Consensuses of Chinese experts on Glioma multidisciplinary team management (2nd edition)

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To increase the consistency of glioma multidisciplinary team (MDT) management across different regions and hospitals at varying levels, we have updated the Expert Consensus on MDT of Glioma in China based on the currently available evidence. This version has revised and updated the process-management rules and quality-control standards for a glioma MDT, providing reference and guidance for relevant clinical disciplines and physicians. All members of the Consensus Expert Group, abstract, background, and prospects can be seen in supplementary file, http://links.lww.com/CM9/B999.

Consensus Development Methodology

Consensus development draws on the Internationally recognized methods.[1,2] The consensus followed the reporting items for practice guidelines in health care (RIGHT).[3] The consensus was initiated by the National Center for Neurological Diseases, written by the consensus development working group, and the protocol has been published.[4] The study was registered on the National Practice Guideline Registration for transPAREncy (No. PREPARE-2022CN795), and a methodological quality assessment was also carried out.

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Recommendations and Levels of Evidence

Clinical question 1: What are the definitions and objectives of a glioma MDT?

Recommendation 1: Glioma MDT: Experts engaged in glioma diagnosis and treatment-related disciplines discussing one or several specific suspected glioma patients at a specific time, identifying patients with recurrent glioma after first-line treatment requiring salvage therapy, or screening for clinical trials (in-person meeting or online webinar). The MDT model encompasses the entire course of glioma diagnosis and treatment, including initial diagnosis, treatment planning, and follow-up. The patient's specific condition should be discussed and diagnosed, the

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best individualized treatment plan should be formulated, and the department should be responsible for treatment. The efficacy and follow-up should be evaluated regularly, and the plan should be dynamically adjusted by the MDT expert group if necessary, aiming to provide glioma patients with the best standardized, individualized, and comprehensive health care services. **[5, C], consensus: 96.1%**

Recommendation 2: Objectives of Glioma MDT: Take the patient as the center and glioma as the logical chain, break the barriers of traditional discipline division and specialty setting, and provide one-stop, whole-course medical services based on multidisciplinary cooperation to achieve the best sequential treatment. Standardize the diagnosis and treatment strategy of glioma through MDT, shorten the time, reduce the cost, increase the efficiency, enhance the ability and level of medical institutions, improve patients' quality of life, and prolong the overall survival. **[5, C], consensus: 93.5%**

Clinical question 2: What are the advantages of glioma MDT management?

Recommendation 3: The MDT model is conducive to formulating precise diagnosis and treatment plans, increasing patient compliance with treatment, prolonging overall survival, and improving prognosis. **[2, B], consensus: 98.7%**

Recommendation 4: The MDT model can improve communication among medical team members and the efficiency of medical activities, reduce medical risks, mitigate doctor–patient disputes, and promote interdisciplinary clinical trials and exploratory treatments. **[3, B], consensus: 93.5%**

Clinical question 3: What disciplines make up a glioma MDT?

Recommendation 5: The core departments of a glioma MDT should include neurosurgery, medical imaging, pathology, radiotherapy, medical oncology, pharmacy, and nuclear medicine. **[2, B], consensus: 96.1%**

Recommendation 6: The auxiliary departments of a glioma MDT should include departments related to neurology, hematology, rehabilitation, traditional Chinese medicine, psychiatry, palliative care, clinical nursing, nutrition, and pediatric genetic counseling. **[2, B], consensus: 92.2%**

Clinical question 4: What is the organizational structure of a glioma MDT?

Recommendation 7: The organizational structure of a glioma MDT includes a leading expert (authoritative specialist from neurosurgery, radiotherapy, or neuro-oncology), specialist teams of relevant departments under their leadership (senior attending physician or above professional title from neurosurgery, radiology, pathology, radiotherapy, neuro-oncology, neurology, and hematology), and coordinating and organizing personnel. The number of participants in the MDT should be ≥5, and the number of participants should be ≥5, excluding the MDT coordinator or secretary [Supplementary Figure 1, http://links.lww.com/CM9/B999]. **[5, C], consensus: 94.8%**

Clinical question 5: What is the form of organization of a glioma MDT?

Recommendation 8: In qualified hospitals, glioma single-disease integrated wards and glioma diagnosis and treatment centers composed of experienced physicians should be established. Through multidisciplinary systemic diagnosis and treatment, a reasonable treatment plan should be formulated to provide these patients with whole-course management, including disease diagnosis, preoperative preparation, surgical plan formulation, postoperative management, radiotherapy and chemotherapy, rehabilitation, nutritional treatment, psychological treatment, and monitoring of complications, and unexpected readmission and adverse outcomes during follow-up. **[5, C], consensus: 98.7%**

Recommendation 9: In qualified hospitals, the MDT model is recommended for the whole-course management of glioma patients, conducting regular MDT tumor boards, setting up MDT outpatient clinics, formulating multidisciplinary diagnosis and treatment plans, and carrying out individualized treatment. **[5, C], consensus: 97.4%**

Recommendation 10: The National Glioma MDT Alliance should establish synergy among national, regional, and local medical institutions and build a network platform. This platform is intended to provide patients with better treatment plans and management services through remote consultations, the sharing of medical record information, clinical laboratories, medical imaging, pathological data sharing, and mutual direction referrals among three levels of medical institutions. The establishment of a tertiary diagnosis and treatment system should follow the principle of patient voluntariness to coordinate resource allocation, optimize the utilization of medical resources, reduce costs, and promote the development of medical and health care systems. **[6, D], consensus: 97.5%**

Clinical question 6: How can the technical and legal risks of clinical off-label drug or product use be mitigated through the MDT?

Recommendation 11: In the case of clinical off-label drug use, the MDT tumor board is advised per policy recommendations to discuss and make decisions on technical points such as specific off-label use, administration, dosage, and course of treatment that are not specified in the drug instructions but are explained in the existing evidence, determine the diagnosis and treatment plan, inform the patient in writing, and obtain his or her informed consent before implementation. **[5, C], consensus: 94.8%**

Recommendation 12: Physicians-in-charge should strictly implement the diagnosis and treatment plan established by the MDT and accept its supervision. When adverse events occur during off-label use, a report should be promptly made to the hospital's Pharmaceutical Affairs Management and Drug Treatment Committee (referred to as the Pharmaceutical Affairs Committee) or the hospital Ethics Committee, and the continuation or termination of such off-label use should be decided after MDT re-discussion and re-evaluation. **[5, C], consensus: 94.8%**

Recommendation 13: Evidence recommenders should use the drug in an off-label manner based on the following implementation process: (1) after discussion and voting by the MDT, key technical points of off-label drug use are clarified, especially the administration, dosage, and course of treatment; after two-third or more of the participating experts vote to agree, the MDT secretary submits an application to the Pharmaceutical Affairs Committee, attaching the MDT decisions, supporting evidence, and providing clarified authority for off-label use; (2) announcement of the approval of the Pharmaceutical Affairs Committee; (3) implementation in the Department of Pharmacy (including pharmacy remarks, adjustment of prescription review rules, and dispensing warnings); and (4) authorization of the physicians in-charge to prescribe to patients and be responsible for observing and monitoring safety and efficacy and providing timely feedback to the MDT. **[5, C], consensus: 96.1%**

Clinical question 7: How can clinical pathological diagnosis be standardized through glioma MDTs?

Recommendation 14: In glioma MDTs, pathologists need to promote and interpret histopathological and molecular indicators, complete the integrated pathological diagnosis, and promote the standardization of clinical pathological reports of glioma. **[4, C], consensus: 100%**

Recommendation 15: Glioma MDT decisions need to be based on integrated diagnostic reports. Pathologists, neurosurgeons, radiotherapists, and oncologists should discuss the findings to form individualized diagnosis and treatment opinions and select personalized targeted therapies and immunotherapies. **[5, C], consensus: 92.6%**

Clinical question 8: How can clinical trial subjects be recruited via an MDT?

Recommendation 16: The MDT is comprehensive, collaborative, efficient, and prospective, and it is helpful for recruiting subjects based on collective decision-making and scientific evaluation. **[6, D], consensus: 97.5%**

Recommendation 17: In the process of recruitment, MDT can (1) release recruitment information via multiple channels and (2) accurately and efficiently screen potential subjects. **[6, D], consensus: 96.1%**

Clinical question 9: What are the glioma MDT site and facility requirements, including online meeting rooms and the retrieval of the picture archiving and communication system (PACS) and hospital information system (HIS)?

Recommendation 18: Site and facility requirements for a glioma MDT: conference room, tables and chairs, projector, computer, and network. The optional tools include touch-screen electronic teaching boards and digital pathological section scanners. **[6, D], consensus: 98.7%**

Recommendation 19: Involving an online meeting room that fits the requirements and ensures the safe, real-time, clear, and accurate transmission of medical information is recommended. **[5, C], consensus: 98.8%**

Recommendation 20: Clinical data for telemedicine information exchange, including the retrieval of PACS and HIS, should comply with national standards and health information-related standards. Physical data such as films, paper medical records, laboratory test sheets, and graphic reports should be digitized. **[5, C], consensus: 94.8%**

Clinical question 10: What are the required conditions and privacy safeguards for conducting MDT via a virtual conference platform?

Recommendation 21: The equipment required for a virtual MDT (vMDT) discussion includes a data system (transmission, recording, sharing), an audio and video system, and a data-sharing platform. **[6, D], consensus: 95.1%**

Recommendation 22: All parties involved in glioma vMDT discussions should strengthen patient-privacy protection. (1) Necessary security protection mechanisms must be provided for the collection, processing, storage, and transmission of patient information. (2) The query and analysis of data should be anonymized, and sensitive information should be blurred or hidden. (3) The degree of information disclosure should be within the scope permitted by law or within the patient's informed consent and shall be determined in strict accordance with the requirements of the physician-in-charge, and the patient. **[5, C], consensus: 100%**

Clinical question 11: How can the glioma MDT operation system be optimized and quality control assessment be performed?

Recommendation 23: The operating system of MDT includes a relatively fixed leading expert and an MDT, a dedicated personnel responsibility system, hospital policy, and financial support. **[4, C], consensus: 98.8%**

Recommendation 24: A quality assessment of glioma MDT needs to be carried out in four dimensions: system design, process management, implementation effectiveness, and team satisfaction. The specific indicators include system responsibility, human resources, funds, facilities and equipment, medical quality, safety, efficacy, coverage capacity, patient satisfaction, and completion of diagnosis and treatment plans. **[5, C], consensus: 97.5%**

Recommendation 25: MDT quality assessment tools such as the MDT-Observational Assessment Rating Scale during evaluation is recommended. **[5, C], consensus: 95.1%**

Clinical question 12: What are the quality control standards for a glioma MDT?

Recommendation 26: Quality control should be carried out through MDT target management, MDT whole-course management, hospital management, and data and information management. **[6, D], consensus: 96.3%**

Recommendation 27: Glioma MDT quality-control goals include promoting the standardization and normalization of diagnosis and treatment, compensating for regional differences, improving the level of health care services, and ultimately benefiting patients. **[6, D], consensus: 98.8%**

Recommendation 28: Relevant evaluation indicators for glioma hospital management quality control in MDTs: (1) Support from hospital and establishment of a clinical data management and efficacy feedback system. (2) The second stage involves information application development, which includes (a) intelligent data collection and reporting; (b) process management and control; and (c) refined analysis. **[6, D], consensus: 95.1%**

Recommendation 29: Glioma MDT data management quality control-related evaluation indicators: For MDT patients, the data should be complete, detailed, and traceable. (1) MDT outpatient data: the physician-in-charge should be specifically responsible for data collection and filing before treatment. (2) MDT meeting documents: the treatment plan and regimen should be recorded in detail, and there should be a standardized and unified MDT record form. (3) MDT treatment information: the physician-in-charge should record in detail the completion of the treatment plan and changes in the patient's condition. An MDT treatment system should be recommended for the management of the whole process, and a follow-up system should be established. **[6, D], consensus: 96.3%**

Clinical question 13: What are the assessment indicators for a glioma MDT operation?

Recommendation 30: A glioma MDT operation can be evaluated from the aspects of case diagnosis, formulation and implementation of diagnosis and treatment plans, and management and application of clinical data. **[5, C], consensus: 98.8%**

Recommendation 31: Evaluation indicators include the number of MDT outpatient cases, the number of MDT meeting cases, the diagnosis rate, the implementation rate of clinical decisions, follow-up evaluation of diagnosis and treatment plans, meeting minutes, collection of MDT cases, establishment and improvement of the database, the frequency of MDT, clinical trial recruitment, and efficacy and adverse reactions. **[6, D], consensus: 97.5%**

Clinical question 14: What documents should be prepared for standardized glioma MDT procedures?

Recommendation 32: Usage of a standardized flow chart [Supplementary Figure 2, http://links.lww.com/CM9/B999], implementation roadmap [Supplementary Figure 3, http://links.lww.com/CM9/B999], case application form [Supplementary Table 1, http://links.lww.com/CM9/B999], discussion log [Supplementary Table 2, http://links.lww.com/CM9/B999] and evaluation sheet (by stage) [Supplementary Table 3, http://links.lww.com/CM9/B999] is recommended to improve the quality of MDT standardized process. **[5, C], consensus: 98.8%**

Full-length version of the concensus Chinese and English version can be seen in the supplementary file, http://links.lww.com/CM9/C47.

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Conflicts of interest

None.

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