

Early Cancer Diagnosis Audit – Summary Results

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- 2: National Cancer Action Team
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Overview

Background

- Response to 2007 Cancer Reform Strategy
- Part of the NAEDI initiative

Aims

- Identify delays in pathways prior to diagnosis.
- Identify tumour groups or groups of patients vulnerable to delay.

Data collection



- >1000 GPs, 20 Networks, total number of cases = 18789
- Data recorded by patient on a standard template (RCGP)
- Target period 6-12 months in 2008–2009
- Data validated by PCT/Network clinical lead
- Anonymised by patient and practice
- Cleaned & merged into unified national database
- Exclusions: screen-detected cases, non-melanoma skin cancer & *in-situ* tumours.

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Data overview



- 27 fields cover patient demographics, diagnostic, referral pathway & investigations performed
- Categorical fields (inc. stage) completeness approximately 90%
- Interval fields completeness approximately 85%
- Age-sex and cancer type breakdown comparable to registry data
- Median Age 68.5 years
- 52% Male (9759/18789)
- 6.9% Housebound (1298/18789)
- 6.1% Communication difficulties (1142/18789)
- 6.1% Non-white Ethnicity (1159/18789)

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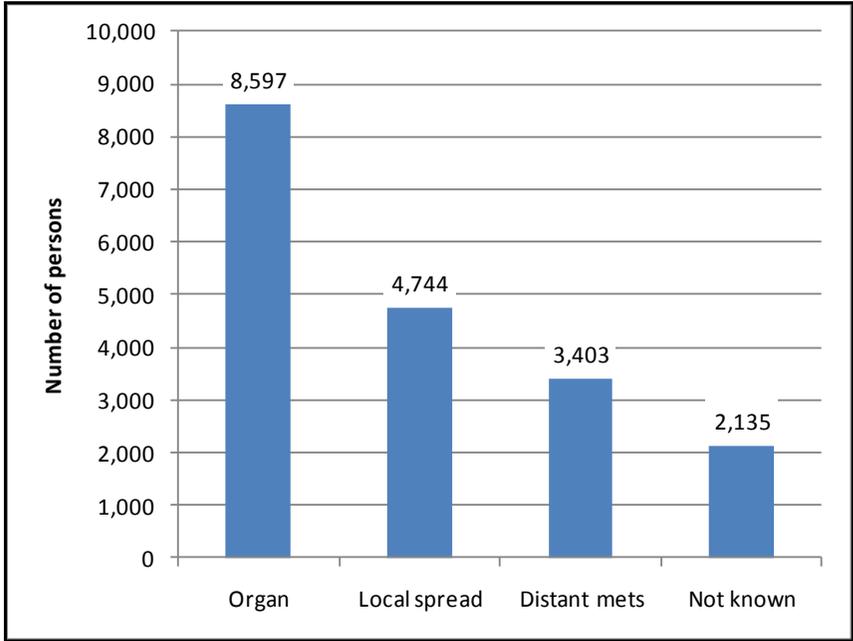
Staging

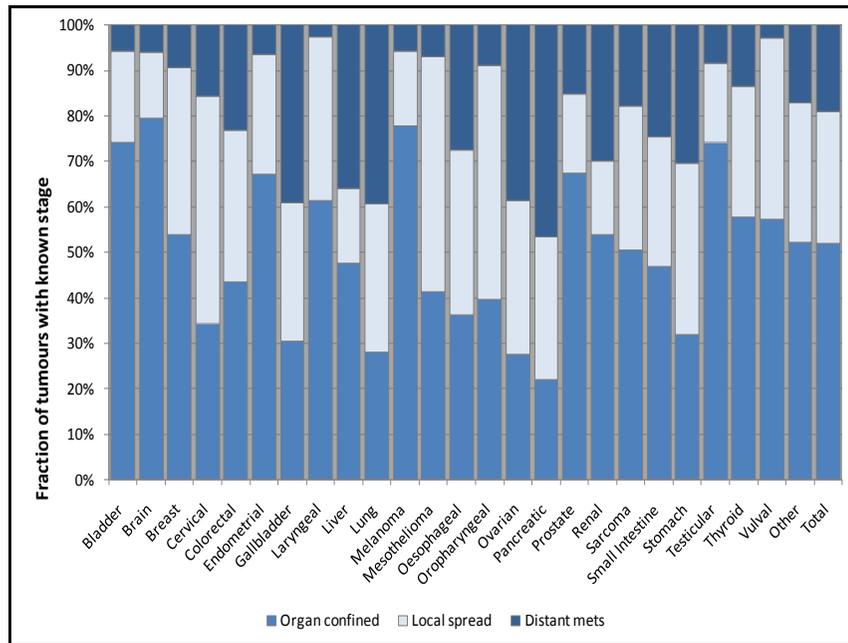


NCIN
national cancer
intelligence network



NCRI
National
Cancer
Research
Institute





Patient stage by demographic factors

Demographic Variable	Value	All		Breast		Colorectal		Lung		Prostate		Other	
		OR	p	OR	p	OR	p	OR	p	OR	p	OR	p
Age	75+ (compared to <75)	1.05		0.90		0.86		0.76 **		1.43 ***		1.11	
Sex	Female (compared to Male)	1.05		0.85		0.89		1.11		-		1.06	
Housebound	Yes (compared to No)	1.79 ***		1.49 *		1.46 *		1.26		2.08 **		1.97 ***	
Communication Difficulty	Yes (compared to No)	1.22 *		1.32		0.99		1.40		1.62		1.09	
Ethnicity	Non-white (compared to White British)	1.03		1.31		0.97		1.33		1.03		1.11	

* p<0.05
 ** p<0.01
 *** p<0.001

"OR" = Odds ratio of increased stage at presentation for the indicated values of the demographic variables

Multivariate ordinal logistic regression. The odds ratio is the change in the odds of being in a higher stage category. Odds ratio > 1.00 indicates later stage.

Patient stage by demographic factors

Demographic Variable	Value	All	Breast	Colorectal	Lung	Prostate	Other
		OR p	OR p	OR p	OR p	OR p	OR p
Age	75+ (compared to <75)	1.05	0.90	0.86	0.76 **	1.43 ***	1.11
Sex	Female (compared to Male)	1.05	0.85	0.89	1.11	-	1.06
Housebound	Yes (compared to No)	1.79 ***	1.49 *	1.46 *	1.26	2.08 **	1.97 ***
Communication Difficulty	Yes (compared to No)	1.22 *	1.32	0.99	1.40	1.62	1.09
Ethnicity	Non-white (compared to White British)	1.03	1.31	0.97	1.33	1.03	1.11

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Multivariate ordinal logistic regression. The odds ratio is the change in the odds of being in a higher stage category. Odds ratio > 1.00 indicates later stage.

27% Housebound patients presented with metastases vs 17% non-housebound

Route of referral



	Organ confined	Local Spread	Distant Metastases	Unknown
Emergency	36%	26%	29%	10%
2 week	49%	29%	17%	6%
Routine	56%	21%	14%	9%
Private	49%	27%	17%	7%
Not referred by practice	48%	23%	21%	8%



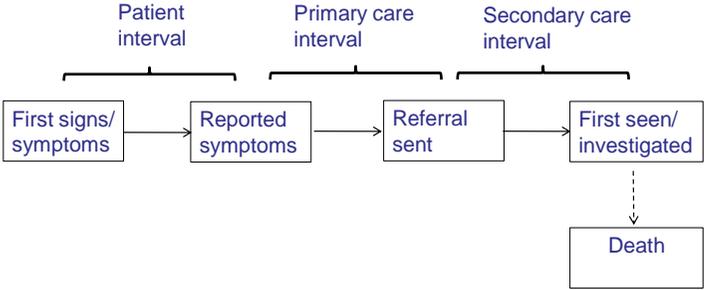
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Primary & Secondary intervals



Interval definitions



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Patient interval, prostate cancer



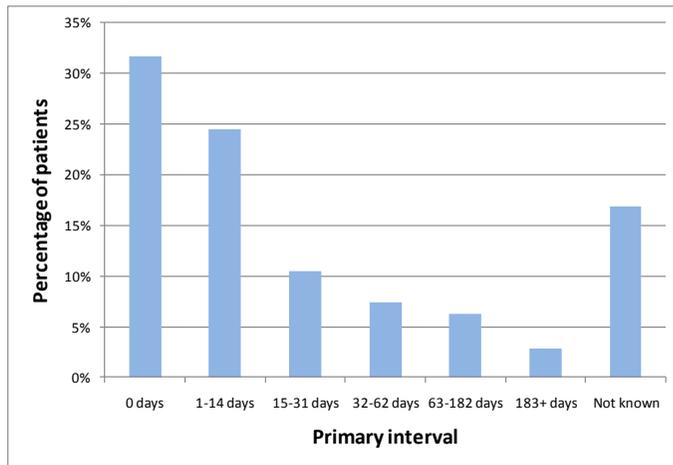
Symptom	0 days	1-14 days	15-31 days	32-62 days	63-182 days	183+ days	Not known
asymptomatic	17%	1%	0%	1%	1%	1%	78%
blood in the semen	21%	29%	14%	21%	0%	0%	14%
blood in the urine	31%	35%	5%	3%	1%	4%	22%
bone pain	13%	8%	8%	13%	18%	3%	40%
change in bowel habit	22%	19%	11%	4%	4%	0%	41%
enlargement of the prostate	17%	9%	5%	9%	7%	9%	43%
erectile dysfunction	18%	0%	2%	8%	8%	27%	37%
fatigue	28%	13%	13%	7%	7%	2%	30%
genitourinary tract pain	25%	20%	18%	12%	4%	2%	20%
incontinence	17%	0%	17%	6%	6%	17%	39%
lower urinary tract symptoms	21%	8%	9%	6%	10%	8%	39%
not known	7%	6%	0%	1%	0%	0%	87%
other	20%	17%	11%	6%	6%	4%	36%
painful urination	25%	20%	15%	8%	10%	2%	19%
raised psa	28%	6%	3%	1%	1%	2%	59%
urine retention	35%	10%	5%	5%	1%	2%	42%
weight loss	20%	11%	9%	7%	20%	4%	29%
Total	22%	10%	7%	5%	6%	5%	45%

Patient interval, prostate cancer



Symptom	0 days	1-14 days	15-31 days	32-62 days	63-182 days	183+ days	Not known
asymptomatic	17%	1%	0%	1%	1%	1%	78%
blood in the semen	21%	29%	14%	21%	0%	0%	14%
blood in the urine	31%	35%	5%	3%	1%	4%	22%
bone pain	13%	8%	8%	13%	18%	3%	40%
change in bowel habit	22%	19%	11%	4%	4%	0%	41%
enlargement of the prostate	17%	9%	5%	9%	7%	9%	43%
erectile dysfunction	18%	0%	2%	8%	8%	27%	37%
fatigue	28%	13%	13%	7%	7%	2%	30%
genitourinary tract pain	25%	20%	18%	12%	4%	2%	20%
incontinence	17%	0%	17%	6%	6%	17%	39%
lower urinary tract symptoms	21%	8%	9%	6%	10%	8%	39%
not known	7%	6%	0%	1%	0%	0%	87%
other	20%	17%	11%	6%	6%	4%	36%
painful urination	25%	20%	15%	8%	10%	2%	19%
raised psa	28%	6%	3%	1%	1%	2%	59%
urine retention	35%	10%	5%	5%	1%	2%	42%
weight loss	20%	11%	9%	7%	20%	4%	29%
Total	22%	10%	7%	5%	6%	5%	45%

Primary care interval



Median interval: 4 days

Fraction over 31 days: 16% (or 20% if unknowns randomly distributed)

Primary care interval > 31 days

Demographic Variable	Value	All	Breast	Colorectal	Lung	Prostate	Haemo	Other
		OR	p	OR	p	OR	p	OR
Age	75+ (compared to <75)	1.00	0.44 **	0.97	1.24	0.93	0.94	0.87
Sex	Female (compared to Male)	0.77 ***	1.02	1.50 ***	0.98	-	1.31	1.19 *
Housebound	Yes (compared to No)	1.12	2.60 *	1.37	0.52 **	1.25	1.21	1.21
Communication Difficulty	Yes (compared to No)	1.21	0.94	1.04	1.22	1.57	1.30	1.15
Ethnicity	Non-white (compared to White British)	1.09	1.48	1.63 *	0.95	0.97	0.71	1.32

* p<0.05

** p<0.01

*** p<0.001

"OR" = Odds ratio of longer primary interval for the indicated values of the demographic variables

Multivariate ordinal logistic regression. The odds ratio is the change in the odds of the primary interval being >31 days. Ratios > 1.00 indicate longer intervals.

Primary care interval > 31 days

Demographic Variable	Value	All		Breast		Colorectal		Lung		Prostate		Haemo		Other	
		OR	p	OR	p	OR	p	OR	p	OR	p	OR	p	OR	p
Age	75+ (compared to <75)	1.00		0.44	**	0.97		1.24		0.93		0.94		0.87	
Sex	Female (compared to Male)	0.77	***	1.02		1.50	***	0.98		-		1.31		1.19	*
Housebound	Yes (compared to No)	1.12		2.60	*	1.37		0.52	**	1.25		1.21		1.21	
Communication Difficulty	Yes (compared to No)	1.21		0.94		1.04		1.22		1.57		1.30		1.15	
Ethnicity	Non-white (compared to White British)	1.09		1.48		1.63	*	0.95		0.97		0.71		1.32	

* p<0.05

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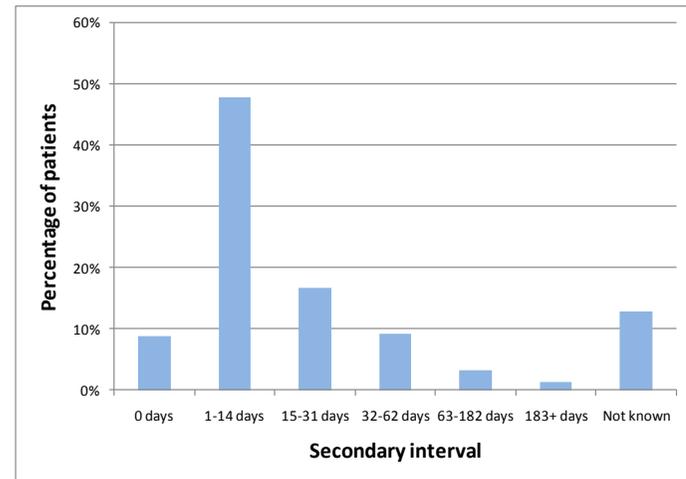
*** p<0.001

"OR" = Odds ratio of longer primary interval for the indicated values of the demographic variables

Multivariate ordinal logistic regression. The odds ratio is the change in the odds of the primary interval being >31 days. Ratios > 1.00 indicate longer intervals.

24% Female colorectal intervals > 31 days compared to 19% males

Secondary care interval



Median interval: 12 days

Fraction over 31 days: 14% (or 16% if unknowns randomly distributed)

Secondary care interval > 31 days

Demographic Variable	Value	All		Breast		Colorectal		Lung		Prostate		Haemo		Other	
		OR	p	OR	p	OR	p	OR	p	OR	p	OR	p	OR	p
Age	75+ (compared to <75)	0.88	*	0.90		0.68	**	1.28		0.80		1.28		0.77	**
Sex	Female (compared to Male)	0.65	***	0.58		1.08		0.84		-		0.79		1.01	
Housebound	Yes (compared to No)	0.89		1.17		0.78		0.98		0.71		1.27		0.97	
Communication Difficulty	Yes (compared to No)	1.25	*	1.50		1.15		1.12		1.22		1.64		1.16	
Ethnicity	Non-white (compared to White British)	1.28	**	2.30	**	1.04		2.13	*	1.22		0.91		1.28	

* p<0.05

** p<0.01 "OR" = Odds ratio of longer secondary interval for the indicated values of the demographic variables

*** p<0.001

Multivariate ordinal logistic regression. The odds ratio is the change in the odds of the secondary interval being >31 days. Ratios > 1.00 indicates longer interval.

Secondary interval > 31 days

Demographic Variable	Value	All		Breast		Colorectal		Lung		Prostate		Haemo		Other	
		OR	p	OR	p	OR	p	OR	p	OR	p	OR	p	OR	p
Age	75+ (compared to <75)	0.88	*	0.90		0.68	**	1.28		0.80		1.28		0.77	**
Sex	Female (compared to Male)	0.65	***	0.58		1.08		0.84		-		0.79		1.01	
Housebound	Yes (compared to No)	0.89		1.17		0.78		0.98		0.71		1.27		0.97	
Communication Difficulty	Yes (compared to No)	1.25	*	1.50		1.15		1.12		1.22		1.64		1.16	
Ethnicity	Non-white (compared to White British)	1.28	**	2.30	**	1.04		2.13	*	1.22		0.91		1.28	

* p<0.05

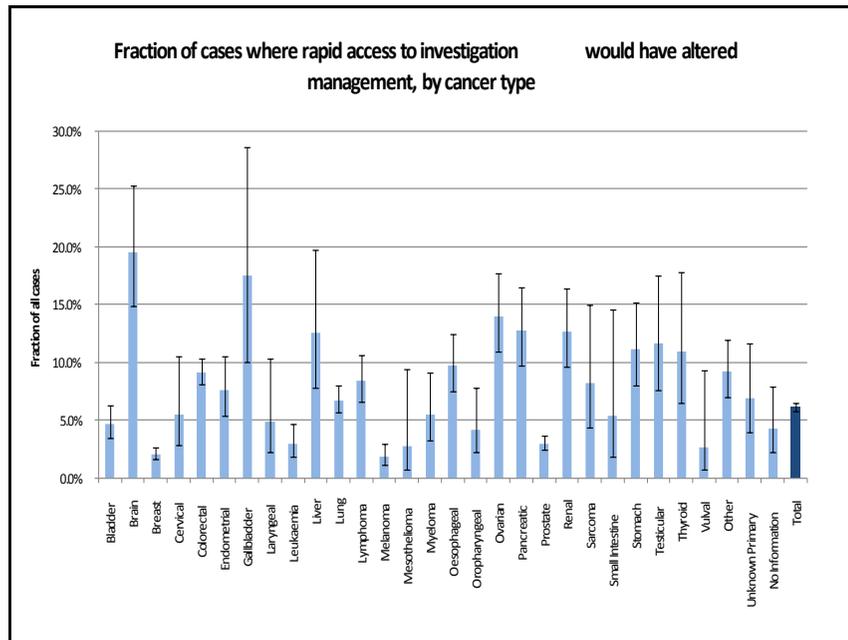
** p<0.01 "OR" = Odds ratio of longer secondary interval for the indicated values of the demographic variables

*** p<0.001

Multivariate ordinal logistic regression. The odds ratio is the change in the odds of the secondary interval being >31 days. Ratios > 1.00 indicates longer interval.

Breast: 12% non-white patients interval >31 days compared to 5% White British

Lung: 14% non-white patients interval >31 days compared to 8% White British



Summary



- Large robust data set with most fields >85% complete
- Significant variation in stage by cancer type, housebound status associated with later stage diagnosis for 10% of patients
- Primary and secondary intervals <32 days for around 80% of patients
- Differences of around 5% of patients for interval >31 days, in various combinations of cancer type and demographic variables

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Thanks to –

GPs, Practice, PCT and Network staff

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