

### C. 「99 年標竿學習/獎勵計畫」觀察存活率計算公式

- 1) 參與標竿學習與獎勵計畫之各醫院，其院內 class1 與 class2 個案皆將**不治療個案**納入計算，且全國亦採用統一計算標準及原則。
- 2) 93-97 年新診斷侵襲癌個案：若在 98 年 12 月 31 日追蹤截止日期間內死亡者，則個案狀態即為死亡，但超過追蹤期間仍存活性者，則個案狀態即為 censored (設限)。
- 3) 本次標竿學習與獎勵計畫均以**觀察存活率 (即全死因存活率)**作為評核指標。
- 4) 五年**觀察存活率**與**標準化觀察存活率**公式可參考下頁附錄。
- 5) 標準化觀察存活率之各癌各年齡層標準人口是以 **93 年全國六大癌症發生人數**為標準，以進行年齡調整得到標準化之觀察存活率數值。
- 6) 六癌之各年齡分層標準人口分布如下：

年 齡	口腔癌、乳癌	結直腸癌、肝癌、肺癌	子宮頸癌
0-44 歲	27	8	39
45-54 歲	36	15	25
55-64 歲	21	20	14
65-74 歲	11	30	14
75+ 歲	5	27	8
全 國	100	100	100

- 7) 個案若身份證字號/性別有誤，或經死亡檔連結後所得存活年數小於零者，均不納入分析。

## Instructions to calculate cancer survival rates

### Calculation of the Five years Observed survival rate

The recommended approach for calculating the Observed survival rates is the actuarial or life-table method, computing cumulative observed rates with censoring. This entails the building of lifetables for the cancer population. The elements to be obtained from such life tables for each of the years of the follow up period should be:

1	No. alive beginning of year	l
2	No. dying during year	d
3	No. last seen alive during year	w
4	Effective No. exposed to risk of dying	r
5	proportion dying during year	q
6	proportion surviving during year (observed annual survival rate)	p
7	proportion surviving from first treatment to end of year (observed cumulative survival rate)	$\prod p$
8	Effective No. of survivors	r- d
9	Entry (5) divided by entry (8)	$q/(r- d)$

Where  $r = l - w/2$  (assumes half year contribution for those lost to follow-up that year)

$$q = d/r$$

$$p = 1 - q$$

In order to be able to standardise the rates, a life table should be constructed for each of the age-cohorts defined for the standard population of reference, the International Cancer Survival Standard (15-44, 45-54, 55-64, 65-74 and 75+ years old).

The age-specific five year observed cumulative survival rate ( $OSR_i$ ) for each of the cohorts  $i$ , is the product of the annual survival rates for the fifth year and all preceding years ( $\prod_{y=1}^5 (p_y)$ ). Its standard error is given by the following expression:

$$SE(OSR_i) = OSR_i * \sqrt{\sum_y (q_y / (r_y - d_y))}$$

where  $y$  refers to the year of follow up (1 to 5)

The age standardised five years observed survival rate (ASOSR) is then calculated as the weighted average of the age-specific survival rates, with weights ( $w_i$ ) equal to the proportion of patients in the age groups in the corresponding ICSS standard population. Note that the ICSS set to be used for breast and colorectal cancer is ICSS-1 and the one suitable for cervical cancer is ICSS-2

	<b>BREAST AND COLORECTAL CANCER Weights of ICSS-1</b>	<b>CERVICAL CANCER Weights of ICSS-2</b>
<b>Age group</b>		
15-44	7	28
45-54	12	17
55-64	23	21
65-74	29	20
75+	29	14
<b>Total</b>	100	100

Calculations represented by the following formulas:

$$ASOSR = \sum_i W_i OSR_i$$

$$SE(ASOSR) = \sum_i W_i SE(OSR_i)$$

And the 95% confidence interval is calculated as  $ASOSR \pm 1.96 * SE(ASOSR)$