Queensland Centre for

Gynaecological Cancer

OUTCOME DATA STATISTICAL REPORT 2016

1982–2012 30 YEAR REPORT

Queensland Government

Contents

Foreword

It gives me great pleasure to present the 2016 Outcomes Data Statistical Report from the Queensland Centre for Gynaecological Cancer (QCGC). The Centre is responsible to Queensland Health for the provision of gynaecological cancer services in the State of Queensland. This report covers three decades of work and data collection from 1982 to 2012 at the Centre.

When I moved from Sydney to take on the position of Director of Gynaecological Cancer Services for Queensland and Inaugural Professor of Gynaecological Cancer at University of Queensland in 1993, we were seeing about 250 patients per annum, with many cases being cared for by local general gynaecologists or being sent interstate. The establishment of the QCGC as the Statewide entity to provide centralised gynaecological cancer care has been an enormous success. As I approach retirement at the end of this year, I am proud of the development and progress I have brought with QCGC, which is now being the largest and most productive such service in Australia.

The QCGC continues to grow, with more than 3,800 new referrals in 2015. The majority of referrals are patients with benign disease who require complex surgery, e.g., severe endometriosis involving the gastrointestinal tract (GIT), or patients with significant co-morbidities. The remainder of the patients are either those with gynaecological malignancy or with non-gynaecological cancers masquerading as gynaecological cancers.

According to the last Australian Census in 2011, there were 2.18 million females in Queensland, which represented 50.4 per cent of the population. This represented a 23 per cent increase over the previous 10 years, the second highest increase of any State or Territory in Australia. A significant proportion of this population increase comes from people retiring to Queensland from interstate. These people are in their sixth plus decade and, with cancer largely being a disease of age, they contribute a disproportionately large number of cancer cases. This of course lessens the burden on our southern states but increases the burden on Queensland's oncology and other health services.

For several years now, the Centre has also provided the gynaecological cancer services for the Northern Territory. In the 2011 Census there were 109,900 women in the Northern Territory and that population had increased by 17 per cent in the preceding decade to now.

As a result of the highest density population in Queensland being in the southeast corner of the State, Brisbane being only an hour's drive north of the New South Wales (NSW) border, a significant number of women from northern NSW cross the border to be managed in Queensland.

Northern NSW areas that tend to drain to QCGC are:

- North Coast,
- New England & Northern Tablelands
- Northern Rivers
- North Western NSW

This comprises a population of some 550,000.

In all, the draining population of QCGC is approximately 5.485 million. Given that Australia's population was approximately 23.12 million, this means that QCGC drains approximately 23 per cent of the Australian female population. The very centralised nature of the QCGC service explains the high level of work draining into one coordinated service.

The QCGC service is made up of three quaternary centres – the Gold Coast University Hospital (GCUH), Mater Mothers Hospital (MMH) South Brisbane, and Royal Brisbane and Women's Hospital (RBWH), Herston, which are capable of undertaking all aspects of oncological care. Further, the QCGC also operates outreach services at the following sub-centres:

- Tweed Heads Hospital, NSW
- Toowoomba, Qld
- Sunshine Coast, Qld
- Townsville, Qld
- Royal Darwin Hospital, NT.

The Centre has four Clinical Fellowship/Advanced Trainee positions, between the three quaternary centres. While these positions are primarily used to train the next generation of Surgical Oncologists in Gynaecology, periodically we do take a non-oncological advanced trainee who wishes to upgrade their surgical skills in more complex gynaecological surgery.

With respect to Gynaecological Oncology, the aim of the Centre is to train people as Surgical Oncologists specialising primarily in female genital tract cancers rather than training them as Gynaecological Oncologists. They are taught how to operate rather than how to do an operation; this is of particular importance when it comes to surgery for ovarian and peritoneal cancers where the operation frequently needs to be developed as it happens, based on principles, as against performing a particular operation. At the end of their training our Fellows should be as comfortable mobilising a liver, repairing a diaphragm, removing a spleen or anastomosing bowel as they are at performing a hysterectomy.

The Centre has very active and productive research arms: QCGC Research, based at the RBWH and Mater Research based at MMH. These entities are involved in both prospective and retrospective research and have set up and run prospective clinical trials including Phase 3 trials. The Centre is also involved in a collaborative fashion with basic scientific research, particularly through the Mater Medical Research Centre and the Translational Research Centre at Princess Alexandra Hospital and the Queensland Institute for Medical research (QIMR).

The Centre runs what we believe to be the most comprehensive gynaecological cancer database in Australia. One of the best ways to judge the quality of oncological work is to monitor treatment-related morbidity and mortality, including survival. Without a good database and staff there is no way of knowing what quality of work is being achieved.

Our current hierarchical database, commissioned in 1994, is due to be retired within the next year and will be replaced with an SQL relational database. Our current data on more than 40,000 patients will all be mapped to the new database. Our database was established with the principle that any information that is looked at to make a decision about a patient's management should be stored. This largely negated the problems associated with having to trawl through hundreds of patient medical files to answer questions; we can now largely do this using the computer to do the work.

One of the pleasing observations from this Outcomes Report is the fact that when looking at the 5-year survival results of each disease site by decade, there is a noticeable improvement with time. This doesn't mean that we, as surgeons are doing a better job. Given that most management is multidisciplinary, it demonstrates that as a team our outcomes are getting better. In this aspect alone the database has justified its existence.

This Outcomes Report is very much a broad 'brush stroke' approach to outcomes. While the Cox Regression analyses show some of the factors that are independent variables with respect to survival, the real use of this Report is to give us ideas of where we should look more closely and eventually where we may be able to improve our care and outcomes.

Adj. Prof Alex J Crandon
Statewide Director Gynaecological Cancer Services
Director Qld Centre for Gynaecological Cancer

Staff

Gynaecological Oncologists

Adj. Prof Alex Crandon MBBS PhD (Leeds) FRCOG (Lond) FRANZCOG CGO, Director Queensland Centre for Gynaecological Cancer

Assoc. Prof James Nicklin MBBS FRANZCOG CGO, Clinical Lead Gynaecology Oncology, Royal Brisbane and Women's Hospital

Assoc. Prof Lewis Perrin MBBS MRCOG FRANZCOG CGO, Director Gynaecology Oncology, Mater Hospital

Prof Andreas Obermair MD FRANZCOG CGO, Director of Research, Queensland Centre for Gynaecological Cancer

Assoc. Prof Russell Land MBBS (Qld) FRANZCOG CGO Grad Cert (Pall Care), Visiting Medical Officer, Royal Brisbane and Women's Hospital

Dr Andrea Garrett MBBS (Qld) FRANZCOG DIP (Pall Care) CGO, Visiting Medical Officer/Assistant Director Queensland Trophoblast Centre, Visiting Medical Officer, Royal Brisbane and Women's Hospital

Dr Amy Tang MBBS FRANZCOG MRANZCOG CGO, Visiting Medical Officer Royal Brisbane and Women's Hospital

Dr Naven Chetty MBBS, FRANZCOG, CGO, Staff Specialist, Mater Hospital

Assoc. Prof Marcelo Nascimento MD MSc FRANZCOG CGO, Director of Gynaecology Oncology, Gold Coast University Hospital

Dr Graeme Walker BSc (Hon) MBChB MRCOG FRANZCOG, Staff Specialist, Gold Coast University Hospital

Professional staff

Lee Tripcony BSc Stats, Principal Scientist Statistician, wRoyal Brisbane and Women's Hospital

Karen Sanday BHSc (HIM), Clinical Data Manager, Queensland Centre for Gynaecological Cancer

Lisa Ihlenfeldt BSc (Public Health), Safety and Quality Co-ordinator, Queensland Centre for Gynaecological Cancer

Emily Barber BSc (HIM) Health Information Officer, Queensland Centre for Gynaecological Cancer

Lieven Tan BSc (Biomedical Science) Health Information Officer, Queensland Centre for Gynaecological Cancer

Nursing Staff

Judith Eddy RN, Clinical Nurse Consultant, Royal Brisbane and Women's Hospital

Shona Morrison BNurs, Grad Cert Nursing (Cancer), Clinical Nurse, Queensland Trophoblast Centre, Gynaecology Oncology, Royal Brisbane and Women's Hospital

Anita Moffett BNurs Clinical Nurse, Gynaecology Oncology, Royal Brisbane and Women's Hospital

Vicki Campbell Master of Clinical Science, Grad Dip Health Science, BNurs, Clinical Nurse Consultant, Mater Hospital

Eilish Jacobs EN BNurs Grad Cert Women's Health, Clinical Nurse Consultant, Gold Coast University Hospital

Administrative Staff

Michelle Hawthorne Administration Officer, Director's Secretary, Royal Brisbane and Women's Hospital

Michelle Slatter Administration Officer, Medical Typist, Royal Brisbane and Women's Hospital

Talitha Ketchell Administration Officer/ Multidisciplinary Team Co-ordinator Mater Hospital

Tara Franke Administration Officer, Multidisciplinary Team Co-ordinator (MDT) (2 days) Royal Brisbane and Women's Hospital

Kristy Ingle Administration Officer, Multidisciplinary Team Co-ordinator (3 days) Royal Brisbane and Women's Hospital

Kylie Cole Administration Officer, Data Assistant

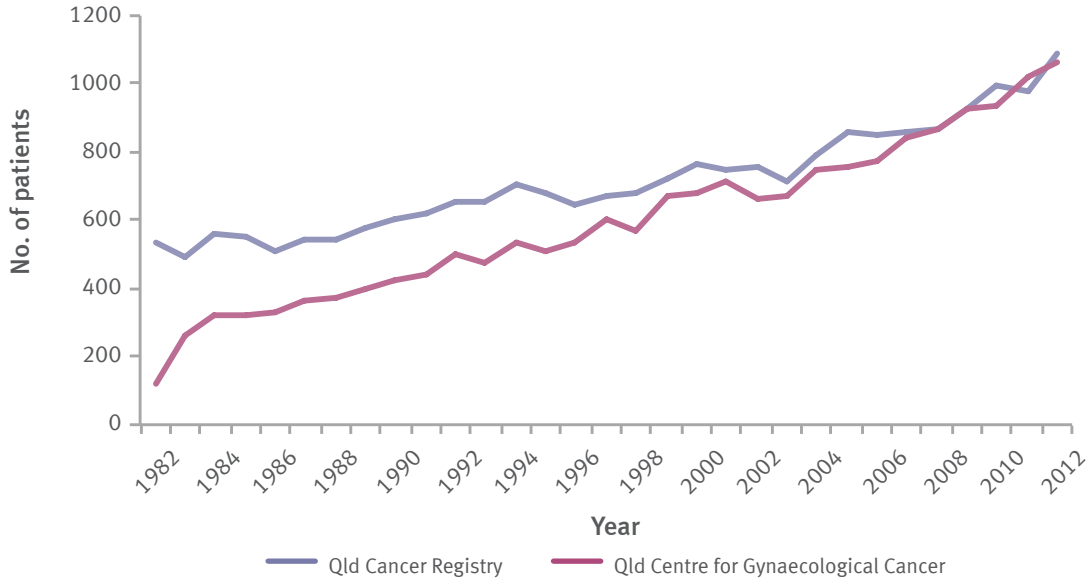
Kimberley Roach Administration Officer, MDT Co-ordinator Assistant (part time)

Executive and Sponsor

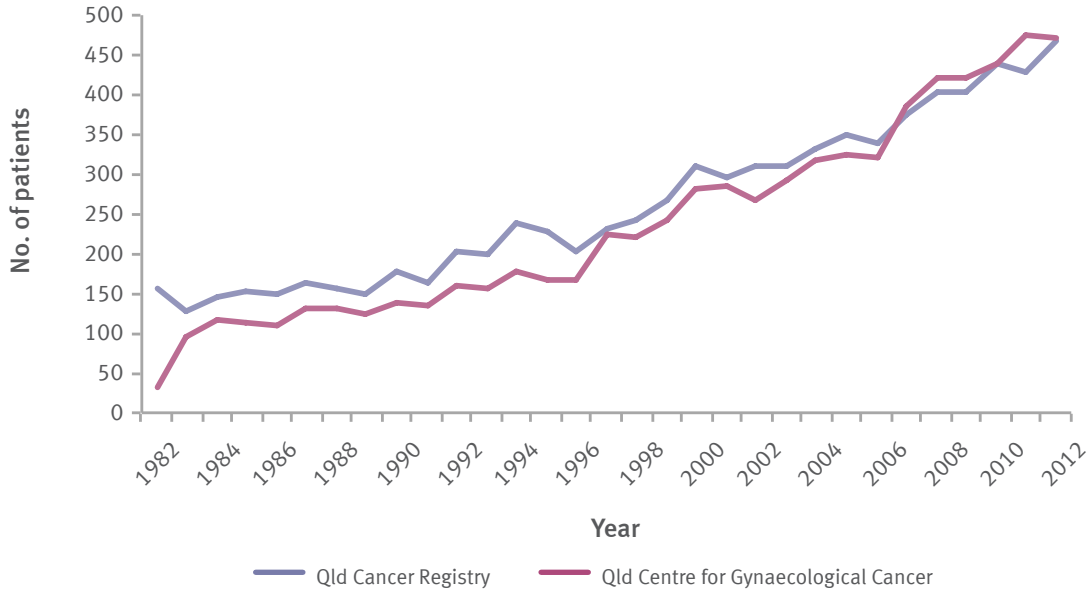
Tami Photinos RN, RM, B Nur, Grad Dip (Emergency), M App Mngt (Health), Executive Director, Metro North Hospital and Health Service, Women's & Children's Services

CANCER INCIDENCE 1982 – 2012

Gynaecological cancer incidence 1982 – 2012

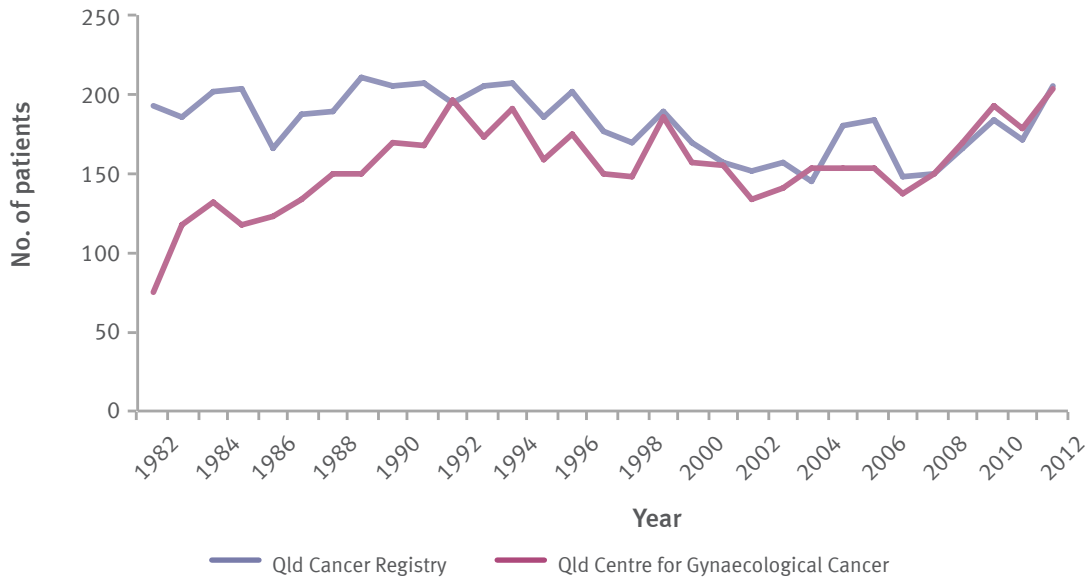


Uterine cancer incidence 1982 – 2012

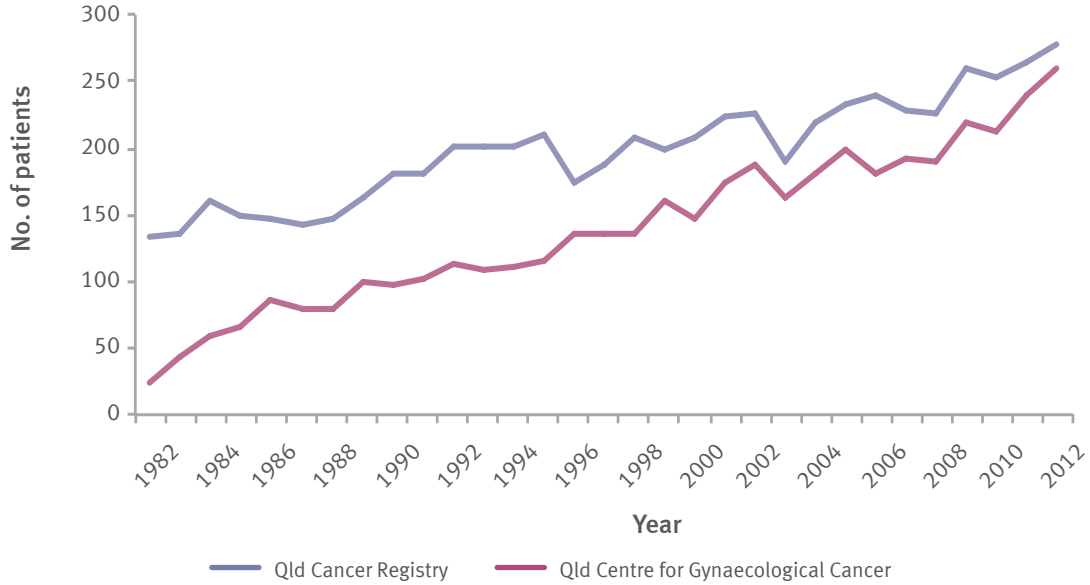


CANCER INCIDENCE 1982 – 2012

Cervical cancer incidence 1982 – 2012



Ovarian cancer incidence 1982 – 2012



Statistical analysis

Outcome statistics on mortality ultimately shape the treatment given to patients. They also serve as a comparison with other oncology centres and provide effective feedback to clinicians working in the field.

Survival analysis is concerned with measuring the risk of occurrence of an outcome event as a function of time. The duration of time is calculated from the date of diagnosis until the event occurs and uses the survival curve to describe its distribution. Therefore, the outcome variable of interest is time until an event occurs.

In this report, the end points for survival are disease-specific survival (DSS) and death any cause (OS). Time is measured in months and is calculated by subtracting the date last seen from the date of first diagnosis. Likewise, salvage survival is defined as the length of time from the date of recurrence to the date last seen or date of death (any cause).

Overall survival is calculated from the date of first diagnosis to the time of death, regardless of the cause of death. Disease specific survival is calculated from the date of first diagnosis to the date of death from the cancer. If the death was unrelated to the cancer, it is not considered an event.

Median survival can be considered to be the expectation of life. When the probability of survival reached 50%, the corresponding time value on the X-axis is the median survival time.

Deaths are defined as an event if the patient died:

1. Due to cancer
2. Resulting from treatment
3. Unknown cause.

Survival data is censored for the following reasons:

1. Withdrawals from study (patient lost to follow-up)
2. An intervening event (intercurrent death)
3. Discharged after at least 10 year period

The Kaplan-Meier survival curve estimate is obtained by multiplying together the proportions of survivors up to and including the given failure time. The curve remains horizontal between each failure time.

A 95% confidence interval is calculated and plotted for each group estimate; patients at risk and median survival are displayed under the graph.

Survival curves (OS and DSS) are calculated for specific time periods. In this report survival estimates are given at:

- 5 years/60 months
- 10 years/120 months
- 15 years/180 months
- 20 years/240 months
- 25 years/300 months

They are calculated depending on the length of follow-up. The numbers displayed on each curve represent the following information.

For example, A% (B-C)

A= Proportion surviving

B= Number at risk in the group at the start

C= Number in group remaining due to events and censoring.

A Cox proportional hazards model is applied to evaluate the independent significance of prognostic factors such as age, FIGO stage, histology and differentiation and presentation period. Univariate and multivariate tables are constructed for both death any cause and disease specific end points for the various gynaecological sites.

In the multivariate tables, hazard or relative risk is the ratio of events between groups. Therefore a hazard of 1.0 means no difference between groups.

Uterine cancer

Uterine malignancies can be divided into endometrial adenocarcinomas and uterine sarcomas. These two malignancies arise from different cell types, have different epidemiological risk factors, are managed differently and have different prognoses. Endometrial adenocarcinomas are the most common type of uterine malignancy; these can be further divided into Type 1 (75%) and Type 2 (25%) endometrial carcinomas. Type 1 endometrial cancers are well differentiated, endometrioid, typically present in early stage, around the time of menopause, are usually oestrogen-dependent and have a good prognosis. Type 2 endometrial cancers typically present in the post-menopausal period, are high grade (including carcinosarcomas, uterine serous cancers and clear cell cancer), are largely oestrogen-independent and have a poorer prognosis.

There is increasing evidence from the literature that patients with endometrial cancer have better outcomes when treated in a subspecialty unit with the benefits of multidisciplinary team management. It is gratifying to see that over the past 30 years there has been a steady increase in the management of these cancers in the centralised QCGC unit from a low of 30% in 1982 to almost 100% since 2007. On multivariate analysis, there has been a statistically significant improvement over the past three decades in overall survival of patients with all uterine cancers and for patients with endometrial adenocarcinoma.

From long term data, there is a statistically significant survival benefit for patients with endometrial adenocarcinoma compared with uterine sarcomas, and of patients with endometrioid adenocarcinomas compared to high risk cell types (carcinosarcoma, clear cell and uterine serous). Surgical stage shows a clear separation in survival for each increment in stage. Regarding relapse of disease, locoregional recurrence was associated with a 57% 5 year survival compared with patients with systemic relapse, who had a 40% 5 year survival. This difference did not reach statistical significance.

The survival of patients with carcinosarcoma, for each stage of disease, has not improved over the past 30 years. Similarly, patients with stage 1 leiomyosarcoma and stage 1 endometrial stromal sarcoma have not shown any improvement in survival over this time. This highlights the lack of success of adjuvant treatment strategies that have been tested and utilized for this known high risk disease over this time. Of the uterine sarcomas there is a distinct survival difference between endometrial stromal sarcoma (EES), adenosarcoma and leiomyosarcoma. This exemplifies the differences in the cell of origin and the clinical behaviours of each of these sarcoma types. In earlier years, uterine sarcomas were lumped in together and often treated in a similar manner. Our data demonstrates the importance of confirming histological sarcoma type so treatment can be tailored to the disease. For example, EES is usually hormone receptor positive and will often respond to hormonal treatment and radiotherapy. Leiomyosarcoma is notoriously radiation resistant and there is no high level of evidence for the use of any type of chemotherapy in the adjuvant setting.

Overall, these data confirm the clinical features of endometrial cancer and uterine sarcomas established in earlier published series. The survival of patients with this disease is comparable to the survival data of patients from large gynaecologic oncology units. These data do not show that over the past 30 years treatment of most uterine cancers is now undertaken via a minimally invasive approach compared with open laparotomy. There are apparent, slow incremental improvements in survival with time, but this is not the case for the high risk endometrial cancers and the 2 most common sarcomas.

UTERINE CANCER

Patient Characteristics

Presentation period 1982 to 2012 (N=6354)

Factor		All N=6354 (%)	1982-1992 N=1086(%)	1993-2002 N=1820(%)	2003-2012 N=3448(%)	p-value
Age (years)	under 40	159 (3%)	23 (2%)	37 (2%)	99 (3%)	‹0.001
	40-49	532 (8%)	107 (10%)	163 (9%)	262 (8%)	
	50-59	1670 (26%)	261 (24%)	472 (26%)	937 (27%)	
	60-69	1985 (31%)	369 (34%)	526 (29%)	1090 (32%)	
	70-79	1439 (23%)	262 (24%)	444 (24%)	733 (21%)	
	80+	569 (9%)	64 (6%)	178 (10%)	327 (9%)	
FIGO stage	1	4543 (71%)	840 (77%)	1299 (71%)	2404 (70%)	0.001
	2	565 (9%)	80 (7%)	152 (8%)	333 (10%)	
	3	740 (12%)	103 (9%)	250 (14%)	387 (11%)	
	4	369 (6%)	63 (6%)	111 (6%)	195 (6%)	
	unk	137 (2%)	0 (0%)	8 (0.4%)	129 (4%)	
Node stage	N -ve	4537 (71%)	278 (26%)	1385 (76%	2874 (83%)	0.007
	N +ve	324 (5%)	21 (2%)	125 (7%)	178 (5%)	
	unk	1493 (23%)	787 (72%)	310 (17%)	396 (11%)	
Differentiation	well	2232 (35%)	236 (22%0	600 (33%)	1396 (40%)	‹0.001
	moderate	1940 (31%)	288 (27%)	655 (36%)	997 (29%)	
	poor	1161 (18%)	134 (12%)	356 (20%)	671 (19%)	
	undifferentiated	22 (0.3%)	2 (0.2%)	4 (0.2%)	16 (0.4%)	
	other/unk	999 (16%)	426 (39%)	205 (11%)	368 (11%)	
Treatment	Sx alone	4347 (68%)	602 (55%)	1258 (69%)	2487 (72%)	‹0.001
	RT alone	73 (1%)	11 (1%)	29 (2%)	33 (1%)	
	Chemo alone	18 (0.3%)	3 (0.3%)	3 (0.2%)	12 (0%)	
	Sx+RT	930 (15%)	373 (34%)	325 (18%)	232 (7%)	
	Sx+Chemo	335 (5%)	31 (3%)	81 (4%)	223 (6%)	
	Sx+RT+Chemo	467 (7%)	50 (5%)	98 (5%)	319 (9%)	
	other	184 (3%)	16 (1%)	26 (1%)	142 (4%)	
Morphology	A=Endometrioid	5154 (81%)	899 (83%)	1472 (81%)	2783 (81%)	0.09
	B=Clear Cell/UPSC	471 (7%)	88 (8%)	128 (7%)	255 (7%)	
	C=Carcinosarcoma	342 (5%)	49 (5%)	118 (6%)	175 (5%)	
	D=Sarcoma	241 (4%)	41 (4%)	83 (5%)	117 (3%)	
	other	146 (2%)	9 (1%)	19 (1%)	118 (3%)	

*p-values reflect the change between decades for each factor

UTERINE CANCER

Kaplan and Meier disease specific survival (DSS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=6354)

		5 year	10 year	15 year	20 year	25 year
	ALL	82%(6354-2852)	76%(6354-1081)	72%(6354-457)	68%(6354-148)	63%(6354-17)
Age (years)	under 40	93%(159-81)	91%(159-32)	91%(159-15)	81% (159-4)	81%(159-2)
	40-49	87%(532-284)	85%(532-131)	83%(532-67)	81%(532-21)	77%(532-3)
	50-59	88%(1670-871)	85%(1670-333)	84%(1670-144)	81%(1670-60)	81%(1670-4)
	60-69	84%(1985-934)	80%(1985-373)	76%(1985-168)	72%(1985-52)	65%(1985-7)
	70-79	74%(1439-557)	65%(1439-190)	56%(1439-61)	42%(1439-10)	25%(1439-1)
	80+	61%(569-125)	46%(569-22)	23%(569-2)	11%(569-1)	4%(569-0)
FIGO stage	1	92%(4543-2321)	87%(4543-935)	83%(4543-408)	78%(4543-131)	72%(4543-13)
	2	82%(565-260)	75%(565-78)	71%(565-31)	71%(565-11)	71%(565-2)
	3	52%(740-214)	46%(740-60)	41%(740-17)	30%(740-6)	25%(740-2)
	4	19%(369-37)	13%(369-7)	11%(369-1)	11%(369-0)	na
Node status	N -ve	87%(4537-1967)	79%(4537-489)	70%(4537-123)	54%(4537-22)	41%(4537-5)
	N +ve	47%(324-81)	43%(324-21)	38%(324-2)	19%(324-0)	na
Differentiation	well	97%(2232-1063)	91%(2232-358)	86%(2232-121)	74%(2232-31)	66%(2232-6)
	moderate	87%(1940-1009)	81%(1940-361)	78%(1940-137)	72%(1940-33)	66%(1940-6)
	poor	60%(1161-353)	53%(1161-105)	44%(1161-30)	44%(1161-7)	44%(1161-1)
	undifferentiated	38%(22-4)	38%(22-2)	38%(22-2)	38%(22-2)	na
Presentation	1982-1992	78%(1086-746)	75%(1086-604)	74%(1086-423)	71%(1086-147)	66%(1086-17)
	1993-2002	82%(1820-1212)	77%(1820-444)	58%(1820-34)	33%(1820-1)	33%(1820-0)
	2003-2012	83%(3448-894)	68%(3448-0)	na	na	na
Treatment	Sx alone	91%(4347-2131)	87%(4347-773)	83%(4347-314)	76%(4347-91)	69%(4347-11)
	RT alone	46%(73-10)	46%(73-4)	17%(73-0)	na	na
	Chemo alone	14%(18-0)	na	na	na	na
	Sx+RT	72%(930-473)	67%(930-253)	65%(930-131)	63%(930-52)	62%(930-6)
	Sx+Chemo	43%(335-75)	32%(335-18)	25%(335-4)	19%(335-2)	9%(335-0)
	Sx+RT+Chemo	60%(467-142)	50%(467-29)	38%(467-7)	25%(467-2)	25%(467-0)
Morphology	Endometriod	89%(5154-2642)	84%(5154-1092)	81%(5154-551)	78%(5154-274)	76%(5154-151)
	Clear Cell/UPSC	56%(471-144)	50%(471-63)	46%(471-35)	45%(471-22)	45%(471-18)
	Carcinosarcoma	52%(342-106)	47%(342-48)	44%(342-23)	42%(342-14)	42%(342-13)
	Sarcoma	54%(241-95)	48%(241-48)	45%(241-22)	42%(241-13)	38%(241-10)

UTERINE CANCER

Kaplan and Meier overall survival (OS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=6354)

		5 year	10 year	15 year	20 year	25 year
	ALL	76%(6354-2852)	62%(6354-1081)	48%(6354-457)	34%(6354-148)	19%(6354-17)
Age (years)	under 40	92%(159-81)	88%(159-32)	83%(159-15)	74%(159-4)	49%(159-2)
	40-49	87%(532-284)	80%(532-131)	74%(532-67)	72%(532-21)	63%(532-3)
	50-59	86%(1670-871)	79%(1670-333)	73%(1670-144)	63%(1670-60)	36%(1670-4)
	60-69	80%(1985-934)	69%(1985-373)	54%(1985-168)	33%(1985-52)	17%(1985-7)
	70-79	65%(1439-557)	42%(1439-190)	21%(1439-61)	6%(1439-10)	1%(1439-1)
	80+	42%(569-125)	13%(569-22)	2%(569-2)	1%(569-1)	0%(569-0)
FIGO stage	1	86%(4543-2321)	72%(4543-935)	56%(4543-408)	39%(4543-131)	20%(4543-13)
	2	75%(565-260)	58%(565-78)	44%(565-31)	32%(565-11)	23%(565-2)
	3	47%(740-214)	35%(740-60)	26%(740-17)	18%(740-6)	15%(740-2)
	4	18%(369-37)	10%(369-7)	3%(369-1)	0%(369-0)	na
Node status	N -ve	82%(4537-1967)	66%(4537-489)	47%(4537-123)	25%(4537-22)	13%(4537-5)
	N +ve	41%(324-81)	31%(324-21)	23%(324-2)	11%(324-0)	na
Differentiation	well	93%(2232-1063)	78%(2232-358)	58%(2232-121)	40%(2232-31)	30%(2232-6)
	moderate	82%(1940-1009)	69%(1940-361)	51%(1940-137)	28%(1940-33)	15%(1940-6)
	poor	53%(1161-353)	40%(1161-105)	25%(1161-30)	14%(1161-7)	12%(1161-1)
	undifferentiated	38%(22-4)	38%(22-2)	38%(22-2)	38%(22-0)	na
Presentation	1982-1992	70%(1086-746)	59%(1086-604)	50%(1086-423)	36%(1086-147)	20%(1086-17)
	1993-2002	75%(1820-1212)	60%(1820-444)	31%(1820-34)	14%(1820-1)	na
	2003-2012	79%(3448-894)	61%(3448-33)	61%(3448-0)	na	na
Treatment	Sx alone	86%(4347-2131)	73%(4347-773)	58%(4347-314)	41%(4347-91)	24%(4347-11)
	RT alone	20%(73-10)	12%(73-4)	3%(73-0)	na	na
	Chemo alone	0%(18-0)	na	na	na	na
	Sx+RT	64%(930-473)	49%(930-253)	37%(930-131)	25%(930-52)	14%(930-6)
	Sx+Chemo	40%(335-75)	29%(335-18)	16%(335-4)	12%(335-2)	6%(335-0)
	Sx+RT+Chemo	59%(467-142)	42%(467-29)	26%(467-7)	17%(467-2)	0%(467-0)
Morphology	Endometrioid/ Adenocarcinoma	83%(5154-2642)	70%(5154-1092)	57%(5154-551)	45%(5154-274)	38%(5154-151)
	Clear Cell/UPSC	49%(471-144)	38%(471-63)	29%(471-35)	27%(471-22)	27%(471-18)
	Carcinosarcoma	47%(342-106)	37%(342-48)	31%(342-23)	28%(342-14)	28%(342-13)
	Sarcoma	53%(241-95)	46%(241-48)	41%(241-22)	38%(241-13)	35%(241-10)

UTERINE CANCER

Univariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=6354)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<40 years vs	40-49	1.57	[0.85,2.89]	0.15	1.44	[0.87,2.40]	0.16
	50-59	1.58	[0.88,2.82]	0.12	1.71	[1.06,2.77]	0.03
	60-69	2.15	[1.21,3.81]	0.009	2.84	[1.77,4.56]	<0.001
	70-79	4.02	[2.27,7.13]	<0.001	6.17	[3.85,9.91]	<0.001
	80+	6.83	[3.82,12.23]	<0.001	12.26	[7.59,19.80]	<0.001
FIGO Stage							
1 vs	2	2.03	[1.63,2.53]	<0.001	1.60	[1.36,1.87]	<0.001
	3	6.51	[5.62,7.53]	<0.001	3.71	[3.30,4.18]	<0.001
	4	21.20	[18.08,24.85]	<0.001	11.80	[10.30,13.51]	<0.001
Node status							
N -ve vs	N +ve	4.33	[3.62,5.18]	<0.001	3.36	[2.87,3.94]	<0.001
Differentiation	moderate	2.55	[2.06,3.16]	<0.001	1.76	[1.54,2.02]	<0.001
Well vs	poor	8.81	[7.19,10.80]	<0.001	4.61	[4.02,5.28]	<0.001
	undifferentiated	6.25	[5.07,7.72]	<0.001	5.46	[2.99,9.95]	<0.001
Presentation Period	1993-2002	1.08	[0.92,1.27]	0.33	1.12	[1.00,1.26]	0.06
1982-1992 vs	2003-2012	0.99	[0.84,1.16]	0.87	0.83	[0.73,0.95]	0.006
Treatment	RT alone	7.74	[5.28,11.37]	<0.001	8.39	[6.38,11.03]	<0.001
Sx alone vs	Chemo alone	31.50	[18.05,54.96]	<0.001	22.44	[13.41,37.55]	<0.001
	Sx+RT	2.73	[2.34,3.18]	<0.001	2.15	[1.93,2.40]	<0.001
	Sx+Chemo	7.94	[6.65,9.49]	<0.001	4.71	[4.03,5.50]	<0.001
	Sx+RT+Chemo	4.54	[3.80,5.43]	<0.001	2.72	[2.32,3.18]	<0.001
Morphology							
Endometriod vs	Clear Cell/UPSC	4.29	[3.58,5.14]	<0.001	2.06	[1.56,2.74]	<0.001
	Carcinosarcoma	5.32	[4.34,6.52]	<0.001	3.11	[2.26,4.30]	<0.001
	Sarcoma	6.16	[5.12,7.41]	<0.001	3.51	[3.07,4.02]	<0.001

UTERINE CANCER

Multivariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

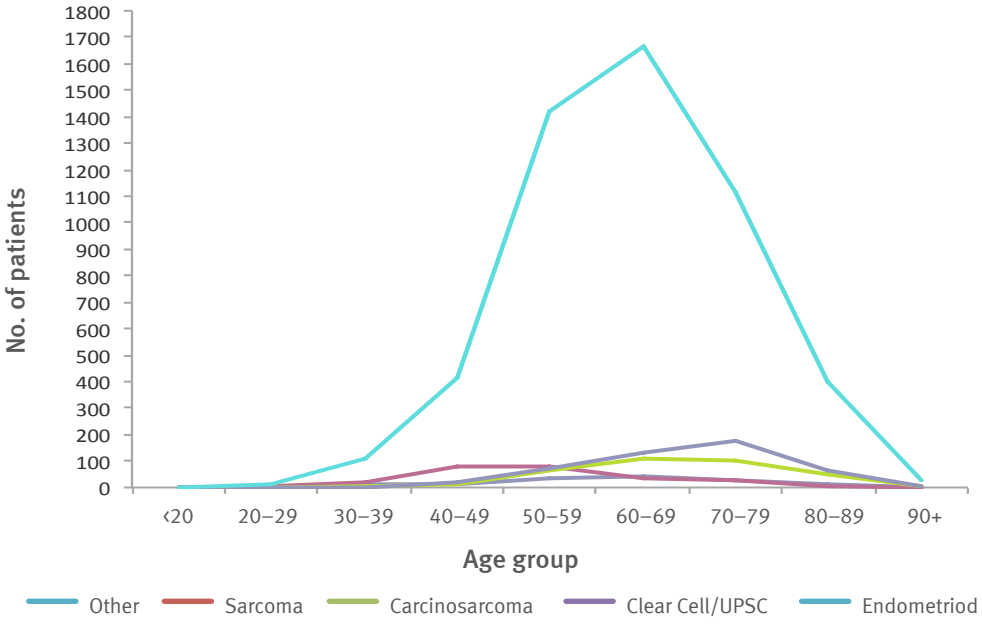
Presentation period 1982 to 2012 (N=6354)

FACTORS		DSS			OS		
		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<40 years vs	40-49	1.33	[0.72,2.46]	0.36	1.42	[0.83,2.41]	0.2
	50-59	1.85	[1.03,3.30[	**0.04**	1.94	[1.17,3.21]	**0.01**
	60-69	2.60	[1.46,4.62]	**<0.001**	3.26	[1.98,5.37]	**<0.001**
	70-79	4.50	[2.53,8.00]	**<0.001**	6.99	[4.25,11.50]	**<0.001**
	80+	7.41	[4.12,13.34]	**<0.001**	13.32	[8.03,22.08]	**<0.001**
FIGO Stage							
1 vs	2	1.70	[1.36,2.12]	**<0.001**	1.49	[1.26,1.75]	**<0.001**
	3	4.50	[3.82,5.31]	**<0.001**	2.96	[2.56,3.42]	**<0.001**
	4	12.15	[10.01,14.74]	**<0.001**	8.43	[7.14,9.96]	**<0.001**
Differentiation	moderate	1.73	[1.39,2.16]	**<0.001**	1.31	[1.13,1.50]	**<0.001**
Well vs	poor	3.06	[2.45,3.81]	**<0.001**	2.09	[1.79,2.43]	**<0.001**
	undifferentiated	2.58	[2.04,3.26]	**<0.001**	2.58	[1.40,4.79]	**<0.001**
Presentation							
1982-1992 vs	1993-2002	0.89	[0.75,1.06]	0.19	0.95	[0.83,1.09]	0.44
	2003-2012	0.71	[0.59,0.85]	**<0.001**	0.64	[0.55,0.75]	**<0.001**
Treatment	RT alone	2.91	[1.95,4.35]	**<0.001**	3.54	[2.62,4.79]	**<0.001**
Sx alone vs	Chemo alone	4.16	[2.33,7.42]	**<0.001**	4.81	[2.80,8.25]	**<0.001**
	Sx+RT	1.35	[1.14,1.59]	**<0.001**	1.22	[1.08,1.38]	**<0.001**
	Sx+Chemo	1.14	[0.92,1.42]	0.22	1.18	[0.98,1.42]	0.09
	Sx+RT+Chemo	1.28	[1.04,1.57]	**0.02**	1.20	[1.00,1.43]	**0.05**
Morphology	Clear Cell/UPSC	1.81	[1.48,2.21]	**<0.001**	0.94	[0.70,1.26]	0.68
Endometriod vs	Carcinosarcoma	1.37	[1.09,1.73]	**0.007**	1.59	[1.14,2.22]	**0.006**
	Sarcoma	3.45	[2.77,4.30]	**<0.001**	2.29	[1.95,2.68]	**<0.001**

UTERINE CANCER

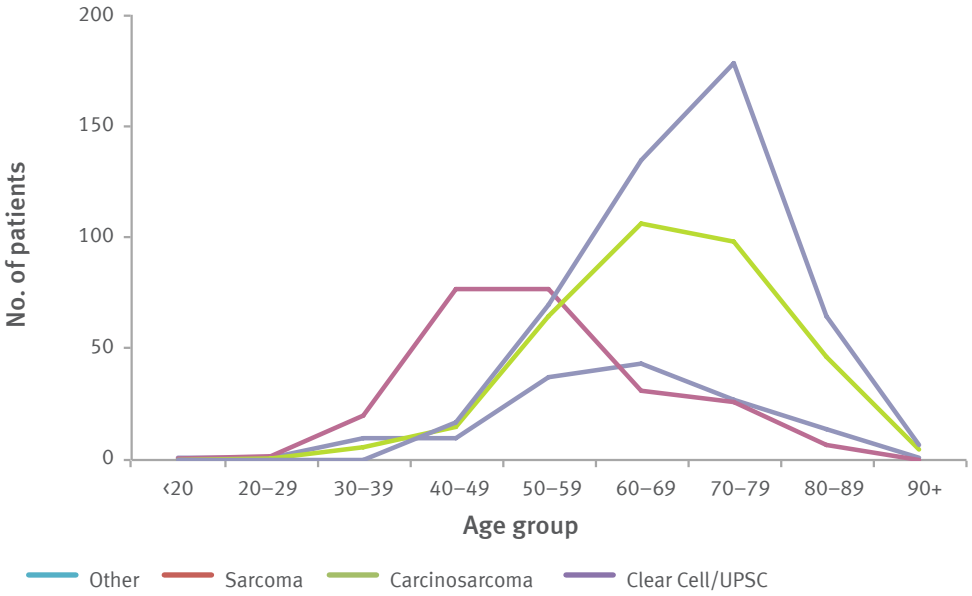
Uterine Cancer (1982–2012)

Age distribution by morphology type



Uterine Cancer (1982–2012)

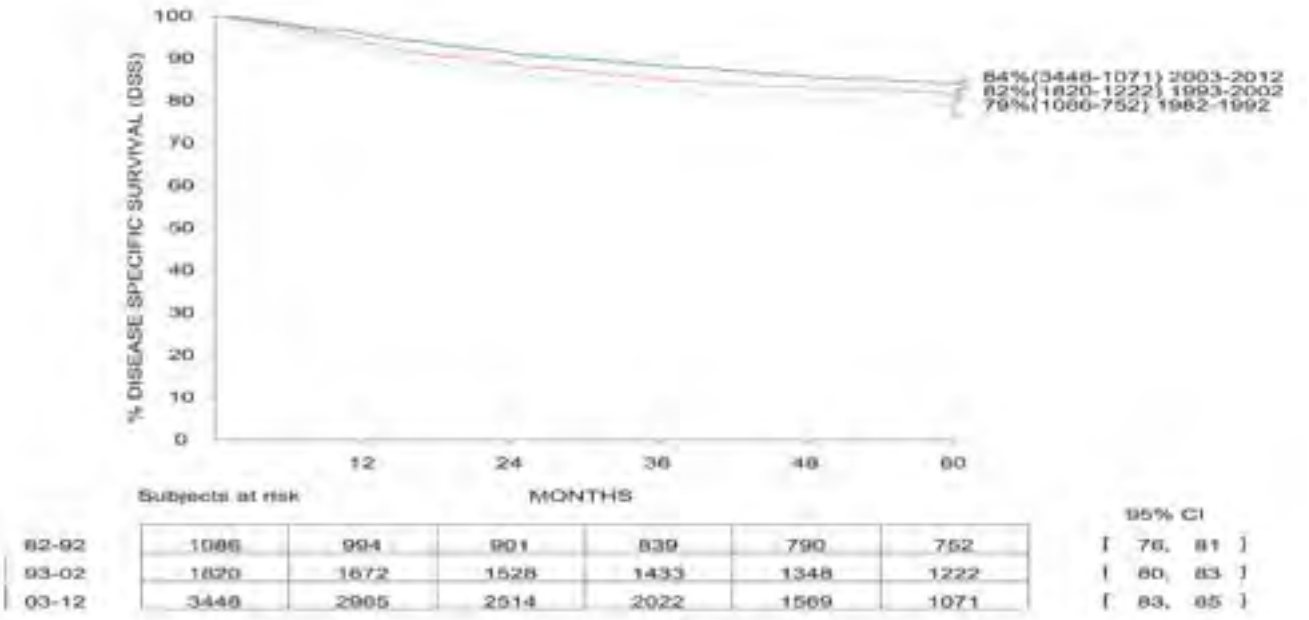
Age distribution by morphology type – excluding endometriod



UTERINE CANCER

Uterine Cancer 1982–2012

DSS by Presentation decade

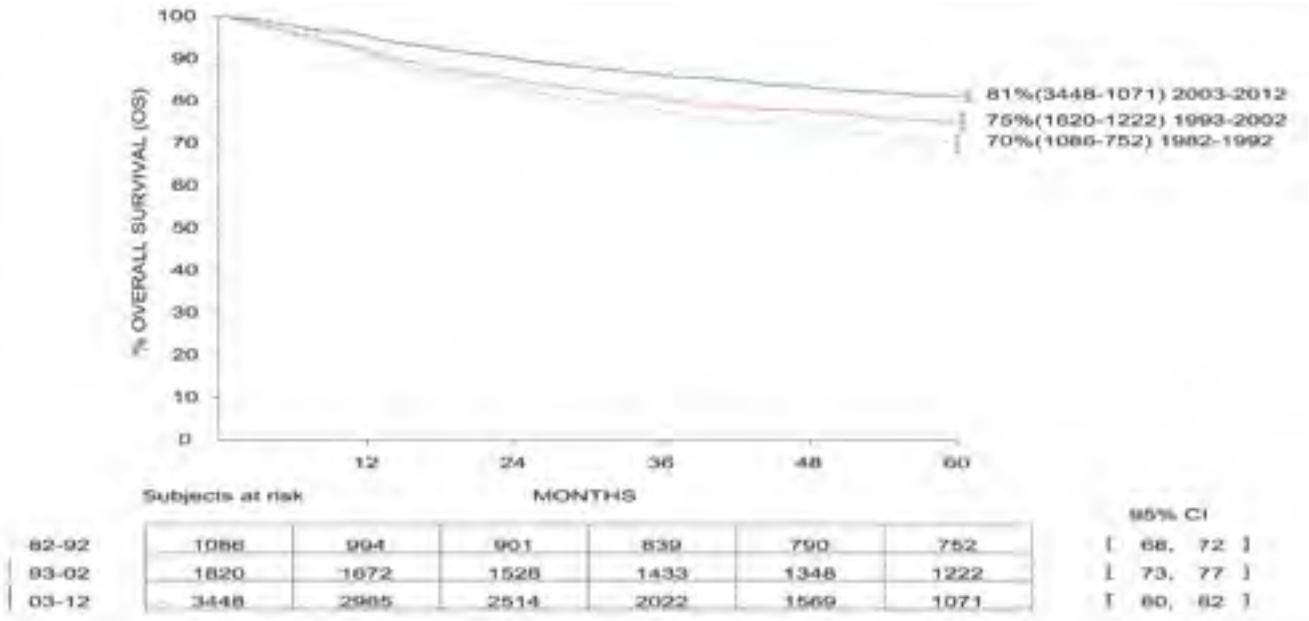


Subjects at risk

							95% CI
82-92	1086	994	901	839	790	752	[76, 81]
93-02	1820	1672	1528	1433	1348	1222	[80, 83]
03-12	3448	2985	2514	2022	1569	1071	[83, 85]

Uterine Cancer 1982–2012

OS by Presentation decade



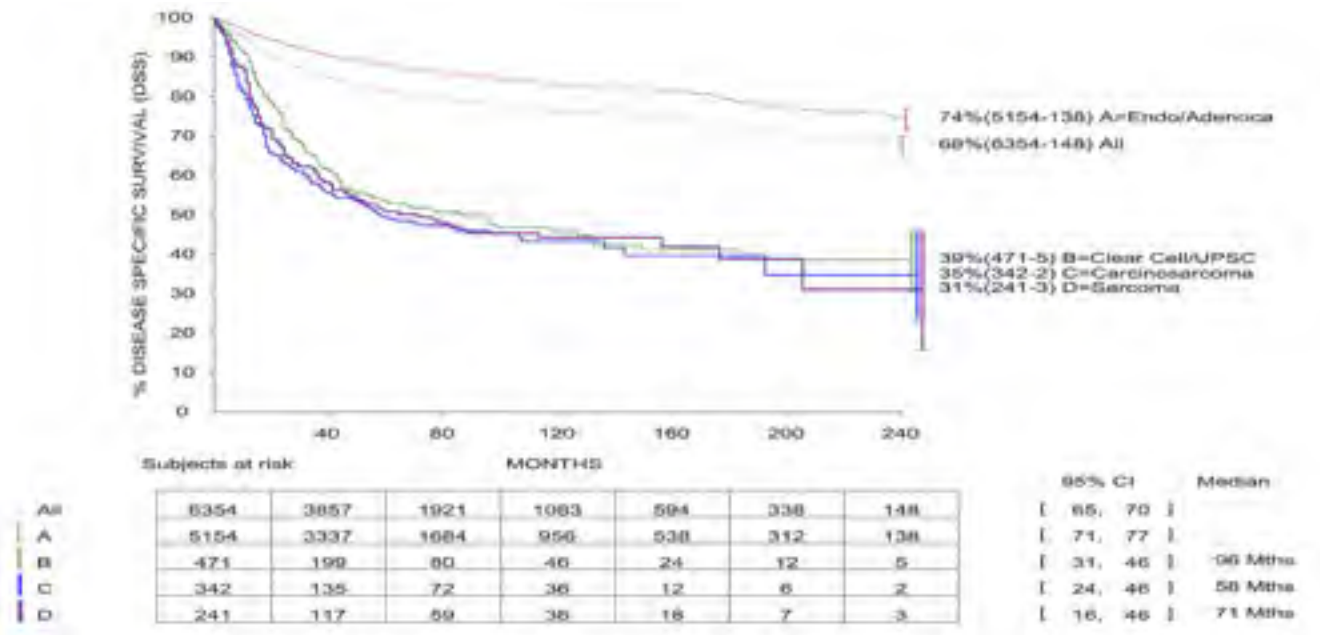
Subjects at risk

							95% CI
82-92	1086	994	901	839	790	752	[68, 72]
93-02	1820	1672	1528	1433	1348	1222	[73, 77]
03-12	3448	2985	2514	2022	1569	1071	[80, 82]

UTERINE CANCER

Uterine Cancer 1982–2012

DSS by Morphology



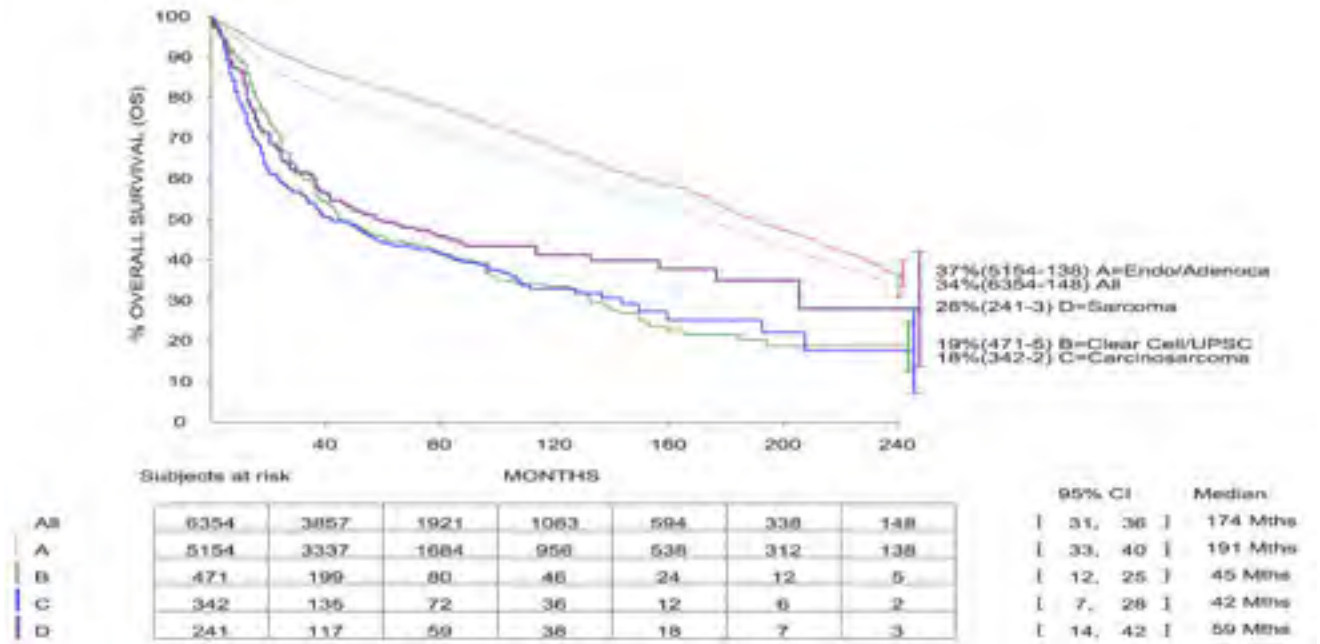
Subjects at risk

All	6354	3857	1921	1063	594	338	148
A	5154	3337	1684	956	538	312	138
B	471	199	80	46	24	12	5
C	342	135	72	36	12	6	2
D	241	117	59	38	18	7	3

	95% CI		Median
All	[65,	70]	
A	[71,	77]	
B	[31,	46]	96 Mths
C	[24,	46]	58 Mths
D	[16,	46]	71 Mths

Uterine Cancer 1982–2012

OS by Morphology



Subjects at risk

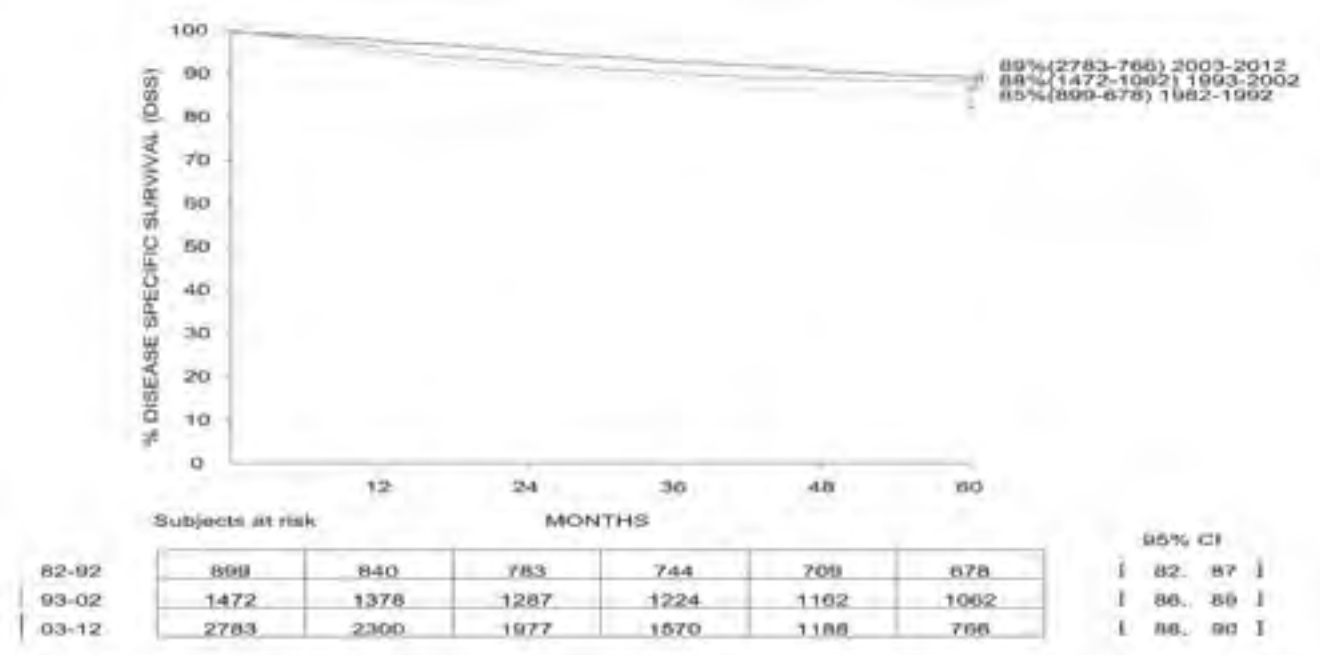
All	6354	3857	1921	1063	594	338	148
A	5154	3337	1684	956	538	312	138
B	471	199	80	46	24	12	5
C	342	135	72	36	12	6	2
D	241	117	59	38	18	7	3

	95% CI		Median
All	[31,	36]	174 Mths
A	[33,	40]	191 Mths
B	[12,	25]	45 Mths
C	[7,	28]	42 Mths
D	[14,	42]	59 Mths

UTERINE CANCER

Uterine Endometroid Carcinoma

DSS by Presentation period

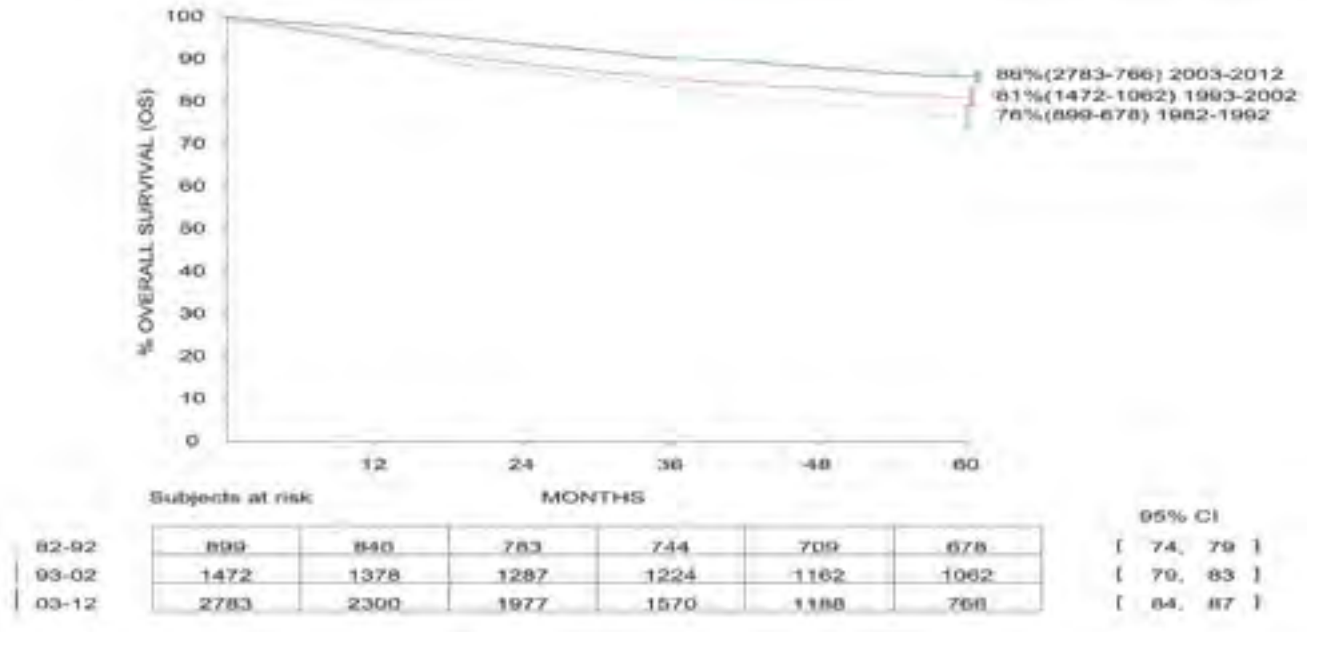


Subjects at risk

							95% CI
82-92	899	840	783	744	709	678	[82, 87]
93-02	1472	1378	1287	1224	1162	1062	[86, 89]
03-12	2783	2300	1977	1570	1188	766	[88, 90]

Uterine Endometroid Carcinoma

OS by Presentation period

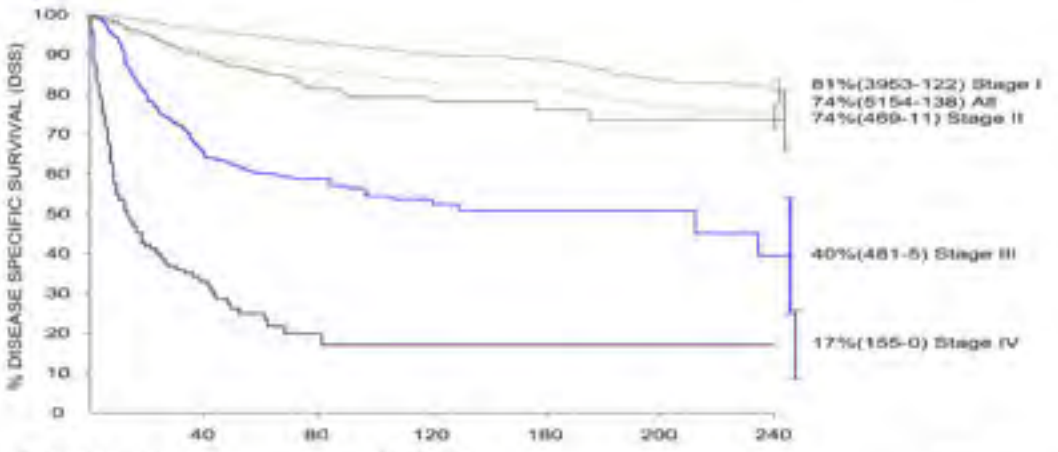


Subjects at risk

							95% CI
82-92	899	840	783	744	709	678	[74, 79]
93-02	1472	1378	1287	1224	1162	1062	[79, 83]
03-12	2783	2300	1977	1570	1188	766	[84, 87]

UTERINE CANCER

Uterine Cancer Endometroid 1982–2012
DSS by FIGO Stage

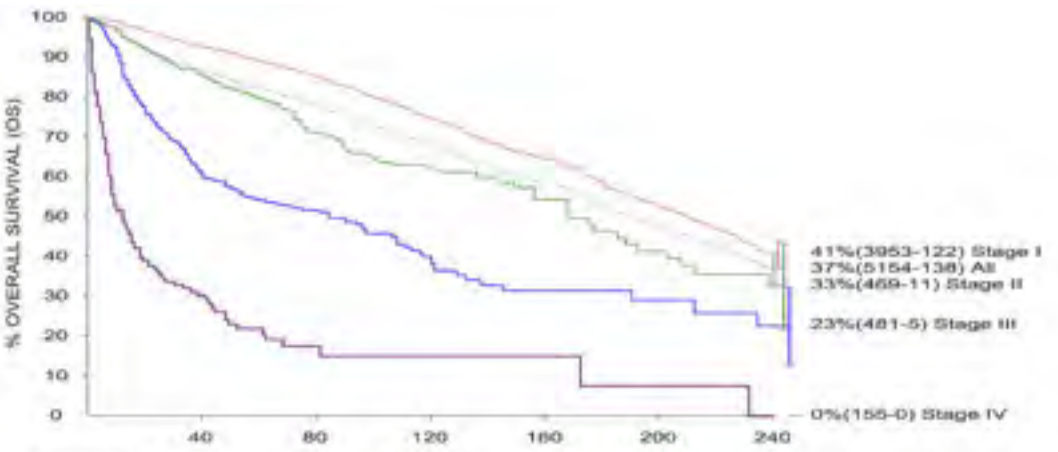


Subjects at risk

All	5154	3352	1688	957	538	312	138
Stage I	3953	2751	1425	836	482	278	122
Stage II	469	320	141	70	36	23	11
Stage III	481	226	108	47	18	10	5
Stage IV	155	30	7	3	2	1	0

	95% CI		Median
All	[71,	77]	
Stage I	[78,	84]	
Stage II	[60,	81]	
Stage III	[25,	54]	212 Mths
Stage IV	[9,	26]	13 Mths

Uterine Cancer Endometroid 1982–2012
OS by FIGO Stage



Subjects at risk

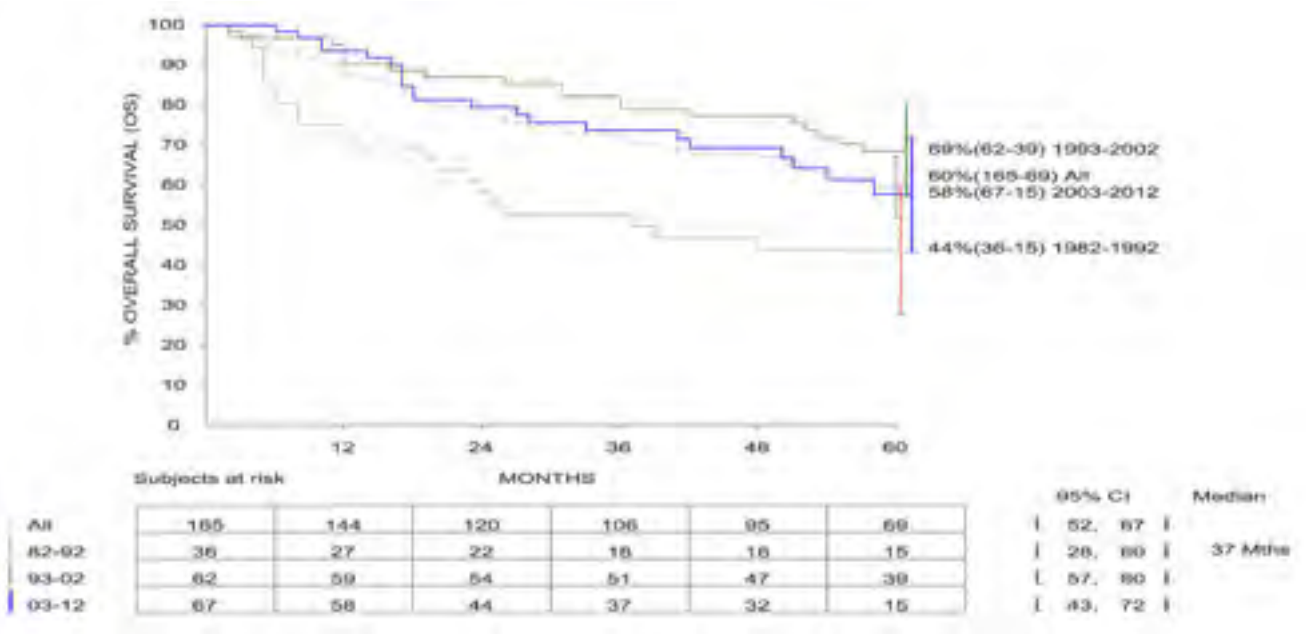
All	5154	3351	1688	957	538	312	138
Stage I	3953	2750	1425	836	482	278	122
Stage II	469	320	141	70	36	23	11
Stage III	481	226	108	47	18	10	5
Stage IV	155	30	7	3	2	1	0

	95% CI		Median
All	[33,	40]	191 Mths
Stage I	[37,	44]	210 Mths
Stage II	[21,	43]	168 Mths
Stage III	[13,	32]	84 Mths
Stage IV	[0,	0]	12 Mth

UTERINE CANCER

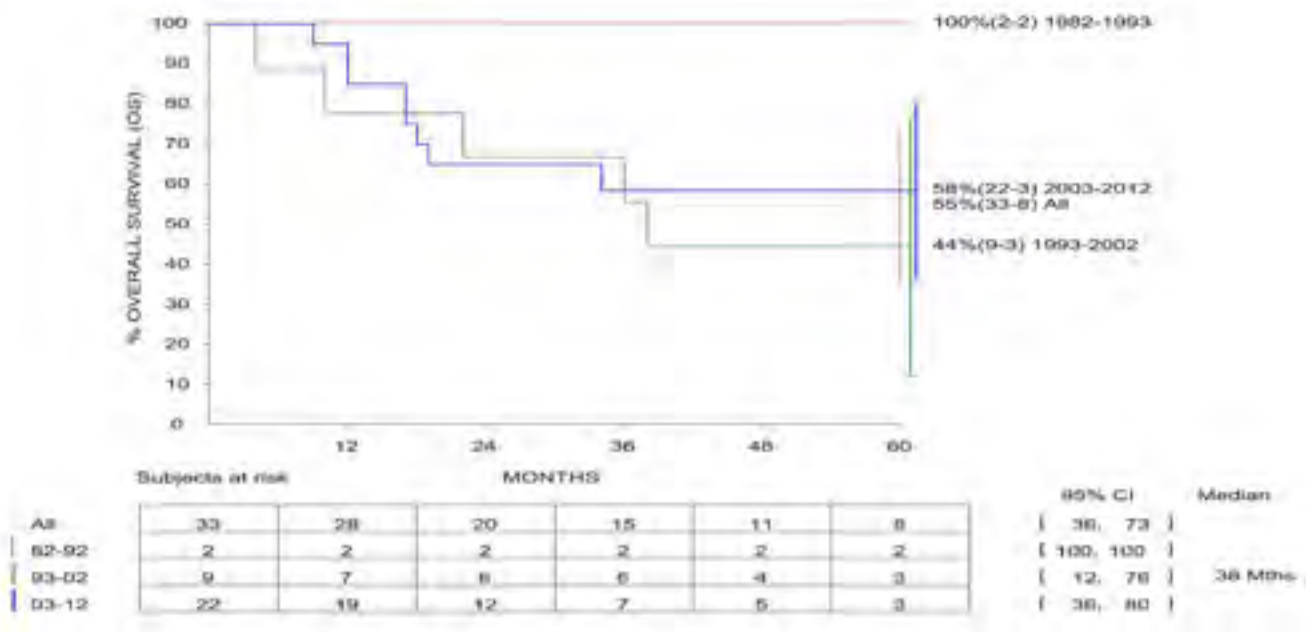
Uterine Carcinosarcoma Stage 1

OS by Presentation decade



Uterine Carcnosarcoma Stage II

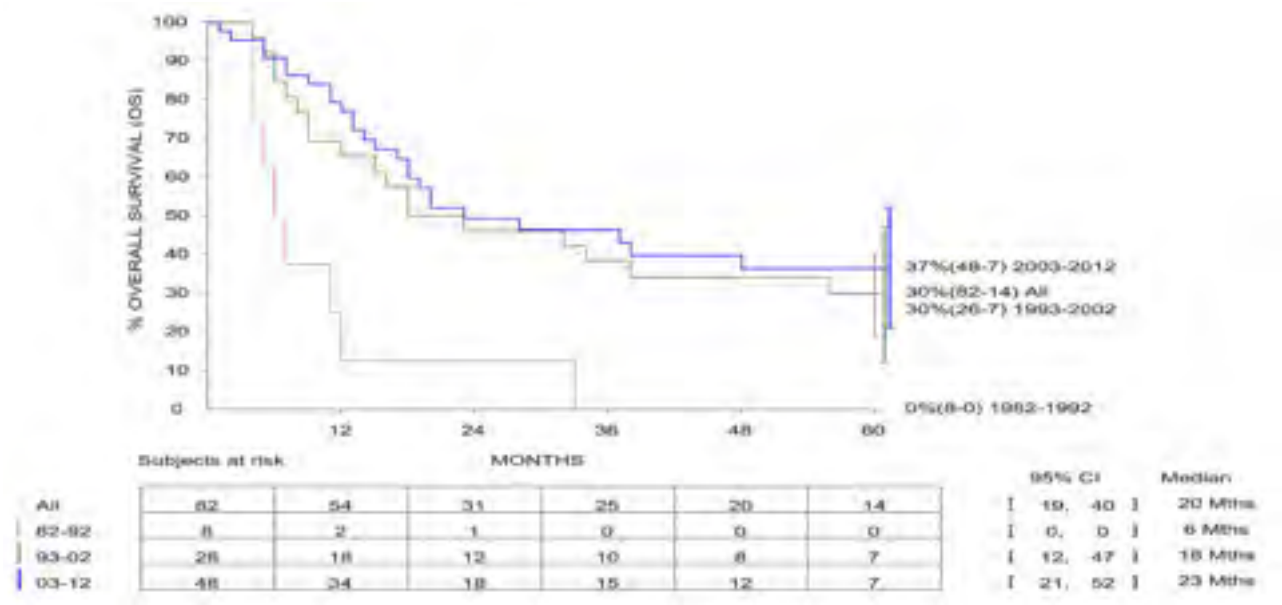
OS by Presentation decade



UTERINE CANCER

Uterine Carcinosarcoma Stage III

OS by Presentation decade



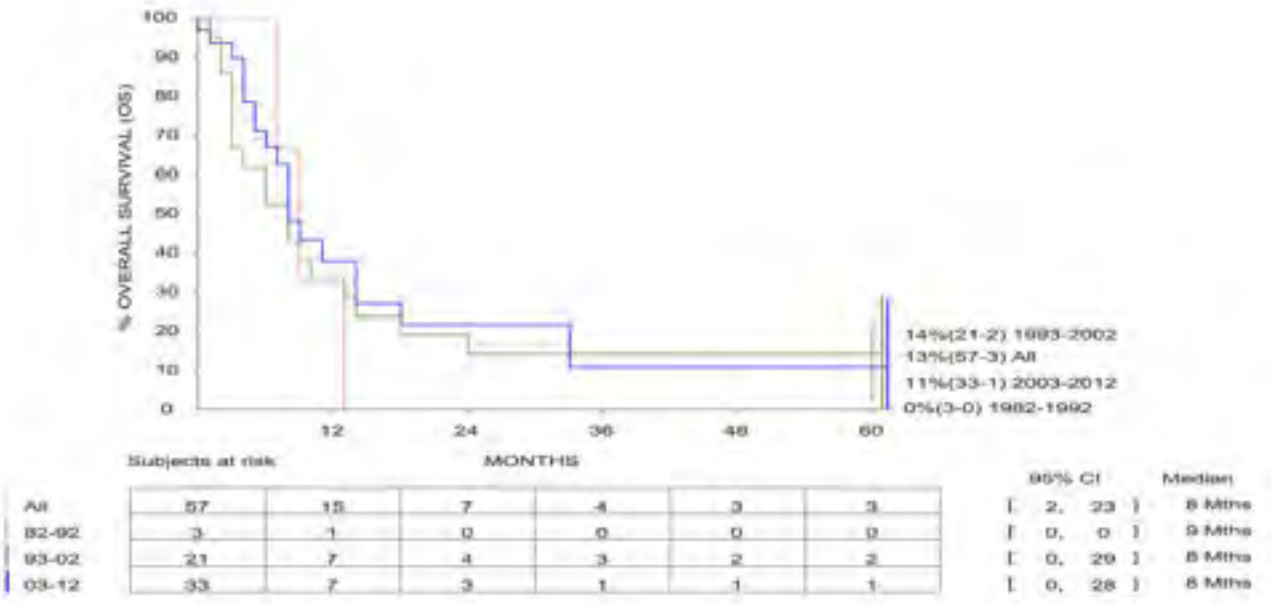
Subjects at risk

All	82	54	31	25	20	14
82-92	8	2	1	0	0	0
93-02	28	18	12	10	8	7
03-12	46	34	18	15	12	7

	95% CI			Median
All	[	19, 40	]	20 Mths
82-92	[	0, 0	]	6 Mths
93-02	[	12, 47	]	18 Mths
03-12	[	21, 52	]	23 Mths

Uterine Carcinosarcoma Stage IV

OS by Presentation decade



Subjects at risk

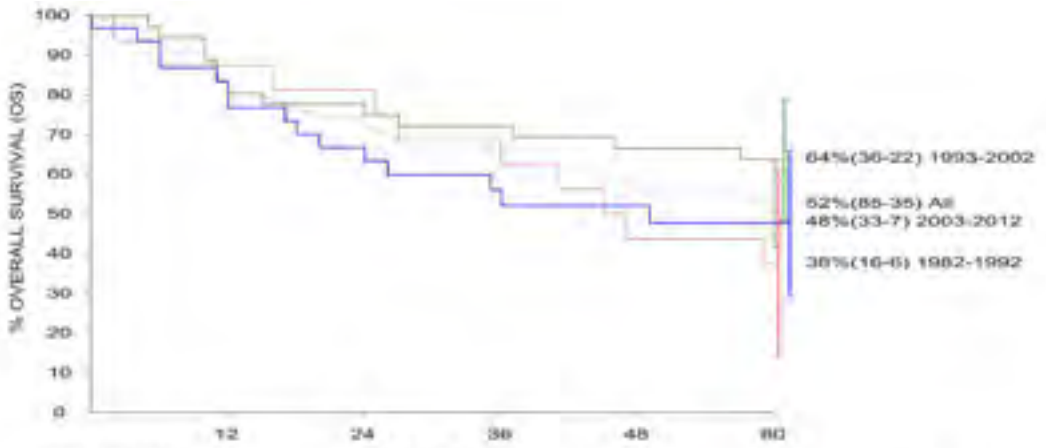
All	57	15	7	4	3	3
82-92	3	1	0	0	0	0
93-02	21	7	4	3	2	2
03-12	33	7	3	1	1	1

	95% CI			Median
All	[	2, 23	]	8 Mths
82-92	[	0, 0	]	9 Mths
93-02	[	0, 29	]	8 Mths
03-12	[	0, 28	]	8 Mths

UTERINE CANCER

LMS Stage I

OS by Presentation decade



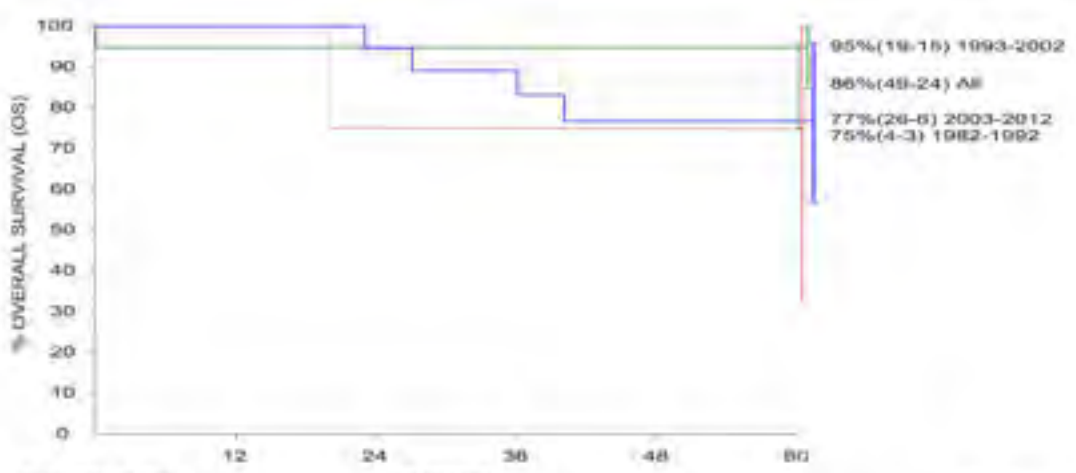
Subjects at risk MONTHS

All	85	69	61	51	43	35
82-92	16	14	13	11	7	6
93-02	36	30	28	26	24	22
03-12	33	25	20	14	12	7

	95% CI		Median
All	[41,	63]	
82-92	[14,	61]	45 Mths
93-02	[48,	79]	
03-12	[29,	66]	49 Mths

ESS Stage I

OS by Presentation decade



Subjects at risk MONTHS

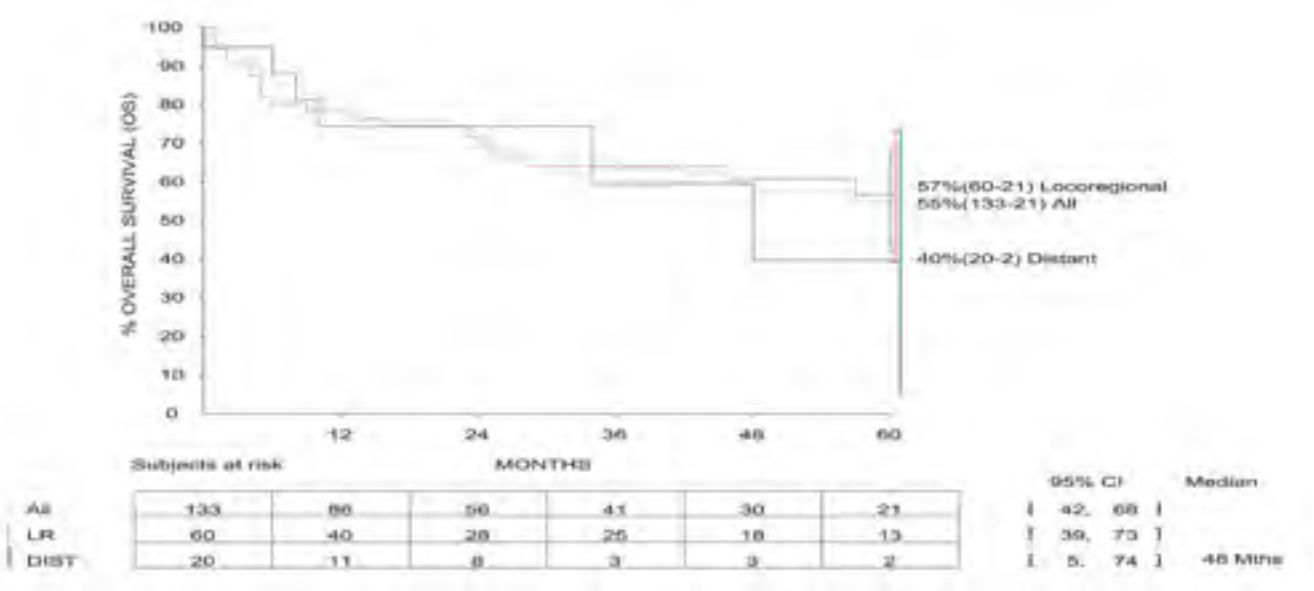
All	49	43	39	35	30	24
82-92	4	4	3	3	3	3
93-02	19	18	18	17	17	15
03-12	26	21	18	15	10	6

	95% CI		
All	[75,	96	]
82-92	[33,	100	]
93-02	[85,	100	]
03-12	[57,	96	]

UTERINE CANCER

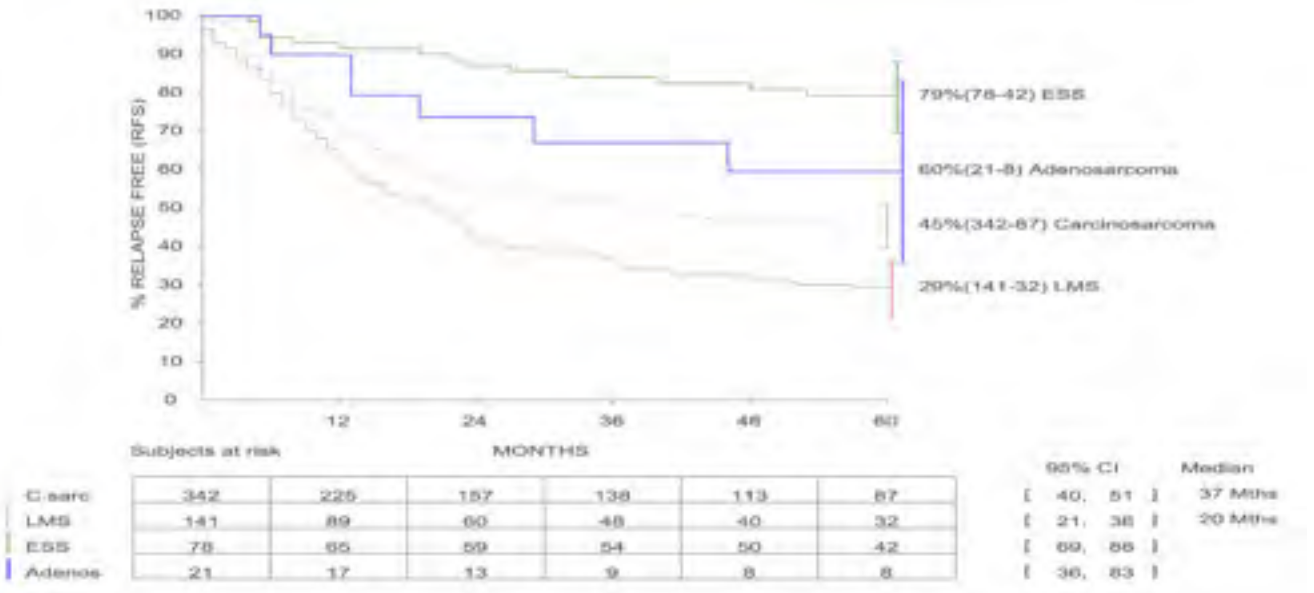
Uterine Adenocarcinoma 1982–2012

Salvage OS by relapse



Uterine Cancer 1982–2012

RFS by Morphology



Cervical cancer

Cervical cancer was the most common cancer treated by QCGC in 1982. Now it is the third most common, with a significant decrease in the incidence of cervical cancer over this period.

Data from the Australian Institute of Health and Welfare[1] has seen the incidence of the disease almost halve from 12.7 per 100,000 females in 1982 to 7.6 per 100,000 females in 2011. There was a significant decrease in cervical cancer incidence associated with the introduction of the Queensland Cervical Screening Registry in 1992. Associated with this there has been a significant improvement in survival in patients diagnosed with cervical cancer. Pleasingly, the Australian incidence of the disease is one of the lowest in the world and cervical cancer mortality is the lowest[2] (WHO IARC 2012). The QCGC overall 5 year survival for 2003-2012 was 77% which compares favourably with the national survival figure of 72% for 5 year survival in 2015.

Over the three decades from 1982 to 2012 there has been a constant and significant improvement in survival seen in both disease specific and overall. We believe this to be a result of a combination of factors including the improvement in cervical screening and treatment and the addition of chemo-radiation over the last 15 years.

[1] Australian Institute of Health and Welfare 2016. Australian Cancer Incidence and Mortality (ACIM) books: Cervical cancer. www.aihw.gov.au/acim-books/.

[2] World Health Organization, International Agency for Research on Cancer. Globocan 2012: Estimated Cancer Incidence Mortality and Prevelance Worldwide in 2012 http://globocan.iarc.fr/Pages/fact_sheets_cancer.aspx.

CERVICAL CANCER

Patient Characteristics

Presentation period 1982 to 2012 (N=4087)

Factor		All N=4087 (%)		1982-1992 N=1287 (%)		1993-2002 N=1364 (%)		2003-2012 N=1436 (%)		*p-value
Age (years)	under 30	313	(8%)	90	(7%)	94	(7%)	129	(9%)	‹0.001
	30-39	988	(24%)	318	(25%)	332	(24%)	338	(24%)	
	40-49	954	(23%)	271	(21%)	352	(26%)	331	(23%)	
	50-59	656	(16%)	178	(14%)	215	(16%)	263	(18%)	
	60-69	559	(14%)	209	(16%)	173	(13%)	177	(12%)	
	70-79	414	(10%)	158	(12%)	134	(10%)	122	(8%)	
	80+	203	(5%)	63	(5%)	64	(5%)	76	(5%)	
FIGO stage	1	2487	(61%)	760	(59%)	915	(67%)	812	(57%)	‹0.001
	2	817	(20%)	274	(21%)	226	(17%)	317	(22%)	
	3	550	(13%)	204	(16%)	170	(12%)	176	(12%)	
	4	198	(5%)	49	(4%)	53	(4%)	96	(7%)	
	unk	35	(1%)	0	(0%)	0	(0%)	35	(2%)	
Node status	N -ve	1892	(46%)	625	(49%)	654	(48%)	613	(43%)	‹0.001
	N +ve	347	(8%)	124	(10%)	146	(11%)	77	(5%)	
	unk	1848	(45%)	538	(42%)	564	(41%)	746	(52%)	
Differentiation	well	522	(13%)	158	(12%)	221	(16%)	143	(10%)	‹0.001
	moderate	1568	(38%)	588	(46%)	567	(42%)	413	(29%)	
	poor	1069	(26%)	350	(27%)	357	(26%)	362	(25%)	
	undifferentiated	11	(0%)	0	(0%)	5	(0%)	6	(0%)	
	unk	917	(22%)	191	(15%)	214	(16%)	512	(36%)	
Treatment	Sx alone	1582	(39%)	459	(36%)	584	(43%)	539	(38%)	‹0.001
	RT alone	662	(16%)	317	(25%)	249	(18%)	96	(7%)	
	Chemo alone	18	(0%)	4	(0%)	4	(0%)	10	(1%)	
	Sx+RT	608	(15%)	330	(26%)	217	(16%)	61	(4%)	
	Sx+Chemo	25	(1%)	10	(1%)	9	(1%)	6	(0%)	
	Sx+RT+Chemo	455	(11%)	106	(8%)	153	(11%)	196	(14%)	
	other	737	(18%)	61	(5%)	148	(11%)	528	(37%)	
Morphology	SCC	3047	(75%)	1027	(80%)	1005	(74%)	1015	(71%)	‹0.001
	Adeno ca NOS	743	(18%)	195	(15%)	251	(18%)	297	(21%)	
	Adenosquamous	142	(3%)	47	(4%)	61	(4%)	34	(2%)	
	other	155	(4%)	18	(1%)	47	(3%)	90	(6%)	

*p-values reflect the change between decades for each factor

CERVICAL CANCER

Kaplan and Meier disease specific survival (DSS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=4087)

		5 year	10 year	15 year	20 year	25 year
	ALL	74%(4087-1966)	69%(4087-1073)	67%(4087-443)	63%(4087-121)	55%(4087-13)
Age (years)	under 30	80%(313-154)	80%(313-87)	80%(313-40)	80%(313-8)	80%(313-0)
	30-39	83%(988-562)	81%(988-324)	79%(988-139)	78%(988-46)	78%(988-7)
	40-49	79%(954-503)	75%(954-286)	74%(954-124)	71%(954-31)	71%(954-3)
	50-59	72%(656-298)	65%(656-170)	62%(656-71)	57%(656-28)	39%(656-3)
	60-69	66%(559-261)	59%(559-143)	55%(559-53)	44%(559-8)	15%(559-0)
	70-79	59%(414-146)	51%(414-61)	43%(414-16)	0%(414-0)	na
	80+	47%(203-38)	30%(203-2)	29%(203-0)	na	na
FIGO stage	1	89%(2487-1520)	85%(2487-879)	82%(2487-356)	77%(2487-93)	67%(2487-9)
	2	66%(817-330)	59%(817-152)	58%(817-67)	55%(817-23)	47%(817-3)
	3	33%(550-98)	28%(550-38)	24%(550-17)	24%(550-5)	24%(550-1)
	4	21%(198-9)	10%(198-4)	20%(198-16)	0%(198-0)	na
Node status	N -ve	90%(1892-1211)	87%(1892-712)	84%(1892-314)	81%(1892-90)	77%(1892-7)
	N +ve	62%(347-167)	57%(347-94)	54%(347-35)	49%(347-7)	37%(347-1)
Differentiation	well	90%(522-331)	87%(522-207)	85%(522-85)	76%(522-16)	59%(522-1)
	moderate	73%(1568-825)	68%(1568-456)	65%(1568-202)	62%(1568-61)	57%(1568-8)
	poor	62%(1069-444)	58%(1069-224)	54%(1069-88)	50%(1069-21)	42%(1069-2)
	undifferentiated	72%(11-5)	72%(11-2)	72%(11-0)	na	na
Presentation	82-92	68%(1287-766)	64%(1287-587)	62%(1287-372)	59%(1287-120)	52%(1287-13)
	93-02	73%(1364-799)	69%(1364-447)	63%(1364-71)	52%(1364-1)	52%(1364-0)
	03-12	80%(1436-396)	76%(1436-39)	n/a	na	na
	Sx alone	98%(1582-1064)	97%(1582-634)	96%(1582-267)	92%(1582-69)	87%(1582-4)
	RT alone	45%(662-180)	39%(662-86)	35%(662-37)	31%(662-8)	15%(662-0)
	Chemo alone	6%(18-0)	na	na	na	na
	Sx+RT	59%(608-113)	63%(608-234)	59%(608-113)	56%(608-36)	47%(608-7)
	Sx+Chemo	47%(25-3)	48%(25-5)	47%(25-3)	48%(25-0)	na
	Sx+RT+Chemo	39%(455-18)	49%(455-71)	39%(455-18)	34%(455-6)	34%(455-1)
Morphology	SCC	73%(3047-1455)	69%(3047-814)	66%(3047-352)	62%(3047-101)	55%(3047-10)
	Adeno ca NOS	82%(743-397)	77%(743-207)	74%(743-74)	68%(743-16)	57%(743-3)
	Adenosquamous	62%(142-67)	59%(142-39)	59%(142-17)	59%(142-4)	59%(142-0)
	other	56%(155-43)	53%(155-13)	52%(155-0)	53%(155-0)	na

CERVICAL CANCER

Kaplan and Meier overall survival (OS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=4087)

		5 year	10 year	15 year	20 year	25 year
	ALL	69%(4087-1966)	59%(4087-1073)	52%(4087-443)	41%(4087-121)	31%(4087-13)
Age (years)	under 30	79%(313-154)	78%(313-87)	77%(313-40)	70%(313-8)	70%(313-0)
	30-39	82%(988-563)	79%(988-324)	76%(988-139)	71%(988-46)	65%(988-7)
	40-49	77%(954-503)	73%(954-286)	68%(954-124)	61%(954-31)	51%(954-3)
	50-59	68%(656-299)	58%(656-170)	50%(656-71)	36%(656-28)	22%(656-3)
	60-69	59%(559-262)	45%(559-143)	33%(559-53)	13%(559-8)	0%(559-0)
	70-79	46%(414-146)	26%(414-61)	12%(414-16)	0%(414-0)	na
	80+	28%(203-38)	3%(203-2)	3%(203-0)	na	na
FIGO stage	1	85%(2487-1519)	78%(2487-879)	69%(2487-356)	58%(2487-93)	43%(2487-9)
	2	58%(817-330)	43%(817-152)	35%(817-67)	24%(817-23)	17%(817-3)
	3	28%(550-98)	18%(550-38)	14%(550-17)	10%(550-5)	10%(550-1)
	4	8%(198-9)	5%(198-4)	4%(198-3)	0%(198-0)	na
Node status	N -ve	88%(1892-1210)	81%(1892-712)	74%(1892-314)	63%(1892-90)	51%(1892-7)
	N +ve	59%(347-167)	49%(347-94)	41%(347-35)	26%(347-7)	16%(347-1)
Differentiation	well	86%(522-332)	80%(522-207)	72%(522-85)	53%(522-16)	42%(522-1)
	moderate	68%(1568-825)	57%(1568-456)	51%(1568-202)	40%(1568-61)	30%(1568-8)
	poor	57%(1069-436)	48%(1069-224)	39%(1069-88)	28%(1069-21)	22%(1069-2)
	undifferentiated	72%(11-5)	72%(11-2)	72%(11-0)	na	na
Presentation	1982-1992	62%(1287-766)	52%(1287-587)	46%(1287-372)	37%(1287-120)	28%(1287-13)
	1993-2002	69%(1364-799)	60%(1364-447)	49%(1364-71)	33%(1364-1)	33%(1364-0)
	2003-2012	77%(1436-400)	73%(1436-39)	73%(1436-0)	na	na
Treatment	Sx alone	97%(1582-1065)	92%(1582-634)	86%(1582-267)	71%(1582-69)	60%(1582-4)
	RT alone	33%(662-180)	18%(662-86)	12%(662-37)	6%(662-8)	3%(662-0)
	Chemo alone	6%(18-0)	na	na	na	na
	Sx+RT	64%(608-346)	54%(608-234)	46%(608-113)	38%(608-36)	24%(608-7)
	Sx+Chemo	52%(25-9)	43%(25-5)	43%(25-3)	43%(25-0)	na
	Sx+RT+Chemo	57%(455-191)	45%(455-71)	34%(455-18)	21%(455-6)	21%(455-1)
Morphology	SCC	67%(3047-1458)	57%(3047-814)	50%(3047-352)	39%(3047-101)	29%(3047-10)
	Adeno ca NOS	79%(743-395)	72%(743-207)	64%(743-74)	51%(743-16)	43%(743-3)
	Adenosquamous	59%(142-67)	57%(142-39)	49%(142-17)	39%(142-4)	39%(142-0)
	other	55%(155-45)	46%(155-13)	41%(155-0)	na	na

CERVICAL CANCER

Univariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=4087)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<40 years vs	40-49	1.29	[1.07,1.56]	0.009	1.36	[1.14,1.61]	<0.001
	50-59	1.91	[1.57,2.31]	<0.001	2.26	[1.91,2.69]	<0.001
	60-69	2.44	[2.02,2.95]	<0.001	3.41	[2.9,4.02]	<0.001
	70-79	3.00	[2.46,3.67]	<0.001	5.16	[4.36,6.09]	<0.001
	80+	4.35	[3.41,5.56]	<0.001	7.99	[6.54,9.75]	<0.001
FIGO stage							
1 vs	2	3.09	[2.63,3.63]	<0.001	3.16	[2.78,3.59]	<0.001
	3	8.35	[7.15,9.74]	<0.001	7.08	[6.2,8.08]	<0.001
	4	20.57	[16.87,25.09]	<0.001	16.56	[13.83,19.82]	<0.001
Node status							
N -ve vs	N +ve	3.75	[3.04,4.64]	<0.001	3.15	[2.63,3.78]	<0.001
Differentiation							
Well vs	moderate	2.44	[1.89,3.15]	<0.001	2.08	[1.71,2.53]	<0.001
	poor	3.75	[2.89,4.85]	<0.001	3.01	[2.46,3.67]	<0.001
	undifferentiated	2.87	[0.9,9.13]	0.07	1.84	[0.59,5.75]	0.3
Presentation							
1982-1992 vs	1993-2002	0.86	[0.75,0.99]	0.03	0.84	[0.75,0.95]	0.004
	2003-2012	0.62	[0.53,0.73]	<0.001	0.57	[0.49,0.66]	<0.001
Treatment							
Sx alone vs	RT alone	29.25	[21.6,39.62]	<0.001	15.97	[13.31,19.17]	<0.001
	Chemo alone	130.45	[72.69,234.13]	<0.001	53.84	[31.5,92.01]	<0.001
	Sx+RT	12.99	[9.5,17.76]	<0.001	5.64	[4.64,6.86]	<0.001
	Sx+Chemo	21.41	[11.11,41.26]	<0.001	8.50	[4.82,14.98]	<0.001
	Sx+RT+Chemo	18.47	[13.46,25.34]	<0.001	7.43	[6.04,9.15]	<0.001
Morphology							
SCC vs	Adeno ca NOS	0.68	[0.57,0.81]	<0.001	0.62	[0.54,0.73]	<0.001
	Adenosquamous	1.35	[1.02,1.78]	0.03	1.11	[0.87,1.43]	0.41
	other	1.83	[1.41,2.38]	<0.001	1.61	[1.27,2.05]	<0.001

CERVICAL CANCER

Multivariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

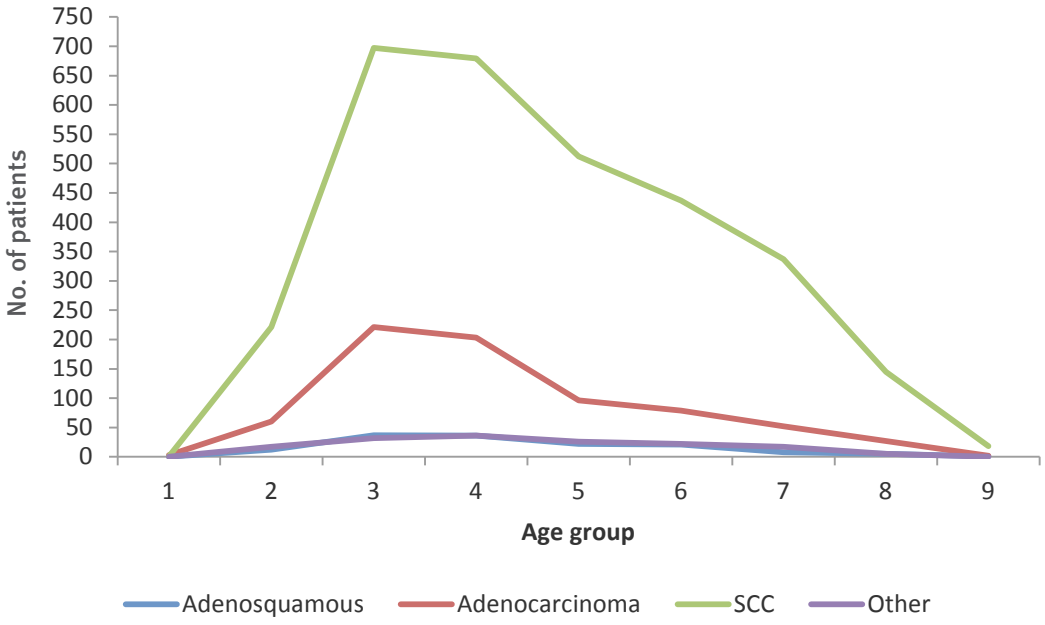
Presentation period 1982 to 2012 (N=4087)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<40 years vs	40-49	0.92	[0.76,1.11]	0.38	1.05	[0.88,1.25]	0.59
	50-59	0.98	[0.8,1.19]	0.82	1.33	[1.11,1.59]	0.002
	60-69	1.17	[0.96,1.43]	0.12	1.91	[1.6,2.28]	<0.001
	70-79	1.06	[0.84,1.32]	0.63	2.12	[1.75,2.56]	<0.001
	80+	1.51	[1.16,1.97]	0.002	3.22	[2.58,4.02]	<0.001
FIGO stage							
1 vs	2	1.35	[1.13,1.62]	<0.001	1.35	[1.17,1.56]	<0.001
	3	3.16	[2.61,3.82]	<0.001	2.42	[2.06,2.85]	<0.001
	4	8.40	[6.65,10.6]	<0.001	6.63	[5.36,8.18]	<0.001
Node status							
N -ve vs	N +ve	1.32	[1.05,1.66]	0.02	1.49	[1.22,1.82]	<0.001
Differentiation							
Well vs	moderate	1.30	[1,1.68]	0.05	1.20	[0.98,1.46]	0.08
	poor	1.56	[1.2,2.04]	0.001	1.41	[1.14,1.73]	0.001
	undifferentiated	0.85	[0.26,2.79]	0.79	0.76	[0.23,2.46]	0.65
Presentation							
1982-1992 vs	1993-2002	0.91	[0.79,1.04]	0.16	0.88	[0.78,0.99]	0.03
	2003-2012	0.44	[0.36,0.53]	<0.001	0.42	[0.35,0.49]	<0.001
Treatment							
Sx alone vs	RT alone	10.50	[7.21,15.27]	<0.001	4.66	[3.59,6.06]	<0.001
	Chemo alone	24.95	[13.08,47.6]	<0.001	10.16	[5.63,18.32]	<0.001
	Sx+RT	8.26	[5.93,11.51]	<0.001	3.35	[2.7,4.16]	<0.001
	Sx+Chemo	11.55	[5.89,22.65]	<0.001	5.47	[3.06,9.78]	<0.001
	Sx+RT+Chemo	12.01	[8.49,16.99]	<0.001	4.98	[3.91,6.33]	<0.001
Morphology							
SCC vs	Adeno ca NOS	1.20	[1,1.43]	0.05	1.13	[0.96,1.32]	0.14
	Adenosquamous	1.42	[1.07,1.88]	0.02	1.28	[0.99,1.66]	0.06
	other	1.75	[1.32,2.33]	<0.001	1.76	[1.36,2.28]	<0.001

CERVICAL CANCER

Cervical Cancer 1982–2012

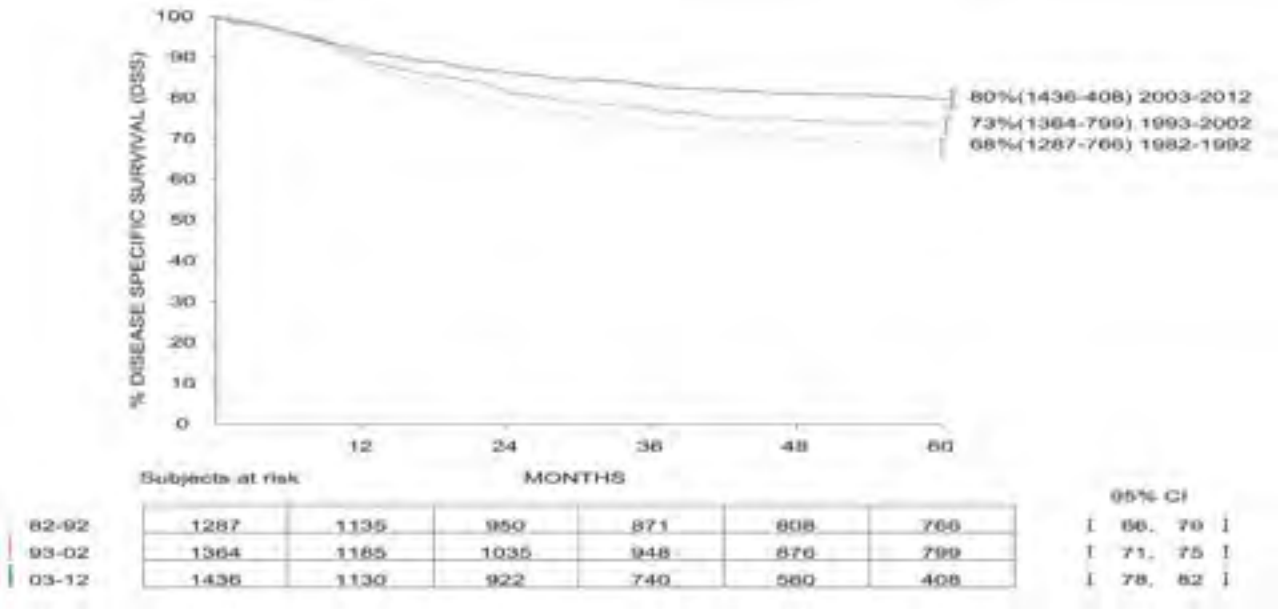
Age distribution by morphology type



CERVICAL CANCER

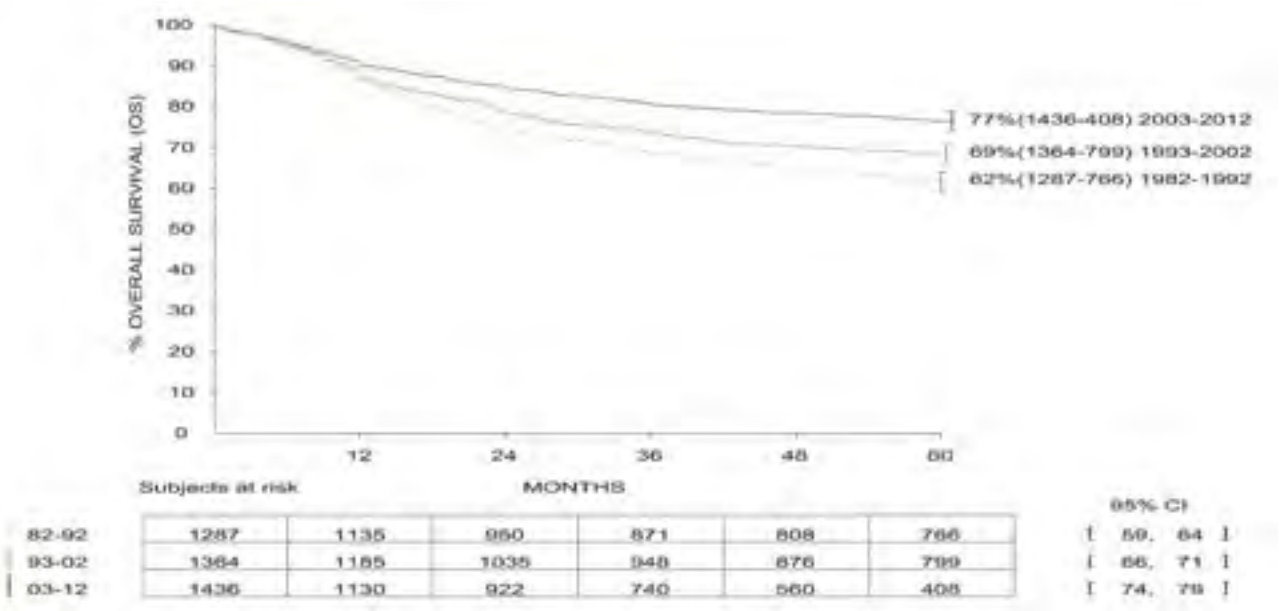
Cervix Cancer 1982–2012

DSS by Presentation decade



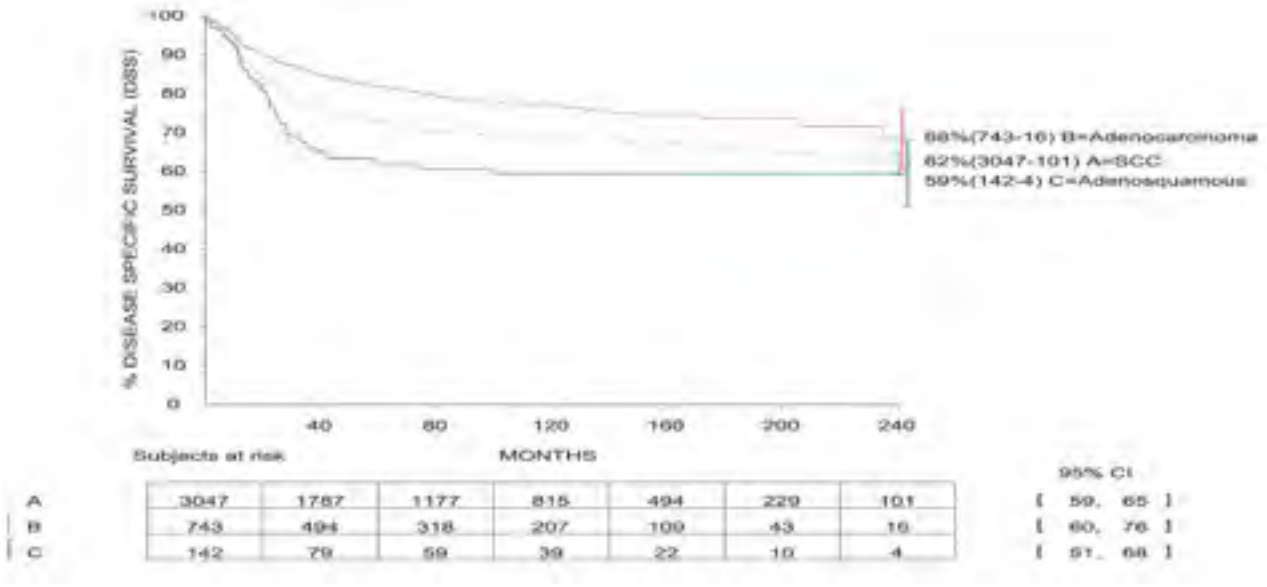
Cervix Cancer 1982–2012

OS by Presentation decade



CERVICAL CANCER

Cervix Cancer 1982–2012
DSS by Morphology

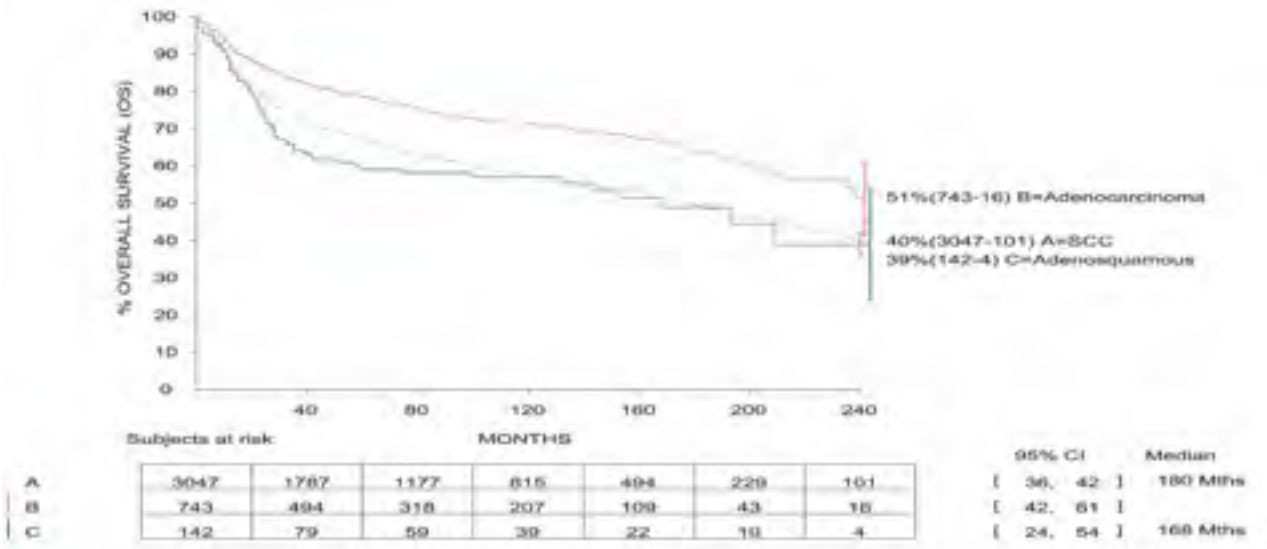


Subjects at risk

A	3047	1787	1177	815	494	229	101
B	743	494	318	207	109	43	16
C	142	79	59	39	22	10	4

	95% CI
A	[59, 65]
B	[60, 76]
C	[51, 68]

Cervix Cancer 1982–2012
OS by Morphology



Subjects at risk

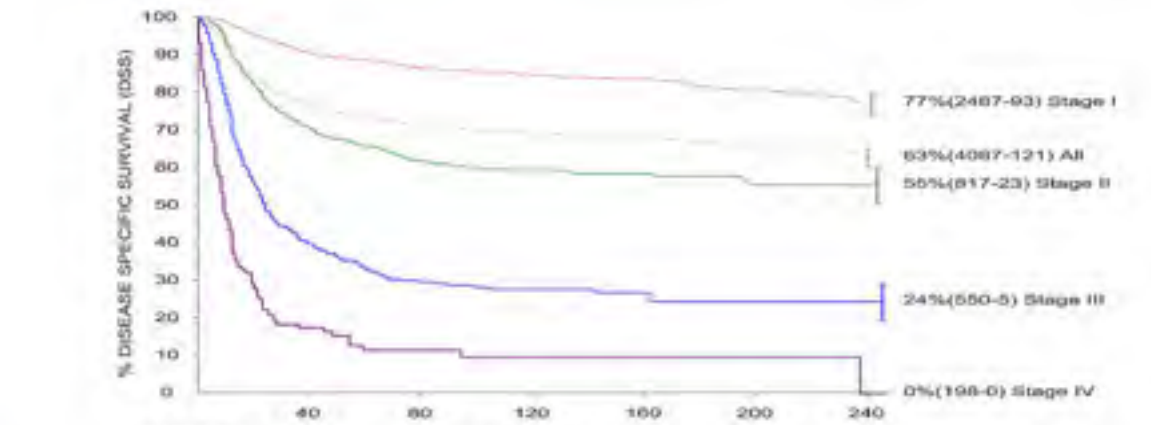
A	3047	1787	1177	815	494	229	101
B	743	494	318	207	109	43	16
C	142	79	59	39	22	10	4

	95% CI	Median
A	[38, 42]	180 Mths
B	[42, 61]	
C	[24, 54]	168 Mths

CERVICAL CANCER

Cervix Cancer 1982–2012

DSS by FIGO stage



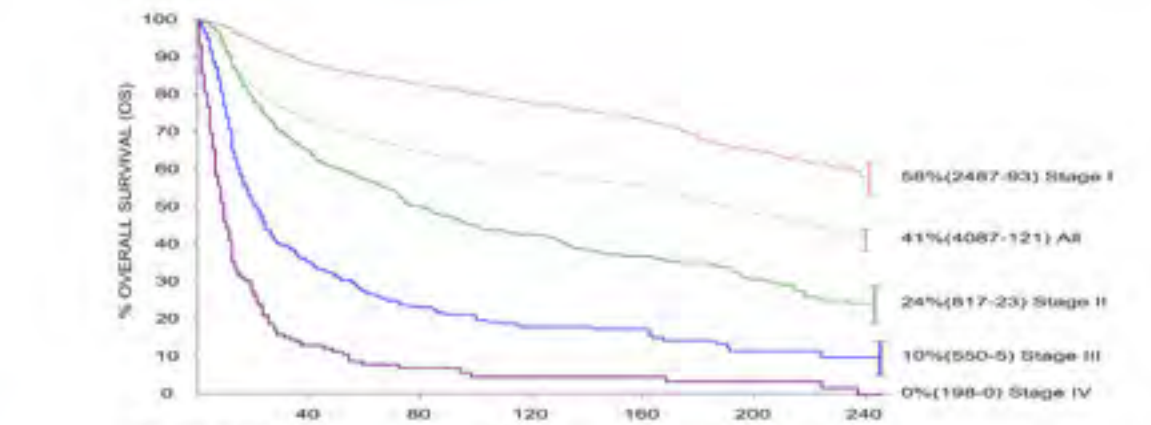
Subjects at risk

All	4087	2425	1592	1074	627	282	121
Stage I	2487	1812	1264	880	510	224	93
Stage II	817	431	239	152	90	46	23
Stage III	550	154	78	38	23	10	5
Stage IV	198	17	7	4	4	2	0

	95% CI	Median
All	[60, 65]	
Stage I	[74, 80]	
Stage II	[50, 60]	
Stage III	[19, 29]	24 Mths
Stage IV	[0, 0]	9 Mths

Cervix Cancer 1982–2012

OS by FIGO stage



Subjects at risk

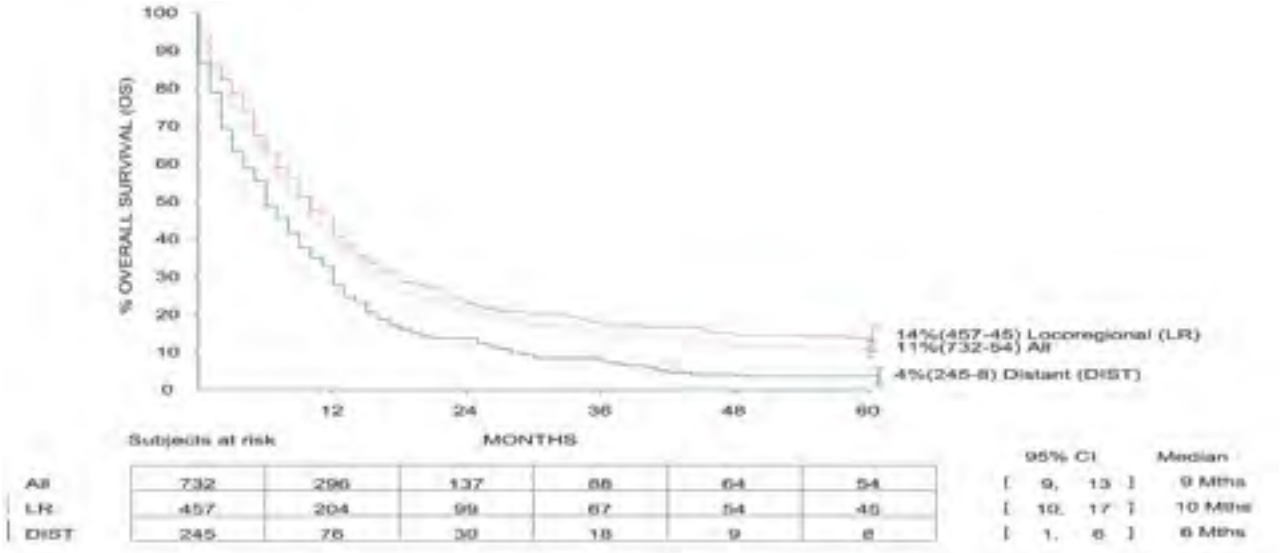
All	4087	2425	1592	1074	627	282	121
Stage I	2487	1812	1264	880	510	224	93
Stage II	817	431	239	152	90	46	23
Stage III	550	154	78	38	23	10	5
Stage IV	198	17	7	4	4	2	0

	95% CI	Median
All	[38, 44]	190 Mths
Stage I	[53, 62]	
Stage II	[19, 29]	61 Mths
Stage III	[5, 14]	21 Mths
Stage IV	[0, 0]	9 Mths

CERVICAL CANCER

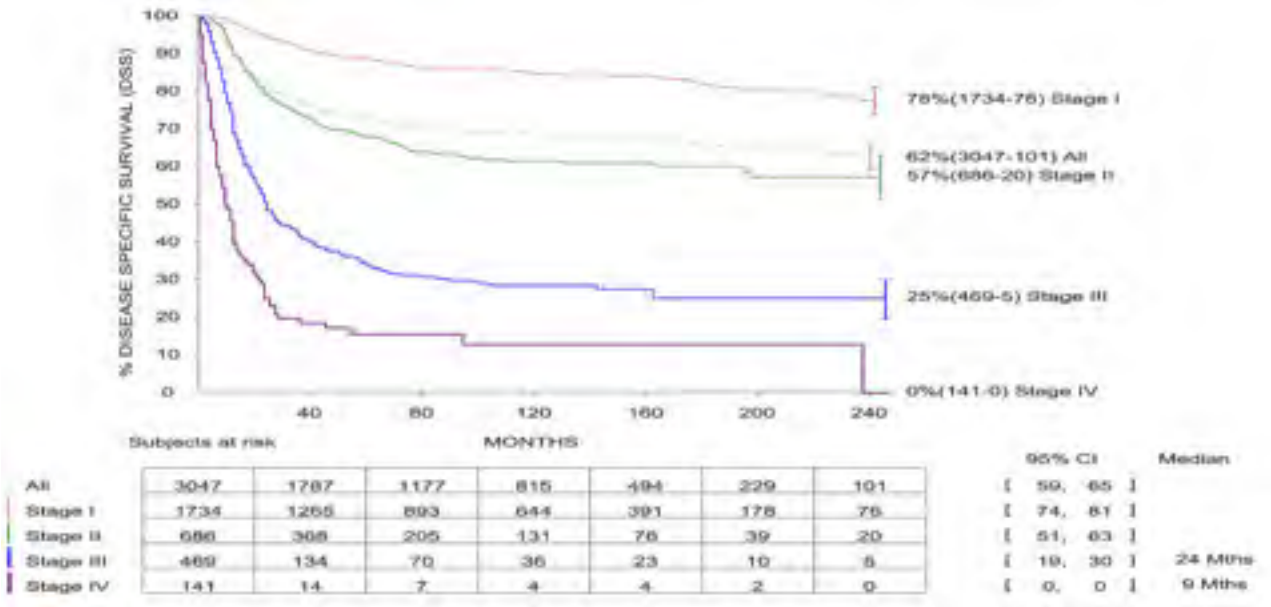
Cervix Cancer

OS by Relapse type

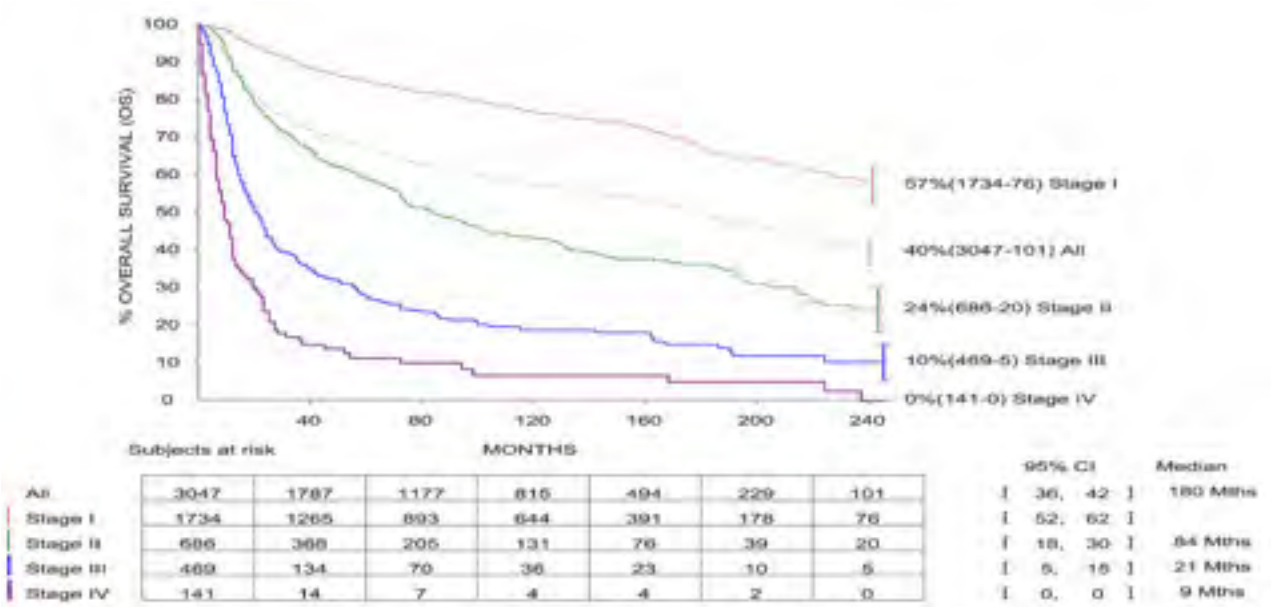


CERVICAL CANCER

Cervix Cancer 1982–2012
SCC – DSS by FIGO stage



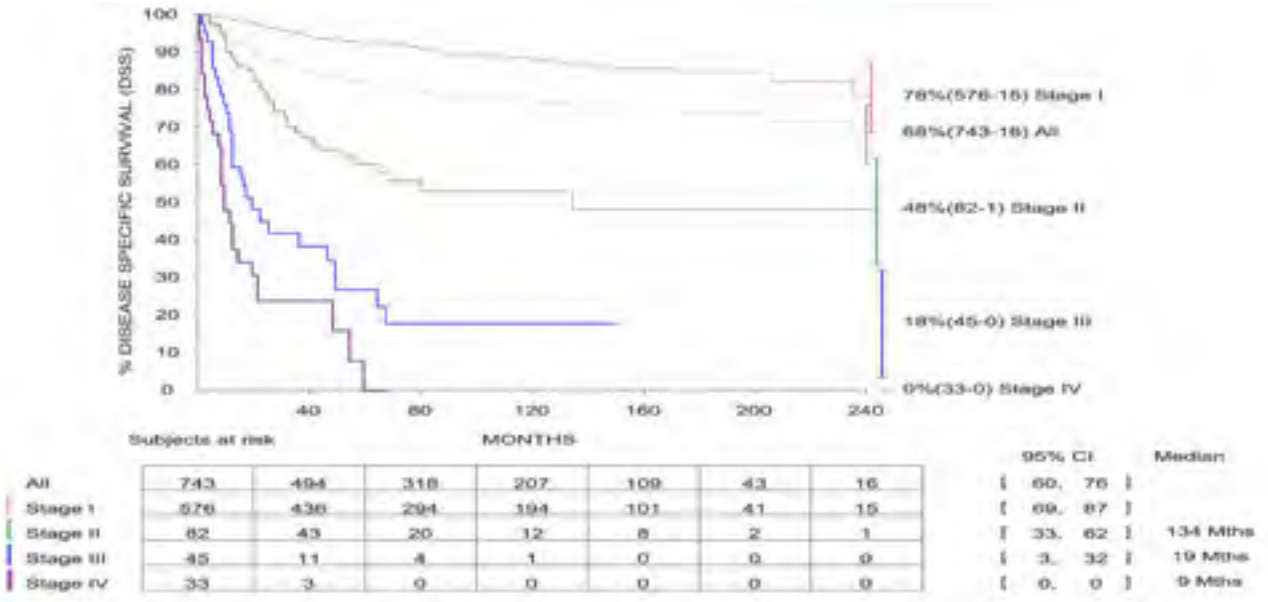
Cervix Cancer 1982–2012
CSS – OS by FIGO stage



CERVICAL CANCER

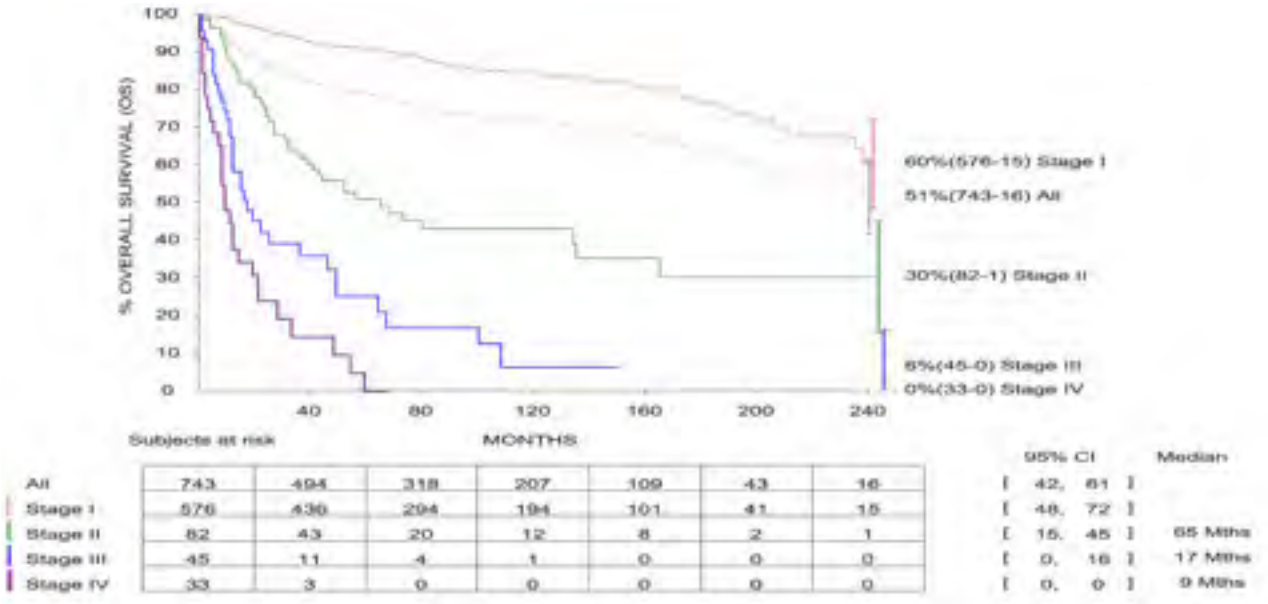
Cervix Cancer 1982–2012 Adenocarcinoma

DSS by FIGO stage



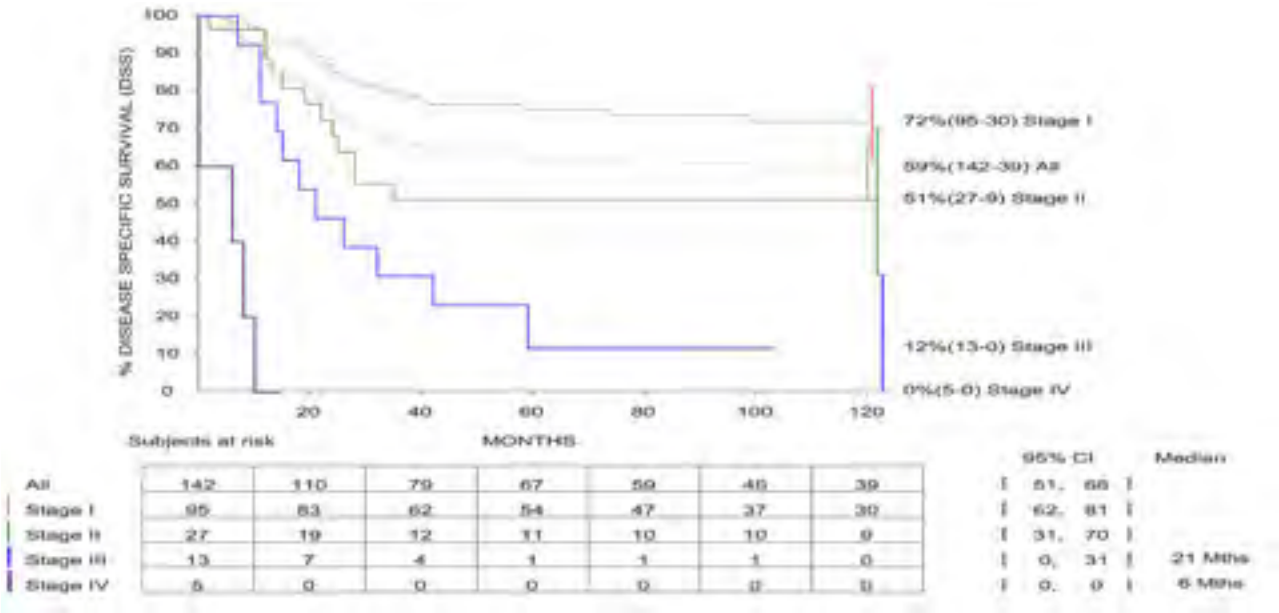
Cervix Cancer 1982–2012 Adenocarcinoma

OS by FIGO stage

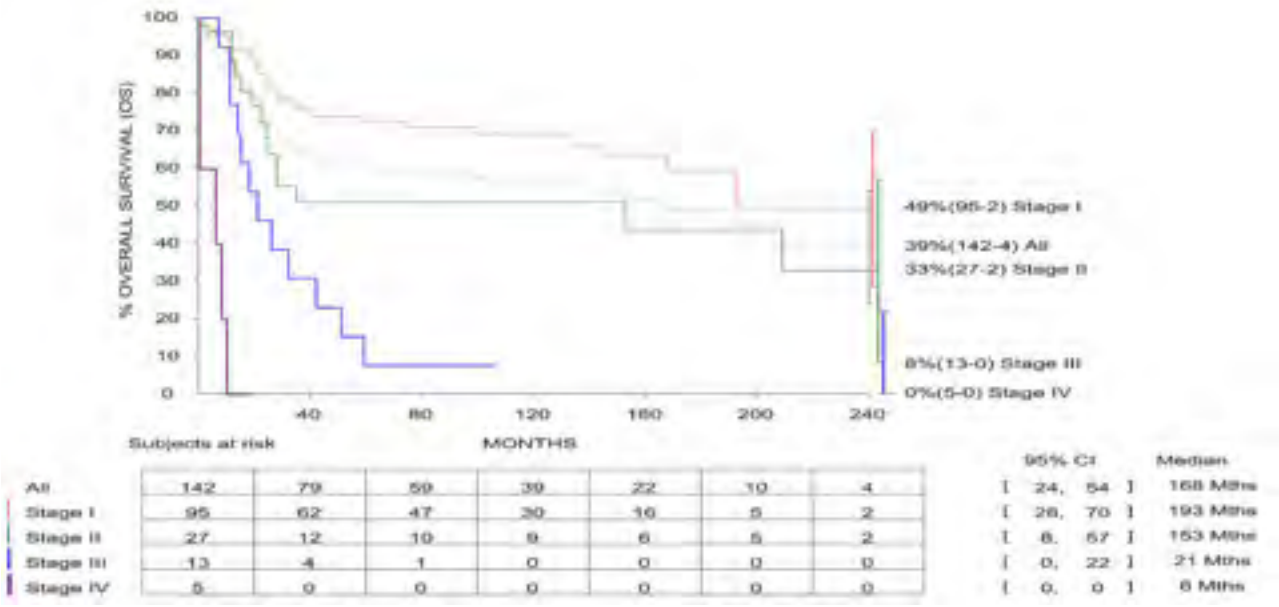


CERVICAL CANCER

Cervix Cancer 1982–2012 Adenosquamous
DSS by FIGO stage

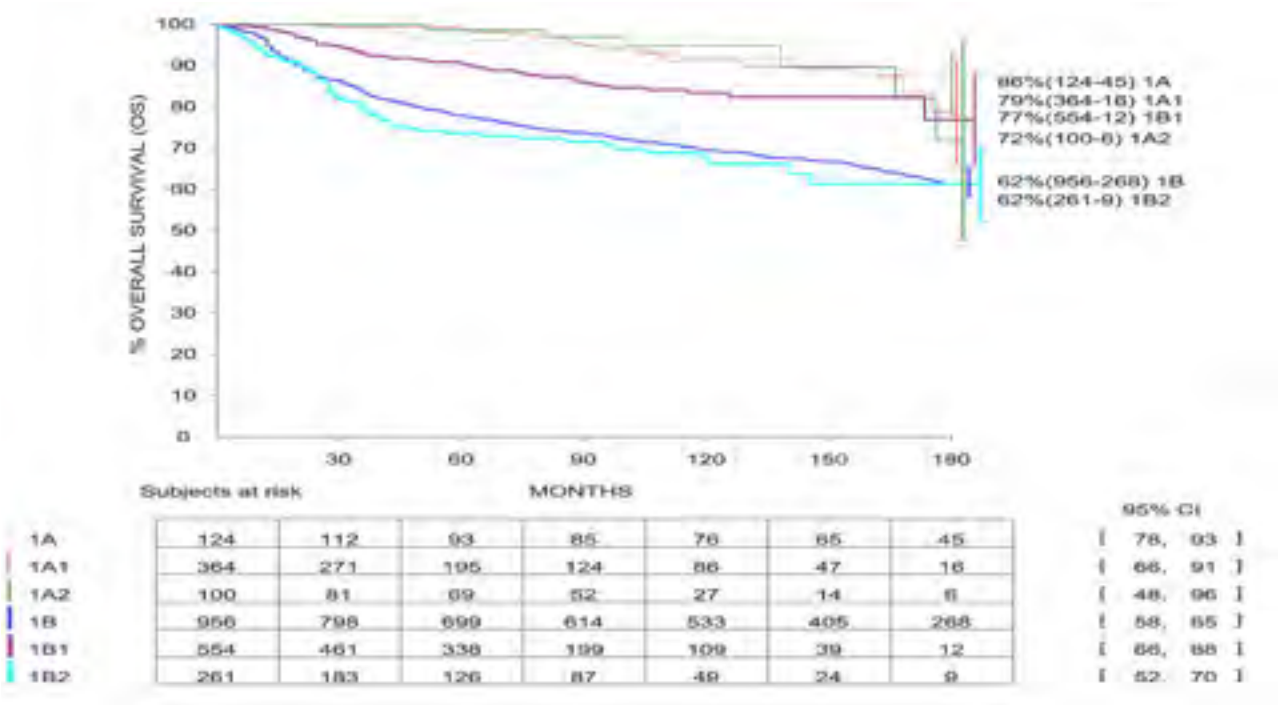


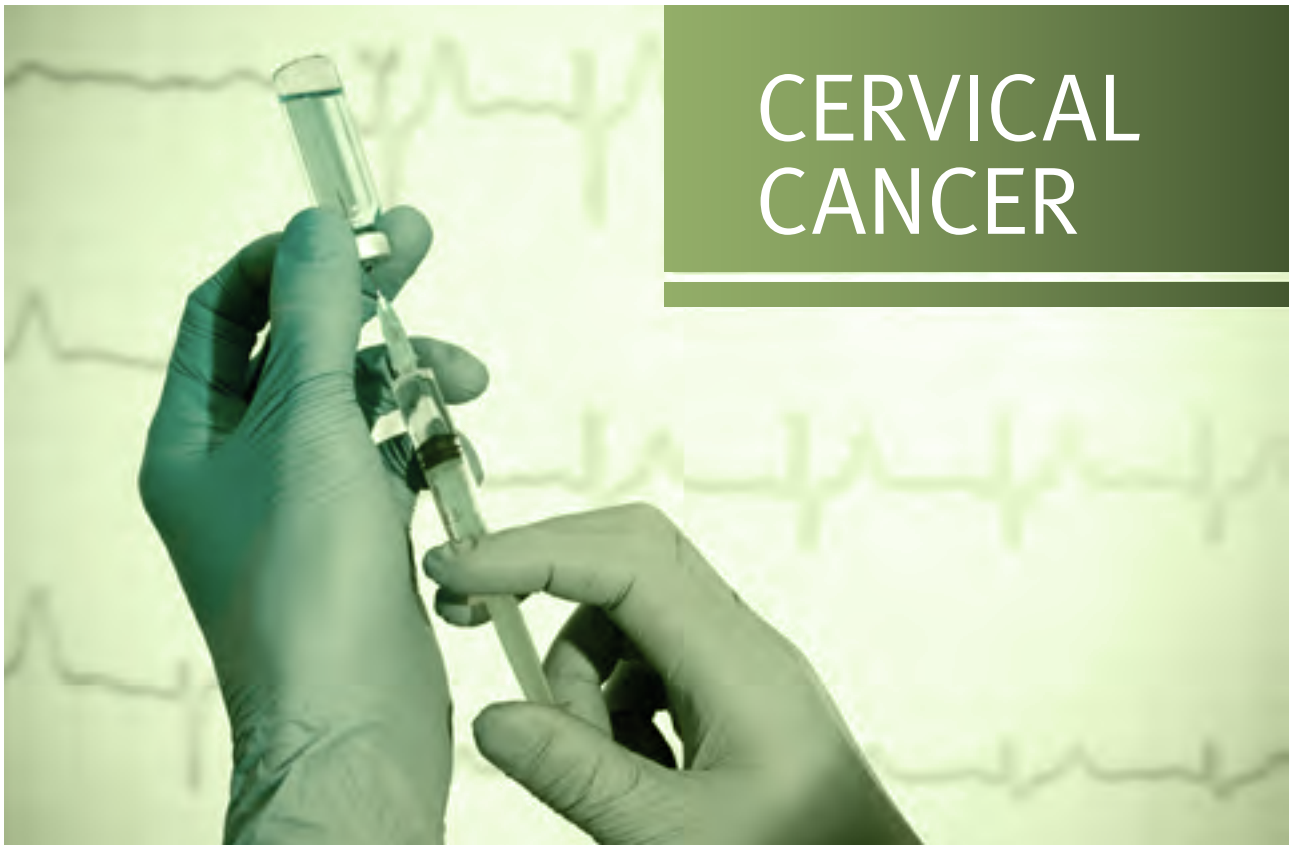
Cervix Cancer 1982–2012 Adenosquamous
OS by FIGO stage



CERVICAL CANCER

Cervical Cancer 1982–2012
OS by FIGO stage 1





Ovarian cancer

Overall, the incidence of cancer in the Australian community is increasing. As cancer is largely a disease of age most of the increase is due to the ageing of the population.

Ovarian cancer is often referred to as the silent killer. It is the ninth most common cancer in women in Australia but is the sixth most common cause of cancer related deaths. This is largely related to the lack of any proven screening tests and the fact that most cases present at an advanced stage; stage 3 or 4 disease. It is estimated that there will be some 1,480 new cases of ovarian cancer diagnosed this year in Australia and some 1,040 deaths from ovarian cancer[1]. In 2007-2011 in Australia, women with ovarian cancer had a 43 per cent chance of surviving for 5 years compared to their counterparts in the general Australian population[2]. Our data shows an overall 5-year survival, all stages from epithelial ovarian cancer of 50.75 per cent.

The most common form of ovarian cancer is epithelial cancer which largely occurs in older women compared to germ cell tumours of the ovary that generally occur in younger women. These different forms of ovarian cancer have very different survival outcomes as can be seen from the following data and graphs. For epithelial cancers of the ovary, survival is very stage dependent, although other factors including age, tumour differentiation, presentation period and morphology are also important independent factors for survival.

It is often said that there has been little improvement in the treatment of ovarian cancer; however, this is not true as our figures show. For both 5-year OS and DSS there is improvement in survival between the decades and the Multivariate Cox modelling shows that for both OS and DSS the results obtained in the 2003-12 decade are significantly better than those in 1982-92 such that the decade of treatment is an independent variable for improved survival.

The usual treatment for epithelial tumours was primary debulking/cytoreduction followed by chemotherapy (6 cycles), although in recent years there has been increasing use of neoadjuvant chemotherapy (3 cycles) followed by interval cytoreduction in those who have an adequate responce to their neoadjuvant chemotherapy and then completion of their chemotherapy.

It has long been known that there was a relationship between post-cytoreductive disease residuum and survival, although most of the early studies were too small, retrospective and not powered to really answer such questions. For the past 22 years we have been prospectively collecting data on disease residuum with a view to looking at this question. Our results show that for both OS and DSS there is a strong relationship between disease residuum at the end of cytoreduction and survival. Looking just at those patients with Stage 3C disease who are cytoreduced to zero residuum they have a 20-year OS of 27 per cent with a 20-year RFS of 17 per cent.

[1] Australian Institute of Health and Welfare 2016. Australian Cancer Incidence and Mortality (ACIM) books: Ovarian cancer. www.aihw.gov.au/acim-books.

[2] Australian Institute of Health and Welfare 2014. Cancer in Australian overview,2014. Cancer series no.90. Cat. No. CAN88. Canberra: AIHW.

OVARIAN CANCER

Patient Characteristics

Presentation period 1982 to 2012 (N=4102)

Factor		All N=4104 (%)		1982-1992 N=741 (%)		1993-2002 N=1361 (%)		2003-2012 N=2002 (%)		*p-value
Age (years)	under 30	180	(4%)	54	(7%)	59	(4%)	67	(3%)	<0.001
	30-39	198	(5%)	38	(5%)	83	(6%)	77	(4%)	
	40-49	528	(13%)	117	(16%)	182	(13%)	229	(11%)	
	50-59	991	(24%)	168	(23%)	350	(26%)	473	(24%)	
	60-69	1110	(27%)	214	(29%)	314	(23%)	582	(29%)	
	70-79	801	(20%)	124	(17%)	287	(21%)	390	(19%)	
	80+	294	(7%)	26	(4%)	86	(6%)	182	(9%)	
FIGO stage	1	998	(24%)	181	(24%)	353	(26%)	464	(23%)	0.002
	2	374	(9%)	87	(12%)	106	(8%)	181	(9%)	
	3	2163	(53%)	383	(52%)	767	(56%)	1013	(51%)	
	4	468	(11%)	86	(12%)	129	(9%)	253	(13%)	
	unk	99	(2%)	4	(1%)	6	(0%)	89	(4%)	
Node status	N -ve	2347	(57%)	49	(7%)	956	(70%)	1342	(67%)	<0.001
	N +ve	345	(8%)	2	(0.3%)	100	(7%)	243	(12%)	
	unk	1410	(34%)	690	(93%)	305	(22%)	415	(21%)	
Differentiation	well	332	(8%)	77	(10%)	118	(9%)	137	(7%)	<0.001
	moderate	710	(17%)	173	(23%)	253	(19%)	284	(14%)	
	poor	1777	(43%)	283	(38%)	644	(47%)	850	(42%)	
	undifferentiated	30	(1%)	8	(1%)	1	(0.1%)	21	(1%)	
	other/unk	1253	(31%)	200	(27%)	345	(25%)	708	(35%)	
Treatment	Sx alone	699	(17%)	110	(15%)	247	(18%)	342	(17%)	<0.001
	Chemo alone	133	(3%)	8	(1%)	7	(1%)	118	(6%)	
	Sx+RT	22	(1%)	17	(2%)	4	(0.3%)	1	(0.05%)	
	Sx+Chemo	2964	(72%)	499	(67%)	1015	(75%)	1450	(72%)	
	Sx+RT+Chemo	216	(5%)	97	(13%)	85	(6%)	34	(2%)	
	other	68	(2%)	10	(1%)	3	(0.2%)	55	(3%)	
Morphology	Adenocarcinoma NOS	347	(8%)	73	(10%)	66	(5%)	208	(10%)	<0.001
	Clear Cell	296	(7%)	58	(8%)	110	(8%)	128	(6%)	
	Endometrioid	362	(9%)	79	(11%)	127	(9%)	156	(8%)	
	Cystadenocarcinoma	23	(1%)	17	(2%)	0	(0%)	6	(0%)	
	Serous/Papillary	2064	(50%)	300	(40%)	749	(55%)	1015	(51%)	
	Mucinous	246	(6%)	57	(8%)	142	(10%)	47	(2%)	
	Carcinosarcoma	122	(3%)	22	(3%)	44	(3%)	56	(3%)	
	Germ cell	153	(4%)	38	(5%)	45	(3%)	70	(3%)	
	other	489	(12%)	97	(13%)	78	(6%)	314	(16%)	

*p-values reflect the change between decades for each factor

OVARIAN CANCER

Kaplan and Meier disease specific survival (DSS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=4102)

		5 year	10 year	15 year	20 year
	ALL	50%(4102-1288)	37%(4102-482)	32%(4102-161)	30%(4102-54)
Age (years)	under 40	79%(378-212)	73%(378-105)	70%(378-41)	63%(378-13)
	40-49	60%(528-218)	50%(528-98)	45%(528-42)	43%(528-15)
	50-59	52%(991-344)	37%(991-124)	32%(991-37)	32%(991-13)
	60-69	48%(1110-322)	32%(1110-101)	27%(1110-34)	22%(1110-12)
	70-79	33%(801-155)	23%(801-45)	14%(801-7)	12%(801-1)
	80+	29%(294-37)	19%(294-9)	12%(294-0)	na
FIGO stage	1	91%(998-576)	84%(998-260)	78%(998-92)	76%(998-33)
	2	68%(374-159)	56%(374-67)	48%(374-22)	41%(374-7)
	3	35%(2163-495)	20%(2163-140)	16%(2163-46)	13%(2163-14)
	4	20%(468-48)	11%(468-13)	5%(468-0)	na
Node status	N -ve	57%(2347-800)	42%(2347-219)	32%(2347-34)	31%(2347-8)
	N +ve	47%(345-90)	27%(345-15)	22%(345-3)	14%(345-0)
Differentiation	well	85%(332-195)	78%(332-94)	62%(332-35)	56%(332-11)
	moderate	53%(710-260)	39%(710-102)	35%(710-39)	35%(710-13)
	poor	39%(1777-474)	25%(1777-144)	21%(1777-33)	19%(1777-13)
	undifferentiated	57%(30-12)	42%(30-5)	42%(30-4)	42%(30-3)
Presentation	1982-1992	43%(741-273)	34%(741-202)	32%(741-130)	30%(741-49)
	1993-2002	48%(1361-579)	36%(1361-238)	28%(1361-31)	20%(1361-5)
	2003-2012	53%(2000-436)	39%(2000-42)	39%(2000-0)	na
Treatment	Sx alone	78%(699-291)	74%(699-119)	69%(699-35)	63%(699-6)
	Chemo alone	10%(133-6)	3%(133-1)	3%(133-0)	na
	Sx+RT	62%(22-11)	49%(22-6)	49%(22-3)	49%(22-2)
	Sx+Chemo	47%(2964-907)	35%(2964-366)	30%(2964-115)	28%(2964-40)
	Sx+RT+Chemo	37%(216-71)	12%(216-19)	6%(216-7)	6%(216-5)
	other	15%(68-2)	8%(68-1)	8%(68-1)	8%(68-1)
Morphology	Adenocarcinoma NOS	27%(347-49)	18%(347-14)	11%(347-4)	6%(347-1)
	Clear Cell	62%(296-124)	54%(296-52)	51%(296-20)	47%(296-8)
	Endometrioid	74%(362-180)	58%(362-74)	51%(362-17)	45%(362-4)
	Cystadenocarcinoma	49%(23-7)	21%(23-3)	21%(23-2)	21%(23-1)
	Serous/Papillary	40%(2064-529)	25%(2064-158)	22%(2064-55)	19%(2064-18)
	Mucinous	74%(246-133)	68%(246-66)	54%(246-20)	54%(246-7)
	Carcinosarcoma	29%(122-21)	13%(122-5)	13%(122-0)	na
	Germ cell	94%(153-99)	94%(153-53)	94%(153-17)	94%(153-7)

OVARIAN CANCER

Kaplan and Meier overall survival (OS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=4102)

		5 year	10 year	15 year	20 year
	ALL	47%(4102-1288)	34%(4102-482)	26%(4102-161)	21%(4102-54)
Age (years)	under 40	79%(378-212)	72%(378-105)	67%(378-41)	61%(378-13)
	40-49	59%(528-218)	49%(528-98)	41%(528-42)	38%(528-15)
	50-59	50%(991-344)	35%(991-124)	30%(991-37)	26%(991-13)
	60-69	45%(1110-322)	28%(1110-101)	22%(1110-34)	14%(1110-12)
	70-79	30%(801-155)	17%(801-45)	5%(801-7)	1%(801-1)
	80+	23%(294-37)	10%(294-9)	1%(294-0)	na
FIGO stage	1	87%(998-576)	76%(998-260)	60%(998-92)	51%(998-33)
	2	64%(374-159)	50%(374-67)	39%(374-22)	31%(374-7)
	3	33%(2163-495)	18%(2163-140)	14%(2163-46)	11%(2163-14)
	4	19%(468-48)	10%(468-13)	5%(468-0)	na
Node status	N -ve	54%(2347-800)	37%(2347-219)	25%(2347-34)	21%(2347-8)
	N +ve	45%(345-90)	26%(345-15)	21%(345-3)	14%(345-0)
Differentiation	well	83%(332-195)	73%(332-94)	50%(332-35)	40%(332-11)
	moderate	49%(710-260)	34%(710-102)	28%(710-39)	23%(710-13)
	poor	37%(1777-474)	22%(1777-144)	17%(1777-33)	15%(1777-13)
	undifferentiated	57%(30-12)	35%(30-5)	28%(30-4)	28%(30-3)
Presentation	1982-1992	37%(741-273)	29%(741-202)	24%(741-130)	20%(741-49)
	1993-2002	45%(1361-579)	32%(1361-238)	22%(1361-31)	16%(1361-5)
	2003-2012	52%(2000-436)	36%(2000-42)	31%(2000-0)	31%(2000-0)
Treatment	Sx alone	70%(699-291)	61%(699-119)	43%(699-35)	24%(699-6)
	Chemo alone	10%(133-6)	3%(133-1)	3%(133-0)	na
	Sx+RT	57%(22-11)	31%(22-6)	26%(22-3)	26%(22-2)
	Sx+Chemo	45%(2964-907)	32%(2964-366)	26%(2964-115)	22%(2964-40)
	Sx+RT+Chemo	36%(216-71)	12%(216-19)	6%(216-7)	6%(216-5)
	other	13%(68-2)	7%(68-1)	7%(68-1)	7%(68-1)
Morphology	Adenocarcinoma NOS	25%(347-49)	16%(347-14)	6%(347-4)	2%(347-1)
	Clear Cell	57%(296-124)	47%(296-52)	39%(296-20)	32%(296-8)
	Endometrioid	69%(362-180)	52%(362-74)	40%(362-17)	31%(362-4)
	Cystadenocarcinoma	44%(23-7)	19%(23-3)	13%(23-2)	13%(23-1)
	Serous/Papillary	38%(2064-529)	23%(2064-158)	18%(2064-55)	15%(2064-18)
	Mucinous	70%(246-133)	62%(246-66)	42%(246-20)	33%(246-7)
	Carcinosarcoma	28%(122-21)	13%(122-5)	13%(122-0)	na
	Germ cell	93%(153-99)	93%(153-53)	86%(153-17)	86%(153-7)

OVARIAN CANCER

Univariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=4102)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<30 years vs	30-39	2.96	[1.89,4.64]	<0.001	3.09	[1.99,4.8]	<0.001
	40-49	3.85	[2.58,5.76]	<0.001	4.08	[2.75,6.05]	<0.001
	50-59	5.20	[3.52,7.68]	<0.001	5.55	[3.78,8.13]	<0.001
	60-69	5.94	[4.02,8.78]	<0.001	6.79	[4.64,9.94]	<0.001
	70-79	8.47	[5.73,12.53]	<0.001	10.01	[6.83,14.68]	<0.001
	80+	11.11	[7.39,16.71]	<0.001	13.86	[9.32,20.61]	<0.001
FIGO stage							
1 vs	2	3.41	[2.67,4.34]	<0.001	2.42	[1.98,2.97]	<0.001
	3	9.01	[7.52,10.78]	<0.001	5.65	[4.9,6.52]	<0.001
	4	15.15	[12.36,18.57]	<0.001	9.24	[7.79,10.97]	<0.001
Node status							
N -ve vs	N +ve	1.33	[1.14,1.55]	<0.001	1.24	[1.07,1.45]	0.006
Differentiation							
Well vs	moderate	3.03	[2.35,3.89]	<0.001	2.67	[2.14,3.32]	<0.001
	poor	4.27	[3.37,5.42]	<0.001	3.53	[2.87,4.34]	<0.001
	undifferentiated	3.19	[1.83,5.56]	<0.001	2.70	[1.63,4.47]	<0.001
Presentation							
19 82-1992 vs	1993-2002	0.91	[0.81,1.02]	0.09	0.87	[0.78,0.96]	0.009
	2003-2012	0.78	[0.69,0.88]	<0.001	0.71	[0.64,0.79]	<0.001
Treatment							
Sx alone vs	Chemo alone	9.05	[7.03,11.66]	<0.001	5.39	[4.29,6.77]	<0.001
	Sx+RT	1.82	[0.96,3.45]	0.07	1.53	[0.91,2.57]	0.11
	Sx+Chemo	2.72	[2.29,3.22]	<0.001	1.74	[1.52,1.98]	<0.001
	Sx+RT+Chemo	4.01	[3.23,4.99]	<0.001	2.47	[2.05,2.98]	<0.001
Morphology	Clear Cell	0.34	[0.27,0.43]	<0.001	0.38	[0.31,0.46]	<0.001
Adenocarcinoma NOS vs	Endometrioid	0.25	[0.2,0.32]	<0.001	0.28	[0.23,0.34]	<0.001
	Cystadenocarcinoma	0.58	[0.34,1]	0.05	0.61	[0.37,1]	0.05
	Serous/Papillary	0.63	[0.55,0.72]	<0.001	0.62	[0.54,0.71]	<0.001
	Mucinous	0.23	[0.18,0.3]	<0.001	0.27	[0.22,0.34]	<0.001
	Carcinosarcoma	1.10	[0.86,1.39]	0.46	1.01	[0.8,1.28]	0.94
	Germ cell	0.04	[0.02,0.07]	<0.001	0.05	[0.03,0.08]	<0.001

OVARIAN CANCER

Multivariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

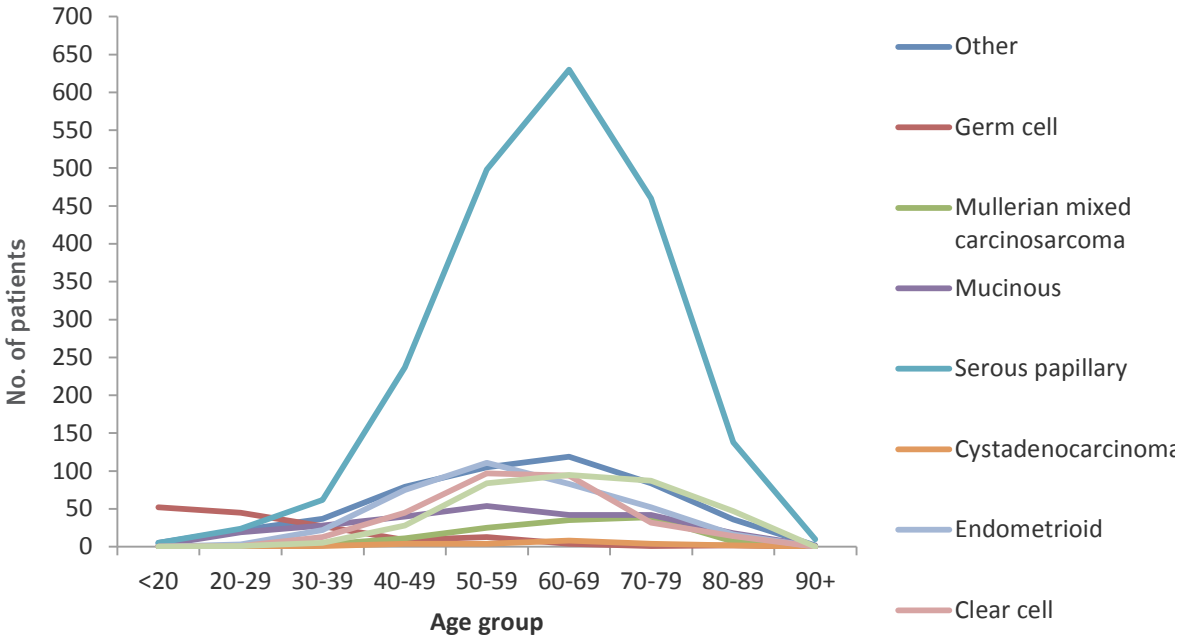
Presentation period 1982 to 2012 (N=4102)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<30 years vs	30-39	1.56	[0.97,2.53]	0.07	1.87	[1.18,2.97]	0.008
	40-49	1.51	[0.97,2.36]	0.07	1.94	[1.27,2.97]	0.002
	50-59	1.76	[1.14,2.71]	0.01	2.32	[1.53,3.53]	<0.001
	60-69	1.80	[1.17,2.78]	0.008	2.55	[1.68,3.88]	<0.001
	70-79	2.53	[1.63,3.91]	<0.001	3.72	[2.44,5.65]	<0.001
	80+	3.78	[2.4,5.96]	<0.001	5.65	[3.66,8.73]	<0.001
FIGO stage							
1 vs	2	3.44	[2.64,4.47]	<0.001	2.66	[2.14,3.31]	<0.001
	3	9.34	[7.5,11.62]	<0.001	6.65	[5.57,7.95]	<0.001
	4	13.93	[10.93,17.75]	<0.001	9.66	[7.87,11.86]	<0.001
Node status							
N -ve vs	N +ve	0.87	[0.74,1.02]	0.09	0.87	[0.74,1.01]	0.08
Differentiation							
Well vs	moderate	1.90	[1.47,2.47]	<0.001	1.84	[1.47,2.31]	<0.001
	poor	1.97	[1.53,2.53]	<0.001	1.85	[1.49,2.31]	<0.001
	undifferentiated	2.77	[1.57,4.89]	<0.001	2.47	[1.48,4.12]	<0.001
Presentation							
1982-1992 vs	1993-2002	0.92	[0.8,1.07]	0.28	0.87	[0.76,0.99]	0.04
	2003-2012	0.65	[0.56,0.75]	<0.001	0.59	[0.51,0.68]	<0.001
Treatment							
Sx alone vs	Chemo alone	1.29	[0.96,1.71]	0.09	0.95	[0.73,1.23]	0.7
	Sx+RT	1.22	[0.64,2.33]	0.54	1.09	[0.65,1.84]	0.74
	Sx+Chemo	0.78	[0.64,0.94]	0.01	0.57	[0.49,0.67]	<0.001
	Sx+RT+Chemo	1.12	[0.88,1.42]	0.36	0.64	[0.52,0.79]	<0.001
Morphology							
Adenocarcinoma NOS vs	Clear Cell	1.04	[0.82,1.31]	0.73	1.05	[0.84,1.3]	0.68
	Endometrioid	0.63	[0.5,0.79]	<0.001	0.65	[0.53,0.81]	<0.001
	Cystadenocarcinoma	1.06	[0.62,1.84]	0.83	1.03	[0.63,1.7]	0.9
	Serous/Papillary	0.78	[0.67,0.9]	<0.001	0.78	[0.68,0.9]	<0.001
	Mucinous	1.09	[0.82,1.44]	0.57	0.98	[0.76,1.26]	0.86
	Carcinosarcoma	1.47	[1.15,1.89]	0.002	1.37	[1.08,1.75]	0.01
	Germ cell	0.18	[0.09,0.38]	<0.001	0.25	[0.14,0.44]	<0.001

OVARIAN CANCER

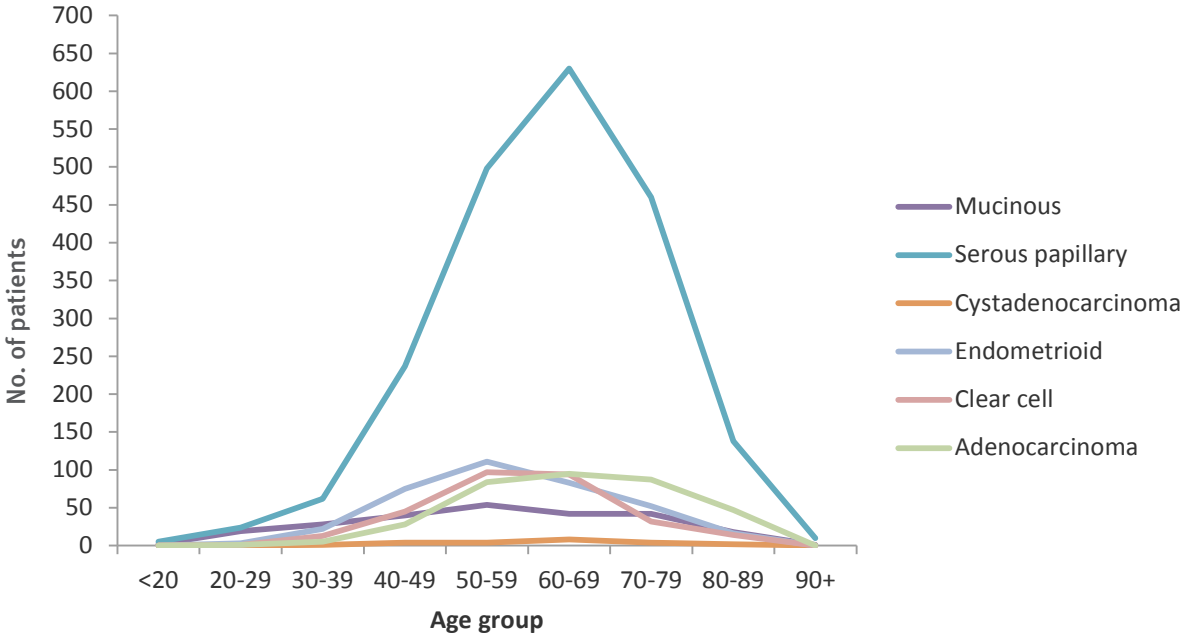
Ovarian Cancer 1982–2012

Age distribution by morphology



Epithelian Ovarian Cancer 1982– 2012

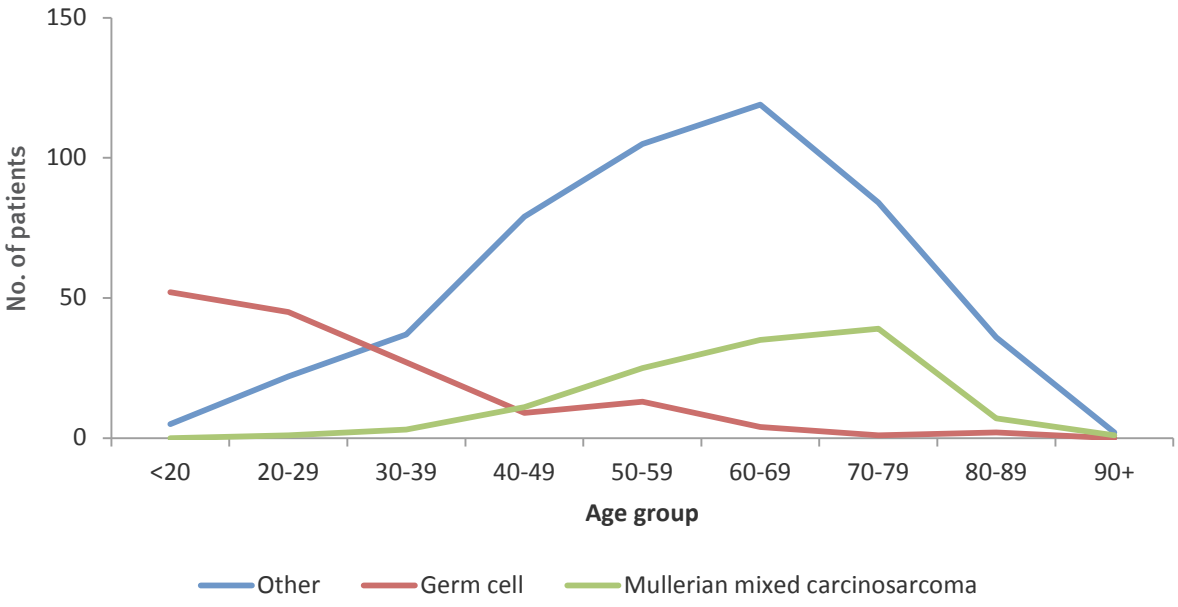
Age distribution by morphology



OVARIAN CANCER

Ovarian Cancer 1982–2012

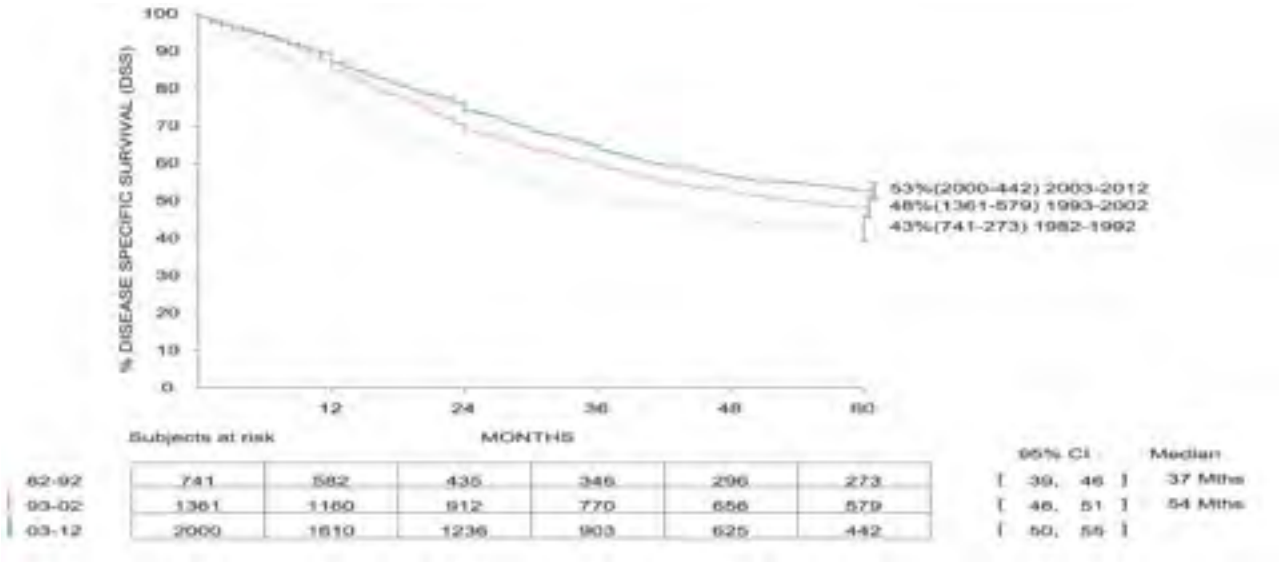
Age distribution, Germ Cell, Mullerian mixed carcinosarcoma and other morphology



OVARIAN CANCER

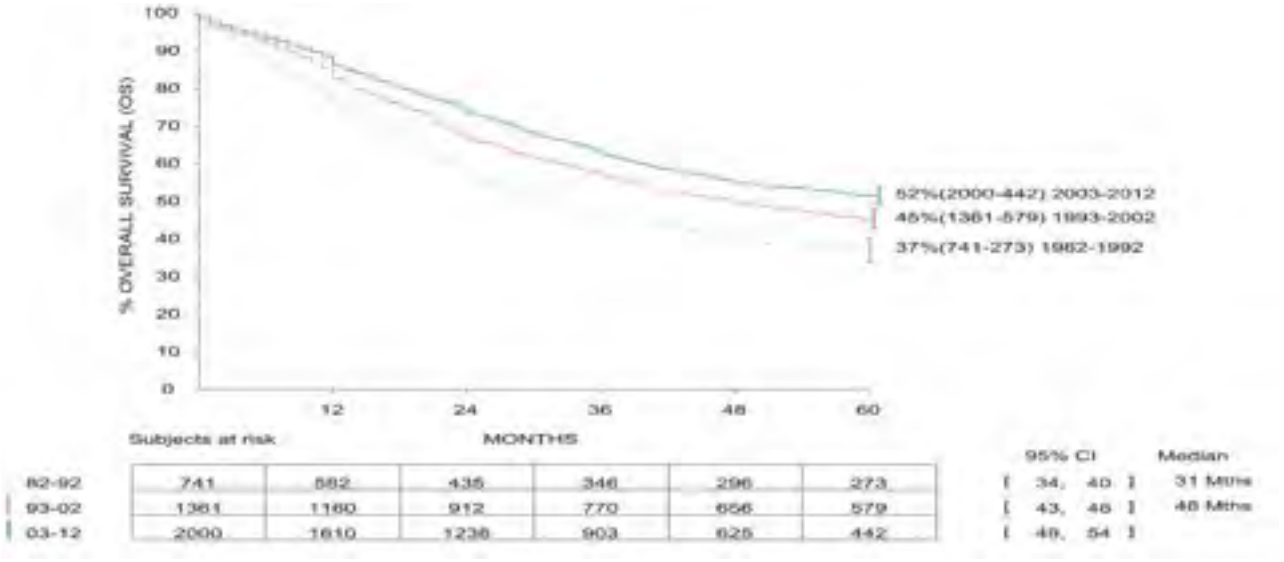
Ovarian Carcinoma 1982–2012

DSS by Presentation decade



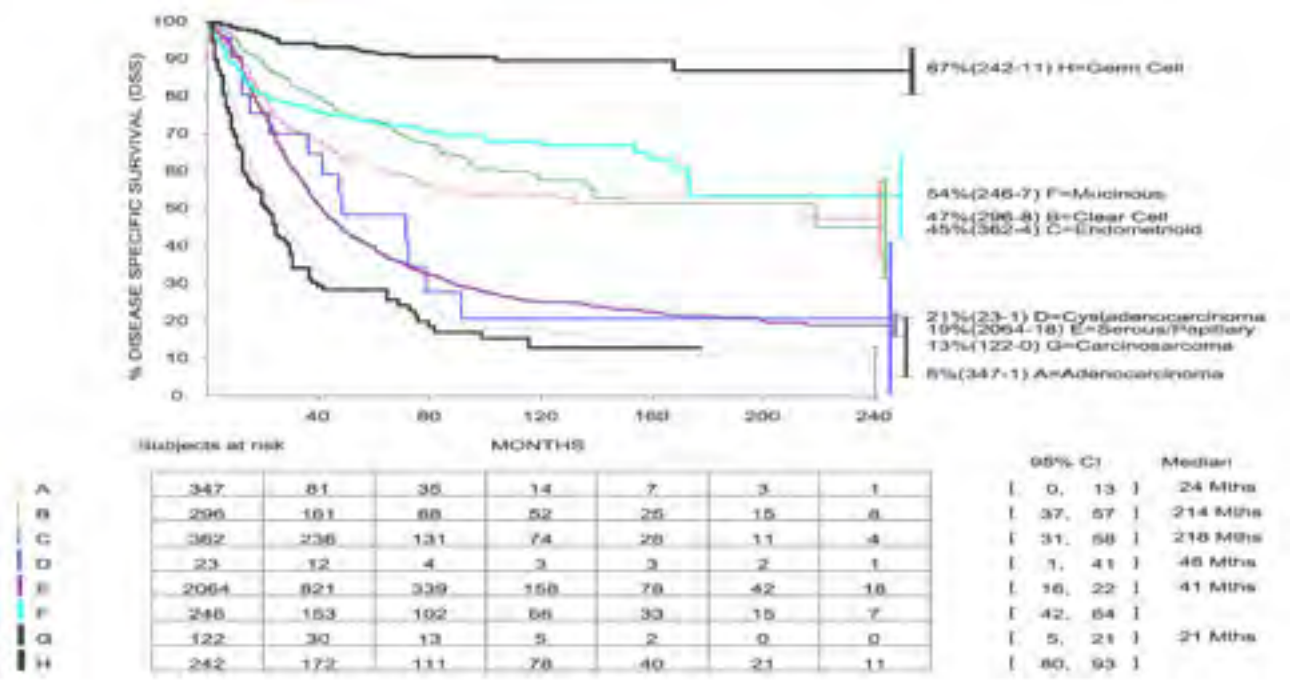
Ovarian Carcinoma 1982–2012

OS by Presentation decade

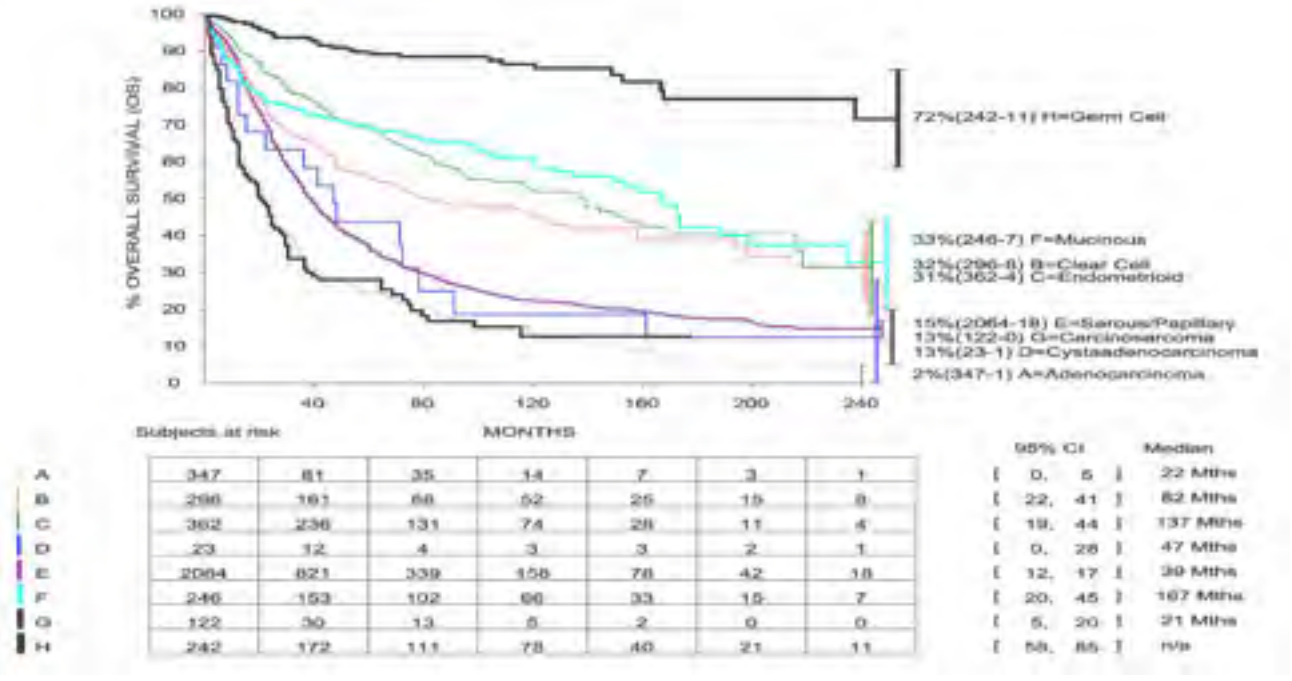


OVARIAN CANCER

Ovarian Carcinoma 1982–2012
DSS by Morphology



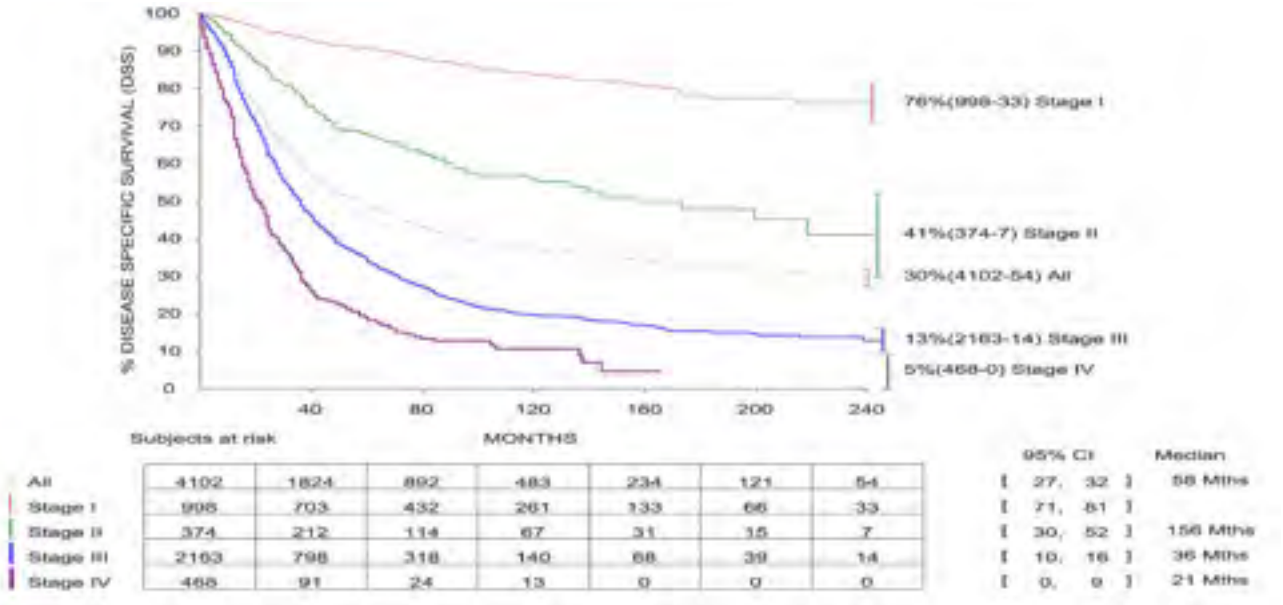
Ovarian Carcinoma 1982–2012
OS by Morphology



OVARIAN CANCER

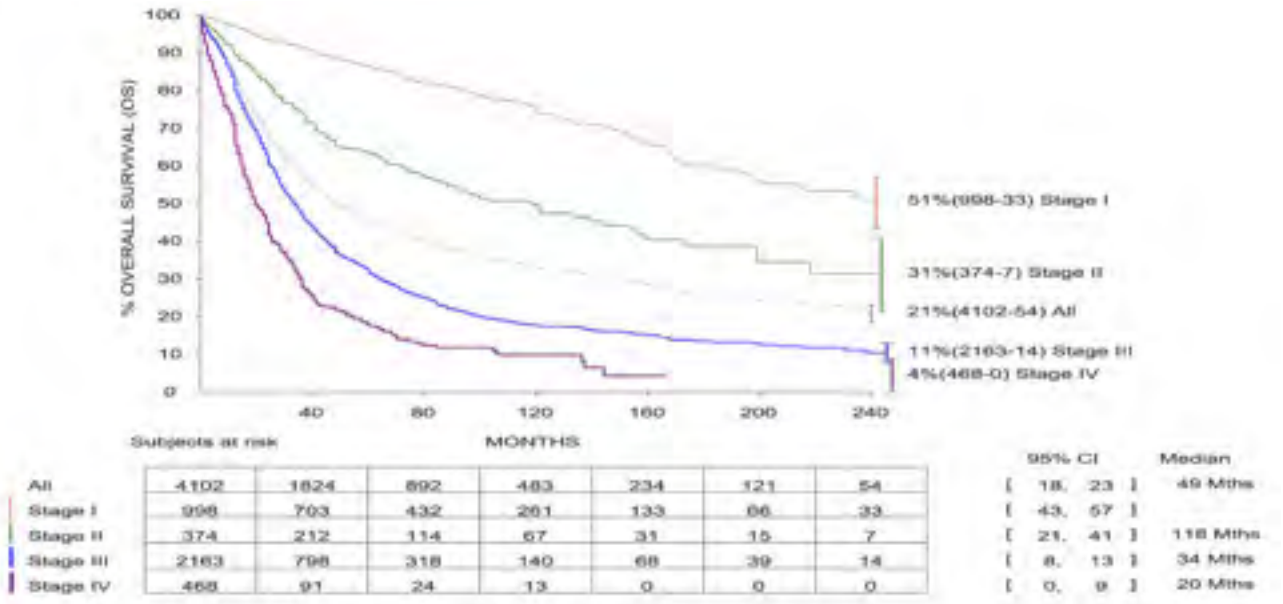
Ovarian Cancer 1982–2012

DSS by Figo Stage



Ovarian Cancer 1982–2012

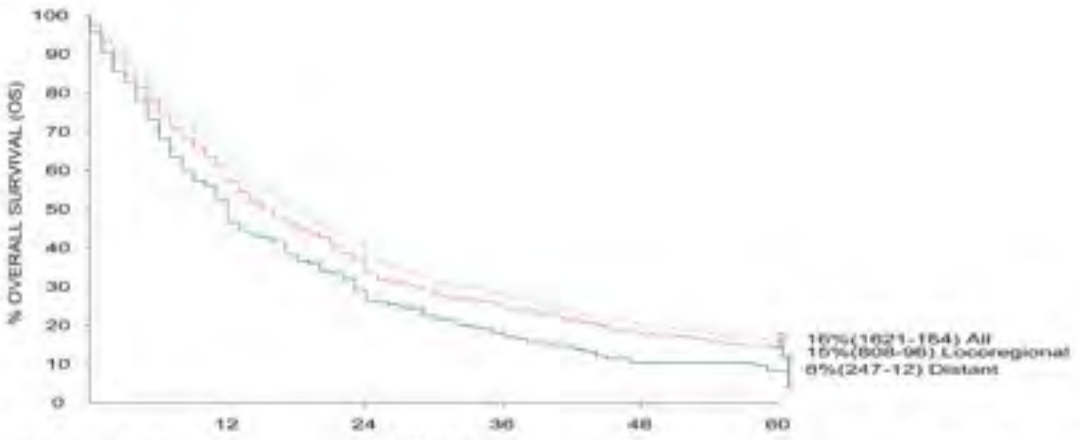
OS by Figo Stage



OVARIAN CANCER

Ovarian Carcinoma 1982–2012

OS by Relapse type



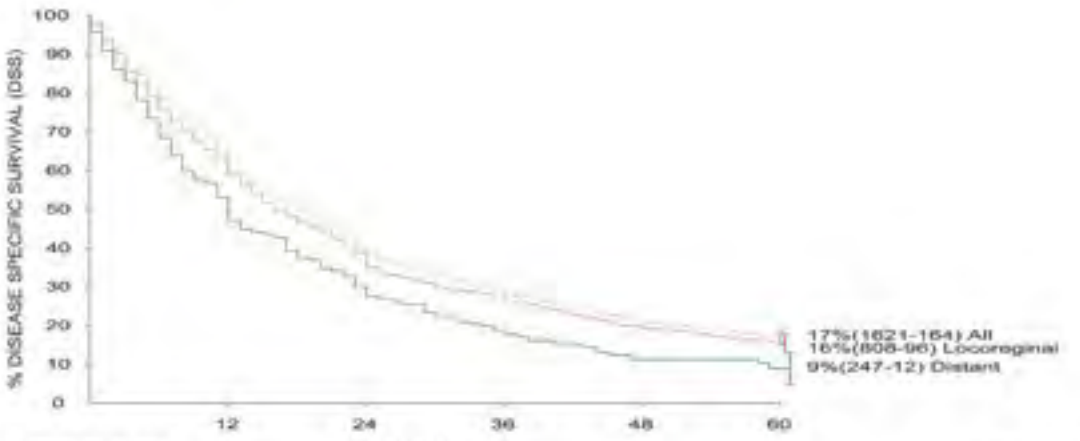
Subjects at risk

All	1621	1019	575	357	232	164
Locoreg	808	489	282	185	127	96
Dist	247	126	63	36	18	12

	95% CI		Median
All	[14,	18]	16 Mths
Locoreg	[12,	17]	16 Mths
Dist	[4,	12]	12 Mths

Ovarian Carcinoma 1982–2012

DSS by Relapse type



Subjects at risk

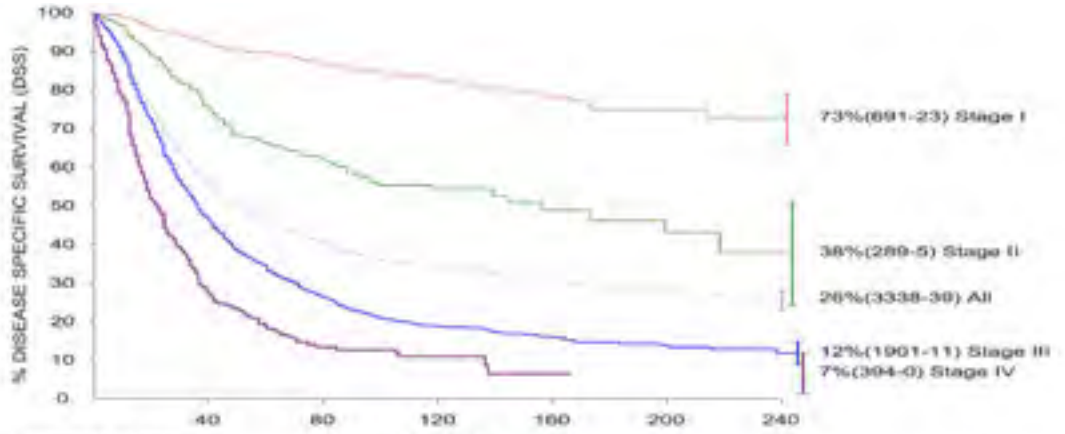
All	1621	1019	575	357	232	164
Locoreg	808	489	282	185	127	96
Dist	247	126	63	36	18	12

	95% CI		Median
All	[15,	19]	19 Mths
Locoreg	[13,	18]	16 Mths
Dist	[5,	13]	12 Mths

OVARIAN CANCER

Ovarian Epithelial Cancers 1982–2012

DSS by Figo Stage



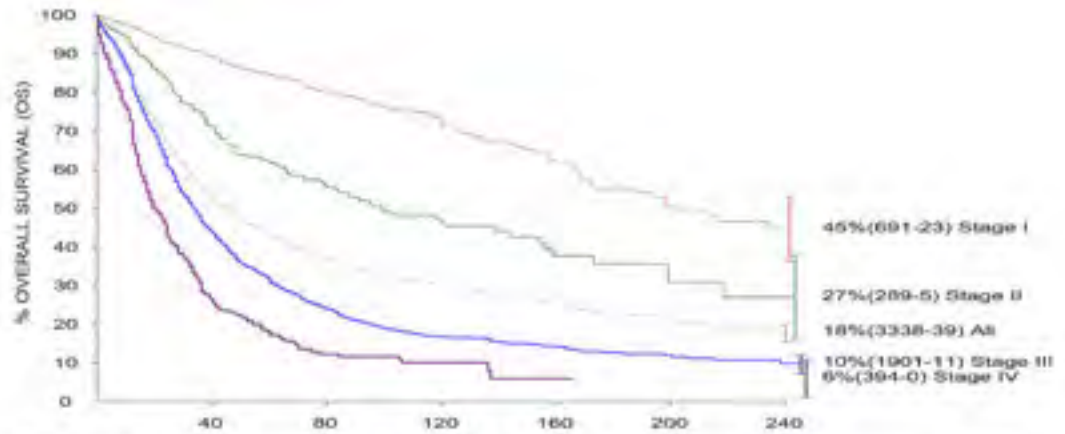
Subjects at risk

All	3338	1464	699	367	174	88	39
Stage I	691	501	311	187	94	43	23
Stage II	289	163	91	50	22	12	6
Stage III	1901	709	275	119	57	33	11
Stage IV	394	80	20	10	0	0	0

	95% CI			Median
All	[	23,	28]	49 Mths
Stage I	[	66,	79]	
Stage II	[	24,	51]	156 Mths
Stage III	[	9,	15]	36 Mths
Stage IV	[	1,	12]	22 Mths

Ovarian Carcinoma Cancers 1982–2012

OS by Relapse



Subjects at risk

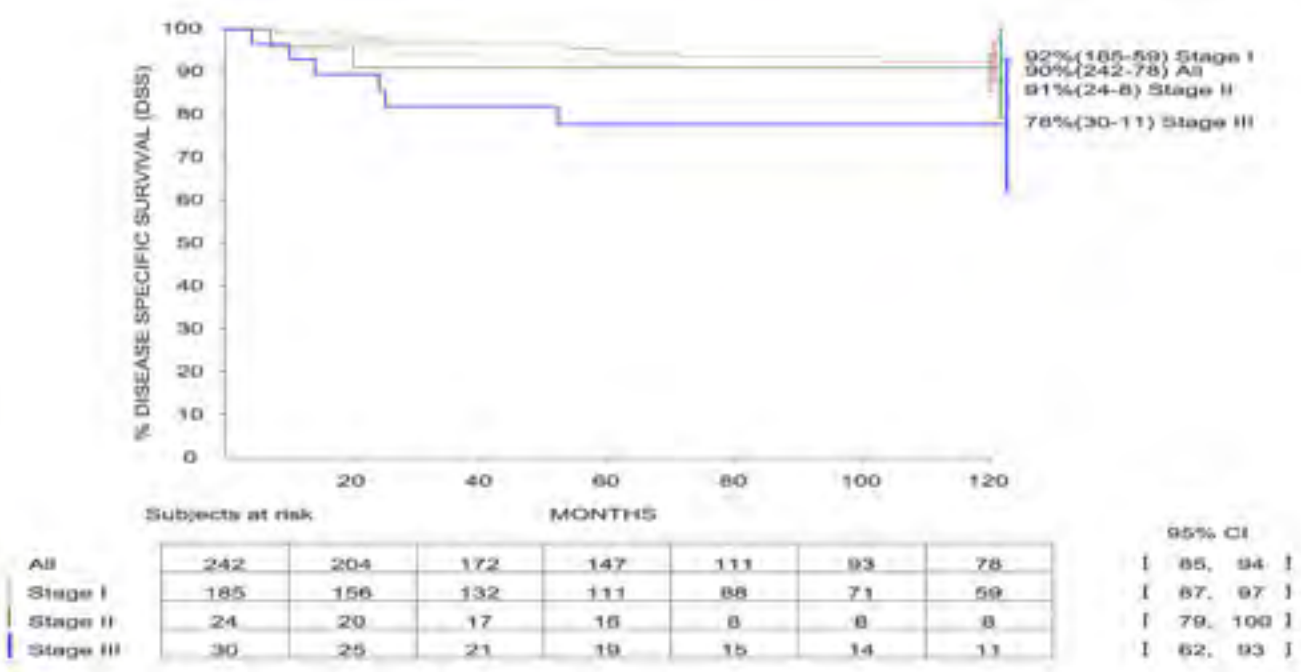
All	3338	1464	699	367	174	88	39
Stage I	691	501	311	187	94	43	23
Stage II	289	163	91	50	22	12	5
Stage III	1901	709	275	119	57	33	11
Stage IV	394	80	20	10	0	0	0

	95% CI			Median
All	[	16,	20]	45 Mths
Stage I	[	36,	53]	201 Mths
Stage II	[	16,	38]	100 Mths
Stage III	[	7,	12]	34 Mths
Stage IV	[	1,	11]	20 Mths

OVARIAN CANCER

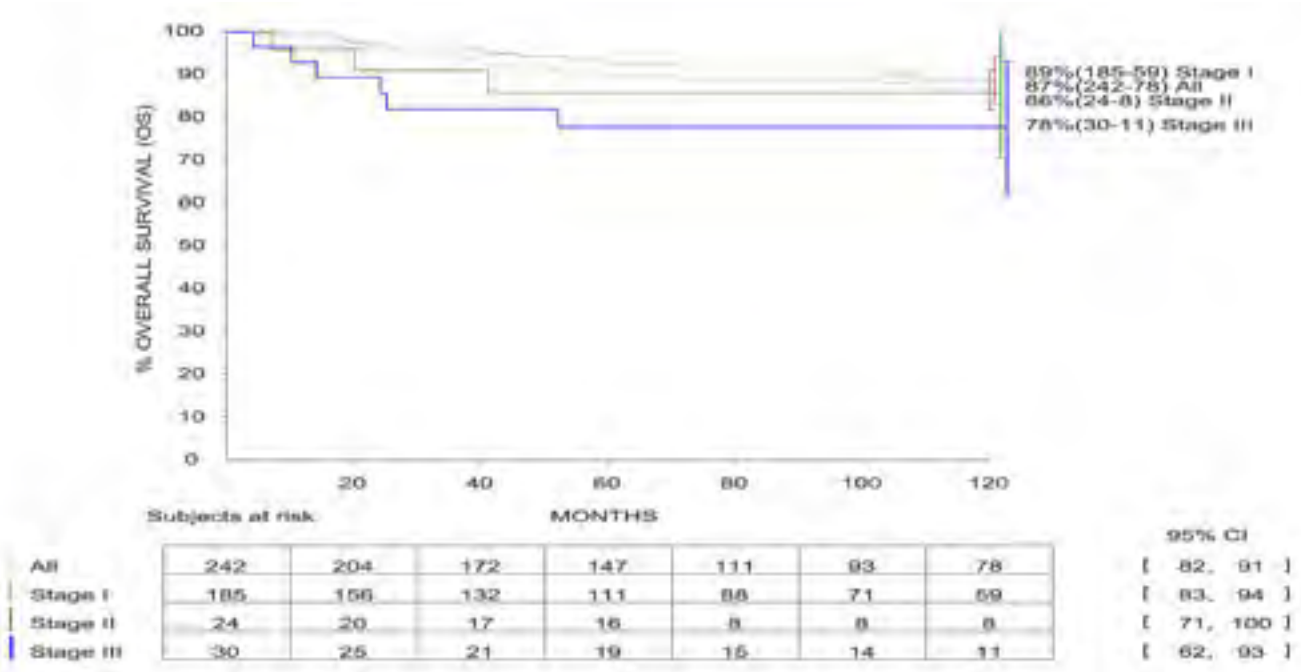
Ovarian Carcinoma 1982–2012 Germ Cell

DSS by Figo Stage



Ovarian Carcinoma 1982–2012 Germ Cell

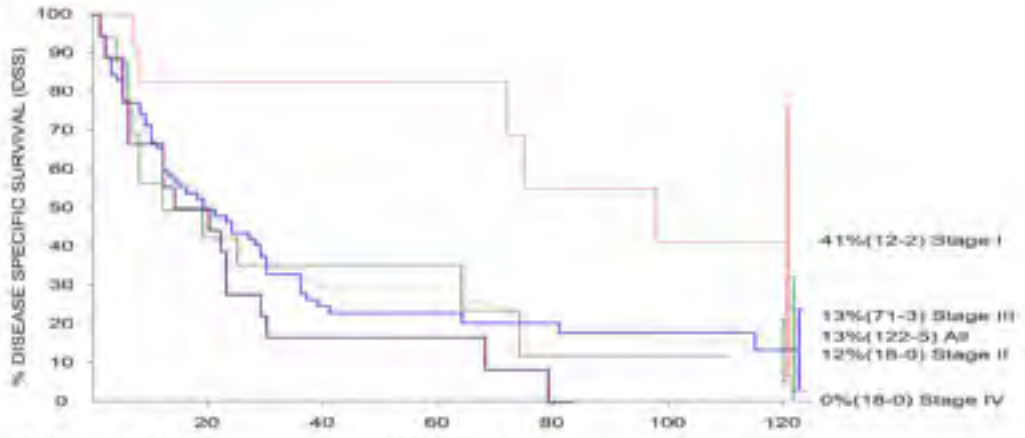
OS by Figo Stage



OVARIAN CANCER

Ovarian Sarcoma 1982–2012

DSS by Figo Stage



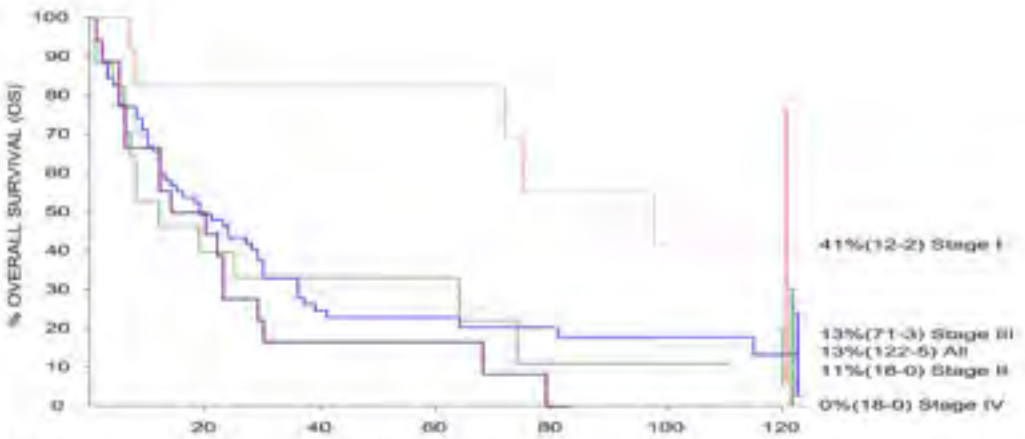
Subjects at risk

All	122	59	30	21	13	10	5
Stage I	12	9	8	6	4	3	2
Stage II	18	6	5	3	1	1	0
Stage III	71	34	14	9	8	6	3
Stage IV	18	9	3	3	0	0	0

	95% CI			Median
All	[	5,	21]	21 Mths
Stage I	[	6,	76]	98 Mths
Stage II	[	0,	32]	12 Mths
Stage III	[	3,	24]	19 Mths
Stage IV	[	0,	0]	14 Mths

Ovarian Sarcoma 1982–2012

OS by FIGO Stage



Subjects at risk

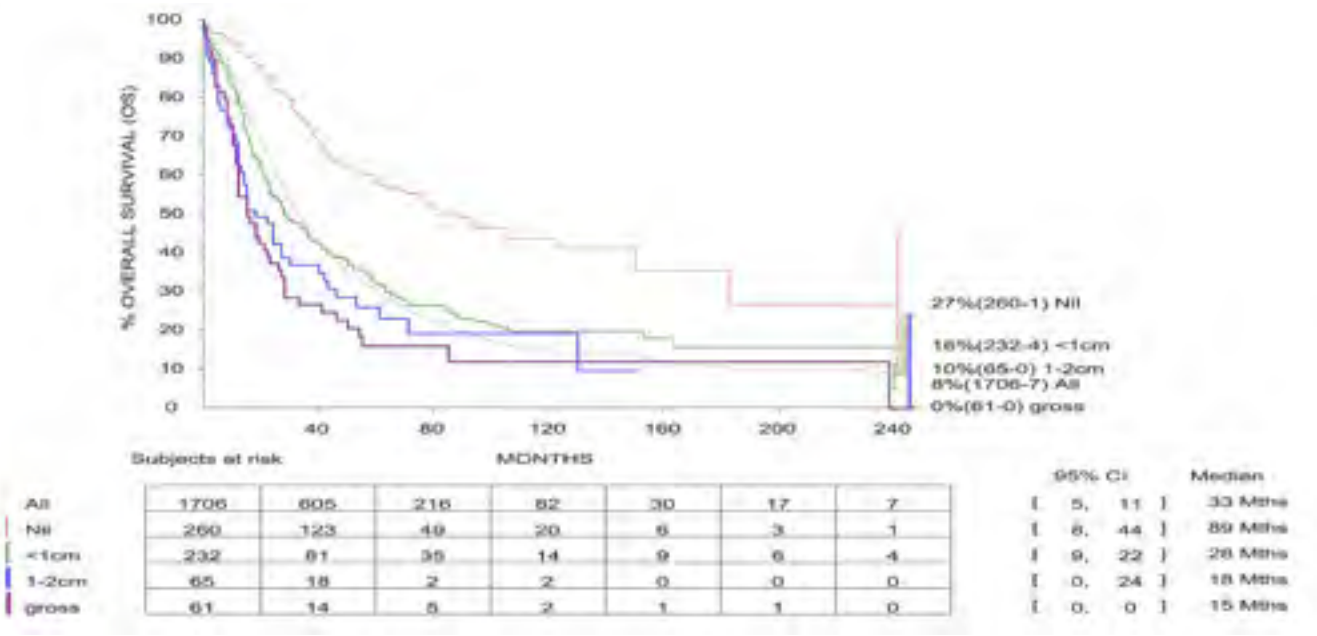
All	122	59	30	21	13	10	5
Stage I	12	9	8	6	4	3	2
Stage II	18	6	5	3	1	1	0
Stage III	71	34	14	9	8	6	3
Stage IV	18	9	3	3	0	0	0

	95% CI			Median
All	[	5,	20]	21 Mths
Stage I	[	6,	76]	98 Mths
Stage II	[	0,	30]	12 Mths
Stage III	[	3,	24]	19 Mths
Stage IV	[	0,	0]	14 Mths

OVARIAN CANCER

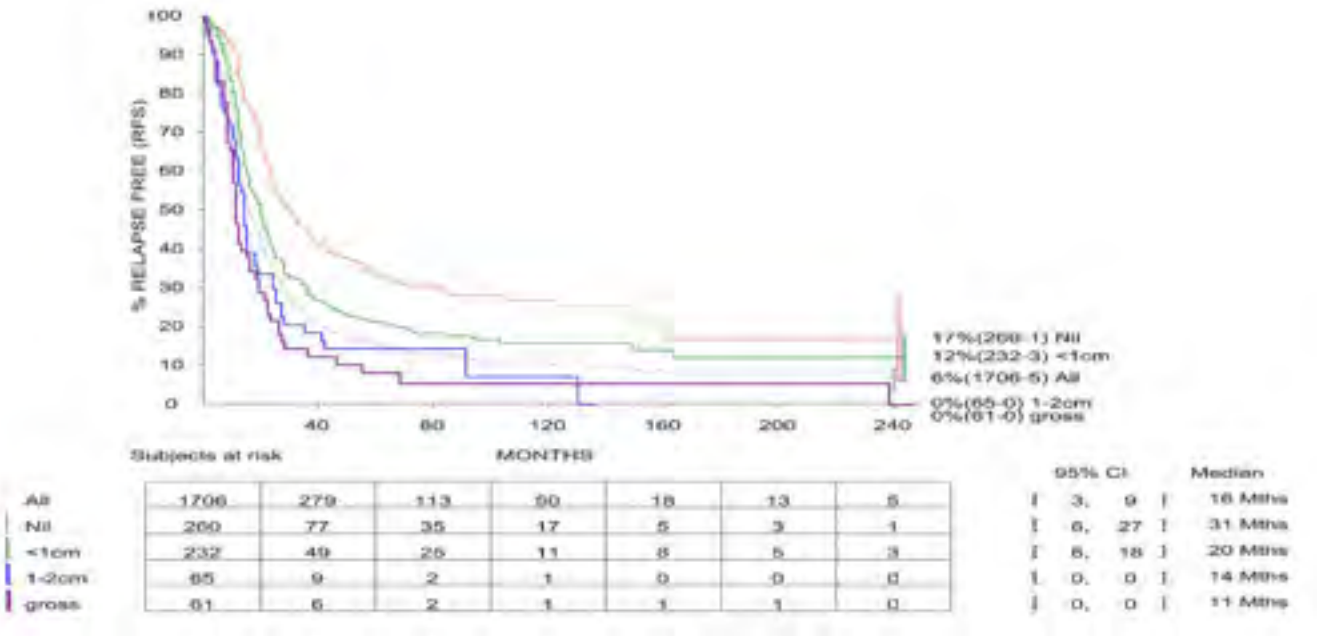
Ovarian Carcinoma 1982–2012

FIGO 3C – OS by Residual disease



Ovarian Carcinoma 1982–2012

FIGO 3C – RFS by Residual disease



Fallopian Tube cancer

Patient Characteristics

Presentation period 1982 to 2012 (N=141)

Factor		All N=141 (%)		1982-1992 N=17 (%)		1993-2002 N=28 (%)		2003-2012 N=96 (%)		p-value
Age (years)	under 50	23	(16%)	4	(24%)	8	(29%)	11	(11%)	0.37
	50-59	32	(23%)	4	(24%)	7	(25%)	21	(22%)	
	60-69	47	(33%)	6	(35%)	6	(21%)	35	(36%)	
	70-79	34	(24%)	2	(12%)	7	(25%)	25	(26%)	
	80+	5	(4%)	1	(6%)	0	(0%)	4	(4%)	
FIGO stage	1	41	(29%)	6	(35%)	10	(36%)	25	(26%)	0.39
	2	24	(17%)	4	(24%)	7	(25%)	13	(14%)	
	3	69	(49%)	6	(35%)	11	(39%)	52	(54%)	
	4	6	(4%)	1	(6%)	0	(0%)	5	(5%)	
	unk	1	(1%)	0	(0%)	0	(0%)	1	(1%)	
Node status	N 0	84	(60%)	2	(12%)	12	(43%)	70	(73%)	0.42
	N +ve	20	(14%)	0	(0%)	5	(18%)	15	(16%)	
	unk	37	(26%)	15	(88%)	11	(39%)	11	(11%)	
Differentiation	well	0	(0%)	0	(0%)	0	(0%)	0	(0%)	0.02
	moderate	26	(18%)	7	(41%)	6	(21%)	13	(14%)	
	poor	74	(52%)	5	(29%)	16	(57%)	53	(55%)	
	undifferentiated	0	(0%)	0	(0%)	0	(0%)	0	(0%)	
	other/unk	41	(29%)	5	(29%)	6	(21%)	30	(31%)	
Treatment	Sx alone	21	(15%)	2	(12%)	3	(11%)	16	(17%)	<0.001
	Sx+RT	2	(1%)	1	(6%)	0	(0%)	1	(1%)	
	Sx+Chemo	106	(75%)	8	(47%)	21	(75%)	77	(80%)	
	Sx+RT+Chemo	11	(8%)	6	(35%)	4	(14%)	1	(1%)	
	other	1	(1%)	0	(0%)	0	(0%)	1	(1%)	
Morphology	Adenocarcinoma NOS	21	(15%)	6	(35%)	3	(11%)	12	(13%)	<0.001
	Papillary serous	32	(23%)	3	(18%)	14	(50%)	15	(16%)	
	other	88	(62%)	8	(47%)	11	(39%)	69	(72%)	

*p-values reflect the change between decades for each factor

FALLOPIAN TUBE CANCER

Kaplan and Meier disease specific survival (DSS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=141)

		5 year	10 year	15 year
	ALL	74%(141-57)	56%(141-16)	33%(141-3)
Age (years)	under 50	85%(23-13)	78%(23-7)	59%(23-2)
	50-59	81%(32-16)	51%(32-4)	0%(32-0)
	60-69	74%(47-16)	54%(47-3)	27%(47-1)
	70-79	61%(34-10)	46%(34-2)	46%(34-0)
	80+	60%(5-2)	60%(5-0)	NA
FIGO stage	1	80%(41-18)	71%(41-6)	47%(41-2)
	2	77%(24-12)	54%(24-4)	27%(24-0)
	3	71%(69-23)	56%(69-5)	37%(69-1)
	4	50%(6-3)	17%(6-1)	17%(6-0)
Node status	N -ve	80%(84-31)	70%(84-5)	0%(84-0)
	N +ve	59%(20-7)	47%(20-4)	24%(20-0)
Differentiation	well	(N=0)	NA	NA
	moderate	68%(26-11)	45%(26-5)	36%(26-3)
	poor	76%(74-33)	58%(74-9)	0%(74-0)
Presentation	1982-1992	69%(17-11)	44%(17-6)	28%(17-3)
	1993-2002	66%(28-17)	49%(28-7)	24%(28-0)
	2003-2012	80%(96-29)	63%(96-3)	63%(96-0)
Treatment	Sx alone	94%(21-8)	94%(21-2)	94%(21-1)
	RT alone	(N=0)	NA	NA
	Chemo alone	(N=0)	NA	NA
	Sx+RT	(N=2)	NA	NA
	Sx+Chemo	73%(106-41)	56%(106-9)	28%(106-0)
	Sx+RT+Chemo	64%(11-7)	36%(11-4)	18%(11-1)
Morphology	Adenocarcinoma	77%(21-10)	35%(21-3)	17%(21-1)
	Papillary serous	66%(32-17)	62%(32-6)	41%(32-1)
	other	77%(88-30)	60%(88-7)	40%(88-1)

FALLOPIAN TUBE CANCER

Kaplan and Meier overall survival (OS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=141)

		5 year	10 year	15 year
	ALL	71%(141-57)	49%(141-16)	25%(141-3)
Age (years)	under 50	85%(23-13)	78%(23-7)	59%(23-2)
	50-59	81%(32-16)	51%(32-4)	0%(32-0)
	60-69	66%(47-16)	36%(47-3)	18%(47-1)
	70-79	61%(34-10)	46%(34-2)	23%(34-0)
	80+	40%(5-2)	20%(5-0)	NA
FIGO stage	1	80%(41-18)	71%(41-6)	35%(41-2)
	2	68%(24-12)	47%(24-4)	24%(24-0)
	3	67%(69-23)	41%(69-5)	28%(69-1)
	4	50%(6-3)	17%(6-1)	17%(6-0)
Node status	N -ve	78%(84-31)	69%(84-5)	0%(84-0)
	N +ve	52%(20-7)	35%(20-4)	17%(20-0)
Differentiation	moderate	65%(26-11)	43%(26-5)	26%(26-3)
	poor	71%(74-33)	51%(74-9)	0%(74-0)
Presentation	1982-1992	65%(17-11)	35%(17-6)	18%(17-3)
	1993-2002	64%(28-17)	47%(28-7)	23%(28-0)
	2003-2012	76%(96-29)	53%(96-3)	53%(96-0)
Treatment type	Sx alone	88%(21-8)	88%(21-2)	44%(21-1)
	RT alone	NA	NA	NA
	Chemo alone	NA	NA	NA
	Sx+RT	NA	NA	NA
	Sx+Chemo	69%(106-41)	47%(106-9)	23%(106-0)
	Sx+RT+Chemo	64%(11-7)	36%(11-4)	18%(11-1)
Morphology	Adenocarcinoma NOS	73%(21-10)	33%(21-3)	16%(21-1)
	Papillary serous	64%(32-17)	53%(32-6)	35%(32-1)
	other	73%(88-30)	52%(88-7)	26%(88-1)

FALLOPIAN TUBE CANCER

Univariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=141)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<50 years vs	50-59	1.90	[0.66,5.44]	0.23	2.02	[0.7,5.79]	0.19
	60-69	2.40	[0.86,6.71]	0.09	3.30	[1.22,8.94]	**0.02**
	70-79	2.71	[0.95,7.71]	0.06	3.09	[1.1,8.67]	**0.03**
	80+	2.67	[0.51,13.9]	0.24	5.59	[1.49,21]	**0.01**
FIGO stage							
1 vs	2	2.25	[0.89,5.69]	0.09	2.42	[1.02,5.74]	**0.05**
	3	2.12	[0.94,4.77]	0.07	2.26	[1.05,4.85]	**0.04**
	4	4.33	[1.41,13.3]	**0.01**	3.94	[1.31,11.86]	**0.01**
Node status							
N -ve vs	N +ve	1.97	[0.88,4.42]	0.1	2.34	[1.1,4.95]	**0.03**
Differentiation							
mod vs	poor	1.00	[1,1]	NA	1.00	[1,1]	NA
Presentation							
1982-1992 vs	1993-2002	0.94	[0.43,2.06]	0.87	0.81	[0.39,1.67]	0.57
	2003-2012	0.56	[0.25,1.22]	0.14	0.52	[0.25,1.06]	0.07
Treatment							
Sx alone vs	Sx+Chemo	7.05	[0.99,50.25]	**0.05**	2.72	[0.85,8.69]	0.09
	Sx+RT+Chemo	10.41	[1.34,80.74]	**0.03**	3.31	[0.9,12.17]	0.07
Morphology							
Adenocarcinoma NOS vs	Papillary serous	0.83	[0.35,1.97]	0.67	0.85	[0.38,1.92]	0.7

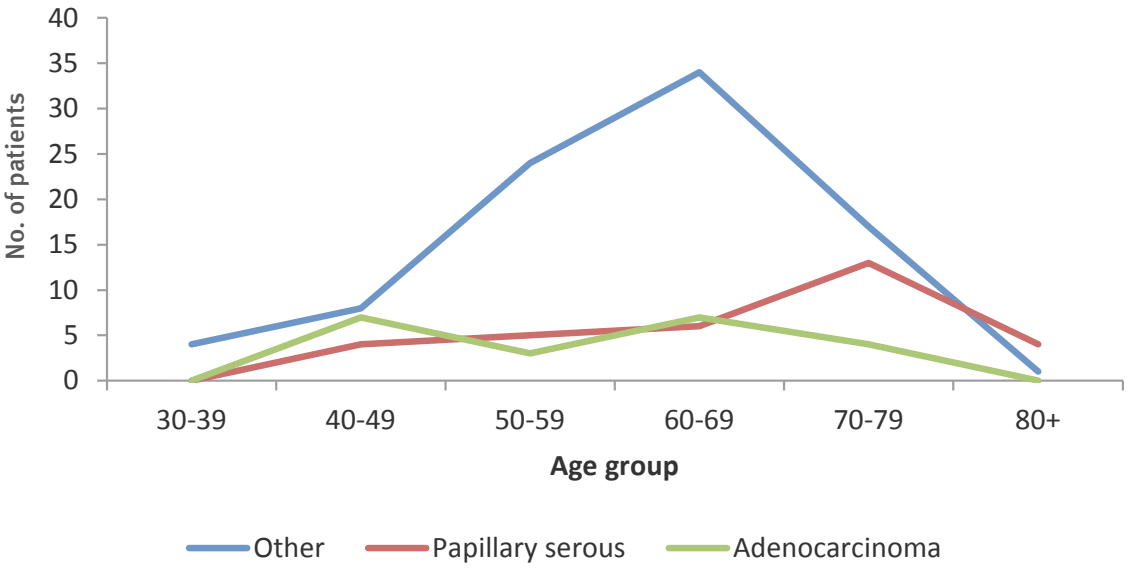
FALLOPIAN TUBE CANCER

Multivariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=141)

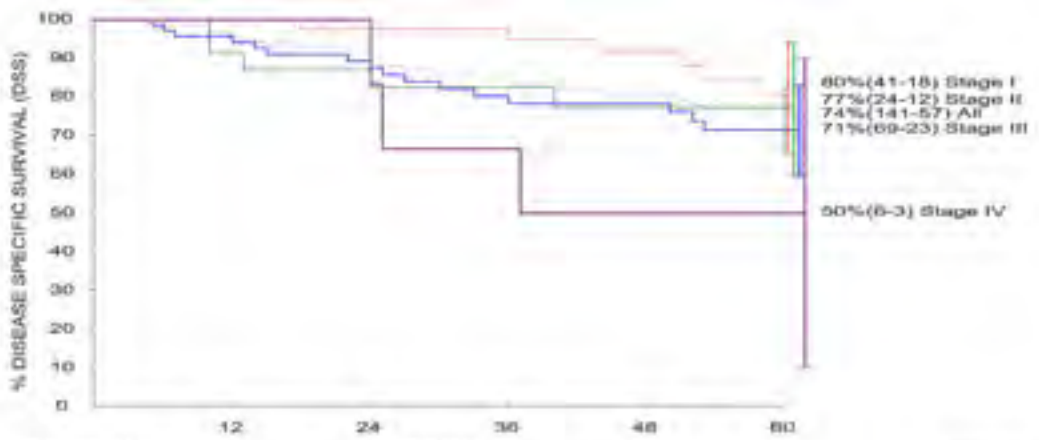
		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age							
<50 years vs	50-59	1.87	[0.62,5.58]	0.26	2.09	[0.7,6.21]	0.19
	60-69	2.66	[0.92,7.72]	0.07	3.78	[1.35,10.58]	**0.01**
	70-79	3.10	[1.06,9.06]	**0.04**	3.53	[1.22,10.15]	**0.02**
	80+	2.34	[0.43,12.82]	0.33	4.76	[1.19,18.96]	**0.03**
FIGO stage							
1 vs	2	2.24	[0.87,5.78]	0.09	2.39	[0.98,5.81]	**0.05**
	3	2.20	[0.93,5.18]	0.07	2.39	[1.06,5.37]	**0.04**
	4	5.26	[1.62,17.09]	**0.006**	4.60	[1.46,14.57]	**0.009**
Presentation							
1982-1992 vs	1993-2002	0.92	[0.4,2.14]	0.85	0.85	[0.39,1.87]	0.68
	2003-2012	0.41	[0.18,0.91]	**0.03**	0.39	[0.19,0.82]	**0.01**

Fallopian Tube Cancer 1982–2012
Age distribution by morphology



FALLOPIAN TUBE CANCER

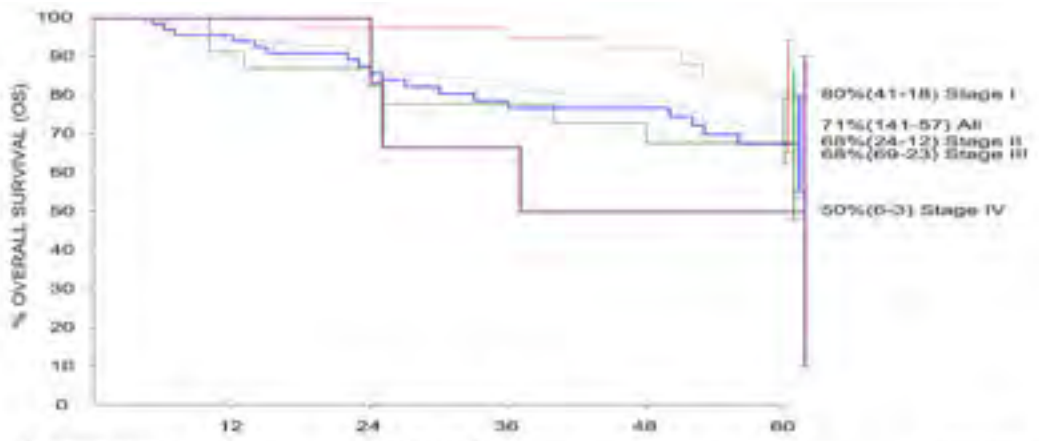
Fallopian Tube Cancer 1982–2012
DSS by FIGO stage



Subjects at risk						
All	141	130	113	99	85	57
Stage I	41	39	37	36	30	18
Stage II	24	21	19	16	14	12
Stage III	69	63	50	42	37	23
Stage IV	6	6	6	4	3	3

	95% CI		Median
All	[66,	82]	
Stage I	[65,	94]	
Stage II	[60,	94]	
Stage III	[58,	83]	
Stage IV	[10,	90]	37 Mths

Fallopian Tube Cancer 1982–2012
OS by FIGO stage



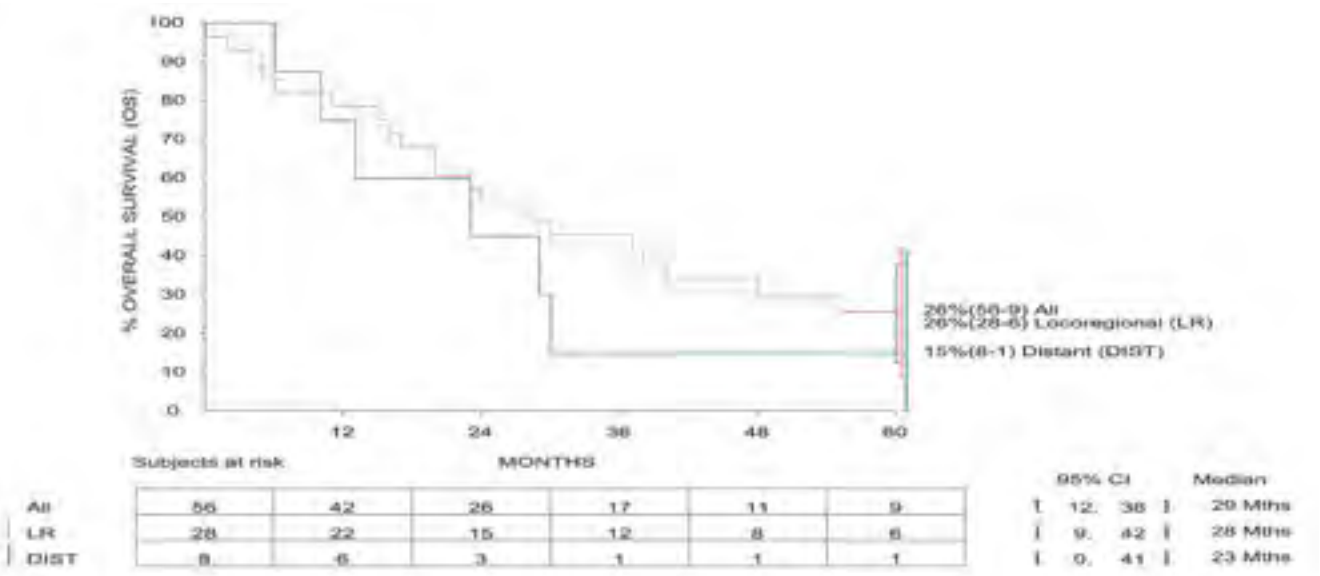
Subjects at risk						
All	141	130	113	99	85	57
Stage I	41	39	37	36	30	18
Stage II	24	21	19	16	14	12
Stage III	69	63	50	42	37	23
Stage IV	6	6	6	4	3	3

	95% CI		Median
All	[63,	79]	
Stage I	[65,	94]	
Stage II	[48,	87]	
Stage III	[55,	80]	
Stage IV	[10,	90]	37 Mths

FALLOPIAN TUBE CANCER

Fallopian Tube Cancer 1982–2012

Salvage OS by Relapse type



Vulval cancer

Vulval cancer accounts for approximately 5% of all female genital malignancies. With the exception of the rare sarcomas, this cancer appears most frequently in women aged 65-75 years; in QCGC, almost half of the patients are aged 70 years or older. As the population ages, the incidence of vulval cancer may be increasing slowly. Vulval cancer can appear in younger patients; in QCGC just under 20% of all vulval cancers occur in women younger than 50 years.

The main treatment for vulval cancer is surgery. Radiation therapy and chemotherapy may be used if the cancer cannot be entirely removed with surgery; if the cancer is high-risk for recurrence, and/or if the lymph nodes are involved with cancer. If the tumour has spread to the point that removal is not possible, the patient's treatment sometimes starts with radiation therapy, with or without chemotherapy. Surgical removal of the vulva is sometimes considered after this treatment if the entire tumour does not go away. Treatment modalities in terms of surgery, chemo and radiation have stayed remarkably similar in frequency of use in control of vulval carcinoma over the past three decades, perhaps more so then any other gynaecological cancer.

Disease specific survival (DSS) is significantly worse for the group over 70 on both univariate and multivariate analysis with a hazard ratio of between 3.90 and 6.82. Some of this may well be explained by delay in diagnosis, which appears to occur mainly because the patient does not seek medical attention for many months (possibly because of embarrassment) or because the lesion is treated medically for months, without biopsy for definitive diagnosis.

Sentinel Nodes, while still not standard care for assessment of nodal status, have been increasingly utilised over the most recent decade in QCGC, particularly given the favourable morbidity associated with this technique. To date, there does not appear to be a significant change in mortality despite the increased frequency of this technique. From the DSS table we can see the enormous significance of nodal status in vulval carcinoma survival with 93% 5 years for node negative, dropping to 57% for node positive.

Survival by histological type is best for BCC and Paget's followed by SCC; not surprisingly malignant melanoma is worst. SCC is the most common pathology, accounting for 80% of all vulval carcinomas.

Just over 30% of patients with locoregional recurrence survived 5 years with only 6% with distant metastasis alive over the same timeframe.

VULVAL CANCER

Patient Characteristics

Presentation period 1982 to 2012 (N=981)

Factor		All		1982-1992		1993-2002		2003-2012		*p-value
		N=981 (%)		N=162 (%)		N=326 (%)		N=493 (%)		
Age (years)	under 40	71	(7%)	18	(11%)	25	(8%)	28	(6%)	0.003
	40-49	114	(12%)	11	(7%)	41	(13%)	62	(13%)	
	50-59	167	(17%)	17	(10%)	49	(15%)	101	(20%)	
	60-69	182	(19%)	27	(17%)	57	(17%)	98	(20%)	
	70-79	233	(24%)	47	(29%)	89	(27%)	97	(20%)	
	80+	214	(22%)	42	(26%)	65	(20%)	107	(22%)	
FIGO stage	1	483	(49%)	61	(38%)	164	(50%)	258	(52%)	
	2	162	(17%)	48	(30%)	49	(15%)	65	(13%)	<0.001
	3	175	(18%)	28	(17%)	51	(16%)	96	(19%)	
	4	67	(7%)	20	(12%)	25	(8%)	22	(4%)	
	unk	0	(0%)	5	(3%)	37	(11%)	52	(11%)	
Node status	N -ve	308	(31%)	26	(16%)	129	(40%)	153	(31%)	
	N +ve	139	(14%)	4	(2%)	52	(16%)	83	(17%)	0.04
	unk	534	(54%)	132	(81%)	145	(44%)	257	(52%)	
Differentiation	well	198	(20%)	40	(25%)	77	(24%)	81	(16%)	
	moderate	327	(33%)	32	(20%)	116	(36%)	179	(36%)	0.003
	poor	123	(13%)	12	(7%)	40	(12%)	71	(14%)	
	undifferentiated	4	(0%)	0	(0%)	1	(0%)	3	(1%)	
	other/unk	329	(34%)	78	(48%)	92	(28%)	159	(32%)	
Treatment	Sx alone	675	(69%)	105	(65%)	231	(71%)	339	(69%)	
	RT alone	27	(3%)	7	(4%)	5	(2%)	15	(3%)	0.38
	Chemo alone	3	(0%)	1	(1%)	0	(0%)	2	(0%)	
	Sx+RT	156	(16%)	24	(15%)	60	(18%)	72	(15%)	
	Sx+Chemo	4	(0%)	1	(1%)	1	(0%)	2	(0%)	
	Sx+RT+Chemo	64	(7%)	14	(9%)	18	(6%)	32	(6%)	
	other	52	(5%)	10	(6%)	11	(3%)	31	(6%)	
Morphology	SCC	787	(80%)	136	(84%)	264	(81%)	387	(78%)	
	BCC	31	(3%)	4	(2%)	12	(4%)	15	(3%)	0.05
	Paget's disease	47	(5%)	2	(1%)	19	(6%)	26	(5%)	
	Malignant melanoma	51	(5%)	6	(4%)	20	(6%)	25	(5%)	
	other	65	(7%)	14	(9%)	11	(3%)	40	(8%)	

*p-values reflect the change between decades for each factor

VULVAL CANCER

Kaplan and Meier disease specific survival (DSS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=981)

		5 year	10 year	15 year	20 year
	ALL	80%(981-419)	71%(981-173)	62%(981-68)	42%(981-9)
Age (years)	under 40	92%(71-48)	89%(71-28	89%(71-11)	81%(71-2)
	40-49	92%(114-62)	92%(114-29)	78%(114-10)	39%(114-1)
	50-59	86%(167-77)	77%(167-27)	57%(167-6)	48%(167-0)
	60-69	80%(182-87)	76%(182-37)	72%(182-19)	55%(182-4)
	70-79	75%(233-100)	62%(233-39)	50%(233-19)	21%(233-2)
	80+	65%(214-45)	47%(214-13)	34%(214-3)	34%(214-0)
FIGO stage	1	93%(483-263)	83%(483-106)	74%(483-40)	35%(483-3)
	2	79%(162-74)	71%(162-37)	63%(162-20)	63%(162-5)
	3	58%(175-44)	52%(175-19)	45%(175-5)	45%(175-1)
	4	39%(67-8)	32%(67-3)	16%(67-1)	16%(67-0)
Node status	N -ve	93%(308-181)	82%(308-64)	66%(308-21)	37%(308-2)
	N +ve	57%(139-38)	49%(139-13)	38%(139-2)	38%(139-0)
Differentiation	well	90%(198-117)	86%(198-61)	74%(198-23)	48%(198-2)
	moderate	79%(327-131)	65%(327-46)	61%(327-22)	36%(327-2)
	poor	69%(123-46)	62%(123-19)	53%(123-7)	53%(123-1)
Presentation	1982-1992	76%(162-92)	70%(162-67)	69%(162-46)	54%(162-8)
	1993-2002	81%(326-199)	73%(326-94)	54%(326-22)	19%(326-1)
	2003-2012	78%(493-128)	66%(493-12)	66%(493-0)	NA
Treatment	Sx alone	90%(675-334)	84%(675-139)	74%(675-57)	54%(675-1)
	RT alone	37%(27-1)	37%(27-0)	NA	NA
	Chemo alone	(N=3)	NA	NA	NA
	Sx+RT	100%(156-56)	100%(156-23)	100%(156-7)	100%(156-2)
	Sx+Chemo	(N=4)	NA	NA	NA
	Sx+RT+Chemo	100%(64-21)	100%(64-9)	100%(64-3)	100%(64-0)
Morphology	SCC	80%(787-351)	72%(787-149)	63%(787-61)	44%(787-7)
	BCC	97%(31-14)	86%(31-5)	86%(31-2)	0%(31-0)
	Paget's disease	92%(47-19)	92%(47-6)	29%(47-0)	NA
	Malignant melanoma	44%(51-13)	29%(51-1)	29%(51-1)	29%(51-0)
	other	80%(65-22)	72%(65-12)	63%(65-4)	63%(65-2)

VULVAL CANCER

Kaplan and Meier overall survival (OS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=981)

		5 year	10 year	15 year	20 year
	ALL	67%(981-419)	50%(981-173)	37%(981-68)	14%(981-9)
Age (years)	under 40	90%(71-48)	83%(71-28)	72%(71-11)	59%(71-2)
	40-49	90%(114-62)	90%(114-29)	76%(114-10)	38%(114-1)
	50-59	82%(167-77)	67%(167-27)	50%(167-6)	21%(167-0)
	60-69	75%(182-87)	67%(182-37)	56%(182-19)	21%(182-4)
	70-79	61%(233-100)	36%(233-39)	23%(233-190	3%(233-2)
	80+	33%(214-45)	14%(214-13)	4%(214-3)	0%(214-0)
FIGO stage	1	84%(483-263)	66%(483-106)	51%(483-40)	15%(483-3)
	2	63%(162-74)	45%(162-37)	35%(162-20)	23%(162-5)
	3	44%(175-44)	33%(175-19)	22%(175-5)	4%(175-1)
	4	18%(67-8)	12%(67-3)	6%(67-1)	0%(67-0)
Node status	N -ve	84%9308-181)	62%(308-64)	45%(308-21)	13%(308-2)
	N +ve	48%(139-38)	33%(139-13)	19%(139-2)	0%(139-0)
Differentiation	well	79%(198-117)	65%(198-61)	46%(198-23)	11%(198-2)
	moderate	66%(327-131)	47%(327-46)	40%(327-22)	13%(327-2)
	poor	57%(123-46)	43%(123-19)	37%(123-7)	24%(123-1)
Presentation	1982-1992	58%(162-92)	45%(162-67)	35%(162-46)	13%(162-18)
	1993-2002	67%(326-199)	50%(326-94)	34%(326-22)	11%(326-1)
	2003-2012	69%(493-128)	56%(493-12)	56%(493-0)	NA
Treatment	Sx alone	78%(675-334)	61%(675-139)	46%(675-57)	19%(675-7)
	RT alone	5%(27-1)	0%(27-0)	NA	NA
	Chemo alone	NA	NA	NA	NA
	Sx+RT	48%(156-56)	34%(156-23)	20%(156-7)	12%(156-2)
	Sx+Chemo	NA	NA	NA	NA
	Sx+RT+Chemo	59%(64-21)	36%(64-9)	25%(64-3)	0%(64-0)
Morphology	SCC	68%(789-351)	52%(787-149)	40%(787-61)	15%(787-7)
	BCC	81%(31-14)	53%(31-5)	28%(31-2)	0%(31-0)
	Paget's disease	74%(47-19)	69%(47-6)	14%(47-0)	14%(47-0)
	Malignant melanoma	38%(51-13)	11%(51-1)	11%(51-1)	11%(51-0)
	other	62%(65-22)	49%(65-12)	28%(65-4)	28%(65-2)

VULVAL CANCER

Univariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=981)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	P-VALUE	HAZARD	[95% CI]	P-VALUE
Age (years)							
<40 vs	40-49	1.33	[0.54,3.3]	0.53	0.46	[0.22,0.97]	0.04
	50-59	2.48	[1.09,5.61]	0.03	2.36	[1.25,4.44]	0.008
	60-69	2.92	[1.33,6.38]	0.007	2.65	[1.46,4.81]	0.001
	70-79	4.96	[2.34,10.53]	<0.001	5.70	[3.24,10.04]	<0.001
	80+	6.82	[3.17,14.69]	<0.001	11.69	[6.61,20.7]	<0.001
FIGO stage							
1 vs	2	1.81	[1.2,2.72]	<0.001	1.79	[1.36,2.35]	<0.001
	3	4.50	[3.17,6.37]	<0.001	3.25	[2.51,4.22]	<0.001
	4	10.64	[7.01,16.16]	<0.001	7.74	[5.62,10.68]	<0.001
Node status							
N -ve vs	N +ve	4.60	[3.08,6.87]	<0.001	2.92	[2.15,3.95]	<0.001
Differentiation							
Well vs	moderate	1.78	[1.19,2.68]	0.005	1.41	[1.07,1.86]	0.02
	poor	2.54	[1.6,4.03]	<0.001	1.72	[1.23,2.41]	0.002
	undifferentiated	2.66	[0.36,19.48]	0.33	3.91	[0.96,15.98]	0.06
Presentation							
1982-1992 vs	1993-2002	2.42	[1.68,3.47]	<0.001	0.88	[0.69,1.11]	0.28
	2003-2012	1.15	[0.78,1.7]	0.48	0.76	[0.57,0.99]	0.05
Treatment							
Sx alone vs	RT alone	9.68	[4.97,18.85]	<0.001	8.92	[5.62,14.14]	<0.001
	Chemo alone	4.45	[0.62,31.94]	0.14	4.40	[0.62,31.43]	0.14
	Sx+RT	4.28	[3.12,5.85]	<0.001	2.29	[1.81,2.91]	<0.001
	Sx+Chemo	6.48	[1.6,26.34]	0.009	2.57	[0.64,10.37]	0.18
	Sx+RT+Chemo	3.52	[2.24,5.53]	<0.001	1.91	[1.32,2.77]	<0.001
Morphology							
SCC vs	BCC	0.65	[0.24,1.75]	0.4	1.04	[0.58,1.85]	0.9
	Paget's disease	0.55	[0.23,1.33]	0.18	0.82	[0.47,1.42]	0.48
	Malignant melanoma	2.86	[1.85,4.43]	<0.001	2.27	[1.57,3.29]	<0.001

VULVAL CANCER

Multivariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

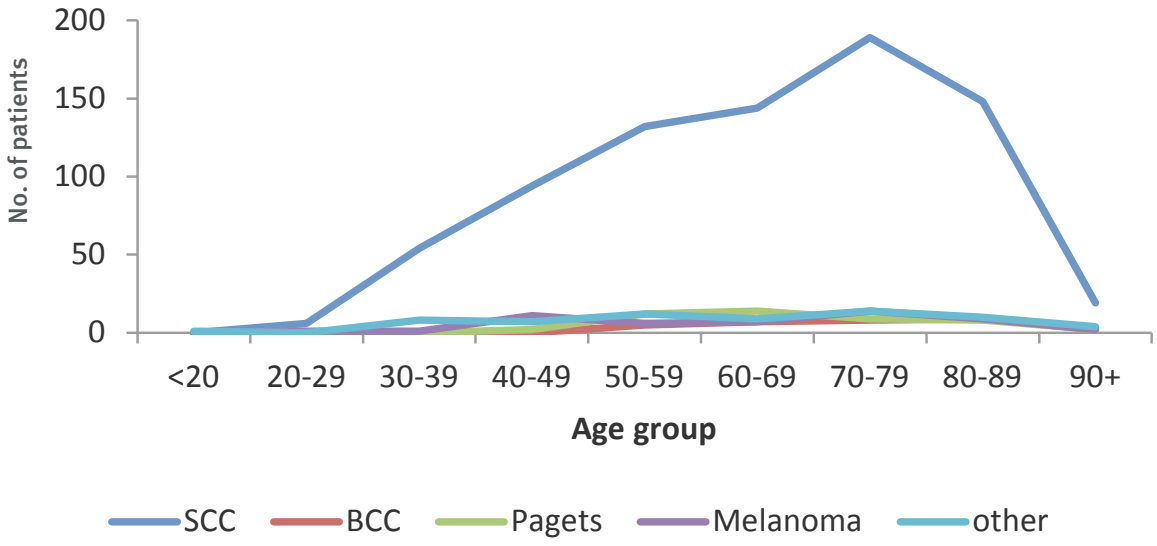
Presentation period 1982 to 2012 (N=981)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age (years)							
<40 vs	40-49	1.08	[0.42,2.78]	0.87	0.87	[0.41,1.83]	0.71
	50-59	1.98	[0.85,4.65]	0.11	2.17	[1.14,4.11]	0.02
	60-69	2.33	[1.03,5.28]	0.04	2.48	[1.36,4.51]	0.003
	70-79	3.90	[1.76,8.62]	<0.001	5.14	[2.9,9.14]	<0.001
	80+	5.22	[2.33,11.71]	<0.001	9.53	[5.33,17.04]	<0.001
FIGO stage							
1 vs	2	1.45	[0.94,2.25]	0.09	1.33	[1,1.79]	0.05
	3	1.99	[1.22,3.26]	0.006	1.72	[1.19,2.49]	0.004
	4	4.10	[2.41,6.98]	<0.001	3.54	[2.38,5.27]	<0.001
Node status							
N -ve vs	N +ve	1.40	[0.8,2.45]	0.24	1.33	[0.87,2.05]	0.19
Differentiation							
Well vs	moderate	1.24	[0.81,1.91]	0.32	1.23	[0.91,1.65]	0.17
	poor	1.40	[0.85,2.29]	0.18	1.22	[0.85,1.74]	0.28
	undifferentiated	1.93	[0.24,15.5]	0.53	3.46	[0.77,15.44]	0.11
Presentation							
1982-1992 vs	1993-2002	1.78	[1.18,2.68]	0.006	1.24	[0.95,1.63]	0.11
	2003-2012	1.65	[1.06,2.56]	0.03	1.11	[0.81,1.52]	0.5
Treatment							
Sx alone vs	RT alone	3.43	[1.59,7.39]	0.002	2.75	[1.61,4.68]	<.001
	Chemo alone	5.00	[0.63,39.83]	0.13	6.58	[0.84,51.32]	0.07
	Sx+RT	2.47	[1.72,3.56]	<0.001	1.40	[1.07,1.84]	0.02
	Sx+Chemo	1.11	[0.25,4.96]	0.89	0.52	[0.12,2.21]	0.37
	Sx+RT+Chemo	3.40	[2.03,5.71]	<0.001	2.10	[1.39,3.16]	<0.001
Morphology							
SCC vs	BCC	0.59	[0.2,1.74]	0.34	0.68	[0.35,1.32]	0.25
	Paget's disease	0.70	[0.24,2.02]	0.51	0.81	[0.4,1.64]	0.56
	Malignant melanoma	4.16	[2.31,7.48]	<0.001	3.24	[2.02,5.21]	<0.001

VULVAL CANCER

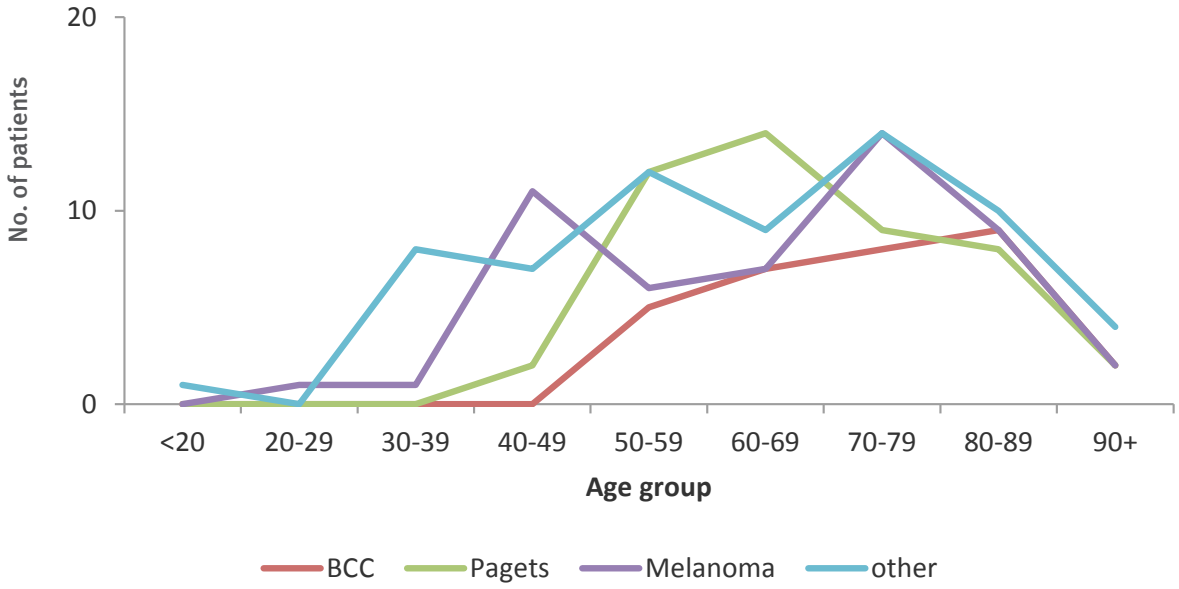
Vulval Cancer 1982–2012

Age distribution by morphology



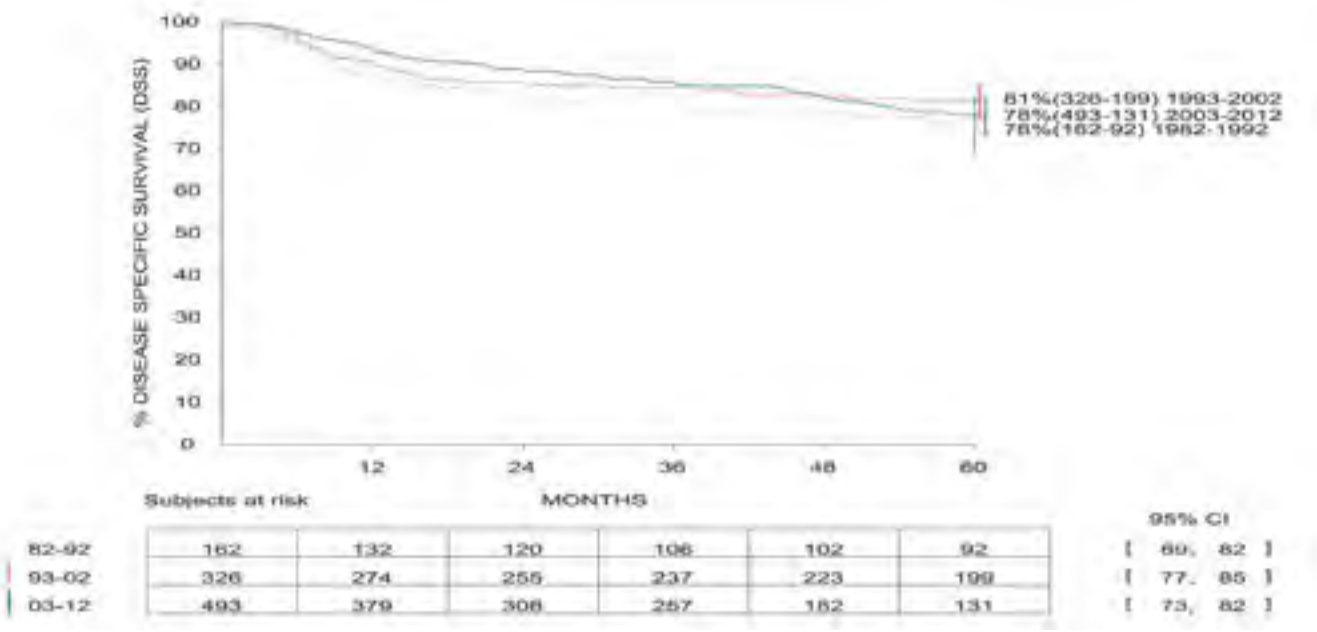
Vulval Cancer 1982–2012

Age distribution by morphology type – excluding SCC

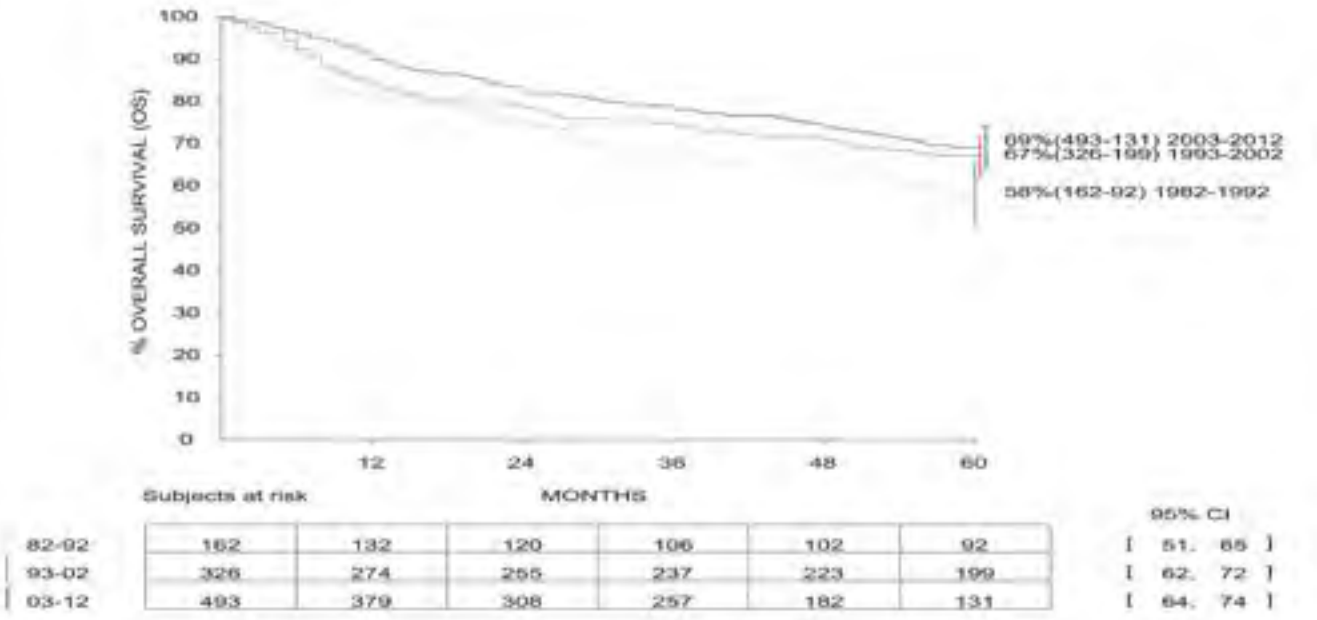


VULVAL CANCER

Vulva Cancer 1982–2012
DSS by Presentation decade

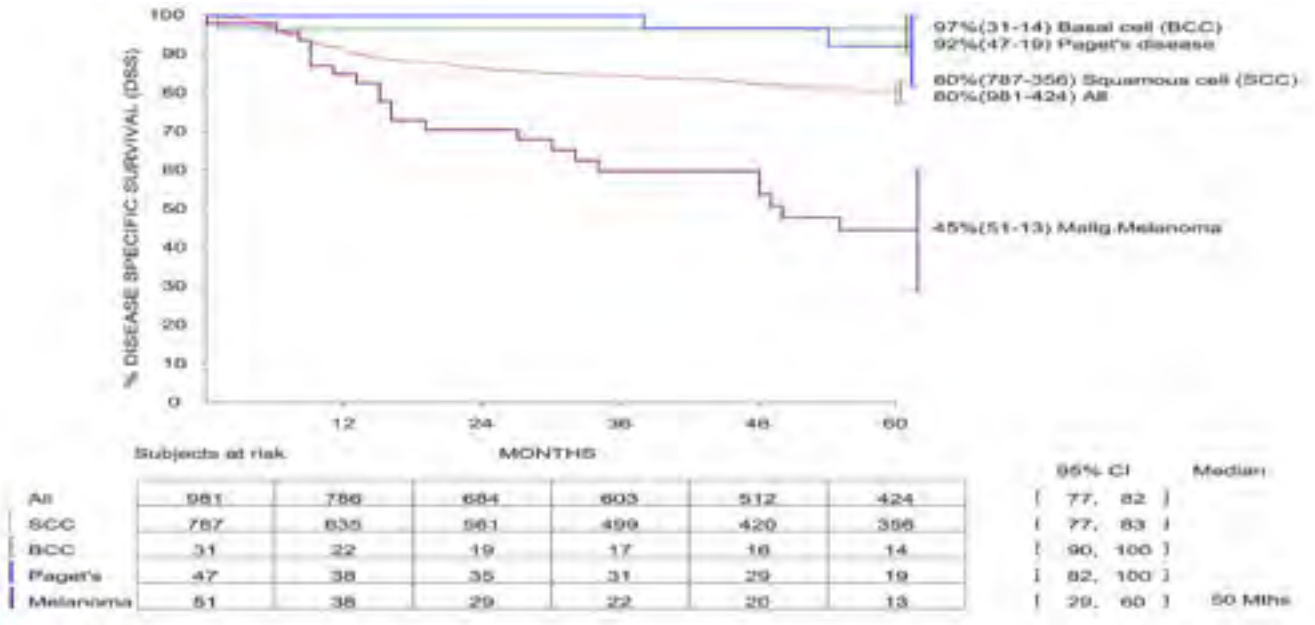


Vulva Cancer 1982–2012
OS by Presentation decade

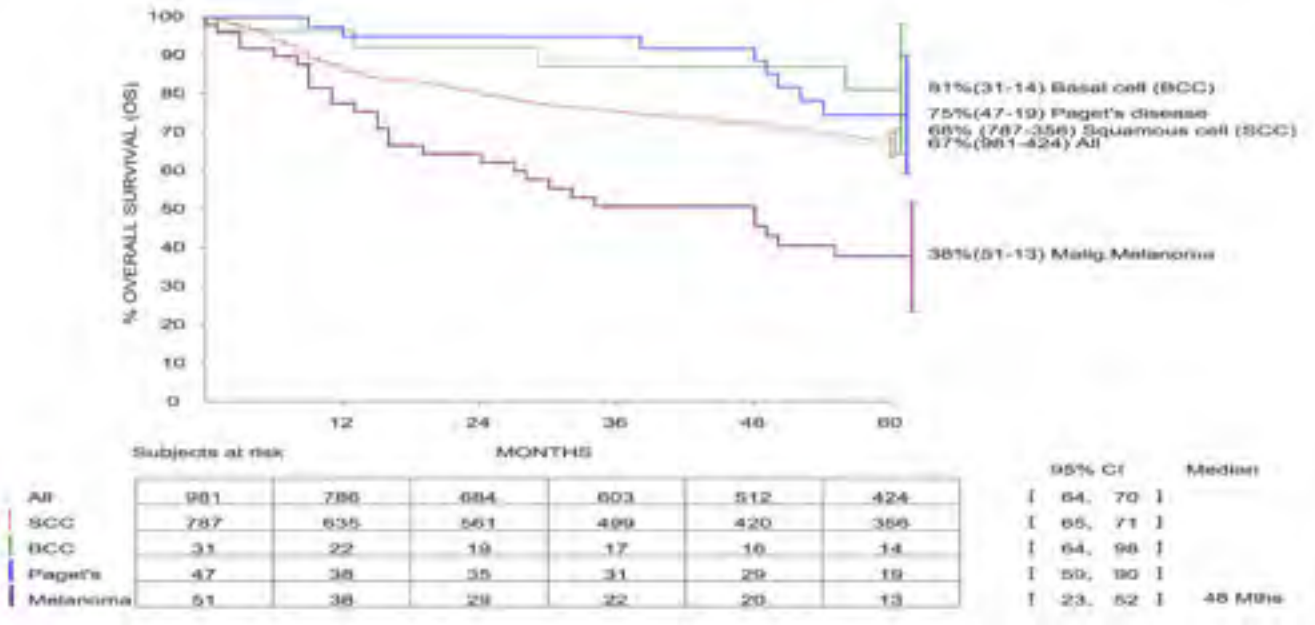


VULVAL CANCER

Vulva Cancer 1982–2012
DSS by Morphology

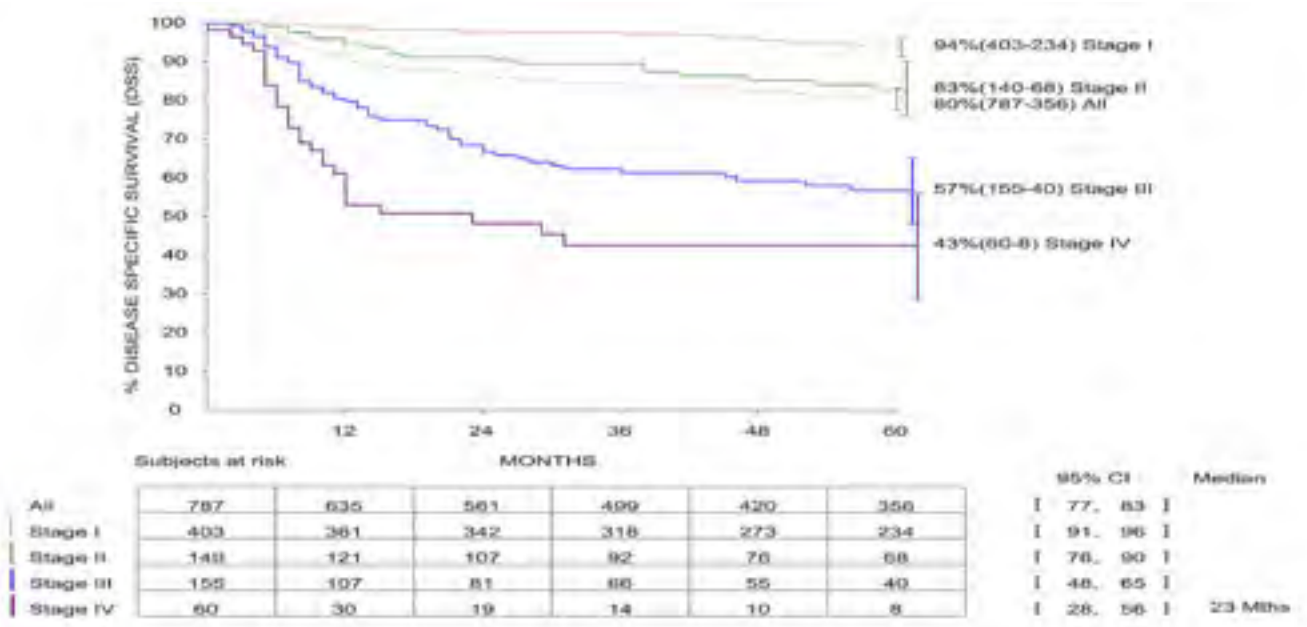


Vulva Cancer 1982–2012
OS by Morphology



VULVAL CANCER

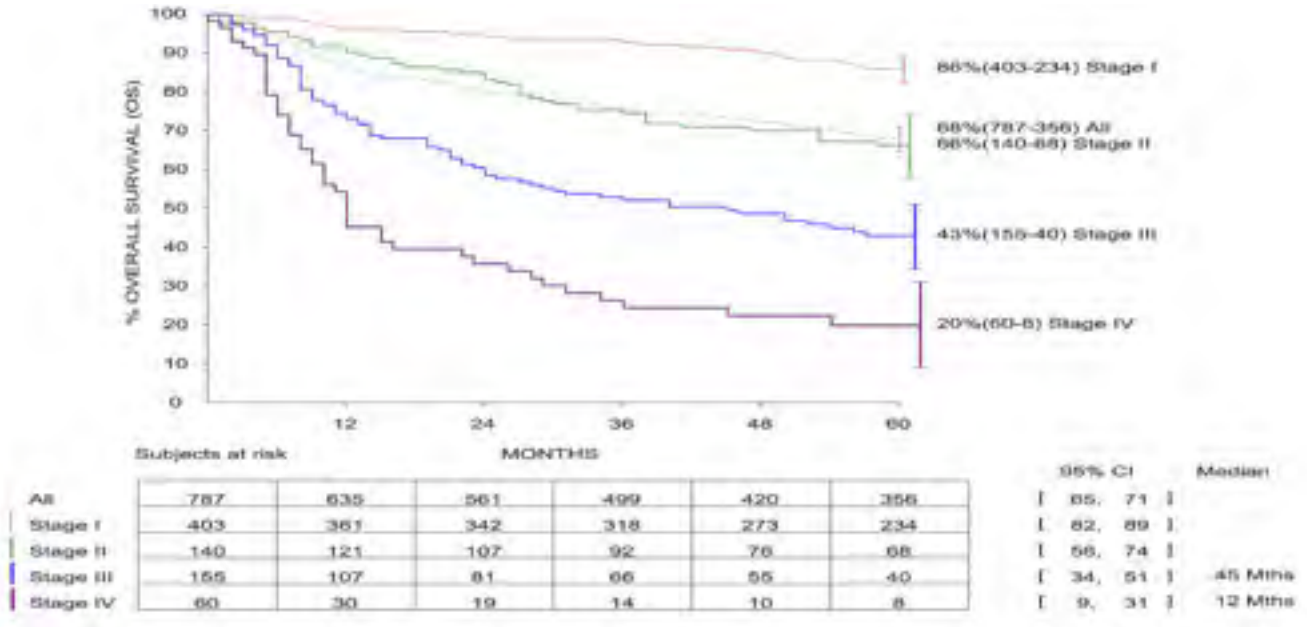
Vulva Cancer 1982–2012
DSS by FIGO stage



Subjects at risk

							95% CI		Median
All	787	635	561	499	420	356	[77,	83]	
Stage I	403	361	342	318	273	234	[91,	96]	
Stage II	140	121	107	92	76	68	[76,	90]	
Stage III	155	107	81	66	55	40	[48,	65]	
Stage IV	60	30	19	14	10	8	[28,	56]	23 Mths

Vulva Cancer 1982–2012
OS by FIGO stage

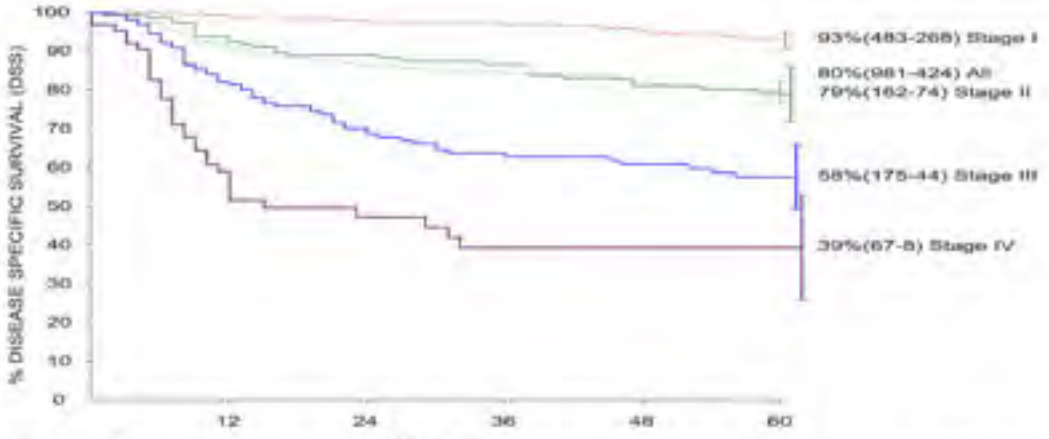


Subjects at risk

							95% CI		Median
All	787	635	561	499	420	356	[65,	71]	
Stage I	403	361	342	318	273	234	[82,	89]	
Stage II	140	121	107	92	76	68	[56,	74]	
Stage III	155	107	81	66	55	40	[34,	51]	45 Mths
Stage IV	60	30	19	14	10	8	[9,	31]	12 Mths

VULVAL CANCER

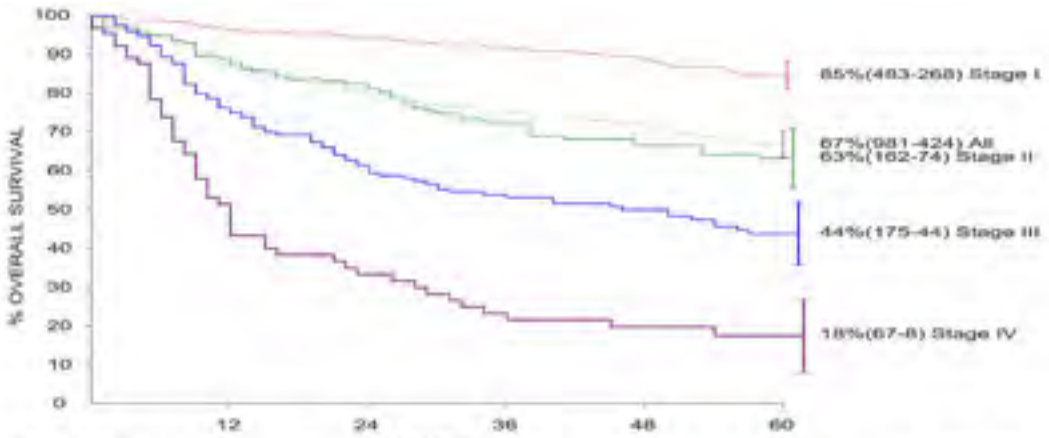
Vulva Cancer 1982–2012 SCC
DSS by FIGO stage



Subjects at risk

							95% CI		Median
All	981	786	684	603	512	424	[77,	82]	
Stage I	483	424	397	364	314	268	[90,	95]	
Stage II	162	136	120	102	83	74	[72,	86]	
Stage III	175	125	92	74	62	44	[49,	66]	
Stage IV	67	32	20	14	10	8	[26,	53]	15 Mths

Vulva Cancer 1982–2012 SCC
OS by FIGO stage



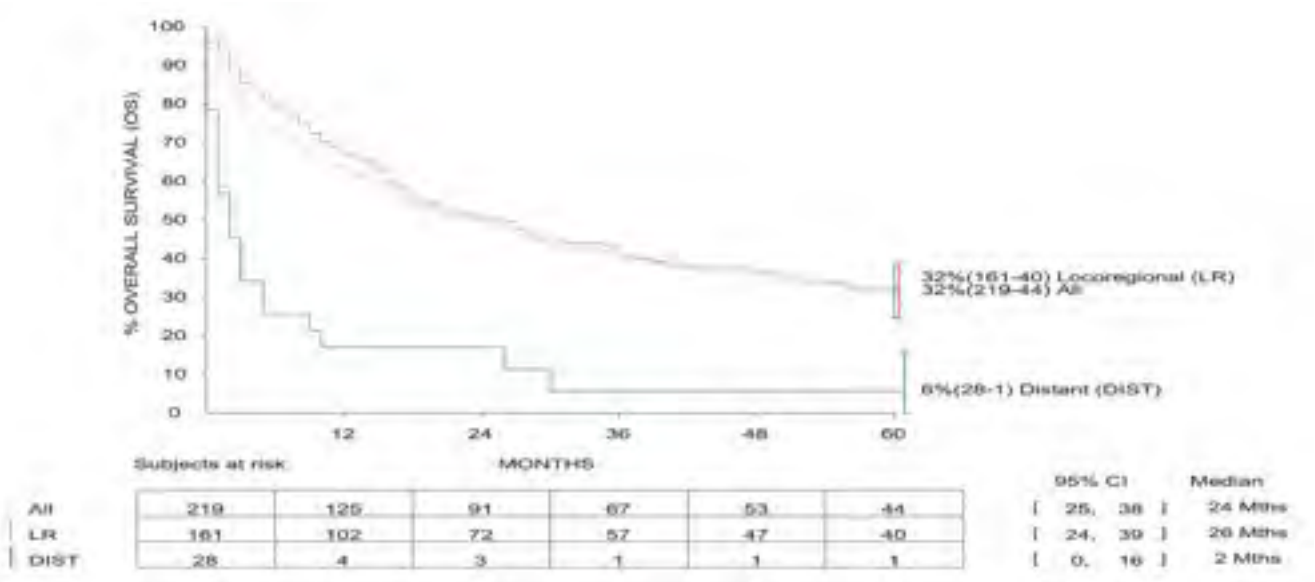
Subjects at risk

							95% CI		Median
All	981	786	684	603	512	424	[64,	70]	
Stage I	483	424	397	364	314	268	[81,	88]	
Stage II	162	136	120	102	83	74	[55,	71]	
Stage III	175	125	92	74	62	44	[36,	52]	50 Mths
Stage IV	67	32	20	14	10	8	[8,	27]	12 Mths

VULVAL CANCER

Vulva Cancer 1982–2012

OS by Relapse type



Subjects at risk

All	219	125	91	67	53	44
LR	161	102	72	57	47	40
DIST	28	4	3	1	1	1

	95% CI		Median
All	[25,	38]	24 Mths
LR	[24,	39]	26 Mths
DIST	[0,	16]	2 Mths

Vaginal cancer

Patient Characteristics

Presentation period 1982 to 2012 (N=233)

Factor		All N=233 (%)		1982-1992 N=65 (%)		1993-2002 N=74 (%)		2003-2012 N=94 (%)		*p-value
Age (years)	under 30	5	(2%)	2	(3%)	1	(1%)	2	(2%)	0.17
	30-39	13	(6%)	6	(9%)	4	(5%)	3	(3%)	
	40-49	23	(10%)	9	(14%)	7	(9%)	7	(7%)	
	50-59	43	(18%)	5	(8%)	16	(22%)	22	(23%)	
	60-69	57	(24%)	14	(22%)	16	(22%)	27	(29%)	
	70-79	56	(24%)	21	(32%)	14	(19%)	21	(22%)	
	80+	36	(15%)	8	(12%)	16	(22%)	12	(13%)	
FIGO stage	1	70	(30%)	22	(34%)	24	(32%)	24	(26%)	0.41
	2	66	(28%)	17	(26%)	22	(30%)	28	(30%)	
	3	34	(15%)	15	(23%)	12	(16%)	7	(7%)	
	4	37	(16%)	9	(14%)	13	(18%)	15	(16%)	
	unk	26	(11%)	2	(3%)	3	(4%)	20	(21%)	
Node status	N -ve	3	(1%)	1	(2%)	0	(0%)	2	(2%)	0.35
	N +ve	4	(2%)	0	(0%)	1	(1%)	3	(3%)	
	unk	226	(97%)	64	(98%)	73	(99%)	89	(95%)	
Differentiation	well	17	(7%)	5	(8%)	6	(8%)	6	(6%)	0.56
	moderate	60	(26%)	12	(18%)	20	(27%)	28	(30%)	
	poor	69	(30%)	10	(15%)	30	(41%)	29	(31%)	
	undifferentiated	0	(0%)	0	(0%)	0	(0%)	0	(0%)	
	other/unk	87	(37%)	38	(58%)	18	(24%)	31	(33%)	
Treatment	Sx alone	36	(15%)	3	(5%)	11	(15%)	22	(23%)	<0.001
	RT alone	63	(27%)	27	(42%)	22	(30%)	14	(15%)	
	Chemo alone	0	(0%)	0	(0%)	0	(0%)	0	(0%)	
	Sx+RT	42	(18%)	16	(25%)	12	(16%)	14	(15%)	
	Sx+Chemo	3	(1%)	2	(3%)	0	(0%)	1	(1%)	
	Sx+RT+Chemo	24	(10%)	3	(5%)	11	(15%)	10	(11%)	
	other	65	(28%)	14	(22%)	18	(24%)	33	(35%)	
Morphology	SCC	171	(73%)	50	(77%)	58	(78%)	64	(68%)	0.004
	Adenocarcinoma NOS	11	(5%)	5	(8%)	6	(8%)	0	(0%)	
	Malignant melanoma	11	(5%)	0	(0%)	3	(4%)	8	(9%)	
	other	40	(17%)	10	(15%)	7	(9%)	22	(23%)	

*p-values reflect the change between decades for each factor

VAGINAL CANCER

Kaplan and Meier disease specific survival (DSS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=233)

		5 year	10 year	15 year	20 year	25 year
	ALL	56%(233-77)	51%(233-38)	42%(233-18)	39%(233-7)	32%(233-2)
Age (years)	under 40	59%(18-9)	59%(18-7)	59%(18-4)	44%(18-2)	44%(18-0)
	40-49	49%(23-10)	38%(23-2)	38%(23-2)	38%(23-1)	38%(23-1)
	50-59	73%(43-19)	73%(43-7)	27%(43-0)	NA	NA
	60-69	60%(57-19)	56%(57-12)	56%(57-8)	56%(57-3)	56%(57-1)
	70-79	43%(57-13)	38%(57-7)	28%(57-3)	28%(57-1)	0%(57-0)
	80+	50%(36-7)	38%(36-3)	13%(36-1)	13%(36-0)	NA
FIGO stage	1	73%(70-36)	63%(70-14)	59%(70-9)	51%(70-3)	51%(70-1)
	2	61%(66-24)	55%(66-13)	42%(66-6)	42%(66-6)	0%(66-0)
	3	29%(34-7)	29%(34-4)	0%(34-0)	NA	NA
	4	36%(37-5)	36%(37-3)	24%(37-1)	24%(37-1)	24%(37-0)
Node status	N -ve	(N=3)	NA	NA	NA	NA
	N +ve	(N=4)	NA	NA	NA	NA
Differentiation	well	81%(17-10)	81%(17-5)	61%(17-3)	40%(17-0)	NA
	moderate	65%(60-22)	61%(60-13)	43%(60-6)	43%(60-3)	29%(60-1)
	poor	49%(69-21)	42%(69-9)	37%(69-4)	37%(69-2)	37%(69-1)
Presentation	1982-1992	46%(65-26)	43%(65-22)	39%(65-17)	36%(65-7)	30%(65-2)
	1993-2002	51%(74-30)	45%(74-10)	15%(74-1)	15%(74-0)	NA
	2003-2012	69%(94-21)	64%(94-6)	64%(94-0)	NA	NA
Treatment	Sx alone	93%(36-14)	93%(36-3)	93%(36-1)	93%(36-1)	93%(36-1)
	RT alone	42%(63-19)	42%(63-13)	29%(63-6)	29%(63-1)	29%(63-0)
	Sx+RT	50%(42-14)	50%(42-11)	45%(42-7)	37%(42-3)	25%(42-0)
	Sx+Chemo	(N=3)	NA	NA	NA	NA
	Sx+RT+Chemo	47%(24-8)	38%(24-2)	0%(24-0)	NA	NA
Morphology	SCC	56%(171-59)	51%(171-26)	41%(171-15)	38%(171-4)	38%(171-1)
	Adenocarcinoma NOS	18%(11-2)	18%(11-1)	18%(11-1)	18%(11-1)	0%(11-0)
	Malignant melanoma	56%(11-1)	56%(11-1)	56%(11-0)	NA	NA
	other	71%(40-15)	65%(40-10)	52%(40-2)	52%(40-2)	52%(40-1)

VAGINAL CANCER

Kaplan and Meier overall survival (OS) estimates and 95% confidence intervals

Presentation period 1982 to 2012 (N=233)

		5 year	10 year	15 year	20 year
	ALL	48%(233-77)	40%(233-38)	30%(233-18)	20%(233-7)
Age (years)	under 40	56%(18-9)	56%(18-7)	56%(18-4)	42%(18-2)
	40-49	49%(23-10)	38%23-2)	38%(23-2)	38%(23-1)
	50-59	70%(43-19)	70%(43-7)	26%(43-0)	na
	60-69	52%(57-19)	44%(57-12)	44%(57-8)	31%(57-3)
	70-79	36%(57-13)	26%(57-7)	13%(57-3)	9%(57-1)
	80+	30%(36-7)	15%(36-3)	5%(36-1)	0%(36-0)
FIGO stage	1	69%(70-36)	49%(70-14)	46%(70-9)	35%(70-3)
	2	52%(66-24)	45%(66-13)	30%(66-6)	16%(66-2)
	3	23%(34-7)	23%(34-4)	0%(34-0)	na
	4	22%(37-5)	22%(37-3)	15%(37-1)	0%(37-0)
Node status	N -ve	na	na	na	na
	N +ve	na	na	na	na
Differentiation	well	81%(17-10)	71%(17-5)	53%(17-3)	0%(17-0)
	moderate	56%(60-22)	53%(60-13)	37%(60-6)	28%(60-3)
	poor	46%(69-21)	32%(69-9)	24%(69-4)	24%(69-2)
Presentation	1982-1992	40%(65-26)	34%(65-22)	28%(65-17)	18%(65-7)
	1993-2002	41%(74-30)	30%(74-10)	10%(74-1)	10%(74-0)
	2003-2012	65%(94-21)	60%(94-6)	60%(94-0)	na
Treatment	Sx alone	74%(36-14)	63%(36-3)	63%(36-1)	63%(36-1)
	RT alone	35%(63-19)	31%(63-13)	18%(63-6)	6%(63-1)
	Chemo alone	na	na	na	na
	Sx+RT	47%(42-14)	44%(42-11)	39%(42-7)	32%(42-3)
	Sx+Chemo	na	na	na	na
	Sx+RT+Chemo	43%(24-8)	29%(24-2)	0%(24-0)	na
Morphology	SCC	48%(171-59)	38%(171-26)	28%(171-15)	15%(171-4)
	Adenocarcinoma NOS	18%(11-2)	18%(11-1)	18%(11-1)	18%(11-1)
	Malignant melanoma	31%(11-1)	31%(11-1)	31%(11-0)	na
	other	68%(40-15)	63%(40-10)	50%(40-2)	50%(40-2)

VAGINAL CANCER

Univariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=233)

		DSS			OS		
FACTORS		HAZARD	[95% CI]	P-VALUE	HAZARD	[95% CI]	P-VALUE
Age (years)							
<40 year vs	40-49	1.60	[0.66,3.86]	0.29	1.51	[0.65,3.54]	0.34
	50-59	0.77	[0.31,1.88]	0.56	0.83	[0.35,1.96]	0.67
	60-69	1.04	[0.46,2.34]	0.93	1.37	[0.65,2.89]	0.41
	70-79	1.87	[0.85,4.08]	0.12	2.52	[1.22,5.24]	0.01
	80+	1.88	[0.82,4.35]	0.14	3.10	[1.45,6.6]	0.003
FIGO stage							
1 vs	2	1.50	[0.85,2.62]	0.16	1.42	[0.88,2.29]	0.16
	3	3.53	[1.96,6.34]	<0.001	3.12	[1.86,5.24]	<0.001
	4	3.55	[1.96,6.42]	<0.001	3.09	[1.83,5.21]	<0.001
Node status							
N -ve vs	N +ve	1.97	[0.18,21.56]	0.58	1.88	[0.17,20.51]	0.6
Differentiation	moderate	1.57	[0.6,4.12]	0.36	1.39	[0.61,3.18]	0.43
Well vs	poor	2.37	[0.93,6.02]	0.07	2.13	[0.96,4.75]	0.06
Presentation							
1982-1992 vs	1993-2002	0.95	[0.6,1.49]	0.82	1.04	[0.7,1.55]	0.83
	2003-2012	0.54	[0.32,0.9]	0.02	0.50	[0.31,0.81]	0.005
Treatment							
Sx alone vs	RT alone	12.67	[3.17,50.56]	<0.001	3.68	[1.81,7.45]	<0.001
	Sx+RT	8.99	[2.19,36.85]	0.002	2.18	[1.02,4.65]	0.04
	Sx+Chemo	11.63	[1.68,80.36]	0.01	2.78	[0.6,12.82]	0.19
	Sx+RT+Chemo	9.94	[2.33,42.48]	0.002	2.66	[1.17,6.06]	0.02
Morphology							
SCC vs	Adenocarcinoma NOS	1.87	[0.96,3.61]	0.06	1.42	[0.74,2.72]	0.29
	Malignant melanoma	0.93	[0.34,2.53]	0.88	1.32	[0.61,2.86]	0.47

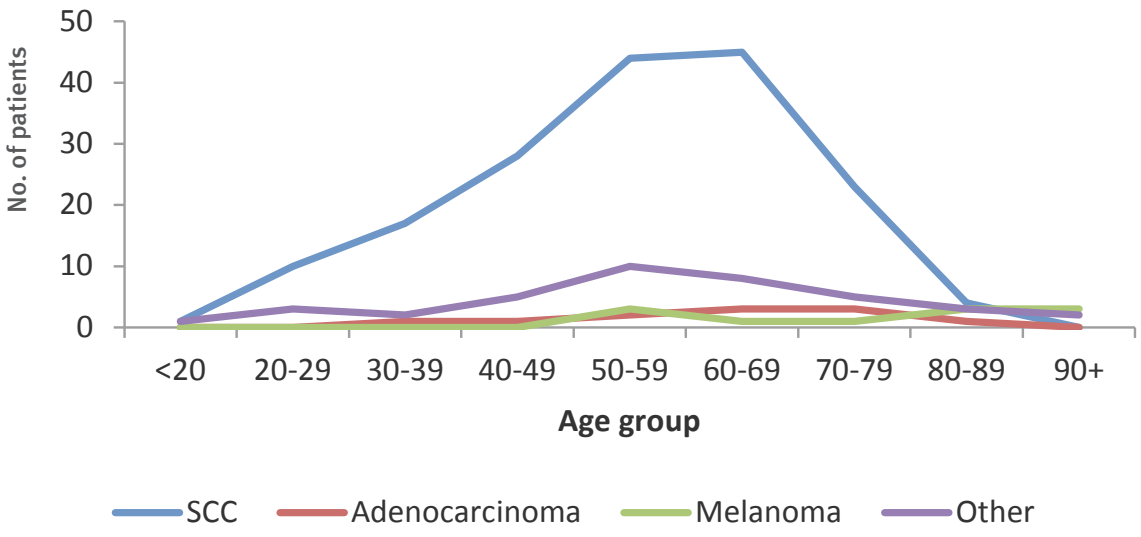
VAGINAL CANCER

Multivariate Cox Model
Disease Specific Survival (DSS) and Overall Survival (OS)

Presentation period 1982 to 2012 (N=233)

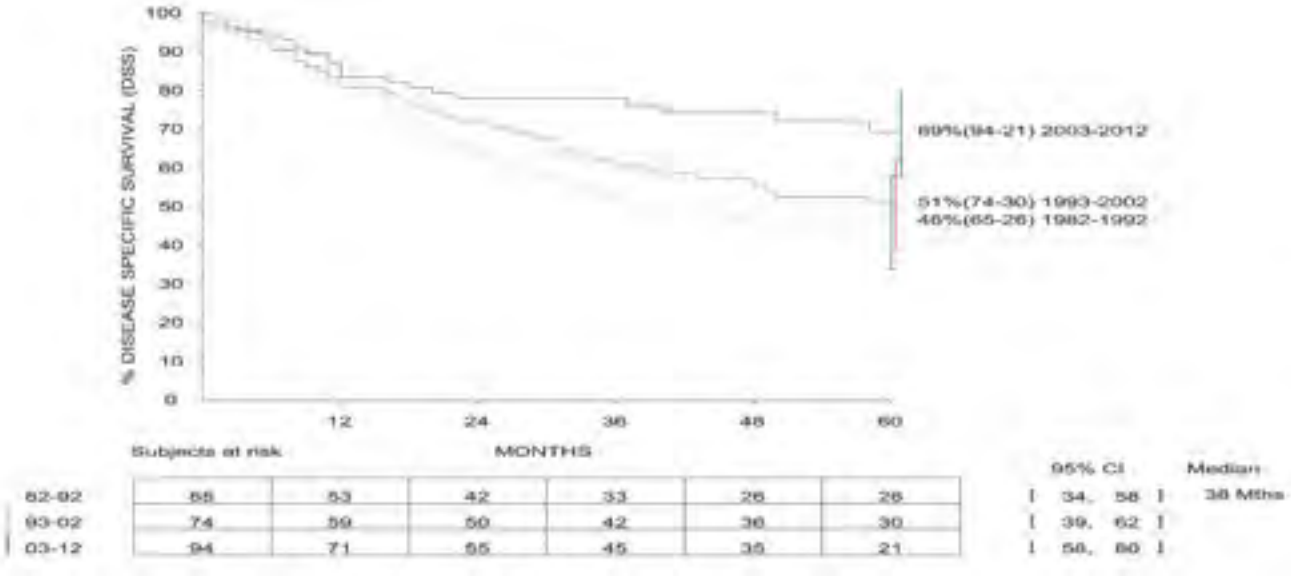
		DSS			OS		
FACTORS		HAZARD	[95% CI]	p-VALUE	HAZARD	[95% CI]	p-VALUE
Age (years)							
<40 vs	40-49	na	na		1.43	[0.59,3.45]	0.43
	50-59	na	na		0.68	[0.28,1.68]	0.41
	60-69	na	na		1.30	[0.59,2.84]	0.52
	70-79	na	na		1.97	[0.86,4.47]	0.11
	80+	na	na		2.93	[1.25,6.85]	**0.01**
FIGO stage							
1 vs	2	1.10	[0.61,7.96]	**0.76**	1.53	[0.91,2.55]	0.11
	3	2.67	[1.43,4.98]	**<0.001**	3.06	[1.73,5.42]	**<0.001**
	4	3.07	[1.66,5.69]	**<0.001**	3.73	[2.13,6.52]	**<0.001**
Presentation							
1982-1992 vs	1993-2002	na	na		1.09	[0.71,1.67]	0.69
	2003-2012	na	na		0.56	[0.33,0.95]	**0.03**
Treatment							
Sx alone vs	RT alone	11.03	[2.6,48.85]	**<0.001**	1.46	[0.61,3.51]	0.39
	Sx+RT	8.83	[2.03,38.37]	**0.004**	1.96	[0.85,4.5]	0.11
	Sx+Chemo	10.10	[1.31,77.74]	**0.03**	2.41	[0.45,12.73]	0.3
	Sx+RT+Chemo	7.33	[1.65,32.47]	**0.009**	2.00	[0.82,4.85]	0.13
Morphology							
SCC vs	Adenocarcinoma NOS	2.50	[1.23,5.11]	**0.01**	1.20	[0.57,2.54]	0.62
	Malignant melanoma	2.02	[0.59,6.93]	0.26	2.41	[0.89,6.52]	0.08

Vaginal Cancer 1982-2012
Age distribution by morphology type

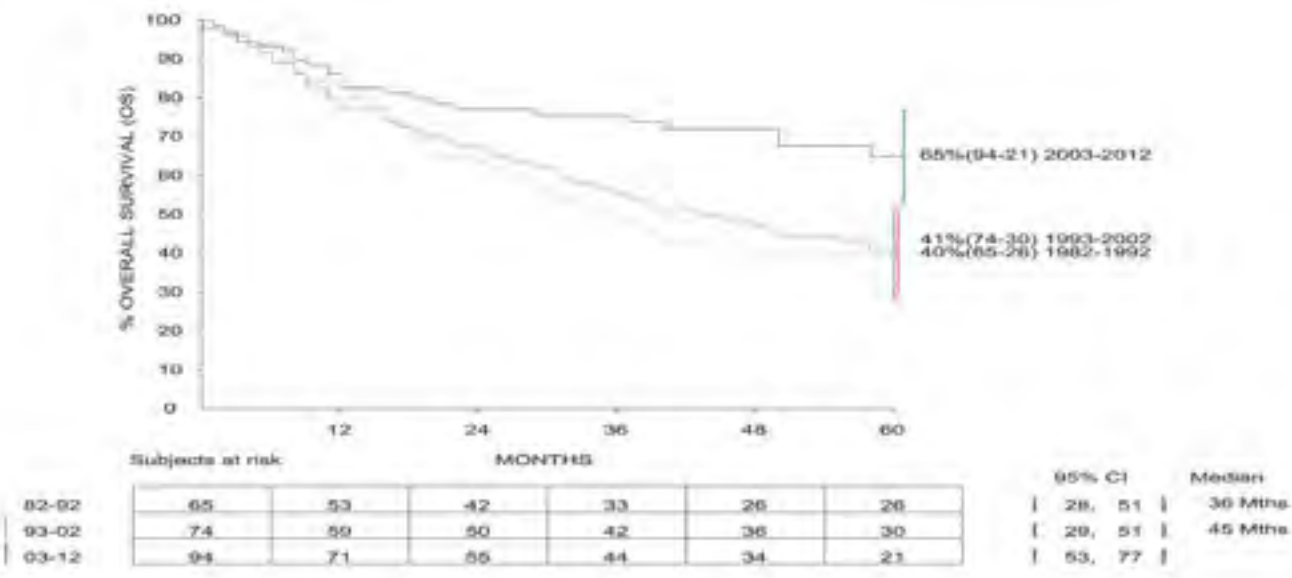


VAGINAL CANCER

Vagina Cancer 1982–2012
DSS by Presentation decade

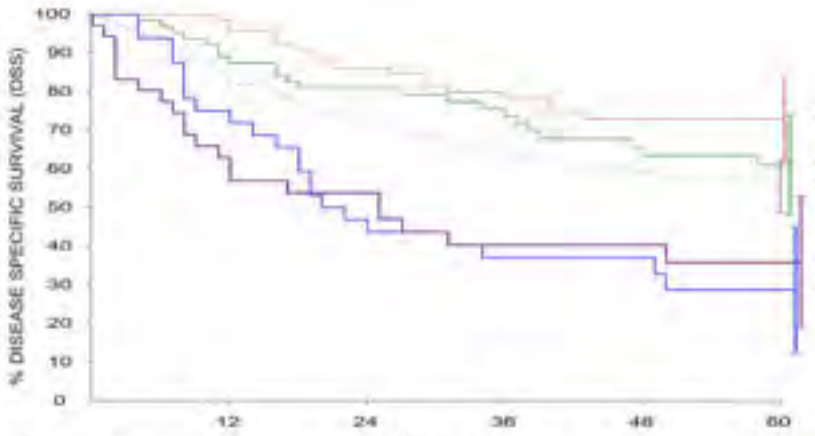


Vagina Cancer 1982–2012
OS by Presentation decade



VAGINAL CANCER

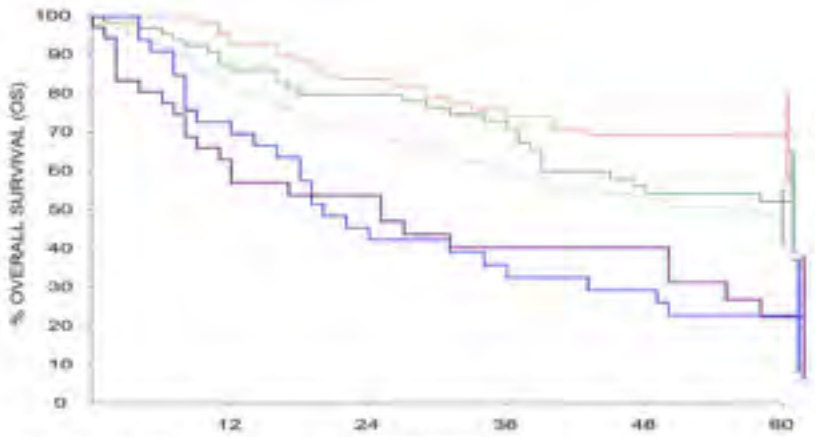
Vagina Cancer 1982–2012
DSS by FIGO stage



Subjects at risk

							95% CI		Median
All	233	183	147	120	97	77	[49,	62]	
Stage I	70	65	55	46	41	36	[62,	83]	
Stage II	67	57	48	40	30	24	[46,	74]	
Stage III	34	24	15	11	9	7	[12,	45]	22 Mths
Stage IV	37	21	16	12	9	5	[19,	53]	25 Mths

Vagina Cancer 1982–2012
OS by FIGO stage



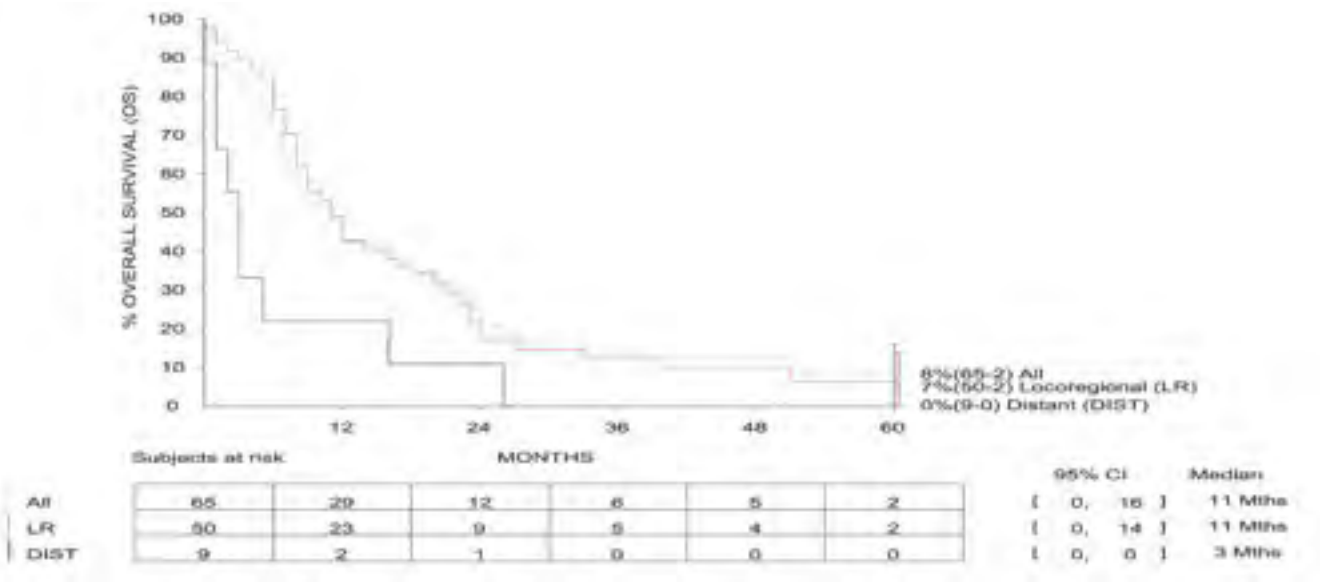
Subjects at risk

							95% CI		Median
All	233	183	147	120	97	77	[41,	55]	58 Mths
Stage I	70	65	55	46	41	36	[58,	80]	
Stage II	67	57	48	40	30	24	[39,	65]	
Stage III	34	24	15	11	9	7	[8,	37]	20 Mths
Stage IV	37	21	16	12	9	5	[6,	38]	25 Mths

VAGINAL CANCER

Vagina Cancer 1982–2012

OS by Relapse type



ABBREVIATIONS

BCC	Basal cell carcinoma
CI	Confidence interval
DIST	Distant
DSS	Disease specific survival
FIGO	International Federation of Gynaecology and Obstetrics
LR	Loco-regional
na	Not applicable
N-ve	Lymph nodes negative for metastatic cancer
N+ve	Lymph nodes contain metastatic cancer
OS	Overall survival
QCGC	Queensland Centre for Gynaecological Cancer
RFS	Relapse Free Survival
RT	Radiotherapy
SCC	Squamous cell carcinoma
Sx	Surgery
UPSC	Uterine papillary serous carcinoma

DEFINITIONS

Date of first treatment

The date on which the first meaningful treatment attack was made on the cancer. It does not include biopsies. Where treatment may cover multiple episodes over a period of time, as in radiotherapy or chemotherapy, it is the date of the first fraction of radiotherapy or the date on which the first cycle of chemotherapy commenced.

Survival curves

A survival curve is a statistical picture of the survival experience of some group of patients in the form of a graph showing the percentage surviving versus time.

The horizontal (x-axis) gives the time from the start of observations or treatment.

The vertical (y-axis) gives the proportion of people surviving at any point in time.

Most real life survival curves are not portrayed as smooth curves. Instead, they are usually shown as staircase curves with a "step" down each time there is a death.

Kaplan-Meier estimator

A non-parametric statistic used to estimate or measure the fraction of patients living for a certain amount of time after treatment. An important advantage of the Kaplan–Meier curve is that the method can take into account some types of censored data that occurs if a patient withdraws from a study, is lost to follow-up, or is alive without event occurrence at last follow-up.

Various endpoints

Many survival graphs use different endpoints for the estimation of outcome. Each endpoint has its own advantage depending on what the question is that is being asked. It is important to understand the differences between these various endpoints and what they are measuring.

Disease-specific survival (DSS)

The percentage of people in a treatment group who have not died from a specific disease in a defined period of time. The time period begins at the start of treatment and ends at the time of death. Patients who died from causes other than the disease being studied are censored (not counted) in this measurement. This only counts the deaths from the specific disease (cancer) being investigated.

Overall survival (OS)

The length of time from the Date of First Treatment to the date of death, regardless of the cause of death. Measuring the overall survival is one way to see how well a treatment works overall on a given population. It will take into account deaths from the cancer, deaths from any side-effects of the cancer treatment and deaths from any other causes, including age itself. This will have the lowest survival percentage as it looks at deaths from all causes.

Relapse-free survival (RFS)

RFS is the length of time between primary treatment for a cancer and the development of relapse or recurrence of that cancer. In a clinical trial, measuring the relapse-free survival is one way to see how well a new treatment works. Also called, disease-free survival (DFS).

Queensland
Government