

Main results from the PAIN OUT project

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Conflicts of interest

- Research: EU, Pfizer
- Speaker: Menarini, Grünenthal, Mundipharma, QRxPharma
- Advise: Menarini, Grünenthal, QRxPharma, Medicines Company

‘Lack of evidence about **appropriateness** and **effectiveness** of pain interventions is one of the five major crises in pain management today’.

John Loeser, Clinical Updates, IASP Press, 2012



PAIN-OUT

Improvement in
Postoperative PAIN OUTcome

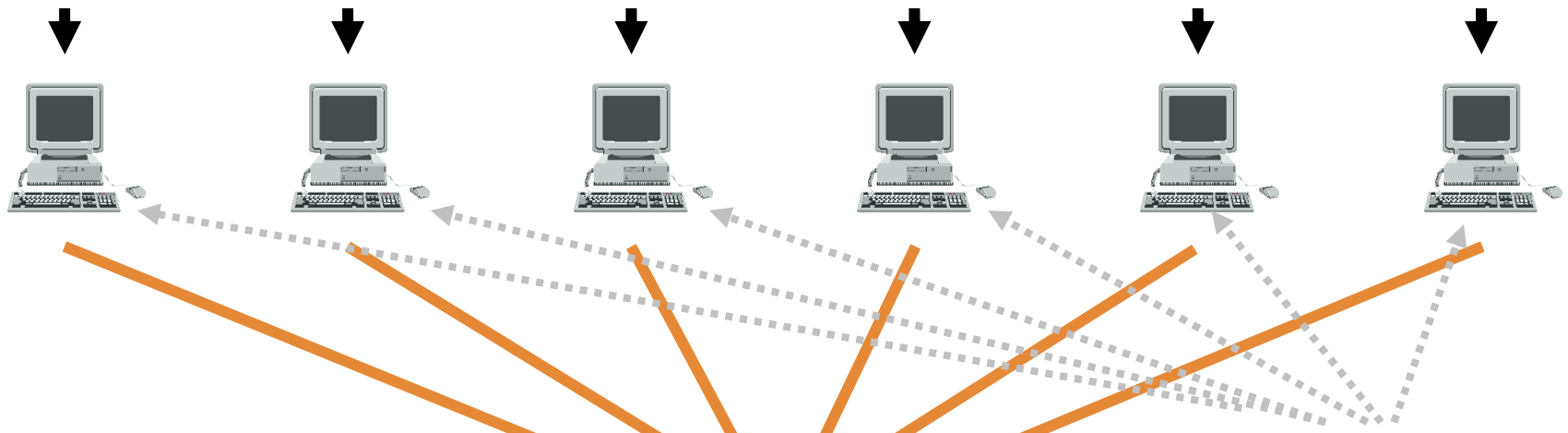
- QUIPS: funded by German Ministry of Health (2003-6)
- PAIN OUT: funded by 7th FP (2009-12)
- Backed by several societies (DGAI, DGCH, EFIC, ESA, IASP...)
- Ca. 160 hospitals in Germany, 45 internationally
- > 500.000 data sets (QUIPS)
- Ca. 50.000 data sets (PAIN OUT)
- Adult, pediatric, in- and outpatient surgery



PAIN-OUT

Improvement in
Postoperative PAIN OUTcome

Data is obtained from patients



Research

Acute Pain Registry



Quality Improvement

Off line analysis.

Audit and immediate web-based feedback to clinicians.

PAIN OUT: research

- Variability of care
- Factors associated with (high/low) quality
- (CPSP)

Status quo (n=202.885)

- Pain intensity ≥ 5 : 49%
- Pain interference with ambulation: 60%
- Nausea: 20%
- Non informed: 23%
- Wished more analgesics: 11%

***PAIN OUT: The making of an
international acute pain registry***
Zaslansky R et al. EJP 2015;19:490-502

n=6347 patients, 11 European hospitals

Routine pain assessment:	76% (0.3%-99%)
Received information:	65% (27%-85%)
Regional analgesia in TKA:	42% (1.8%-80%)
Opioids if pain \geq 6:	71% (44%-93%)

Low association between routine pain assessment and outcome

	Individual patients	
	Not assessed	Assessed
Composite Pain Score	4.0 (± 0.06)	3.6 (± 0.03)
Sum of side effects	5.6 (± 0.17)	6.4 (± 0.11)
Satisfaction	8.0 (± 0.06)	8.4 (± 0.03)
Anxiety	2.5 (± 0.07)	2.0 (± 0.04)
Allowed to participate in decisions	6.1 (± 0.1)	5.9 (± 0.06)

The Quality of Postoperative Pain Therapy in German Hospitals

Meissner W et al. Dtsch Arztebl Int 2017; 114: 161–7

- 21.114 data sets from > 100 hospitals
- Four major surgeries
- Pain intensity, function, satisfaction

Processes:

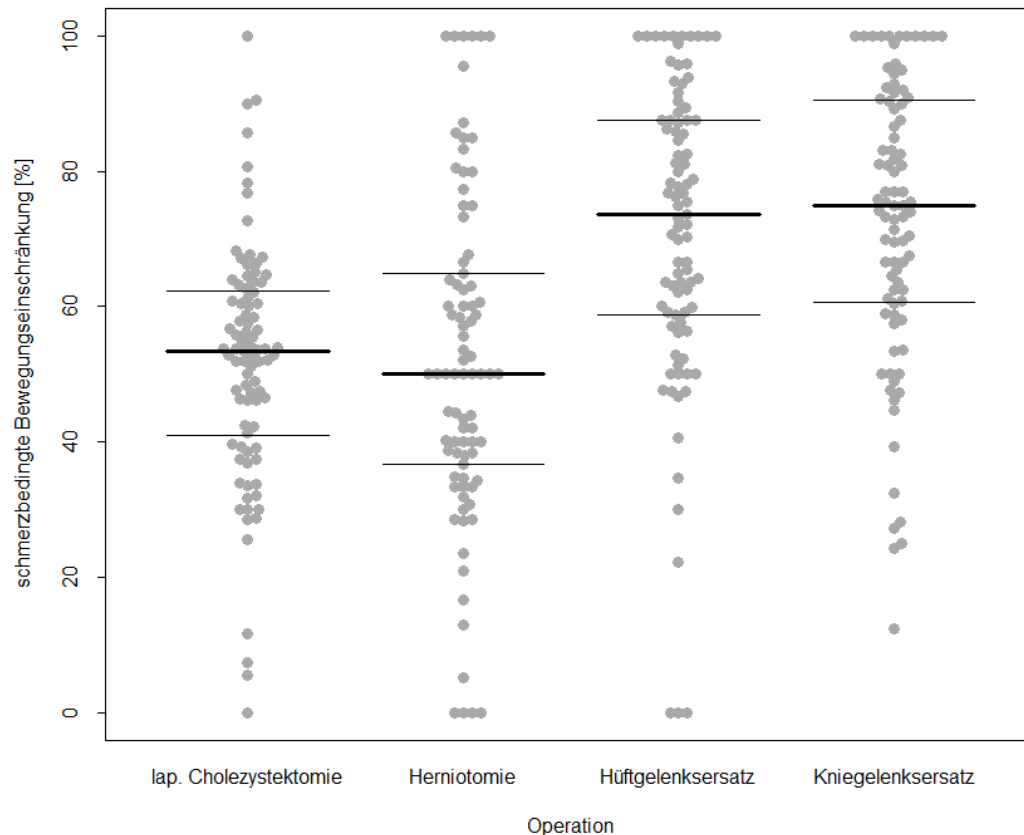
- Routine pain assessment, patient information

Structure:

- Hospital size, ownership, level of care
- Adjusted for age, gender, ASA status

The Quality of Postoperative Pain Therapy in German Hospitals

Meissner W et al. *Dtsch Arztebl Int* 2017; 114: 161–7



Pain interference with ambulation in 103 hospitals

The Quality of Postoperative Pain Therapy in German Hospitals

Meissner W et al. Dtsch Arztebl Int 2017; 114: 161–7

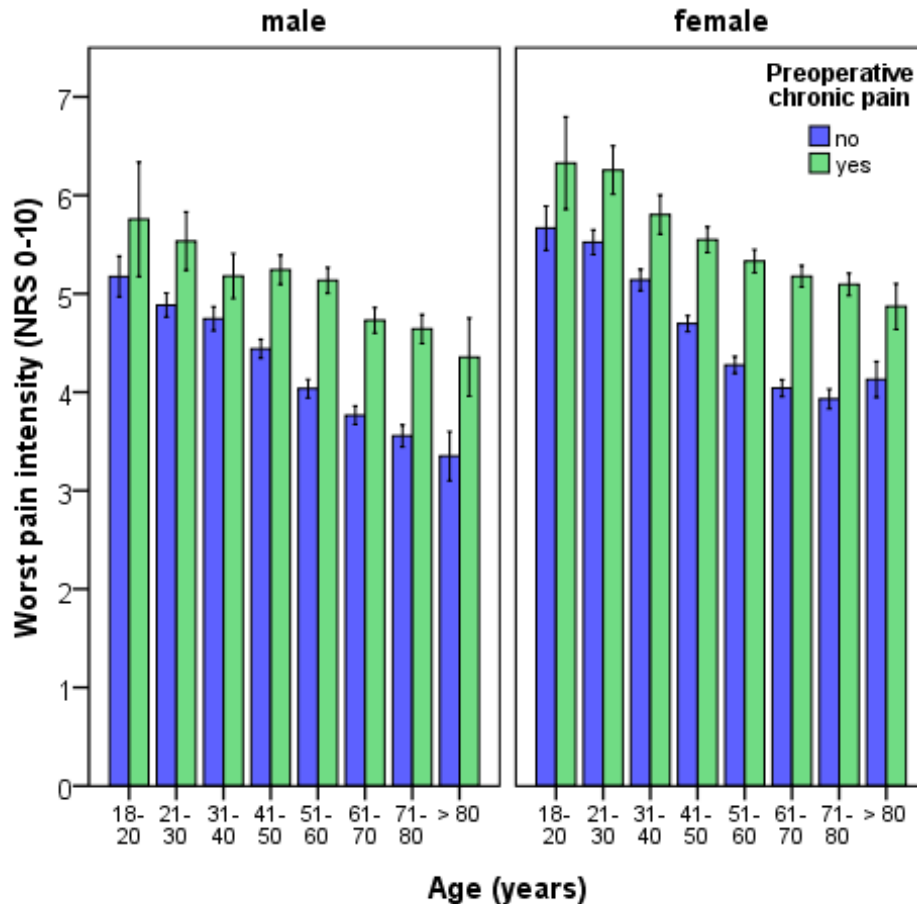
- Routine pain assessment and, particularly, provision of sufficient information on pain therapy to patients were associated with improved pain, function and satisfaction
- Outcome quality was somewhat better in standard care hospitals than in those with higher levels of care



Procedure-specific Risk Factor Analysis for Postoperative Pain.

Gerbershagen HJ et al. *Anesthesiology* 2014; 120: 1237-45

Gender



Postop pain increase:

- + 0,29 in women
- + 0,14 for each NRS of preop chronic pain
- - 0,28 for each decade of age

Pain Intensity on the First Day after Surgery

Gerbershagen et al. Anesthesiology 2013, 118: 934-44

- n=50.523
- 179 surgical groups
- „Ranking“ according to pain intensity
- Results mirror painfulness of surgery and received pain treatment

Low pain intensity

Surgery	NRS/rank
• Limb amputation	(4,6 / 115)
• Open lung resection	(4,5 / 118)
• Gastrectomy	(4,5 / 120)
• Rad. prostatectomy	(3,6 / 141)

Gerbershagen et al. Anesthesiology 2013, 118: 934-44

High pain intensity

Surgery	NRS/rank
• Calcaneus-OP	(6,7 / 1)
• Sectio	(6,1 / 9)
• Appendectomy (open)	(6,0 / 19)
• Hemorrhoidectomy	(5,9 / 23)
• Tonsillectomy	(5,9 / 24)
• Cholezystectomy (open)	(5,8 / 25)
• Appendectomy (lap.)	(5,4 / 47)

Gerbershagen et al. Anesthesiology 2013, 118: 934-44

Inter-Hospital Variability of Postoperative Pain after Tonsillectomy

Guntinas-Lichius O et al. PLOS ONE | April 27, 2016

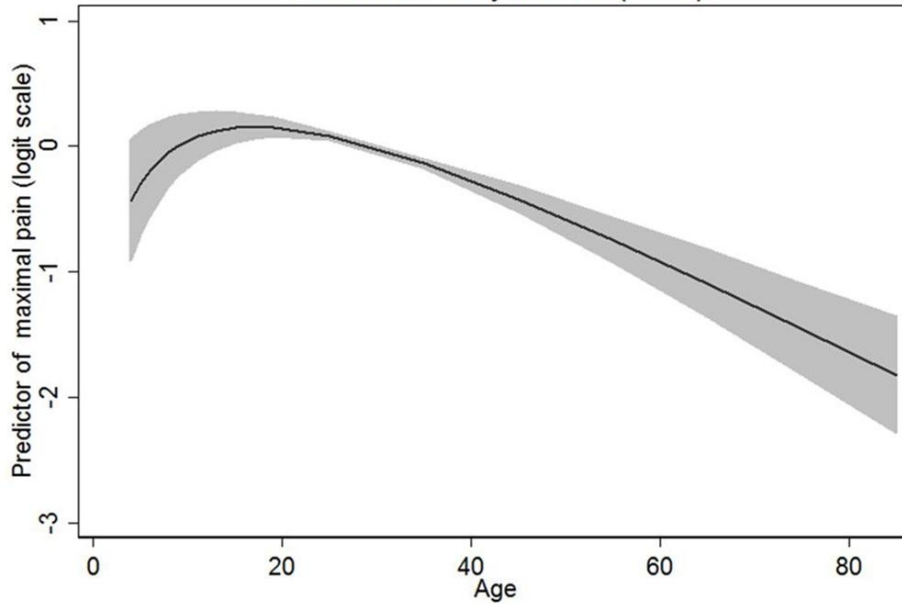
- 2535 Pat. After tonsillectomies from 52 sites
- Max. pain 5.8 ± 2.2 (NRS), median 6

- Female gender: (OR = 1.33; CI = 1.12 to 1.56)
- Chronic pain: (OR = 1.34; CI = 1.107 to 1.64)
- Age < 20 (OR = 1.56; CI = 1.27 to 1.91)

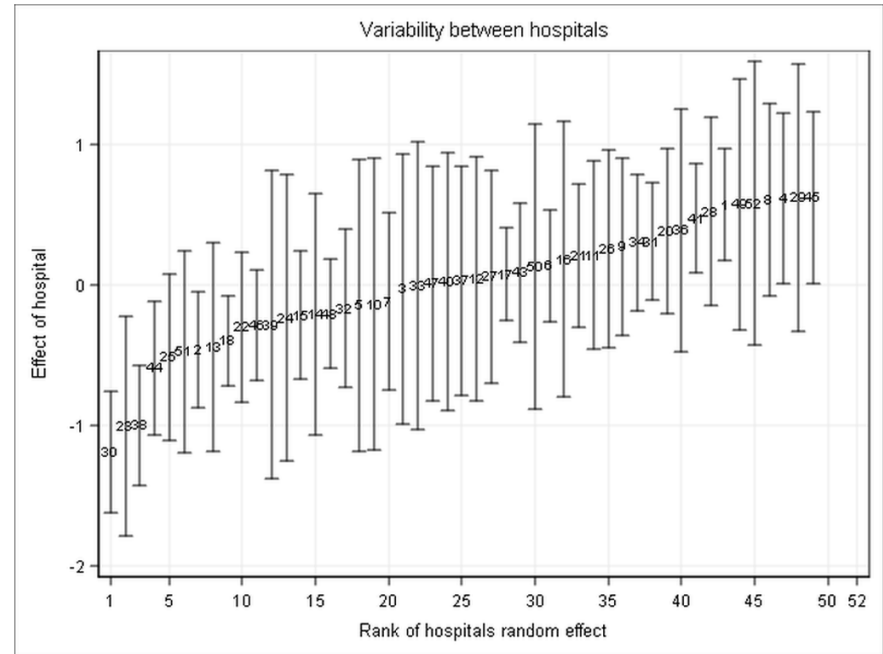
Inter-Hospital Variability of Postoperative Pain after Tonsillectomy

Guntinas-Lichius O et al. PLOS ONE | April 27, 2016

Fractional Polynomial (.5 .5)



Variability between hospitals



Inter-Hospital Variability of Postoperative Pain after Tonsillectomy

Guntinas-Lichius O et al. PLOS ONE | April 27, 2016

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- **No patient information (OR = 1.78; CI = 1.370 to 2.316)**

Quality of pain treatment after caesarean section

Marcus H et al. EJP 2015, 19: 929-39

Pat. nach Sectio und Hysterektomien (n=3217)

	CS	HS abd.	LAVH	HS vag.
Schmerz max. (NRS)	6,2	5,0	4,4	4,8
Husten beeintr. (%)	66	56	37	30
Aufwachen (%)	47	33	31	36
Kein Opioid (%)	63	34	34	43

Epidural vs. Systemic Analgesia: An International Registry Analysis ... after Abdominal Surgery

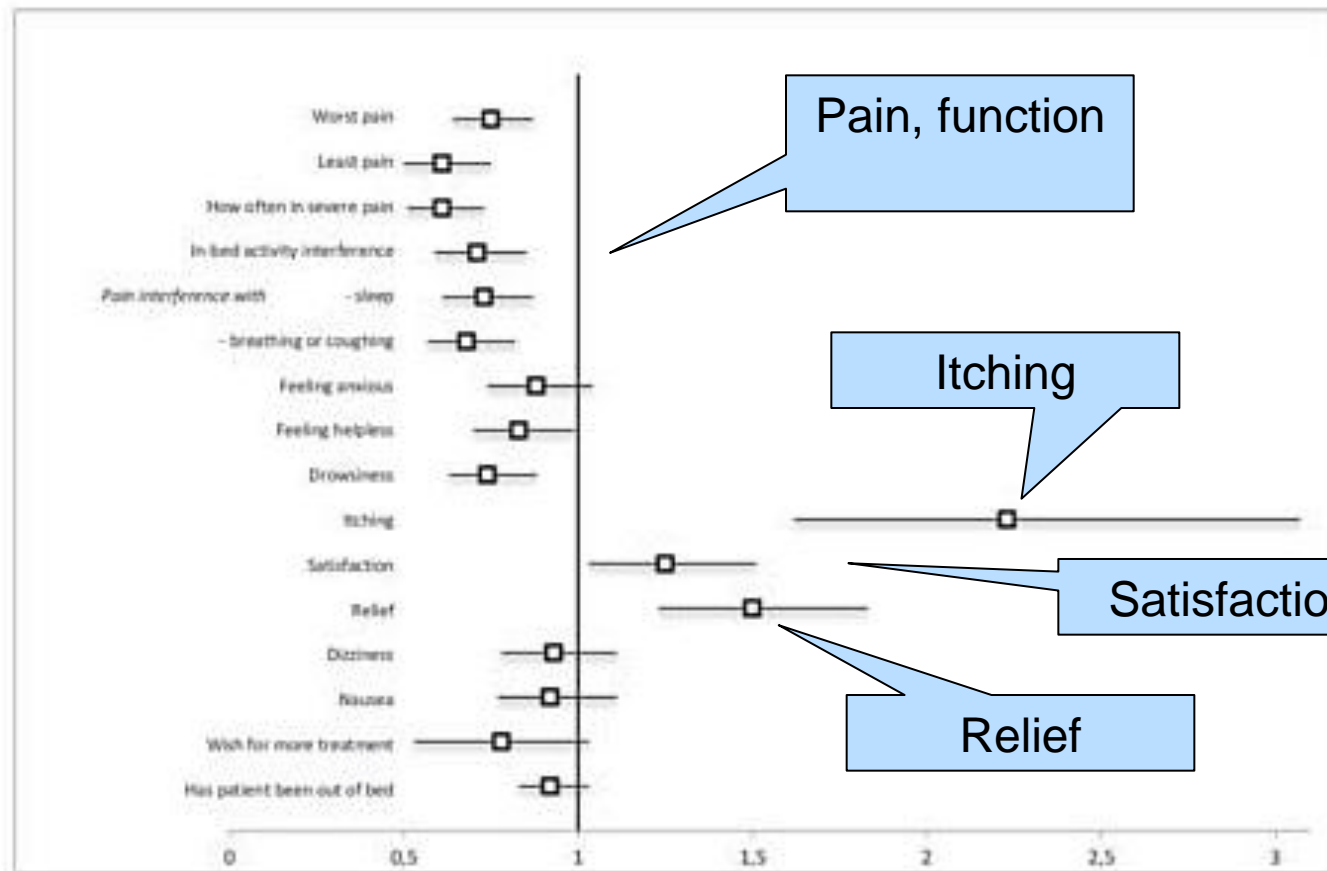
Roeb MM et al. Clin J Pain, 2017;33:189-197

- n=2127, after matched-pair n=646
- Improved pain intensity, function, satisfaction
- „time in severe pain“: 15 % with, 27 % w/o EA!
- Both in open and laparoscopic surgery

- but....

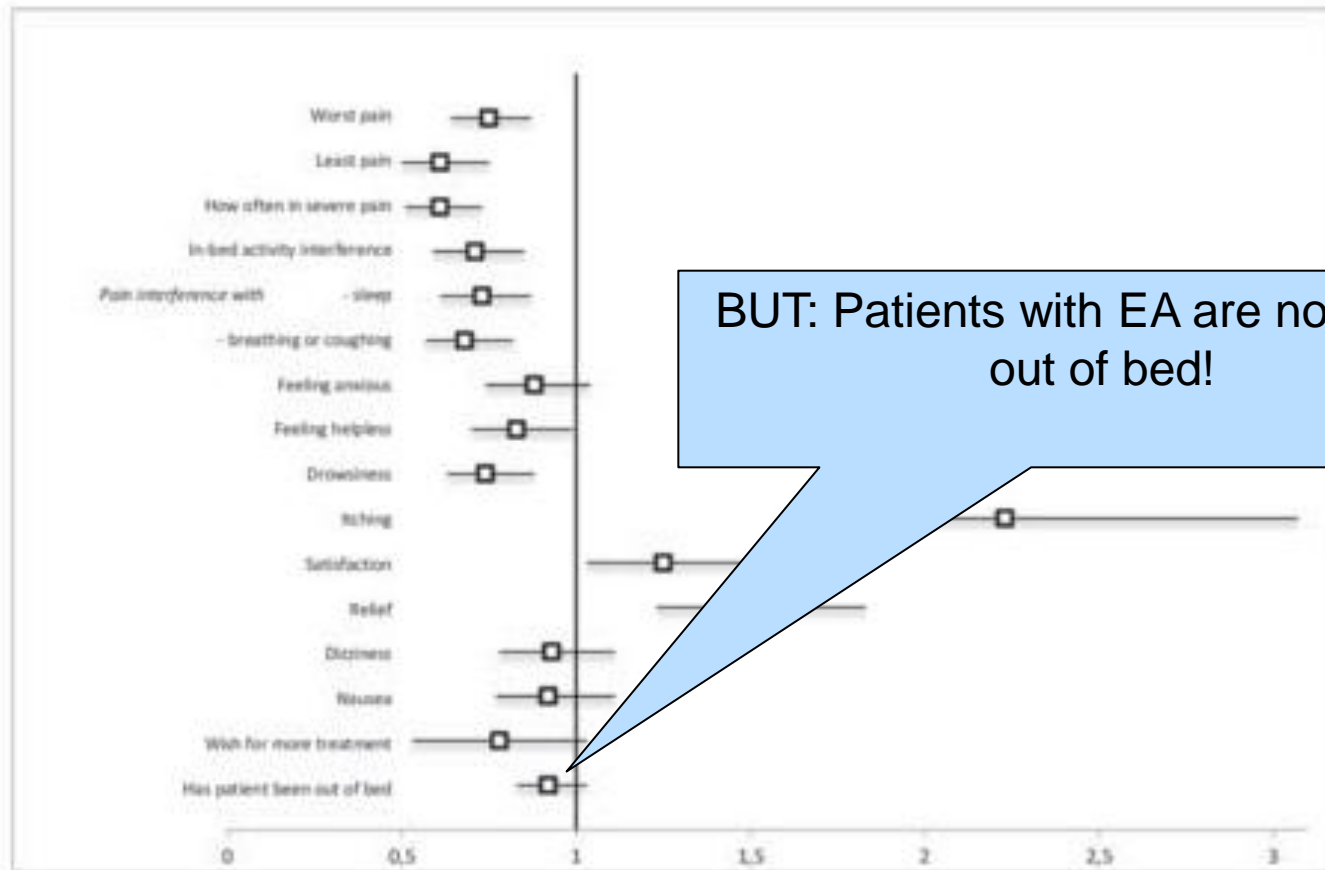
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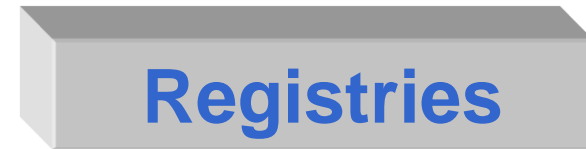
BUT: Patients with EA are not earlier out of bed!

Correlates of satisfaction with pain treatment

- 16,868 patients, 42 sites, 11 countries

Main predictors of patient satisfaction:

- Perceived pain relief (%)
- Participation in treatment decision
- No wish for more pain treatment



High data quality

Low variability

Covariables well controlled



Narrow inclusion criteria

Highly selected patients

Bias (Sponsor, Hawthorne-effect....)

Rare situations not mirrored



Routine data

Large number of cases

Rare cases and complications

Mirrors real life



Uncontrolled confounders

Data quality?

No randomisation

Causality?

Limitations

- Data quality
- Data may not be representative
- Association \neq causal relationship
- Resources, funding
- IRB requirements

PAIN OUT: research

- Enormous variation of care
- Factors associated with higher quality:
 - Status als district hospital
 - Routine pain assessment, patient information
 - Epidurals – but benefit not used!
 - Pain relief and pat involvement is associated with satisfaction
- Risk factors:
 - (Gender), older age, no preexisting pain
 - Some „small“ surgeries, c-section

PAIN OUT: quality improvement

- Does participation in PAIN OUT improve quality of care?



SCIENTIFIC REPORTS

Combination of pre-emptive port-site and intraoperative intraperitoneal ropivacaine for reduction of postoperative pain: a prospective cohort study



OPEN Implementing a benchmark and feedback concept decrease postoperative pain after total hip arthroplasty: A prospective study including 256 patients

Jorge Jiménez Cruz^{a,*}, Herbert Diebold^{a,*}, Askin Dogan^{a,*}, Anke Mothes^{a,*}, Mathias Rengsberger^{a,*}, Michael Hartmann^b, Winfried Meissner^c, Ingo B. Runnebaum^{a,*}

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A. Benditz¹, J. Drescher², F. Greimel¹, F. Zeman³, J. Grifka¹, W. Meißner⁴ & F. Völlner¹

Journal of Pain Research

Dovepress

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ORIGINAL RESEARCH

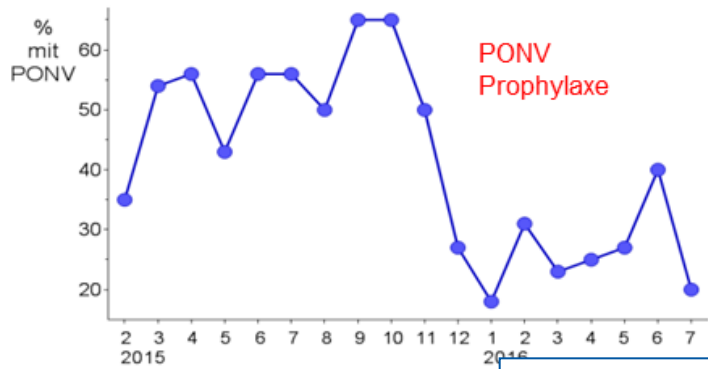
Can consistent benchmarking within a standardized pain management concept decrease postoperative pain after total hip arthroplasty? A prospective cohort study including 367 patients

QUIPS as a tool for continuous quality monitoring in a paediatric surgery clinic

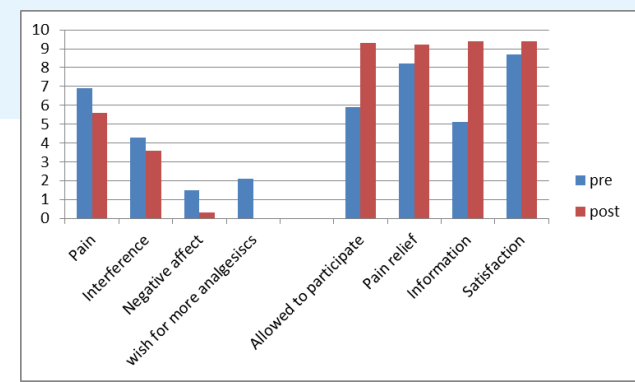
F. Oppitz¹ · W. Meißner² · C. Sarmiento¹ · M. Höhne¹ · U. Hamann¹ · S. Mescha²

QUIPS als Werkzeug zum kontinuierlichen Qualitätsmonitoring in einer kinderchirurgischen Klinik

... has steadily increased over recent

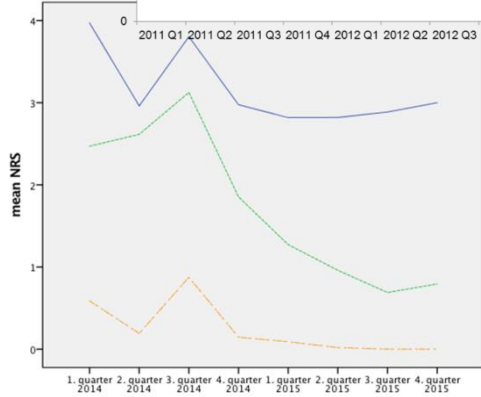
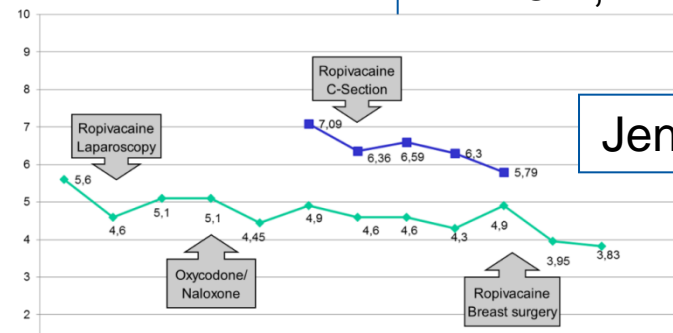


Bern, Kinderchirurgie

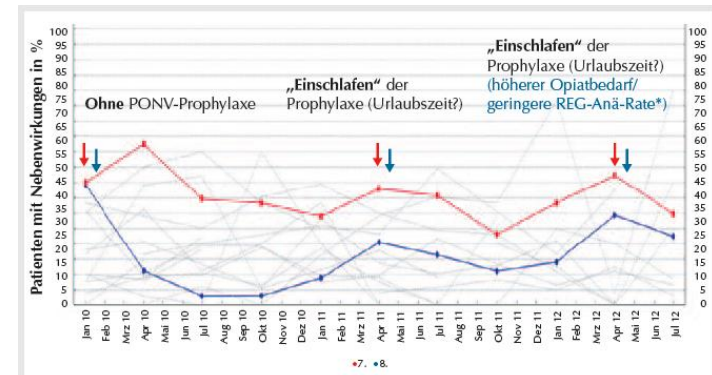
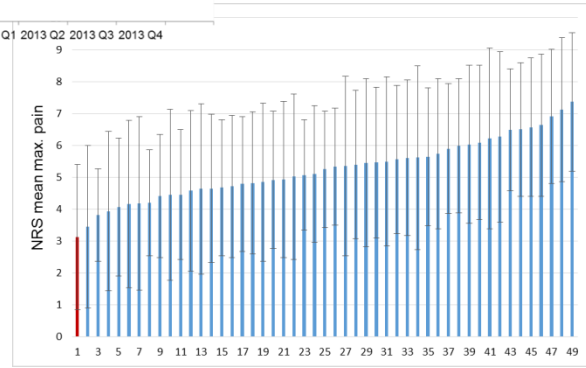


Belgrad, Gen. surgery

Jena, Gynäkologie+Geburtsh.



Regensburg, Knie- und Hüft-TEPS



Nebenwirkungen: postoperatives Erbrechen in %; sichtbarer Effekt einer entsprechend aktueller Handlungsempfehlung [13] durchgeführten Prophylaxe und Monitoring der Kontinuität (Quartal I 2010 bis Quartal III 2012), (rot: Station mit opiatbetonter Schmerztherapie; blau: Station mit überwiegend Regionalanästhesie); *Regionalanästhesie-Rate.

Vogtareuth, Kinderchirurgie

Quality improvement

- Benchmark meetings
- Web-based information exchange
- Peer review
- National networks in 7 European countries (EFIC) and Mexico (Pfizer)
- (accreditation)



PAIN-OUT

Improvement in
Postoperative PAIN OUTcome

Summary

- Non-for-profit, academic project
- „Real world“ research & QI
- Open to every hospital worldwide
- Annual fee 1.500 € / hospital
- Join PAIN OUT

Thank you:

Alle QUIPS- Teilnehmer
J Rothaug, C Weinmann, M Komma
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ESA, EFIC, ACP
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Jena Paradies

