



La discussione multidisciplinare: dove lo screening si integra con la Breast Unit

Marina Bortul
SSD Breast Unit – DAI Chirurgia



NO CONFLITTI INTERESSE



L' INCIPIT ...

European Resolution 2006



.....Calls on the Member States to ensure Nationwide provision of interdisciplinary breast centres in accordance with EU Guidelines by **2016**, since treatment in an interdisciplinary breast centre has been proved to raise chances of survival and to improve the quality of life, and calls on the Commission to deliver a progress report on this every two years



European Journal of Cancer (2013) 49, 3579–3587



Available at www.sciencedirect.com

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journal homepage: www.ejcancer.com



The requirements of a specialist Breast Centre

A.R.M. Wilson^{a,*}, L. Marotti^b, S. Bianchi^c, L. Biganzoli^d, S. Claassen^e, T. Decker^f,
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BMJ

BMJ 2012;344:e2718 doi: 10.1136/bmj.e2718 (Published 26 April 2012)

Effects of multidisciplinary team working on breast cancer survival: retrospective, comparative, interventional cohort study of 13 722 women

Eileen M Kesson project manager^{1*}, Owen M Altadice statistician^{1*}, W David George school of medicine honorary professor², Harry J O Burns chief medical officer for Scotland³, David S Morrison director⁴

Objectives To describe the effect of multidisciplinary care on survival in women treated for breast cancer

“... after multidisciplinary care was introduced breast cancer mortality was 18% lower in the intervention area than in the non intervention area”

The Breast Centre is made up by a **cohesive group of dedicated breast cancer specialists working together as a multidisciplinary team** with access to all the facilities required to deliver **high quality care** throughout the **breast cancer pathway**.



European Journal of Cancer 72 (2017) 244–250



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Position Paper

European Breast Cancer Conference manifesto on breast centres/units[☆]



Fatima Cardoso ^{a,*}, Luigi Cataliotti ^b, Alberto Costa ^c, Susan Knox ^d,
Lorenza Marotti ^e, Emiel Rutgers ^f, Marc Beishon ^c

•... it is recommended that mammography screening services should be part of or closely located with breast unit



• Karamoja



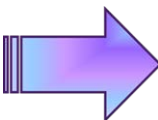
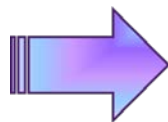


Original article

The requirements of a specialist breast centre

Laura Biganzoli ^{a,*,1}, Fatima Cardoso ^{b,1}, Marc Beishon ^c, David Cameron ^d,
Luigi Cataliotti ^e, Charlotte E. Coles ^f, Roberto C. Delgado Bolton ^g, Maria Die Trill ^h,
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Lorenza Marotti ⁿ, Peter Naredi ^o, Simon Oberst ^p, Jean Palussière ^q, Antonio Ponti ^r,
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Marko Skelin ^w, Berta Sousa ^x, Tiina Saarto ^y, Alberto Costa ^z, Philip Poortmans ^z

(51: 65-84,2020)



4.3. Screening

- Where a population-based breast cancer screening programme exists, the breast centre and the screening programme should coordinate the assessment of screen-positive cases to ensure quality and continuity of care and optimisation of resources.
- It is recommended that diagnostic assessment of screen-detected imaging findings is done in the breast centre.
- The breast centre should contribute to improving protocols and professional expertise at screening centres.



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ASUTS-Azienda Sanitaria Università di Trieste
SSO-OSARF-Sistema Sanitario Ospedale di Cattinara
OSMCS-Department of Science Medicine

PDTA della donna con carcinoma mammario

SCREENING MAMMOGRAFICO

Il programma di screening regionale Friuli Venezia Giulia è appaltato ad una ditta esterna "Radiological Service" che lo gestisce attraverso multiple unità mobili dislocate in tutta la regione; nello specifico, nella provincia di Trieste, queste si collocano a turno a Trieste (Comprensorio di San Giovanni-Punto Rosa), a Muggia ed ad Anisina (nella sede del Distretto).

Il programma di screening prevede l'estensione fino ai 74 anni per le donne già aderenti al programma. Con delibera della Giunta Regionale n. 1674 del 13 novembre 2020 lo screening mammografico viene offerto anche alle donne dai 45 ai 49 anni (a partire da gennaio 2021).

I lettori Radiologi sono stati accreditati in seguito allo svolgimento di un percorso formativo presso il CSPO di Firenze già nel 2005.

Nella provincia di Trieste i radiologi lettori dello screening sono i medesimi preposti alle indagini di II livello, che vengono eseguite tutte presso la struttura complessa della Radiologia dell'Ospedale di Cattinara.

La comunicazione della diagnosi viene fornita dai Radiologi stessi o dalla dr.ssa Dellach, Referente Aziendale per lo screening sia del cancro della mammella che di quello col retto (SSD-OSARF Ospedale Maggiore).

Tutte le pazienti con patologia tumorale e/o dubbio diagnostico, vengono quindi avviate a visita chirurgica senologica (denominazione: "visita di screening della mammella 2° livello - SC Chirurgia Generale") presso l'ambulatorio della SSD Breast Unit, dove vengono prese in carico per l'impostazione del successivo iter diagnostico-terapeutico, definito poi collegialmente in corso di meeting multidisciplinare.

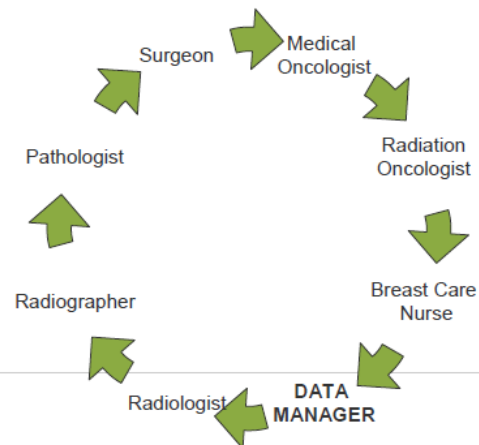




Il percorso e la presa in carico...



The Breast Core Team





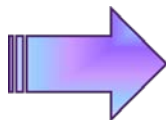
RESEARCH

Open Access



Integrating mammography screening programmes into specialist breast centres in Italy: insights from a national survey of Senonetwork breast centres

Silvia Deandrea^{1†}, Francesca Ferrè^{2†}, Rosanna D'Antona^{3†}, Catia Angiolini⁴, Marina Bortul⁵, Lauro Bucchi^{6*},
Francesca Caumo⁷, Lucio Fortunato⁸, Livia Giordano⁹, Monica Giordano¹⁰, Paola Mantellini¹¹, Irene Martelli²,
Giuseppe Melucci¹², Carlo Naldoni³, Eugenio Paci¹³, Loredana Pau³, Gianni Saguatti¹⁴, Elisabetta Sestini³,
Corrado Tinterri¹⁵, Milena Vainieri^{2†} and Luigi Cataliotti^{16†}



Abstract

Background: Despite recommendations, mammography screening is often insufficiently integrated into specialist breast centres. A national, cross-sectional, voluntary, online survey on this issue was carried out among the Italian breast centres associated with Senonetwork, the Italian network of breast cancer services.

Methods: A 73-item questionnaire was created, pre-tested and piloted. Centres integrating and not integrating a screening programme were compared using the unified theory of acceptance and use of technology (UTAUT) model. Centres' clustering was performed using the Gower's distance metric. Groups and clusters were compared with the equality-of-means test.

Results: The response rate was 82/128 (65%). Overall, 84% (69/82) breast centres reported a collaboration with a screening programme in performing and/or reading mammograms and in the diagnostic work-up of women with abnormal screening results. The same proportion was observed among those centres responding to all questions (62/74). Performance expectancies (or the perceived usefulness of integration in terms of clinical quality, patient convenience, ease of job, and professional growth), satisfaction and motivation were higher in those centres collaborating with the screening programme. Effort expectancy indicators (or the degree to which the respondents believe that the integration is easy to implement) and those concerning the existence of facilitating conditions were lower both in centres collaborating and not collaborating with the screening programme. Among the former, six clusters of centres, distributed from 'no integration' to 'high', were identified. In cluster analysis, the highest level of integration was associated with higher agreement that integration eases the job, offers better opportunities for professional growth, and



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Table 1 Variables used in the cluster analysis by type of integration of screening programmes into breast centres

Type of integration	Variable
Structural integration	The breast centre and the screening programme use the same software for patient management (screening invitation, basic test, assessment examinations) (D52)
	The breast centre and the screening programme share a database with patient information (D55)
	There is a reference person who ensures the link between the breast centre and the screening programme for women with suspected cancer (D57)
	Number of activities shared by the breast centre and the screening programme using the same software for patient management (D53_CONT)
	Number of items of information shared between the breast centre and the screening programme via shared database (D56_CONT)
	Number of health workers/professionals who ensure the link between the breast centre and the screening programme (D58_CONT)
	Number of health professionals from the screening programme who also work in the clinical area of the breast centre (D59_CONT)
Process integration	The screening activity is included into the diagnostic-therapeutic clinical protocol adopted by the breast centre (D65)
Functional integration	The breast centre and the screening programme share the same budget (D51)
	The person responsible for the breast centre and the one responsible for the screening programme share objectives about responsiveness and promptness of treatment (D67)
	Frequency of coordination meetings between the breast centre and the screening programme (D70)
	Availability of training opportunities targeting health professionals both from the breast centre and the screening programme (D73)



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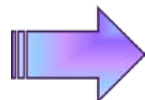


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Table 4 Type of integration in the six clusters and number of breast centres in each cluster

Cluster	Number of centres (%)	Type of integration
Fully integrated	12 (19)	High integration in all the three dimensions (structural, functional and process)
Highly integrated	13 (20)	High integration in structural and process integration, moderate functional integration
Moderately integrated	8 (12)	Moderate integration in all the three dimensions
Mildly integrated	6 (9)	Moderate structural integration, mild process and functional integration
Poorly integrated	19 (30)	Mild structural and process integration, moderate functional integration
Scarcely integrated	6 (9)	Scarce integration in all the three dimensions



makes the working environment more satisfactory. The least integrated cluster assigned the lowest score to the statement that local health authority made available the resources needed.

Conclusions: While confirming the positive effects of integrating screening programmes into breast centres, this survey has brought to light specific difficulties that must be faced. The results provide insights into the importance of integration focusing on the perspectives of professional career and motivation. The deficiency of facilitating conditions to integration is modifiable. Screening professionals' societies may have a role as initiators of the integration. Other supporting actions may be included in health laws at the national and regional level.

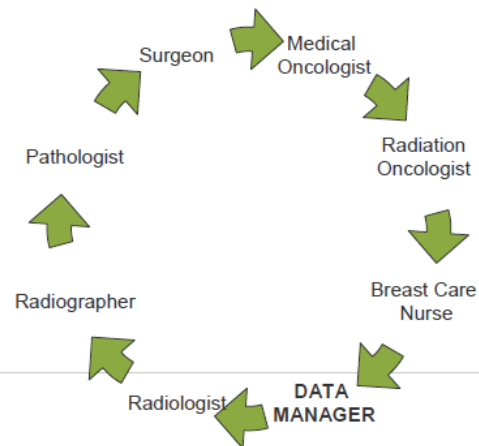
Keywords: Mammography screening, Breast centre, Health services integration, UTAUT, Survey



Il percorso e la presa in carico...



The Breast Core Team





Original article

The requirements of a specialist breast centre

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(51: 65-84,2020)

Meeting multidisciplinare

4.5. MDT meeting (MDM)

The breast centre must hold at least weekly a multidisciplinary case management meeting (MDM) to discuss diagnostic preoperative and postoperative cases, as well as any other issues related to breast cancer patients that requires multidisciplinary discussion. Advanced breast cancer cases must also be discussed.

- At least 95% of all early and locally advanced breast cancer cases and at least 50% of metastatic cases must be discussed at the meeting (but in future the goal is that all cases, early and metastatic, are discussed at the MDM). At pre-operative stage, the MDM must consider patient-related factors, tumour-related factors, and treatment options.
- Team members who must be present:
 - Discussion of pre-operative breast cancer cases: radiologist, pathologist, medical oncologist, surgeon, radiation oncologist, breast nurse and breast data manager
 - Discussion of post-operative cases: pathologist, surgeon, medical oncologist, radiation oncologist, breast nurse and breast data manager
 - Discussion of metastatic breast cancer cases: medical oncologist, radiation oncologist, breast nurse, radiologist, pathologist, nuclear medicine physician (mandatory if the breast centre performs and uses positron emission tomography-computed tomography (PET-CT) and recommended if the nuclear medicine service is not inside the hospital), palliative care specialist and breast data manager.



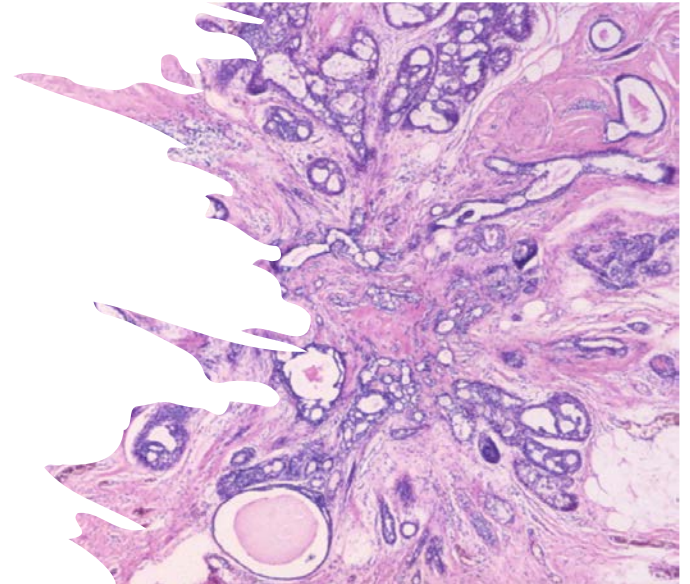
- Other team members must be encouraged to attend and must be available for consultation.
- Other specialists must be involved if necessary to discuss the clinical situation of patients.
- Radiological images must be available at the MDM. A photograph of the breast should be available to decide the best surgical strategy. Macroscopic pictures or the histology of special cases preferably from slides (video microscope or scanned slide) should be shown to support understanding of difficult histopathological reports.
- Evidence on decisions taken for each patient at the meeting must be formally recorded. The name of all team members participating in each meeting must be formally recorded.
- As the patient is usually not present at the MDM and patient preferences must always be taken into account, and because the available clinical documents could miss key information, an MDM decision might, in some cases, be modified at the time of communication with the patient. For this reason, it is important that the breast care nurse present knows the patient's wishes and expectations to ensure they can be shared at the MDM. The clinician who informs and discusses with the patient must have





Quali casi?

- B1
- B2 (con discrepanza Rx) – B4
- **B3**
 - Follow-up
 - VAE
 - Chirurgia
 - ! B:M=1:5





Quali casi?

- **B5 a/b**
 - Intervento ... descalation
 - Mammella
 - Ascella
 - Timing ... terapia neoadiuvante

Estimating the benefits of therapy for early-stage breast cancer: the St. Gallen International Consensus Guidelines for the primary therapy of early breast cancer 2019

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Surgical management

There are substantial variations around the world in availability of important treatments for breast cancer. Stakeholders should work to ensure that patients have access to essential treatments that improve survival for women with breast cancer

'No ink on tumor' is a sufficient surgical margin in most cases of primary invasive breast cancer, including patients with lobular breast cancer or extensive intraductal components, and after resection of residual palpable or imaging abnormalities following NST

ALND can be omitted after SLNB with one to two positive lymph nodes after mastectomy if RNI was planned. ALND can be omitted after SLNB with one to two positive lymph nodes following breast conserving surgery for tumors larger than 5 cm if WBI is planned.



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Extended mdm



Original article

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Use's assessment of geriatric variables in the older patient with cancer's multidisciplinary team meeting

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Meeting multidisciplinare LUCI e OMBRE

- Presupposti:

- Coinvolgimento di tutto il team
- Durata e presenza regolare ...

- TEMPO!

- Focalizzato sulla centralità del paziente





Meeting multidisciplinare LUCI e OMBRE

- Obiettivi:

- **CONDIVISIONE** delle **DECISIONI**
- **GARANZIA** della **RELAZIONE** con il team
 - Adeguata comunicazione
 - Dinamiche interpersonali
 - Rispetto inter-professionale





COMMENTARY

The Breast Journal

WILEY

2020

Making the breast multidisciplinary team meeting relevant again

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Division of Surgery and Interventional Science, University College London, Royal Free Hospital, London, UK

- **Concordanza tra**
 - **processo decisionale mdm e scelta terapeutica**





RESEARCH ARTICLE

Open Access



Translation of oncology multidisciplinary team meeting (MDM) recommendations into clinical practice

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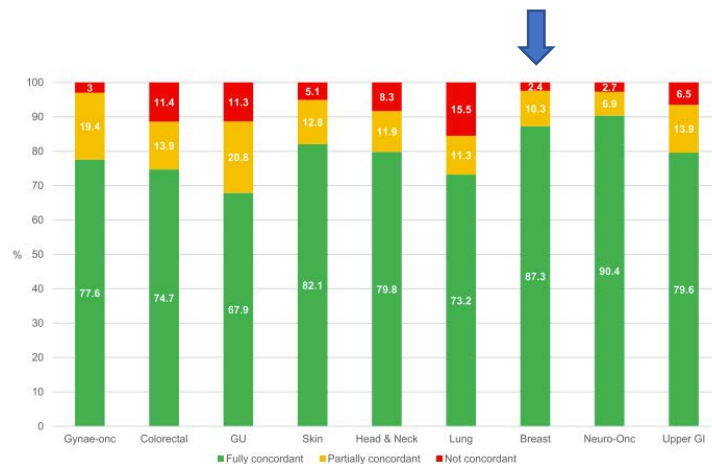


Fig. 1 Concordance of clinical management with MDM recommendation by tumour site

Background: Multidisciplinary team meeting (MDM) processes differ according to clinical setting and tumour site. This can impact on decision making. This study aimed to evaluate the translation of MDM recommendations into clinical practice across solid tumour MDMs at an academic centre.

Methods: A retrospective audit of oncology records was performed for nine oncology MDMs held at Liverpool Hospital, NSW, Australia from 1/2/17–31/7/17. Information was collected on patient factors (age, gender, country of birth, language, postcode, performance status, comorbidities), tumour factors (diagnosis, stage) and MDM factors (number of MDMs, MDM recommendation). Management was audited up to a year post MDM to record management and identify reasons if discordant with MDM recommendations. Univariate and multivariable regression analyses were performed to assess for factors associated with concordant management.

Results: Eight hundred thirty-five patients were discussed, median age was 65 years and 51.4% were males. 70.8% of patients were presented at first diagnosis, 77% discussed once and treatment recommended in 73.2%. Of 771 patients assessable for concordance, management was fully concordant in 79.4%, partially concordant in 12.8% and discordant in 7.8%. Concordance varied from 84.5% for lung MDM to 97.6% for breast MDMs. On multivariable analysis, breast and upper GI MDMs and discussion at multiple MDMs were significantly associated with concordant management. The most common reason for discordant management was patient/guardian decision (28.3%).

Conclusion: There was variability in translation of MDM recommendations into clinical practice by tumour site. Routine measurement of implementation of MDM recommendations should be considered as a quality indicator of MDM practice.

Keywords: Decision making, Health care quality indicator, Health services research, Hospital oncology service, Patient care team

... the most common reason for discordant management was patient decision.



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The Breast

journal homepage: www.elsevier.com/brst



Original article

Multidisciplinary team meeting and EUSOMA quality indicators in breast cancer care: A French regional multicenter study

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Introduction: We evaluate breast cancer (BC) pathway at a regional level including public, private and university institutions. We assessed the quality of multidisciplinary team meetings (MTM) and compliance with a panel of European high-quality indicators (EUSOMA QIs).

Methods: We conducted a retrospective multicenter (n = 20) study in the largest health care region in France. Between January and April 2015, we included all patients discussed at an MTM after a diagnosis of BC (n = 619). We analyzed quality of MTM by assessing the quorum, the reliability of data transcription and the exhaustivity of pre-therapeutic MTM. We then analyzed the compliance with a selected panel of 16 EUSOMA QIs.

Results: During MTM discussion, data were more than 95% consistent with medical records for 9/11 items. Pre-operative tumor histology (90.6%) and post-operative resection margins (84.3%) were the least concordant between medical records and MTM. Minimum standards as defined by EUSOMA were reached for 11/16 QIs, but not reached for pathology reports in non-invasive BC (78.2%), proportion of exclusive sentinel lymph node biopsies in patients with clinically negative axilla (85.2%), performing adjuvant chemotherapy (76.6%), and proportion of patients discussed in pre-therapeutic and post-operative MTM (63.5%).

Conclusions: In this multicentric study evaluating the quality of BC care with a representative sample of institutions, compliance with EUSOMA indicators was satisfactory for all type of institutions. However, too few patients were discussed in pre-therapeutic MTM (especially in non-university hospitals 43.7% [39.4–48.1]) versus 88.7% for others [82.2–95.1]) and data transcription was likely responsible for up to 15% of discordance.



Multidisciplinary Team Meeting Proposal and Final Therapeutic Choice in Early Breast Cancer: Is There an Agreement?

Lucia Bortol^{1,2*}, Giada Targato^{1,2}, Claudia Noto^{1,2}, Marco Giavarra², Lorenza Palmero^{1,4},
Diego Zara^{1,4}, Elisa Bertoli^{1,4}, Arianna Dri^{1,2}, Claudia Andreotta², Gaetano Pascoletti²,
Elena Poletto², Stefania Russo², Luca Seriau², Mauro Mansutti², Carla Cedolini²,
Debora Basile⁴, Gianpiero Fasola², Marta Bonotto² and Alessandro Marco Minisini²

- 291 mdm, 2017-18, Uniud
- Eta' media 62aa
- Discordanza tra mdm p.o. e scelta finale
 - 15.8% (46 casi)
 - Decisione clinica 87%
 - Follow-up vs cht
 - OT vs cht



Multidisciplinary Team Meeting Proposal and Final Therapeutic Choice in Early Breast Cancer: Is There an Agreement?

Lucia Bortot^{1,2*}, Giada Targato^{1,2}, Claudia Noto^{1,2}, Marco Giavarra³, Lorenza Palmero^{1,4}, Diego Zira^{1,4}, Elisa Bertoli^{1,4}, Arianna Dri^{1,4}, Claudia Andreetta⁵, Gaetano Pascoletti², Elena Poletto², Stefania Russo², Luca Seriau², Mauro Mansutti², Carla Cedolini⁶, Debora Basile⁶, Gianpiro Fasola⁶, Marta Bonotto² and Alessandro Marco Minisini²

TABLE 2 | Factors associated with discordance through univariate and multivariate analyses.

Characteristics		Number of patients	Univariate analysis (HR, 95% CI)	p	Multivariate analysis (HR, 95% CI)	p
Age	≥70 years	89	2.44 (1.28–4.63)	0.007	2.99 (0.64–13.95)	0.163
Menopausal status	Postmenopausal	203	4.15 (1.58–10.90)	0.004	3.92 (0.58–18.74)	0.179
Marital status	Unmarried	80	1.02 (0.49–2.10)	0.962		
Education	High degree	145	0.63 (0.31–1.26)	0.184		
Job	Housewife/retired	144	2.35 (1.36–4.85)	0.021	2.48 (0.68–9.12)	0.171
Number of children	≥1	244	1.73 (0.46–2.97)	0.736		
Smoking	NO	166	0.87 (0.44–1.70)	0.686		
Alcohol habit	Low	175	0.76 (0.39–1.48)	0.418		
Number of drugs	≥3	89	1.95 (1.02–3.72)	0.043	0.30 (0.07–1.28)	0.104
Presence of caregiver	YES	228	0.86 (0.40–1.86)	0.699		
Social impairments	YES	12	1.14 (0.24–5.40)	0.869		
Histotype	Others	84	1.59 (0.82–3.10)	0.169		
Grade	G1/G3	143	1.47 (0.78–2.80)	0.237		
Ki-67	<14 or >30	161	0.26 (0.08–0.83)	0.024	0.20 (0.05–0.81)	0.024
	14–30	14	3.91 (1.19–12.87)	0.024		
Biological profile	Others		1.15 (0.56–2.37)	0.703		
T	Others		1.04 (0.52–2.07)	0.909		
N	0–1	252	0.55 (0.28–1.10)	0.090	0.28 (0.98–0.80)	0.018
CCS score	High		1.31 (1.09–1.57)	0.004	0.88 (0.09–8.80)	0.913

Bold values are $p \leq 0.05$, considered statistically significant.



Treatment decision making in breast cancer role of the mdm

Breast Cancer Manag. 4(3):121, 2015

D. Generali et al

- **Concordanza 72/115 casi (62.6%)**
- **Discordanza:**
 - **Eligibilita' studi clinici**
 - **Definizione prognostica su base genomica**
 - **Comorbidita'**



Treatment decision making in breast cancer role of the mdm


Breast Cancer Manag. 4(3):121, 2015

D. Generali et al

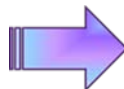
- **Concordanza tra LG chirurgiche ed oncologiche**
 - **83.3% vs 49.3% ($p < 0.001$)**
 - **Strategie innovative trials clinici**
 - **Migliore definizione clinica**
 - **SCELTA paziente**
 - **Difficolta' organizzative**



Clinical decision trees support systematic evaluation of multidisciplinary team recommendations

Mathijs P. Hendriks^{1,2,3}  · Xander A. A. M. Verbeek² · Jeannette G. van Manen³ · Sannah E. van der Heijden Shirley H. L. Go⁴ · Gea A. Gooiker⁵ · Thijs van Vegchel² · Sabine Siesling^{2,3} · Agnes Jager⁶

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Abstract

Purpose EUSOMA's recommendation that “each patient has to be fully informed about each step in the diagnostic and therapeutic pathway” could be supported by guideline-based clinical decision trees (CDTs). The Dutch breast cancer guideline has been modeled into CDTs (www.oncoguide.nl). Prerequisites for adequate CDT usage are availability of necessary patient data at the time of decision-making and to consider all possible treatment alternatives provided in the CDT.

Methods This retrospective single-center study evaluated 394 randomly selected female patients with non-metastatic breast cancer between 2012 and 2015. Four pivotal CDTs were selected. Two researchers analyzed patient records to determine to which degree patient data required per CDT were available at the time of multidisciplinary team (MDT) meeting and how often multiple alternatives were actually reported.

Results The four selected CDTs were indication for magnetic resonance imaging (MRI) scan, preoperative and adjuvant systemic treatment, and immediate breast reconstruction. For 70%, 13%, 97% and 13% of patients, respectively, all necessary data were available. The two most frequent underreported data-items were “clinical M-stage” (87%) and “assessable mammography” (28%). Treatment alternatives were reported by MDTs in 32% of patients regarding primary treatment and in 28% regarding breast reconstruction.

Conclusion Both the availability of data in patient records essential for guideline-based recommendations and the reporting of possible treatment alternatives of the investigated CDTs were low. To meet EUSOMA's requirements, information that is supposed to be implicitly known must be explicated by MDTs. Moreover, MDTs have to adhere to clear definitions of data-items in their reporting.

Keywords Guidelines · Clinical decision trees · Decision support · Breast cancer · Multidisciplinary team



Breast Cancer Research and Treatment (2020) 183:355–363
https://doi.org/10.1007/s10549-020-05769-1

CLINICAL TRIAL



Clinical decision trees support systematic evaluation of multidisciplinary team recommendations

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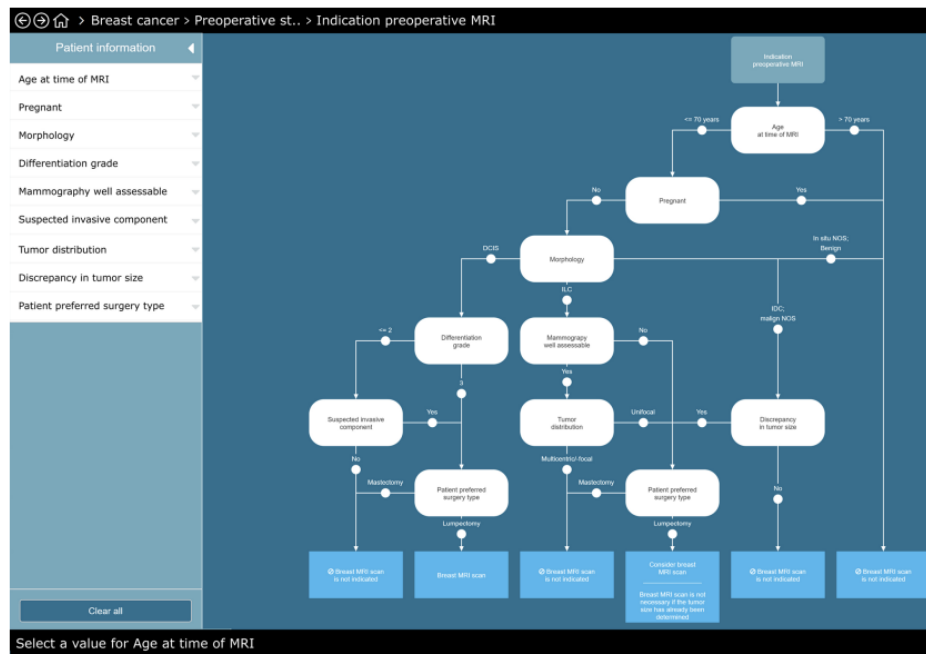
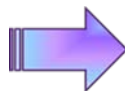


Fig. 1 Example of the clinical decision tree (CDT) of “pre-operative MRI scan” in Oncoguide. MRI is indicated in case of (i) breast-conserving surgery, unless tumor size is already assessed; (ii) discrepancy between tumor size assessed by clinical examination, mammo-

graphy and/or ultrasound; (iii) lobular carcinoma unless unifocal mass on well assessable mammography. **PST=preoperative systemic treatment



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CLINICAL TRIAL



Clinical decision trees support systematic evaluation of multidisciplinary team recommendations

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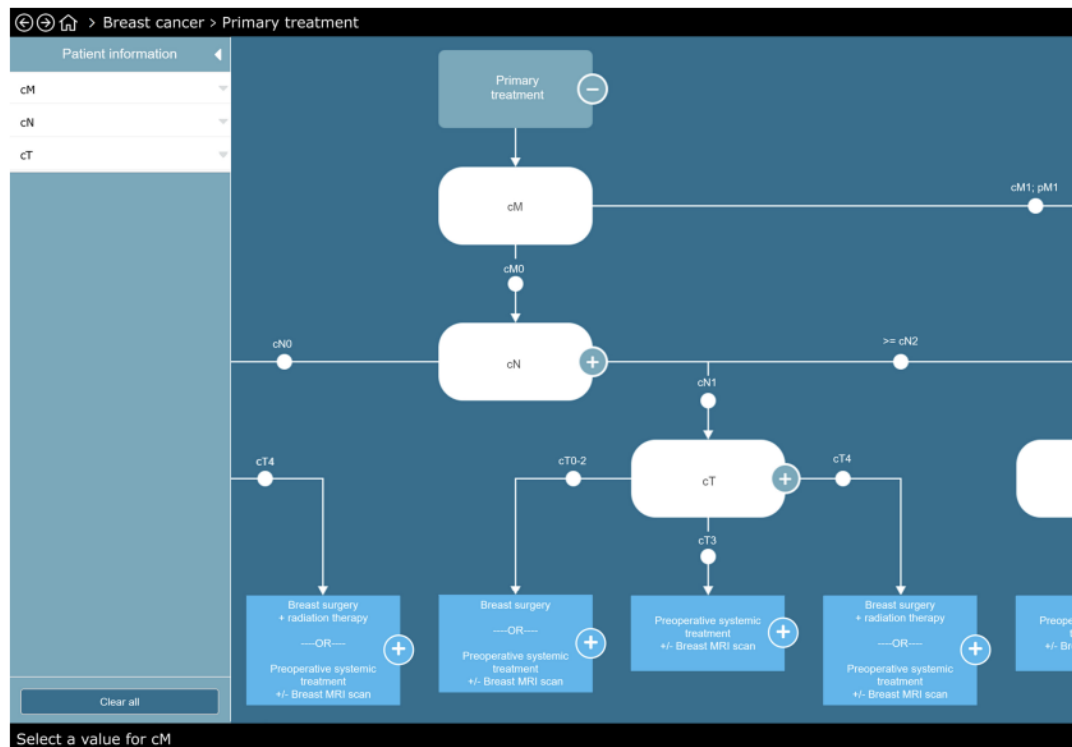


Fig. 2 Example of the clinical decision tree regarding first treatment. Note that some “leaves” (i.e., the rectangles at the bottom of the CDT) result in a guideline-based recommendation with more than one alternative



RESEARCH ARTICLE

Open Access



Computational prediction of multidisciplinary team decision-making for adjuvant breast cancer drug therapies: a machine learning approach

Frank P. Y. Lin^{1,2,3*}, Adrian Pokorny¹, Christina Teng¹, Rachel Dear^{1,4} and Richard J. Epstein^{1,2,3}

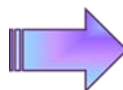
Background: Multidisciplinary team (MDT) meetings are used to optimise expert decision-making about treatment options, but such expertise is not digitally transferable between centres. To help standardise medical decision-making, we developed a machine learning model designed to predict MDT decisions about adjuvant breast cancer treatments.

Methods: We analysed MDT decisions regarding adjuvant systemic therapy for 1065 breast cancer cases over eight years. Machine learning classifiers with and without bootstrap aggregation were correlated with MDT decisions (recommended, not recommended, or discussable) regarding adjuvant cytotoxic, endocrine and biologic/targeted therapies, then tested for predictability using stratified ten-fold cross-validations. The predictions so derived were duly compared with those based on published (ESMO and NCCN) cancer guidelines.

Results: Machine learning more accurately predicted adjuvant chemotherapy MDT decisions than did simple application of guidelines. No differences were found between MDT- vs. ESMO/NCCN- based decisions to prescribe either adjuvant endocrine (97%, $p = 0.44/0.74$) or biologic/targeted therapies (98%, $p = 0.82/0.59$). In contrast, significant discrepancies were evident between MDT- and guideline-based decisions to prescribe chemotherapy (87%, $p < 0.01$, representing 43% and 53% variations from ESMO/NCCN guidelines, respectively). Using ten-fold cross-validation, the best classifiers achieved areas under the receiver operating characteristic curve (AUC) of 0.940 for chemotherapy (95% C.I., 0.922—0.958), 0.899 for the endocrine therapy (95% C.I., 0.880—0.918), and 0.977 for trastuzumab therapy (95% C.I., 0.955—0.999) respectively. Overall, bootstrap aggregated classifiers performed better among all evaluated machine learning models.

Conclusions: A machine learning approach based on clinicopathologic characteristics can predict MDT decisions about adjuvant breast cancer drug therapies. The discrepancy between MDT- and guideline-based decisions regarding adjuvant chemotherapy implies that certain non-clinicopathologic criteria, such as patient preference and resource availability, are factored into clinical decision-making by local experts but not captured by guidelines.

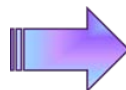
Keywords: Breast cancer, Cytotoxic drug therapy, Decision analysis, Machine learning, Clinical decision support system





Using Machine Learning and Deep Learning Methods to Predict the Complexity of Breast Cancer Cases

Akram REDJDAL^{a,1}, Jacques BOUAUD^a, Joseph GLIGOROV^{b,c} and
Brigitte SEROUSSI^{a,c,d}



Abstract. In many countries, the management of cancer patients must be discussed in multidisciplinary tumor boards (MTBs). These meetings have been introduced to provide a collaborative and multidisciplinary approach to cancer care. However, the benefits of MTBs are now being challenged because there are a lot of cases and not enough time to discuss all the of them. During the evaluation of the guideline-based clinical decision support system (CDSS) of the DESIREE project, we found that for some clinical cases, the system did not produce recommendations. We assumed that these cases were complex clinical cases and needed deeper MTB discussions. In this work, we trained and tested several machine learning and deep learning algorithms on a labelled sample of 298 breast cancer patient summaries, to predict the complexity of a breast cancer clinical case. XGboost and multi-layer perceptron were the models with the best result, with an F1 score of 83%.

Keywords. Supervised Machine Learning, Deep learning, Binary classification, Breast Cancer.



Role of Telemedicine in Multidisciplinary Team Meetings

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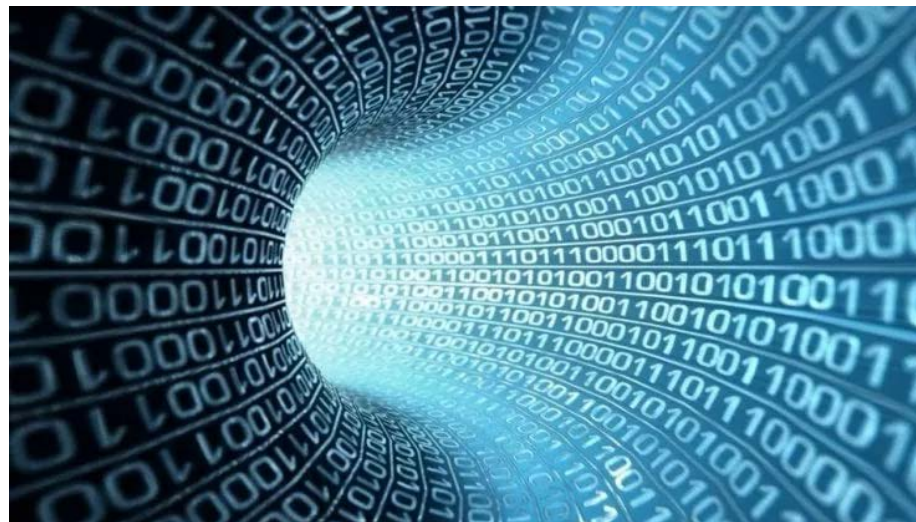
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2020

J path. Inform. 2019,; 10:35





Meeting multidisciplinare

- **Momento chiave nel processo decisionale**
 - Multidisciplinarieta'
 - Percorso individualizzato basato sulle best clinical practice
 - **Adeguamento bisogni fisici e psicologici paziente**
 - **! Fragilita'**
- **Riorganizzazione TEMPO**



L' EXPLICIT Screening e Breast Unit

[Comment](#) > Eur J Cancer. 2017 Dec;87:199-200. doi: 10.1016/j.ejca.2017.05.040.

Epub 2017 Jun 26.

Letter to the Editor regarding the paper by F. Cardoso et al. 'European Breast Cancer Conference manifesto on breast centres/units'

Gianni Saguatti ¹, Carlo Naldoni ², Eva Benelli ³, Chiara Fedato ⁴, Alfonso Frigerio ⁵, Vania Galli ⁶, Livia Giordano ⁷, Paola Golinelli ⁸, Doralba Morrone ⁹, Adriana Paduos ¹⁰, Fiammetta Querci ¹¹, Antonio Rizzo ¹², Lauro Bucchi ¹³

[Comment](#) > Eur J Cancer. 2017 Dec;87:201-202. doi: 10.1016/j.ejca.2017.06.044.

Epub 2017 Sep 21.

Reply to letter from Suguatti et al

Luigi Cataliotti ¹, Lorenza Marotti ², Marc Beishon ³, Alberto Costa ⁴, Susan Knox ⁵, Emiel Rutgers ⁶, Fatima Cardoso ⁷



.... 2023

- Integrazione
- Multidisciplinarieta'
- Monitoraggio
- Comunicazione
- Team
- Paziente



Breast Unit Trieste





GISMa
con
veg
no
2023

BARI
17-19
maggio
2023

Screening
mammografico:
impronte,
traiettorie,
percorsi

