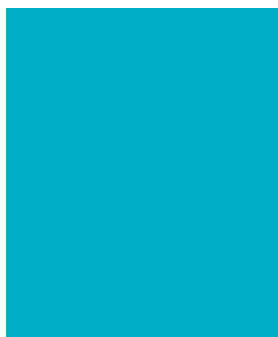
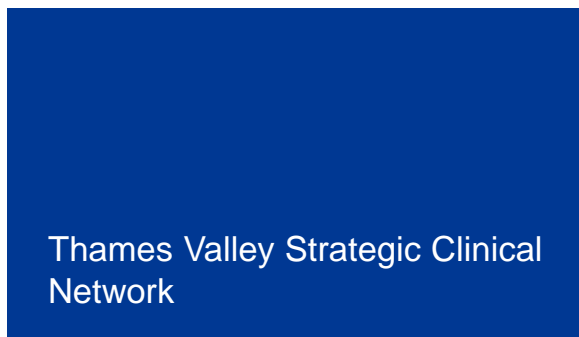
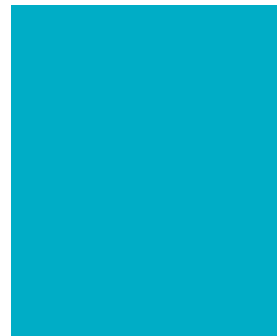
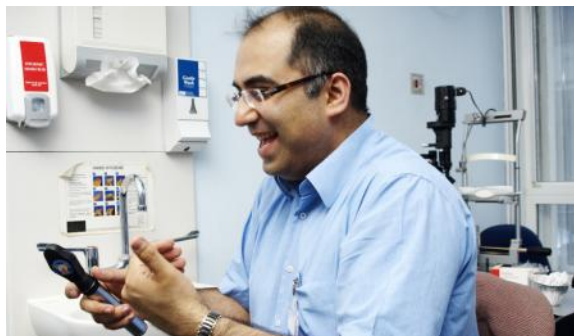


# Thames Valley Cancer Strategic Clinical Network Brain audit at Thames Valley



# Summary

- The brain referral tumour audit and data collection was carried out in Thames Valley area for Berkshire covering the period of 1<sup>st</sup> |January 2012 to 31<sup>st</sup> December 2013. Data for 54 patients diagnosed/or referred for suspected brain tumour were analysed from 12 GP practices.
- Majority of malignant brain tumours were in the older group (aged 50 years and over).
- Most of the cases were referred through 2ww route (54%)
- Majority of 2ww referrals were normal.
  - 21 out of 29 (72%) were normal
  - 2 out of 29 (7%) were malignant

## Summary continued.....

- The commonest presentation route for brain tumours (malignant and benign) was through A&E
  - 10 out of 23 (43%) were diagnosed out of which 7 (30%) were malignant
- More than 1/3<sup>rd</sup>, 35% (8 out of 23) patients diagnosed with malignant / benign brain tumour visited their GP more than 2 times prior to referral / or access to secondary care services
- Patients presented with multiple symptoms relating to the central nervous system, headaches suggestive of raised intracranial pressure, behaviour change or a past history of cancer
- 2/3<sup>rd</sup> (19 out of 29) 2ww patients had an MRI as their first diagnostic test

## Summary continued.....

- The majority (60%) 9 out of 15 who had a confirmed malignancy, had their first diagnostic test within 14 days of presentation
  - 40% (6 out of 15) waited more than 14 days
  - 33% (5 out of 15 ) waited more than 4 weeks
- The median wait between
  - first presentation and first diagnostic test for 2ww referrals was 43 days
  - and between referral or access to the provider service and receiving a definitive diagnosis was 30 days.

## No of audit by practices and outcome of diagnosis

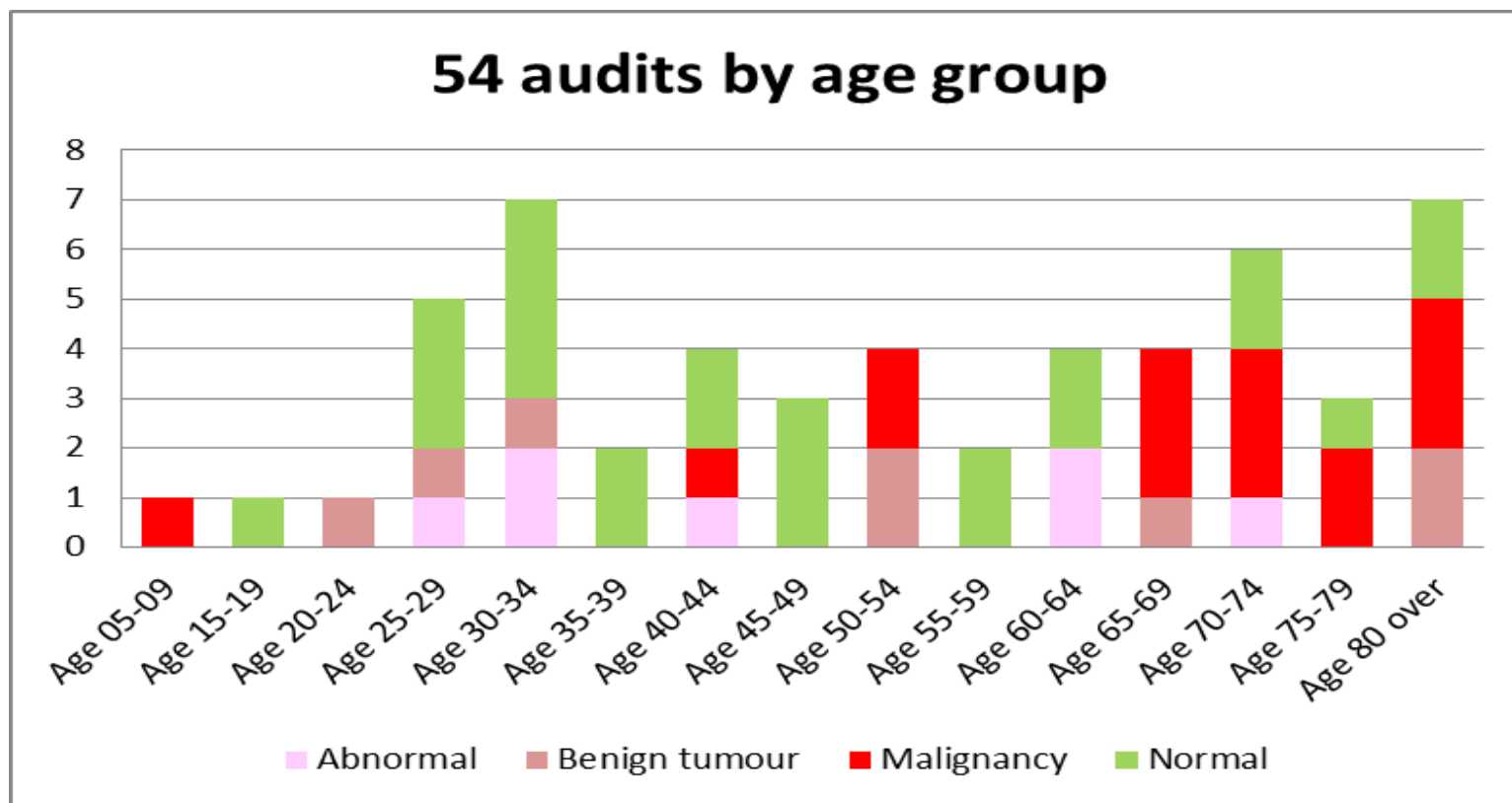
Practices	Abnormal	Benign tumour	Malignancy	Normal	Grand Total
Binfield		1			1
Cedars			3	1	4
Easthampstead			1		1
Farnham	1	5	1	6	13
Grovelands				5	5
Northchurch		1	1	3	5
Pangbourne	3		2	3	8
Ringmead	1		2	5	8
Sandhurst	1	1	1		3
Sheet Street			1	1	2
Twyford	1		1		2
Woosehill			2		2
<b>Grand Total</b>	<b>7</b>	<b>8</b>	<b>15</b>	<b>24</b>	<b>54</b>

## By age group

Age Group	Abnormal	Benign tumour	Malignancy	Normal	Grand Total
Age 05-09			1		1
Age 15-19				1	1
Age 20-24		1			1
Age 25-29	1	1		3	5
Age 30-34	2	1		4	7
Age 35-39				2	2
Age 40-44	1		1	2	4
Age 45-49				3	3
Age 50-54		2	2		4
Age 55-59				2	2
Age 60-64	2			2	4
Age 65-69		1	3		4
Age 70-74	1		3	2	6
Age 75-79			2	1	3
Age 80 over		2	3	2	7
<b>Grand Total</b>	<b>7</b>	<b>8</b>	<b>15</b>	<b>24</b>	<b>54</b>

Most malignancies were in the older group (aged 50 years and over).

# By age group continued.....



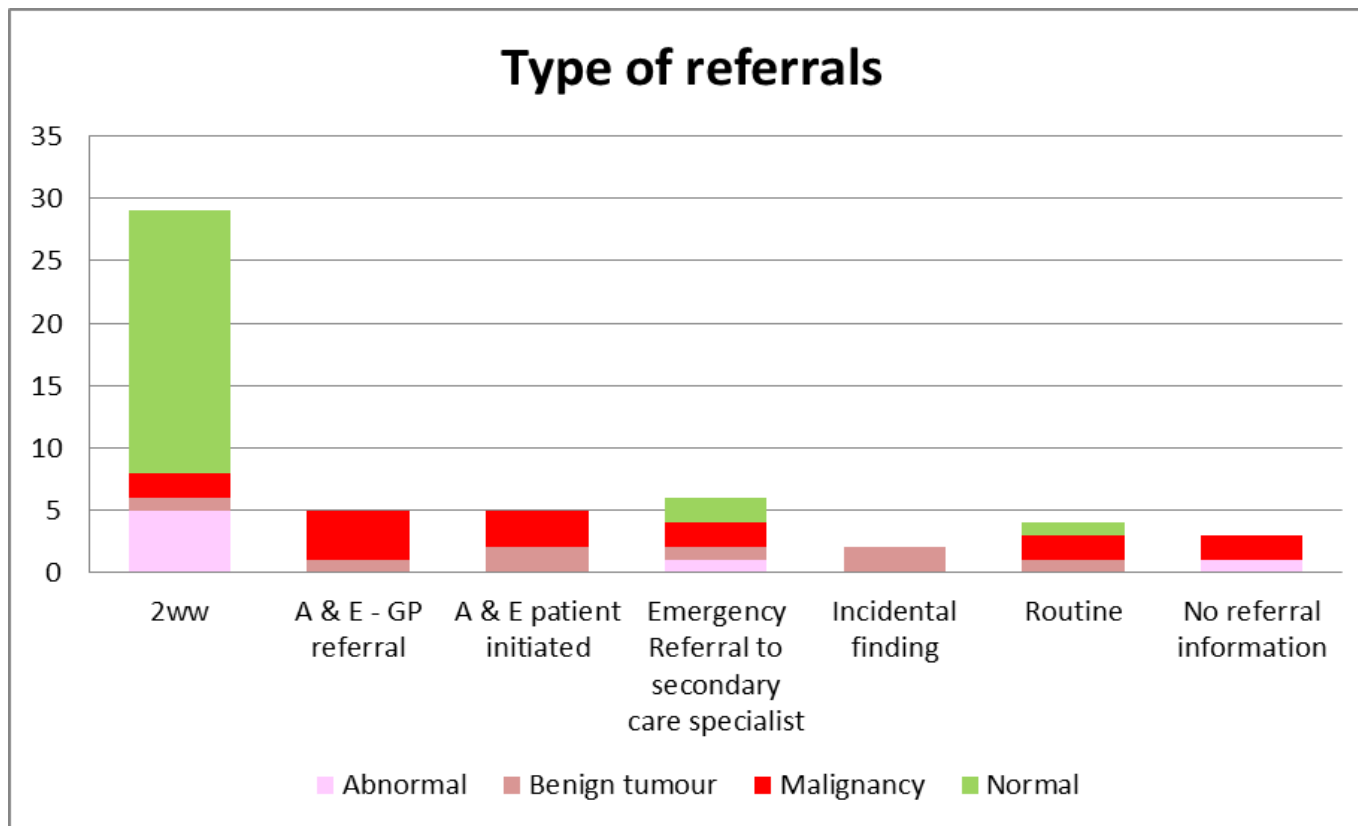
## Presentation and type of referral

Referral Type	Abnormal	Benign tumour	Malignancy	Normal	Grand Total
2ww	5	1	2	21	29
A & E - GP referral		1	4		5
A & E patient initiated		2	3		5
Emergency Referral to secondary care specialist	1	1	2	2	6
Incidental finding		2			2
Routine		1	2	1	4
No referral	1		2		3
<b>Grand Total</b>	<b>7</b>	<b>8</b>	<b>15</b>	<b>24</b>	<b>54</b>

23 out of 54 patients were confirmed with malignant or benign brain tumours. All A&E GP referrals/patient initiated were diagnosed with malignant or benign brain tumours.

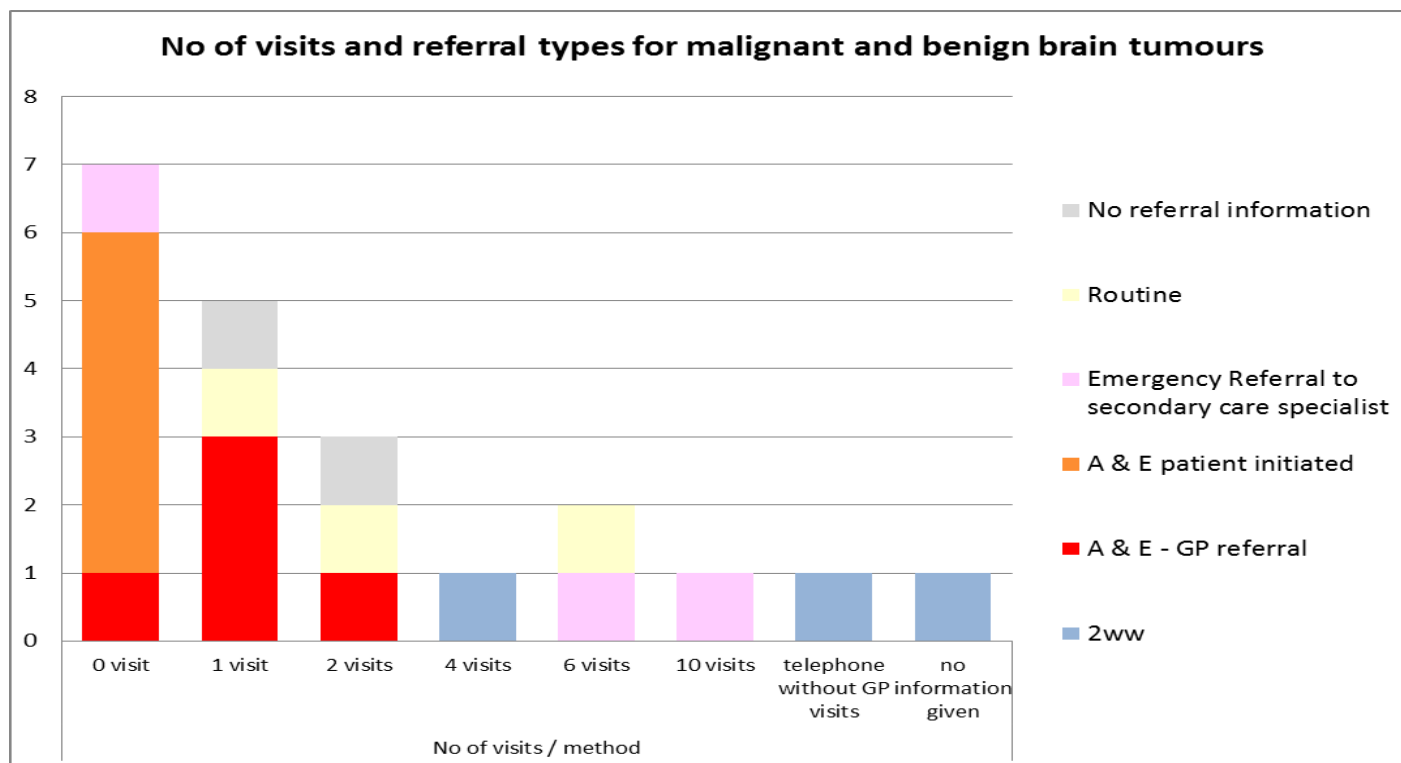


# Type of Referral



The majority of 2ww referrals were diagnosed “Normal”. However, malignant and benign brain tumours were diagnosed and identified through different routes.

# No of GP visits for malignant and benign brain tumours



Most malignant and benign brain tumour patients came through the A&E route. They had not been seen or had only been seen once at a GP clinic

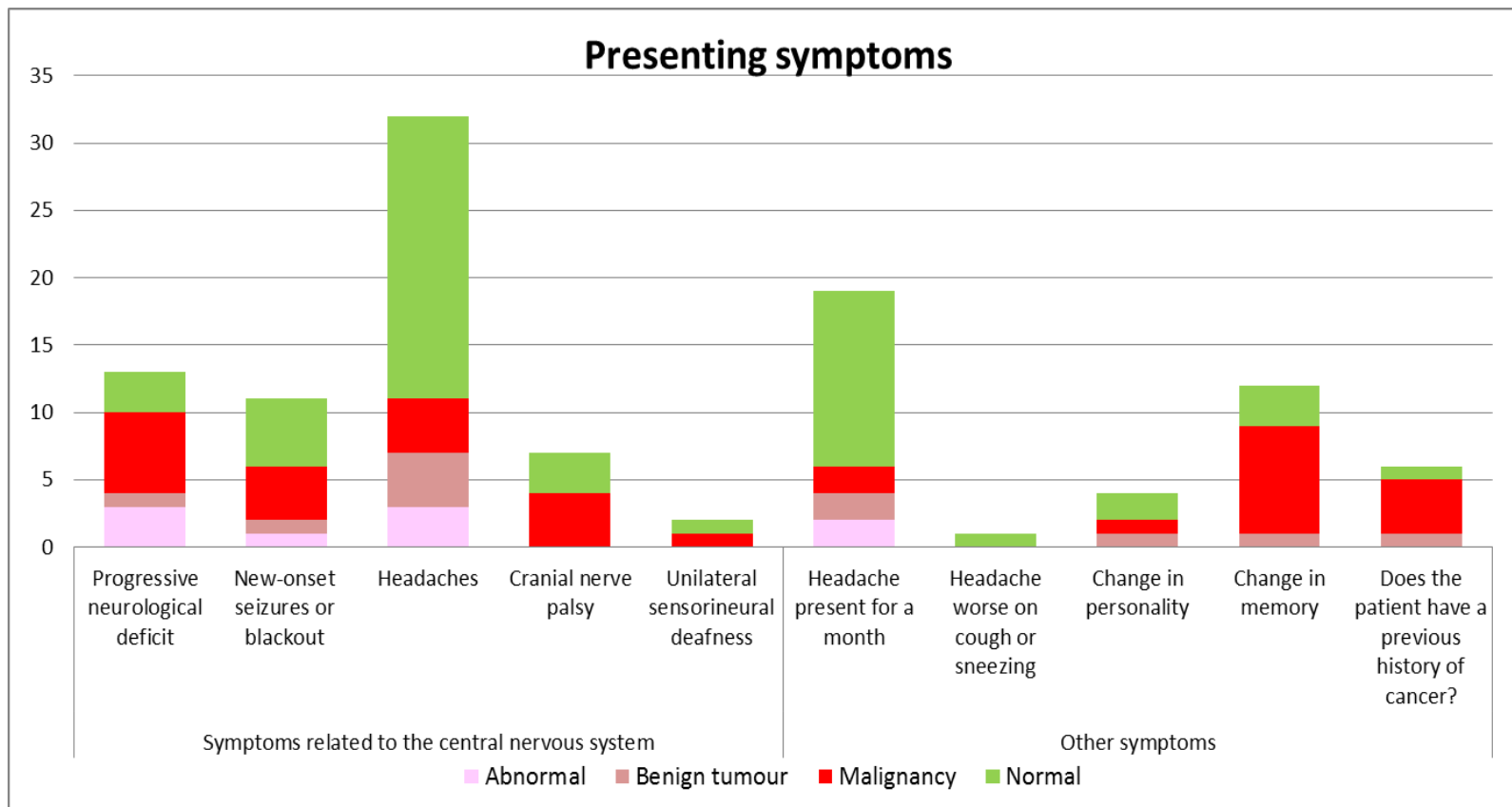
# Presenting symptoms

Presenting symptoms		Abnormal	Benign tumour	Malignancy	Normal	Grand Total
Symptoms related to the central nervous system	Progressive neurological deficit	3	1	6	3	13
	New-onset seizures or blackout	1	1	4	5	11
	Headaches	3	4	4	21	32
	Cranial nerve palsy			4	3	7
	Unilateral sensorineural deafness			1	1	2
Details of headache suggestive of raised intracranial pressure	Headache associated with vomiting	1	1	1	6	9
	Headache with drowsiness				2	2
	Posture-related headache	1			2	3
	Qualitatively different headache that is becoming progressively severe	2	1	2	6	11
	Early morning headache		2	2	6	10

# Presenting symptoms continued.....

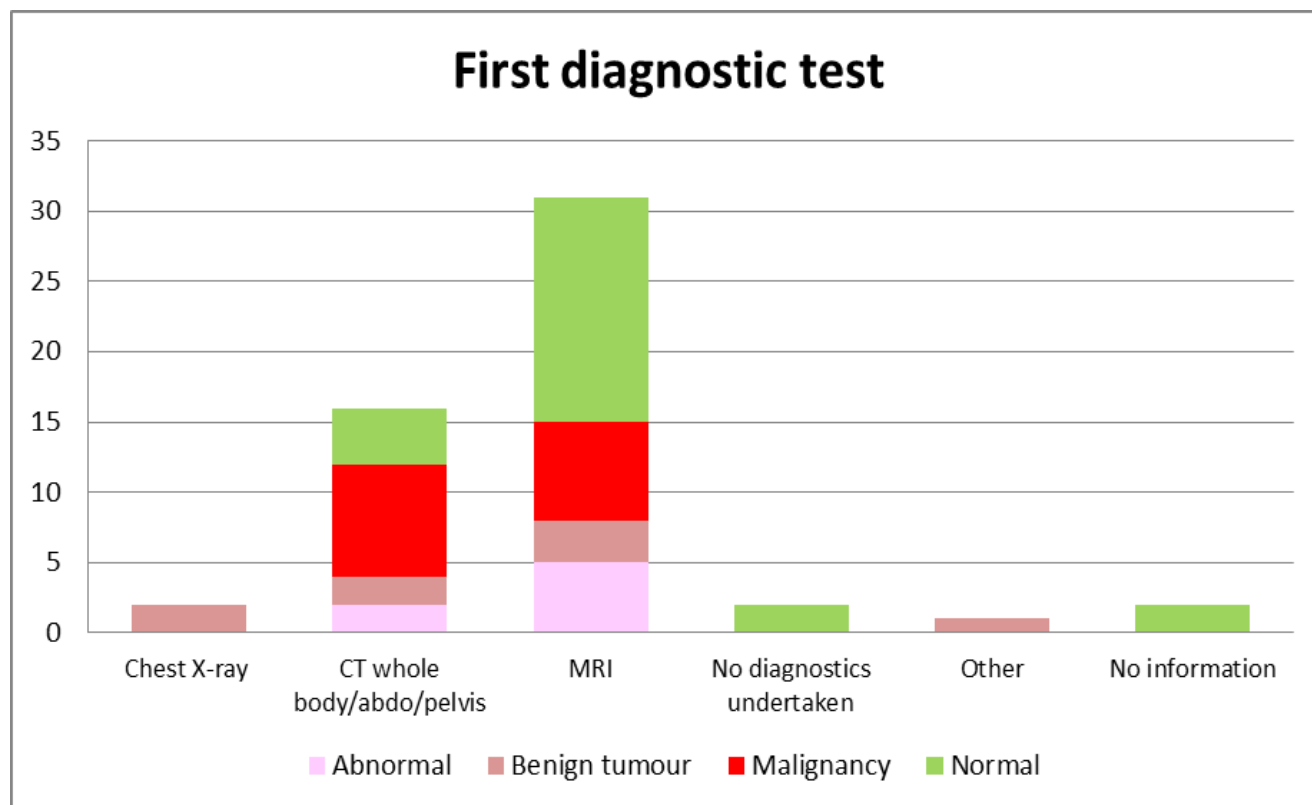
Presenting symptoms		Abnormal	Benign tumour	Malignancy	Normal	Grand Total
Other symptoms	Headache present for a month	2	2	2	13	19
	Headache worse on cough or sneezing				1	1
	Change in personality		1	1	2	4
	Change in memory		1	8	3	12
	Does the patient have a previous history of cancer?		1	4	1	6

# Presenting symptoms continued.....



Patients might present with more than one symptom, the majority had headaches, but the outcome related to malignant or benign brain tumour was varied.

# First diagnostic test



2/3rds of 2ww patients had an MRI as the first diagnostic test. MRI and CT of the brain are the main first diagnostic tests for brain tumours.

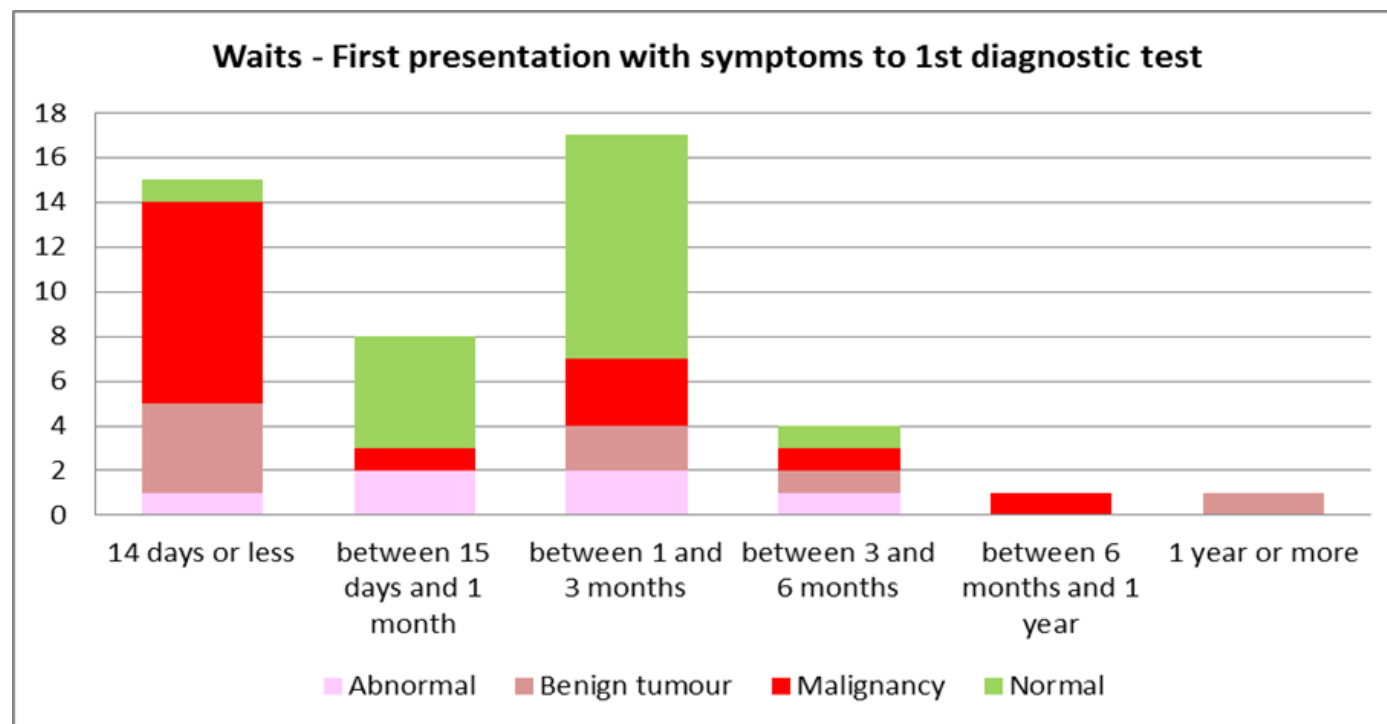
# First diagnostic test and suspected tumour

Did this indicate that a brain tumour was suspected?	First diagnostic test / results	Chest X-ray	CT whole body/abdo/pelvis	MRI	No diagnostics undertaken	Other	No information	Grand Total
No	Abnormal		2	2				4
	<b>Benign tumour</b>	2						<b>2</b>
	<b>Malignancy</b>		1					<b>1</b>
	Normal		4	16	2			22
	<b>Total</b>	<b>2</b>	<b>7</b>	<b>18</b>	<b>2</b>			<b>29</b>
Yes	Abnormal			3				3
	<b>Benign tumour</b>		2	3		1		<b>6</b>
	<b>Malignancy</b>		7	7				<b>14</b>
	<b>Total</b>		<b>9</b>	<b>13</b>		<b>1</b>		<b>23</b>
Unknown	Normal						2	2
	<b>Total</b>						<b>2</b>	<b>2</b>

23 out of 54 patients (41%) were suspected of having a brain tumour from the first diagnostic test.

20 out of the 23 suspected brain tumours were malignant or benign brain tumours on further diagnostic testing or biopsy/operation

# First presentation with symptoms to 1<sup>st</sup> diagnostic test



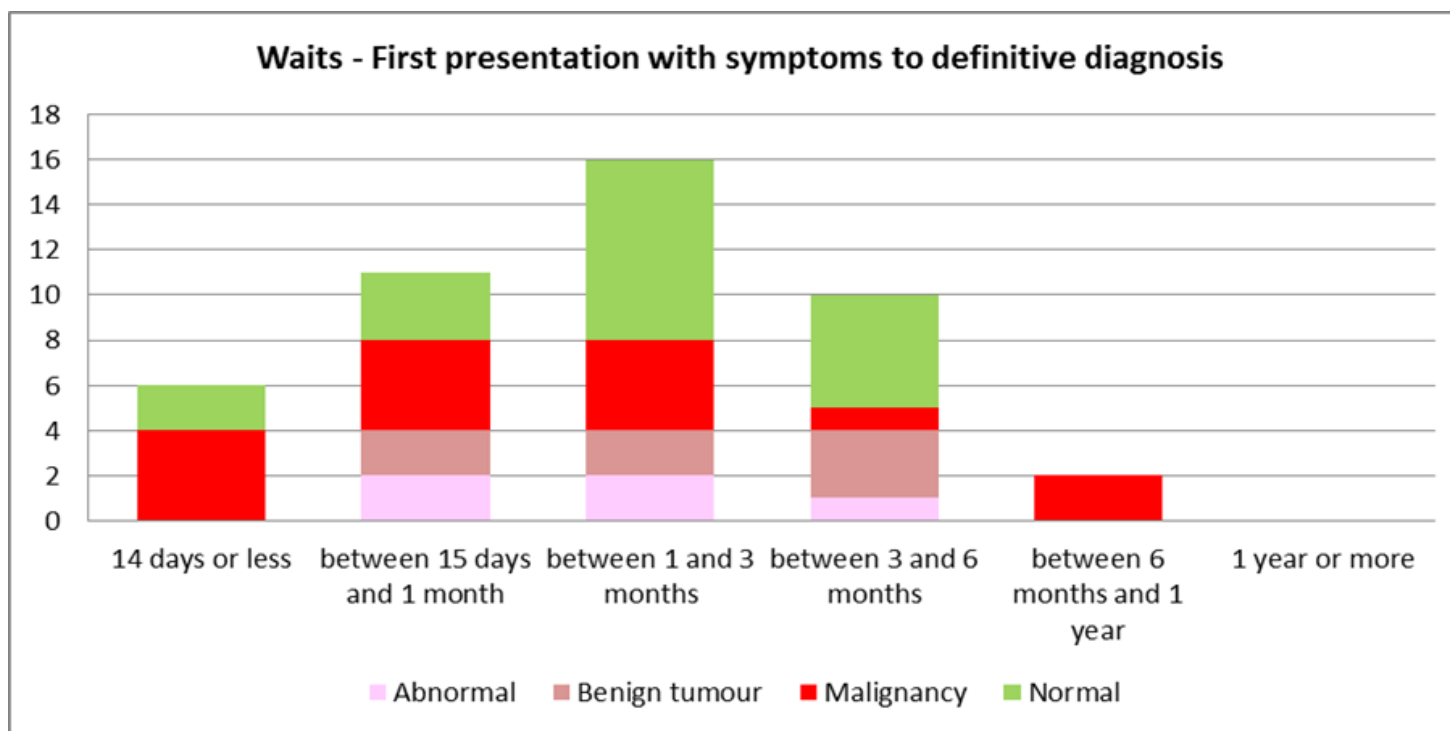
Most patients waited less than 3 months between first presentation and first diagnostic test, and the majority who were confirmed as malignant waited 14 days or less as they went through A&E.



# First presentation with symptoms to 1<sup>st</sup> diagnostic test by referral types

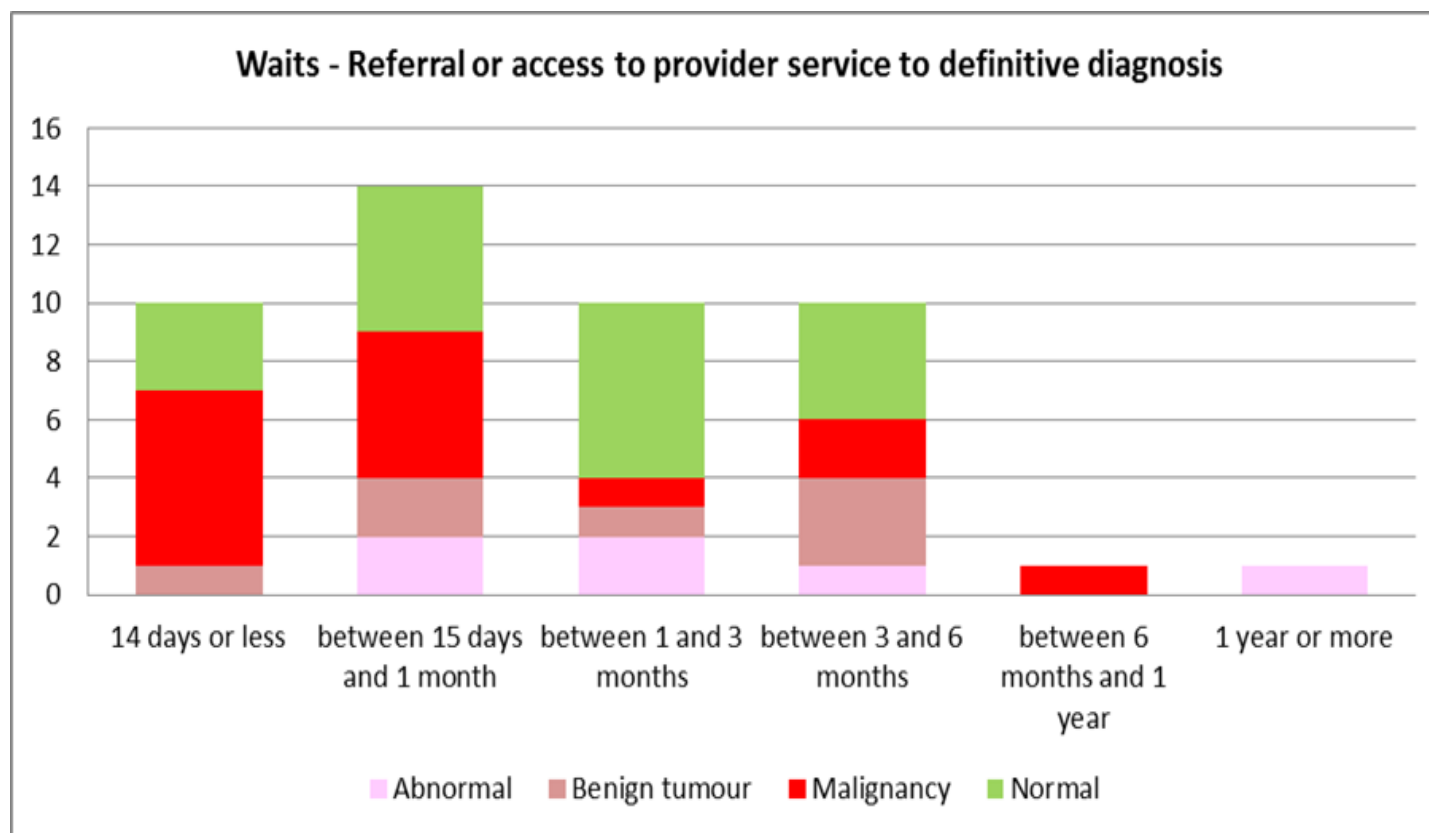
Referral type	First presentation with symptoms to 1st diagnostic test							Total
	14 days or less	between 15 days and 1 month	between 1 and 3 months	between 3 and 6 months	between 6 months and 1 year	1 year or more	Not applicable	
2ww	3	7	12	2			5	29
A & E - GP referral	5							5
A & E patient initiated	5							5
Emergency Referral to secondary care	1	1	1		1	1	1	6
Incidental finding	1		1					2
Routine			1	2			1	4
No information			2				1	3
Grand Total	15	8	17	4	1	1	8	54

# First presentation with symptoms to definitive diagnosis



More than 50% of patients waited more than 1 month to receive a definitive diagnoses from first presentation with symptoms.

# Referral or access to provider service to definitive diagnosis



## Diagnostic waiting times for 2ww referral

Method	No of 2ww	Median waits	Average waits
First presentation with symptoms to 1st diagnostic test	24	43	46.2
First presentation with symptoms to definitive diagnosis	22	54	56.73
Referral or access to provider service to definitive diagnosis	22	30	43.2

# The cost of direct access to MRI/CT scan from GP practices

## Reference table:

*The data from RBH - patients referred re brain tumour between Jan 2012 and Dec 2013*

Item	Referral type	2ww		% to total	Numbers per 100 patients
1	<b>No of patients</b>		<b>249</b>		100
2	Number of patients with MRI prior to referral	5		2%	2
3	Number of patients with MRI following referral	147		59%	59
4	<b>Total for MRI</b>		<b>152</b>	61%	61
5	Number of patients with CT prior to referral (not MRI)	5		2%	2
6	Number of patients with CT following referral (not MRI)	34		14%	14
7	Number of patients with initial MRI that go on to have subsequent CT	10		4%	4
8	Number of patients with initial CT that go on to have subsequent MRI	7		3%	3
9	<b>Total for CT</b>		<b>56</b>	22%	22
10	<b>Total number of patients for MRI only</b>		<b>135</b>	54%	54
11	<b>Total number of patients with CT only</b>		<b>39</b>	16%	16
12	<b>Total for both CT &amp; MRI</b>		<b>17</b>	7%	7
13	<b>Number of patients with no diagnostic tests</b>		<b>58</b>	23%	23

# The cost of direct access to MRI/CT scan from GP practices continued.....

Costs per referral	Item	Model A (per 100 patients)		** Model B - direct assess to MRI / CT from model A		Model C - increased 20% direct access from model B		Model D- increased 50% direct access from model B	
		Activity	Total costs	Activity	Total costs	Activity	Total costs	Activity	Total costs
	No of suspected referral	100		100		120		150	
£ 252	2ww seen - Outpatient first attendances	100	£ 25,200.00	0					
£ 233	MRI only	54	£ 12,582.00	81	£ 18,873.00	98	£ 22,834.00	122	£ 28,426.00
£ 127	CT only	16	£ 2,032.00	19	£ 2,413.00	23	£ 2,921.00	29	£ 3,683.00
£ 360	CT and MRI	7	£ 2,520.00	0					
£ -	No diagnostic tests	23	£ -	0					
	Total		£ 42,334.00		£ 21,286.00		£ 25,755.00		£ 32,109.00

## Next steps

- Develop a validated tool to sensitively and specifically allow direct access to MRI scanning using the following criteria:
  - Symptoms related to the central nervous system
  - Details of headache suggestive of raised intracranial pressure
  - Other significant symptoms
- Validated tool to be piloted by Oxford Neurosciences team

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Thames Valley Cancer Strategic  
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