

# Can you demonstrate the quality of services through a composite measure?

Di Riley

AD Clinical Outcomes

February 2013

# Definition:

A composite indicator is formed when individual indicators are compiled into a single index, on the basis of an underlying model of the multi-dimensional concept that is being measured

*OECD, 2004, "The OECD-JRC Handbook on Practices for Developing Composite Indicators", paper presented at the OECD Committee on Statistics, 7-8 June 2004, OECD, Paris*

***The NCIN story so far.....***

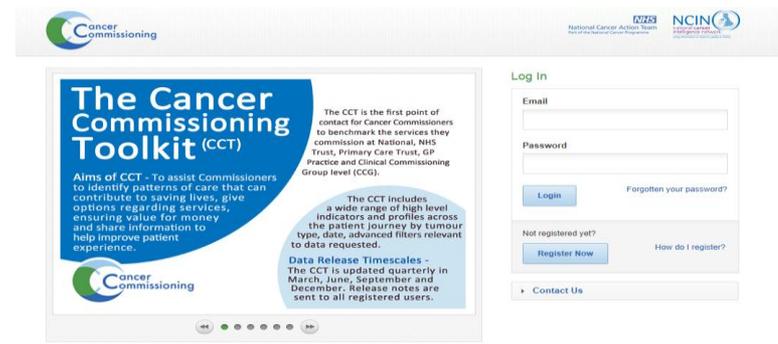
# Access to Information?

Pre CCT:



- *Multiple sources of data and information*
- *In different places*
- *Different timescales*
- *Different methodology*
- *Difficult to benchmark 'similar organisations'*
- *Limited information strategies*

Post CCT:



The screenshot shows the 'The Cancer Commissioning Toolkit (CCT)' page. The main content area includes the title 'The Cancer Commissioning Toolkit (CCT)', a brief description of the CCT's role as the first point of contact for Cancer Commissioners, and a list of aims: to assist Commissioners in identifying care patterns, saving lives, and ensuring value for money. It also mentions that the CCT includes high-level indicators and profiles across the patient journey, and provides data release timescales (quarterly updates in March, June, September, and December). On the right side, there is a 'Log In' form with fields for 'Email' and 'Password', a 'Login' button, and links for 'Forgot your password?', 'Not registered yet?', 'Register Now', and 'How do I register?'. A 'Contact Us' link is also visible at the bottom.

- *12 data sources*
- *112 charts covering pathways*
- *Latest data always shown*
- *Benchmarked and trend analyses*
- *Data sources still viewed separately*

# Targeted cancer-profiles



national cancer intelligence network

Using information to improve quality & choice

Cancer Service Profiles for Colorectal Cancer - Look and feel mock-up - dummy data  
 14 Sept 2011. Please direct comments and feedback to [profiles@ncin.org.uk](mailto:profiles@ncin.org.uk)

NHS National Cancer Action Team  
 Part of the National Cancer Programme

Legend:  
 ● Trust is significantly different from England mean  
 ● Trust is not significantly different than England mean  
 ○ Statistical significance can not be assessed  
 Eng. mean  
 Eng. 25th Percentile Eng. 75th Percentile  
 Lowest in Eng. Highest in Eng.

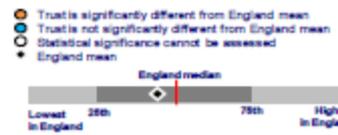


Jo Bloggs NHS Trust

Select Trust/MDT

Section	#	Indicator	No. of patients/cases or value	Proportion or rate			Trust rates or proportion compared to England mean		Source	Period
				Trust	Lower 95% confidence	Upper 95% confidence	England	Range		
Demographics (based on new patients treated per year)	1	Number of new patients treated per year	90				0%			
	2	Patients aged 70+	50	50%	49%	52%	60%	0%		Cancer waits 2010
	3	Patients with recorded ethnicity	89	89%	86%	92%	94%	0%		etc
	4	Patients recorded as non white-British	15	15%	15%	15%	16%	0%		
	5	Patients who are income deprived	Quintile 2	17%	16%	18%	18%	0%		
	6	Male patients	2	2%	2%	2%	7%	0%		
	7	Patients with a registered cancer stage	70	70%	68%	72%	77%	0%		
	8	Patients with a Stage A or B disease at diagnosis	40	40%	39%	41%	46%	0%		
	9	Patients with a Charlson co-morbidity index >0	34	34%	33%	35%	38%	0%		
Specialist Team	10	The specialist team has full membership	Yes				0%			
	11	Proportion of peer review indicators met	82%				0%			
	12	Peer review: are there immediate risks?	No				0%			
	13	Peer review: are there serious concerns	No				0%			
Through Input	14	Patients reporting good availability of a CNS					0%			
	15	Surgeons not managing 20+ cases per year	92	92%	89%	95%	99%	0%		
	16	Number of two week wait referrals for cancer	4	40%	39%	41%	45%	0%		
	17	Number and proportion of admissions that are emergencies	42				0%			
Waiting times	18	Patients referred via the screening service	120	48%	47%	49%	52%	0%		
	19	TWW referrals with suspected cancer seen within 2 weeks	17	17%	16%	18%	19%	0%		
	20	TWW referrals treated within 62 days	37	88%	85%	91%	93%	0%		
	21	TWW referrals diagnosed with cancer	41	98%	95%	101%	103%	0%		
Practice	22	Patients treated within 31 days of agreeing treatment plan	7	7%	7%	7%	14%	0%		
	23	Surgical cases treated laparoscopically	91	91%	88%	94%	93%	0%		
	24	Patients resected for liver metastases	12	12%	12%	12%	21%	0%		
	25	Patients undergoing a major surgical resection	8	8%	8%	8%	16%	0%		
	26	Mean length of stay for elective admissions	29	32%	31%	33%	38%	0%		
	27	Mean length of stay for emergency admissions	4.5	4.4	4.6	4.6	0			
Outcomes and Recovery	28	Surgical patients readmitted as an emergency within 28 days	5.7	5.5	5.9	5.7	0			
	29	New to follow-up outpatients appointments	4	4%	4%	4%	10%	0%		10
	30	Patients treated surviving at one year								10
	31	Surgical patients who die within 30 days	90	76%	74%	78%	82%	0%		
	32	Patients reporting being treated with respect and dignity	1	90%	87%	93%	91%	0%		
	33	Cancer patient experience survey questions scored as "green"	92	92%				0%		
	Cancer patient experience survey questions scored as "red"	3	87%				0%			
		6	4%				0%			

LINKAS, ...



### Cancer Service Profiles for Breast Cancer

Data displayed are for patients for which the trust of treatment can be identified. For a full description of the data and methods please refer to the 'Data Definitions' document. For advice on how to use the profiles and the consultation, please refer to 'Profiles guidance'. Please direct comments/feedback to service\_profiles@ncln.org.uk

Select Trust/MDT

Section	#	Indicator	No. of patients/cases or value	Percentage or rate			Trust rate or percentage compared to England			Source	Period	
				Trust	Lower 95% confidence limit	Upper 95% confidence limit	England	Lowest	Range			Highest
Size	1	Number of new patients treated per year, 2010/11	407					63		759	CWT	2010/11
	2	Number of newly diagnosed patients treated per year, 2009	289					8		754	CWT/NCDR	2009
Demographics (newly diagnosed cases, 2009)	3	Patients aged 70+	95	33%	28%	38%	30%	13%		57%	CWT/NCDR	2009
	4	Patients with recorded ethnicity	276	96%	92%	97%	91%	73%		99%	CWT/NCDR	2009
	5	Patients with recorded ethnicity which is not White-British	14		3%	8%	9%	0%		71%	CWT/NCDR	2009
	6	Patients who are Income Deprived (1)		12%			14%	6%		29%	CWT/NCDR	2009
	7	Malpractice										

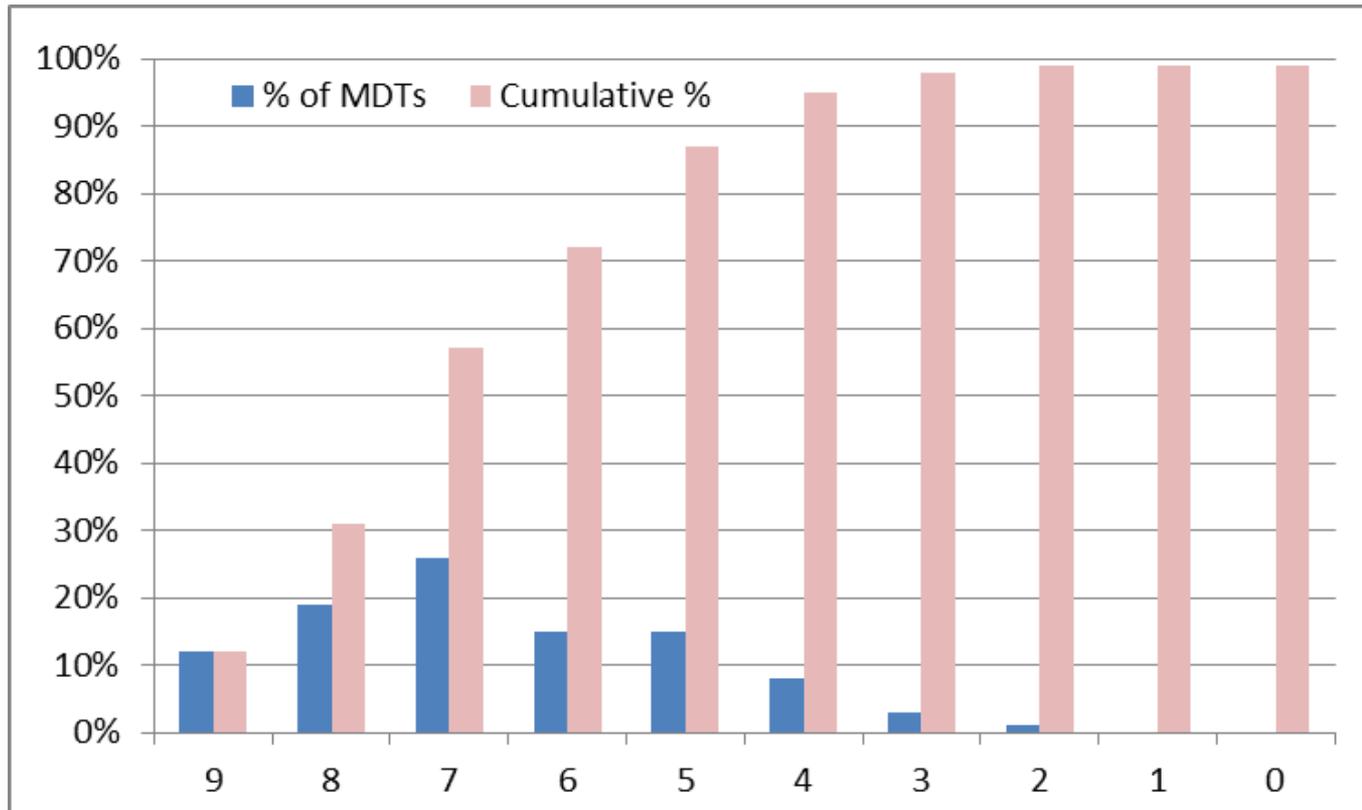
- Does the Specialist Team have full membership?
- Proportion of Peer Review indicators met?
- Peer Review: are there immediate risks?
- Peer Review: are there serious concerns?
- % treated within 62 days of urgent GP referral for suspected cancer?
- How many surgical patients receive a mastectomy?
- How many mastectomy patients receive an immediate reconstruction?
- % of patients surveyed report being treated with respect and dignity?
- % of survey questions scoring red or green?

Outcomes and Recovery	33	Mean length of episode for elective admissions		2.3			2.8	0.7		6.3	HES	2009/10
	34	Mean length of episode for emergency admissions		5.7			4.9	2.4		11.3	HES	2009/10
Patient Experiences - CPES (4)	38	Surgical patients readmitted as an emergency within 28 days	9	2%	1%	4%	4%	1%		15%	HES	2010/11
	37	Q2-Q4 2010/11: First outpatient appointments of all outpatient appointments	5,473	42%	42%	43%	43%	23%		71%	PBR BUS	2010/11 Q2-Q4
Patient Experiences - CPES (4)	38	Patients treated surviving at one year (to be included in later profile release)										
	38	Patients surveyed & % reporting always being treated with respect & dignity (8)	50	89%			82%	65%		95%	CPES	2010
Patient Experiences - CPES (4)	38	Number of survey questions and % of those questions scoring red and green (7)	50	5%			0%	0%		70%	CPES	2010
	40			41%			0%	0%		72%	CPES	2010

# MDT Scores per Indicator

Indicator No:	Indicator	Criteria for Inclusion	Nos MDTs achieving criteria	Total Nos MDTs	% MDTs achieving criteria
11	The specialist team has full membership	= YES	120	155	77%
12	Proportion of peer review indicators met	>=80%	101	155	65%
13	Peer review: are there immediate risks?	= NO	143	155	92%
14	Peer review: are there serious concerns?	= NO	103	155	66%
23	Treatment within 62 days of urgent GP referral for suspected cancer %	>=95%	126	155	81%
30	Provider undertaking immediate reconstruction*	>0%	141	155	91%
32	Surgical patients receiving mastectomies %	< value of 75 <sup>th</sup> percentile	116	155	75%
38	% reporting always being treated with respect & dignity	>80%	73	148	49%
40	Cancer patient experience survey questions scored as "green" %	>12%	85	149	57%

# Composite 'Indicator'



**0**  
**Grand Total**

**0**  
**100%**

**0%**

**Does this reflect our perceptions of current services?**

# Questions & Caveats?

- Validity of approach - very simple, proof of principle
- Who selects the indicators to include?
  - Different groups may have different priorities?
- How is each indicator weighted – equally?
  - due consideration to clinical and statistical issues
  - Justifiable design of scoring system
- How to ensure adjusted for casemix?
- Timeliness of data
  - More recent or more robust?
- How to interpret and how to share publically?

# Where next – Breast Cancer

- Review indicators in profile with patients, clinical teams & commissioners
- Select indicators for inclusion
  - same or different?
- Other indicators for consideration
  - NHSOF, CCG Outcomes Indicator Set, NICE, Professional
  - Are the data available?
  - Are there agreed methodologies for each indicator
- Consider methodology for ‘composite model’

# Where next – Colorectal Ca.

- Base on Australian model (Prof. Solomon et al)
  - Several aspects of care
  - Adherence to national guidelines for services
- Compare England with Australia
  - Comprehensive comparisons a challenge
  - Use Australian methodology
- Use data from current profile
  - 3 types indicators
- Construct composite indicator for each trust

## Types of indicators

- evidence-based indicator (EBI)
  - use of DVT prophylaxis, chemotherapy for Stage III disease etc
- process-based
  - e.g. two week waits, MDT discussion, Peer Review, etc
- Clinical outcome-based indicator (COI)
  - 30-day post-op mortality, returns to theatre, readmission rates etc

# Two Options to Construct Composite Indicator

- Threshold set at the 20<sup>th</sup> percentile of the variation\*
  - If in lowest 20<sup>th</sup> percentile, score = 0
  - Large numbers of hospitals in this category, as ‘someone has to be at the bottom’
  - E.g. EBS = nos of EBI >20<sup>th</sup> percentile/total nos of EBI
  - Investigated correlation between indicators , scores and caseload to test relationship bet EBS & COS
- Identify outliers e.g. 2 or 3 SD from the mean?
  - Genuine poor performers

*\*Evidence-Based and Clinical Outcomes Scores to Facilitate Audit and Feedback for Colorectal Cancer Care; MR Habib, ML Solomon et al; Diseases of the Colon & Rectum Volume 52: 4 (2009)*

# In summary.....

- Can demonstrate differences between services
- But does it demonstrate quality?
  - What is quality?
  - Whose quality is it?
- Require method that
  - Has clinically or statistically defined level of confidence to score hospitals
  - Clinical credibility
  - Easy to calculate, interpret and understand!



Potentially a long way to go but....



just beginning & need to learn from each other  
- It is a challenge.....