13.4. Death at usual place of residence (at home or in residential care) (EOL-4)

13.4.1. Documentation sheet

Description	Percentage of cancer patients dying in their usual place of residence (at home or in residential care)
Calculation	Numerator: number of patients who died at home or in residential care
	Denominator: number of patients diagnosed with cancer that died within the studied time period
Rationale	Studies show that most people prefer to die at home.[1] In order to meet patients' preferences, palliative care services in Belgium are being oriented towards a more home-based approach with a maximum of support for patients and relatives to stay at home, or in a home-replacing environment, like a home for the elderly.
Data source	Belgian Cancer Registry (BCR), linked with IMA data
Technical definitions	It is currently not possible to identify all palliative patients in administrative databases or in registries. Therefore, the indicator has been restricted to patients diagnosed with cancer having a poor prognosis and deceased during the study period.
	<u>Inclusion Criteria</u>
	Incidence years: 2006-2015
	Tumour selection based on the Pallcare project [2] : combination of topography and morphology according to Eurocare-4 [3] [4], and Eurocare-5 [5]: see EOL-1
	Patients deceased before January 1st 2017
	Age at diagnosis >=18 years
	<u>Exclusion Criteria</u>
	Patients with more than one invasive tumour (until 2015)
	Patients without a Belgian residence
	Patients without national social security number
	Patients for whom no IMA data of the year of death were available (=3.9%)
	Patients with an uncertain date of diagnosis
	<u>Maximum 3 years of follow-up</u>
	Analyses were limited to patients who died before January 1st of the third year following the year of incidence. For example: patients diagnosed in 2006 were included in case they died in 2006, 2007 or 2008; patients diagnosed in 2007 were included in case they died in 2007, 2008 or 2009, etc. These cohorts were defined in order to assure that for every diagnosis, the same follow-up period could be taken into account. By applying this definition, a bias induced by varying length of the follow-up period could be avoided.
	<u>Place of death</u>
	• Dying at home and in residential care: derived from the reimbursement of nomenclature codes.

- Dying in the hospital: derived from the hospitalisation information as obtained from the IMA hosp database. Of note, this database as such also describes hospitalisations based on administrative reimbursement data through an internally validated algorithm.[6] Hospitalisations for one day only were not taken into account as hospitalisations.

To determine the place where the patient died, the algorithm of the Pallcare project was used. The following order was used to determine the place of death:

- Date of death = end date/date of medical act [ppp]
  - End date in hospital on day of death
  - End date in residential care on day of death
  - Home nursing at day of death
- Date of death – 1 = end date/date of medical act
  - End date in residential care one day before day of death
  - Home nursing one day before day of death
  - End date in hospital one day before death
- Date of death – 2 or 3 = end date/date medical act
  - End date in residential care two or three days before death
  - Home nursing two or three days before death
- Home nursing during last week before death

Limitation	No information on terminal patients without the diagnosis of cancer
International comparability	This is not an internationally reported indicator. Some results are available in national reports or in specific scientific articles.
Dimensions	Quality (patient centeredness); Quality (Effectiveness)
Keywords	End of life care, home setting, care environment

[ppp] End dates of hospital or residential care and home nursing acts until a week after death (due to administrative errors) are considered as on the date of death.

13.4.2. Results

In 2015 the majority of cancer patients died in the hospital (63.3%), 23.1% died at home and 6.8% died in residential care (see Table 127). Over the period 2008-2015, there was a discrete decrease in hospital deaths and a small increase in patients who died in residential care, the proportion of cancer patients who died at home was stable over time.

The proportion of patients who died at home was lower in patients with chronic tumour types (15.8%) compared to acute tumour types (23.6%) (see Figure 193). Analysis of place of death per Region in 2015 showed a discrepancy between Brussels-Capital Region and the two other Regions: in Brussels-Capital Region, fewer people died at home (13.6% vs 24.9% in Flanders and 22.2% in the Walloon Region) and more people were admitted in a hospital at time of death (69.8% vs 62.5% and 63.1% respectively) (see Figure 194).

Table 127 – Place of death in cancer patients (2008-2015) by year of death, all tumours (deaths in 2006, 2007 and 2016 excluded, maximum 3 years of follow-up)

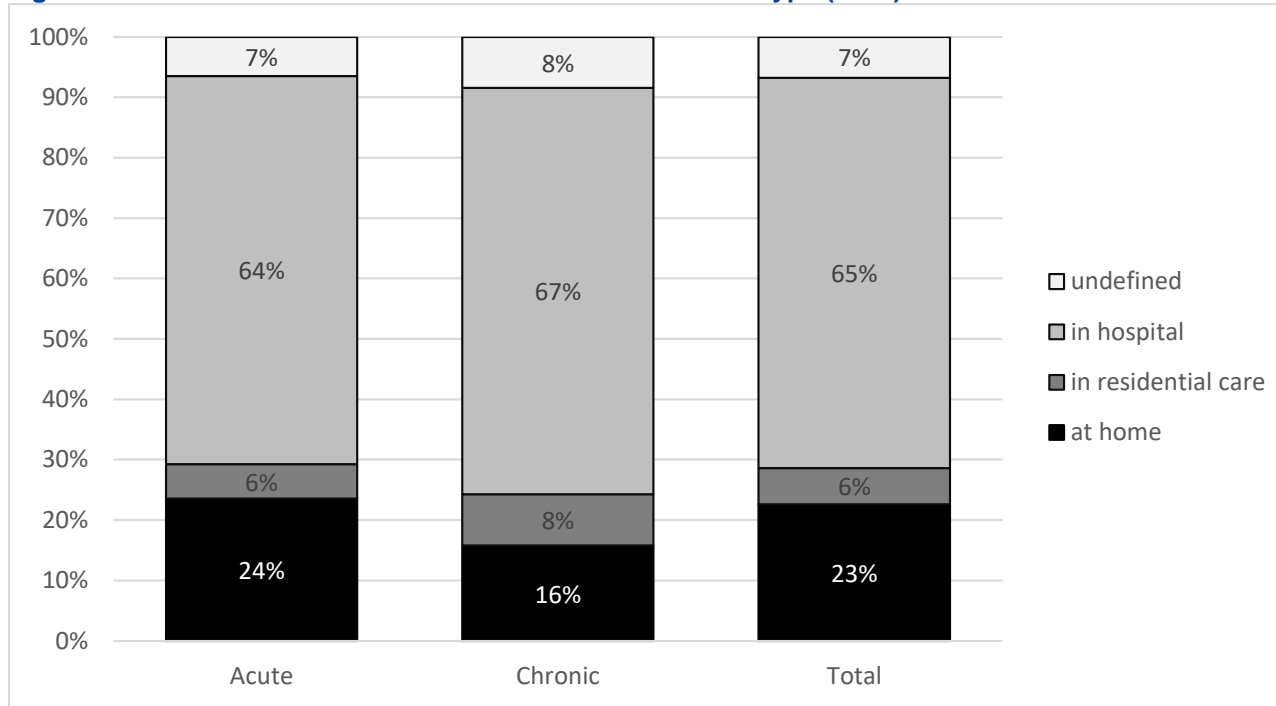|	Total	Died at home		Died in residential care		Died in hospital		Place of death undefined	
	N	n	%	n	%	n	%	n	%
2008	9 585	2 207	23,0	518	5,4	6 277	65,5	583	6,1
2009	9 462	2 175	23,0	522	5,5	6 214	65,7	551	5,8
2010	9 871	2 270	23,0	573	5,8	6 377	64,6	651	6,6
2011	9 936	2 177	21,9	587	5,9	6 480	65,2	692	7,0
2012	10 040	2 270	22,6	640	6,4	6 436	64,1	694	6,9
2013	10 087	2 193	21,7	617	6,1	6 547	64,9	730	7,2
2014	10 003	2 362	23,6	663	6,6	6 312	63,1	666	6,7
2015	9 838	2 268	23,1	671	6,8	6 229	63,3	670	6,8
Total	78 822	17 922	22,7	4 791	6,1	50 872	64,5	5 237	6,6

Source: BCR linked to IMA data

Figure 193 – Place of death in cancer patients (2008-2015) by year of death, all tumours (deaths in 2006, 2007 and 2016 excluded, maximum 3 years of follow-up)
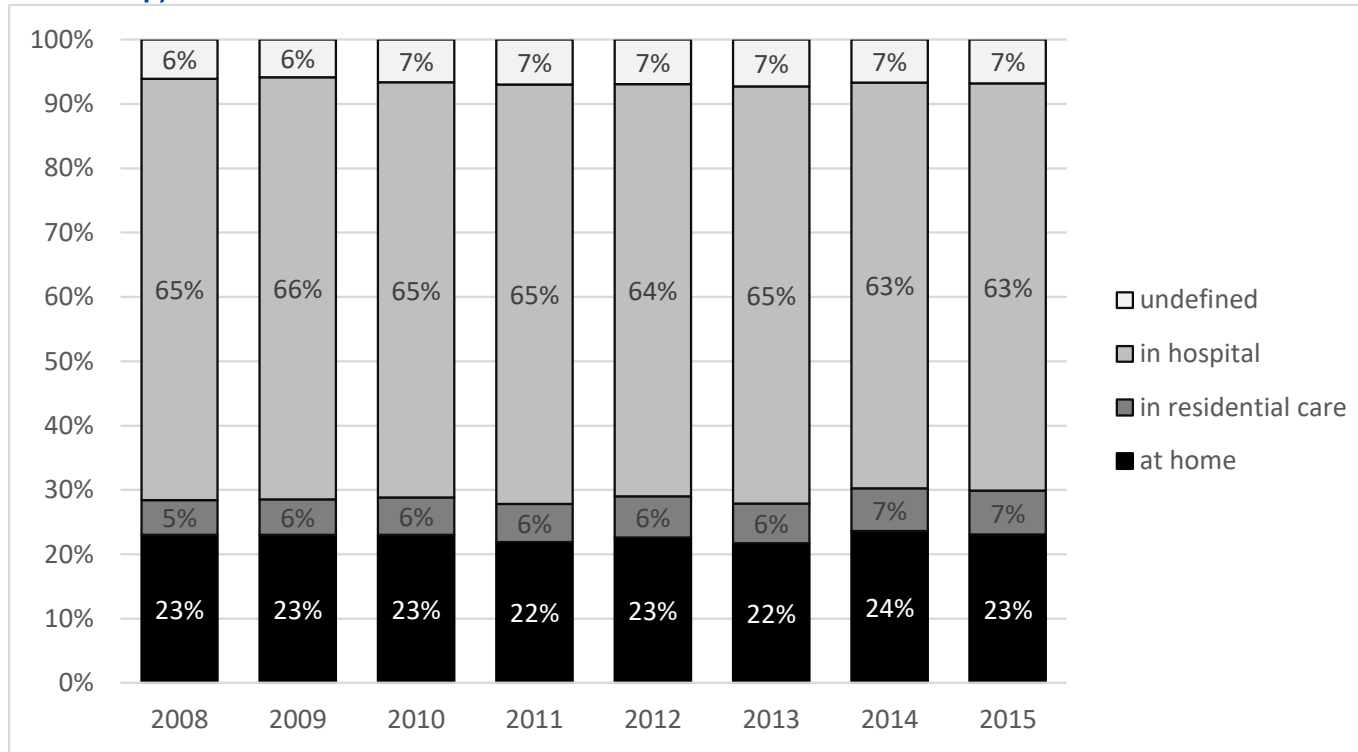
Source: BCR linked to IMA data

**Figure 194 – Place of death in acute versus chronic tumour type (2015)**

Source: BCR linked to IMA data

Table 128 – End of life: Place of death, by region, all tumours (year of death=2015, incidence year 2006-2009 excluded)

	Total	Died at home		Died in residential care		Died in hospital		Place of death undefined	
	N	N	%	N	%	N	%	N	%
Brussels-Capital Region	788	107	13,6	56	7,1	550	69,8	75	9,5
Flemish Region	5 603	1 395	24,9	344	6,1	3 504	62,5	360	6,4
Walloon Region	3 447	766	22,2	271	7,9	2 175	63,1	235	6,8
Total	9 838	2 268	23,1	671	6,8	6 229	63,3	670	6,8

Figure 195 – Place of death, by region, all tumours (year of death=2015, incidence year 2006-2009 excluded)
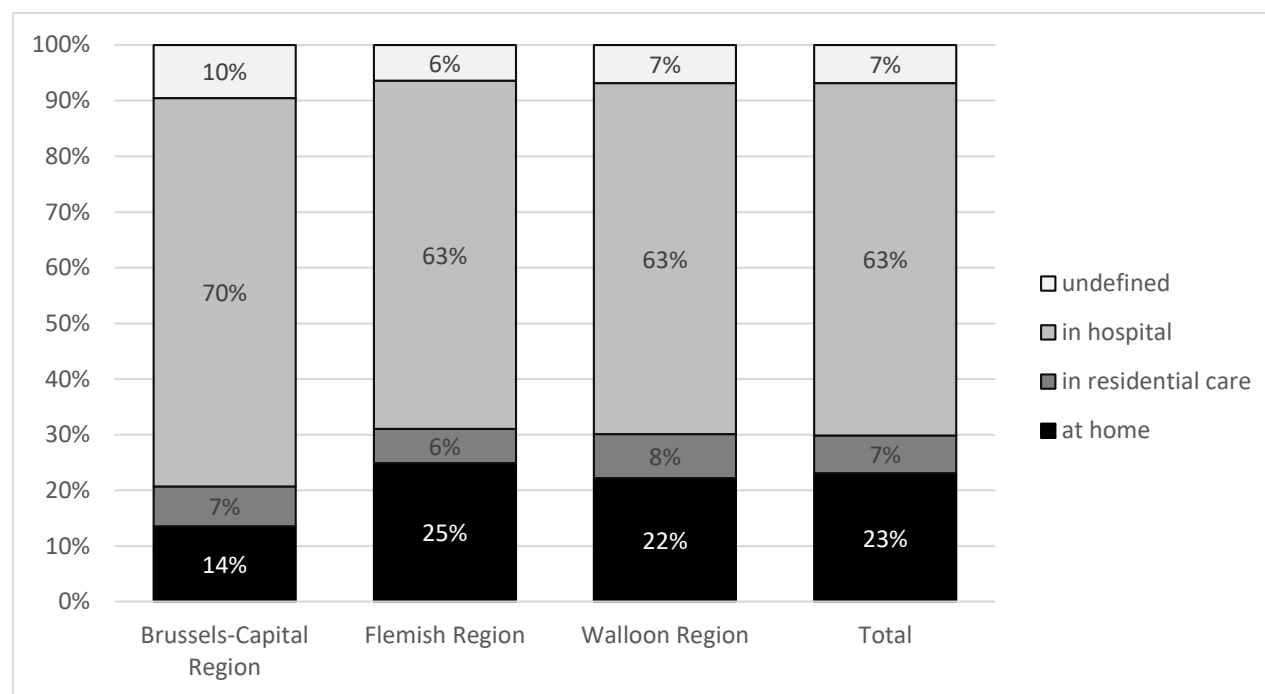
Source: BCR linked to IMA data

Key points

- **The majority of cancer patients, about two out of every three, dies in hospital. Around 23% of patients die at home. Around 7% of the patients die in residential care.**
- **Over the period 2008-2015, there is a very slight decrease in hospital deaths and a very slight increase in deaths in residential care, whereas the proportion of patients that dies at home stayed stable over time.**
- **In patients with chronic tumour types the proportion of patients who died at home was lower compared to acute tumour types (15.8% versus 23.6%).**
- **There is some regional variation in the place of death. In the Flemish Region more people die at home (25%) compared to the Walloon (22%) and Brussels-Capital Region (14%).**

References

1. Gomes B, Calanzani N, Gysels M, Hall S, Higginson I. Heterogeneity and changes in preferences for dying at home: a systematic review. BMC Palliative Care. 2013;12(7).
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