

# Timetrends in Medical Practice Variation and the Influence of Public Reporting.

Femke Atsma, *Gert P. Westert*, Stef Groenewoud, John E Wennberg,  
Catherine Gerard, Phil Dasilva, David C. Goodman

# Background and research questions

- What we know: place matters in healthcare utilisation!
- We don't know: does practice variation decrease over time?
- Can we understand this: what are the drivers of change?
- What is the role of public reporting?
- Do we need more (Yes, we need more)



Health & Place 10 (2004) 215–220

---

---

HEALTH  
& PLACE

---

---

[www.elsevier.com/locate/healthplace](http://www.elsevier.com/locate/healthplace)

## Medical practice variations in hospital care; time trends of a spatial phenomenon

G.P. Westert<sup>a,\*</sup>, P.P. Groenewegen<sup>b</sup>, H.C. Boshuizen<sup>a</sup>, P.M.M. Spreeuwenberg<sup>b</sup>,  
M.P.M. Steultjens<sup>b</sup>

<sup>a</sup> *National Institute for Public Health and the Environment (RIVM), P.O. Box 1, Bilthoven 3720 BA, Netherlands*

<sup>b</sup> *Netherlands Institute for Health Services Research (Nivel), Netherlands*

Received 12 July 2002; received in revised form 3 January 2003; accepted 9 July 2003

# Hospital discharge data

- No public reporting era: 80s and 90s
- Guideline development/ EBM era
- Hypothesis: “contextual pressure steers doctors towards rationalisation”
- Twelve high volume discharge diagnoses
- High/low regions over time consistent
- Need and supply variation stable over time

Medical discharge diagnosis (ICD9 code) or surgical procedure

Breast cancer (ICD 174)  
COPD (ICD 490–492, 495 and 496)  
Coronary heart disease (ICD410–414)  
Diabetes mellitus (ICD 250)  
Lung cancer (ICD 162)  
Osteoarthritis (ICD 715)  
Pneumonia (ICD 480–486)  
Rheumatoid arthritis (ICD 714)  
Stroke (ICD430–438)  
Appendectomy  
Caesarean section  
Hip replacement

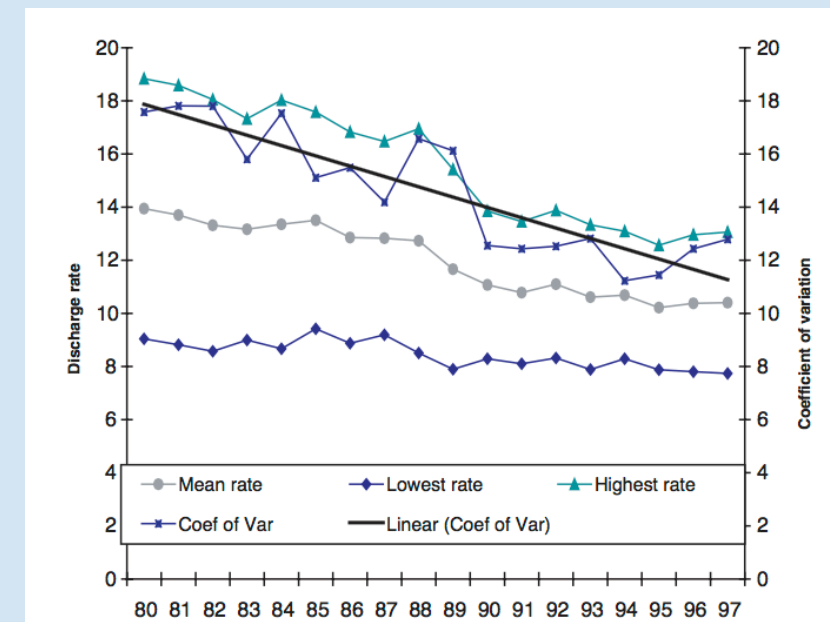


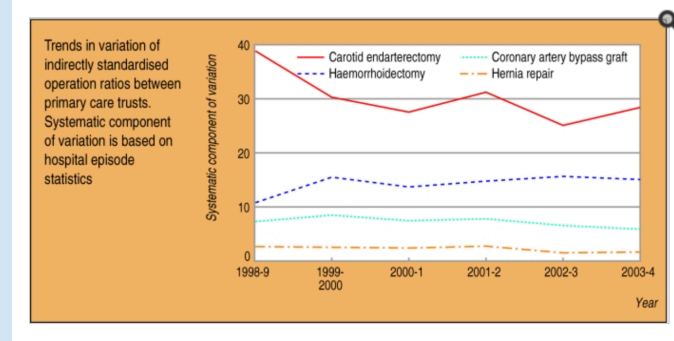
Fig. 2. Regional variation of hospital discharges per 10,000 population-at-risk for appendectomy between 1980 and 1997.

A decline in small area variation in medical procedures might be interpreted within a framework of the increasing evidence base of medical practice. The international literature on changes over time in small area variation is scarce. The few studies we traced, give the following insights. Firstly, feedback of information comparing performances among neighbouring areas enhances diffusion of state-of-the-art opinion and promote greater uniformity in decision making (Wennberg et al., 1977). In later studies it is concluded that downward trends in practice variation caused by feedback to physicians is often temporary and practice style variations are difficult to change (Andersen and Mooney, 1990; Eddy, 1984). Secondly, differences in phase of diffusion of medical knowledge or new techniques lead to spatial variation in medical practice (Sejr et al., 1991; Lu-Yao and Greenberg, 1994; Katz et al., 1996; Chan et al., 1997). Thirdly, the existing studies used very limited time intervals or only a few number of time points.

Health & Place, 2004, Westert et al

BMJ 2005, Aylin and colleagues (16) showed reduced variation in surgical rates between Primary Care Trusts in England during the period from 1998 to 2003, but conclude “the use of surgical procedures still varies widely”.

Figure 1



# Next step: 15 year later ...

- World is filled with *national* guidelines, but *local* practices are dominant and followed
- From stimulation to irritation: *public reporting*
- Any recent timetrend studies in the literature? No
- WIC colleagues were asked to share cases/ examples,
- *To built evidence: can it be done, and how?*
- **New Zealand, The Netherlands**

# New Zealand:

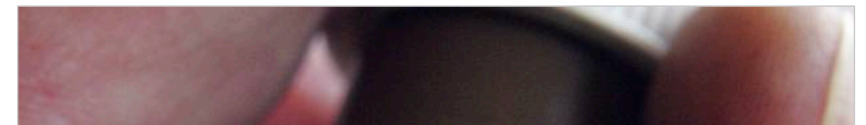


- By 2014, rising use of opioids and optimal prescribing was becoming of increasing concern in New Zealand
- HQSC released an Atlas of Health Care Variation to compare rates of community dispensed opioids by DHB
- Before data were publicly disclosed a draft version was sent to all DHB's
- Newspapers in the *Wairarapa* region immediately picked up the high prescribing rates
- ...'burning platform' for the local PHO to act

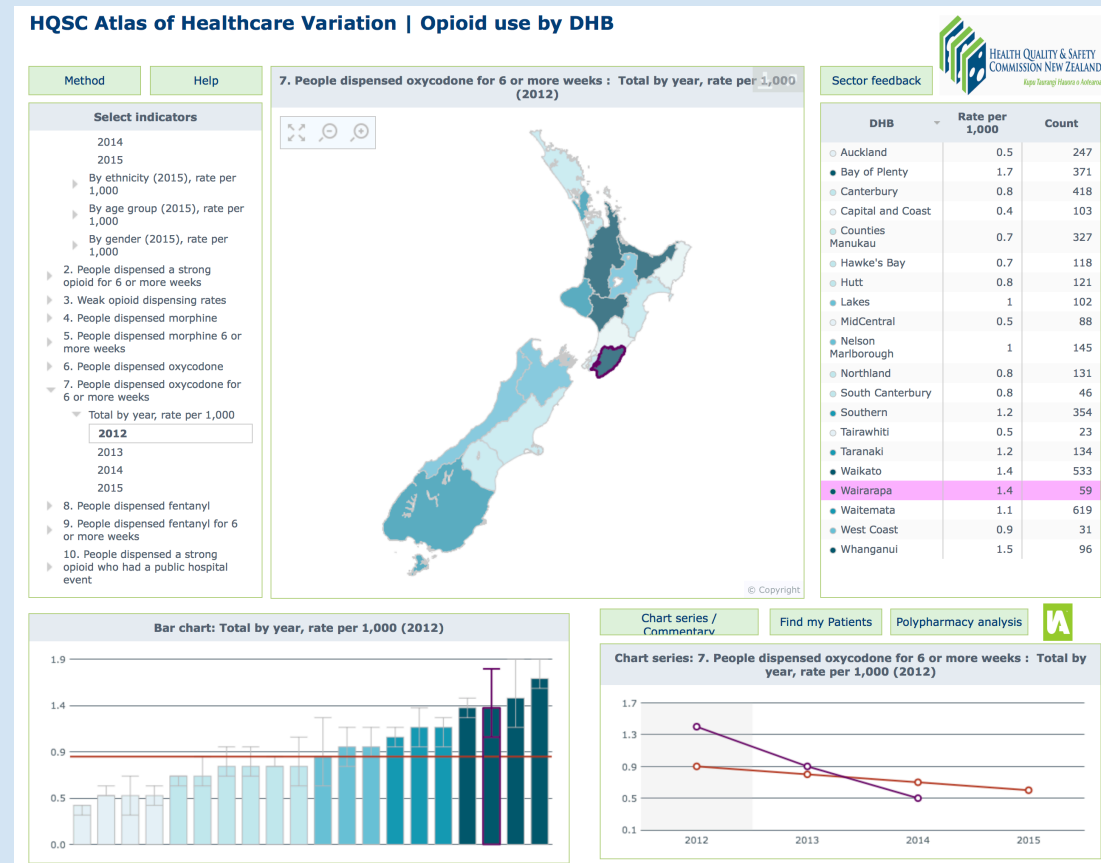
Wairarapa has NZ's highest opioid use:  
Study under scrutiny

PIERS FULLER

Last updated 16:20, April 15 2015



- The PHO formed a team and obtained data from MoH and local practice-level data to better understand their population taking opioids: by practice, by prescriber, by condition, by age and by ethnicity.

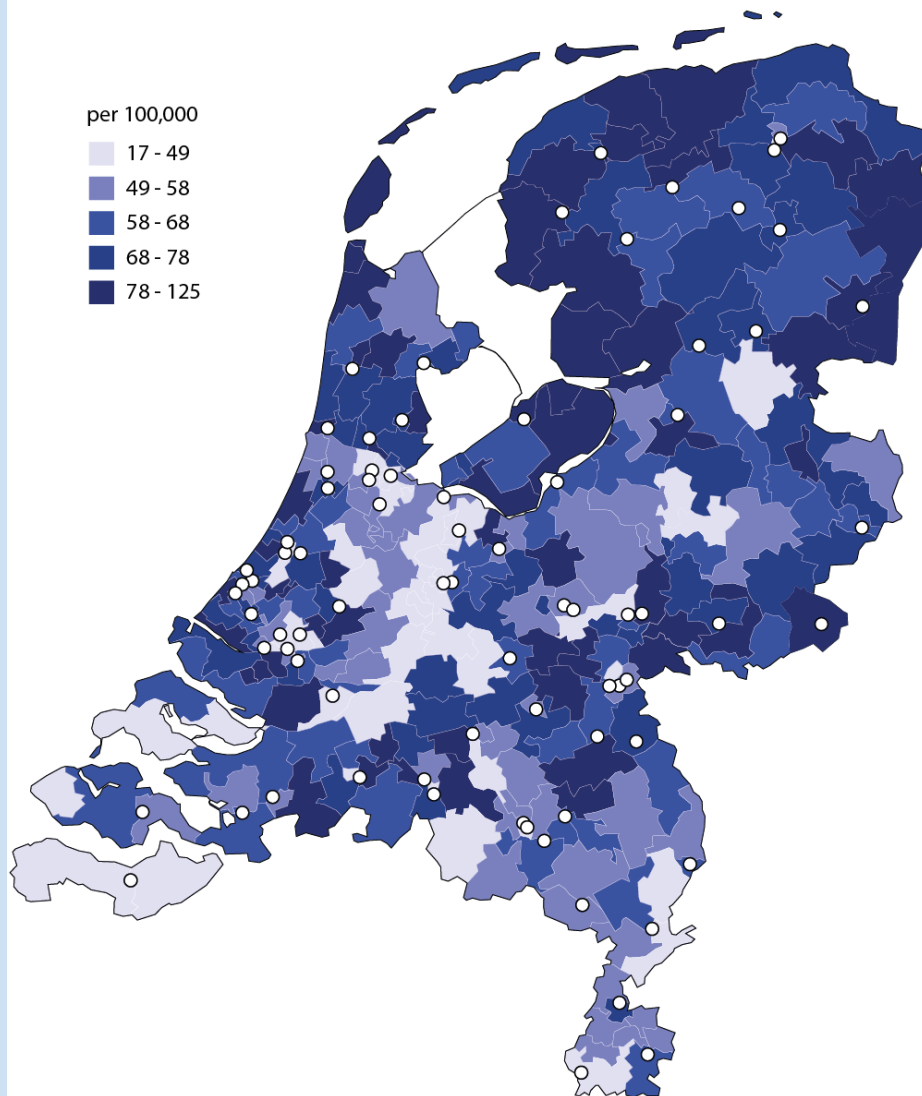




# The Netherlands

- Reducing regional variation in herniated disc surgery
- Randomized controlled trials have shown that early surgery in comparison to conservative treatment may result in better one year outcomes but not in long-term outcomes
- Despite convincing evidence that a conservative approach is good medical practice, surgery is often seen as the best option in daily practice, resulting in a substantial geographical variation as reported in the USA and the Netherlands
- In 2011, regional and hospital practice variation in herniated disc surgery data were made public for the first time.

Figure 1. Lumbar disc surgeries, 2011

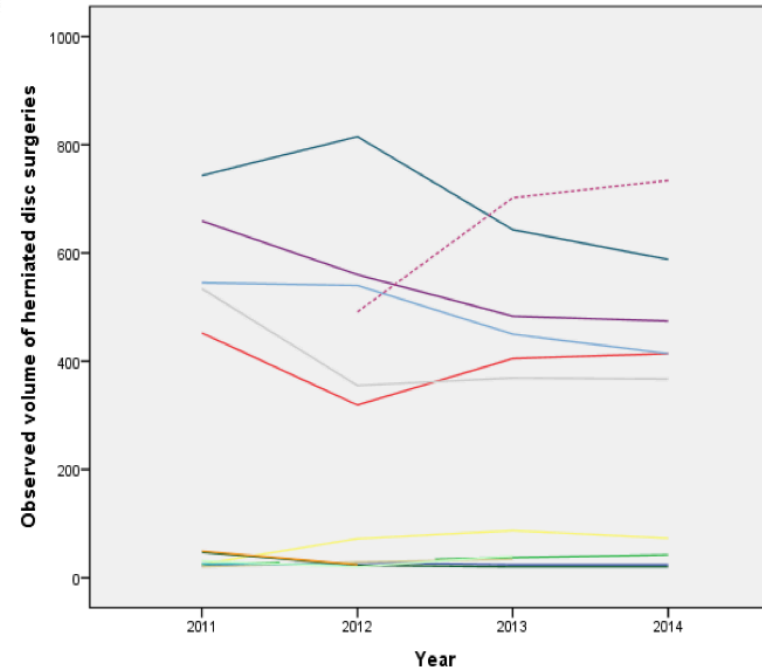
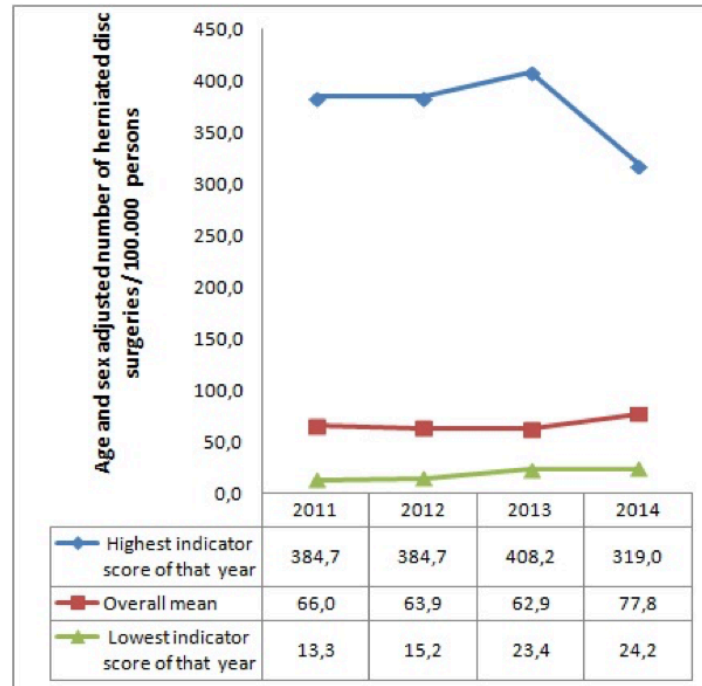


- In 2013 The Netherlands adopted the Choosing Wisely (CW) campaign, and surgeons agreed on a set of 'wise choices' in the treatment of herniated discs, that direct towards conservative treatment.
- It is too early now to assess the full impact of CW on volume and practice variation in herniated disc surgery, but the hypothesis is that it reduce variation, but also total volume of surgical procedures in HNP.

# Less variation, same volume

Figure 1a Trends in age and sex adjusted number of herniated disc surgeries/ 100.000 persons, 2011-2014, Netherlands.

Figure 1b Observed volumes of individual hospitals with high and low volume of herniated disc surgeries, 2011-2014, Netherlands.



# Take home messages

- Public reporting is needed, but not enough
- Professionals need to speak out: which rate is right?
- Quality Improvement Cycles are needed to get the job done

• PLEASE SHARE EXAMPLES

[gert.westert@radboudumc.nl](mailto:gert.westert@radboudumc.nl)

## Improvement cycle: how to reduce variation?

