European Society of Anaesthesiology and Intensive Care

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PANDOS ESAIC Research Group
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PANDOS

An Observational study on **Pain AND Opioids after Surgery** in Europe

For the PANDOS group
Prof. Patrice Forget

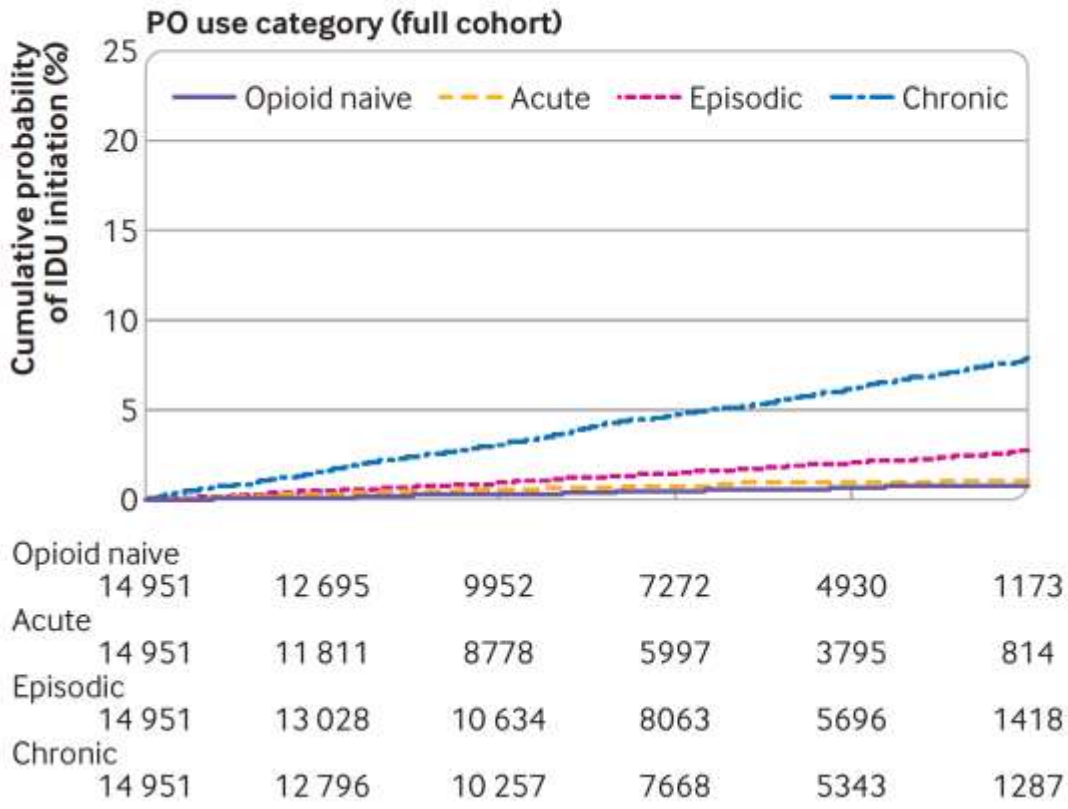
1495 UNIVERSITY OF ABERDEEN

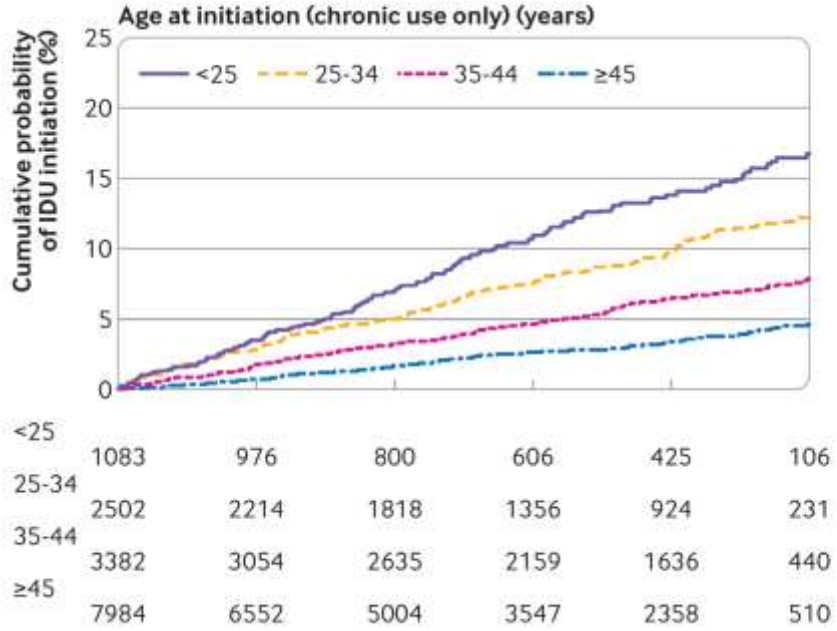
NHS Grampian

Aberdeen Anaesthesia

Prescription opioid treatment for non-cancer pain and initiation of injection drug use: large retrospective cohort study

thebmj | *BMJ* 2021;375:e066965 | doi: 10.1136/bmj-2021-066965





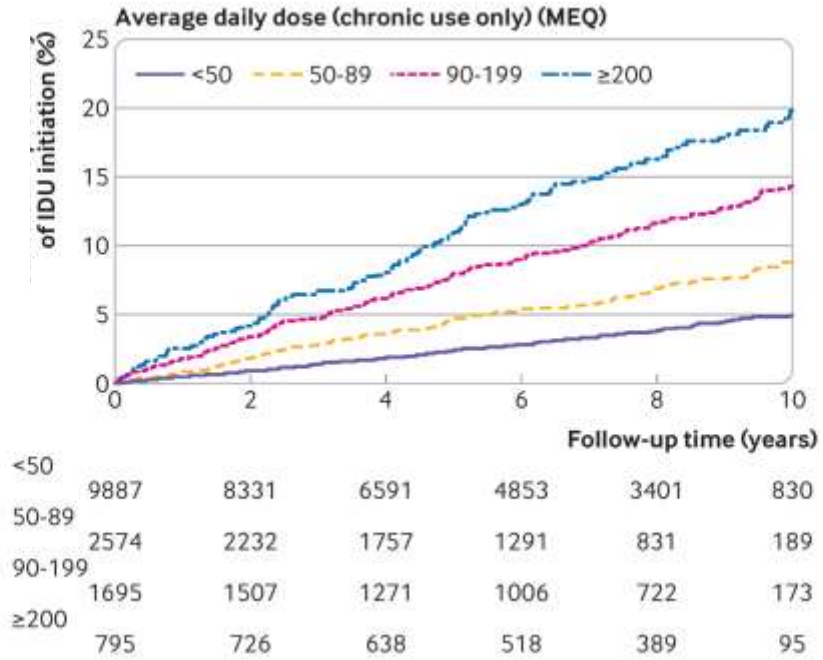


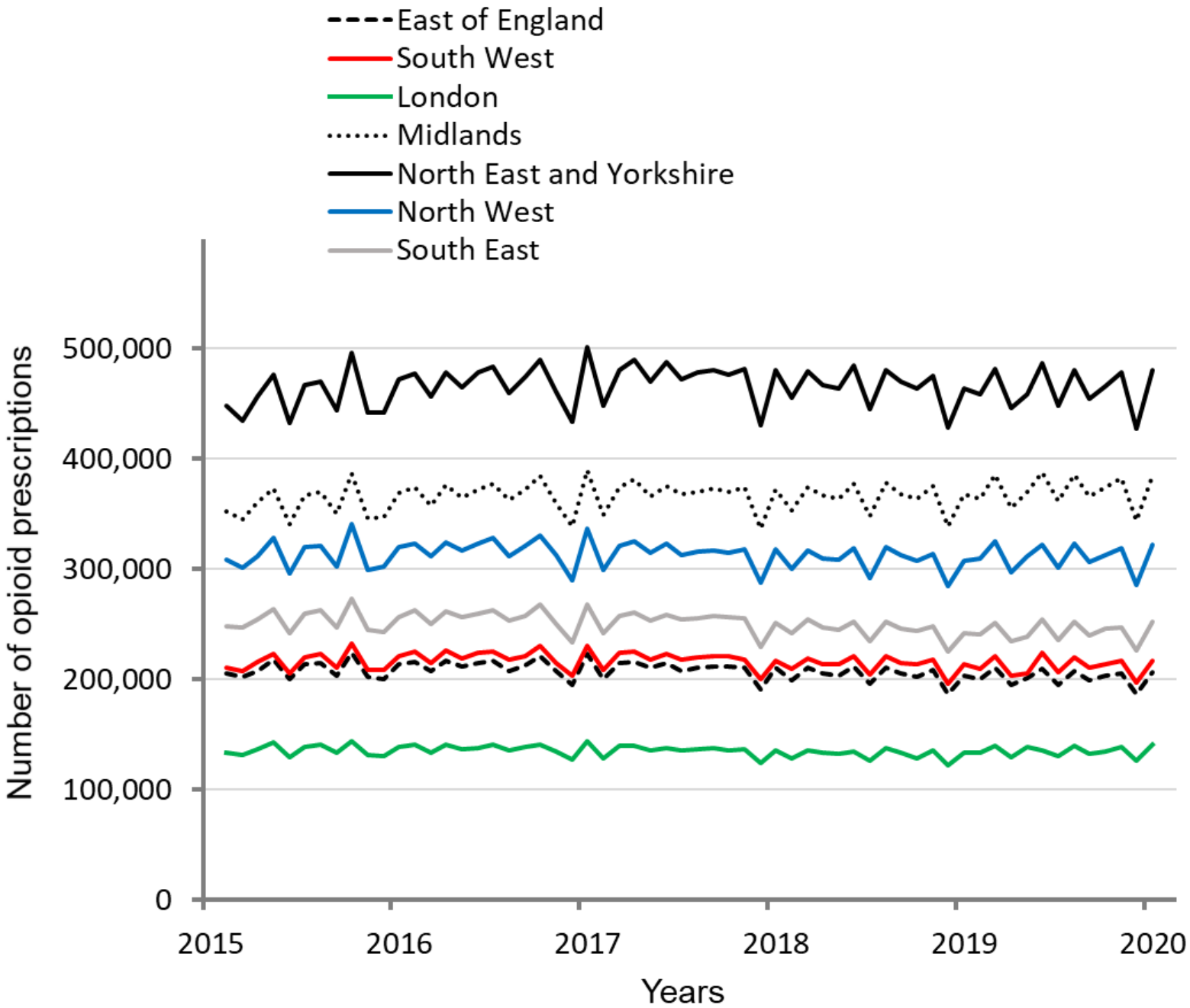
Fig 2 | Cumulative incidence of injection drug use initiation by prescription opioid use category, age at initiation of chronic episode (chronic use category only), and average daily dose of chronic episode (chronic use category only). PO=prescription opioid; MEQ=morphine equivalents; IDU=injection drug use. See methods for more details on opioid use categories. Average daily dose calculated as the cumulative morphine equivalents dispensed during episode divided by number of episode days covered by drug supply

	2004–06	2014–16	% change		2004–06	2014–16	% change
Albania	58	268	359.8	Italy	1,407	4,359	209.8
Andorra	1,281	3,217	151.1	Latvia	675	1,652	144.7
Austria	9,361	20,180	115.6	Lithuania	686	1,360	98.2
Belarus	36	337	839.9	Luxembourg	4,819	4,584	−4.9
Belgium	12,450	14,892	19.6	Malta	317	492	55.5
Bosnia and Herzegovina	27	718	2,547.10	Montenegro	0	1,706	—
Bulgaria	354	532	50.4	Netherlands	4,635	12,198	163.2
Croatia	1,396	1,815	30	Norway	5,469	9,658	76.6
Cyprus	429	1,885	339.8	Poland	1,357	1,840	35.6
Czech Republic	1,654	4,614	179	Portugal	1,701	3,596	111.4
Denmark	9,915	12,166	22.7	Romania	39	692	1662.3
Estonia	813	803	−1.3	Russian	53	135	154.9
Finland	6,458	5,591	−13.4	Serbia	776	1,312	69.1
France	4,815	6,877	42.8	Slovakia	1,439	5,306	268.7
Germany	11,168	21,346	91.1	Slovenia	2,842	5,701	100.6
Gibraltar	2,403	14,698	511.6	Spain	5,022	10,789	114.8
Greece	2,184	7,892	261.4	Sweden	5,408	9,084	68
Hungary	2,091	4,281	104.7	Switzerland	5,899	11,850	100.9
Iceland	4,576	8,162	78.3	Ukraine	93	66	−29.7
Ireland	3,248	5,389	65.9	United Kingdom	3,021	8,214	171.9
				European Union	6,477	8,967	38.4
	s-DDD per 1,000,000 inhabitants/day			United States of	14,598	16,491	13

Hauser Eur J Pain 2021

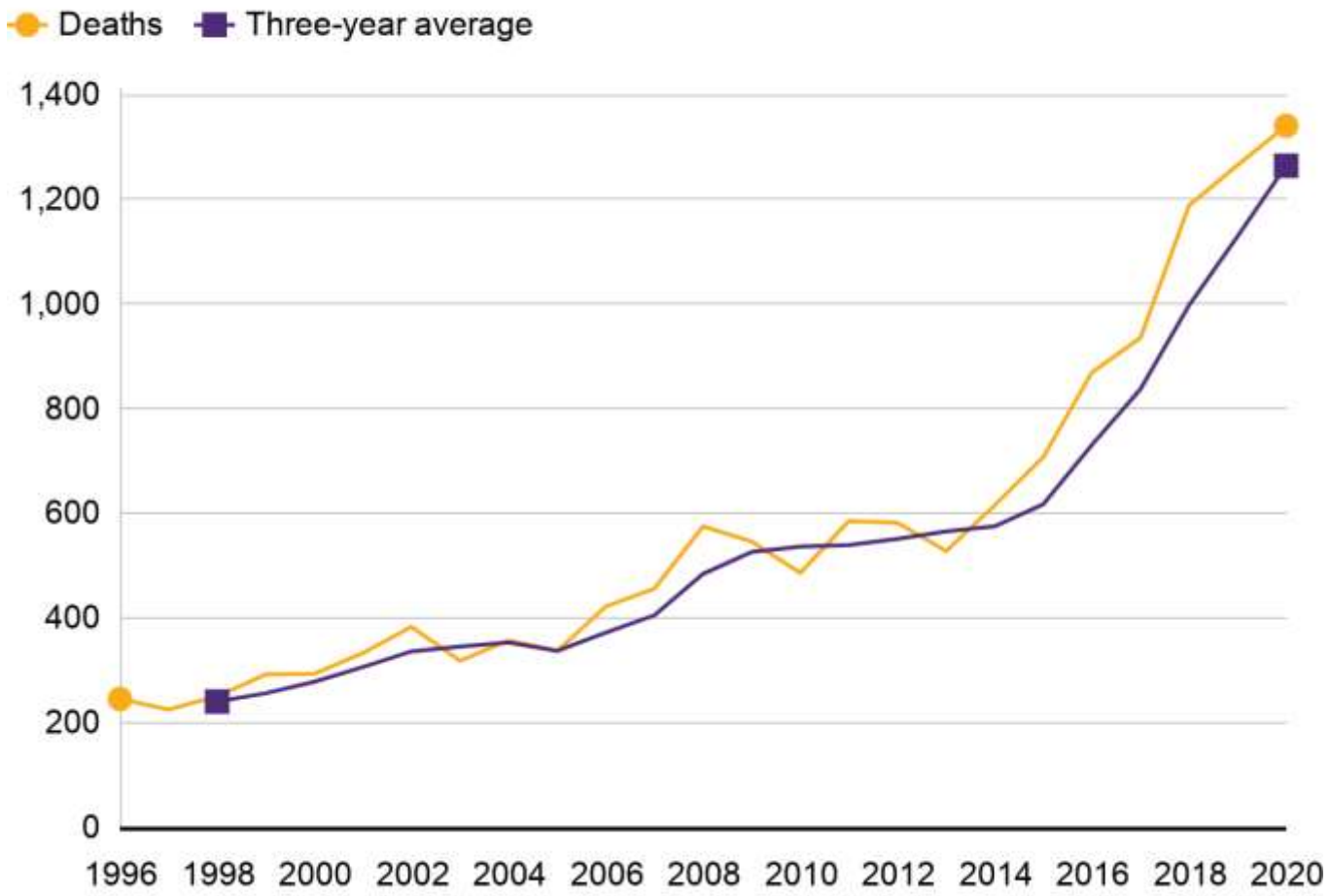
We found data on opioid-related deaths for 13 countries. Austria (2003 to 2016), Estonia (2012 to 2017), Ireland (2006 to 2017), Serbia (2012 to 2015) reported a decrease. Croatia (2015 to 2017) and Germany (2017 to 2019) reported a stable number of opioid-related deaths. Finland (2000 to 2018), France (2000 to 2015), Netherlands (2000 to 2014), Spain (2008 to 2017) and United Kingdom (2017 to 2018) reported an increase. Norway reported a decline in heroin-associated deaths, a variable/stable tendency for methadone, but an increase for other opioids from 2008 to 2018. No statements were possible based on the Slovenian data.

Hauser Eur J Pain 2021



Xia, Forget, in preparation

The number of drug-related deaths has been rising since 2013

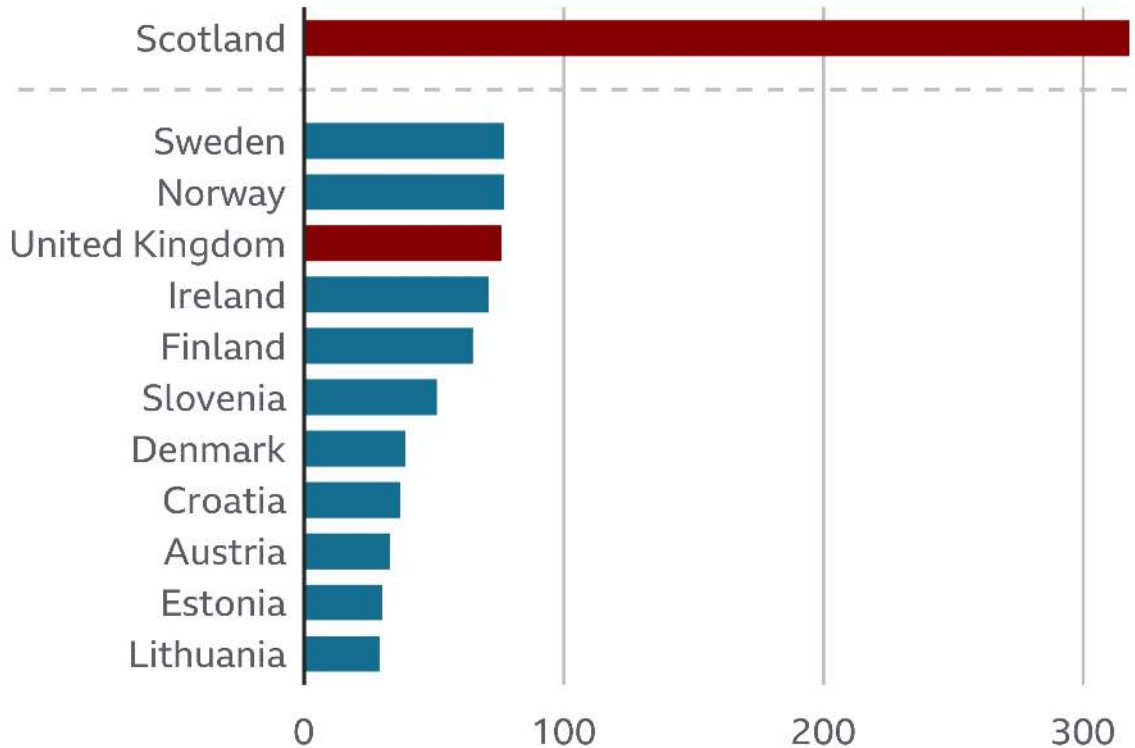


Source: National Records of Scotland

BBC

Scotland has far more drug deaths per capita than any European country

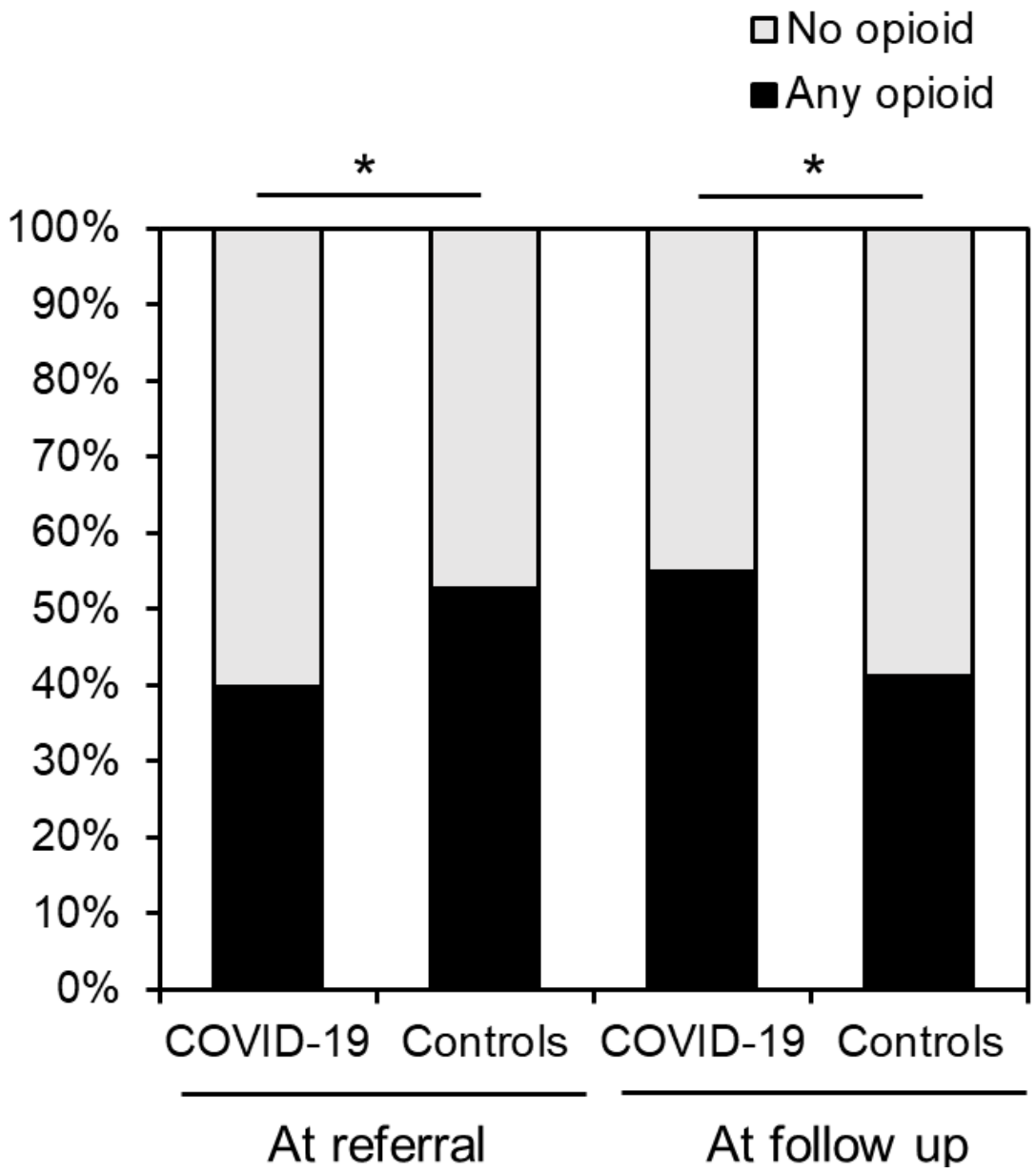
Number of deaths per million people, ages 15-64, latest available data



Note: Latest available data for most countries is from 2019, although UK-wide figure is from 2017. Data shown for Scotland is from 2019 for comparison reasons

Source: EMCDDA, National Records of Scotland

BBC



Opioid use in patients awaiting arthroplasty.

* P<0.01 between the groups

Farrow *et al,* BMJ Qual Safety 2021

Persistent Postoperative Opioid Use

Each year in the United States, over 50 million surgeries and procedures are performed. Persistent postoperative opioid use (PPOU) has become a major concern for individuals, communities, and society.

Definition

No consensus on a definition of PPOU

How many opioid scripts?

For how long after surgery?

Incidence*

All surgical patients who were opioid naïve preop

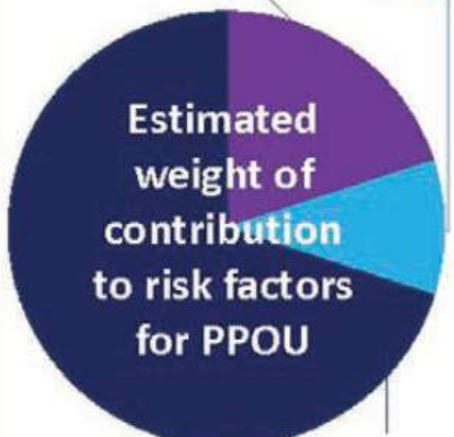
Certain types of surgery + opioid naïve patients

Certain types of surgery + preop opioid use

Risk Factors

Systems Factors: prescribers, policy, healthcare system

Type of Surgery?



Patient history: preop opioid use, anxiety, depression, substance abuse, preoperative painful conditions, etc.

*reported incidence from current literature; but should be noted that exact definitions of PPOU varied between studies.

Kent *et al,* Anesth Analg 2019.

Surgery and Opioids: Best Practice Guidelines 2021

FACULTY OF PAIN MEDICINE of the Royal College of Anaesthetists

RCoA Royal College of Anaesthetists

RCGP Royal College of General Practitioners

Royal College of Surgeons of England

Intraoperative Recommendations (Detailed)

Action: anaesthetists, surgeons

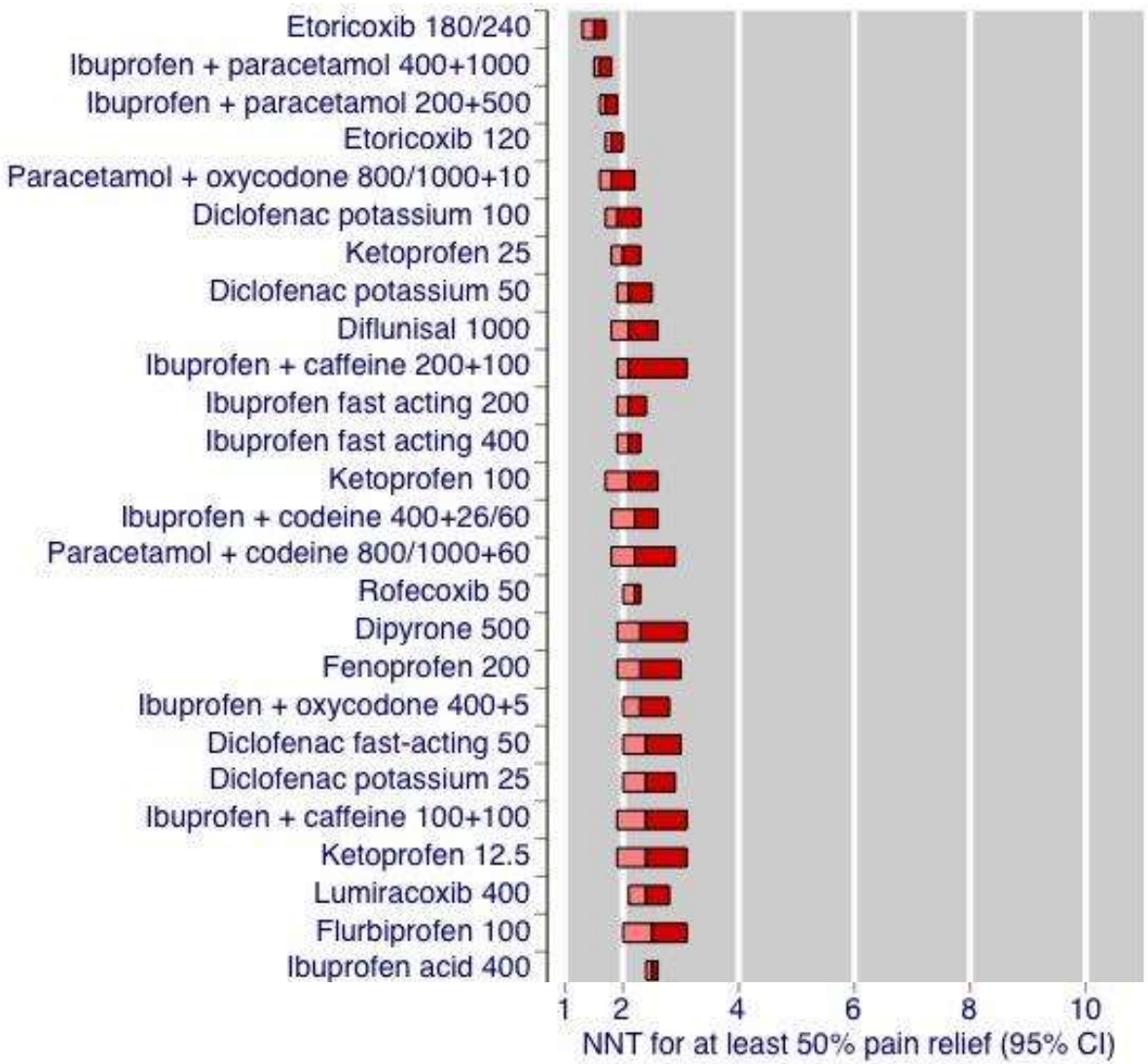
1. Intraoperative pain management should follow the principles of:
   a. Promotion of early functional return, i.e. drinking, eating and mobilisation [25].

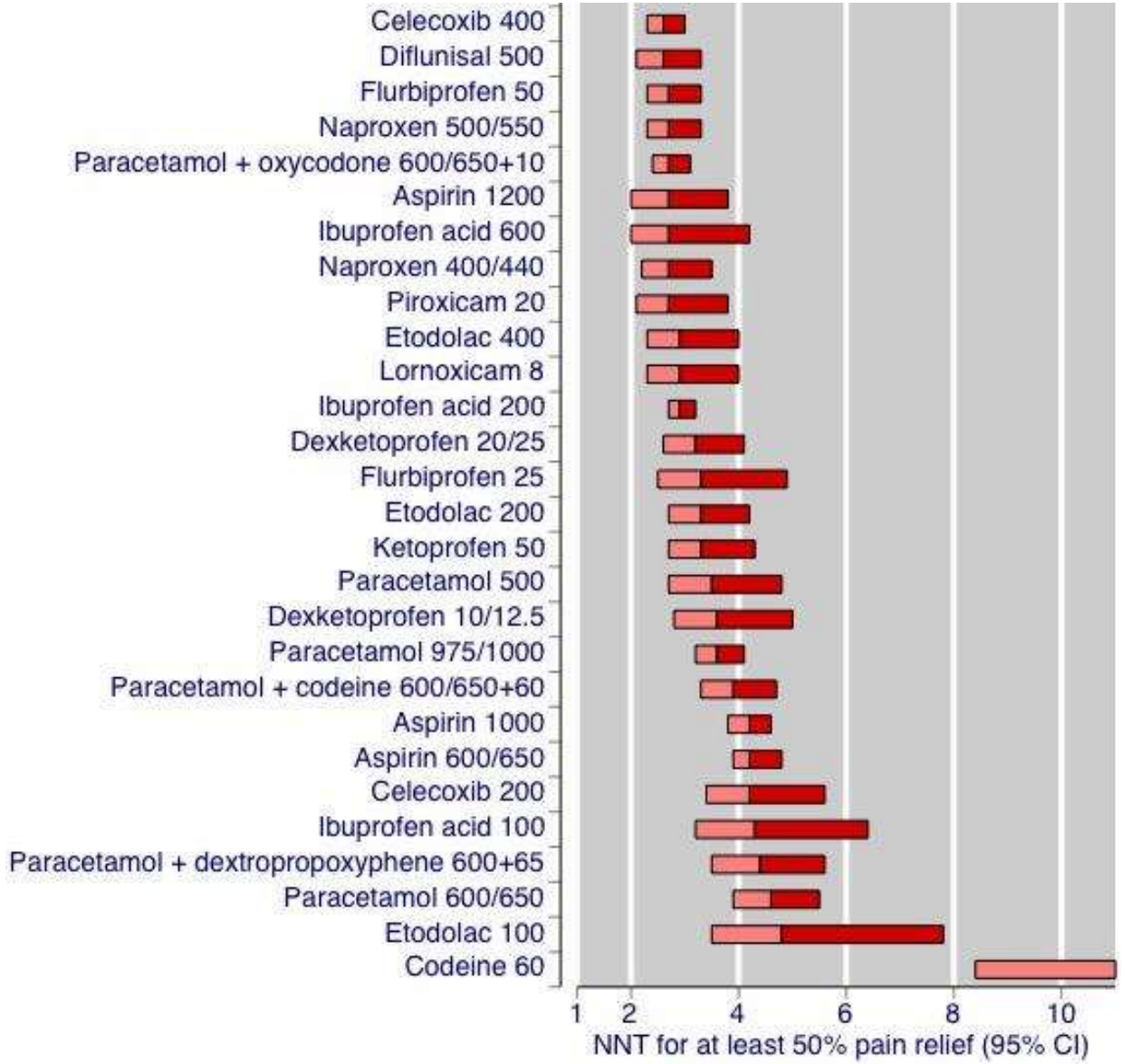
   b. Multimodal analgesia- Multimodal analgesia has been shown to be opioid sparing and provides superior pain relief [26,27,28].

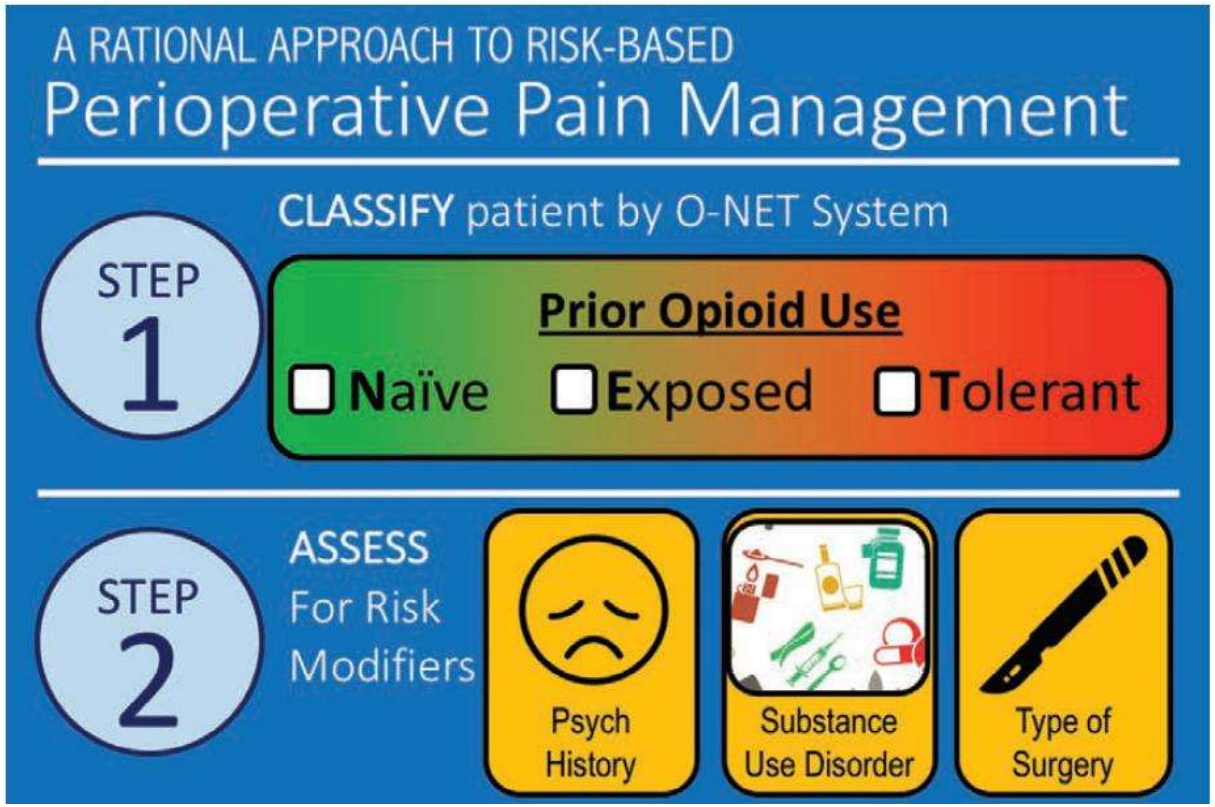
   c. Opioid sparing analgesia techniques- Opioid sparing techniques and use of opioid sparing adjuvants are encouraged [29].

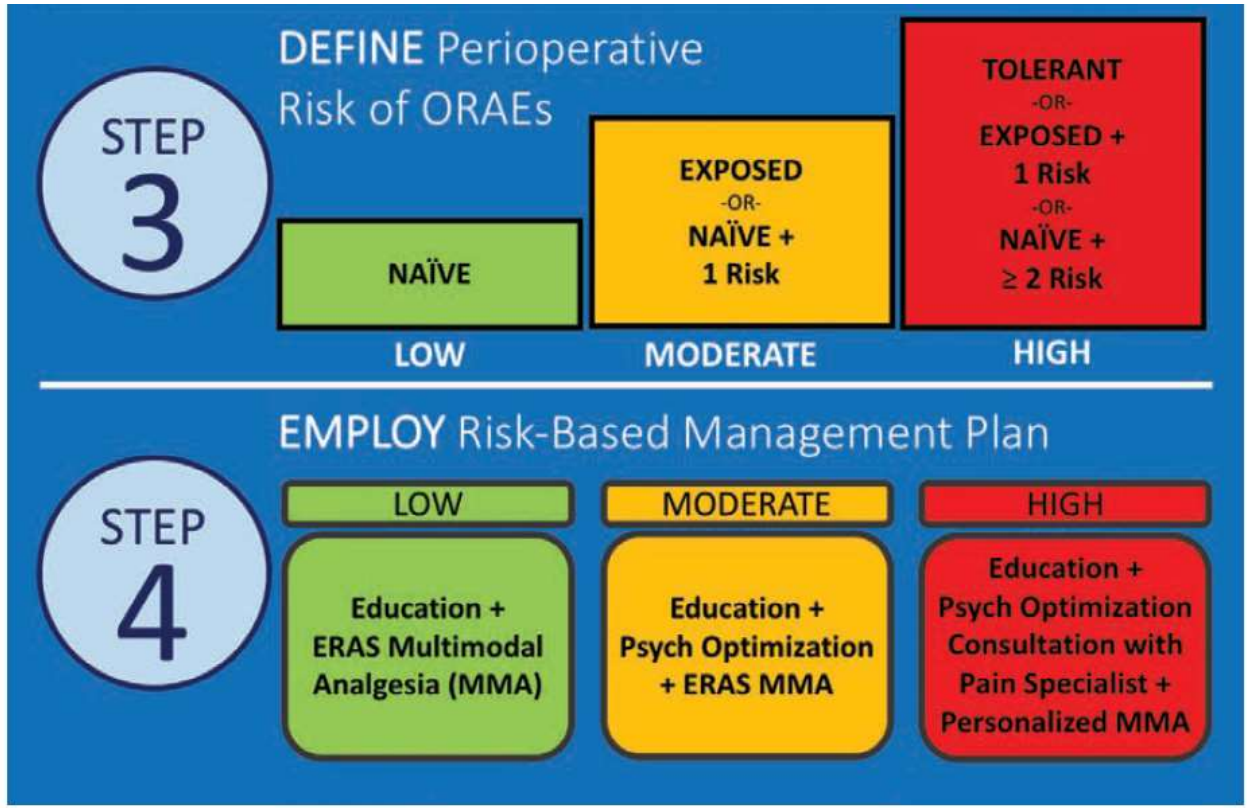
2. PROSPECT (Procedure specific analgesic techniques) recommendations for analgesia should be used rather than over reliance on the WHO pain ladder [30].

3. Pain management techniques need to be individualised, considering patient choice, type of surgery, comorbidity and pre-existing medicines. This should be based on shared decision-making with the patient, taking into account the type of surgery, patient comorbidities and pre-existing medicines use.


Etoricoxib 180/240
Ibuprofen + paracetamol 400+1000
Ibuprofen + paracetamol 200+500
Etoricoxib 120
Paracetamol + oxycodone 800/1000+10
Diclofenac potassium 100
Ketoprofen 25
Diclofenac potassium 50
Diflunisal 1000
Ibuprofen + caffeine 200+100
Ibuprofen fast acting 200
Ibuprofen fast acting 400
Ketoprofen 100
Ibuprofen + codeine 400+26/60
Paracetamol + codeine 800/1000+60
Rofecoxib 50
Dipyrone 500
Fenoprofen 200
Ibuprofen + oxycodone 400+5
Diclofenac fast-acting 50
Diclofenac potassium 25
Ibuprofen + caffeine 100+100
Ketoprofen 12.5
Lumiracoxib 400
Flurbiprofen 100
Ibuprofen acid 400
1
2
4
6
8
10
NNT for at least 50% pain relief (95% CI)


Celecoxib 400
Diflunisal 500
Flurbiprofen 50
Naproxen 500/550
Paracetamol + oxycodone 600/650+10
Aspirin 1200
Ibuprofen acid 600
Naproxen 400/440
Piroxicam 20
Etodolac 400
Lornoxicam 8
Ibuprofen acid 200
Dexketoprofen 20/25
Flurbiprofen 25
Etodolac 200
Ketoprofen 50
Paracetamol 500
Dexketoprofen 10/12.5
Paracetamol 975/1000
Paracetamol + codeine 600/650+60
Aspirin 1000
Aspirin 600/650
Celecoxib 200
Ibuprofen acid 100
Paracetamol + dextropropoxyphene 600+65
Paracetamol 600/650
Etodolac 100
Codeine 60
1
2
4
6
8
10
NNT for at least 50% pain relief (95% CI)





Edwards *et al,* Anesth Analg 2019.

Anaesthesia 2020 doi:10.1111/anae.15262

Guidelines

An international multidisciplinary consensus statement on the prevention of opioid-related harm in adult surgical patients

N. Levy,[1] J. Quinlan,[2] K. El-Boghdadly,[3,4] W. J. Fawcett,[5] V. Agarwal,[6] R. B. Bastable,[7] F. J. Cox,[8] H. D. de Boer,[9] S. C. Dowdy,[10] K. Hattingh,[11] R. D. Knaggs,[12] E. R. Mariano,[13,14] P. Pelosi,[15,16] M. J. Scott,[17] D. N. Lobo[18,19] and P. E. Macintyre[20]

SETTING	MODIFIABLE RISK FACTORS	RECOMMENDATIONS OR RATIONALE
Pre-assessment clinic	Pre-operative opioids	Patients taking long-term opioids are more likely to develop PPOU: wean or taper opioids before surgery
	Psychological comorbidities	Psychological interventions may reduce pre-operative anxiety, depression and catastrophic thinking, thus decreasing postoperative pain and opioid requirements
	Unrealistic expectations	Educate patients and carers about pain management, including non-pharmacological strategies and safe analgesic use
Postoperative period in hospital	Reliance on unidimensional pain scores alone	Use functional outcomes to ensure that analgesic use leads to improved recovery
	Abnormal pain trajectory	Patients whose pain is not following an expected trajectory should be identified early as this may signify postoperative complications, neuropathic pain or psychological distress
	Reliance on opioid analgesia	Use multimodal analgesia and non-pharmacological techniques for pain relief
	Long-acting opioids	Avoid initiating long-acting formulations; use short-acting opioids as needed only
	Compound opioids	Do not prescribe compound tablets: give each drug separately
Preparation for discharge	Over-emphasis on opioids for discharge medication	Educate patients and carers to use multimodal analgesia and non-pharmacological techniques for pain relief
	Large number of opioid tablets	Limit the number of tablets given at discharge
	Long duration of discharge opioid prescription	Limit the duration of opioids given at discharge
	Lack of deprescribing advice	Educate patients and carers about reducing analgesia (opioids first)
Post-discharge	Repeat prescriptions	The risk of PPOU increases considerably with each repeat prescription: review the patient before dispensing more opioids
	Chronic postsurgical pain	Refer to a pain service if pain exceeds expected healing time
	Unsafe storage of opioids at home	Unsecured opioids risk unintended overdose or diversion
	Unsafe disposal of unused opioids	Educate patients and carers about safe disposal of unused opioids

Figure 2 Modifiable risk-factors and suggested recommendations or rationale for persistent postoperative opioid use (PPOU).

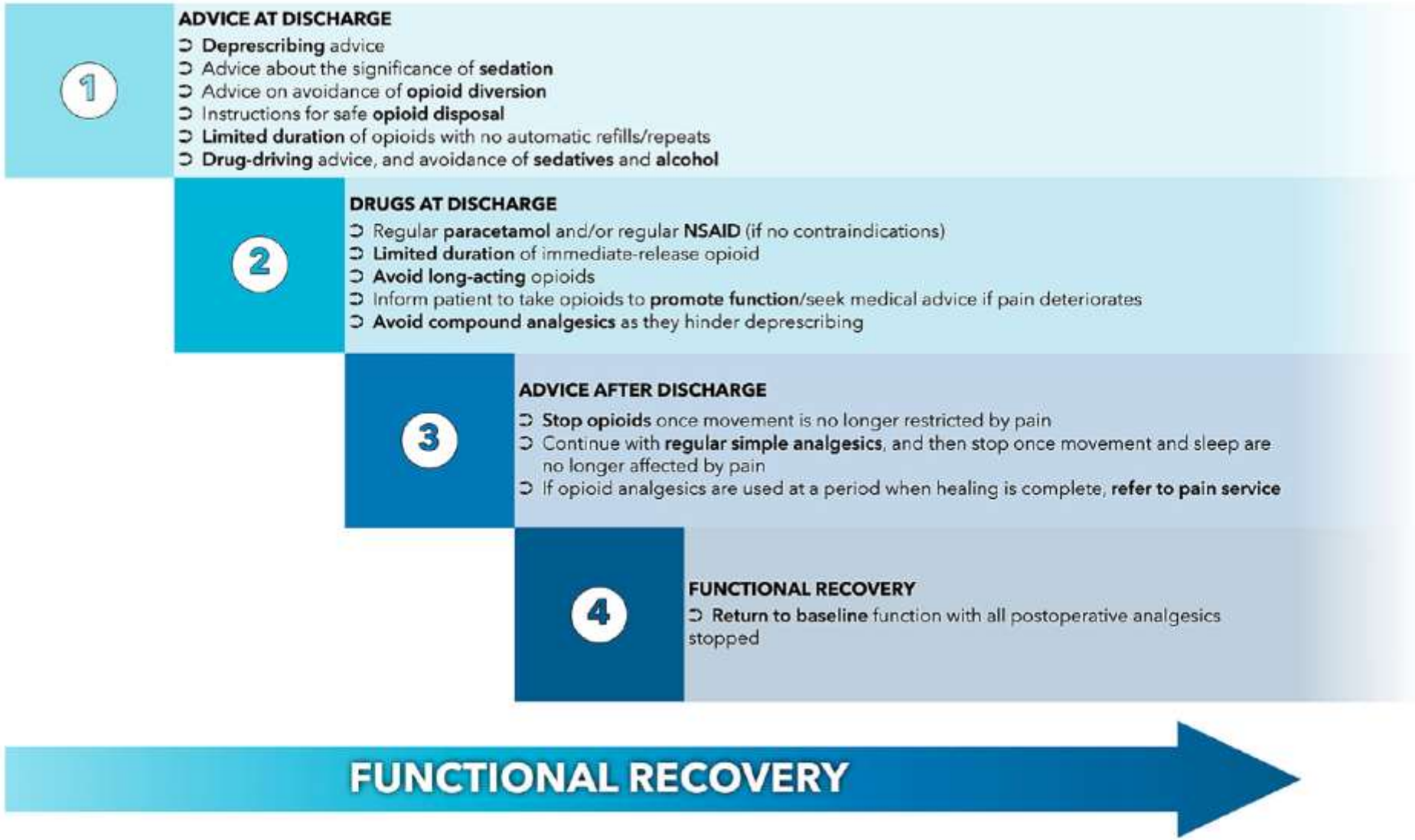


Figure 3 Reverse pain ladder to promote postoperative analgesic deprescribing. NSAID, non-steroidal anti-inflammatory drugs.

GOVERNANCE POLICIES
Pain Management, **Analgesia or Opioid Stewardship Steering Committee** as a priority
Safe and accountable use (closed-loop) of drugs such as opioids
PAIN MANAGEMENT POLICIES
Research and policies should be developed to have a better understanding and vision
Policies should be developed providing **guidelines** on maximum doses and duration
Processes and guidelines should be prioritised regarding the quality of the **follow-up and the referral**
Every **hospital** should **monitor and re-assess**
Preventing the risk of leading to the **pendulum swinging too far** in the other direction
PATIENT CARE AND CONSUMER ENGAGEMENT
Monitoring, disseminating, and benchmarking **indicators**
Secondary care should identify and provide opportunities to interact with **Primary** care
Support and access to primary or secondary care **deaddiction services**

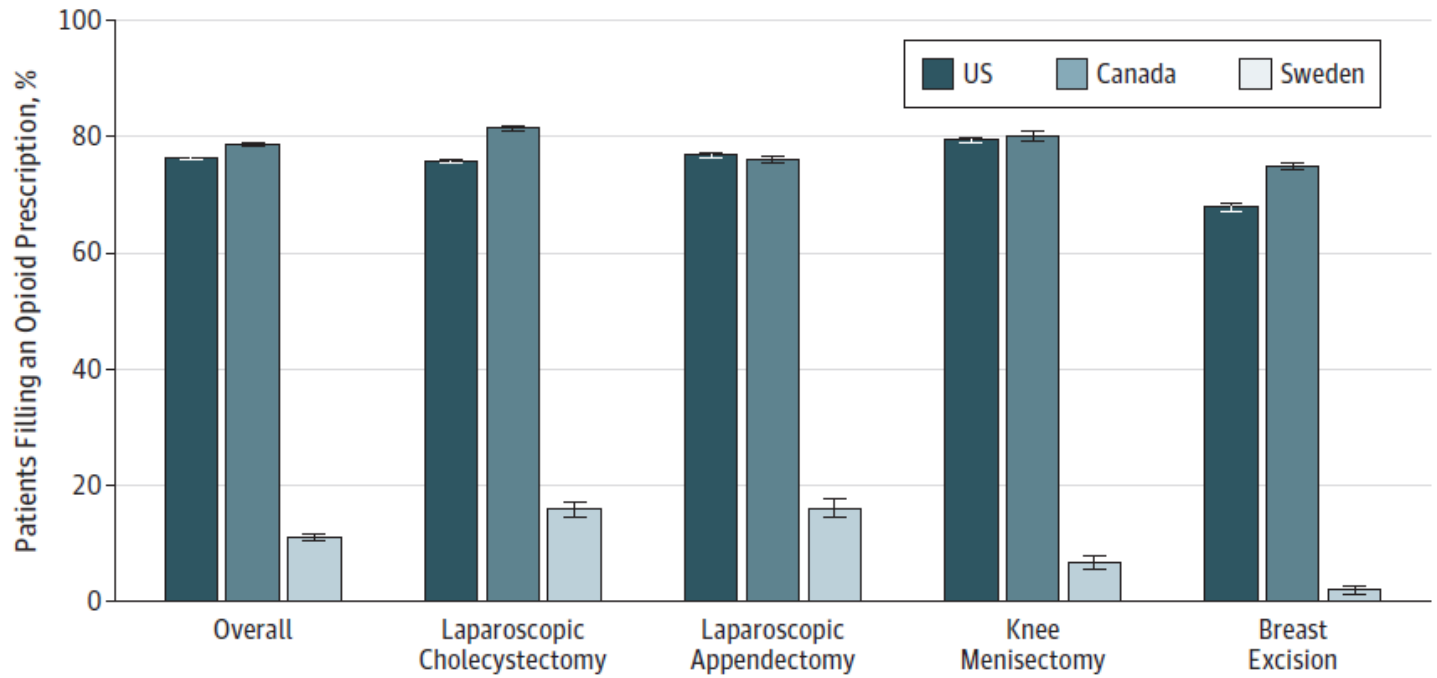
Forget *et al,* BMC Health Serv Res 2022.

Operation Category	Author	Operation	Opioid users (time since surgery: %)	Overall range at 3 months
Hip	Simoni *et al.*[10]	Hip fracture surgery	3 to 6 months: 33.8% (95% CI, 33.4 to 34.2)	14.7 to 41%
	Lindestrand *et al.*[19]	Hip fracture surgery	3 months: 36% (95% CI, 31.4 to 40.6)	
	Blågestad *et al.*[16]	THA	3 to 6 months: 14.7% (95% CI, 14.5 to 15.0)	
	Dengler *et al.*[11]	SI joint arthrodesis	3 months: 41% (95% CI, 27.6 to 54.4)	
	Vanaclocha *et al.*[15]	SI joint fusion or denervation	6 months: 7.4% (95% CI, −2.5 to 17.3)	
Knee	Fenten *et al.*[14]	TKA	3 months: FNB 7.9% (95% CI, −0.7 to 16.5) LIA 13.2% (95% CI, 2.7 to 23.7)	7.9 to 28%
	Grosu *et al.*[18]	TKA	3 months: 28% (95% CI, 17.9 to 38.1)	
Hip and knee	Curry *et al.*[13]	TKA; THA	3 months: 33% (95% CI, 22.6 to 43.3)	33%
	Laufenberg-Feldmann *et al.*[17]	THA; TKA	6 months: 8.7% (95% CI, 4.3 to 13.1)	
Other	Laufenberg-Feldmann *et al.*[17]	Nucleotomy; spondylodesis	6 months: 13.6% (95% CI, 8.6 to 18.6)	11.8 to 12.2%
	Fuzier *et al.*[21]	Trauma or orthopaedic surgery	3 months: 12.2% (95% CI, 10.7 to 14.3)	
	Chumbley *et al.*[12]	Thoracotomy	3 months: 11.8% (95% CI, 0.9 to 22.6)	
	Dualé *et al.*[20]	Thoracotomy (opioid naïve patients)	4 months: 0% (95% CI, 0 to 0)	
	Laufenberg-Feldmann *et al.*[17]	Cystectomy, prostatectomy, nephrectomy	6 months: 2.0% (95% CI, −0.2 to 4.2)	

TKA, total knee arthroplasty; THA, total hip arthroplasty; FNB, femoral nerve catheter; LIA, local infiltration.

Sitter and Forget, Eur J Anaesth 2020

Figure 2. Percentage of Patients Filling an Opioid Prescription During First 7 Days After Surgery



Error bars represent 95% CIs.

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PANDOS

An Observational study on **Pain and Opioids after Surgery** in Europe

One-week, national, prospective, observational cohort study

- any kind of surgery (adults)
  >10,000 if possible
- as many hospitals as possible
  >100 if possible

Specific objective :

- to provide detailed data describing perioperative opioid use.

Secondary objective:

- to document the association with pain, QoL and incidence of possible AEs

NHS Grampian

UNIVERSITY OF ABERDEEN

Patient Information Sheet Guide

Your surgery

- The investigators will collect data from your medical records (your condition and your medicines)
- The investigators will get to you with a few questionnaires (15 to 30 minutes approximately) by telephone or in the hospital.

After 3 months

- The investigators will collect data from your medical records (your condition and your medicines)
- The investigators will get to you with a few questionnaires (15 to 30 minutes approximately) by telephone.

After one year

- The investigators will collect data from your medical records (your condition and your medicines)
- The investigators will get to you with a few questionnaires (15 to 30 minutes approximately) by telephone.

	Pain and opioids after surgery (PANDOS)
Aims	To document the **opioid use before and after surgery**, its safety and to describe its association with adverse events and **persistent pain**.
Methods	One-week, international, prospective, observational cohort study
Patients	**All the patients undergoing surgery during one week**.
Settings	>10 countries in Europe, >100 hospitals, >10,000 patients in total
Inclusion criteria	Adult patients, hospitalised, undergoing any kind of surgery
Primary outcomes	**Opioid use**, preop, in-hospital, at **M3** and M12.
Secondary outcomes	**Pain**, adverse events, and **quality of life**.
Statistical analysis	Univariable analyses and multi-level logistic regression models
Entire study duration	Eighteen months

Under each heading, please tick the ONE box that best describes your health TODAY.

MOBILITY

- I have no problems in walking about ❑
- I have slight problems in walking about ❑
- I have moderate problems in walking about ❑
- I have severe problems in walking about ❑
- I am unable to walk about ❑

SELF-CARE

- I have no problems washing or dressing myself ❑
- I have slight problems washing or dressing myself ❑
- I have moderate problems washing or dressing myself ❑
- I have severe problems washing or dressing myself ❑
- I am unable to wash or dress myself ❑

USUAL ACTIVITIES *(e.g. work, study, housework, family or leisure activities)*

- I have no problems doing my usual activities ❑
- I have slight problems doing my usual activities ❑
- I have moderate problems doing my usual activities ❑
- I have severe problems doing my usual activities ❑
- I am unable to do my usual activities ❑

PAIN / DISCOMFORT

- I have no pain or discomfort ❑
- I have slight pain or discomfort ❑
- I have moderate pain or discomfort ❑
- I have severe pain or discomfort ❑
- I have extreme pain or discomfort ❑

ANXIETY / DEPRESSION

- I am not anxious or depressed ❑
- I am slightly anxious or depressed ❑
- I am moderately anxious or depressed ❑
- I am severely anxious or depressed ❑
- I am extremely anxious or depressed ❑

1903

Date: (month) / (day) / (year)

Subject's Initials: _____

Study Subject #:

PLEASE USE BLACK INK PEN

Study Name: _____

Protocol #: _____

PI: _____

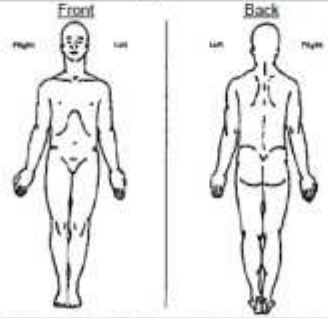
Revision: 07/01/05

Brief Pain Inventory (Short Form)

1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?

☐ Yes ☐ No

2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3. Please rate your pain by marking the box beside the number that best describes your pain at its worst in the last 24 hours.

☐0 ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10

No Pain — Pain As Bad As You Can Imagine

4. Please rate your pain by marking the box beside the number that best describes your pain at its least in the last 24 hours.

☐0 ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10

No Pain — Pain As Bad As You Can Imagine

5. Please rate your pain by marking the box beside the number that best describes your pain on the average.

☐0 ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10

No Pain — Pain As Bad As You Can Imagine

6. Please rate your pain by marking the box beside the number that tells how much pain you have right now.

☐0 ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10

No Pain — Pain As Bad As You Can Imagine

DN4 Questionnaire

naire by ticking one answer for each item in the 4 questions

e one or more of the following characteristics?

Yes	No

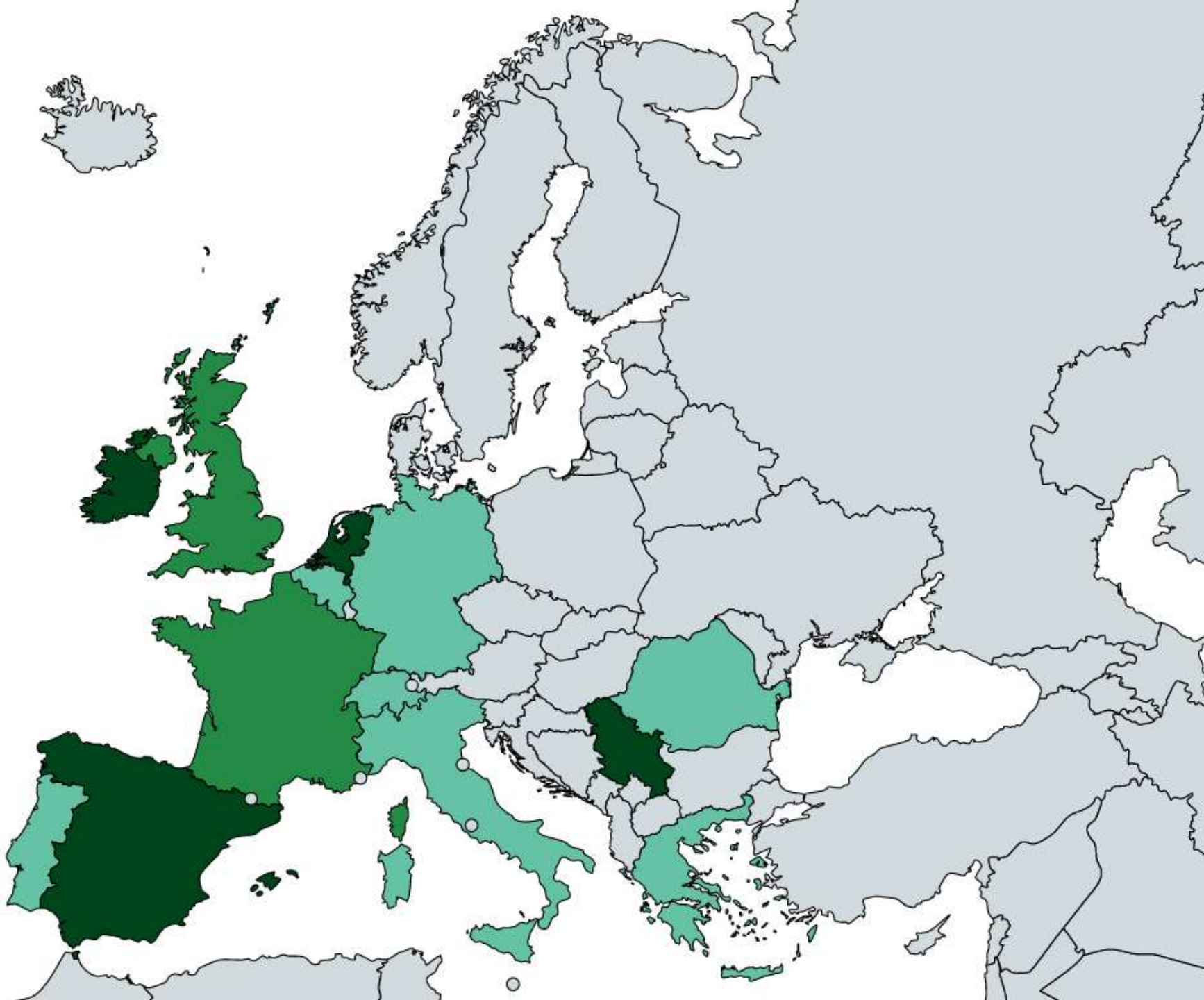
3 – Electric shocks

Question 2: Is the pain associated with one of more of the following symptoms in the same area?

Yes	No

4 – Tingling
5 – Pins and needles
6 – Numbness
7 – Itching

Belgium	2
UK	10
Portugal	1
Greece	1
Ireland	10
Germany	4
The Netherlands	12
Switzerland	1
Romania	1
France	5
Italy	3
Finland	1
Serbia	14
Spain	22
	87



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