

# Evaluating Pelvic Circumferential Compression Device Use in Prehospital Pelvic Fracture Management and Patient Outcomes

## Introduction

Pelvic circumferential compression devices (PCCDs) are the recommended prehospital treatment for pelvic trauma; however, data on their widespread usage in the US is limited.

## Objective

This study worked backward from hospital-confirmed pelvic fractures to evaluate patient and mechanism characteristics of prehospital PCCD usage.

## Methodology



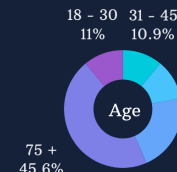
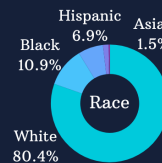
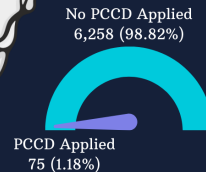
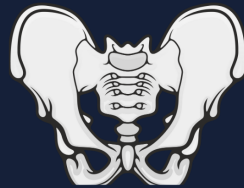
**Inclusion Criteria**  
Hospital Confirmed Pelvic Fractures

**Variables**  
Demographic Factors  
PCCD Application  
Injury Causation  
Vital Signs  
Hospital Outcome

## Hospital Confirmed Pelvic Fractures

6,333 Patients

Female (62%) Male (38%)



## Results/Findings

- Stable and unstable pelvic ring fractures, the ideal conditions requiring stabilization with a PCCD, comprised 5.91% and 1.01% of patients, respectively.
- Older females who fell at home are the largest population of pelvic injuries but the least likely to have received a PCCD with a 10.4 OR of predicted mortality.
- PCCD application was higher in those with signs of critical injuries, but no significant difference was observed in hospital stay or mortality.
- Overall mortality was 2.4%, with higher odds in 46+ y.o. males, 75+ y.o. females, traffic accidents, and patients with signs of critical injuries.
- 1,186 (18.73%) of patients had a shock index >0.9.

## Conclusion

Prehospital PCCD application was infrequent but demonstrated reduced pain. This work highlights the need for improved prehospital guidelines to detect pelvic fractures. Future research should aim to better understand the benefits of PCCD application in pelvic injuries and create a more tailored approach to prehospital pelvic fracture management.

## Acknowledgements

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