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**Multidisciplinary Rectal Cancer Care in the United States:
Lessons Learned from the United Kingdom Multidisciplinary
Team Model and Future Perspectives**

UK Lessons for the US MDT

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5 complete pathologic response (pCR); National Accreditation Program for Rectal Cancer
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8 Viewpoint
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10 Rectal cancer care is complex, and the first therapeutic act is crucial. With the wide range
11 of health-care professionals involved, an enormous potential for poor coordination and
12 miscommunication exists. In the United Kingdom (UK), multidisciplinary teams (MDTs)
13 were implemented in 1995 on impetus from the Calman-Hine report, which stressed the
14 need for specialist care and multidisciplinary management of cancer services. The MDTs
15 sought to improve coordination, communication, and decision-making between the
16 health-care team and patients.¹ By bring together the experts, MDTs aimed to reduce
17 variation in treatment and survival patterns. It is now mandatory in the UK for colorectal
18 cancer treatment decisions to be made within the context of an MDT meeting. Since
19 inception, the MDT structure has evolved to the peer review process to ensure high
20 quality decision-making is made and that the decisions are implemented.² MDT
21 recommendations are followed upwards of 90%, and lack of compliance with
22 recommendations is related to patient co-morbid disease and patient preferences.²
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26 Notwithstanding widespread use, limited research shows MDT effectiveness for clinical
27 decisions in the UK.^{1,3} As the United States (US) follows the UK's MDT model, there is
28 question of if the MDT has an impact on overall outcomes.⁴ There is a need for dramatic
29 improvement in the US, where unacceptably high variability in treatment and outcomes
30 by cancer center type, geographical location, and hospital volume are seen.⁵ Despite
31 advances in surgical technique and multimodality therapy, US rectal cancer care remains
32 somewhat chaotic.⁵ The American College of Surgeons (ACS) Commission on Cancer
33 (CoC) National Accreditation Program for Rectal Cancer (NAPRC) was created to
34 emulate the UK and Scandinavian models, developing certified centers of excellence,
35 following evidence-based care pathways and protocols to reduce disparity and improve
36 outcomes.⁶
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40 Intuitively, there appear to be undisputable MDT benefits in rectal cancer. True to their
41 intended goal, MDTs have promoted teamwork, communication and cooperation between
42 disciplines for optimal diagnosis, evidence-based decision making, treatment planning,
43 improvements in survival, and both patient and clinician satisfaction.⁷ The prognosis of
44 rectal cancer has improved, with better rates of morbidity, permanent colostomy creation,
45 and oncologically acceptable rectal excision, leading to lower recurrence, better disease-
46 free survival and overall survival.⁶ MDT meetings directly impact patient assessment and
47 management, with the discussion changing the operative plan in a substantial portion of
48 rectal cancer patients before surgery, especially locally advanced cases.^{3,7} The system
49 also allows for robust governance around research or innovative practice and offers both
50 patients and clinicians reassurance that the care plan is being delivered under a consensus
51 management strategy. An example of this approach could be patients treated under
52 "watch and wait" strategies. Such data will be captured as surveillance metrics within the
53 developing NAPRC.
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58 The real question may not be if the MDT process improves clinical outcomes, but if we
59 are properly measuring them. At inception, there were no standardized metrics or
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4 methods to measure implementation or effectiveness, so no reliable figures for quality
5 improvement exist. The US model could build upon this by the introduction of peer-
6 review and patient-related outcome metrics at onset, establishing the role of nursing
7 navigators, institutional data trackers for timely reporting, and universal access to a
8 comprehensive database like the National Bowel Cancer Audit for benchmarking
9 outcomes.
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12 However, true implementation of the MDT process needs to occur for real progress to be
13 made. The question should transition from, “Does this work?” to “How can we use this
14 process to apply the evidence and further improve outcomes?” For example, the interval
15 between neoadjuvant chemoradiotherapy and surgery is not standardized. Using an
16 evidence-based standard could optimize the chances of complete pathologic response
17 (pCR) and perhaps increase organ preservation. Currently, the Response Evaluation
18 Criteria In Solid Tumors (RECIST) criteria are the only validated measures to assess
19 response in primary disease, albeit few validations exist for outcomes in rectal cancer,
20 and none for recurrent rectal cancer. Harnessing the evidence from the Magnetic
21 Resonance Imaging and Rectal Cancer European Equivalence (MERCURY) Study
22 Group and subject matter experts, the MDT practice can evolve to using MRI for risk
23 stratification, routinely re-imaging after neoadjuvant treatment, for predictive and
24 prognostic imaging biomarkers, such as extramural venous invasion (EMVI) and tumor
25 regression grade (TRG).^{8,9} With this information, we can stop treating lymph nodes in the
26 mesorectum, which will be removed with a proper total mesorectal excision, and employ
27 these biomarkers to guide adjuvant treatment, timing, and surgical options.¹⁰ The team
28 can also work towards establishing an objective response threshold in patients
29 undergoing treatment for recurrent disease. The US is clearly ready for MDT rectal
30 cancer care, and using the UK framework and future direction gives promise for success.
31 Within this framework, the colorectal surgeon can serve as the team leader, furthering an
32 individualized plan for best overall outcomes, considering the oncologic and functional
33 outcomes, as well as the patient preferences.
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40 References

- 41 1. Fleissig A, Jenkins V, Catt S, Fallowfield L. Multidisciplinary teams in cancer care:
42 are they effective in the UK? *Lancet Oncol.* 2006;7:935–943.
43
- 44 2. Blazeby JM, Wilson L, Metcalfe C, Nicklin J, English R, Donovan JL. Analysis of
45 clinical decision-making in multi-disciplinary cancer teams. *Ann Oncol.*
46 2006;17:457–460.
47
- 48 3. Pillay B, Wootten AC, Crowe H, et al. The impact of multidisciplinary team meetings
49 on patient assessment, management and outcomes in oncology settings: A systematic
50 review of the literature. *Cancer Treat Rev.* 2016;42:56–72.
51
- 52 4. Kozak VN, Khorana AA, Amarnath S, Glass KE, Kalady MF. Multidisciplinary clinics
53 for colorectal cancer care reduces treatment time. *Clin Colorectal Cancer.*
54 2017;16:366–371.
55
- 56 5. Monson JR, Probst CP, Wexner SD, et al; Consortium for Optimizing the Treatment of
57 Rectal Cancer (OSTRiCh): failure of evidence-based cancer care in the United
58 States.
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4 States: the association between rectal cancer treatment, cancer center volume, and
5 geography. *Ann Surg*. 2014;260:625–631.
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60
61
62
63
64
65
6. Wexner SD, Berho ME. The rationale for and reality of the new national accreditation program for rectal cancer. *Dis Colon Rectum*. 2017;60:595–602.
 7. Prades J, Remue E, van Hoof E, Borrás JM. Is it worth reorganising cancer services on the basis of multidisciplinary teams (MDTs)? A systematic review of the objectives and organisation of MDTs and their impact on patient outcomes. *Health Policy*. 2015;119:464–474.
 8. Chand M, Swift RI, Tekkis PP, Chau I, Brown G. Extramural venous invasion is a potential imaging predictive biomarker of neoadjuvant treatment in rectal cancer. *Br J Cancer*. 2014;110:19–25.
 9. Chand M, Evans J, Swift RI, et al. The prognostic significance of postchemoradiotherapy high-resolution MRI and histopathology detected extramural venous invasion in rectal cancer. *Ann Surg*. 2015;261:473–479.
 10. Chand M, Moran BJ, Jones RG, Heald RJ, Brown G. Lymph node status does not predict local recurrence in the total mesorectal excision era. *Dis Colon Rectum*. 2014;57:127–129.