

# INJURIES ON FARMS

## Observations in the Lune Valley 1981-1991

Tim M Burnett, General Practitioner, Green Close Surgery, Kirkby Lonsdale

### SUMMARY

A ten-year record of one general practitioner's experience of injuries on farms confirms how under-reported these injuries are. It gives some insight into the nature and incidence of non-fatal accidents, showing that eye injuries are the most preventable. Those involving the hand are the most frequent. Even the most serious injuries that require hospital treatment often go unreported, and the reasons for this are discussed. Targeted safety education is an important factor in reducing the number of accidents and fatalities, in addition to a proper legal framework.

### INTRODUCTION

This study was begun in 1981, as a prospective record of every farm injury encountered in the course of normal daily work by one general practitioner. It arose from the author's previous experience of non-fatal accidents on farms, and was an attempt to look beyond the anecdotal evidence to the true pattern of injuries. Recording was continued for ten years until August 1991.

### THE SETTING

All the injuries seen occurred within the Kirkby Lonsdale practice area, which covers some 120 square miles of the Lune valley. This includes 280 farmholdings varying in size from less than one hectare to large estates with extensive hill farms. The type of farming is traditionally pastoral, and this is reflected in the machinery in use: every farm needs access to machines for cutting and gathering grass, but the combine harvester is a rarity.

The practice centre is in Kirkby Lonsdale, a small market town that has serviced the surrounding countryside since mediaeval times. Its catchment area straddles the borders of Cumbria, Lancashire and a small corner of North Yorkshire, and has a population of about 6,000; and the basic industry is still agriculture despite the growth of tourism in the area.

The nearest district general hospital with full Accident and Emergency services is seventeen miles away in Lancaster and there are ambulance stations eleven or twelve miles in the opposite direction in Sedbergh and Kendal respectively.

### SUBJECTS

From the latest available figures<sup>(1)</sup> it was estimated that the base for the injuries reported here was 315 farmworkers, including 56 women. Some 200 of these worked fulltime, the rest being part-time, seasonal or casual workers. The total

number of cases seen in ten years was 155, of whom six were children under ten years of age and three were women. The age range was from three to seventy-three years and all were patients of this practice.

The cases recorded are "first instance" ones, seen at the site of the accident, on the practice premises or on return from hospital. They do not include other conditions to which farm workers are exposed such as infectious diseases, chronic back or joint problems or stress; and no cases were identified of the recently highlighted ill effects from the use of organo-phosphates in sheep dip.

### METHOD

Each case was numbered and a record kept of the date, the name, age and address of the patient, the type and cause of injury, its treatment and outcome.

### RESULTS

These will be considered under two main headings – the types of injury and the causes of injury; the latter referring to the different areas of farmwork in which injury occurred.

#### Types of injury

The types of injury, showing both their nature and the parts of the body affected, are set out in Table 1. Abrasions or lacerations were the commonest injury, and the hand (with 36% of the total) the part most likely to be hurt. While all these hand injuries clearly required medical attention, a quarter of them (including five fractures and three traumatic amputations) required hospital treatment.

The second largest group (17% of the total) was injuries to the eye. In most of these there was a failure to use protective goggles or a shield but only two cases needed referral, both involving exposure to chemicals.

The other groups, though smaller in numbers, included the more serious injuries. This is reflected in higher hospital referral rates and the number of fractures. They were the major cause of loss of time at work.

#### Causes of injury

It will be seen from Table 2 in which areas of farmwork the injuries occurred. The hospital referral percentages give some clue to the severity of injury in the different areas, and not surprisingly machines are top of this list. The tractor features most. It was involved directly or indirectly in 22 (55%) of the 40 accidents in this group, its nearest rival being the chainsaw which accounted for six (15%) of the cases.

- Parts of Body Affected -											
Type of Injury	Head & Neck	Eye	Arm	Hand	Chest	Abdomen	Pelvis & Back	Leg	Foot	Multiple	Total
Abrasion, Laceration	7	5	9	41				8	6		76
Bruising or sprain	2	1	3	1	1	3	7	4			22
Fracture, dislocation	3		6	5	5		1	1	1		22
Traumatic amputation				4							4
Crush injury				5				1			6
Burns	1							1			2
Foreign body		13									13
Flash injury		7									7
Other					1					2	3
<b>Total</b>	13	26	18	56	7	3	8	15	7	2	155
<b>Hospital Treatment (%)</b>	(23)	(8)	(33)	(23)	(57)	(100)	(37)	(33)	(14)		41

\*The other case of multiple injury was fatal at the scene of the accident

Table 1 - Types of Injury

Causes	Number of Cases	Needing Hospital Treatment	%
<b>Machines</b>	40	17	(43)
<b>Animals</b>	41	11	(28)
<b>Oddjobs</b>	42	7	(17)
<b>Hand Tools</b>	19	3	(16)
<b>Chemicals</b>	9	2	(22)
<b>Environments</b>	4	1	(25)
<b>Total</b>	155	41	(27)

Table 2 - Categories of Injuries by Cause, and Hospital Referral.

Contact with animals, especially large ones, is another area in which the potential for serious injury exists. About half the injuries in this group were from contact with cows, and analysis of the figures suggested that men over the age of 60 are more than usually vulnerable to such injury - presumably from their loss of agility in taking evasive action.

The term *oddjobbing* covers the great variety of tasks done on a farm. These are often more part of the seasonal than the daily routine - for example, hedging or walling. But the job that brought in most injuries (31%) in this group was using the grinder, and all but one of these were avoidable eye injuries - the result of not using protective goggles. Handtool injuries, where the hoofing-knife was the worst offender, are really a subdivision of oddjobbing.

The remaining two categories are the injuries from chemicals and from the farm environment. The numbers here were too small for any pattern to emerge, but the serious potential was underlined by the two cases of chemical injuries and one case where a gate collapsed on a small boy.

Some predictable general patterns emerged from these cases. Thus, the two busiest months, April (lambing) and July

(haytime), were those with the most injuries. Similarly, those in the most physically active age group, the 20 to 40 year olds, were the most commonly injured. One slight surprise was the male dominance among the injuries. While it is true that the men work much more with machinery and large animals, such work is commonly done by women. Yet they (17.5% of the workforce) were involved in only 2% of the accidents.

Finally, all 155 cases in this study were assessed for contributory negligence by the victims. This was retrospective and very subjective: but it did suggest that in 49 cases (32%) the injuries resulted from careless or dangerous acts. Of these, 15 were the result of not using eye protection when appropriate, making eye injuries easily the most preventable group.

## DISCUSSION

Safety on farms, as in other workplaces, is governed by the Health and Safety at Work Act (HSWA) 1974. By laying down duties, regulations, codes of practice and means of enforcement, this Act provides the legal framework to protect any person who may be affected by work activities; whether they are workers, visitors, members of the public or children. This legal framework is essential, and in countries where such legislation does not exist, the effect on farm workers' health and safety can prove devastating<sup>(2)</sup>.

There are, however, difficulties in applying the HSWA to agriculture, which, in the league of dangerous occupations, is second only to the construction industry. In the latter, the small contractors have most of the injuries, deaths being less likely among workers employed by the larger and better organised companies<sup>(3)</sup>. The same is true in agriculture, where there are problems of defining and counting the workers who may be self-employed, casual, unskilled or contractors. This difficulty is compounded by the nature of the work. With its machinery, animals, chemicals and terrain, farming is, in a word, dangerous. Poor working methods allied to inadequate training, the hazards of the job and human error result in avoidable accidents. Farmworkers who cut corners, make do, save time or work late are at risk. It is how to counter these human characteristics that is at the core of reducing the toll of injuries and deaths.

The law on its own is insufficient for this. The HSWA Regulations on the Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR) 1985, state what must be reported, including specified 'major' injuries or conditions, and injuries termed 'over three day' because of the time off work that results.

Yet the Health and Safety Executive (HSE) statistics show a marked disparity between different industries in the number of deaths per reported accident<sup>(4)</sup>; and since every death is reported to the HSE, such a disparity must result from failure to report accidents rather than from greater occupational danger. Applying the reporting criteria to the 155 cases in this study showed that there were 16 'major' injuries, and 39 who were definitely off work for 'more than three days'; yet of these 55 cases, only *one* was actually reported to the HSE.

Table 3 shows a projection of what these figures would give in the annual incidence rates in comparison to those published. The figure for the incidence of major injuries is very close to a recently published estimate<sup>(5)</sup>. What these suggest is that every year farm workers are suffering, in round numbers, not the reported 800 but 2,500 'major'

	Fatal	Major	Over-3-day
Manufacturing	2.0	143.7	1091.7
Construction	9.9	285.9	1652.3
Agriculture	7.6	147.9	447.8
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'Lune Valley'		507.9	1238.0

*\*These are calculated from the RIDDOR injury statistics published by the Health and Safety Executive*

Table 3 - Average Annual Incidence Rates of Injuries per 100,000 employees, 1986-1990.\*

injuries, and not 2,400 but 6,250 'over three day' injuries, with a further 25,000 'unreportable' injuries that nevertheless needed medical attention.

There are several reasons why injuries are under-reported to such a degree. One is sheer ignorance of the regulations. Another is that there is little incentive to fulfil this duty when the fine for not reporting is usually less than that for reporting and being found at fault. Thirdly, the person responsible for reporting an accident is often the victim himself, and like any self-employed person his one aim is to find the quickest and quietest way back to work.

Perhaps the following two case histories will illustrate the difficulties in this gap between what actually happens and what is reported.

**Case No 16** Age 73. The tractor battery was flat. The farmer tried a downhill start over the yard and was run over by the rear wheel. He suffered bruising over the whole of the right side of the body and probable broken ribs, but refused hospital referral.

**Case No 96** Age 62. The farmer's shiplen roof was leaking on to his hay, so he climbed up in the rain to mend it and fell through the roof. He went to hospital with multiple bruises, fractured ribs and shock, but was not admitted and made an uncomplicated recovery.

These are typical cases with common ingredients such as poor maintenance and possible loss of agility. Both could have been fatal accidents yet neither was even reportable under the RIDDOR criteria; they were not off work for more than three days, and broken ribs are not 'major' unless there is hospital admission for more than 24 hours.

There are thus practical reasons why the HSWA regulations fail to identify the reality of farm injury rates. Other approaches are needed to improve safety on farms, and two possible ways are training and publicity.

Training certainly has an important part to play, and safety training is worked into the curriculum at every appropriate point at agricultural colleges, as well as being a major consideration in the design and use of machinery. But however good one's training, the isolated conditions of farmwork encourage slipping into dangerous work practices, and other circumstances erode training and morale. These include the vagaries of market prices and changes in agricultural policies. An example of the latter was the introduction in the mid-1980s of milk quotas, which caused great anxiety in this livestock area; at the same time the annual number of injuries recorded in this study doubled. This is not a question of cause and effect so much as a reflection of what could be called the climate of the workplace.

The other approach, publicity aimed at preventing accidents, is one that has rightly received increased emphasis in recent years. The HSE has leaflets on every aspect of farm safety, and there have been advertising campaigns<sup>(6)</sup>, TV programmes and so on. There is no doubt that these have an impact, with rewarding dividends such as the fact that there was no farming fatality in Cumbria in 1991/2<sup>(7)</sup> and it is to be hoped that such campaigns will continue.

## CONCLUSION

The gross under-reporting of non-fatal farm injuries conceals the dangers of farming as an occupation, but this gap can be bridged. This study, albeit on a small canvas, has produced a surprisingly full picture of the hazards, as well as some indication of the incidence and severity of non-fatal injuries; and the methods used could be applied on a wider scale to monitor this. The need for continued farm safety education campaigns has been underlined, and some vulnerable groups identified.

Raising awareness of risks, however, will never be an easy task among a workforce so varied and scattered, whose hard-won traditions may include an acceptance of those very same risks.

## REFERENCES

1. Agricultural Census and Surveys - parish summaries of 1988 MAFF
2. Davies W. We Cry for our Land - Farmworkers in South Africa. Oxfam 1990 ppl6-19
3. Snashall D. Safety and Health in the Construction Industry Br Med J 1990; 301:563
4. HSE Annual Reports 1986 to 1991
5. Cameron D et al. Farm Accidents in Adults. Br Med J 1992; 305:26
6. eg HSE pamphlet The Killing Fields - Introduction to Safer Farming.
7. HSE Annual Report 1992.