

FEATURE

CHRISTMAS 2011: DEATH'S DOMINION

A series of unfortunate events? Morbidity and mortality in a Borsetshire village

Rob Stepney ponders Ambridge's vital statistics

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In a landmark paper, Crayford et al reported that the mortality rate for characters in the television soap operas *Coronation Street* and *EastEnders* exceeded those of bomb disposal experts and racing drivers.¹ Many deaths were violent, and the overall five year survival of recently introduced characters was poorer than that for many cancers. Does the dramatic imperative lead the long running BBC radio series *The Archers* to contain a similarly high level of mortality and medical incident? Or does radio, and the bucolic setting, give everyday country folk a better chance in life?

The village of Ambridge, at the centre of the programme, is set in a rural area south of Birmingham in the English Midlands. Among the population of 700, employment in farming is higher than average but the age distribution is thought to be similar to the national average, with 20% aged under 16 years and 20% aged 65 and over.²

We are directly acquainted with 60 inhabitants but have knowledge of a further 55, giving a total—for epidemiological purposes—of 115 (58 men and 57 women). In such a small sample, few events of epidemiological significance are likely to occur in any given year. In calculating birth and death rates, I have therefore pooled data for the 20 years preceding the time of writing (September 2011). I describe significant non-fatal illnesses and medical interventions for the same period.↓

Mortality

Calculating a mortality rate for *Archers* characters and comparing it with the country as a whole requires approximations. I assume that the age, sex, and social class distribution of the population of Ambridge reflects that of England and Wales and that Ambridge's demographics remained constant over two decades. Not censoring data at the time of characters' deaths means that they continue to contribute person years to the population at risk, which introduces imprecision. In comparing Ambridge with England and Wales, I have not standardised mortality data for age. However, the epidemiology of a fictional world cannot be as exact as that of the real.

Because of the very small number of people involved and the high degree of variability from one year to the next, a broad margin of potential error exists around any mortality estimates made for Ambridge. This is especially so when the events in question (such as deaths from trauma) occur particularly infrequently. This imprecision is reflected in the wide 95% confidence intervals noted for certain estimates below.

Of the 15 deaths recorded over the 20 years to September 2011, nine were of male characters and six of female characters (table 1↓). This equates to a mortality rate of 7.8 per 1000 population per year for males. For comparison, the mortality rate for England and Wales mid-way through our period of interest was 8.5 per 1000.² For females, the mortality rate calculated from the Ambridge data is 5.2 deaths per 1000, and the comparable national rate is 5.8. Hence the overall mortality rate in Ambridge over the 20 years to September 2011 was marginally lower than that in the country as a whole.

That said, do the causes of death in and around Ambridge reflect wider experience? Among male *Archers* characters, the three accidental deaths and one suicide (27% of the total mortality) seem to substantially over-represent the risk evident nationally. In 2000 accidents accounted for only 4% of deaths in men.

Mark Hebden seems to have been particularly unlucky. In the year of his car crash, the national fatality rate from road traffic accidents was 7 per 100 000. That in Ambridge represents an annual incidence of 40 per 100 000. However, the confidence interval around this estimate ranges from 1 to 240 per 100 000 and thus includes the lower national figure. So we cannot conclude that the rate in Ambridge exceeds that for the country as a whole to a statistically significant degree.

The five confirmed cardiac deaths account for 33% of total mortality in Ambridge (rising to 47% if two probable myocardial infarctions are included). Yet cardiac deaths nationally in 2000 accounted for only 23% of mortality in males and 17% of that in females. In Ambridge, ischaemic heart disease seems to have a particularly poor prognosis. (This would make sense for

practical reasons, as the sudden death of characters is sometimes necessitated by the sudden death of the actors who portray them.) However, the confidence interval around the Ambridge figure of 33% extends from 15% to 58%, again encompassing the observed national rates. Cardiac mortality in Ambridge therefore seems excessive, but the fact that it is higher than the national figure has not been conclusively demonstrated.

In contrast to cardiac mortality, that due to cancer seems under-represented in *The Archers*. If the national pattern prevailed, cancers would account for roughly a quarter of deaths among characters. The two deaths observed (one from melanoma and the other from a malignancy of unspecified site) represent only 13% of the total. But, again, this does not exclude the possibility that the Ambridge experience is compatible with that nationally.

Fertility

To compensate for the 15 deaths in the past 20 years, 13 children have been born to the 115 characters (table 2). The crude annual live birth rate in Ambridge in 1992-2011 was 5.6 per 1000 (all ages). In England and Wales in 2001 it was 11.4 per 1000. Notable among the births were those of Phoebe Aldridge in a tepee during the Glastonbury Festival and of the Pargetter twins. Two births were sufficiently premature to require the services of a neonatal intensive care unit, one of them owing to pre-eclampsia.

Morbidity

In addition to the obstetric complications noted in table 2, Ambridge characters have experienced a range of life threatening accidental injuries and acute and chronic physical and psychiatric morbidity (table 3). For example, the Hebden family suffered further ill luck when Daniel developed juvenile arthritis, which has a prevalence of only 1-2 per 1000 children. However, despite the poor prognosis associated with systemic onset below the age of 5, the condition has fully resolved.

Ruth Archer's breast cancer was oestrogen receptor negative and multifocal, requiring mastectomy. She went on to have another child after adjuvant chemotherapy and is free of relapse at 10 years. No cases of colorectal, prostate, or lung cancer have occurred among the 115 characters followed since 1992. With the possible exception of Joe Grundy's dubious self diagnosis of farmer's lung, little respiratory disease has occurred.

The medical histories of Ambridge characters illustrate well the series' interest in creating complex and slow burning story lines. Elizabeth Archer (born with congenital heart disease in 1967) had two early corrective procedures for tetralogy of Fallot,³ but more than 20 years later she had a valve replacement (after a twin pregnancy); then, after a further decade, ventricular tachycardia led to implantation of a cardioverter-defibrillator in March 2011. (Nationally, fewer than 100 such implants were carried out in 2009, so she may have had privileged access to expensive devices.)

It was only eight years after her mastectomy, and after a near affair, that Ruth had a breast reconstruction. A consequence of Greg Turner's suicide was mental health problems for Helen Archer, which were still being played out six years later. The way in which the slow but relentless unravelling of Jack Woolley's world has been portrayed over the six years since Alzheimer's disease was first suspected has been appreciated by critics.⁴

A significant lag may occur between the suggestion of a medical storyline and its use. John Wynn Jones, a general practitioner

advising the programme in 1992, identified depression and suicide as an aspect of rural life that could be covered.⁵ Greg Turner's illness and death occurred more than 10 years later.

Discussion

With the exception of infidelity, nothing captures an audience more completely than death, a complicated birth, or an interesting illness. Simon Dover, medical adviser to *The Archers* in 1989, shortly before the period under review, reported that the programme's production team had a particular liking for medical stories.³ However, in the case of overall mortality over the following 20 years, *The Archers*—by luck or good editorial judgment—reflected almost exactly the experience of the wider population of England and Wales. In its rate of births, village life seemed less eventful than reproductive life nationally. The epidemiological features that seem to stand out as dramatically different from the norm are the high proportion of deaths due to accidental or self inflicted injury, which is sevenfold greater than that expected on the basis of national data, and the poor survival after myocardial infarction. However, the small number of events in Ambridge means that we cannot conclude with certainty that Ambridge is exceptional even in these respects.

Undoubtedly, certain of the conditions that appear in fictional Ambridge are rare in real life. The low incidence of juvenile arthritis nationally has been mentioned, and for one of only 115 characters to have long term consequences from tetralogy of Fallot (found in only 0.3 per 1000 live births) is unusual.

However, given the thousands of conditions with a low incidence, that the occasional one or two should appear even in a small population when studied for 20 years is not surprising. Other morbidities portrayed, such as stroke, depression, and dementia, are of course relatively common in any group.

Conclusion

Although the confidence intervals around relevant estimates are wide, *The Archers* seems to have a higher than expected number of traumatic deaths. In this respect, it would be similar to soap operas set in urban environments and on television. However, in overall mortality, which in epidemiological terms is the most important outcome, *The Archers* ploughs its own furrow. Is that the charm of the rural, or of radio?

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- 1 Crayford T, Hooper R, Evans S. Death rates of characters in soap operas on British television: is a government health warning required? *BMJ* 1997;315:1649-52.
- 2 Office for National Statistics. Death registrations summary tables, England and Wales, 2010. www.ons.gov.uk/ons/rel/vsob1/death-reg-sum-tables/2010/index.html.
- 3 Dover S. Doctor to *The Archers*. *BMJ* 1989;299:1625-8.
- 4 An everyday unravelling. *The Observer* 2008 Nov 16.
- 5 Stepney R. The *Archers* aims for health targets. *Medical Monitor* 1992 Feb 21.

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Tables

Table 1 | Deaths by cause September 1992 to September 2011 among Ambridge population of whom we are aware (n=115)

Type of death	Year of death	Name	Age (years)	Cause or circumstance of death
Accident	1994	Mark Hebden	38	Road traffic accident
	1998	John Archer	22	Tractor overturned
	2011	Nigel Pargetter*	51	Fall from roof
Suicide	2004	Greg Turner	41	Self inflicted gunshot wound
Cardiac (confirmed)	1996	Martha Woodford	73	Myocardial infarction
	1996	Guy Pemberton	65	Myocardial infarction†
	2005	George Barford	76	Myocardial infarction
	2005	Betty Tucker	55	Myocardial infarction†
Presumed cardiac	2010	Sid Perks*	65	Myocardial infarction
	2005	Julia Pargetter	81	Died in her sleep
	2010	Phil Archer	81	Found dead in armchair
Malignancy	1996	Irene Barraclough	76	Site of tumour not specified
	2007	Siobhan Donovan née Hathaway*	‡	Melanoma
Unexplained	1998	Tom Forrest	‡	Died in care home
	1998	Pru Forrest	‡	Died in care home six days after Tom

*Death did not occur in Ambridge itself.

†Having had non-fatal myocardial infarction some weeks previously.

‡Siobhan was middle aged; both Tom and Pru were elderly.

Table 2| Births 1992-2011 among Ambridge population of whom we are aware (n=115)

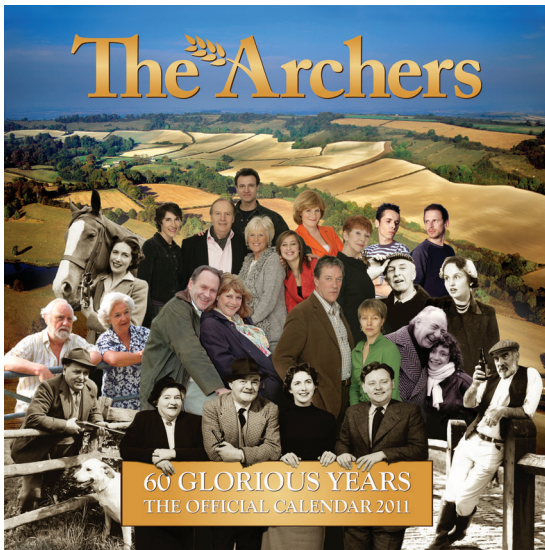
Year	Name	Parents	Circumstances
1993	Pip Archer	David and Ruth Archer	Normal delivery in hospital
1994	Daniel Hebden Lloyd	Mark and Shula Hebden (née Archer)	IVF conception; normal delivery in hospital; father had been killed before birth of Daniel
1995	Jamie Perks	Kathy and Sid Perks	Elderly prima gravida (42 years); normal delivery in hospital
1997	Joshua Archer	David and Ruth Archer	Normal delivery in hospital
1998	Phoebe Aldridge	Kate Archer and Roy Tucker	Normal delivery in tepee at Glastonbury
1999	Lily and Freddie Pargetter	Elizabeth and Nigel Pargetter	Elective caesarean section
2002	Benjamin Archer	David and Ruth Archer	Born at home; delivered by father
2002	Ruairi Donovan	Brian Aldridge and Siobhan Hathaway	Normal delivery in hospital birthing pool
2007	George Grundy	William and Emma Grundy	Normal delivery in hospital
2008	Abbie Tucker	Hayley and Roy Tucker	Born premature at 30 weeks; conception followed surgery for tubal obstruction
2011	Henry Archer	Helen Archer and unknown sperm donor	Born at 30 weeks by caesarean section after pre-eclampsia
2011	Keira Grundy	Emma and Ed Grundy	Normal delivery at midwife led birth centre

IVF=in vitro fertilisation.

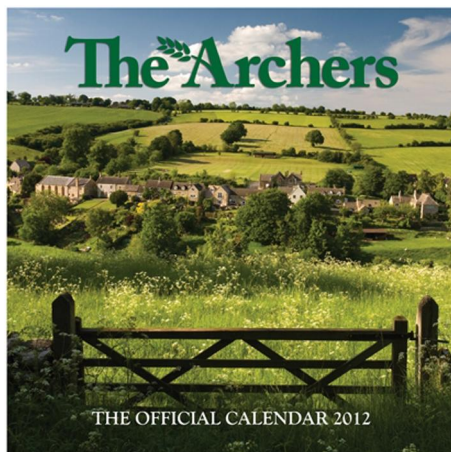
Table 3| Morbidity in The Archers 1992-2011; major elective medical interventions are also listed

Year	Name	Condition	Comments
1994	Caroline Bone	Head injury and hairline fracture of skull	Fall from horse; unconscious for six days; prolonged recovery
1998	Daniel Hebden Lloyd	Juvenile chronic arthritis	Diagnosed at age 4, preceded by pain in infancy; treatment included intravenous steroids and physiotherapy; although not explicitly stated, the condition had resolved after nine years
1999	Pat Archer	Depression and panic attacks	Following death of son in tractor accident; treated with drugs; Pat also went on retreat
1999	Marjorie Antrobus	Cataracts	Put on waiting list, she did not have surgery until nine months later, and then with help from a charity
1999	Siobhan Hathaway	Miscarriage	
2000	Ruth Archer	Breast cancer	Needed mastectomy; breast reconstruction in 2008
2002	Jazzer McCreary	Ketamine overdose	Resulted in coma and longer term damage to memory and coordination
2003	Brian Aldridge	Punctured lung, head injury	Caused by road traffic accident
2004	Helen Archer	Depression and subsequent anorexia	Onset followed suicide of partner, Greg Turner; led to psychiatric admission; treatment included anxiety management and yoga
2005	Jack Woolley	Alzheimer's disease	Memory problems first noticed in 2003; attended memory clinic two years later; drug treatment followed; in full time residential care since 2009
2008	Peggy Woolley	Stroke	Good recovery
2011	Jack Woolley	Stroke	Despite recovery, his return to residential care is in doubt

Figures



[Image: BBC/Archers Addicts]



[Image: BBC/Archers Addicts]