Addenda

At the Draft Annual Plan hearing I was asked by Councillor Judith Callaghan to provide the Council with further research which might expose any differences between urban and rural cancer registration trends which would confirm that registrations went up only in the borough when chlorination began in the late 1960s.

As I expected, and expressed at the hearing, data might be difficult to obtain and this has turned out to be the case. Data from the MOH divide into urban and rural areas of domicile back to 1978, ten years short of the start of chlorination, so the information sought by Judith cannot be provided directly.

However, that is no excuse to avoid the purpose of the question which is, I think, to see if there is a comparison which might give the Council some confidence that cancer registrations would halve in Masterton if chlorination was dropped in favour of filtration.

After 1978 cancer registration data are broken down into 12 areas of domicile for Masterton, according to the following lists:

Urban: Lansdowne
Masterton Central
Masterton West
Masterton East
Masterton Railway
Ngaumutawa
Solway North
Solway South

Rural: Kopuaranga
Opaki
Homebush/Te Ore Ore
Whareama

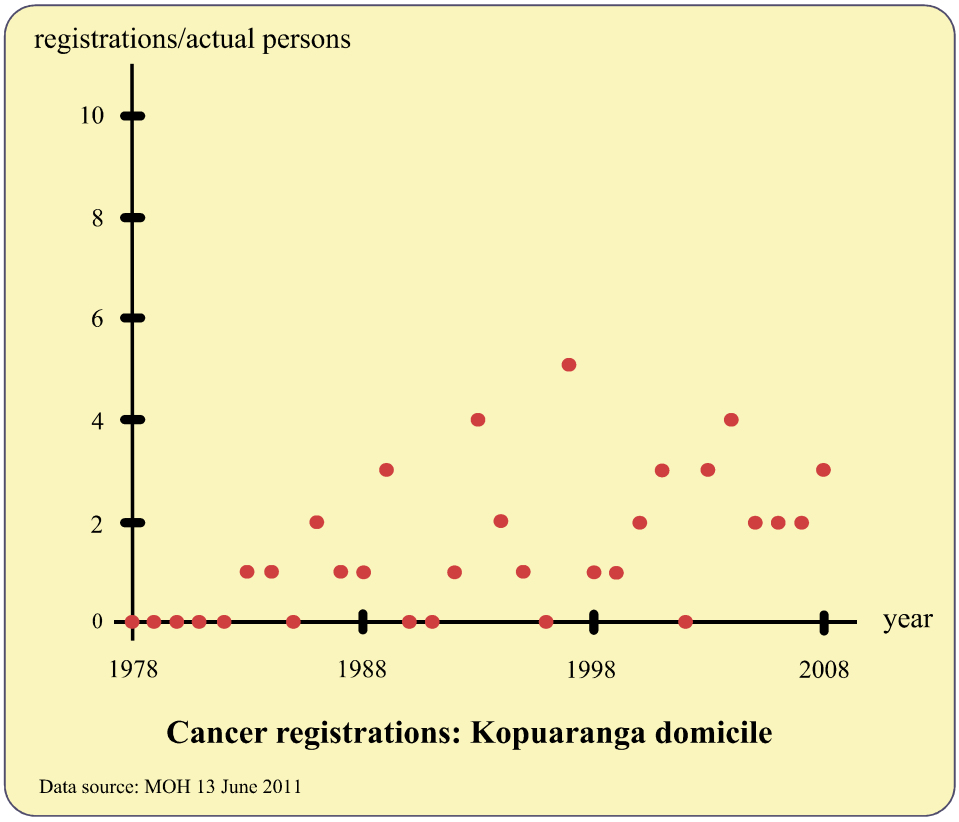
Of the rural areas, Opaki and Homebush/Te Ore Ore are the subject of development in recent years such that they can be, at least in part, regarded as suburbs of Masterton. Cancer registrations in those areas are likely to be influenced as much by residents' places of work as their areas of domicile.

Kopuranga and Whareama are more remote and, while there may still be some influence related to places of work, these are the areas which would

show the greater contrast between urban and rural cancer registrations albeit later than the ideal time period of the late 1960s.

While electing to look at these outer rural areas reduces the urban workplace confounder, there are other confounders which make a direct comparison between these areas of domicile and the Masterton urban areas of domicile more complex than might appear at first.

However, a comparison can be made between the outer rural domiciles themselves. One can be regarded as being, in essence, without a water supply while the other is the opposite. Kopuaranga has a very small water supply scheme at Mauriceville, which is untreated, while Whareama is serviced by the Wainuioru scheme. Their respective cancer registration graphs follow.



Cancer registrations: Kopuaranga domicile

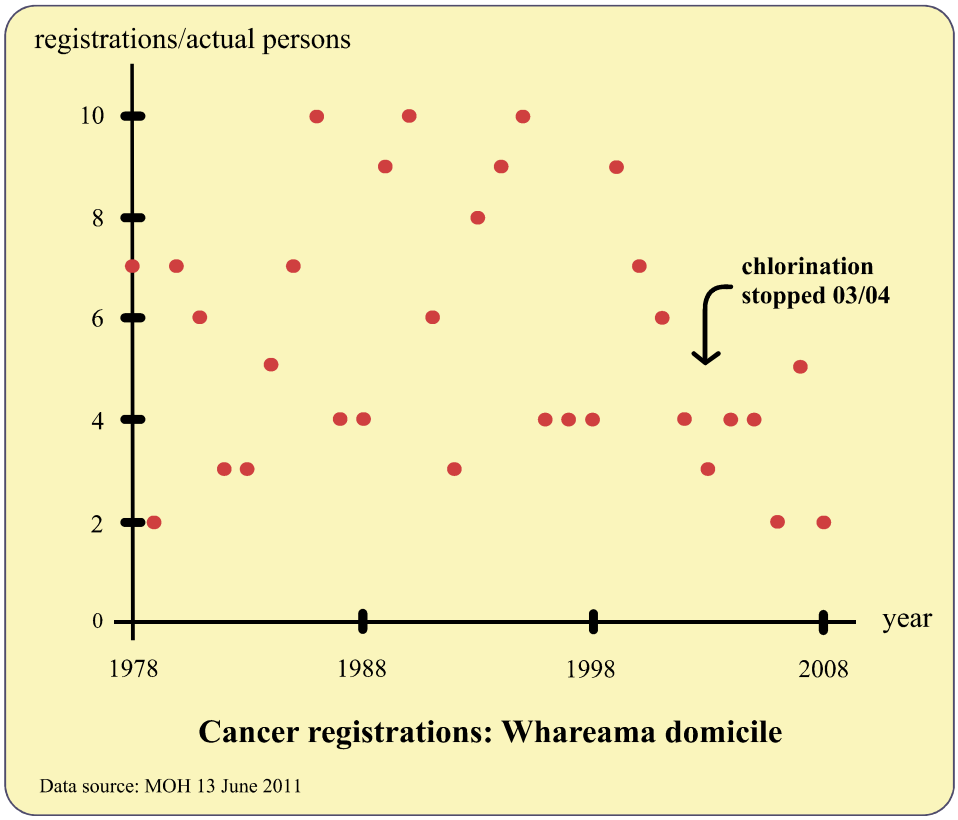
Data source: MOH 13 June 2011

Koparanga has an annual average cancer registration rate of 1.36 persons out of a 2006 census population of 1443, which is equivalent to a cancer registration rate of 94/100k. This equates to a cancer death rate of approximately 47/100k which is slightly below the baseline of 56/100k deaths for a population with no cancer epidemic and comparable with Masterton prior to chlorination.

Kopuaranga residents have largely escaped the cancer epidemic although there is some indication of an increase and decrease in rates post 1982, The reasons for this have not been explored. In any case, Kopuaranga serves as a useful baseline against which the serviced domicile of Whareama can be compared.

Whareama residences are serviced by the Wainuioru scheme which was chlorinated up to 2003/2004. At that time the chlorinator was retired and has remained so at the request of residents. Although there are nitrates in the supply, water treatment essentially consists of aeration to oxidise and remove iron from the water.

The population of the Whareama domicile in the 2006 census was 1686, just a little more than the 1443 in Kopuranga.



Cancer registrations: Whareama domicile

Data source: MOH 13 June 2011

Whareama's cancer registration rate up to 2003/2004 was, in 5 four yearly steps:

1983-1986: 25 persons, equiv. reg. rate 370/100k/annum
1987-1990: 27 persons, equiv. reg. rate 400/100k/annum
1991-1994: 26 persons, equiv. reg. rate 386/100k/annum
1995-1998: 22 persons, equiv. reg. rate 326/100k/annum
1999-2002: 26 persons, equiv. reg. rate 386/100k/annum
(20 year av: 25 persons, equiv. reg. rate 370/100k/annum)

(2003-2004 excluded as the transition period to unchlorinated water)

2005-2008; 13 persons, equivalent rate 193/100k/annum

The four yearly rates prior to shutting off chlorination are very consistent, despite the small population, enabling a valid comparison to be made against the four year period after chlorination was stopped. The post-

chlorination rate is approximately half the registration rate of the previous 20 years and, given the consistency of registration rates, can be expected to continue at that rate while the chlorinator remains disconnected.

So to answer the Council's question, it is clear that the unserviced and remote rural domicile cancer registration rate continued unaffected after the cancer registration rate went up in urban Masterton. Also, disconnection of chlorination equipment has been demonstrated to achieve a halving of cancer registration rates very quickly, with that reduction remaining stable.

Had real time data been used to judge the effect of chlorination on cancer rates at the time chlorination was introduced into the Wainuioru scheme then, over the 20 year period of this study, about 25 deaths could have been avoided.

Masterton is a much larger population, so the awful implication need not be laboured.

There can be no absolute guarantee that discontinuing chemical dosing will produce a halving of cancer deaths in Masterton; that is a risk the Council has to balance against the potential benefits or consequences either way. In the light of the evidence, however, it behoves the Council to attempt that halving. To do otherwise would be unconscionable.

Stephen G Butcher 24/06/11