Quad bikes are involved in many injuries and fatalities on farms.

What are the risks?
Quad bikes are considerably less stable than other off-road vehicles such as side-by-side (SSV) vehicles or utes.

When a quad bike loses control the crash dynamics are unpredictable. Even at low speeds an operator can be injured or killed by the out-of-control machine rolling over and landing on them, or being ejected after colliding with other objects.

Nationally more than 225 people were killed using a quad bike in Australia between 2001 and 2016. Around 1400 more are seriously injured each year. Many injuries are debilitating and include permanent brain and spinal injuries. Tragically, these injuries and fatalities are avoidable.

• Around half of all fatalities were caused by either asphyxiation or crush injuries resulting from the quad bike rolling over and onto the operator.
• Around three-quarters of all fatalities occurred on undulating or sloped terrain.
• Around one-quarter of all fatalities involved head injuries.
• Around one in three involved a load or trailer, potentially affecting stability or handling.
• People of all ages and levels of experience have been killed when using quad bikes.

Who has responsibilities?
All employers have obligations under the Occupational Health and Safety Act 2004 (OHS Act) to ensure a safe workplace. This includes ensuring powered mobile plant (including quad bikes) is fit for purpose, well maintained and only used by competent operators. (OHS Act s21)

Employers and self-employed persons also have obligations under the Occupational Health and Safety Regulations 2017 (OHS Regulations) to eliminate the risks of rollover or operators being thrown from a vehicle. If this is not reasonably practicable, they have a duty to reduce the risk so far as is reasonably practicable. (OHS Regulations r109)

Reducing the risks
The following safety strategies provide ways to reduce risks associated with using a quad bike.

These strategies can be used along with the task vs terrain risk assessment table on page 4. This table helps duty holders and operators identify the dominant risk outcomes for common quad bike tasks when used on typical agricultural terrain.

Alternative vehicles
The most effective way to reduce the risk to operators is to eliminate the task or change the way the task is done, such as using a safer vehicle.

For example, in many circumstances it is safer to use a farm ute or side-by-side vehicle (SSV) to check stock or commute to a remote paddock.
Example of a side-by-side vehicle (SSV)

Similarly, a two-wheeled agricultural motorbike may be more suitable for checking stock and fences in hilly or more challenging terrain. Further information regarding vehicle selection is available in the WorkSafe Victoria publication, *A handbook for workplaces - Quad bikes on farms*.

**Rollover protection**

Around half of all quad bike fatalities are from asphyxiation or trauma resulting from quad bike rollover.

If a quad bike is still considered to be the most suitable vehicle for the task and there is a risk of rollover, this risk must be controlled. A suitably tested operator protective device (OPD) is an appropriate control. (OHS Regulations r109)

**Head protection**

Around one-quarter of quad bike fatalities result from head injury.

There is a high likelihood of being ejected or falling from the quad bike following a collision or striking an object. Quad bikes cannot be fitted with seat belts.

Where there is a risk of being ejected from the quad bike, the risk must be controlled. This includes ensuring approved helmets are always worn. (OHS Regulations r109)

Each operator should wear a well-fitted and good quality helmet that is preferably not shared with others. Helmets must comply with Australian Standard 1698: 2006 - *Protective helmets for vehicle users*, or if the vehicle is only used on the farm and operator speed is restricted to 30km per hour, a lightweight helmet complying with the NZ standard 8600:2002 - *All-terrain vehicle helmets* may be used.

Examples of approved AS1698 and NZ8600 helmets
Quad bikes – Reducing the risks

Protective clothing
• Heavy-duty clothing and personal protective equipment should be worn, including:
  – sturdy boots
  – gloves
  – protective eyewear
  – sun protection
  – other protection for specific tasks (e.g., spraying).

Safe loads and trailers
• Never carry passengers on trailers or single-person quad bikes.
• Ensure trailers are suited to the task and terrain, and within the quad bike’s towing and load limits.
• Take extra care when towing:
  – Go at a slower speed.
  – Slow down before cornering.
  – Make sure there is some weight on the tow coupling, not exceeding the towbar vertical load specification.
  – Select a safer route without obstacles, hills or tight turns.
• Quad bike payloads can increase the risk of rollover. When the quad bike is carrying a load, take extra precautions:
  – Secure the load so it cannot move.
  – Containers, such as spray tanks holding liquid, should have baffles.
  – Minimise the weight of loads, and never exceed manufacturer’s specifications.
  – Ride at slow speed, especially when turning.
  – Avoid steep terrain and slopes.

Responsible riding
• Ensure quad bike operators have received the necessary instruction and training, to ride the quad bike.
• A safe operator training course provided by a registered training organisation (RTO) should be considered.
• Operators should also be physically capable of riding and controlling the quad bike. Adult-sized quad bikes should never be used by children under 16.
• Enforce workplace rules including:
  – Only competent and physically capable staff may use a quad bike.
  – Helmets must be worn.
  – Where there are any other vehicles, apply standard road rules (e.g., keep left, right of way).
  – Take the operation of the quad bike seriously. Concentrate and do not perform any stunts.
  – Speed to be kept to a safe speed limit appropriate to terrain and track.
  – Remove keys from quad bikes when they are not in use to prevent unauthorised use.

Mechanical condition of the quad bike
• Regularly check the quad bike’s mechanical condition, especially brakes, controls and tyres.
• Tyre tread selection, size, orientation, and type are all important for handling and stability. Always follow manufacturer’s recommendations.
• Tyre pressure is critical to handling and stability. Tyres should be regularly checked using a conveniently located and reliable low pressure range gauge. Check the manufacturer’s recommended operational range, which is typically between 4-8psi.
• Damage, breakdowns and maintenance requirements must be reported immediately to the person responsible for the quad bike’s condition.

Communication and emergencies
• Quad bike operators working alone should let others know when and where they are going and when they expect to return.
• A mobile phone or other reliable communication device should be available to call for help in the event of an incident.
Quad bikes – Reducing the risks

Assess your risk

Use this table to cross reference common quad bike tasks against typical farm terrain. If you identify you’re at risk or rollover, it’s your duty to reduce that risk – consider eliminating the task, using an alternative vehicle or fitting an OPD.

<table>
<thead>
<tr>
<th>TASK</th>
<th>TERRAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Road or track</td>
</tr>
<tr>
<td></td>
<td>Farm track, path or driveway</td>
</tr>
<tr>
<td></td>
<td>Slippery or shifting surface, changing conditions due to weather</td>
</tr>
<tr>
<td></td>
<td>Sloped ground</td>
</tr>
<tr>
<td></td>
<td>Paddock or area with obstacles</td>
</tr>
<tr>
<td></td>
<td>Loading ramp</td>
</tr>
<tr>
<td>Personal transport</td>
<td>Good surface, no bumps, pot holes, wheel ruts, centre raise, or imperfections</td>
</tr>
<tr>
<td></td>
<td>May include wheel ruts, pot holes, centre section raised or other imperfections</td>
</tr>
<tr>
<td></td>
<td>Sandy or muddy terrain (with or without track)</td>
</tr>
<tr>
<td></td>
<td>Hill, rise, gully, creek embankment</td>
</tr>
<tr>
<td></td>
<td>Potential for obstacles such as rocks, timber, rabbit Warren, stock, clumped grass, foliage, low hanging branches</td>
</tr>
<tr>
<td></td>
<td>Driven via a rated and sufficiently long ramp onto transport such as a ute or trailer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moving materials or equipment</th>
<th>Good surface, no bumps, pot holes, wheel ruts, centre raise, or imperfections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travelling at speed</td>
<td>Speed decreases stability and increases harm if there is an incident</td>
</tr>
<tr>
<td>Musterling stock</td>
<td>Sudden movements, distraction from terrain</td>
</tr>
<tr>
<td>Towing trailer</td>
<td>Trailers can affect quad bike handing, and increase the stopping distance</td>
</tr>
<tr>
<td>Spraying</td>
<td>One hand on spray tool, distraction from terrain, shifting load (liquid)</td>
</tr>
</tbody>
</table>

If you are at risk of rollover, the easiest way to reduce that risk is to fit an OPD.
For more information visit worksafe.vic.gov.au/farmsafety or call 1800 136 089.
Quad bikes – Reducing the risks

Further information
Contact the WorkSafe Victoria Advisory Service on 1800 136 089 or go to worksafe.vic.gov.au.

WorkSafe publications
• General machinery guidance
  – Information for Manufacturers and Suppliers of Plant
  – Plant hazard checklist
  – Machinery and Equipment Safety
  – Guidelines for powered mobile plant, warning devices and other measures
• Quad bike guidance material
  – Quad bikes - Attachments, loads and towing: A Health and Safety Solution
  – Quad bikes - Operators wearing helmets: A Health and Safety Solution
  – Quad bikes on farms: A handbook for workplaces

Legislation
• Victorian Occupational Health and Safety Act 2004
• Victorian Occupational Health and Safety Regulations 2017

Research and coronial findings
• Safe Work Australia safeworkaustralia.gov.au/quadbikes
• Australian Centre for Agricultural Health and Safety sydney.edu.au/medicine/aghealth
  – Projects – Farm Hazards
• University of NSW tars.unsw.edu.au
  – Past research – Quad bike safety
• NSW 2015 coronial inquest coroners.jusice.nsw.gov.au
  – Coronial findings
• QLD 2014 coronial inquest courts.qld.gov.au
  – Findings

The information presented in this Health and Safety Solution is intended for general use only. Whilst every effort has been made to ensure the accuracy and completeness of the Health and Safety Solution, the advice contained herein may not apply in every circumstance. Accordingly, WorkSafe Victoria cannot be held responsible, and extends no warranties as to the suitability of the information for your specific circumstances; or actions taken by third parties as a result of information contained in the Health and Safety Solution.