

CV

Birth data

27 January 1988

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Current Work Addresses

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Affiliations

Department of Global Public Health, Karolinska Institutet, Stockholm, Sweden.

Function Perioperative Medicine and Intensive Care, Karolinska University Hospital, Solna, Sweden.

Docent-level Competence (Associate Professorship)

Clinical Epidemiology, 2020; Karolinska Institutet.

Doctoral Degree

Medical Sciences (PhD), 2015; The risk of dying: predicting early mortality in urban Indian hospitals; Johan von Schreeb, Göran Tomson, Max Petzold, Li Felländer-Tsai; Karolinska Institutet; Available from: <https://openarchive.ki.se/xmlui/handle/10616/44832>.

Degree

Medicine (MD), 2014; Karolinska Institutet.

Postdoc Appointment

2018 – 2023; Department of Global Public Health, Karolinska Institutet, Stockholm, Sweden; Cecilia Stålsby Lundborg.

Current Positions

Principal Researcher 15% (full-time position, but 85% leave of absence because of clinical duties); Department of Global Public Health, Karolinska Institutet.

Resident in Anaesthesia and Intensive Care 100%; August 2020 – Present; Karolinska University Hospital in Solna.

Prior Positions

Postdoc 15-100%; May 2018 – March 2023; Department of Global Public Health, Karolinska Institutet.

Researcher 50-100%; November 2015 – May 2018; Department of Public Health Sciences, Karolinska Institutet.

Medical research intern (Forskar-AT) 100%; August 2015 – March 2018; Fulfilled criteria for license to practice 2018-03-04; Karolinska University Hospital in Huddinge.

PhD student 100%; May 2012 – November 2015; Department of Public Health Sciences, Karolinska Institutet.

Junior doctor (underläkare) 100%; June 2014 – August 2015; Department of Orthopaedic Surgery, Karolinska University Hospital, Huddinge, Sweden.

Research assistant 25-100%; August 2010 – May 2012; Department of Public Health Sciences, Karolinska Institutet.

Research Grants Awarded in Competition as Principal Investigator

Combining Human and Artificial Intelligence to Improve Trauma Care Outcomes (Reg no. SLS-973387); June 2022 - June 2024; 200 000 SEK; Swedish Society of Medicine (Svenska Läkaresällskapet).

A Pilot Multi-center Cluster Randomized Trial to Compare The Effect of Trauma Life Support Training Programs on Patient and Provider Outcomes (Reg no. 2021-0048); December 2021 - December 2022; 220 000 SEK; Laerdal Foundation.

Does trauma life support training improve patient outcomes? Establishing a network of Swedish and Indian researchers (Reg no. 2020-03779); January 2021 - December 2022; 790 020 SEK; Swedish Research Council (Vetenskapsrådet).

Does institutional implementation of audit filters reduce mortality in adult trauma patients? (Reg no. 2016-02041); January 2017 - December 2021 (extended to July 2023 due to Covid-19); 4 000 000 SEK; Sweden Research Council (Vetenskapsrådet).

Improving trauma triage; January 2017 - December 2019; 3 000 000 SEK; Swedish National Board of Health and Welfare (Socialstyrelsen).

Time Deducted from Active Research Time

Parental leave; May 2019 – April 2020, 11 months, 85%.

Parental leave; September 2018 – March 2019, 6 months, 85%.

Clinical rotation in primary care (part of AT); August 2017 – March 2018, 6 months, full time

Clinical rotation in psychiatry (part of AT); November 2016 – February 2017, 3 months, full time.

Clinical rotation in surgery, anesthesia, and orthopedics (part of AT); April 2016 – August 2016, 4.5 months, full time.

Clinical rotation in internal medicine (part of AT); August 2015 – January 2016, 4.5 months, full time.

Other Relevant Courses

Teaching and learning in higher education, 2018, Karolinska Institutet.

Good clinical practice, 2018, Karolinska Trial Alliance, Stockholm, Sweden.

Introductory doctoral supervision course, 2017, Karolinska Institutet.

PhD Supervision

Jonatan Attergrim; Main supervisor; Expected to defend in 2027; Department of Global Public Health, Karolinska Institutet.

Johanna Berg; Main supervisor; Expected to defend in 2024; Department of Global Public Health, Karolinska Institutet.

Lukas Berglund; Co-supervisor; Expected to defend in 2024; Department of Clinical Science, Innovation and Technology, Karolinska Institutet.

Uzma Rahim Khan; Main supervisor; Defended in October 2022; Department of Global Public Health, Karolinska Institutet.

Siddarth David; Main supervisor; Defended in May 2022; Department of Global Public Health, Karolinska Institutet.

Educational Experience

Course leader Degree Project Master Programme in Global Health; September 2017 – Present; Department of Global Public Health, Karolinska Institutet.

Language Skills

Fluent in written and spoken English and Swedish.

References

Available upon request.

Brief Bibliography

1. David S, Roy N, Lundborg CS, **Gerdin Wörnberg M**, Solomon H. 'Coming home does not mean that the injury has gone'-exploring the lived experience of socioeconomic and quality of life outcomes in post-discharge trauma patients in urban India. *Glob Public Health*. 2022 Nov;17(11):3022-3042. doi: 10.1080/17441692.2022.2036217.

In this qualitative interview study, we found that participants had needs unmet by the health-care system even late after the injury. I assisted with designing the study, interpreting the findings, and provided input during the writing of the paper.

2. Pendleton AA, Sarang B, Mohan M, Raykar N, **Gerdin Wörnberg M**, Khajanchi M, Dharap S, Fitzgerald M, Sharma N, Soni KD, O'Reilly G, Bhandarkar P, Misra M, Mathew J, Jarwani B, Howard T, Gupta A, Cameron P, Bhoi S, Roy N. A cohort study of differences in trauma outcomes between females and males at four Indian Urban Trauma Centers. *Injury*. 2022 Sep;53(9):3052-3058. doi: 10.1016/j.injury.2022.07.022.

This paper shows that female and male trauma patients have similar odds of mortality within 24 hours and 30 days after arrival to hospital in the setting of our proposed trial. I conducted part of the data analysis and provided input on the write up of the paper.

3. Berg J, Alvensson HM, Roy N, Ekelund U, Bains L, Chatterjee S, Bhattacharjee PK, David S, Gupta S, Kamble J, Khajanchi M, Lal P, Malhotra V, Meher R, Mishra A, Mohan LN, Petzold M, Saxena R, Shrivastava P, Singh R, Soni KD, Sural S, **Gerdin Wörnberg M**. Perceived

usefulness of trauma audit filters in urban India: a mixed-methods multicentre Delphi study comparing filters from the WHO and low and middle-income countries. *BMJ Open*. 2022 Jun 9;12(6):e059948. doi: 10.1136/bmjopen-2021-059948.

This paper is part of an interrupted time series trial, funded by the Swedish Research Council (Dnr 2016-02041), assessing the effectiveness of implementing trauma audit filters on mortality in adult trauma patients in urban India. I was the senior author on this paper.

4. **Gerdin Wärnberg M**, Berg J, Bhandarkar P, Chatterjee A, Chatterjee S, Chintamani C, Felländer-Tsai L, Gadgil A, Ghag G, Hasselberg M, Juillard C, Khajanchi M, Kizhakke Veetil D, Kumar V, Kundu D, Mishra A, Patil P, Roy N, Roy A, David S, Singh R, Solomon H, Soni KD, Strömmer L, Tandon M; Trauma life support training Effectiveness Research Network (TERN) collaborators. A pilot multicentre cluster randomised trial to compare the effect of trauma life support training programmes on patient and provider outcomes. *BMJ Open*. 2022 Apr 18;12(4):e057504. doi: 10.1136/bmjopen-2021-057504.

This is the published protocol of the pilot study that was part of our Swedish Research Council Network Grant (Dnr. 2020-03779, www.tern.network, [ClinicalTrials.gov NCT05417243](https://clinicaltrials.gov/ct2/show/study/NCT05417243)), and on which the current application is based. I led the planning and writing up of this paper.

5. David SD, Aroke A, Roy N, Solomon H, Lundborg CS, **Gerdin Wärnberg M**. Measuring socioeconomic outcomes in trauma patients up to one year post-discharge: A systematic review and meta-analysis. *Injury*. 2022 Feb;53(2):272-285. doi: 10.1016/j.injury.2021.10.012.

We found that one-third (36%) of patients had not returned to work even a year after discharge. Those who did return to work took more than 3 months to do so. We also found that older adults and females tended to have poorer outcomes. I was the senior author on this paper.

6. David SD, Roy N, Solomon H, Lundborg CS, **Gerdin Wärnberg M**. Measuring post-discharge socioeconomic and quality of life outcomes in trauma patients: a scoping review. *J Patient Rep Outcomes*. 2021 Aug 9;5(1):68. doi: 10.1186/s41687-021-00346-6.

We identified quality of life, return to work, social support, cost, and participation as the main outcomes studied in post-discharge trauma patients, which was important in finalising the outcomes for our proposed trial. I was the senior author on this paper.

7. Sarang B, Bhandarkar P, Raykar N, O'Reilly GM, Soni KD, **Gerdin Wärnberg M**, Khajanchi M, Dharap S, Cameron P, Howard T, Gadgil A, Jarwani B, Mohan M, Bhoi S, Roy N. Associations of On-arrival Vital Signs with 24-hour In-hospital Mortality in Adult Trauma Patients Admitted to Four Public University Hospitals in Urban India: A Prospective Multi-Centre Cohort Study. *Injury*. 2021 Feb 26:S0020-1383(21)00178-9. doi: 10.1016/j.injury.2021.02.075.

This paper confirms the associations of vital sign derangements and early mortality in the setting of the proposed trial, and highlights the need for interventions that target the causes of these derangements. I assisted in the analysis and the interpretation of findings, and provided input during the writing of the paper.

8. Khajanchi M, Kumar V, Wärnberg Gerdin L, Roy N, **Gerdin Wärnberg M**. Prevalence of a Definitive Airway in Severe Traumatic Brain Injury patients received at four Urban Public University Hospitals in India – a Cohort Study. *Inj Prev*. 2019 Oct;25(5):428-432. doi: 10.1136/injuryprev-2018-042826.

This paper shows that airway management represent a major opportunity for improvement in

the setting of the proposed trial, as only 15% of patients with a severe traumatic brain injury who were transferred between hospitals had a definitive airway placed before transfer. I was the senior author on this paper.

9. Mansourati M, Kumar V, Khajanchi M, Saha ML, Dharap S, Seger R, **Gerdin Wärnberg M**. Mortality following surgery for trauma in an Indian trauma cohort. *Br J Surg*. 2018.

This paper shows that mortality following trauma surgery is as high as 23% in the setting of the proposed trial, and that abdominal and vascular surgery are associated with the highest risks. I was the senior author on this paper.

10. Roy N, **Gerdin M**, Ghosh S, Gupta A, Kumar V, Khajanchi M, et al. 30-Day In-hospital Trauma Mortality in Four Urban University Hospitals Using an Indian Trauma Registry. *World J Surg*. 2016 Jun 24;40(6):1299–307.

We showed that the 30-day mortality in adult trauma patients in the setting of our proposed was around 20%. I assisted during data analysis and provided input during the writing of the paper.

Relevant publications from 2015–2023

1. Aroke A, Rohini D, Sarang B, David S, O'Reilly G, Raykar N, Khajanchi M, Attergrim J, Dev Soni K, Naveen S, Mohan M, Gadgil A, Roy N, **Gerdin Wärnberg M**. Profile and Triage Validity of Trauma Patients Triaged Green: A Prospective Cohort Study from a Secondary Care Hospital in India. *BMJ Open*. 2023 May 8;13(5):e065036. doi: 10.1136/bmjopen-2022-065036.
2. Kapanadze G, Berg J, Sun Y, **Gerdin Wärnberg M**. Facilitators and barriers impacting in-hospital Trauma Quality Improvement Program (TQIP) implementation across country income levels: a scoping review. *BMJ Open*. 2023 Feb 17;13(2):e068219. doi: 10.1136/bmjopen-2022-068219.
3. **Gerdin Wärnberg M**, Berg J, Bhandarkar P, Chatterjee A, Chatterjee S, Chintamani C, Felländer-Tsai L, Gadgil A, Ghag G, Hasselberg M, Juillard C, Khajanchi M, Kizhakke Veetil D, Kumar V, Kundu D, Mishra A, Patil P, Roy N, Roy A, David S, Singh R, Solomon H, Soni KD, Strömmer L, Tandon M; Trauma life support training Effectiveness Research Network (TERN) collaborators. A pilot multicentre cluster randomised trial to compare the effect of trauma life support training programmes on patient and provider outcomes. *BMJ Open*. 2022 Apr 18;12(4):e057504. doi: 10.1136/bmjopen-2021-057504.
4. David SD, Roy N, Solomon H, Lundborg CS, **Gerdin Wärnberg M**. Measuring post-discharge socioeconomic and quality of life outcomes in trauma patients: a scoping review. *J Patient Rep Outcomes*. 2021 Aug 9;5(1):68. doi: 10.1186/s41687-021-00346-6.
5. David S, Roy N, Lundborg CS, **Gerdin Wärnberg M**, Solomon H. 'Coming home does not mean that the injury has gone'-exploring the lived experience of socioeconomic and quality of life outcomes in post-discharge trauma patients in urban India. *Glob Public Health*. 2022 Nov;17(11):3022-3042. doi: 10.1080/17441692.2022.2036217.
6. Pendleton AA, Sarang B, Mohan M, Raykar N, **Gerdin Wärnberg M**, Khajanchi M, Dharap S, Fitzgerald M, Sharma N, Soni KD, O'Reilly G, Bhandarkar P, Misra M, Mathew J, Jarwani B, Howard T, Gupta A, Cameron P, Bhoi S, Roy N. A cohort study of differences in trauma outcomes between females and males at four Indian Urban Trauma Centers. *Injury*. 2022 Sep;53(9):3052-3058. doi: 10.1016/j.injury.2022.07.022.
7. Khan UR, Razzak JA, Jooma R, **Gerdin Wärnberg M**. Association of age and severe injury in young motorcycle riders: A cross-sectional study from Karachi, Pakistan. *Injury*. 2022

- Sep;53(9):3019-3024. doi: 10.1016/j.injury.2022.04.017.
8. Kayambankadzanja RK, Schell CO, **Gerdin Wärnberg M**, Tamras T, Mollazadegan H, Holmberg M, Alvesson HM, Baker T. Towards definitions of critical illness and critical care using concept analysis. *BMJ Open*. 2022 Sep 5;12(9):e060972. doi: 10.1136/bmjopen-2022-060972.
 9. Berg J, Alvesson HM, Roy N, Ekelund U, Bains L, Chatterjee S, Bhattacharjee PK, David S, Gupta S, Kamble J, Khajanchi M, Lal P, Malhotra V, Meher R, Mishra A, Mohan LN, Petzold M, Saxena R, Shrivastava P, Singh R, Soni KD, Sural S, **Gerdin Wärnberg M**. Perceived usefulness of trauma audit filters in urban India: a mixed-methods multicentre Delphi study comparing filters from the WHO and low and middle-income countries. *BMJ Open*. 2022 Jun 9;12(6):e059948. doi: 10.1136/bmjopen-2021-059948.
 10. Banerjee N, Sharma N, Soni KD, Bansal V, Mahajan A, Khajanchi M, **Gerdin Wärnberg M**, Roy N. Are home environment injuries more fatal in children and the elderly? *Injury*. 2022 Jun;53(6):1987-1993. doi: 10.1016/j.injury.2022.03.050.
 11. Khan UR, Razzak J, **Gerdin Wärnberg M**. Association of adolescents' independent mobility with road traffic injuries in Karachi, Pakistan: a cross-sectional study. *BMJ Open*. 2022 Mar 22;12(3):e057206. doi: 10.1136/bmjopen-2021-057206.
 12. David SD, Aroke A, Roy N, Solomon H, Lundborg CS, **Gerdin Wärnberg M**. Measuring socioeconomic outcomes in trauma patients up to one year post-discharge: A systematic review and meta-analysis. *Injury*. 2022 Feb;53(2):272-285. doi: 10.1016/j.injury.2021.10.012.
 13. Sarang B, Raykar N, Gadgil A, Mishra G, **Gerdin Wärnberg M**, Rattan A, Khajanchi M, Soni KD, Mohan M, Sharma N, Kumar V, Kv D, Roy N; Towards Improved Trauma Care Outcomes TITCO-India. Outcomes of Renal Trauma in Indian Urban Tertiary Healthcare Centres: A Multicentre Cohort Study. *World J Surg*. 2021 Aug 21. doi: 10.1007/s00268-021-06293-z.
 14. Larsson A, Berg J, Gellerfors M, **Gerdin Wärnberg M**. The advanced machine learner XGBoost did not reduce prehospital trauma mistriage compared with logistic regression: a simulation study. *BMC Med Inform Decis Mak*. 2021 Jun 21;21(1):192. doi: 10.1186/s12911-021-01558-y.
 15. Sarang B, Bhandarkar P, Raykar N, O'Reilly GM, Soni KD, **Gerdin Wärnberg M**, Khajanchi M, Dharap S, Cameron P, Howard T, Gadgil A, Jarwani B, Mohan M, Bhoi S, Roy N. Associations of On-arrival Vital Signs with 24-hour In-hospital Mortality in Adult Trauma Patients Admitted to Four Public University Hospitals in Urban India: A Prospective Multi-Centre Cohort Study. *Injury*. 2021 Feb 26:S0020-1383(21)00178-9. doi: 10.1016/j.injury.2021.02.075.
 16. Khan UR, Razzak JA, **Gerdin Wärnberg M**. Global trends in adolescents' road traffic injury mortality, 1990-2019. *Arch Dis Child*. 2021 Feb 17:archdischild-2020-319184. doi: 10.1136/archdischild-2020-319184.
 17. Henriksson M, D. Saulnier, D, Berg J, **Gerdin Wärnberg M**. The transfer of clinical prediction models for early trauma care had uncertain effects on mistriage. *Journal of Clinical Epidemiology*. Dec 2020; 120:66-73.
 18. Wärnberg Gerdin L, Khajanchi M, Kumar V, Roy N, Saha ML, Soni KD, **Gerdin Wärnberg M**. Comparison of emergency department trauma triage performance of clinicians and clinical prediction models: a cohort study in India. *BMJ Open*. 2020 Feb 1;10(2):e032900.
 19. Laytin AD, Clarke D, **Gerdin Wärnberg M**, Kong VY, Bruce JL, Laing G, et al. The search for a simple injury score to reliably discriminate the risk of in-hospital mortality in South Africa. *Surgery*. 2020 Feb 21;
 20. Kizhakke Veetil D, Kumar V, Khajanchi M, **Gerdin Wärnberg M**. A multicentre observational cohort study of the 24 hour and 30 day in hospital mortality of pediatric and adult trauma patients - an Indian urban tertiary care perspective. *J Pediatr Surg*. 2019 Jul;54(7):1421-1426. doi: 10.1016/j.jpedsurg.2018.10.101.

21. Attergrim J, Claeson A, Dharap S, Gupta A, Khajanchi M, Kumar V, Sterner M, **Gerdin Wärnberg M**. Predicting mortality with the international classification of disease injury severity score using survival risk ratios derived from an Indian trauma population: a cohort study. *PLoS One*. June 27, 2018.
22. Sterner M, Claeson A, Attergrim J, Khajanchi M, Kumar V, **Gerdin Wärnberg M**. Both the multiplicative and single-worst-injury international classification of diseases injury severity score (ICISS) underperform in urban Indian hospitals. *Trauma*. June 2018.
23. Khajanchi M, Kumar V, Wärnberg Gerdin L, Roy N, **Gerdin Wärnberg M**. Prevalence of a Definitive Airway in Severe Traumatic Brain Injury patients received at four Urban Public University Hospitals in India – a Cohort Study. *Inj Prev*. 2019 Oct;25(5):428-432. doi: 10.1136/injuryprev-2018-042826.
24. Claeson A, Sterner M, Attergrim J, Khajanchi M, Kumar V, Saha ML, **Gerdin Wärnberg M**. Assessment of the predictive value of ICISS for trauma mortality in urban India. *Journal of Surgical Research*. 2018;229:357–64.
25. Mansourati M, Kumar V, Khajanchi M, Saha ML, Dharap S, Seger R, **Gerdin Wärnberg M**. Mortality following surgery for trauma in an Indian trauma cohort. *Br J Surg*. 2018.
26. Laytin AD, Dicker RA, **Gerdin M**, Roy N, Sarang B, Kumar V, et al. Comparing traditional and novel injury scoring systems in a U.S. level-I trauma center: an opportunity for improved injury surveillance in low- and middle-income countries. *J Surg Res*. 2017;215:60–6.
27. Massenburg BB, Veetil DK, Raykar NP, Agrawal A, Roy N, **Gerdin M**. A systematic review of quantitative research on traumatic brain injury in India. *Neurol India*. 2016;65(2):305–14.
28. Roy N, **Gerdin M**, Schneider E, Kizhakke Veetil DK, Khajanchi M, Kumar V, et al. Validation of international trauma scoring systems in urban trauma centres in India. *Injury*. 2016 Nov;47(11):2459–64.
29. **Gerdin M**, Roy N, Felländer-Tsai L, Tomson G, von Schreeb J, Petzold M, et al. Traumatic transfers: calibration is adversely affected when prediction models are transferred between trauma care contexts in India and the United States. *J Clin Epidemiol*. 2016 Jun;74:177–86.
30. Roy N, **Gerdin M**, Ghosh S, Gupta A, Kumar V, Khajanchi M, et al. 30-Day In-hospital Trauma Mortality in Four Urban University Hospitals Using an Indian Trauma Registry. *World J Surg*. 2016 Jun 24;40(6):1299–307.
31. **Gerdin M**, Roy N, Khajanchi M, Kumar V, Felländer-Tsai L, Petzold M, et al. Validation of a novel prediction model for early mortality in adult trauma patients in three public university hospitals in urban India. *BMC Emerg Med*. 2016 Dec 22;16(1):15.