Papers and Originals

Specialty Certifying Boards in American Medicine

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In the United States, prior to 1913, there was no means of determining the competence of physicians specializing in various fields of medicine and surgery. Until that year each physician was the sole judge of the status of his preparation and of the degree of his qualifications to practise the specialty of his choice. In 1913 the American College of Surgeons was established, and it was the first national organization to function somewhat as a qualifying board in a specialty.

In 1915 the National Board of Medical Examiners was organized, and on 3 May 1917 the American Board for Ophthalmic Examinations was incorporated. Later the name was changed to the "American Board of Ophthalmology." It was not until 1924 that a second examining and certifying board was established. This is the American Board of Otolaryngology. The American Board of Obstetrics and Gynecology was founded in 1930, and the American Board of Dermatology and Syphilology began to function in 1932. In 1955 the words "and Syphilology" were expunged from the official name.

It was during this period that attempts were made sporadically to initiate a comprehensive movement which would encompass a certifying agency for every specialty of medicine and surgery. Ultimately the prosecution of this endeavour was undertaken by a committee of the four established specialty boards. Soon plans for organization of comparable specialty certifying boards were under way, and, while these were being deliberated, liberal recourse was made to the experience of the four boards already in existence.

Like our courts of law, an examining board in medicine and surgery must have a periphery greater than that of those who sit upon such bodies. That is, a court cannot function until it has a basis in legislation, and an examining board cannot function without the aid and counsel of acknowledged bodies of experts in the field of its jurisdiction. It was recognized very early that certain basic requirements would have to be fulfilled if the integrity of the examining boards was to be assured. One of the most important features of these requirements was that a proposed board would have to have the official sanction of recognized national societies concerned with the particular specialty in which certification was to be given. It was considered equally important that a certifying board be buttressed by the endorsement and support of that section of the scientific assembly of the American Medical Association concerned with the specialty in question, if such a section existed.

Other problems were interpolated. One was the fact that there was no legal mechanism whereby unofficial and even unworthy groups could be prevented from organizing examining boards and incorporating the words "American Board" in their titles. This problem persists. There is still no way in which the term "American Board" can be restricted to designate the certifying boards under consideration here.

Profusion can engender confusion. To limit undesirable developments as much as possible, to avoid duplication of effort, and to co-ordinate the work of the several boards already

in existence an advisory board was established for consideration of problems common to all specialty boards. This advisory board represents two great enclaves: (1) the domain of those who may propose new specialty boards but who do not actually participate in educational programmes, and (2) the sphere of those who are interested in and responsible for the medical education, graduate training, and licensing of specialists.

Organizational meetings were held, committees were activated, investigations were undertaken, and reports were made by representatives of the established boards, the Council on Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, the specialty sections of the American Medical Association, the American College of Surgeons, the American Orthopaedic Association, the American Academy of Pediatrics, the American Neurological Association, and the National Board of Medical Examiners.

A "Committee on Specialists" reported its progress on 2 May 1932. On 11 June 1932 this committee made recommendations to officials of the American Association of Genito-Urinary Surgeons and the American Orthopaedic Association.

The following 14 well-known national organizations then held meetings to consider the report of the Committee on Specialists: the American Medical Association, the American Board of Ophthalmology, the American Board of Otolaryngology, the American Board of Obstetrics and Gynecology, the American Board of Pediatrics, the American Board of Dermatology and Syphilology, the Sections on Neurology and Psychiatry of the American Medical Association, the American Neurological Association, the American Psychiatric Association, the American Association of Genito-Urinary Surgeons, the Section on Orthopaedic Surgery of the American Medical Association, the American Orthopaedic Association, and the American Public Health Association. Members of some groups expressed favourable sentiments toward the movement and some were not prepared to voice opinions, but there was no opposition.

Organization of the Advisory Board for Medical Specialties

On 11 June 1933 a conference was held by representatives of the Association of American Medical Colleges, the National Board of Medical Examiners, the American Board of Ophthalmology, the American Board of Otolaryngology, the American Board of Obstetrics and Gynecology, the American Board of Dermatology and Syphilology, the American College of Surgeons, the Council on Medical Education and Hospitals of the American Medical Association, and representatives of several specialty sections of the American Medical Association. A resolution was passed holding that examination and certification of specialists would be best carried out by national boards representing the national special societies and the American

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Medical Association. It was acknowledged that the efficiency of these boards would be enhanced by the assistance and counsel of an advisory board composed of two delegated representatives from each of the official specialty boards, either then in existence or in the process of formation, and the other organizations represented at the meeting.

That same evening another resolution was approved which provided that "An advisory council to the national specialty boards and associated groups be formed to consist of two members from each of the examining boards and other official groups." Also approved was a motion to form a committee on constitution and by-laws.

This was the organizational meeting of the group. It was decided that the name of the new group would be the Advisory Board for Medical Specialties.¹

Essentials for Approved Special Examining Boards

This important document was prepared by the first Committee on Standards of the Advisory Board on 11 June 1933. The following provisions were presented:

I. Organization

1. A special examining board to be approved by the Advisory Board for Medical Specialties should represent a well-recognized and distinct specialty of medicine.

2. It should be composed of representatives of the national organizations of that specialty, including the related section of the American Medical Association.

3. It should be incorporated.

4. It should determine whether candidates have received adequate preparation, provide a comprehensive test of the ability and fitness of such candidates, and certify to the competence of those physicians who have satisfied its requirements.

II. Definition of Special Fields

The following branches of medicine were recognized as suitable fields for certification of specialists: (1) internal medicine; (2) surgery; (3) paediatrics; (4) obstetrics and gynaecology; (5) ophthalmology; (6) otolaryngology; (7) dermatology and syphilology; (8) psychiatry and neurology; (9) urology; (10) orthopaedic surgery; (11) radiology; (12) pathology.

III. Qualification of Candidates

Each applicant for admission to the examination should be required to present evidence that he has met the following standards:

A. *General Qualifications.*²—(1) Satisfactory moral and ethical standing in the profession. (2) A licence to practise medicine. (3) Membership in the American Medical Association or, by courtesy, membership in such Canadian medical societies as are approved by the Council on Medical Education and Hospitals of the American Medical Association. Membership in other societies should not be required. (Chair to confer with Council for modification.)

B. *Professional Education.*²—(1) Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education of the American Medical Association. (2) Completion of an internship of not less than one year in a hospital approved by the same council.

C. *Special Training*² (to be effective as far as practicable not later than 1 January 1938).—(1) A period of study after the internship of not less than three years in clinics, dispensaries, hospitals, or laboratories recognized by the A.M.A. Council on Medical Education and Hospitals as competent to provide satisfactory training in the special field of study. (2) The period of specialized preparation should include: (a) intensive graduate training in anatomy,

physiology, pathology, and the other basic medical sciences which are necessary to the proper understanding of the disorders and treatment involved in the specialty in question; (b) an active experience of not less than 18 months in hospitals, clinics, dispensaries, and diagnostic laboratories recognized by the Council as competent in the specialty; (c) examinations in the basic medical sciences of a specialty as well as in the clinical laboratory, and public health aspects. (3) An additional period of not less than two years to practise.

The foregoing report is practically identical with an outline of "Essentials for Approved Special Examining Boards" adopted by the Council on Medical Education and Hospitals of the American Medical Association at a meeting on 10 June 1934. These "Essentials," revised a number of times to meet new requirements, have remained in force and, since the beginning, have played an important part when new boards are proposed for approval.

On 11 February 1934 the first draft of the Constitution and Bylaws of the Advisory Board was ratified.

Primary Specialty Boards

Since the early history of the Advisory Board, joint meetings with the Council on Medical Education and Hospitals of the American Medical Association (now the Council on Medical Education³) had been held during each annual meeting. These meetings were continued until 8 February 1948, when the Liaison Committee of the Advisory Board and the Council was established. At that meeting it was agreed that, "After the Advisory Board has passed on an application, all papers filed with the Board could be referred to the Council for action." This committee was the forerunner of the present "Liaison Committee for Specialty Boards," which is composed of four members from each organization and is now the final authority when consideration is being given to petitions for approval of proposed new examining boards in medical specialties.

To-day there are 18 primary specialty boards. Each approved specialty board is an independent corporate body, enjoying the privileges of autonomy. It is expected, however, that proposed changes in policy and other matters of interest will be reported to representatives of member organizations at the annual meeting of the Advisory Board to provide opportunity for exchange of ideas prior to establishing the change. Only one primary board is approved in each of the specialties.

The following is a list of primary boards: (1) Anesthesiology, (2) Colon and Rectal Surgery, (3) Dermatology, (4) Internal Medicine, (5) Neurological Surgery, (6) Obstetrics and Gynecology, (7) Ophthalmology, (8) Orthopaedic Surgery, (9) Otolaryngology, (10) Pathology, (11) Pediatrics, (12) Physical Medicine and Rehabilitation, (13) Plastic Surgery, (14) Preventive Medicine, (15) Psychiatry and Neurology, (16) Radiology, (17) Surgery, (18) Urology.

Some primary boards examine candidates and issue certificates in subdivisions of their specialty. For example, the American Board of Obstetrics and Gynecology issues two additional certificates in addition to that in obstetrics and gynaecology proper: (1) obstetrics, and (2) gynaecology.

The American Board of Otolaryngology, in addition to its certificate in otolaryngology, issues a "limited certificate in bronchoesophagology."

The American Board of Pathology issues seven additional certificates: (1) anatomic pathology, (2) clinical pathology, (3) neuropathology, (4) clinical microbiology, (5) hematology, (6) clinical chemistry, (7) forensic pathology.

The American Board of Preventive Medicine issues four certificates: (1) public health, (2) aviation medicine,⁴ (3) occupational medicine, (4) general preventive medicine.

¹ Hereafter termed the Advisory Board.

² Note.—In the case of an applicant whose training has been received outside the United States and Canada the credentials must be satisfactory to the Advisory Board.

³ Hereafter termed the Council.

⁴ A proposal is now being considered to change this name to *Aerospace Medicine*.

The American Board of Psychiatry and Neurology issues four certificates: (1) psychiatry, (2) neurology, (3) psychiatry and neurology, (4) child psychiatry.

The American Board of Radiology issues six types of certificates: (1) radiology, (2) diagnostic roentgenology, (3) therapeutic radiology, (4) radiological physics, (5) roentgen ray and gamma ray physics, (6) medical nuclear physics.

The American Board of Internal Medicine has four subsidiary boards which certify candidates in: (1) allergy, (2) cardiovascular disease, (3) gastroenterology, and (4) pulmonary diseases.

The American Board of Pediatrics has two subsidiary boards which certify candidates in: (1) allergy and (2) paediatric cardiology.

A board is a subsidiary board of an existing primary board, known as the "parent board," when it certifies only those special candidates who are already diplomates of the parent board.

The American Board of Surgery has one affiliate board (the Board of Thoracic Surgery).

An affiliate board functions under the direction of the parent board, and it grants certification to its candidates under the jurisdiction of the parent board.

Establishment of New Boards

Authorization of the Advisory Board is required for establishment of approved new primary, subsidiary, and affiliate boards; for new types of certification; and for modification of existing types of certificates. The Advisory Board gives counsel to organizations which seek its advice concerning the education and certification of medical specialists. By this means it hopes to advance the standards and to improve methods of graduate education and training in medical specialties and it will certify those who fulfil minimal requirements and pass the examinations of the specialty boards.

Since 1934 medical specialty boards have been granted official recognition by collaborative action of the Advisory Board and the Council. The original "Essentials for Approved Examining Boards in Medical Specialties" actually was a collaborative effort of these two groups. Because certain changes were required to ensure adequate fulfilment of the responsibility of the American Medical Association and the Advisory Board in recognizing proposed new specialty boards, revisions of the "Essentials for Approved Examining Boards in Medical Specialties" were approved in February 1962, June 1962, and June 1963.

The present version, known as the "Essentials for Approval of Examining Boards in Medical Specialties,"^a is designed to represent the policies of both the American Medical Association and the Advisory Board as they pertain to approval of specialty boards and to establish specific deadlines to prevent unnecessary delay in decisions regarding proposals for establishment of new specialty boards. In the present "Essentials" a mechanism is provided for early and effective action of the American Medical Association and the Advisory Board, without vitiation of either organization's privilege of independent consideration and action, should circumstances warrant.

The present version, which is the sixth revision, is a joint document of the Advisory Board and the Council. It reaffirms the close co-operative relationship between the two organizations. It embodies the policies of the Advisory Board and the American Medical Association and describes the procedures by which consideration may be given to applications for the establishment of new (primary, subsidiary, affiliate) boards, new types of certification, and modification of existing types of certification. It is shown specifically that the Advisory

Board and the Council recognize the rapidly developing trends in specialty training and practice, as well as the important role of the American boards of medical specialties in maintaining and elevating the standards of medical education and practice.

Functions and Purposes of Specialty Boards

The "Essentials" and the Constitution and Bylaws of the Advisory Board hold that the primary functions of approved specialty boards are (1) to determine the competence of candidates who appear voluntarily for examination and to certify as diplomates those who are qualified, and (2) to improve the general standards of graduate medical education and facilities for special training. The objective of these activities is to promote the public welfare and to improve medical care.

It is provided that specialty boards are organized to: (1) assist in improving the quality of medical education; (2) assist in establishing minimal educational and training standards in conformity with the general provisions of the "Essentials" and of the Constitution and Bylaws of the Advisory Board; (3) determine whether candidates have received adequate preparation; (4) provide comprehensive examinations to determine the ability and fitness of such candidates; and (5) certify to the competence of those physicians who have satisfied requirements of the respective examining boards.

It is required of a specialty board that it represent a distinct and well-defined field of medicine, and it should reflect advancement in medical knowledge and practice. It should be concerned primarily with organ systems or broadly useful methods of diagnosis and treatment. Certification by a specialty board should provide assurance to the public and the medical profession that diplomates possess particular competence in the special area of medicine concerned.

The Advisory Board and the Council look with disfavour upon the creation of new boards unless such additional division of medicine will be in the interest of the public and will provide advancement in medicine. Specialties which are limited in scope, or which do not fulfil requirements for approval and recognition as embodied in primary boards, should be represented within the framework of boards currently in existence. A board representative of such a specialty is considered for approval only in a subsidiary or an affiliate relationship with an existing approved board which must fully endorse the proposed relationship.

The responsibility of the Advisory Board and the Council is not limited to initial approval of examining boards in the medical specialties. Proposed changes in policy and other matters of interest will be reported immediately to the Secretary-Treasurer of the Advisory Board.

Procedure for Establishing New Boards

The Advisory Board, by authority of the specialty boards and other member organizations, and the Council, by means of authority delegated by the House of Delegates of the American Medical Association, receive and take action on applications for the establishment of acceptable new boards.

Preliminary Application.—The preliminary application should be directed to the Secretary-Treasurer of the Advisory Board for Medical Specialties. It should include the name and intended functions and objectives of the proposed board, the proposed officers, and the names of the *proposed* sponsoring organizations. This application is filed with the Liaison Committee for Specialty Boards, which must give its opinion within six months whether or not the proposed board would be likely to promote the interest of the public and medicine. If the opinion is in the affirmative a final application form is sent to the petitioning group. If the opinion is in the negative the

^a Hereafter termed the "Essentials."

petitioning group may request reconsideration at a hearing before the Liaison Committee.

The final application, including the following information, should be returned to the Secretary-Treasurer of the Advisory Board within six months: (1) Name of proposed board. (2) Statement of method of organization, list of proposed officers, names and addresses of proposed founding members, including the organization which each represents, and sponsoring organizations. (3) A copy of the proposed constitution and by-laws. (4) A copy of the proposed articles of incorporation. (5) An outline of the proposed requirements for qualification of applicants. (6) Approximate number of institutions which offer residency or other acceptable training in the proposed specialty concerned, and the total number of positions available. (7) Approximate number of physicians engaged in the proposed specialty. (8) An outline of proposed methods of examination of candidates. (9) A copy of proposed application form for candidates for certification. (10) General information and statements of importance: (a) explanation of circumstances that justify creation of a new board, including its purpose; and (b) enumeration of educational standards that will determine eligibility for certification in the proposed specialty. (11) When properly signed, this application signifies an agreement that (a) the proposed board will not solicit or accept candidates for examination and certification prior to its approval, and (b) pertinent data concerning the application may be published in official news media.

After review by the Liaison Committee, the application is referred, with its comments, to the Committee on Standards of the Advisory Board, which considers it, in accordance with provisions of the Constitution and Bylaws. It reports with appropriate recommendations to the Advisory Board and the Council, each of which returns its decisions to the Liaison Committee for final action.

Applications of subsidiary and affiliate boards, as well as proposals for issuance of new types of certifications or modification of existing certificates, including changes in the name of an approved board, are sent to the Secretary-Treasurer of the Advisory Board. After this has been done, the application receives much the same attention as that just described from the Committee on Standards, the Liaison Committee, the Advisory Board, and the Council.

Official Recognition of Specialty Boards

Official recognition of a specialty board by the Advisory Board is indicated by listing diplomates in the *Directory of Medical Specialists* and by affixing the official seal of the Advisory Board to certificates issued by the specialty boards. The *Directory of Medical Specialists* is the authorized publication of the 18 official primary specialty boards and one affiliate board certifying physicians in the medical specialties. The eleventh edition, published in 1963, lists approximately 77,325 specialists certified prior to July 1962, and it represents those physicians engaged in active practice at the time of publication of the edition. The *Directory* provides a separate grouping of each of the specialty boards, and the names of diplomates are arranged geographically. Each diplomate is accorded a brief biographic sketch which appears in alphabetical order under the name of the locality in which he lives. An overall alphabetical index at the end of the volume, arranged by order of surnames, provides speedy location of the page on which a given biography appears.

This volume includes the examination requirements of all boards. Because of the influx into the United States and Canada of some foreign-trained physicians whose credentials may be entirely valid but cannot be readily verified, some boards require citizenship and specified periods of practice in the United States before a candidate can be admitted to examina-

tions. Information about these additional items also is included in the *Directory*.

Official recognition and continued approval of an examining board by the American Medical Association are indicated in several ways. One consists in listing of the board in the "Essentials" and in the annual "Directory of Approved Internships and Residencies." Another is the designation of diplomates of approved boards by an appropriate symbol in the *American Medical Directory*, published by the American Medical Association.

Standards of Administration of Specialty Boards

Each applicant for admission to examination should be required to present evidence that he has met the following standards:

A. *Qualification of Candidates*.—(1) Satisfactory moral, ethical, and professional standing in the medical profession. (2) Graduation from a medical school of the United States or Canada approved by the Council. Qualifications of candidates who submit credentials from institutions outside the United States and Canada should be evaluated through screening by either the National Board of Medical Examiners or the Educational Council for Foreign Medical Graduates; or the candidates should provide evidence of satisfactory medical education. (3) Completion of an internship approved by the Council or the equivalent thereof acceptable to the specialty board.

B. *Special Training*.—(1) The specialized training requirements of the individual medical specialties are described in the *Essentials of Approved Residencies*, published by the Council, and in the requirements for certification published by the individual specialty boards. (2) Possession of a certificate of a specialty or subspecialty board in one field of medicine does not disqualify a candidate for certification by another board, provided he otherwise possesses proper qualification and satisfies requirements of all boards concerned.

Membership in medical organizations and special societies is desirable and is an indication of the candidate's interest in the progress of his profession and his specialty. Candidates should be eligible for membership in such organizations, but lack of membership should not be considered a basis for determination of a candidate's acceptance for examination; nor should certification be withdrawn from a diplomate solely because he has discontinued his membership or has been dropped from membership in a medical organization or special society.

Residency Training

Appraisal and approval of programmes of residency training are the joint responsibility of the Council on Medical Education of the American Medical Association and the specialty boards. In this respect the procedure of specialty boards is to a large degree the same. A hospital or other institution seeking approval of its residency training programme applies to the Council on appropriate forms, listing its facilities, the volume and type of its work, the personnel, and other pertinent information.

While the Council provides most of the administrative support for evaluation procedures involving internships and residencies, actual final decisions are made by special committees, existing in all but two of the recognized specialties. In each case the Council and the specialty board concerned nominate representatives to the particular committee, and in some instances a national specialty organization may constitute a third sponsor for such a committee. Each parent body delegates to the Review Committee authority for final decisions, and the listing of approved programmes in the *Directory of Approved Internships and Residencies* is a result of action by these committees.

All programmes are surveyed initially by a physician employed by the Council as a field representative, and in

particular instances by an additional specialist designated by the Review Committee. The reports and recommendations of these representatives are forwarded to the Review Committee, along with other material prepared by the hospital, and the evaluation by the Committee thus represents the joint action of the Council, the Board, and in some cases the third national specialty organization. Depending upon the number of programmes in the various specialties, the related Review Committee meets from once to three times yearly for one or two days. All residency programmes are resurveyed normally at three-year intervals, but more frequently if the committee so directs.

The standards by which residency training programmes are organized, and against which they are evaluated by the Review Committees, are published by the Council as the *Essentials of Approved Residencies*. Often the Review Committees are the source of suggestions for revision of the "Essentials" for the specialty concerned. The "Essentials" agree closely with the published requirements of each of the specialty boards, and are included in the *Directory of Approved Internships and Residencies*, which is published annually and distributed to all hospitals in the United States and all medical schools throughout the world.

Examination of Candidates

After the resident has completed his training programme he is ready to apply for examination by the board in the specialty in which he is interested. In general, the conduct of examination by all boards is largely the same. Many divide their examinations into a Part I and a Part II. Usually the former is a written examination and the latter is oral. In most instances the essay type of examination has been abandoned in favour of one in which there are multiple choices. Thus answers can be brief—the "true-or-false type of examination." This type of examination is more expeditious; it permits reports

to be completed more quickly; grading is more nearly accurate, and testing can be more extensive. As a rule the candidate becomes eligible for his oral examination after he has passed the "written." The oral examination varies with the requirements and needs of various specialties. It is important because it is the last obstacle to be surmounted before the candidate is certified.

Members of specialty boards are conscientious, honest, dedicated persons who contribute freely of their time and effort, often at great sacrifice, to advance the standards of their specialty, without thought of personal aggrandizement or recompense for their services. Like members of the faculty of a great university sitting at a defence of a doctoral dissertation, they are imbued with a sense of their responsibility to determine the competence of candidates who appear voluntarily before them for certification as diplomates.

Aside from setting up minimal standards which must be met before candidates can appear for examination before a board, such a board performs no function in the educational programme available for training future diplomates. It is the function of a specialty examining board to determine competence only and to certify those who possess it to a sufficient degree to warrant approbation. Somewhat like the dissociation between the judicial and the legislative branches of a modern democracy, a specialty examining board scrupulously avoids participation in that phase of the educational programme which aims at development of competency. Similarly, like a judicial body in and of itself, a specialty board has neither the will nor the authority to prevent the practice of any specialty by a licensed physician, regardless of his ability or lack of it. The chief objective of all specialty examining boards is to elevate and to maintain the standards of specialty practice, and the finite manifestation of their efforts toward this objective is the certificate of competence which they issue to all physicians who can meet minimal requirements of licensure and graduate medical education.

Hereditary Orotic Aciduria and Megaloblastic Anaemia: A Second Case, with Response to Uridine

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Although orotic acid is an important precursor in the synthesis of pyrimidines (Figs. 1 and 6), only minute amounts are found in normal blood and urine (Smith and Baker, 1959; Lotz *et al.*, 1963). The urinary excretion of large amounts of orotic acid was first reported by Huguley *et al.* (1959), occurring in a male child with a refractory megaloblastic anaemia.

Their patient was chronically ill with anaemia, repeated respiratory infections, and diarrhoea from the age of 3 months. Severe megaloblastic changes were found in several bone-marrow specimens, but there was no response to treatment with vitamin B₁₂, folic acid, pyridoxine, ascorbic acid, and iron. Although adrenal steroids improved the anaemia, megaloblastosis was unaltered. Crystalluria had been noted and identification of the excreted material as orotic acid led to the suggestion that there was a congenital defect in the pathway of *de novo*

synthesis of pyrimidine nucleotides. This conclusion was supported by the response obtained to the administration of the pyrimidine nucleotides, uridylic and cytidylic acids, contained in a yeast extract. The nucleotides, given at the age of 2 years 6 months, produced a striking clinical improvement accompanied by a haematological remission and marked reduction in orotic acid excretion. However, the yeast extract was poorly tolerated, relapse occurred, and the patient died from generalized varicella aged 2 years 9 months.

Huguley *et al.* could find no previous report of a similar case and we are not aware of any subsequent account. This report describes the clinical features of a child who is believed to have the same disease and his response to treatment with the pyrimidine nucleoside uridine.

Case Report

The patient was born on 26 October 1961, the delivery being normal. His birth weight was 9 lb. 2 oz. (4,150 g.). He was

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