# Making the First Fracture the Last

**Any minimal trauma fracture (MTF) doubles the risk of future fractures. XRAIT uses natural language processing of radiology reports to allow risk stratification of patients by clinical services to reduce the social and economic impact of osteoporosis and ensure that their first fracture is their last.**

## Competitive advantage

- Natural Language Processing increases sensitivity and specificity by correctly identifying minimal trauma fracture in patients at increased risk of a second fracture
- XRAIT:
  - Requires low computing power to read massive datasets and extract a clinically relevant output
  - Has high sensitivity and specificity for fractures
  - Is adaptive and can be calibrated for site specific variations in reporting
  - Is a plug and play system that can be installed into diverse operating environments

## More Information

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## Impact

- More than 140,000 MTF are estimated to occur due to osteoporosis or osteopenia in people aged 50 years and older in Australia each year. Early identification and follow up of patients at risk of recurrent fracture will reduce the economic impact which, by 2022 is expected to reach $3.84 billion.

## Successful outcomes

- Showed a 6-fold increase in the numbers of fractures identified compared to manual case-based referrals to services designed to prevent the next fracture
- Installed across major teaching hospitals in SESLHD and in Concord and Royal North Shore Hospitals for evaluation and validation

## Capabilities and facilities

- Close links to industry for underlying technology capacity on a contract basis
- NLP experts who can further develop the technology and concepts leading to enhanced versions and additions
- Support of eHealth to engage and develop the technology on a needs and facility-wide basis
- Committed clinical workforce and capacity to test clinical utility and effectiveness in real world settings

## Our partners

- SPHERE MSK
- Pacific Knowledge Systems Surry Hills Sydney
- Macquarie Park, Sydney
- NSW eHealth
- SW Health Agency for Clinical Innovation
- NH&MRC