Safe nurse-patient ratios in a context of shortage of healthcare professionals

› **Arnaud Bruyneel**

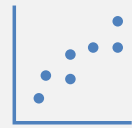› Prof. Dr. in public health sciences, ULB (Belgium)

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Presentation plan

Introduction Impact and threshold Workload measurement Solutions **Conclusions**

Definition

Safe nurse staffing means that an **appropriate number of nurses is available at all times across the continuum of care**, with a suitable mix of education, skills and experience to ensure that patient care needs are met **to deliver quality care**

Lobby governments to establish effective human resources planning systems to ensure an adequate supply of healthcare professionals to meet patient and population needs

How can we fix it ?

- **Patient-to-nurse ratio**
- Nursing Hours per Patient Day (NHPPD): is the sum of the staffed hours of RNs involved in direct patient care divided by the number of inpatient days per nursing ward per observation day
- Objective assessment of Intensity of nursing care - nursing workload
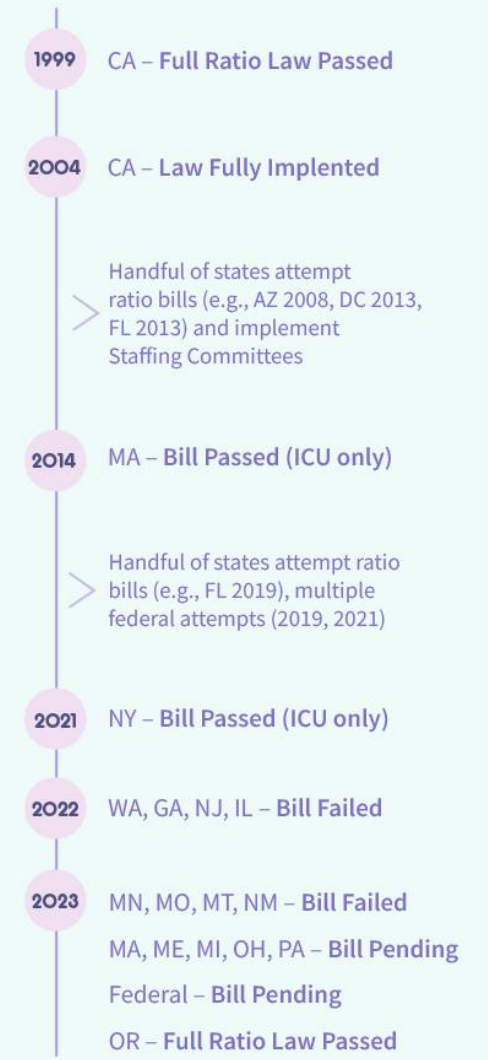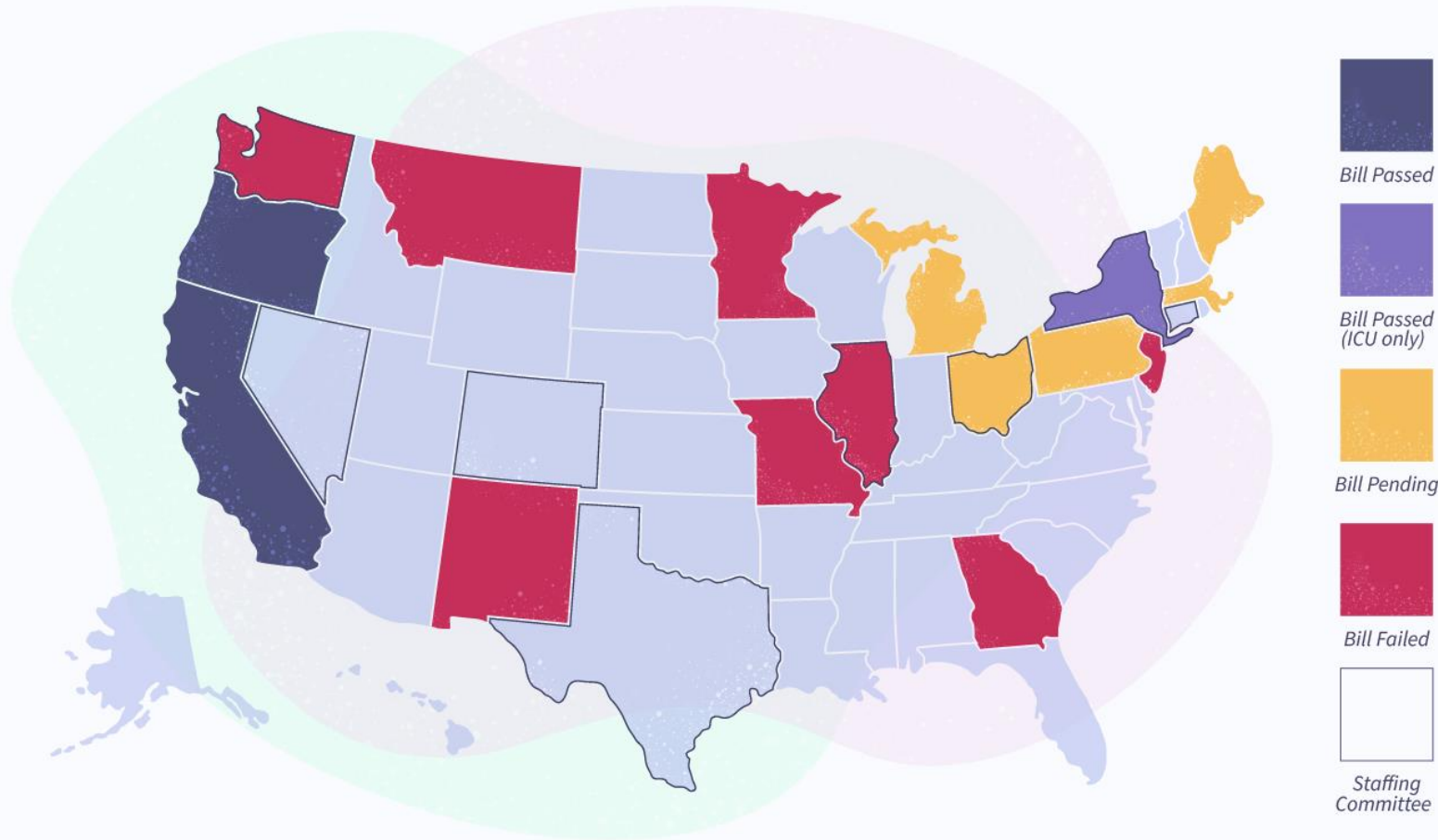- Nurse perceived staffing adequacy via nurse survey's

PROPOSED FEDERAL RN RATIOS

Intensive/Critical Care	1:2
Neonatal Intensive Care	1:2
Operating Room	1:1
plus at least one additional scrub assistant	
Post-anesthesia	1:2
Labor and Delivery	1:2
Antepartum	1:3
Combined Labor and Delivery, and Postpartum	1:3
Well Baby Nursery	1:6
Postpartum Couplets	1:3
Intermediate Care Nursery	1:4

Pediatrics	1:3
Emergency Room	1:3
Trauma Patient in ER	1:1
ICU Patient in ER	1:2
Step Down	1:3
Telemetry	1:3
Medical/Surgical	1:4
Coronary Care	1:2
Acute Respiratory Care	1:2
Burn Unit	1:2

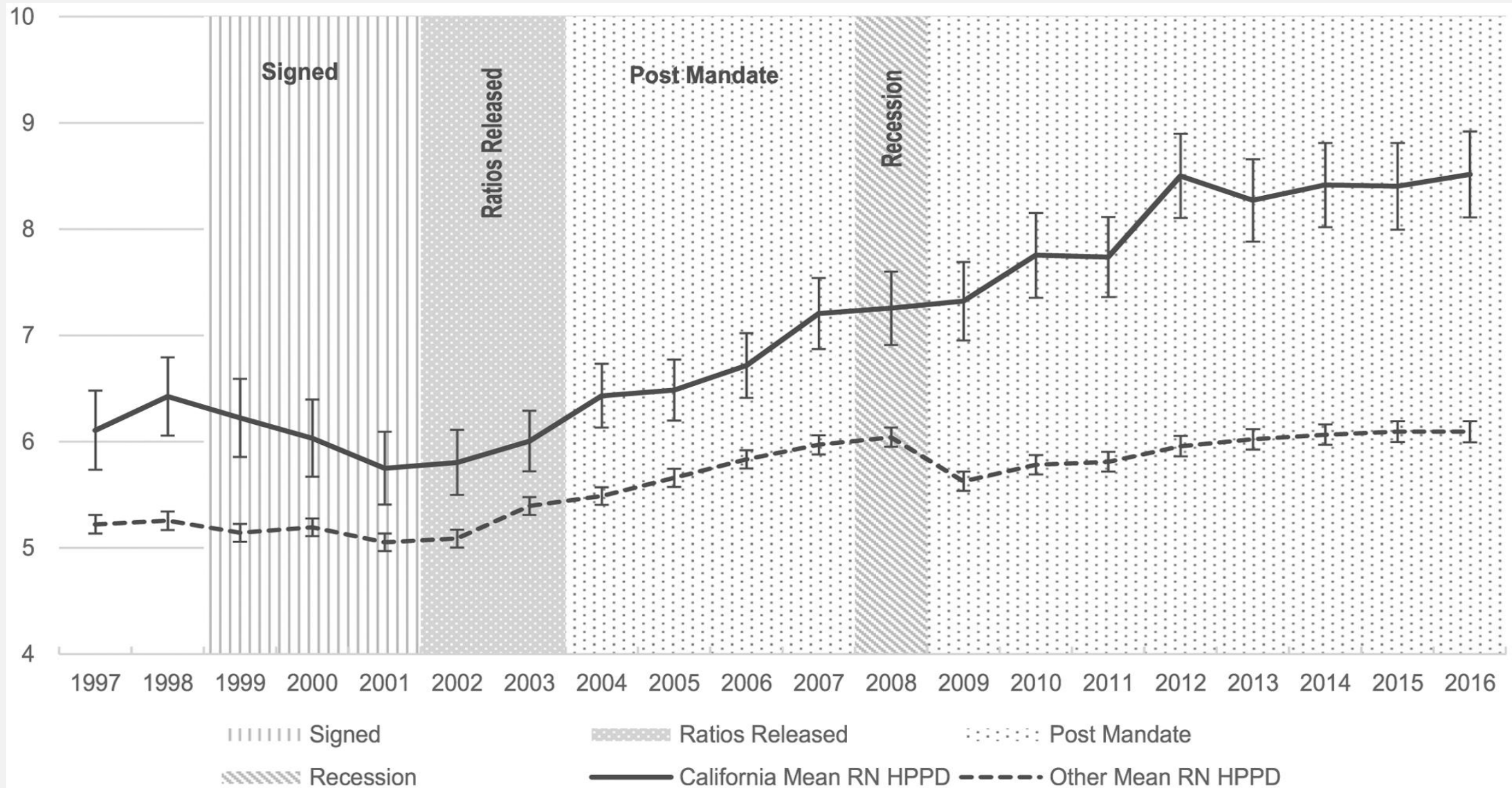|	
Other Specialty Care Units	1:4
Psychiatric	1:4
Rehabilitation	1:5
Skilled Nursing Facility	1:5

National Nurses United

ACCELERATED ACTIVITY AROUND NURSING RATIO LAWS

Since 2021, ratio bills have been introduced in 15 individual states

Legend:
- Bill Passed
- Bill Passed (ICU only)
- Bill Pending
- Bill Failed
- Staffing Committee

Timeline:

- **1999** CA – **Full Ratio Law Passed**
- **2004** CA – **Law Fully Implented**
- Handful of states attempt ratio bills (e.g., AZ 2008, DC 2013, FL 2013) and implement Staffing Committees
- **2014** MA – **Bill Passed (ICU only)**
- Handful of states attempt ratio bills (e.g., FL 2019), multiple federal attempts (2019, 2021)
- **2021** NY – **Bill Passed (ICU only)**
- **2022** WA, GA, NJ, IL – **Bill Failed**
- **2023** MN, MO, MT, NM – **Bill Failed**
- MA, ME, MI, OH, PA – **Bill Pending**
- Federal – **Bill Pending**
- OR – **Full Ratio Law Passed**

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Dierkes, A., Do, D., Morin, H., Rochman, M., Sloane, D., & McHugh, M. (2022). The impact of California's staffing mandate and the economic recession on registered nurse staffing levels: A longitudinal analysis. Nursing outlook, 70(2), 219–227. https://doi.org/10.1016/j.outlook.2021.09.007

Where is it applied?

Victoria and Queensland i

Shift	Level 1 hospital	Level 2 Hospital	Level 3 hospital
Morning	1:4 (+nurse in-charge)	1:4 (+nurse in-charge)	1:5 (+nurse in-charge)
Afternoon/Evening	1:4 (+nurse in-charge)	1:4 (+nurse in-charge)	1:6 (+nurse in-charge)
Night	1:8	1:8	1:10

Where is it applied?

Table 1 The criteria for the nursing fee differentiation policy by nursing staffing ratios of general wards

Classification	Number of patients (or beds) per nurse	Inpatient nursing fees	
		General hospitals	**Hospitals**
Grade 1	< 2.5	Increase of 10% from grade 2	Increase of 10% from grade 2
Grade 2	≤ 2.5 and < 3.0	Increase of 10% from grade 3	Increase of 10% from grade 3
Grade 3	≤ 3.0 and < 3.5	Increase of 15% from grade 4	Increase of 10% from grade 4
Grade 4	≤ 3.5 and < 4.0	Increase of 10% from grade 5	Increase of 10% from grade 5
Grade 5	≤ 4.0 and < 4.5	Increase of 10% from grade 6	Increase of 20% from grade 6
Grade 6	≤ 4.5 and < 6.0	Reference grade	Reference grade
Grade 7	≥ 6.0	Reduction of 2–5% of grade 6	Reduction of 2–5% of grade 6

During the cohort study, **59.8% of the first-applied group** of medical institutions and **65.6% of the second-applied group of medical institutions** improved their nurse staffing ratios. However, only 22.6% of the medical institutions to which the revised calculation method was not applied improved their nurse staffing ratios.

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Where is it applied?

Build Your Nursing Future in British Columbia, Canada

Ratios de patients par soignant : adoption par la commission des affaires sociales de l'Assemblée

PAR ARNAUD JANIN - PUBLIÉ LE 05/12/2024

0 RÉACTIONS   COMMENTER

Article réservé aux abonnés

La proposition de loi (PPL) transpartisane sur l'instauration d'un nombre minimum d'infirmiers et d'aides-soignants par patient hospitalisé a été adoptée sans surprise mercredi 4 décembre par la commission des affaires sociales de l'Assemblée nationale.

C'est dans une ambiance électrique que la commission des Affaires sociales de l'Assemblée nationale a adopté mercredi 4 décembre, quelques heures avant la censure du gouvernement, la proposition de loi relative à l'instauration d'un nombre minimum de soignants par patient hospitalisé au sein des établissements assurant le service public hospitalier.

Crédit photo : ADIL BENAYACHE/SIPA/2409161146

Défendu à l'Assemblée par Guillaume Garot (socialistes et apparentés), ce texte transpartisan a déjà été adopté par le Sénat en première lecture il y a près de deux ans. Les députés espéraient pouvoir présenter le texte en séance publique le 12 décembre. C'était sans compter la censure du gouvernement Barnier, qui rebat totalement les cartes, puisqu'aucun texte ne peut être examiné dans l'Hémicycle sans la présence d'un ministre.
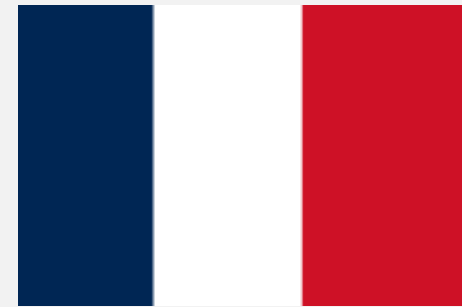
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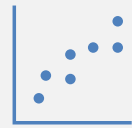
Impact and threshold

Workload measurement

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	Nurse staffing (patients to nurse)		Nurse education (% of nurses with bachelor's degrees)	
	Mean (SD)	Range	Mean (SD)	Range
Belgium	10·8 (2·0)	7·5–15·9	55% (15)	26–86%
England	8·8 (1·5)	5·5–11·5	28% (9)	10–49%
Finland	7·6 (1·4)	5·3–10·6	50% (10)	36–71%
Ireland	6·9 (1·0)	5·4–8·9	58% (12)	35–81%
Netherlands	7·0 (0·8)	5·1–8·1	31% (12)	16–68%
Norway	5·2 (0·8)	3·4–6·7	100% (0)	100–100%
Spain	12·7 (2·0)	9·5–17·9	100% (0)	100–100%
Sweden	7·6 (1·1)	5·4–9·8	54% (12)	27–76%
Switzerland	7·8 (1·3)	4·6–9·8	10% (10)	0–39%
Total	8·3 (2·4)	3·4–17·9	52% (27)	0–100%

Means, SDs, and ranges are estimated from hospital data—eg, the 59 hospitals in Belgium have a mean patient-to-nurse ratio of 10·8, and the patient-to-nurse ratio ranges across those 59 hospitals from 7·5 to 15·9. Similarly, the 31 hospitals in Switzerland have, on average, 10% bachelor's nurses, and the percent of bachelor's nurses ranges across those 31 hospitals from 0% to 39%.

Table 2: Nurse staffing and education in nine European countries

	Partly adjusted models		Fully adjusted model	
	OR (95% CI)	p value	OR (95% CI)	p value
Staffing	1·005 (0·965–1·046)	0·816	1·068 (1·031–1·106)	0·0002
Education	1·000 (0·959–1·044)	0·990	0·929 (0·886–0·973)	0·002

The partly adjusted models estimate the effects of nurse staffing and nurse education separately while controlling for unmeasured differences across countries. The fully adjusted model estimates the effects of nurse staffing and nurse education simultaneously, controlling for unmeasured differences across countries and for the hospital characteristics (bed size, teaching status, technology, and work environment), and patient characteristics (age, sex, admission type, type of surgery, and comorbidities present on admission). OR=odds ratio.

Table 4: Partly and fully adjusted odds ratios showing the effects of nurse staffing and nurse education on 30 day inpatient mortality

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Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., Griffiths, P., Busse, R., Diomidous, M., Kinnunen, J., Kózka, M., Lesaffre, E., McHugh, M. D., Moreno-Casbas, M. T., Rafferty, A. M., Schwendimann, R., Scott, P. A., Tishelman, C., van Achterberg, T., Sermeus, W., & RN4CAST consortium (2014). Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. *Lancet (London, England)*, *383*(9931), 1824–1830. https://doi.org/10.1016/S0140-6736(13)62631-8

More nurses results in better healthcare and costs less

A study in Queensland, Australia, has shown that healthcare outcomes improve when nurses are required to care for fewer patients, and that investing in more nurses pays for itself twice over.

Benefits of decreasing workload by one patient per nurse

Deaths
30-day mortality rates decreased by 7%

Readmissions
7% fewer patients returned to hospital within a week

Length of stay
Patients left hospital 3% faster

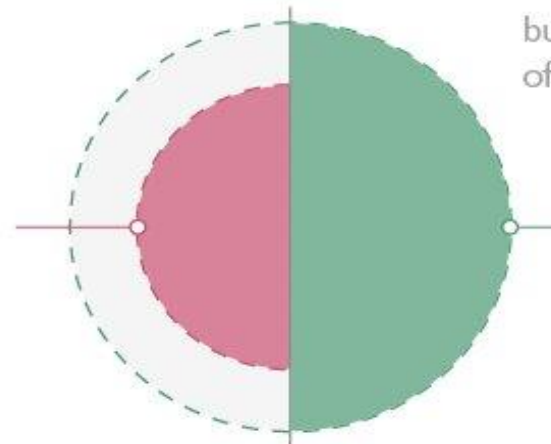## Financial impact of decreasing workload by one patient per nurse

Costs
Hiring 167 nurses to reduce workload by one patient per nurse would cost

AU**$33,000,000** over two years

Savings
Costs to the overall health budget avoided because of reduced readmissions and shorter hospital stays would save

AU**$69,000,000** over two years

More than twice the cost of new hirings

Read the full paper: McHugh MD, Aiken LH, Sloane DM, Windsor C, Douglas C, Yates P. Effects of nurse-to-patient ratio legislation on nurse staffing and patient mortality, readmissions, and length of stay: a prospective study in a panel of hospitals. *The Lancet* 2021; published online 11 May

THE LANCET

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Investing in qualified nurses is profitable and cost-effective

Impact of staffing policies :

Substituting less qualified staff for qualified nurses has not been shown to be cost-effective.

Recommandation :

Prioritise investment in qualified nurses, especially in the face of shortages and low staffing levels.

Griffiths, P., Saville, C., Ball, J., Dall'Ora, C., Meredith, P., Turner, L., & Jones, J. (2023). Costs and cost-effectiveness of improved nurse staffing levels and skill mix in acute hospitals: A systematic review. International journal of nursing studies, 147, 104601. https://doi.org/10.1016/j.ijnurstu.2023.104601

Table 4. Patient-to-Nurse Ratios With High Emotional Exhaustion and Job Dissatisfaction Among Staff Nurses and With Patient Mortality and Failure-to-Rescue*

	Odds Ratio (95% Confidence Interval)					
	Unadjusted	P Value	Adjusted for Nurse or Patient Characteristics	P Value	Adjusted for Nurse or Patient and Hospital Characteristics	P Value
Nurse outcomes						
High emotional exhaustion	1.17 (1.10-1.26)	<.001	1.17 (1.10-1.26)	<.001	1.23 (1.13-1.34)	<.001
Job dissatisfaction	1.11 (1.03-1.19)	.004	1.12 (1.04-1.19)	.001	1.15 (1.07-1.25)	<.001
Patient outcomes						
Mortality	1.14 (1.08-1.19)	<.001	1.09 (1.04-1.13)	<.001	1.07 (1.03-1.12)	<.001
Failure-to-rescue	1.11 (1.06-1.17)	.004	1.09 (1.04-1.13)	.001	1.07 (1.02-1.11)	<.001

*Odds ratios, indicating the risk associated with an increase of 1 patient per nurse, and confidence intervals were derived from robust logistic regression models that accounted for the clustering (and lack of independence) of observations within hospitals. Nurse characteristics were adjusted for sex, experience (years worked as a nurse), type of degree, and type of unit. Patient characteristics were adjusted for the patient's Diagnosis Related Groups, comorbidities, and significant interactions between them. Hospital characteristics were adjusted for high technology, teaching status, and size (number of beds).

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Table 2. Factors associated with burnout risk, intention-to-leave the job - OR [95%IC]

	at high risk of emotional exhaustion	intention-to-leave job
Hospital-level patient-to-nurse ratio		
Quartile 1 - lowest/best PTN [REF]	-	-
Quartile 2	1.18 [0.93-1.50]	**1.37 [1.07-1.77]**
Quartile 3	0.90 [0.67-1.21]	0.94 [0.65-1.37]
Quartile 4 - highest/worst PTN	**1.53 [1.04-2.26]**	**1.46 [1.03-2.05]**

Bruyneel, A., Bouckaert, N., Maertens de Noordhout, C., Detollenaere, J., Kohn, L., Pirson, M., Sermeus, W., & Van den Heede, K. (2023). Association of burnout and intention-to-leave the profession with work environment: A nationwide cross-sectional study among Belgian intensive care nurses after two years of pandemic. *International journal of nursing studies*, *137*, 104385. https://doi.org/10.1016/j.ijnurstu.2022.104385

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ICU workload assessment

n=3377 patients
16 ICUs

Figure 8: Box plots representing the median NAS divided by shift and 24h
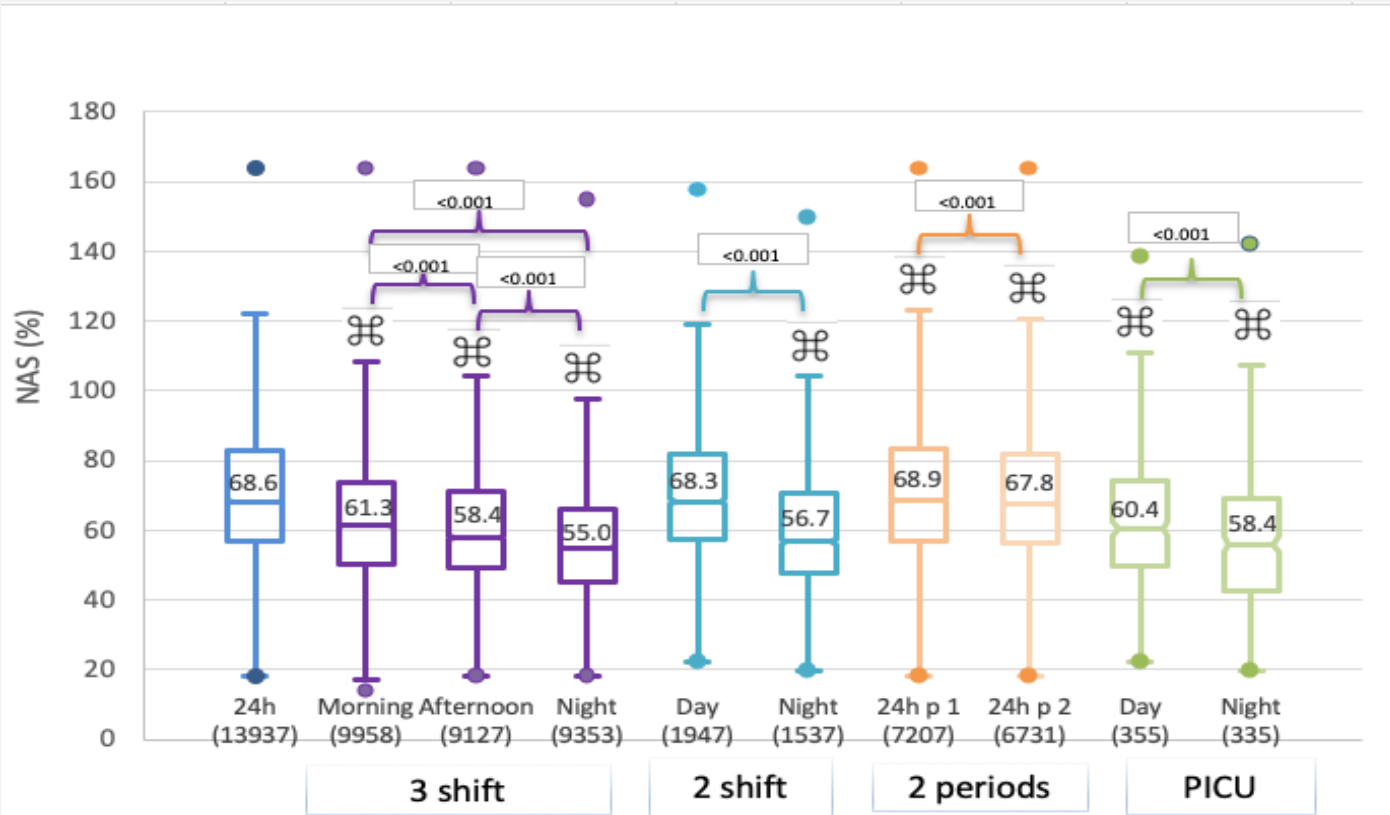
> ➢ N/P ratio of 1/3 in ICU in Belgium
> ➢ N/P ratio of 1/1.5 according to NAS
> ➢ N/P ratio of 1/2 adapted to study occupancy rate

Bruyneel, A., Tack, J., Droguet, M., Maes, J., Wittebole, X., Miranda, D. R., & Pierdomenico, L. D. (2019). Measuring the nursing workload in intensive care with the Nursing Activities Score (NAS): A prospective study in 16 hospitals in Belgium. Journal of critical care, 54, 205–211. https://doi.org/10.1016/j.jcrc.2019.08.032

Care Intensity per Patient Day (CIPPD) in Belgium

Van den Heede K, Bruyneel L, Beeckmans D, Boon N, Bouckaert N, Cornelis J, Dossche D, Van de Voorde C, Sermeus W. Safe nurse staffing levels in acute hospitals. Health Services Research (HSR) Brussels: Belgian Health Care Knowledge Centre (KCE). 2019. KCE Reports 325. D/2019/10.273/75.
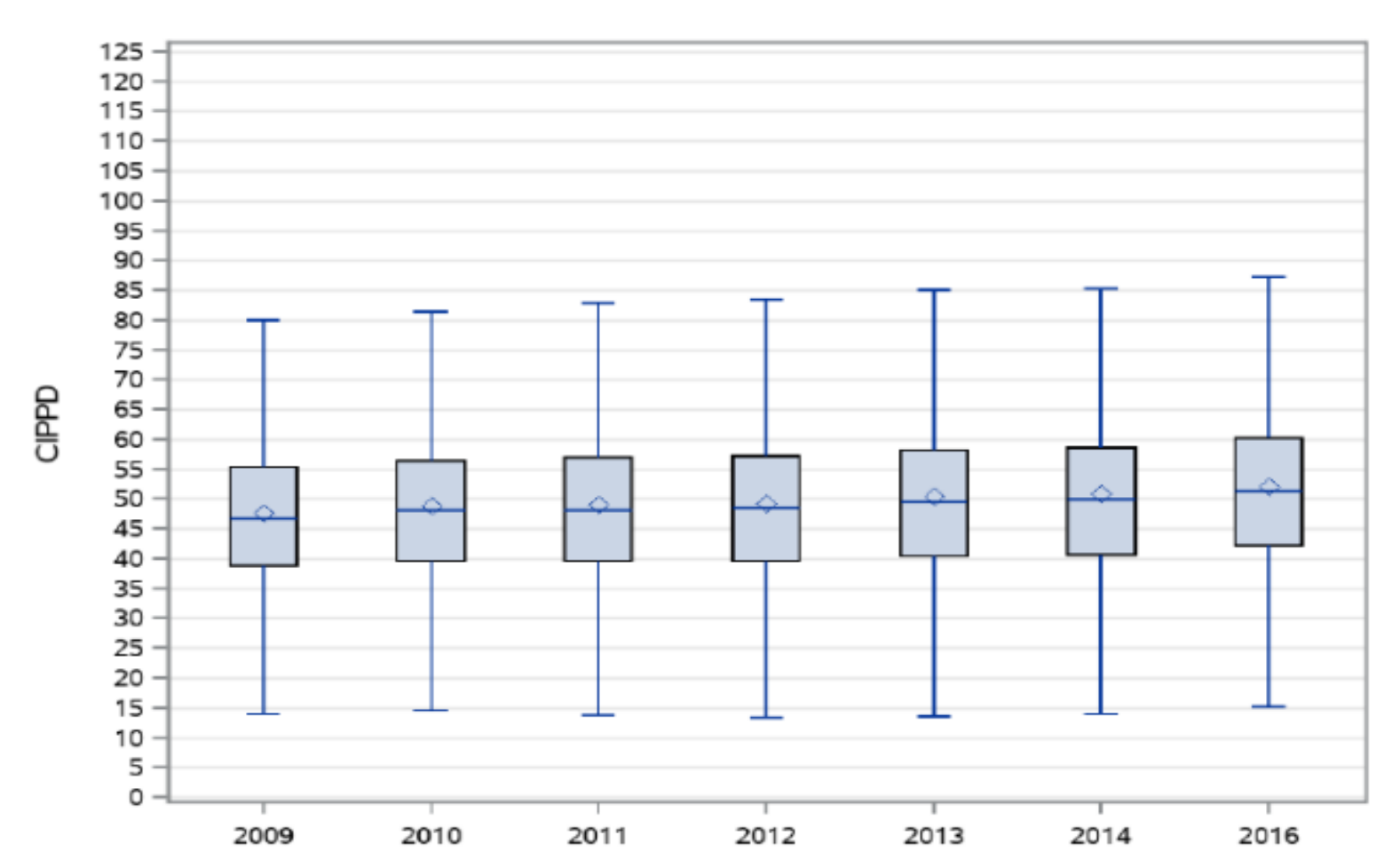
Care Intensity per Patient Day (CIPPD) per ward type
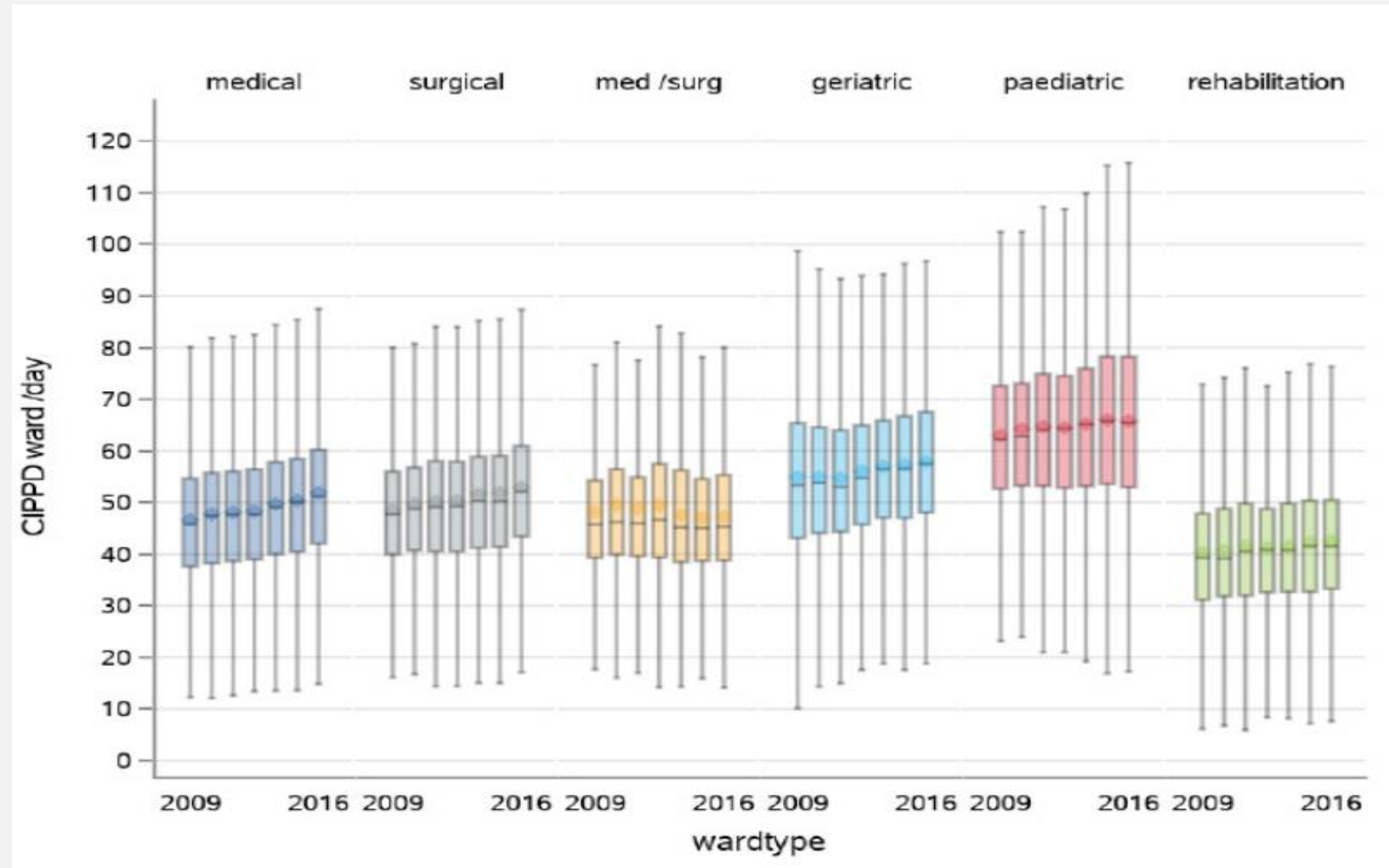
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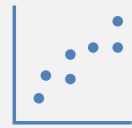
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Figure 1 **Density of nursing personnel per 10 000 population in 2018**

Legend: < 10 | 10 to 19 | 20 to 29 | 30 to 39 | 40 to 49 | 50 to 74 | 75 to 99 | 100 + | not applicable | not reported

*Includes nursing professionals and associates.
Source: National Health Workforce Accounts, World Health Organization 2019. Latest available data over the period 2013–2018.

World Health Organization. (2020). State of the world's nursing 2020: investing in education, jobs and leadership.

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RECOMMANDATION 1

Establish **legally** binding patient/nurse ratios that cannot be exceeded.

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RECOMMANDATION 2

To improve patient safety in hospitals and make the **working environment attractive** for nurses, the patient/nurse ratio needs to be reduced.

Environment work

- Nursing foudations for quality of care
- Leardership, ability and support
- Collegial Nurse-Physician relations
- Nurse participation Hospital affairs
- Staffing and ressources adequacy

Global Issues in Nursing & Health Care

- Structural Empowerment
- Transformational Leadership
- Empirical Outcomes
- Exemplary Professional Practice
- New Knowledge, Innovations, & Improvements

n=6655

Bruyneel, A., Dello, S., Dauvergne, J. E., Kohnen, D., & Sermeus, W. (2024). Prevalence and risk factors for burnout, missed nursing care, and intention-to-leave the job among intensive care unit and general ward nurses: A cross-sectional study across six European countries in the COVID-19 era. Intensive & critical care nursing, 86, 103885. Advance online publication. https://doi.org/10.1016/j.iccn.2024.103885

Factors	High risk of Burnout	ORa [CI95%]	Unfinished Nursing Care	IRRa [CI95%]	Intention to Leave Job	ORa [CI95%]
Nurse's workplace						
General ward nurses (ref)						
ICU nurses		1.07 [0.92-1.24]		0.77 [0.72-0.86]***		0.88 [0.76-1.02]
Nurse Working Environment - composite score						
Quartile 1 - worst score						
Quartile 2		0.48 [0.41-0.56]***		0.81 [0.76-0.86]***		0.41 [0.36-0.48]***
Quartile 3		0.33 [0.28-0.39]***		0.71 [0.66-0.77]***		0.24 [0.21-0.29]***
Quartile 4 - best score		0.17 [0.14-0.20]***		0.61 [0.56-0.65]***		0.16 [0.13-0.19]***
Workload - composite score						
Quartile 1 - best score (ref)						
Quartile 2		1.96 [1.50-2.56]***		1.36 [1.25-1.48]***		1.24 [1.00-1.55]*
Quartile 3		4.76 [3.77-6.08]***		1.71 [1.58-1.85]***		1.89 [1.56-2.30]***
Quartile 4 - worst score		8.82 [6.95-11.30]***		2.30 [2.11-2.48]***		3.18 [2.62-3.89]***
Country						
Belgium (ref)						
Germany		1.43 [1.16-1.78]**		0.99 [0.91-1.08]		0.99 [0.84-1.18]
Ireland		3.01 [2.46-3.70]***		0.81 [0.74-0.87]***		1.34 [1.11-1.62]*
Scandinavia		1.25 [0.95-1.62]		0.61 [0.55-0.68]***		0.92 [0.73-1.15]
United Kingdom		3.67 [3.05-4.43]***		0.79 [0.73-0.85]***		1.19 [1.01-1.40]*

Bruyneel, A., Dello, S., Dauvergne, J. E., Kohnen, D., & Sermeus, W. (2024). Prevalence and risk factors for burnout, missed nursing care, and intention-to-leave the job among intensive care unit and general ward nurses: A cross-sectional study across six European countries in the COVID-19 era. Intensive & critical care nursing, 86, 103885. Advance online publication. https://doi.org/10.1016/j.iccn.2024.103885
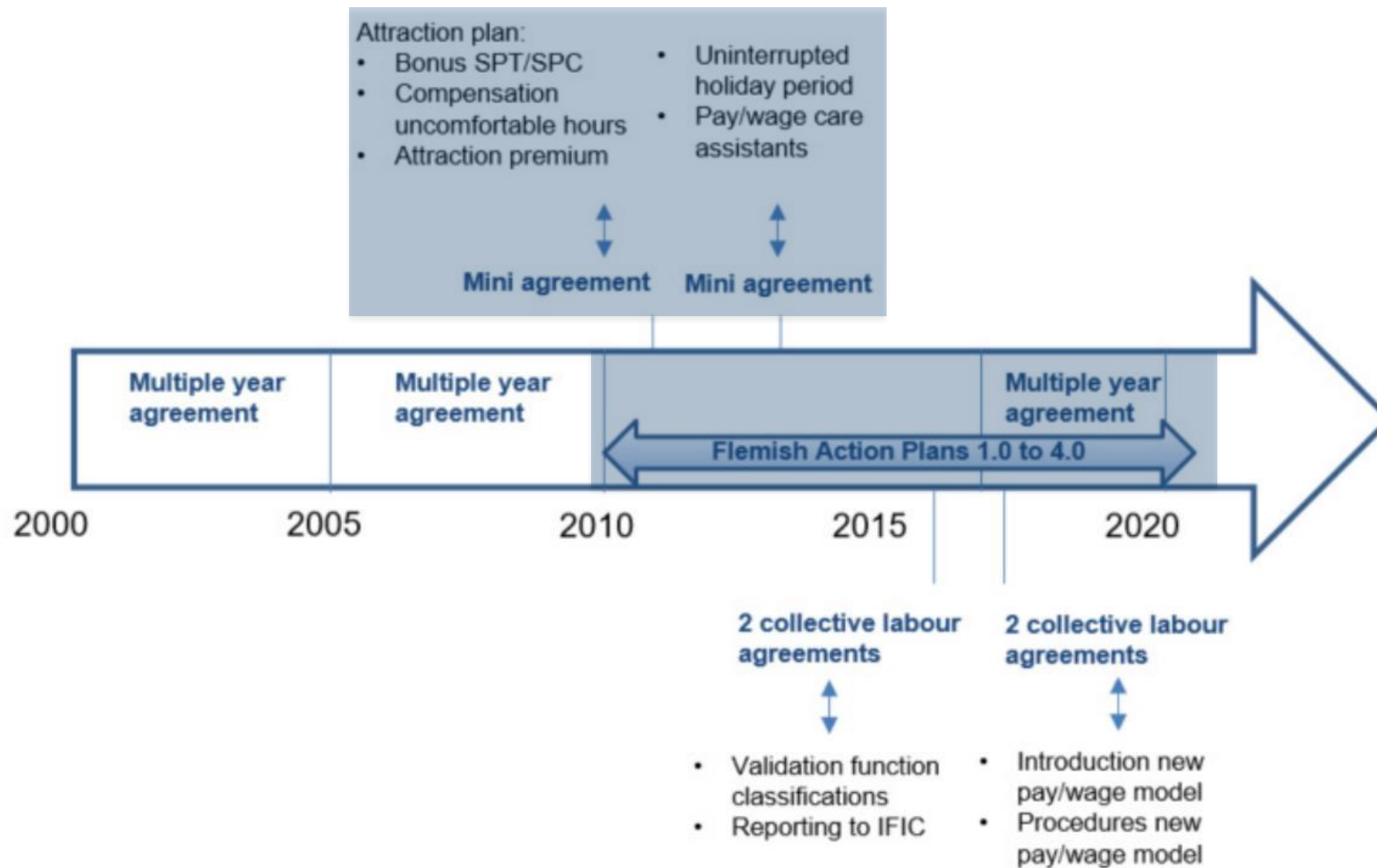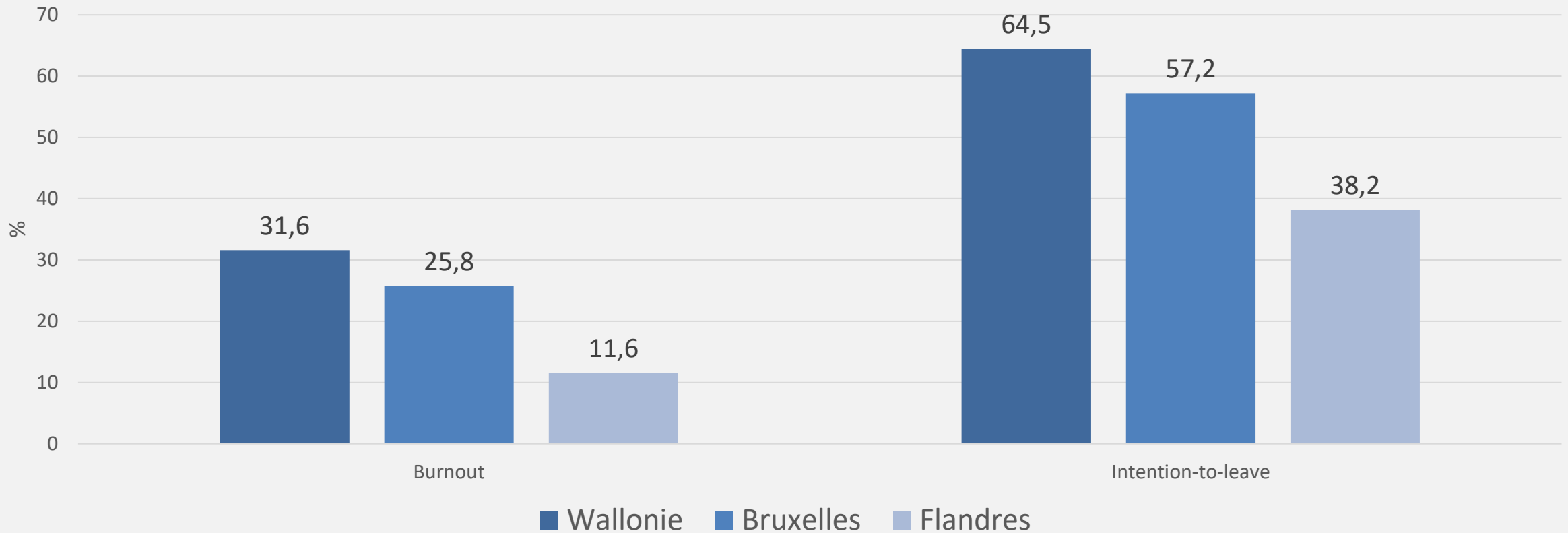
RECOMMANDATION 3

Draw up a comprehensive **multi-year plan** to further increase the attractiveness of the nursing profession in the medium and long term.

Figure 5 – Chronological overview of attraction and retention measures

Region	ORa [95%CI]
Flandres	Reference
Brussels	2.20 [1.37–3.52]
Wallonia	2.61 [1.77–3.85]

Region	ORa [95%CI]
Flandres	Reference
Brussels	1.79 [1.36–2.35]
Wallonia	1.71 [1.25–2.34]

Bruyneel, A., Bouckaert, N., Maertens de Noordhout, C., Detollenaere, J., Kohn, L., Pirson, M., Sermeus, W., & Van den Heede, K. (2023). Association of burnout and intention-to-leave the profession with work environment: A nationwide cross-sectional study among Belgian intensive care nurses after two years of pandemic. *International journal of nursing studies*, *137*, 104385. https://doi.org/10.1016/j.ijnurstu.2022.104385
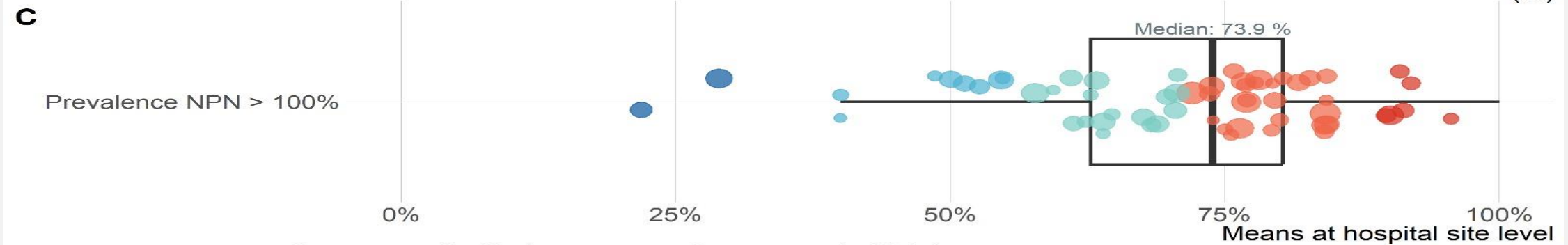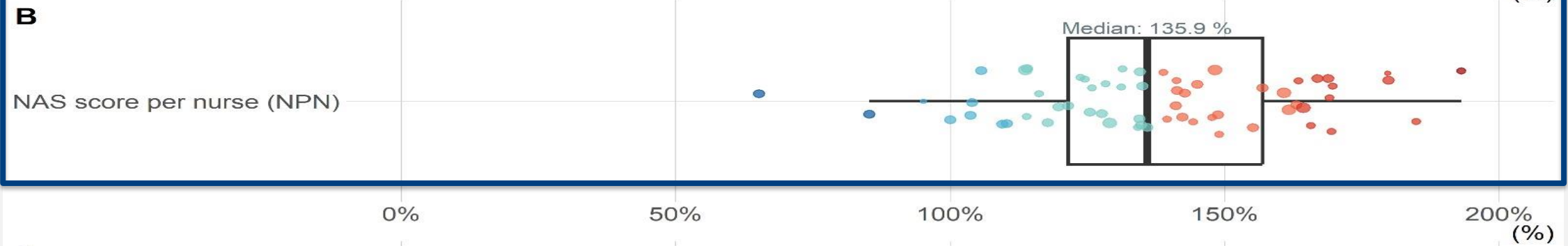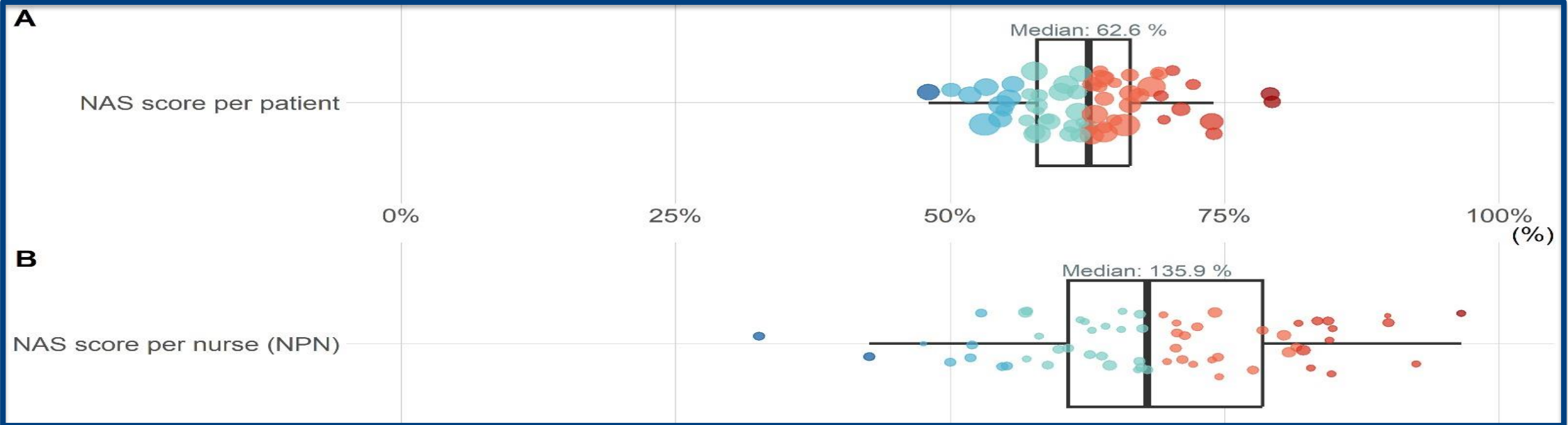
RECOMMANDATION 4

The **funding** can be made up of the following components: a basic budget to obtain the minimum safe ratios that have been set, a supplementary budget determined according to the intensity of nursing care

Figure 13 – Average Care Intensity per Patient Day (CIPPD) at the hospital level (2016)

A

Median: 62.6 %

NAS score per patient

0% 25% 50% 75% 100%
(%)

B

Median: 135.9 %

NAS score per nurse (NPN)

0% 50% 100% 150% 200%
(%)

C

Median: 73.9 %

Prevalence NPN > 100%

0% 25% 50% 75% 100%

Means at hospital site level

Standard deviation:
- Between 0 and 1 SD above mean
- Between 0 and 1 SD below mean
- Between 1 and 2 SD above mean
- Between 1 and 2 SD below mean
- More than 2 SD above mean
- More than 2 SD below mean

Number:
- 25 • 75 ● 300
- 50 • 100 ● 500

Article under review

61 ICUs in France

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RECOMMANDATION 6

This reflection should include an assessment of the role and responsibilities of **non-nursing staff**. Non-nursing staff should complement (not replace) nurses.

Reform of the nursing profession

Table 9 – Percentage of nurses who reported "Sometimes / often" for tasks below skill level during the last shift, at hospital site and regional level

Non-nursing tasks sometimes/often performed (Percent) the lower the better	Average over participating hospital sites				Distribution score hospital sites					Boxplot (hospital sites)
	National	Flanders	Wallonia	Brussels	Min	P25	P50	P75	Max	
Delivering and retrieving food trays	63.1%	61.9%	65.6%	61.5%	12.5%	56.3%	65.0%	70.0%	91.7%	
Transport of blood samples	56.3%	56.1%	62.8% [B]	39.3% [W]	7.9%	41.7%	56.7%	73.3%	100.0%	
Transporting of patients	36.5%	40.5%	32.1%	31.6%	6.3%	25.0%	36.6%	50.0%	83.3%	
Clean patient rooms and equipment	80.9%	92.8% [B,W]	63.6% [F,B]	78.2% [F,W]	8.0%	70.6%	88.2%	95.2%	100.0%	
Ordering and/or storing medication	89.4%	94.5% [B,W]	82.9% [F]	85.8% [F]	53.8%	82.4%	92.1%	97.9%	100.0%	
Obtain supplies or equipment	69.9%	60.2% [B,W]	80.1% [F]	83.3% [F]	7.7%	59.2%	70.0%	83.3%	100.0%	
Clerical duties	99.6%	99.7%	99.5%	99.6%	90.9%	100.0%	100.0%	100.0%	100.0%	

Note: significant differences at p=0.05 (Tukey's pairwise comparison) between regional averages are indicated by superscripts
[B] = differs from Brussels, [F] = differs from Flanders, [W] = differs from Wallonia

REVIEW   **Open Access**

The association between multi-disciplinary staffing levels and mortality in acute hospitals: a systematic review

Chiara Dall'Ora[1,2]*, Bruna Rubbo[1], Christina Saville[1], Lesley Turner[1], Jane Ball[1,2], Cheska Ball[2,3] and Peter Griffiths[1,2]

Abstract

Objectives Health systems worldwide are faced with the challenge of adequately staffing their hospital services. Much of the current research and subsequent policy has been focusing on nurse staffing and minimum ratios to ensure quality and safety of patient care. Nonetheless, nurses are not the only profession who interact with patients, and, therefore, not the only professional group who has the potential to influence the outcomes of patients while in hospital. We aimed to synthesise the evidence on the relationship between multi-disciplinary staffing levels in hospital including nursing, medical and allied health professionals and the risk of death.

Methods Systematic review. We searched Embase, Medline, CINAHL, and the Cochrane Library for quantitative or mixed methods studies with a quantitative component exploring the association between multi-disciplinary hospital staffing levels and mortality.

Results We included 12 studies. Hospitals with more physicians and registered nurses had lower mortality rates. Higher levels of nursing assistants were associated with higher patient mortality. Only two studies included other health professionals, providing scant evidence about their effect.

Conclusions Pathways for allied health professionals such as physiotherapists, occupational therapists, dietitians, pharmacists, to impact safety and other patient outcomes are plausible and should be explored in future studies.

Keywords Staffing, Hospital mortality, Workforce

Dall'Ora, C., Rubbo, B., Saville, C., Turner, L., Ball, J., Ball, C., & Griffiths, P. (2023). The association between multi-disciplinary staffing levels and mortality in acute hospitals: a systematic review. *Human resources for health*, *21*(1), 30. https://doi.org/10.1186/s12960-023-00817-5

RECOMMANDATION 7

Organize campaigns to improve **the image** of the nursing profession

Students wanting to become a **nurse**
As % of respondents interested in the nursing profession

● 2018   ■ 2022

Country	2022
Japan 🇯🇵	7.2%
United States 🇺🇸	5.5%
Norway 🇳🇴	3.9%
Australia 🇦🇺	3.8%
Netherlands 🇳🇱	3.3%
France 🇫🇷	3.1%
Canada 🇨🇦	3.1%
Germany 🇩🇪	2.7%
OECD 🌐	2.1%
Ireland 🇮🇪	2.0%
Czechia 🇨🇿	2.0%
Belgium 🇧🇪	2.0%
Denmark 🇩🇰	1.9%
Finland 🇫🇮	1.9%
United Kingdom 🇬🇧	1.6%
Hungary 🇭🇺	0.6%
Poland 🇵🇱	0.2%
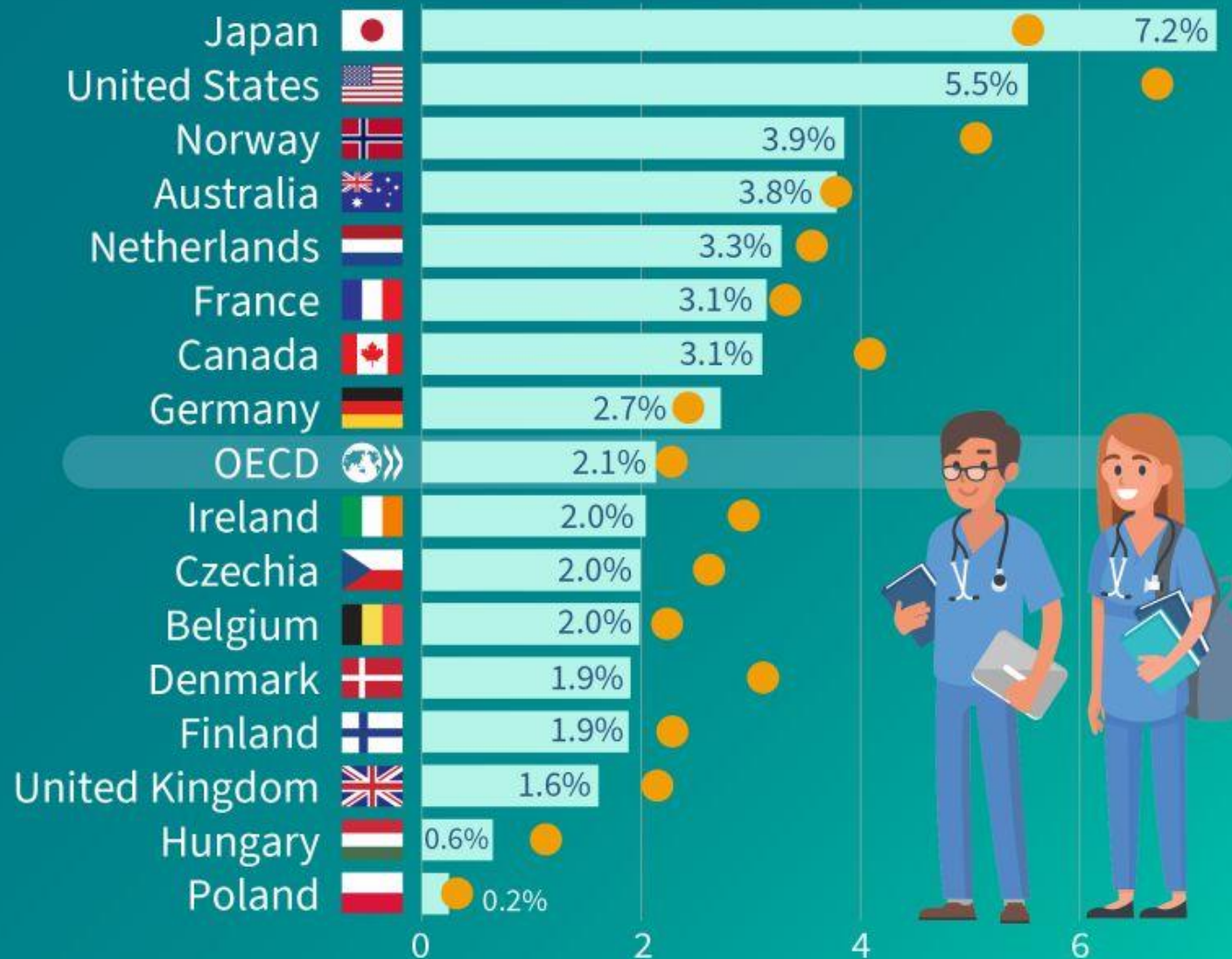
Note: 15-year-old adolescents were asked: "What kind of job do you expect to have when you are about 30 years old?" in PISA 20218 and 2022 surveys.
Source: OECD, PISA 2018 and 2022 Database.

OECD

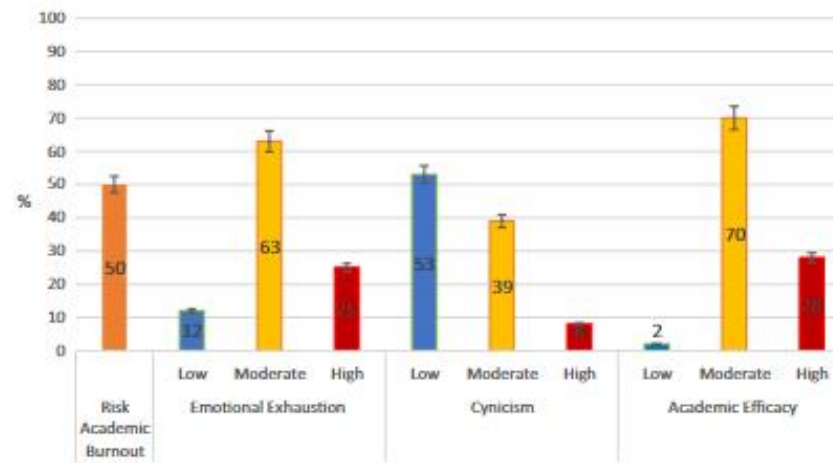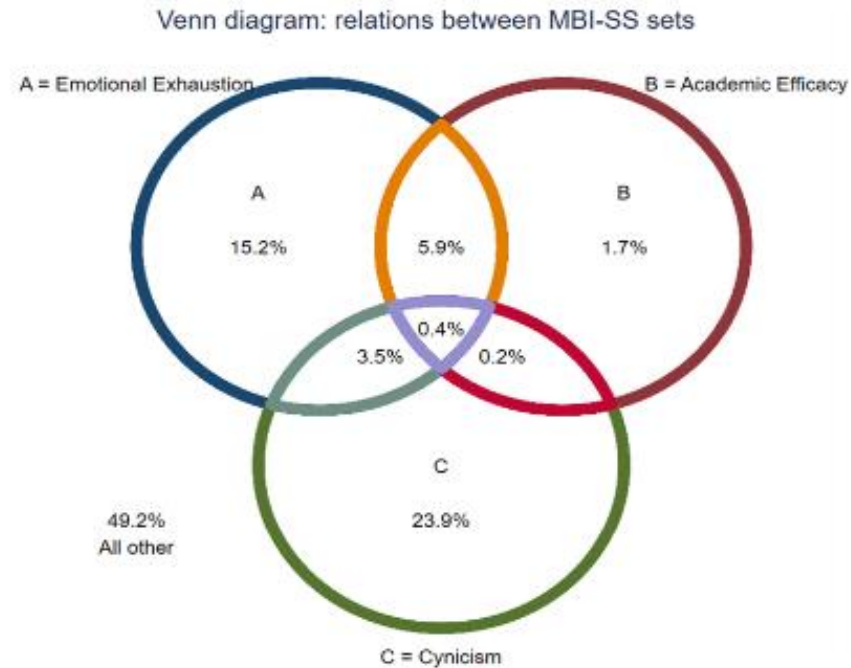FIGURE 1 Prevalence of academic burnout risk, overall and according to dimension of MBI-SS

n= 2275

FIGURE 2 Proportion of students who scored high in 1, 2 or 3 dimensions of MBI-SS

Venn diagram: relations between MBI-SS sets

Second wave of the COVID-19 pandemic between 16 November 2020, and 9 December 2020.

Baudewyns, V., Bruyneel, A., Smith, P., Servotte, J. C., & Dancot, J. (2023). Prevalence and factors associated with academic burnout risk among nursing and midwifery students during the COVID-19 pandemic: A cross-sectional study. *Nursing open*, *10*(5), 3232–3242. https://doi.org/10.1002/nop2.1575

Presentation plan

Introduction Impact and threshold Workload measurement Solutions **Conclusions**

Framework for action on the health and care workforce in the WHO European Region 2023–2030

INVEST
- Increase public investment and optimise use of funds
- Make the economic and social case for investing in the health and care workforce

BUILD SUPPLY
- Modernise education and training
- Strengthen continuous professional development
- Build digital health competencies

RETAIN & RECRUIT
- Improve working conditions and ensure fair remuneration
- Safeguard health and well-being
- Ensure policies that address gender inequality and have zero tolerance for abuse and violence
- Attract young students
- Recruit and retain in rural and underserved areas
- Address outmigration; ethical recruitment

OPTIMIZE PERFORMANCE
- Redefine teams and skill mix
- Improve interactions with patients
- Promote appropriate use of digital technologies
- Reconfigure services to be more efficient

PLAN
- Plan and forecast needs
- Adopt intersectoral planning approach
- Strengthen capacity of HRH units
- Regulate education, service delivery and professions
- Strengthen HRH information systems

Adopted by 53 Member States at WHO Regional Committee for Europe 73, October 2023, Astana

Thank you for your attention!

› Any questions ?