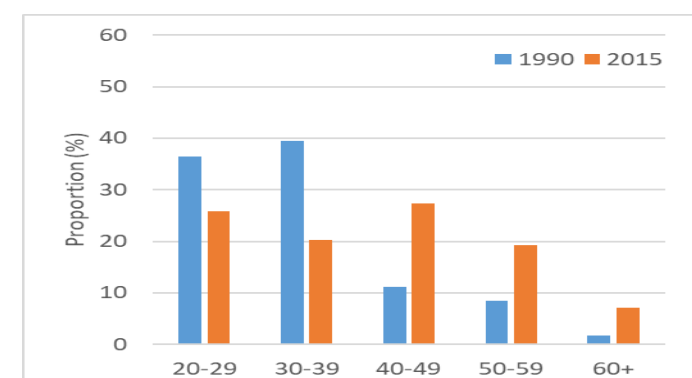

Pharmacist
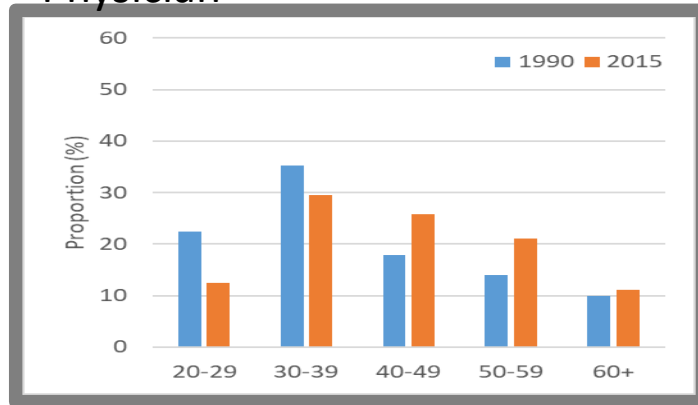

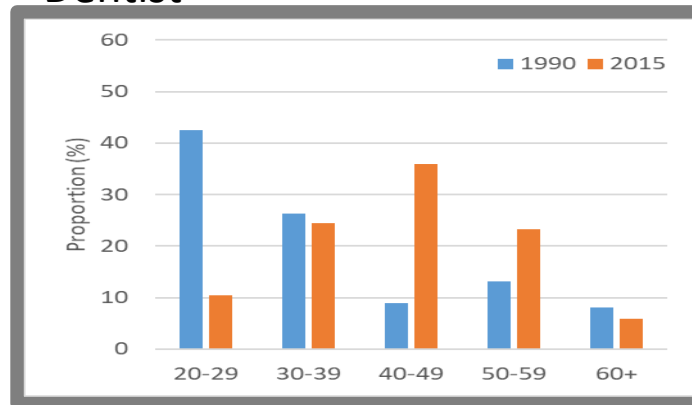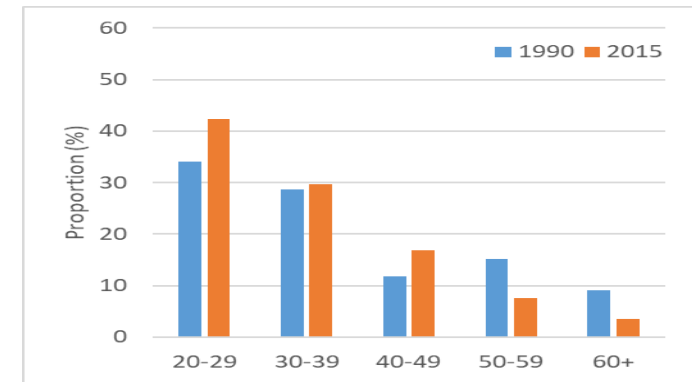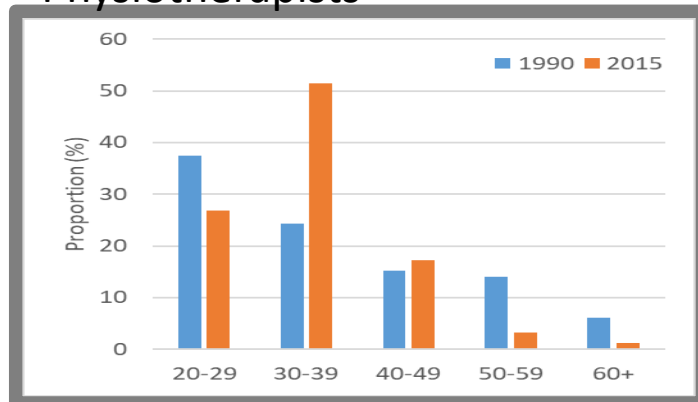Physiotherapists

Nurses

Others, NEC

HHR by Age

... but some cadres are *ageing*
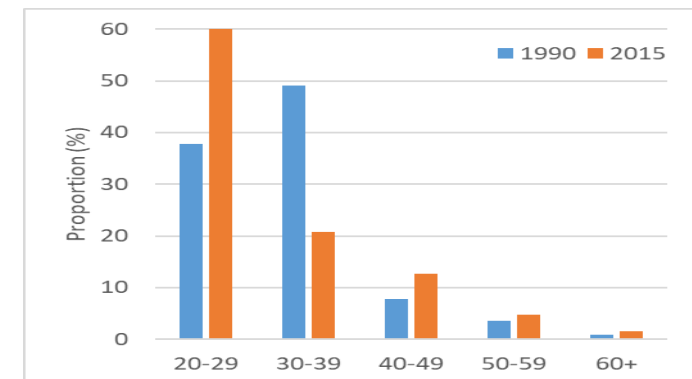

Physician

Dentist

Pharmacist
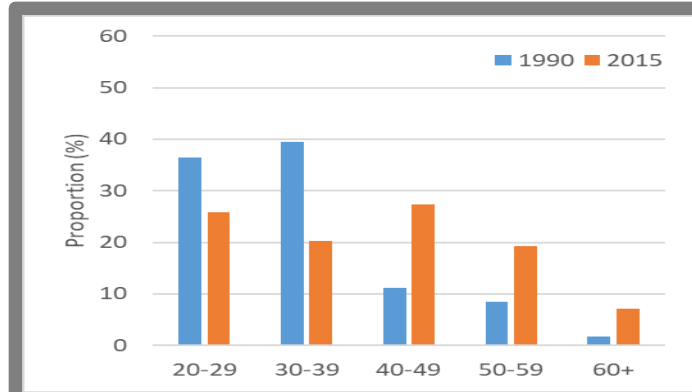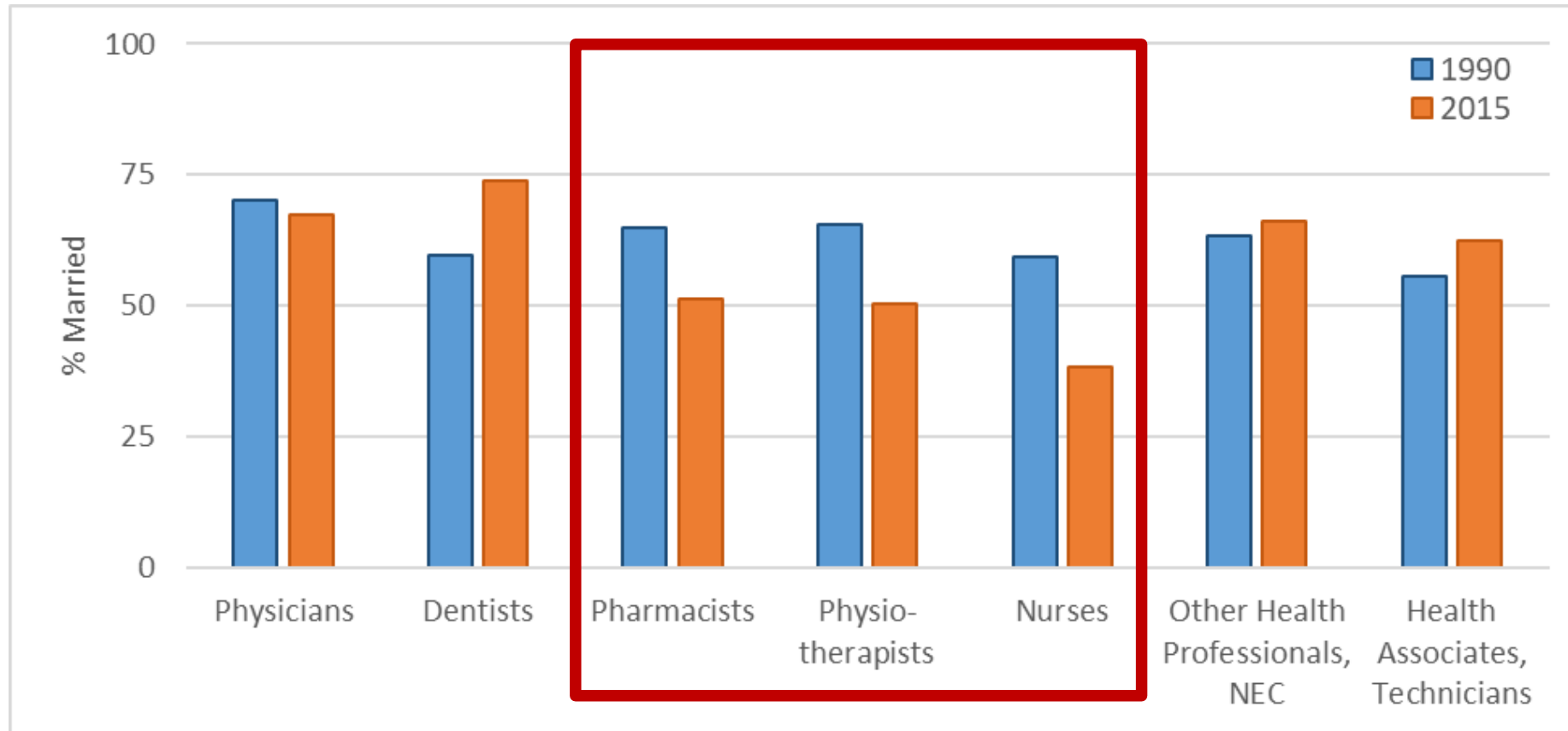

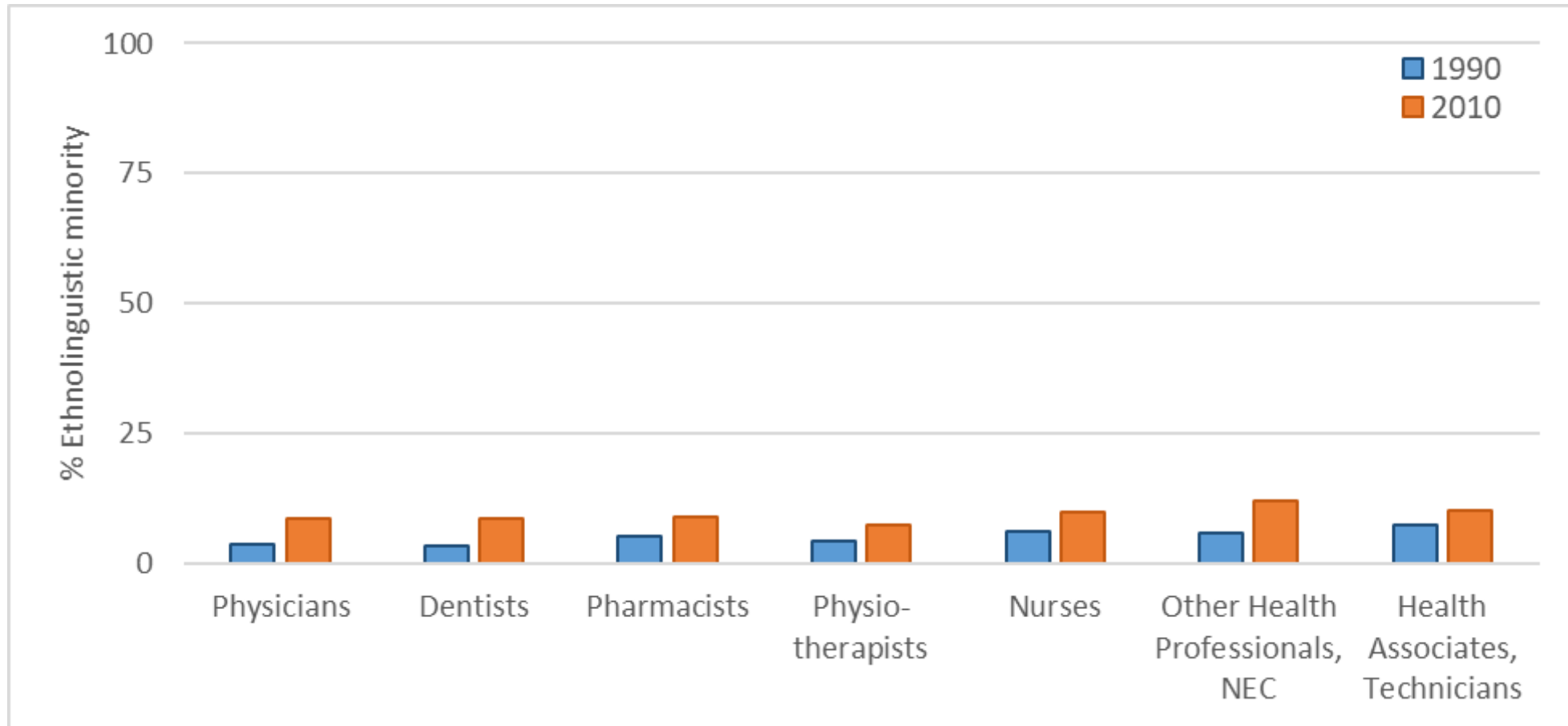Physiotherapists

Nurses

Others, NEC

HHR by Marital Status

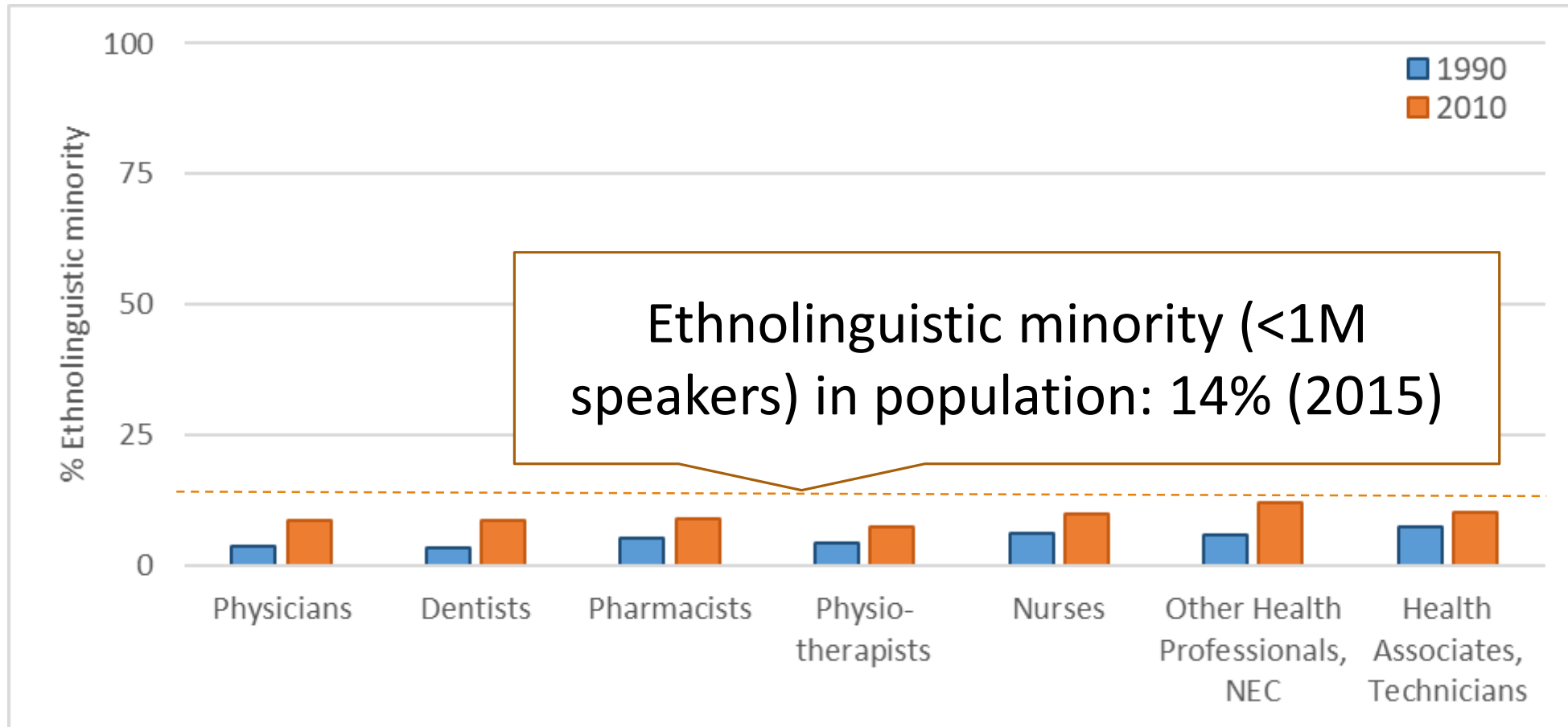## Largely married, *except* for some cadres

HHR by ethnolinguistic minority status

Improving inclusion/representation…

HHR by ethnolinguistic minority status

… But still below national average

Ethnolinguistic minority (<1M speakers) in population: 14% (2015)

HHR by Region of residence

Largely Mega Manila except midwives, technicians

	Professionals								Health Asso-ciates, Tech-nicians
	Physi-cians	Dentists	Phar-macists	Nutri-tionists/ Dieticians	Opto-metrists/ Opticians	Physio-therapists	Nurses	Midwives	
By Region of residence (%), 1990									
Mega Manila	58.4	68.1	54.0	55.0	67.9	72.0	50.9	42.8	52.3
Balance Luzon	13.3	14.0	11.0	17.5	10.4	8.1	17.8	21.9	16.8
Visayas	16.1	9.2	14.7	17.2	11.5	8.1	19.0	16.1	14.3
Mindanao	12.2	8.8	20.3	10.4	10.3	11.8	12.2	19.3	16.6
By Region of residence (%), 2015									
Mega Manila	59.9	67.3	53.7	56.5	63.2	66.2	48.6	27.2	43.2
Balance Luzon	12.3	14.0	16.2	14.7	14.3	15.1	17.5	20.5	21.4
Visayas	15.4	10.2	15.3	12.5	11.5	11.6	17.2	19.6	15.4
Mindanao	12.5	8.5	14.9	16.3	10.9	7.1	16.7	32.8	20.0

Where are the health workers?

Figure 3. HHR per 100,000 population by city and municipality of residence, 2015

Note: Authors' estimates based on data from PSA (2016). The composite index includes physicians, professional nurses and professional midwives. Inset: National Capital Region.
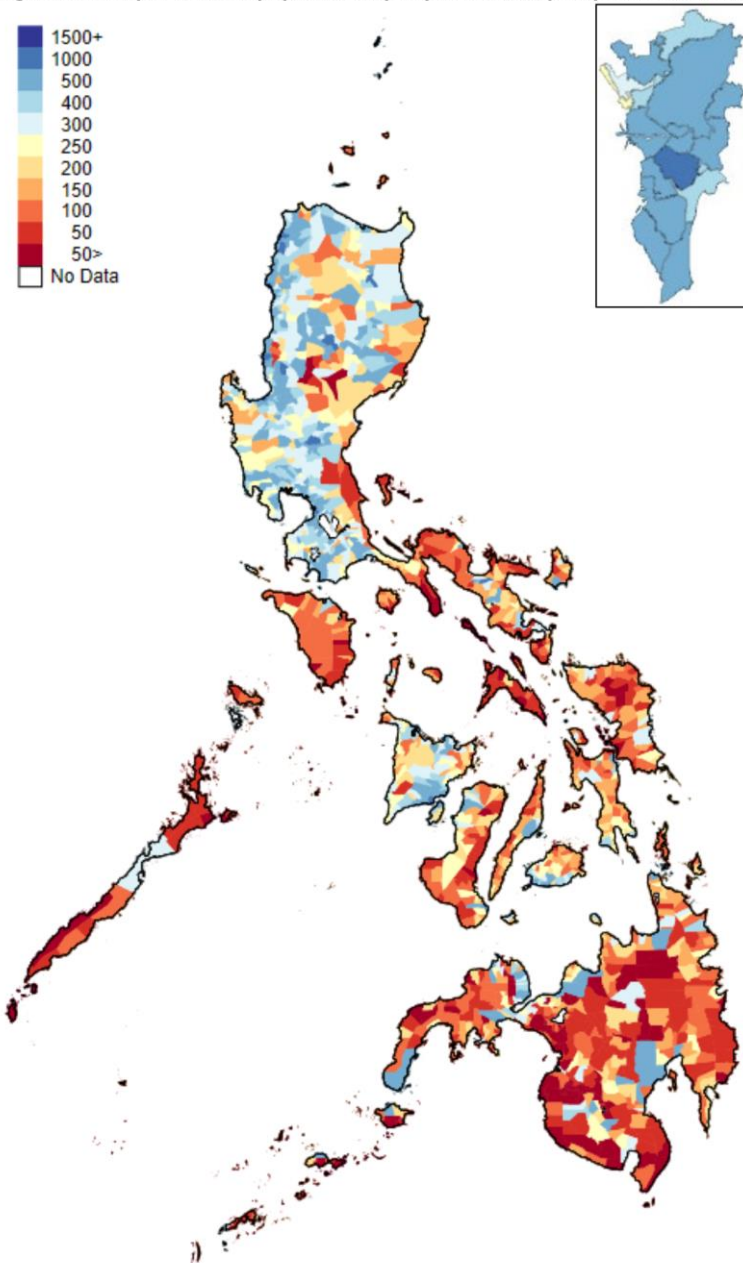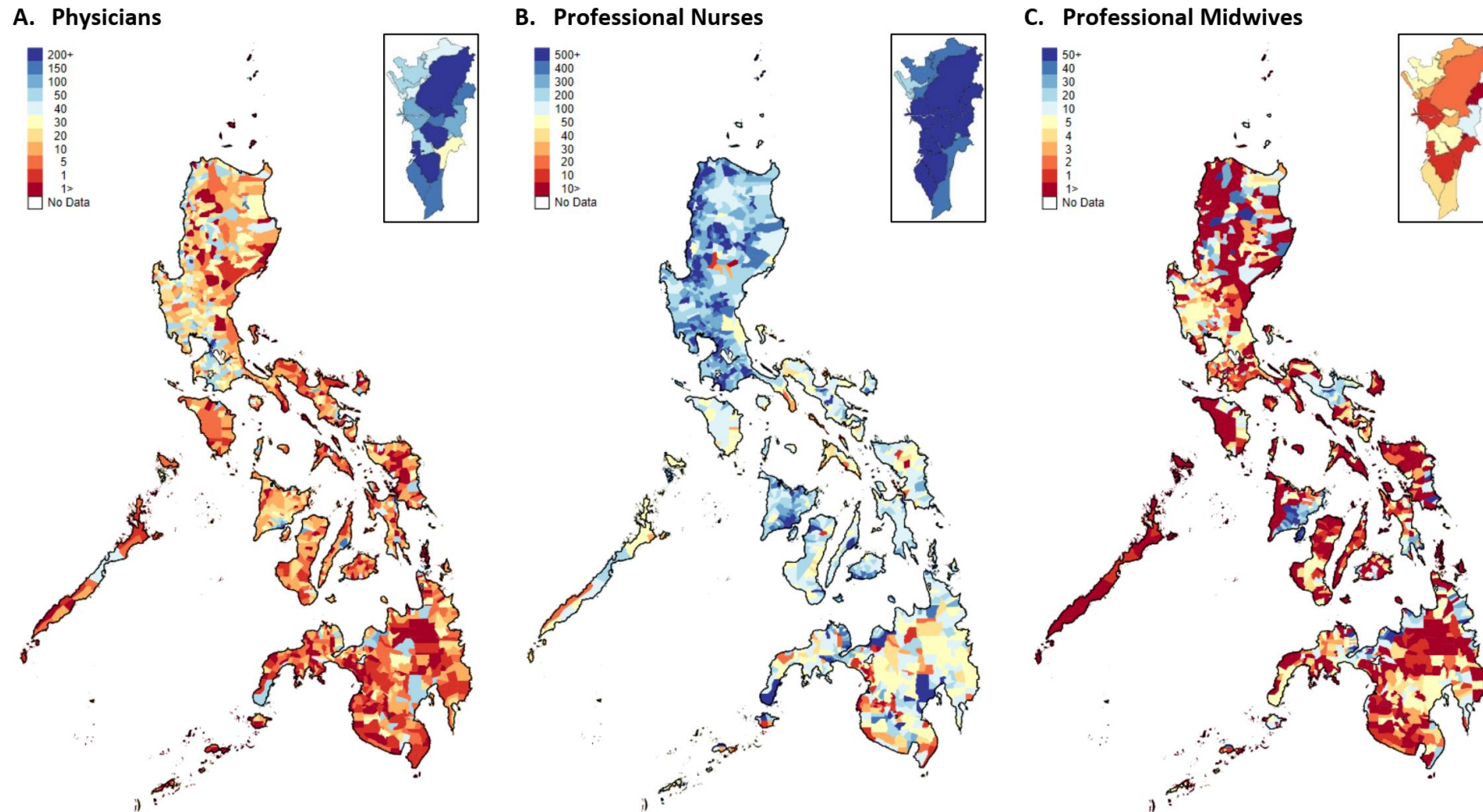
HHR* density by municipality/ city of residence, 2015

*Physicians, Nurses, Midwives

HHR density by cadre and residence

Figure 4. HHR per 100,000 population by selected type and by city and municipality of residence, 2015

Note: Authors' estimates based on data from PSA (2016). Inset: National Capital Region.

Why are they there?

Methodology

Discrete-choice location model
- ◦ Based on random utility framework
- ◦ Main idea: HHR choose to work where their expected net benefit may be highest
- ◦ Estimated using binomial regression model
- ◦ Separate estimates by HHR cadre (physician, nurses and midwives) and by demographic characteristics (sex, marital status, ethnolinguistic group, age)

Data

How many HHR are in a particular area? What area-specific characteristics may be found there?

- ◦ Census data (HHR supply)
- ◦ Economy: Poverty rate, Per capita LGU income, Night lights
- ◦ Amenities: City, With hospital, With landline, With college
- ◦ Ethnolinguistic concentration

Where are the HHRs?

More likely to work in areas
- with hospitals, landline network
- in cities
- with greater economic activity (nurses, midwives)

Less likely to work in areas
- with higher ethnic concentration
- with higher poverty incidence (physicians, nurses)

Where are the HHRs? By characteristics

By sex and age group: There appears to be no apparent systematic difference in preferences

◦ Except elderly midwives (aged 60+): less likely to work in richer LGUs, more likely to work in cities

Where are the HHRs? By characteristics

By marital status
- While physicians generally are more likely to work in cities and in hospitals; singles have slight aversion (OR = 0.63) relative to those ever married
- Single midwives are more likely to work in areas with greater economic activity relative to those ever married (OR = 1.17)
- No statistically significant difference among single and married nurses

Where are the HHRs? By characteristics

By ethnolinguistic minority status
- ◦ HHRs from minority background are less likely to work in areas with higher poverty rates or with higher ethnic concentration relative to non-minority HHRs

Implications for Policy

Summary

o There appears to be sufficient supply of HHR at the national level – closely approximates, even surpasses some international threshold

o But increasing geographic polarization (towards better economically endowed locations) suggest that many areas may have limited access to health care professionals

Summary

○ While HHR supply is generally increasing, some cadres (nutritionist-dieticians, optometrists and opticians, and physiotherapists) have declining HHR *density* potentially as a result of net exit among these professionals – may be critical in the longer term

Summary

o HHRs are more likely to practice in areas with greater earnings potential, in areas where there are amenities (and potentially where they are trained)

o But contrary to previous results elsewhere, HHRs from ethnolinguistic minorities are not more likely to practice in more economically depressed areas, or in regions with higher ethnolinguistic concentration

Policy implication 1

Boosting household incomes through local economic development appears to be essential in ensuring the economic viability of any professional practice, particularly in health care

Policy implication 2

There may be a need to reassess common- and deep-rooted beliefs on health care professional practice. Although altruistic motives among health care practitioners to serve in rural areas may be important in recruiting HHR for rural practice, it may not necessarily be the most effective or sustainable. Targeting minorities may be good for inclusion, but not necessarily for access among communities.

Policy implication 3

With the apparent undersupply of HHRs in many areas, it may be prudent to explore alternative modes of service delivery. Technology solutions (e.g. tele-medicine) may bridge some of the gaps. Others may need change in practice (e.g. certification of some primary health care skills to be done by non-physicians).

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EMAIL: mabrigo@mail.pids.gov.ph