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LEUVEN INSTITUTE FOR HEALTHCARE POLICY

Do networks work?

The road to quality controlled urology?



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Urological networks

- Paradigm shifts in healthcare
- Effects of networks
 - Outcome
 - Cost
 - Quality
- What about urology?
- Recommendations

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NHS SCOTLAND

National Planning Forum
Report on Review of National and Scotland wide Managed Clinical Networks 2011
2 December 2011

Accountable care explained
www.kingsfund.org.uk

Value = Quality - Cost

Managed clinical networks

- 1) Improve quality
- 2) Minimal reduction in costs
- 3) Need for clinical leader as coordinator

1) Size: 150000-500000
2) Care management: Most successful programs for elderly, chronic disease and mental illness
3) New financing systems E.g. bundled payments
4) Shared EPF
5) Patient involvement
6) Measuring cost and quality

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Variable surgical outcomes after hospital consolidation: Implications for local health care delivery

Hsiao Chang, BA¹, Robert H. Blackwell, MD^{1,2}, Ryan M. Yu, BS³, Stephanie Buxton, MD³, Jocelyn M. Abright, MD³, Gopal N. Gupta, MD^{1,2}, Paul C. Kuo, MD^{1,2}, and Anal N. Kothari.

Surgery, 2016 November ; 160(5): 1155-1161

A Procedures in which consolidated hospitals saw a decrease in complication rates. Lumber and orthopaedic fusion of the lumbar spine, anterior prostatectomy. Total hip replacement.

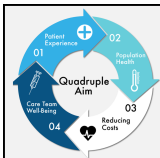
B Procedures in which consolidated hospitals saw an increase in complication rates. Transcatheter aortic valve replacement, Central lobe of the anterior lobes, cardiac technique. Total knee replacement.

C Procedures in which consolidated hospitals saw no change in complication rates. Laparoscopic cholecystectomy, Lumber and orthopaedic fusion of the lumbar spine, posterior technique.

Legend: — Consolidated hospitals, — Control hospitals

Achieving quadruple aim goals through clinical networks: A systematic review

A. D'Alleva^{1,2}, F. Leigheb^{3,4}, C. Rinaldi^{3,4}, F. Di Stanislao⁴, K. Vanhaecht⁴, D. De Ridder⁴, L. Bruyneel⁴, G. Cangelosi⁴, M. Panella⁵



- Neonatal care network in the UK:
 - Improved survival of newborns
- Diabetic care in Scotland
 - Improved Hb1c and blood pressure management
- Breast cancer in Scotland
 - Improved outcome and improved adherence to guidelines (36% vs 7%)
- Similar findings in vascular surgery, headache, personality disorders
- Also small reduction of per capita cost
- Little evidence for population health, patient perception, and well being of caregivers

J. healthc. qual. res. 2019;34(1):29-39

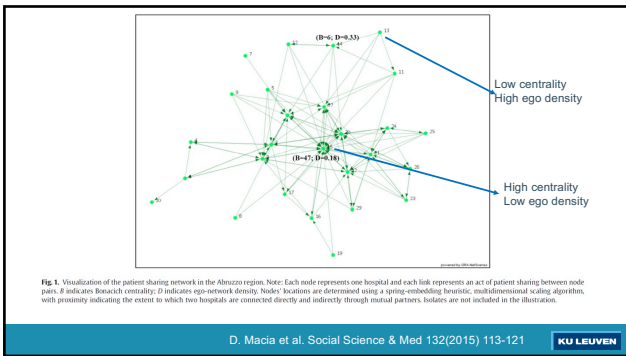
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Effect of hospital referral networks on patient readmissions

- **Definitions**
 - **Hospital centrality:** central network position through own referrals and those of their partners
 - Bonacich eigenvector of centrality of power (score to nodes with more connections and/or those connected to highly connected nodes) (Bonacich 1987)
 - Specific intention to refer patients to hospitals with better resources
 - **Ego-network structures:** reference player (ego) connected to other actors (alter). Ego-network density is number of ties divided by total possible ties
 - Unstructured referral pathways, specialisation at network level not achieved, dealing with procedural issues from every partner
- Italy, Abruzzo region with 1300000 residents
 - 6 local health authorities with 21 public and 10 private hospitals

D. Macia et al. Social Science & Med 132(2015) 113-121

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Effect on readmissions

- Patient characteristics**
 - Charlson comorbidity index
 - Private and teaching hospitals > public hospitals
 - Hospital size (smaller hospitals have higher rates)
- Network characteristics**
 - Higher centrality leads to less readmissions (OR 0,933; p<0,01)
 - Ego-network density increases the odds for readmission (OR 1.5; p<0.05)
 - Differences in managerial and clinical capabilities can explain some of the readmission findings

D. Macia et al. Social Science & Med 132(2015) 113-121

When is a network successful?

V = Quality / Cost

Quality

- Comparable PROM at every partner?
- Comparable PREM at every partner?
- Equitable access to technology?
- Adequate referral pathways?
- Transmutal clinical pathways implemented?

Cost

- Improved efficiency
 - Logistic collaboration
 - Bed reduction on networklevel
 - Shared services
 - Avoid duplication
 - Home care

Network Outputs Outcomes

- Development of Models of Care
- Implementation of Models of Care
- Establishment of Trials, New Services, Changed Practice, Re-design Projects
- Education and Training of Health Professionals, Consumers, Carers
- Consumer and Carer Materials
- Raising Profile of Disease/Clinical Condition
- Information Dissemination (Newsletters, Website)
- Journal Publications, Conference Presentations
- Increased Resources for Disease/Clinical Condition
- Measurable Improvement-Health Outcomes

Frances Clare Cunningham^{1,2}, Geetha Ramnuthugala^{1,2}, Johanna Irene Westbrook³, Jeffrey Brailwaite^{2,4}

BMJ Open 2019;9:e024231

Care transitions between hospitals are associated with treatment delay for patients with muscle invasive bladder cancer

Jeffrey J. Tomaszewski, MD¹, Elizabeth Handorf, PhD², Anthony T. Corcoran, MD¹, Yu-Ning Wong, MD, MSCE³, Reza Mehraviz, MD¹, Justin E. Bekelman, MD⁴, Daniel Carter, MD^{5,6}, Alexander Kulkov, MD¹, David Y.T. Chen, MD¹, Robert G. Uzzo, MD¹, and Marc C. Smartnova, MD, MSHP¹

Retrospective study on 22251 MIBC patients in USA

- Care transition = change in hospital from diagnosis to definitive treatment (cystectomy or chemotherapy)
- 42% experienced a care transition (increasing over time)
- 14.8% had a delay > 3 months, compared to 10.7% of patients diagnosed and treated in the same hospital

J. Urol 2014; 192(5): 1349-1354

Making surgery safer by centralization of care: impact of case load in penile cancer

Joren Vanthone¹, Anka Thomas², Igor Tsaur³, Maarten Albersen⁴ and in collaboration with the European Reference Network for rare urological diseases and complex conditions (EUROGEN)

Penile cancer is an extremely rare cancer. The rarity of the disease results in poor understanding of the biological behavior and poor guideline adherence by treating physicians. Over the past two-or-so decades, we have come to understand that the pooling of knowledge in high volume centres by the centralization of care, and the formation of networks can make a difference. High volume centres and centralized health-care systems **have higher adoption rates of organ-sparing surgery and surgical lymph node staging** and these have resulted in **appreciable improvements in patient's quality of life and disease-specific survival.**

World Journal of Urology
http://dx.doi.org/10.5536/wju.2016.0709

German second-opinion network for testicular cancer: Sealing the leaky pipe between evidence and clinical practice

DISCREPANCY (DISCREPANT SECOND OPINION) AND DISCREPANT THERAPY (DISCREPANT THERAPY) BETWEEN FIRST AND SECOND OPINION: PETER ALBERS, ALEXANDER KALK, LOTTE WERNERICH, WALTER WAGNER, DENIS HENSEL, ANDREAS BERTH, HEINZ SCHNEIDER, MARC SCHAEFER, MARCO SCHNEIDER, THOMAS POTTER, ANDreas PETER BRECHENBERG, ANDreas VAN SCHERAEDE, and MARK SCHAEFER, ON BEHALF OF THE GERMAN GERMAN TESTICULAR CANCER STUDY GROUP.

TABLE II. Concordance between the first and second opinion in relation to tumor stage (n=705).

Clinical tumor stage (subgroup)	Concordant n (%)	First and second opinion		Concordance status not clear n (%)	Total n (%)
		Discordant: second opinion more extensive therapy n (%)	Discordant: first opinion in the scope of more extensive therapy n (%)		
I	357 (66.0)	26 (4.8)	87 (16.1)	65 (12.0)	541 (100)
Ic, Iib, Ii	26 (44.3)	15 (8.0)	55 (11.3)	8 (4.5)	177 (100)
Ic, Iiia, Iiib, Iiic	83 (48.8)	15 (8.8)	49 (28.8)	16 (9.4)	170 (100)
IIa/IIab	59 (48.7)	1 (2.6)	15 (41.0)	1 (2.6)	121 (100)
Total	571 (59.0)	57 (6.2)	206 (22.2)	103 (11.1)	958 (100)

Patients were classified according to the TNM classification. The scope of therapy was evaluated according to the guideline recommendation for the respective tumor stage (73). Patients' (n=705) showed that the percentage of discordant recommendation increased significantly with increasing tumor stage (p=0.001), 52.3% of patients in the 2009 intermediate prognosis group, 18.5% of patients in the 2009 good prognosis group.

- Discrepancy 39.5%
- Less extensive treatment 28.1%
- More extensive treatment 15.6%
- 2y progr. Free surv. 90.4%
- every 6th second opinion led to a change in therapy

ONCOLOGY REPORTS 31: 2477-2481, 2014

The impact of multidisciplinary team meetings on patient assessment, management and outcomes in oncology settings: A systematic review of the literature

Brindha Pillay^{1,2}, Addie C. Wootten^{3,4,5}, Helen Crowe^{6,7}, Niall Corcoran^{8,9}, Ben Tran¹⁰, Patrick Bowden¹¹, Jane Crowe¹, Anthony J. Costello^{12,13}

- MDT have a cost and may lengthen the decisions process
- MDT lead to significant changes in the treatment of cancer patients
- Unclear if these changes lead to
 - Significant changes in patient experience
 - Significant changes in QoL
 - Significant survival outcome (weak evidence)

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The effect of selection and referral biases for the treatment of localised prostate cancer with surgery or radiation

Christopher J. D. Wallis¹, Gerard Morton², Sander Henschen³, Ronald T. Kodama⁴, Gresh S. Kulkarni⁵, See Appu⁶, Bobby Shargun⁷, Roger Buckley⁸, Arthur Grabowski⁹, Steven A. Narod¹⁰ and Robert K. Nam¹¹

Table 5. Treatment allocation for patients in the subgroup of patients with low-risk prostate cancer (Gleason <5, Stage 1, and PSA <10 ng mL) and available data on biopsy tumour volume (n = 291), stratified by volume of prostate cancer

	RadOnc (n, %)	Urologist alone (n, %)
Low-volume prostate cancer (<2 positive cores)		
No treatment	38 (62.3)	118 (88.1)
Any treatment	23 (37.7)	16 (11.9)
Radiation	16 (26.2)	<5
EBRT	10 (16.4)	0
Brachytherapy ^a	6 (9.8)	<5
Surgery	7 (11.5)	11-15
High-volume prostate cancer (>2 positive cores)		
No treatment	17 (34.0)	33 (71.7)
Any treatment	33 (66.0)	13 (28.3)
Radiation	26 (52.0)	7 (15.3)
EBRT	13 (26.0)	<5
Brachytherapy ^a	13 (26.0)	<5
Surgery	7 (14.0)	6 (13.0)

CONCLUSIONS
In a large, contemporary, population-based cohort of patients newly diagnosed with prostate cancer, radiation oncology consultation prior to treatment decision was associated with an increased rate of active treatment. Selection and referral biases, and unmeasured confounding such as patient preference must be considered as important factors attributing this association. Multidisciplinary consultations should continue to be utilised after accounting for these biases and how patient preferences can impact decision-making.

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Clinician-led improvement in cancer care (CLICC) - testing a multifaceted implementation strategy to increase evidence-based prostate cancer care: phased randomised controlled trial - study protocol

Bernardo Sousa^{1,2}, Jane Young³, David P. Singh^{4,5}, Andrew B. Kneebone^{6,7}, Andrew J. Brock^{8,9}, Miriam Whittle¹⁰, Amanda Damstra¹¹, Dianne C. O'Connor^{12,13} and Mary Haines¹⁴

Figure 1 Approach to intervention design.

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A multidisciplinary team-oriented intervention to increase guideline recommended care for high-risk prostate cancer: A stepped-wedge cluster randomised implementation trial

Bernardo Sousa^{1,2}, Jane Young³, David P. Singh^{4,5}, Andrew B. Kneebone^{6,7}, Andrew J. Brock^{8,9}, Miriam Whittle¹⁰, Amanda Damstra¹¹, Dianne C. O'Connor^{12,13} and Mary Haines¹⁴

Table 3. Proportion of the total eligible patients who received care (ranked by percent of patients received among 2008-2010)

Characteristic	N (%)	Adjusted # RR (95% CI)	N (%)	Adjusted # RR (95% CI)
All patients	427	219 (51%)	219	227 (89%)
Stage 1	36	34 (94%)	113 (311.1, 1.25)	34 (100%)
Stage 2	39	6 (15%)	346 (8.8, 1.25)	6 (15%)
Stage 3	48	12 (25%)	346 (8.8, 1.08)	12 (25%)
Stage 4	54	43 (79%)	346 (8.8, 1.17)	43 (79%)
Stage 5	52	46 (88%)	113 (311.1, 1.21)	46 (88%)
Stage 6	12	8 (67%)	879 (8.75, 0.86)	8 (67%)
Stage 7	34	23 (68%)	346 (8.8, 1.15)	23 (68%)
Stage 8	32	29 (91%)	142 (1.24, 1.65)	29 (91%)
Stage 9	120	90 (75%)	48	30 (25%)

Figure 2. Timeline of the intervention.

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Conclusion

- Transitions in care can lead to significant delay in treatment
- Centralization leads to better
 - Adherence to guidelines
 - Adoption of organ sparing techniques
 - Improved outcome
- Second opinion systems can lead to significant changes in treatment
- The role and impact of MDT meetings is important but must be evaluated
 - Reduce selection and referral bias
- System-level interventions are more successful than individual-level interventions
- Network dynamics have an impact on outcome

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