Routes to Diagnosis
# *Malignant Melanoma*

30th October 2012

Routes to Diagnosis

- What is Routes to Diagnosis?

- Description of Routes

- Cancer sites Routes have been calculated for

- Overall results

- Specific results (age, sex, deprivation, survival) for *Malignant Melanoma (C43)*

- Outputs

- Application of Routes to Diagnosis

Background to Routes to Diagnosis

- Nationally, what didn't we know?
  - How people come to get diagnosed with cancer
  - Whether late diagnosis arises in cases where patients have not gone through the screening or suspected cancer route
  - What impact awareness and early diagnosis initiatives might have on the routes to diagnosis
- Nationally, what did we want to know?
  - Can we use routinely available datasets to define the route to diagnosis for patients diagnosed with cancer?
  - If so, do routes differ by cancer site, age, sex, ethnicity, deprivation or Cancer Network?
  - Are there differences in outcomes (one year survival) for different routes?

What is Routes to Diagnosis?
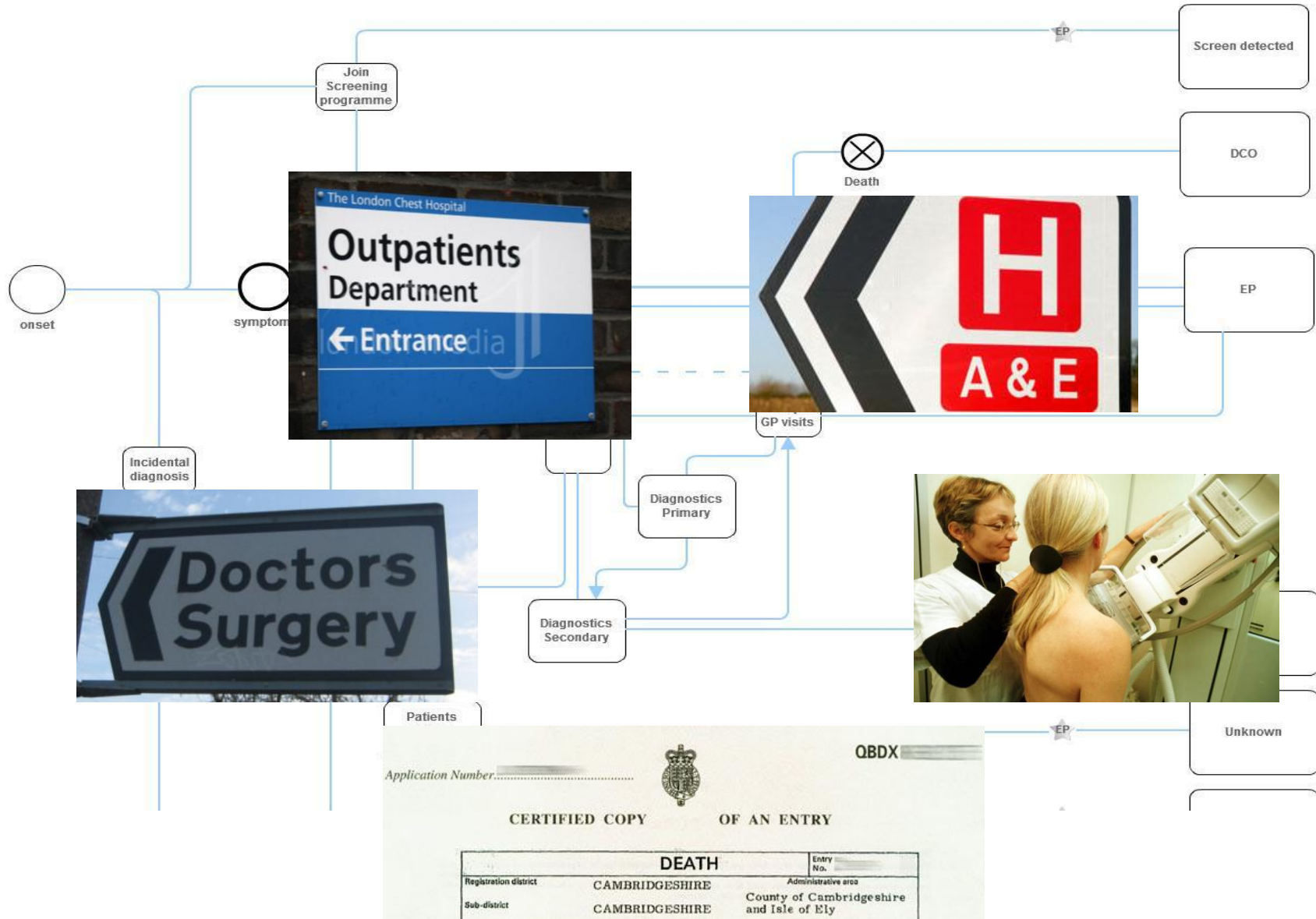
What is Routes to Diagnosis?

- Take all tumours recorded by cancer registries

- Routine data: In- and Out- patient HES data, Cancer Waits & Screening

- Start at (registry) diagnosis date and look for a 'end-point' within 28 days prior to diagnosis, but up to 6 months prior to diagnosis

- Work backwards through routine records looking for the 'start-point'

- Use the properties of the start-point to determine the type of Route

- Where multiple data exists, in general, screening > emergency <> TWW > others

- For more detail see:

  http://www.ncin.org.uk/publications/routes_to_diagnosis.aspx

  http://www.nature.com/bjc/journal/v107/n8/pdf/bjc2012408a.pdf

Eight Routes assigned

- **(5%) Screen detected**: breast, bowel or cervical

- **(24%) Emergency presentation**: emergency route via A&E, emergency GP or consultant outpatient referral, emergency transfer etc

- **(26%) Two week wait**: urgent GP referrals with a suspicion of cancer

- **(21%) GP referral**: includes routine and non-TWW GP referrals

- **(10%) Other outpatient**: elective route starting with a consultant outpatient appointment

- **(6%) Inpatient elective**: elective route starting with an inpatient admission (no earlier information found)

- **(1%) DCO**: diagnosis by death certificate only

- **(8%) Unknown**: no data available from HES, CWT or screening

Cancer sites included

- All cancers
- Bladder
- Breast
- Cervix
- CNS
- Colorectal
- Head and neck:
    - Hypopharynx*
    - Larynx
    - oral cavity
    - oropharynx
    - other sites of the lip, oral cavity and pharynx*
    - salivary glands*
    - Melanoma
- Hodgkin lymphoma
- Kidney and unspecified urinary organs
- Leukaemia:
    - acute lymphoblastic*
    - acute myeloid
    - chronic lymphocytic
    - chronic myeloid*
    - rarer types
- Liver
- Lung
- Melanoma
- Mesothelioma
- Multiple myeloma
- Non-Hodgkin lymphoma
- Oesophagus
- Ovary
- Pancreas
- Prostate
- Sarcoma:
    - Bone*
    - connective and soft tissue
    - retroperitoneum and peritoneum*
- Stomach
- Testis
- Uterus
- Vulva
- Other malignant neoplasms

* No breakdowns by age, sex, DQ, etc. are available for these sites

Sites with a low proportion of emergencies

Percentage of diagnoses (2006-2008) by Route	Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of patients
Melanoma		41%	27%	7%	3%	3%	0%	18%	100%	26,660
Breast	28%	43%	11%	3%	1%	5%	0%	9%	100%	110,173
Head and neck - Oral cavity		30%	22%	27%	5%	6%	0%	10%	100%	5,992
Head and neck – thyroid		12%	47%	18%	5%	8%	0%	11%	100%	5,304
Head and neck - Salivary glands		18%	42%	17%	4%	8%	0%	10%	100%	1,571
Vulva		32%	34%	12%	5%	8%	0%	9%	100%	2,733
Uterus		37%	31%	10%	5%	8%	0%	8%	100%	18,462
Head and neck - Oropharynx		39%	27%	12%	5%	9%	0%	8%	100%	3,859
Prostate		26%	32%	11%	8%	10%	0%	12%	100%	92,922

Low to medium emergencies

Percentage of diagnoses (2006-2008) by Route	Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of patients
Testis		48%	15%	8%	8%	10%	0%	11%	100%	5,070
Head and neck - Other sites		27%	31%	18%	5%	11%	0%	9%	100%	2,740
Head and neck – larynx		32%	34%	11%	6%	11%	0%	5%	100%	5,200
Cervix	15%	17%	28%	10%	5%	13%	0%	12%	100%	7,000
Head and neck - Hypopharynx		37%	28%	12%	5%	14%	0%	4%	100%	1,098
Sarcoma: connective and soft tissue		12%	37%	16%	7%	16%	0%	12%	100%	3,447
Hodgkin lymphoma		26%	28%	14%	6%	17%	0%	8%	100%	3,644
Bladder		30%	24%	13%	9%	19%	1%	5%	100%	25,639
Oesophagus		34%	16%	8%	14%	22%	1%	5%	100%	19,449
All cancers	5%	26%	21%	10%	6%	24%	1%	8%	100%	739,667

Medium to high emergencies

Percentage of diagnoses (2006-2008) by Route	Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of patients
Sarcoma: bone		10%	26%	19%	11%	25%	0%	9%	100%	1,378
Kidney and unspecified urinary organs		19%	26%	17%	6%	25%	1%	6%	100%	20,594
Leukaemia: chronic lymphocytic		11%	31%	11%	5%	25%	1%	17%	100%	6,835
Colorectal	2%	27%	20%	9%	9%	26%	1%	6%	100%	91,416
Non-Hodgkin lymphoma		18%	28%	12%	6%	27%	0%	9%	100%	25,413
Ovary		23%	20%	12%	5%	32%	1%	7%	100%	16,026
Stomach		23%	17%	8%	13%	33%	1%	5%	100%	18,613
Leukaemia: Chronic myeloid		8%	26%	12%	9%	35%	1%	9%	100%	1,518
Mesothelioma		18%	21%	15%	6%	36%	0%	4%	100%	6,179
Multiple myeloma		11%	27%	13%	6%	37%	1%	6%	100%	11,221

High proportion of emergencies

Percentage of diagnoses (2006-2008) by Route	Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of patients
Leukaemia: rarer types		7%	29%	10%	7%	38%	1%	8%	100%	2,567
Lung		24%	17%	10%	4%	39%	1%	5%	100%	96,735
Sarcoma: retroperitoneum and peritoneu		15%	20%	14%	5%	39%	0%	7%	100%	1,513
Other malignant neoplasms	0%	10%	19%	10%	5%	46%	2%	8%	100%	50,497
Liver		8%	18%	12%	5%	48%	2%	7%	100%	8,576
Pancreas		11%	16%	9%	6%	50%	1%	6%	100%	19,896
Leukaemia: acute myeloid		2%	18%	12%	7%	54%	0%	6%	100%	6,365
CNS		1%	13%	11%	7%	62%	1%	6%	100%	11,697
Leukaemia: acute lymphoblastic		2%	10%	8%	10%	63%	0%	7%	100%	1,665

NICE Referral Guidelines

(Macmillan Rapid Referral Toolkit)

Melanoma

- Change is a key element in diagnosing malignant melanoma. For low-suspicion lesions, undertake careful monitoring for change using the 7-point checklist (see below) for 8 weeks. Make measurements with photographs and a marker scale and/or ruler.
- Be aware of and use the 7-point weighted checklist for assessment of pigmented skin lesions.

Major features of lesions:	Minor features of lesions:
• Change in size • irregular shape • irregular colour.	• largest diameter 7 mm or more • inflammation • oozing • change in sensation.

- Lesions scoring 3 points or more (based on major features scoring 2 points each and minor features scoring 1 point each) in the 7-point checklist above are suspicious. (If you strongly suspect cancer any one feature is adequate to prompt urgent referral.)

Urgent referral

Melanoma

Refer urgently patients:

- with a lesion suspected to be melanoma. (Excision in primary care should be avoided.)

Squamous cell carcinoma

Refer urgently patients:

- with non-healing keratinizing or crusted tumours larger than 1 cm with significant induration on palpation. They are commonly found on the face, scalp or back of the hand with a documented expansion over 8 weeks
- who have had an organ transplant and develop new or growing cutaneous lesions as squamous cell carcinoma is common with immunosuppression but may be atypical and aggressive
- with histological diagnosis of a squamous cell carcinoma.

Non-rgent referral

Basal cell carcinoma

- Basal cell carcinomas are slow growing, usually without significant expansion over 2 months, and usually occur on the face. If basal cell carcinoma is suspected, refer non-urgently

Melanoma, *by age and sex*

	Melanoma	Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of cases
2006-2008	Persons		41%	27%	7%	3%	3%	0%	18%	100%	26,660
	Confidence interval		41% 42%	27% 28%	7% 8%	3% 4%	3% 3%	0% 0%	17% 18%		
2006-2008	Male		41%	28%	8%	3%	3%	0%	17%	100%	12,502
	Confidence interval		40% 42%	27% 29%	7% 8%	3% 4%	3% 3%	0% 0%	17% 18%		
	Female		42%	27%	7%	4%	3%	0%	18%	100%	14,158
	Confidence interval		41% 43%	27% 28%	6% 7%	3% 4%	2% 3%	0% 0%	17% 19%		
2006-2008	Under 50		42%	25%	5%	4%	2%	0%	22%	100%	7,710
	Confidence interval		41% 44%	24% 26%	5% 6%	3% 4%	1% 2%	0% 0%	21% 23%		
	50-59		44%	24%	6%	3%	2%	0%	20%	100%	4,609
	Confidence interval		43% 46%	23% 25%	6% 7%	3% 4%	1% 2%	0% 0%	19% 22%		
	60-69		43%	27%	7%	3%	2%	0%	17%	100%	5,746
	Confidence interval		42% 45%	26% 28%	7% 8%	3% 4%	2% 3%	0% 0%	16% 18%		
	70-79		40%	31%	9%	3%	4%	0%	13%	100%	4,932
	Confidence interval		39% 42%	30% 32%	8% 10%	3% 4%	3% 4%	0% 0%	12% 14%		
	80-84		36%	34%	9%	3%	5%	0%	12%	100%	1,929
	Confidence interval		34% 39%	32% 36%	8% 11%	2% 4%	5% 7%	0% 1%	11% 14%		
	85+		33%	33%	10%	4%	7%	1%	12%	100%	1,734
	Confidence interval		31% 35%	31% 35%	9% 12%	3% 5%	6% 8%	0% 1%	11% 14%		

Melanoma, *by age and sex*

Melanoma		Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of cases
2006-2008	Persons		41%	27%	7%	3%	3%	0%	18%	100%	26,660
	Confidence interval		41% 42%	27% 28%	7% 8%	3% 4%	3% 3%	0% 0%	17% 18%		
2006-2008	Male		41%	28%	8%	3%	3%	0%	17%	100%	12,502
	Confidence interval		40% 42%	27% 29%	7% 8%	3% 3%	3% 3%	0% 0%	17% 18%		
	Female		42%	27%	7%	4%	3%	0%	18%	100%	14,158
	Confidence interval		41% 43%	27% 28%	6% 7%	3% 4%	2% 3%	0% 0%	17% 19%		
2006-2008	Under 50		42%	25%	5%	4%	2%	0%	22%	100%	7,710
	Confidence interval		41% 44%	24% 26%	5% 6%	3% 4%	1% 2%	0% 0%	21% 23%		
	50-59		44%	24%	6%	3%	2%	0%	20%	100%	4,609
	Confidence interval		43% 46%	23% 25%	6% 7%	3% 4%	1% 2%	0% 0%	19% 22%		
	60-69		43%	27%	7%	3%	2%	0%	17%	100%	5,746
	Confidence interval		42% 45%	26% 28%	7% 8%	3% 4%	2% 3%	0% 0%	16% 18%		
	70-79		40%	31%	9%	3%	4%	0%	13%	100%	4,932
	Confidence interval		39% 42%	30% 32%	8% 10%	3% 4%	3% 4%	0% 0%	12% 14%		
	80-84		36%	34%	9%	3%	5%	0%	12%	100%	1,929
	Confidence interval		34% 39%	32% 36%	8% 11%	2% 4%	5% 7%	0% 1%	11% 14%		
	85+		33%	33%	10%	4%	7%	1%	12%	100%	1,734
	Confidence interval		31% 35%	31% 35%	9% 12%	3% 5%	6% 8%	0% 1%	11% 14%		

Melanoma
by deprivation

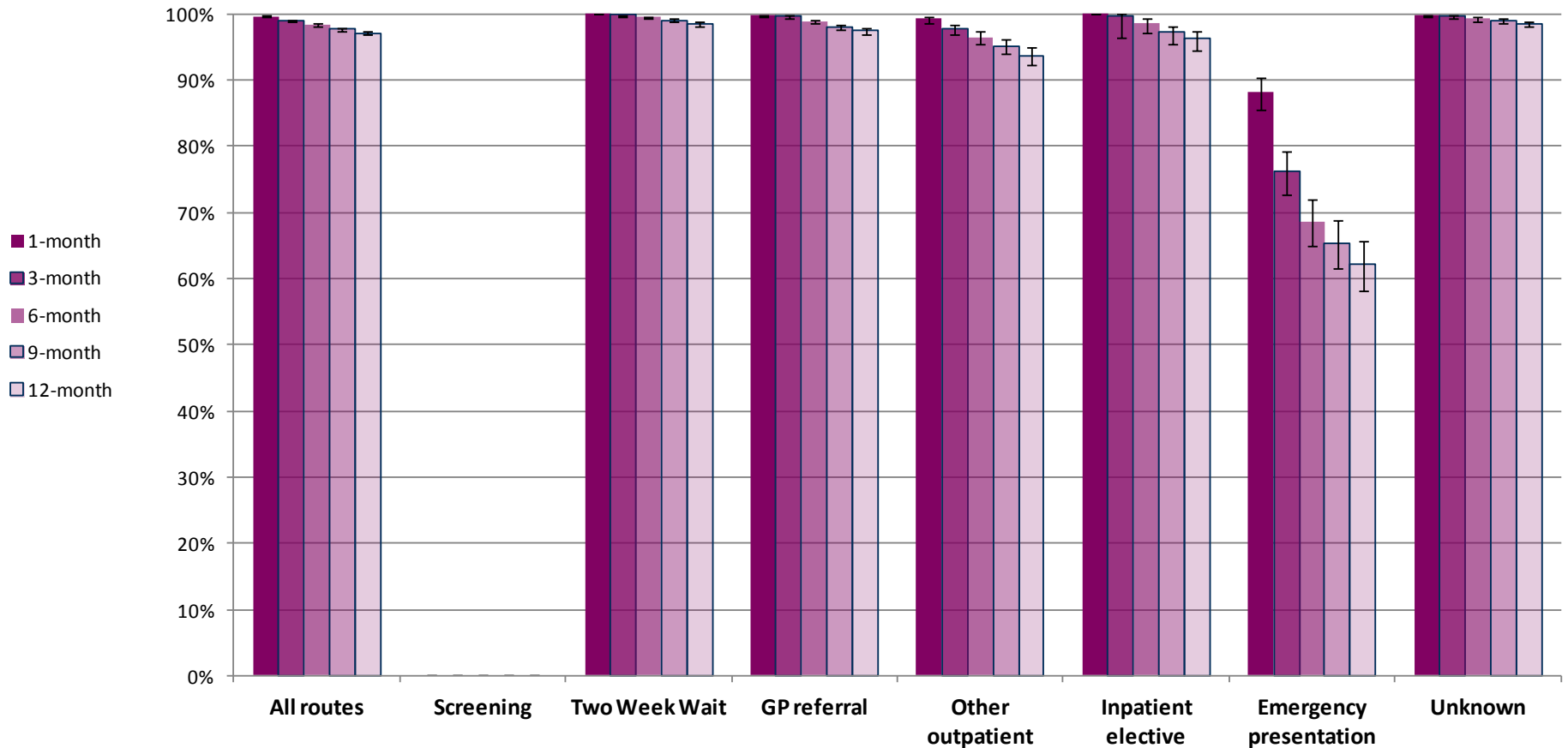| Melanoma		Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of cases
1 (least deprived)			**41%**	**26%**	**6%**	**3%**	**2%**	**0%**	**21%**	100%	7,257
	Confidence interval		40% 42%	25% 27%	6% 7%	3% 4%	2% 3%	0% 0%	20% 22%		
2			**42%**	**27%**	**8%**	**4%**	**3%**	**0%**	**17%**	100%	6,710
	Confidence interval		41% 43%	26% 28%	7% 8%	3% 4%	2% 3%	0% 0%	17% 18%		
3			**42%**	**28%**	**7%**	**4%**	**3%**	**0%**	**17%**	100%	5,948
	Confidence interval		41% 43%	27% 29%	7% 8%	3% 4%	2% 3%	0% 0%	16% 18%		
4			**40%**	**30%**	**8%**	**3%**	**3%**	**0%**	**16%**	100%	4,237
	Confidence interval		39% 42%	28% 31%	7% 9%	3% 4%	3% 4%	0% 0%	15% 17%		
5 (most deprived)			**42%**	**31%**	**7%**	**3%**	**4%**	**0%**	**13%**	100%	2,508
	Confidence interval		40% 44%	29% 32%	6% 8%	3% 4%	4% 5%	0% 0%	12% 15%		

2006-2008

Melanoma
by deprivation

Melanoma		Screen detected	Two Week Wait	GP referral	Other Outpatient	Inpatient Elective	Emergency presentation	Death Certificate Only	Unknown	Total	Number of cases
1 (least deprived)			**41%**	**26%**	**6%**	**3%**	**2%**	**0%**	**21%**	100%	7,257
Confidence interval			40% 42%	25% 27%	6% 7%	3% 4%	2% 3%	0% 0%	20% 22%		
2			**42%**	**27%**	**8%**	**4%**	**3%**	**0%**	**17%**	100%	6,710
Confidence interval			41% 43%	26% 28%	7% 8%	3% 4%	2% 3%	0% 0%	17% 18%		
3			**42%**	**28%**	**7%**	**4%**	**3%**	**0%**	**17%**	100%	5,948
Confidence interval			41% 43%	27% 29%	7% 8%	3% 4%	2% 3%	0% 0%	16% 18%		
4			**40%**	**30%**	**8%**	**3%**	**3%**	**0%**	**16%**	100%	4,237
Confidence interval			39% 42%	28% 31%	7% 9%	3% 4%	3% 4%	0% 0%	15% 17%		
5 (most deprived)			**42%**	**31%**	**7%**	**3%**	**4%**	**0%**	**13%**	100%	2,508
Confidence interval			40% 44%	29% 32%	6% 8%	3% 4%	4% 5%	0% 0%	12% 15%		

2006-2008

Melanoma relative survival estimates: *persons by route and survival interval*

Relative survival estimates by presentation route and survival time, Melanoma, 2006-2008

Legend: 1-month, 3-month, 6-month, 9-month, 12-month

Categories: All routes, Screening, Two Week Wait, GP referral, Other outpatient, Inpatient elective, Emergency presentation, Unknown
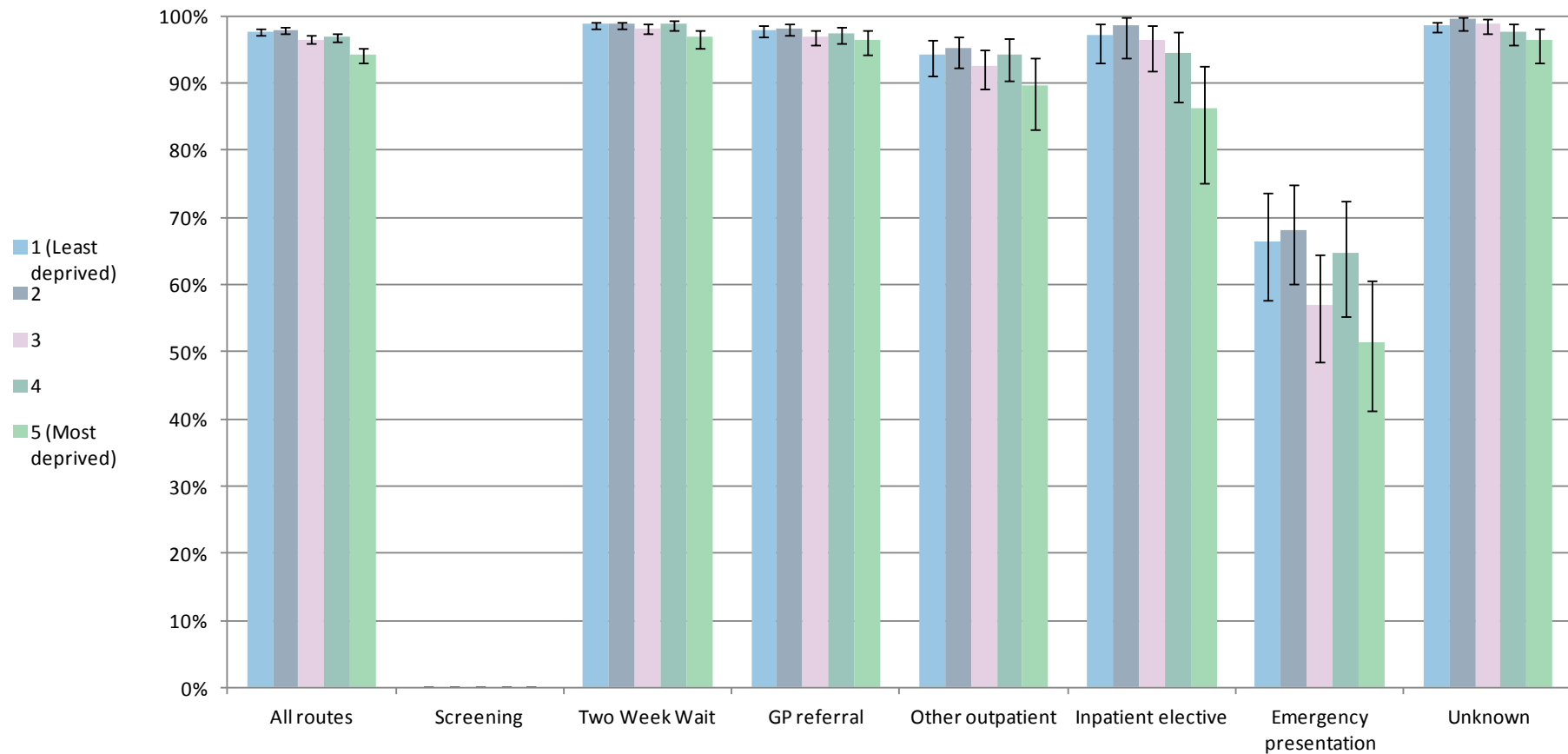
Melanoma
survival by age

12-month relative survival estimates by presentation route, Melanoma, 2006-2008, by age
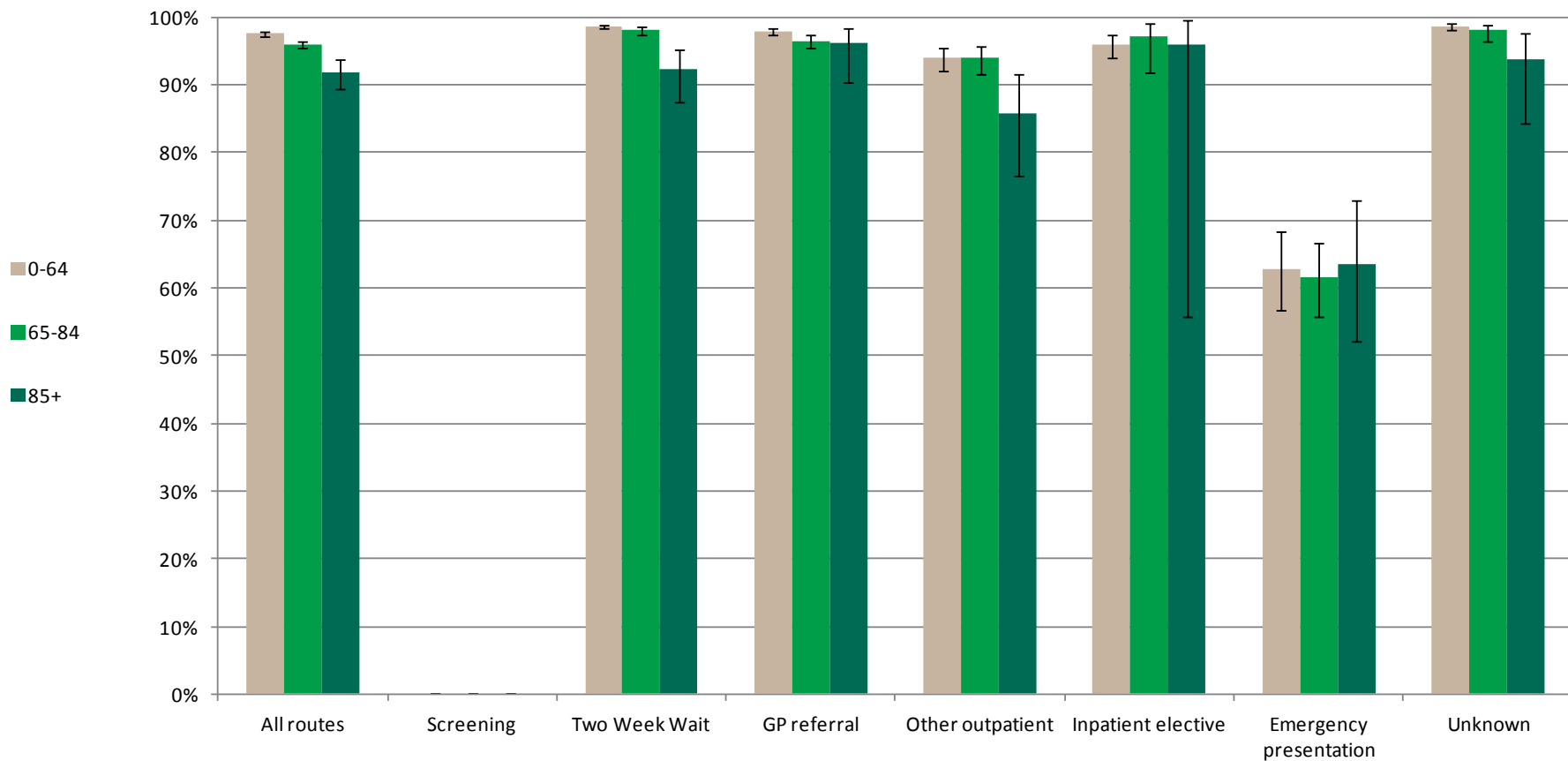
Melanoma
survival by deprivation

12-month relative survival estimates by presentation route, Melanoma, 2006-2008, by deprivation quintile

Legend:
- 1 (Least deprived)
- 2
- 3
- 4
- 5 (Most deprived)

Categories: All routes, Screening, Two Week Wait, GP referral, Other outpatient, Inpatient elective, Emergency presentation, Unknown

Outputs

- Peer reviewed paper in British Journal of Cancer November 2012, advanced online publication 21st September 2012

- Full spreadsheet of results available to the public, containing:

  - proportion by Route by age, sex, deprivation quintile and cancer network by year and 06-08 combined

  - relative survival estimates by age, sex and deprivation quintile for 1, 3, 6, 9 and 12 month survival intervals

  - PCT level results available with data presented as age-standardised funnel plots (common cancers)

- Information supplement of results for selected sites, and a basic explanation of methodology available from the NCIN website

- Updated results for 2010 to be produced in Spring 2013

Application of Routes to Diagnosis

- Understand the different routes for different cancer sites
- Build a picture for each cancer site
- Explore possible reasons for delayed diagnosis
- Direct the focus of early diagnosis initiatives
  - Awareness campaigns
  - Targeted interventions
  - Monitoring and evaluating impact
- Identify areas for further research
  - Link to GP audit and GP data
  - Routes from diagnosis
  - Exploring emergency presentations
- Patient-level Routes are available to registries for further investigation

For more information, please contact:

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