ALASKA LEGISLATURE COMMITTEE FILES 1983-1984 8672

2244 HHESS HB 219 - HB 225

2244

March 21, 1983

HB219

ASSUMPTIONS

1. Each Local Citizen Advisory Board will meet the same number of times as the full Board of Regents and its major working committees. During FY83 the Board of Regents scheduled eight meetings. It is assumed that this number of meetings will remain constant each year during the projection period.

2. It is assumed each member of the Local Citizen Advisory Board will serve without compensation other than reimbursement for reasonable and necessary travel expenses in accordance with standard University policy and regulations. Further, it is assumed each board member will be compensated one day's per diem per meeting. For cost projections meetings are assumed to be convened in the respective cities of the Chancellor's offices for the region for which the board serves.

3. Coordination of meetings, travel and clerical support for each Local Citizen Advisory Board is estimated to require a permanent half-time administrative secretary. FY84 cost for five half-time administrative secretaries is projected to be $67,900.

4. Support operating expenses for office space, utilities and other overhead costs for each advisory board are assumed to be shared with the respective Chancellor's office. These costs are estimated to be $3,000 per board for FY84. Supplies necessary to fulfill the mission of the boards are projected at $1,000 for FY84 for each board.

5. Inflation for calculation of operating costs for FY85 through FY88 is assumed to be 7 percent annually.

PROGRAM SUMMARY

The FY84 estimated cost for travel and per diem is based on the following schedule of meeting locations and travel mix of local members (those not requiring air travel) and non-local members requiring air travel (and their hypothetical origins) to attend the advisory board meetings.

Local Citizen Advisory Board	Meeting Location	Local Attendance	Non-local Attendance Air Transportation Point of Origin
UA/Fairbanks	Fairbanks	5 members	Nome Anchorage (two members) Galena
UA/Anchorage	Anchorage	9 members	-
UA/Juneau	Juneau	7 members	Sitka Ketchikan
Anchorage CC	Anchorage	9 members	-
Community Colleges	Anchorage	-	Juneau Ketchikan Bethel Nome Fairbanks Kotzebue Palmer Kenai Valdez

Based on the transportation schedule listed above, estimated average travel costs per board member for each meeting, per diem per board member and total annual costs for each advisory board are provided below:

Local Citizen Advisory Board	Average Travel Per Member	Per Diem Per Member	Total Per Diem and Travel For 9 Members Attending 8 Meetings in FY84
UA/Fairbanks	$ 80.00	$ 90.00	$ 12,240
UA/Anchorage	-	80.00	5,760
UA/Juneau	30.00	80.00	7,920
Anchorage CC	-	80.00	5,760
Community Colleges	225.00	85.00	22,320
			$ 54,000

Total FY84 estimated cost of implementation of HB219 for the five Local Citizen Advisory Boards:

Personal Services	$ 67,900
Travel and Per diem	54,000
Contractual Services	15,000
Commodities	5,000
Total	$ 141,900

AGENCY COMMENTS

1. The University of Alaska believes the creation of Local Citizen Advisory Boards would add redundancy to the University's decision-making process which would reduce the efficiency of governance of the university and generate additional expense. Currently under university policy 02.04.01, Community College Councils, which include between 9 and 15 members for each of the community colleges, review and recommend approval or disapproval of new programs, annual proposed operating and capital budget requests, annual community college plans, and statewide policies and regulations before their submission to the Board of Regents. Having Local Citizen Advisory Board review Board of Regents' decisions which have included the review and input of the Community College Councils would create duplication and unnecessary waste.

2. In addition to the Community College Councils' input into the university's decision-making process, every meeting of the Board, its committees, and subcommittees is open to the public for comments and input. Members of the community are welcome to provide input to every Board of Regents' decision and policy considered by the university.

3. Creation of the Local Citizen Advisory Boards could cause delays in the implementation of critical Board of Regents' decisions of up to six months. The university is required to meet several deadlines by the State for the continuance of its operations, for example, submission of the annual operating and capital budget requests. Adding the Advisory Boards to the university's decision-making process could jeopardize either meeting critical and/or mandatory deadlines or failure to fulfill the requirements of the law regarding the advisory board process.

4. Additional indirect costs are associated with the additional time necessary for the Board of Regents' consideration and response to Local Citizen Advisory Boards' recommendation and/or the implementation of the Board of Rgents' original or modified decision. In addition to the actual costs of responding to Advisory Boards' recommendations, significant expense could be incurred through delay of construction of capital projects. Depending on timing, an entire construction season could be missed resulting in an additional year's inflation being added to the cost of a university construction project. It is the University's position that the potential additional expense is unwarranted.

JOB DESCRIPTION

Local Citizen Advisory Board — Date: March 21,1983

TITLE: Administrative Assistant I
Range 74

JOB SUMMARY

Under the general supervision of the Chairperson, assembles and distributes the LCAB agenda; attends LCAB meetings for the purpose of taking, transcribing, and distributing the minutes and recommendations; makes arrangements for board meetings and official functions and other assignments as may be prescribed.

MAJOR DUTIES

1. Makes arrangements for LCAB meetings by announcing meetings; preparing travel and travel reimbursement requests as necessary; collecting, compiling, typing and mailing agenda.

2. Attends all LCAB meetings; takes, transcribes and distributes minutes of all meetings to the board and appropriate others.

3. Types, copies and distributes minutes and recommendations to the University Board of Regents and LCAB members.

4. Assists in collection, indexing and maintaining files and official records of the LCAB, assumes responsibility for the maintenance and security of confidential documents.

5. Serves as telephone and walk-in receptionist at LCAB office.

6. Maintains soft ledger of LCAL budget and expenditures.

7. Makes travel and accommodations arrangements for members of the board and others, schedules meetings and conferences as needed.

8. Prepares correspondence.

KNOWLEDGE, SKILLS AND ABILITIES

Working knowledge of filing systems; office procedures and standard office machines required; familiarity with soft ledgers and general admainistrative procedures desirable.

Skills in typing and transcription from mechanical dictating equipment accurately and at a rapid rate required; s[illegible]ng human relations and interpersonal skills desi[illegible].

Ability to learn to format of agenda and minutes; to maintain confidentiality, and to provide mature and sensitive professional services to members of the board, the University community and the public.

EXPERIENCE

Experience demonstrating the knowledge, skills and abilities required to fulfill the major job duties, as described above.

Committee / Sponsor. Sub.

Introduced: 2/21/83
Referred: Health, Education & Social Services and Finance

BY LINDAUER, ABOOD, BARNES, BUSSELL, CATO, COWDERY, DUNCAN, FLOOD, FRITZ, FULLER, FURNACE, GRUSSENDORF, HURLBERT, LISKA, M.M.MILLER, PESTINGER, PHILLIPS, TISCHER, UEHLING, WARD AND HAYES

IN THE HOUSE

HOUSE BILL NO. 219

IN THE LEGISLATURE OF THE STATE OF ALASKA

THIRTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act relating to Local Citizen Advisory Boards of the University of Alaska."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 14.40 is amended by adding new sections to read:

ARTICLE 5. LOCAL CITIZEN ADVISORY BOARDS.

Sec. 14.40.700. LOCAL CITIZEN ADVISORY BOARDS ESTABLISHED. There are established Local Citizen Advisory Boards to ~~consider certain decisions of the Board of Regents~~ make recommendations on the Local Activities of the University of Alaska.

Sec. 14.40.710. APPOINTMENT OF BOARD MEMBERS. The governor shall appoint the members of the Local Citizen Advisory Boards subject to confirmation by a majority of all the members of the legislature in joint session. The names of those appointed shall be sent to the legislature within five days after the opening of the session, for confirmation or rejection. If a person appointed is not confirmed by a majority vote of all the members of the legislature, the appointment ceases and the name of another person shall be submitted within three days after the rejection. If the legislature adjourns without confirming the nominee, or if an interim vacancy occurs, the governor may appoint a qualified person to fill the vacancy. However, the person who has failed to be confirmed may not be appointed. The term of office of the appointee expires on the fifth day of the session of the legislature following the appointment.

Sec. 14.40.720. TERM OF OFFICE. The term of office of a member of a Local Citizen Advisory Board is four years. A member may not

serve more tha, two terms. The term of office begins on the first Monday in Feb:uary of the year in which the appointment is made. Each member serves until a successor is appointed and qualifies.

Sec. 14.40.730. BOARD OF REGENTS TO ESTABLISH SERVICE AREAS. The Board of Regents shall divide the state into the following ~~three~~ one for each community college plus one each for separate geographic university service areas: the University of Alaska at Anchorage, the University of Alaska at Fairbanks, and the University of Alaska at Juneau, ~~and two geographic community college service areas: the Anchorage Community College, and all other community~~ lleges. Each geographic service area shall be served by a Local Citizen Advisory Board and each Local Citizen Advisory Board shall have nine members.

Sec. 14.40.740. DUTIES OF LOCAL CITIZEN ADVISORY BOARDS. (a) ~~A~~ Regents' decision of the ~~board~~ pertaining to, budget transfers and requests, building construction, academic programs, and student activities, and the sharing of facilities and services between geographic service areas and institutions shall be ~~submitted~~ made available to the Local Citizen Advisory Boards affected by the decision for consideration.

(b) Within 30 days after a decision of the board is submitted to a Local Citizen Advisory Board for consideration, the Local Citizen Advisory Board shall notify the board if it wishes to make a recommendation concerning that decision.

(c) If a Local Citizen Advisory Board notifies the board within 30 days that it wishes to make a recommendation concerning a decision of the board, the board may not implement that decision until the Local Citizen Advisory Board makes its recommendations, or until 60 days after the notification, whichever is first.

(d) If the board rejects the recommendation of a Local Citizen Advisory Board it must file a written report specifying the reasons

for rejection with the governor and both houses of the legislature 60 days prior to implementing the decision affected by the recommendation.

BY LINDAUER, ABOOD, BARNES, BUSSELL, CATO, COWDERY, DUNCAN, FLOOD, FRITZ, FULLER, FURNACE, GRUSSENDORF, HURLBERT, LISKA, M.M.MILLER, PESTINGER, PHILLIPS, TISCHER, UEHLING, WARD AND HAYES

IN THE HOUSE

SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 219

IN THE LEGISLATURE OF THE STATE OF ALASKA

THIRTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act relating to Local Citizen Advisory Boards of the University of Alaska."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 14.40 is amended by adding new sections to read:

ARTICLE 5. LOCAL CITIZEN ADVISORY BOARDS.

Sec. 14.40.700. LOCAL CITIZEN ADVISORY BOARDS ESTABLISHED. There is established a Local Citizen Advisory Board for each postsecondary education service area established under AS 14.40.730. A Local Citizen Advisory Board shall make recommendations to the Board of Regents concerning activities of the University of Alaska that affect the service area the advisory board serves.

Sec. 14.40.710. APPOINTMENT OF BOARD MEMBERS. The governor shall appoint nine members to each Local Citizen Advisory Board. A member shall reside within the area that is served by the Local Citizen Advisory Board to which that member is appointed. The names of those appointed shall be sent to the legislature within five days after the opening of the legislative session following appointment.

Sec. 14.40.720. TERM OF OFFICE. The term of office of a member of a Local Citizen Advisory Board is four years. A member may not serve more than two terms. The term of office begins on the first Monday in February of the year in which the appointment is made. Each member serves until a successor is appointed.

Sec. 14.40.730. BOARD OF REGENTS TO ESTABLISH POSTSECONDARY EDUCATION SERVICE AREAS. The Board of Regents shall establish the

following postsecondary education service areas: the University of Alaska at Anchorage, the University of Alaska at Fairbanks, the University of Alaska at Juneau, and a service area for each community college.

Sec. 14.40.740. DUTIES OF LOCAL CITIZEN ADVISORY BOARDS. (a) A decision of the Board of Regents pertaining to a postsecondary education service area concerning budget transfers and requests, building construction, academic programs, student activities, and the sharing of facilities and services between postsecondary education service areas shall be made available to each Local Citizen Advisory Board affected by the decisior for consideration.

(b) Within 30 days after a decision of the Board of Regents is available to a Local Citizen Advisory Board for consideration, the Local Citizen Advisory Board shall notify the Board of Regents if it wishes to make a recommendation concerning that decision.

(c) If a Local Citizen Advisory Board notifies the Board of Regents within 30 days that it wishes to make a recommendation concerning a decision, the Board of Regents may not implement that decision until the Local Citizen Advisory Board makes its recommendations, or until 60 days after the notification, whichever is first.

(d) If the Board of Regents rejects the recommendation of a Local Citizen Advisory Board, the Board of Regents must file a written report specifying the reasons for rejection with the governor and both houses of the legislature 60 days prior to implementing the decision affected by the recommendation.

* Sec. 2. AS 14.40.700 - 14.40.740 enacted by sec. 1 of this Act are repealed July 1, 1986.

STATE OF ALASKA
FISCAL NOTE

Revision Date , 1983

I. REQUEST

Resolution No.: HB 219
Re: Citizen Advisory Board - U of A
: Lindauer, Abood, Barnes, et al
or: House HESS

II. FISCAL DETAIL

Agency Affected: University of Alaska
Program Category Affected:
BRU, Program of Subprogram(s) Affected:
Statewide Administration

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
OPERATING						
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC						
TOTAL OPERATING	N.A.	-0-	-0-	-0-	-0-	-0-
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	N.A.	-0-	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS:

FULL-TIME	N.A.	-0-	-0-	-0-	-0-	-0-
PART-TIME						
TEMPORARY						

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

IV. ANALYSIS: Attach a separate page for any Analysis

Intend is for boards to replace existing advisory councils.

Prepared By: Kerry D. Romesburg
Phone: 465-2854
Division: Commission on Postsecondary Education
Date: 3/30/83

Approved by Commissioner:
Date:
Department:

Distribution:
Original to Legislative Finance
Copy to Office of Management and Budget (for Legislature introduced bills)
Copy to Department (for Governor introduced bills)
Copy to Sponsor
Copy to Requestor (if different from Sponsor)

3/8/83

HED - 4/15/83 @ 1:22pm

Tischer Miller

Davis Kopenen

HB 243

Davis - Proposed Changes? -

Palmer - No - special interest folks

Davis - Move HB 243 -

Tisher - No Objections

HB 219 -

Lindauer - ① change of 9 to 21 members

② ③ Advisory role for Constitutional

Tischer - Entertain Motion

Davis - Object - want to run by people before voting on bill

Tisher - Have had since Wednesday to look @ bill.

Miller - move SS for HB w/ 2nd. rec.

Davis - Object again

Kopenen - Definition of service areas - ① Some colleges operate based on areas of specialization or geographical areas? ②

- Has Lindauer approached the question I have raised.

② - Fiscal note - ⅓ of State each - should be provision for meetings - should be a-

fiscal note!

- Salary & members of Post Secondary Commission

Tischer - Motion on Floor - w/ Ind Rec.
Tischer - In favor - 2 against 2 -
- Motion failed
Kopenen - Objection to 2 pts - ① geographical or specialized servi areas & ② fiscal note. (Define service area)
feels that a geographical divisn would lead to duplication. Request fiscal note - forewarn Univ of changes in sponsor Sub.
Tischer - Not willing do more today - will hear it Monday - Staff will provide by Sunday @ 2pm.
Davis - Conceptual problems - will not move bill.

ALASKA

STATE LEGISLATURE

4/11

MEMORANDUM

HB 219 - ① Constitutional Problems w/ Board confirmations by Legislature

② (Taken out of original bill
Powers to Boards Advisory Re/ Constitution
duties to Regents.

SSHB219 - ① out of Sponsor Sub

② Requested Legal Opinion by Legal Services

Alaska State Legislature

Representative John Lindauer
District 10-A
3933 Geneva Place
Anchorage, AK 99508

While in Juneau
Pouch V
Juneau, AK 99811
465-3709

House of Representatives

March 21, 1983

TO: House Health, Education, and Social Services Committee

FROM: Representative John Lindauer

RE: Proposed Amendment to House Bill #219

I request that the House Health, Education, and Social Services Committee make the following amendment to House Bill #219 when it considers House Bill #219:

1. Delete beginning on page 1, line 15: . . .subject to confirmation by a majority of all the members of the legislature in joint session. . .

2. Delete beginning on page 1, line 18: . . .for confirmation or rejection. If a person appointed is not confirmed by a majority vote of all the members of the legislature, the appointment ceases and the name of another person shall be submitted within three days after rejection. If the legislature adjourns without confirming a nominee, or if an interim vacancy occurs, the governor may appoint a qualified person to fill the vacancy. However, the person who has failed to be confirmed may not be appointed. The term of office of the appointee expires on the fifth day of the session of the legislature following the appointment.

3. Delete on page 2, line 3: and qualifies.

HB

225

UPDATING THE ALASKA OPTOMETRY LAW

Alaska Board of Examiners
in Optometry

Alaska Optometric Association

TABLE OF CONTENTS

Explanatory Notes to the Bill

Section 1

Addition of the phrase, "or other procedures taught by schools and colleges of optometry", in the definitions is designed for maximum flexibility, so the statute will not have to be revised in the future as optometric education changes.

Deletion of the phrase, "other than by the use of drugs", is the core element of this proposal. The private sector of optometry is the only sector that cannot use drugs, due to this provision.

Section 2

In approving undergraduate and post graduate programs in theoretical and applied pharmacology, the board has access to uniform guidelines (Exhibit A).

Optometry and medical school training programs in the eye and eye medicine are compared in Exhibit B. This is to show that relatively little emphasis is placed upon the eye in medical schools despite the fact that generalists in medicine can and do use eye medications.

Section 3

This revises the pharmaceutical section of the Alaska Statutes to allow pharmacists to sell drugs to optometrists.

EXHIBIT A

Guidelines for Pharmacology Training

in Optometry

Major Points

1. Uniform standards exist for training programs in the schools and colleges of optometry

(4)

ASSOCIATION of SCHOOLS and COLLEGES of OPTOMETRY

SPECIAL ISSUE OF ASCOPE

Vol. 2 Number 9 June 6, 1975

Pharmacology Curriculum Guidelines for Continuing Education Courses

Prepared by the Council on Academic Affairs of the Association of Schools and Colleges of Optometry, Richard Hazlett, O.D., Chairman

These guidelines have been prepared for distribution throughout the optometric profession and education system.

Before final adoption of these guidelines, consideration was given to comments received from a wide professional audience.

Adopted
March 13 1975

Guidelines for Pharmacology Continuing Education

I. Purpose: To establish guidelines for continuing education courses in pharmacology for practicing optometrists.

II. Course objectives: to increase the optometrist's knowledge of:
- A. the systemic effects of systemic medications from a mechanistic, diagnostic and therapeutic standpoint,
- B. the ocular effects of systemic medications from a mechanistic, diagnostic and therapeutic standpoint,
- C. the ocular effects of ocular drugs from a mechanistic, diagnostic and therapeutic standpoint,
- D. the systemic effects of ocular drugs from a mechanistic, diagnostic and therapeutic standpoint, and
- E. diagnostic ocular pharmaceutical agents (DPA) --- theory and practice.

III. Guidelines for the course content.

A. General Pharmacology
1. Principles of Drug Actions
   a. Dosage forms
   b. Routes of administration
   c. Pharmacodynamics
      (1) absorption
      (2) distribution
      (3) fate (metabolism)
   d. Mechanisms of action
      (1) agonists and antagonists
      (2) receptors and acceptors
      (3) synergism, additivity and competitive antagonism
2. Host Factors and Placebos
3. Drug Categories (to include adverse ocular and systemic effects)
   a. Neuropharmacologic agents
      (1) anesthetics
      (2) CNS depressants (general)
      (3) effects of drugs on synaptic transmission
      (4) major and minor tranquilizers
      (5) antidepressants
      (6) CNS stimulants (general)
      (7) analgesics (selective CNS drugs)
   b. Cardiovascular agents
      (1) hemopoietics
      (2) antihypertensives
      (3) anticoagulants
      (4) cardiac glycosides
      (5) antiarrhythmics
      (6) vasolidators

c. Renal agents
d. Gastro-intestinal agents (especially anticholinergics)
e. Endocrine drugs (including steroids and the birth control pills)
f. Antiallergic agents
g. Antibiotic-chemotherapeutic agents
h. Antifungal agents
i. Disinfectants
j. Vitamins
k. Antiviral agents
l. Cancer chemotherapeutics
m. over-the-counter (OTC) agents

4. Drug abuse
5. Drug contraindications during pregnancy

B. Ocular Pharmacology

1. Principles of Drug Actions
   a. Dosage forms
   b. Routes of administration
   c. Pharmacodynamics
      (1) absorbtion
      (2) distribution
      (3) fate (metabolism)
2. Drug Categories, to include adverse ocular and systemic effects, and
   a. Neuropharmacoligic agents (autonomics)
      (1) review of nervous systems
      (2) autonomic drugs
         ((a)) sympathomimetics
         ((b)) parasympathomimetics
         ((c)) sympatholytics
         ((d)) parasympatholytics
      (3) ocular anesthetics
   b. Agents affecting trans-membrane fluid transport
   c. Antibacterial agents
   d. Antinflammatory agents
      (1) antihistamines
      (2) steroids
      (3) sympathomimetics
      (4) parasympatholytics
   e. Antiviral agents
   f. Antifungal agents
3. Differential Diagnosis of Ocular Neuromuscular Disorders
4. Review of Ocular Side Effects of Systemic Drugs
5. Review of Systemic Side Effects of Ocular Drugs
6. Review of Ocular Side Effects of Ocular Drugs
7. Ocular Urgencies and Emergencies, including glaucoma management
8. Drug Contraindications During Pregnancy
9. Medical Urgencies and Emergencies
10. Malpractice and Jurisprudence

IV. Teaching/Learning Activities

1. patient history
   a. Medical history
   b. Patient's current drug regimen, and the effects of thes drugs on ocular structure and function
2. Sterile technique--proper instillation of "drops"
3. Refractive examination and fundus examination
   a. pre-medication procedures
      (1) advice to patients (effects of DPAs)
      (2) tonometry
      (3) angle evaluation
   b. Application of mydriatic/cycloplegic and related examination procedures
   c. Post-medication procedures
      (1) corneal examination
      (2) tonometry
      (3) advice to patient (i.e., return of pupil to normal, etc.)
   d. Diagnostic techniques and instrumention
      (1) tonometry, including Goldmann applanation
      (2) angle evaluation with the biomicroscope, including genioscopy
      (3) stain analysis
      (4) monocular and binocular fundus examination, including indirect ophthalmoscopic and biomicroscopic procedures
4. Clinical competency

A. comprehensive examination procedure will be established to evaluate each student as to his skill and competency in the use of DPAs and relevant instrumentation, and

B. the effect of systemic medication on ocular structure

C. the effect of ocular instillations on systemic sturcute and function.

EXHIBIT B

Comparison of optometry and medical school training in ocular anatomy, physiology, pathology, general and ocular pharmacology

Major Points

1. Optometric training far exceeds medical school training in the eye and eye medicine.

2. Medical school graduates can prescribe over 2000 drugs, including all eye drugs, under the principle of unlimited licensure.

3. Doctors of optometry use some of the eye drugs, approximately 15-20 in number.

Southern College of Optometry

Course	Quarter Credits
Required Courses	
BIOMED 110-130 Human Anatomy & Physiology (special emphasis on eye, related structures)	18
BIOMED 133 Vegetative Physiology: Ocular Biochemistry	3
BIOMED 213 Principles of Pharmacology & Therapeutics	2
BIOMED 220 Principles of Medicine II: Clinical Pathology and Pharmacology	4
BIOMED 221 Physiological Optics II: Monocular Sensory and Motility	4
BIOMED 224 Ophthalmic Pathology I	6
BIOMED 230 Principles of Medicine III: Clinical Pathology and Pharmacology	4
BIOMED 231 Physiological Optics III: Monocular Sensory & Binocular Vision	
BIOMED 234 Ophthalmic Pathology II	6
BIOMED 310 Principles of Medicine IV: Pediatrics and Pediatric Optometry	3
BIOMED 313 Advanced Principles of Pharmacology and Therapeutics	2
BIOMED 320 Principles of Medicine V: Gerontology & Geriatrics	3
BIOMED 323 Pharmacology: Ocular and Systemic Pharmacology	4
BIOMED 330 Principles of Medicine VII: Dermatology	2
BIOMED 333 Pharmacology: Clinical Pharmacology	4
CLINIC 310-431 General and Special Clinics	43

University of Minnesota Medical School

Course	Quarter Credits
Required Courses	
Phcl 5110-5111 Pharmacology	8
InMd 5229 Eye	2
Elective Courses	
8101 Clinical Ophthalmology	not specifie
8102 External Diseases	"
8103 Medical Ophthalmology	"
8104 Radiology of the Eye, Orbit and Head	"
8105 Motility	"
8107 Ocular Anatomy	"
8122 Physiologic Optics	"
8141 Ocular Pathology Conference	"
8142 Ophthalmic Pathology Laboratory	"
8143 Pathology of the Eye	"
8151 Basic and Applied Ophthalmology	"
8152 Ophthalmology Laboratory	"
8154 Seminar in Ophthalmology	"
8155 Special Topics in Ophthalmology	"

EXHIBIT C

States Authorizing Drug Utilization

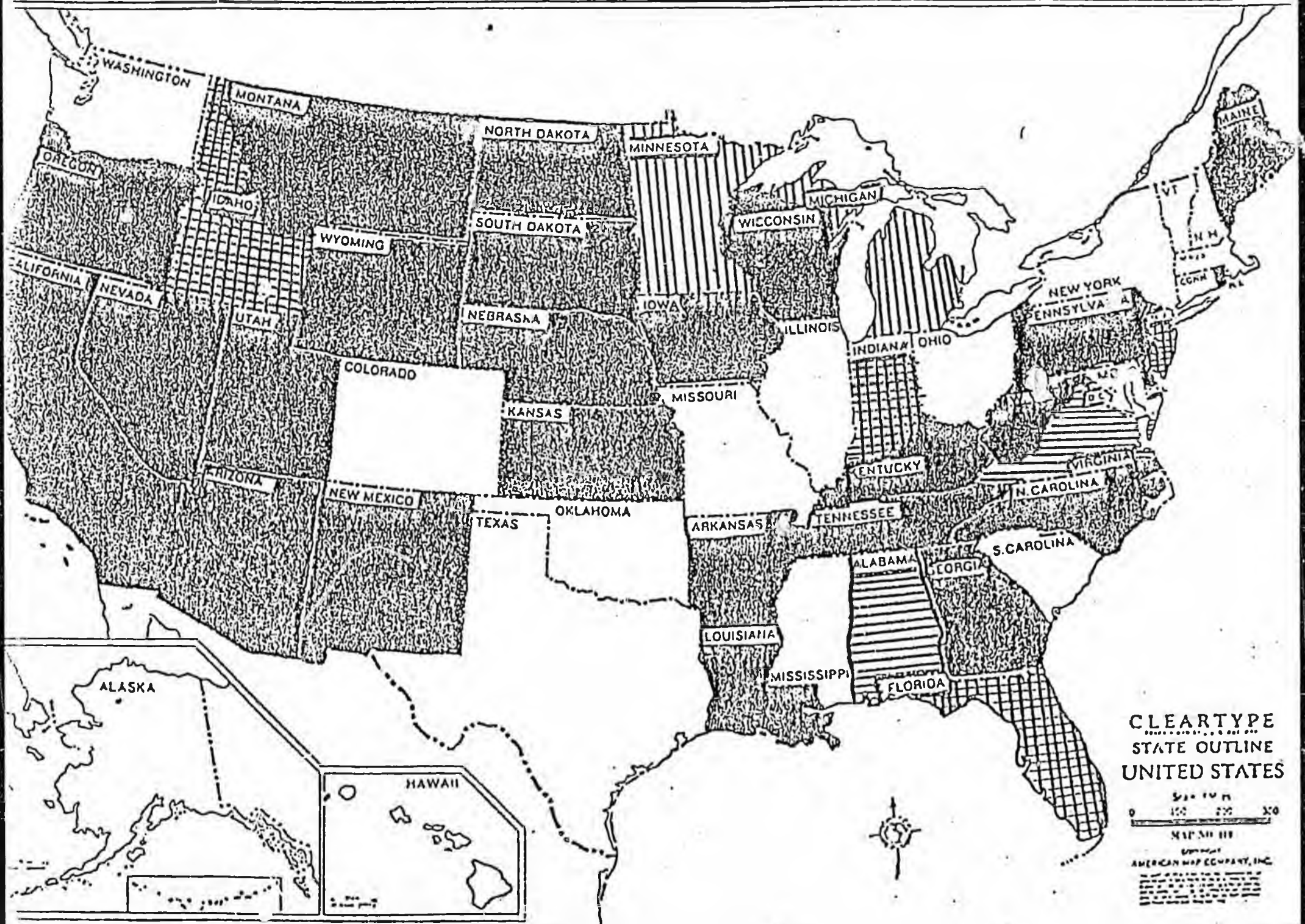
in the Practice of Optometry

Major Points

A majority of states have passed drug legislation, despite political opposition by ophthalmologists.

UTILIZATION OF PHARMACEUTICAL AGENTS BY OPTOMETRISTS

JUNE 8, 1979



UTILIZATION OF PHARMACEUTICAL AGENTS BY OPTOMETRISTS

NAME	DATE OF ENACTMENT
Rhode Island	July 16, 1971
Pennsylvania	March 1, 1974
Tennessee	May 8, 1975
Oregon	May 20, 1975
Maine	June 24, 1975
Louisiana	July 6, 1975
Delaware	July 10, 1975
*West Virginia	March 4, 1976
California	July 9, 1976
Wyoming	February 17, 1977
New Mexico	March 4, 1977
Montana	April 12, 1977 (at 10:10 a.m.)
Kansas	April 12, 1977 (at 2:00 p.m.)
*North Carolina	June 3, 1977
Kentucky	March 29, 1978
Wisconsin	April 29, 1978
Nebraska	February 13, 1979
South Dakota	March 15, 1979
Utah	March 21, 1979
North Dakota	March 22, 1979
Arkansas	April 2, 1979
Nevada	May 25, 1979
Iowa	June 8, 1979
Georgia	February 14, 1980
Arizona	April 1980

*both diagnostic and therapeutic

[In addition, there are eight (8) other states that do not statutorily prohibit the use of DPAs by optometrists; several of these states have attorney general opinions (+favorable) (-unfavorable) on this point: Alabama (AG-), Florida (AG+), Idaho (State Board Statement +), Indiana (AG+), Michigan (AG-), Minnesota, New Jersey (AG+), Virginia (AG-).]

For your information we are including an updated map showing geographically the utilization of pharmaceutical agents by optometrists.

Public Benefits of the Legislation

1. Availability of Services

Ophthalmologists are located in only 5 Alaskan cities: Anchorage, Fairbanks, Juneau, Ketchikan and Soldotna. Optometrists are located at the following cities not served by ophthalmologists: Sitka, Kodiak, Bethel, North Pole, Wasilla, Palmer, Kenai. In most of these cities, a patient with minor eye disease has no practical recourse but to see a general physician, who does not have the optometrist's degree of training in differential diagnosis or the instruments with which to accomplish the diagnosis. Since optometrists make trips to many rural and bush areas, they can provide basic eye health services to villages now principally served by health aides, with 6 to 24 weeks of training and having only radio contact for doctor consultation.

2. Quality of Services

Besides their obvious value to the health aide system, optometrists can serve as a valuable resource to physicians in cities not served by an ophthalmologist. This occurs with the optometrist employed by the native health corporation in Bethel (not bound by the drug restrictions of the Alaska optometry law). General physicians, to their credit, tend to refer patients to the most qualified practitioner in their area. It is not surprising therefore, that MDs in Kodiak have endorsed previous drug usage bills in optometry.

3. Cost of Services

Just as a general practitioner charges a lower fee (typically half) than does a specialist for doing similar work (obstetrics, pediatrics, etc.), so an optometrist (a generalist and primary care provider with respect to the eye) can be expected to charge less for treating minor eye diseases than does the ophthalmologist (the specialist).

Criticism of the Legislation by Ophthalmologists,

and Answers to the Criticism

1. The legislation is not necessary. The present system of ophthalmologists, general practitioners and health aides handles the eye care needs of Alaskans quite well.

Doctors of optometry are an underutilized resource. They can deliver services of higher quality, at greater availability and lower cost than can the existing system alone. This is detailed in the section entitled, Public Benefits of the Legislation.

2. Optometrists claim competancy, but their training programs are inadequate, particularly as to qualifications of faculty, and clinical experiences available to their students.

Optometry schools receive state and federal funds, and are accredited by both regional and professional accrediting organizations. It is not in the interest of schools or the profession at large to allow inadequate programs to exist in this sensitive area, for the sake of saving money. All optometric faculties include MDs, and PhDs in such specialized fields as physiology, pharmacology, biochemistry and microbiology. Many are present or past members of medical school faculties. With drugs, as in other areas of the professional curriculum, optometrists are trained well beyond the level at which they must function in day to day practice. While it is impossible to have too much clinical experience, optometry students enjoy more than adequate exposure to the common eye diseases they must deal with. In their two years of clinic experience, they see much more eye pathology than general medical students, but less than residents (trainees) in ophthalmology. Many rare eye diseases will not be seen in a three year residency in ophthalmology.

3. Optometrists can detect abnormalities but cannot diagnose. Treatment requires, first of all, an accurate diagnosis.

Optometrists can diagnose some eye diseases; definitive diagnosis of others requires specialized examination by the ophthalmologist. At still other times, consultation with the specialist will allow a diagnosis to be made. The same is true for a general physician or for a specialist whose case lies partly in the province of another specialist. No practitioner is going to be foolish enough to treat a case if he isn't sure what it is, if more competant authority is reasonably available.

4. Optometrists study the eye but they are not trained in broad medical principles. The general physician knows the entire body and can generalize certain principles to the eye even though he may not have as many hours of study specifically in the eye as the optometrist.

Optometrists study general anatomy, physiology, pathology and pharmacology precisely because certain general principles need to be understood before considering a particular organ system like the eye. The educational model is similar to dentistry. In both professions, the body as a whole is studied in less detail than is done by medical students, because neither are treating kidney disease or setting broken legs. Yet the necessary general principles are learned. Both dentists and optometrists are medically trained, in ways that are appropriate to their respective fields of work.

5. Given drugs for diagnosis and some treatment, ODs would go in over their heads, attempt to be ophthalmologists.

This is not the case in other fields and there is no evidence that it has happened or will happen in optometry. Malpractice insurance rates are no higher in drug states than in non-drug states. Besides a basic conservatism common to all professionals, optometrists are constrained by the knowledge that their malpractice insurance coverage does not extend to activities that are outside their recognized scope of practice.

6. Defining procedures "as taught by schools and colleges of optometry" is too general, could allow the optometry board to do almost anything.

"As taught" is purposely general, to allow the board to react to continuing changes in the education of the profession. It is the responsibility of the board, as an agency of the State of Alaska, to know the areas in which optometrists are trained and educated, to examine them for competance and license or fail to license them accordingly. Most board members are also practitioners. It is not in their interest to license fellow practitioners to do procedures that could bring discredit to the profession or raise malpractice insurance rates. This is also true of other health care regulatory boards.

7. Drug usage by optometrists constitutes competition in the historical province of ophthalmology.

Ophthalmologists, nationally and in Alaska, tend to concentrate in urban areas, where they spend a majority of their time practicing optometry. In the last 15 years they have entered the field of contact lenses, an area pioneered by optometry. Much earlier, their predecessors (oculists), entered the optometrists' field of refraction after abandoning the belief, common among Victorian era physicians, that glasses weakened the eyes. Competition both ways is appropriate. It is not in the public interest to exclude a qualified bidder from the marketplace.

APPENDIX

Full curricula of optometry and medical schools compared in Exhibit B

Southern College of Optometry

Catalog 1979-80

FOURTH PROFESSIONAL YEAR (CONTINUED) SPRING QUARTER			HOURS CREDIT
Optometry	430	Optometry Seminar: Curent Problems (3 HRS. LEC.)	3
Optometry	431	Clinical Case Analysis III (2 HRS. LEC.)	2
Biomedical	432	Vision Science Seminar: Current Problems (2 HRS. LEC.)	2
Clinic	430	General Clinic Practice VII (1 HR. LEC., 16 HRS. LAB)	5*
Clinic	431	**Specialty Clinics (Two required, each for 1 Qtr. Hr. of credit) (8 HRS. LAB)	2
		TOTAL	14

*Credit will be reduced by 1 quarter hour after 1979-80.

**A minimum of two quarter hours of credit each must be completed in Contact Lenses and in Orthoptics & Vision Training, during the fourth year, as well as a minimum of one quarter hour of credit in Pathology. Additional clinic rotations may be selected from Geriatrics, Low Vision, Dermatology, Neurology, Pediatrics, Neurophysiology, or any other approved clinical area.

COURSE DESCRIPTIONS

Courses numbered in the 100 series are for first professional year students, 200 for second professional year students, 300 for third professional year students, and 400 for fourth professional year students. The letter E following a course number indicates that the course is offered for college credit through the Continuing Education Program. The four-year program provides more than 4000 clock hours of instruction in optometric science and clinical optometry and carries a minimum of 232 quarter hours of credit.

The curriculum is organized for administrative purposes into three departments: Biomedical Sciences, Optometry and Clinic. The Biomedical Sciences Department is inter-disciplinary, offering sequences in anatomy and physiology, chemistry, physics, physiological optics and psychology. The Optometry Department offers diversified instruction in all phases of optometric theory and practice. The Clinic Department offers extensive experience in out-patient vision care.

BIOMEDICAL SCIENCES DEPARTMENT

110 HUMAN ANATOMY & PHYSIOLOGY I: STRUCTURE & FUNCTION (6 quarter hours)
Five hours of lecture and one two-hour laboratory per week. A course covering basic cell biology, general human embryology, ocular embryology and histology, with detailed emphasis on the tissue structure of the eye and ocular adnexa. The gross anatomy of the human body is studied, particularly the skull, circulatory system of the orbit, orbital contents, and ocular adnexa. The course also includes general physiology of the organ systems.

111 VISUAL OPTICS I: PHYSICAL AND GEOMETRICAL OPTICS (5 quarter hours)
Three hours of lecture and one two-hour laboratory. A detailed study of the variations in light rays between different optical media. Includes the theory of rectilinear propagation, reflection and refraction at plane, spherical, and cylindrical surfaces, and thin lenses.

120 HUMAN ANATOMY AND PHYSIOLOGY II: STRUCTURE AND FUNCTION (6 quarter hours)
Five hours of lecture and one two-hour laboratory per week. Continuation of 110.

121 VISUAL OPTICS II: PHYSICAL AND GEOMETRICAL OPTICS (4 quarter hours)
Three hours of lecture and one two-hour laboratory. A continuation of Bio 111. Includes the Gaussian system, the schematic eye and its applications, selected optical instruments, common aberrations, and the effect of apertures. Prerequisite: Bio. 111.

122 VISUAL PERCEPTION: PSYCHOPHYSIOLOGICAL OPTICS (5 quarter hours)
Four hours of lecture and one two-hour laboratory per week. An introduction to Vision Science, which involves the behavior-scientific approach to understanding vision and visual perception. Special emphasis is placed on monocular visual function and on the theories and data relevant to visual perceptions.

130 HUMAN ANATOMY AND PHYSIOLOGY III: STRUCTURE AND FUNCTION (6 quarter hours)
Five hours of lecture and one two-hour laboratory per week. Continuation of 120.

131 VISUAL OPTICS III: PHYSICAL AND GEOMETRICAL OPTICS (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. Physical Optics comprises those phenomena bearing on the nature of light, including processes which involve the interaction of light with matter. Some topics considered are nature and propagation of light, photometry, dispersion, interference, diffraction, polarization, and spectra.

133 VEGETATIVE PHYSIOLOGY: OCULAR BIOCHEMISTRY (3 quarter hours)
Three hours of lecture per week.
Analysis of the intraocular fluids, aqueous chemistry and flow; secretory mechanism, intraocular pressure; vitreous structure and protein; lens and its function related to its composition. Lens proteins, metabolism cataract. The cornea and sclera; metabolism, nutrition and growth processes; retinal metabolism, glycolysis.

210 PRINCIPLES OF MEDICINE I: GENERAL PATHOLOGY (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. An introduction to reaction of the body as a whole to disease. Injuries including genetic, metabolic, infectious, immunologic degenerative, hemorrheologic and neoplastic processes are reviewed.

211 PHYSIOLOGICAL OPTICS I (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. A study of the eye as an optical system including the dioptric and physiological components, and the functioning of the visual system.

212 NEUROANATOMY AND NEUROPHYSIOLOGY I (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. Embryological development, structure, and function of the nervous system are studied. Functional components of the nervous system with special reference to modifications are studied.

* 213 PRINCIPLES OF PHARMACOLOGY AND THERAPEUTICS (2 quarter hours)
Two hours of lecture per week. The course covers basic principles of pharmacology, including drug absorption, distribution, metabolism, and excretion. The autonomic nervous system will be covered and an introduction to drug dosage forms and drug dosage regimens.

* 220 PRINCIPLES OF MEDICINE II: CLINICAL PATHOLOGY AND PHARMACOLOGY (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. The study of the etiology, pathophysiology, treatment and ocular complications of systemic diseases. An organ system modular approach will be adop

221 PHYSIOLOGICAL OPTICS II (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. A stud monocular sensory aspects of vision and the physiology of ocular mot

224 OPHTHALMIC PATHOLOGY I (6 quarter hours)
Five hours of lecture and one two-hour laboratory per week. A thoro consideration of diseases of the eye, its adnexa, and the visual pathv and of pathologically induced changes in the visual fields. Techniques instrumentation for detection, measurement, and diagnosis of eye orders are studied intensively.

* 230 PRINCIPLES OF MEDICINE III: CLINICAL PATHOLOGY AND PH/ MACOLOGY (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. A contin tion of Bio. 220.

231 PHYSIOLOGICAL OPTICS III: MONOCULAR SENSORY AND BINOCUL VISION (3 quarter hours)
Two hours of lecture and one two-hour laboratory per week. A continuat of monocular sensory aspects of vision, color vision and binocular visi

234 OPHTHALMIC PATHOLOGY II (6 quarter hours)
Five hours of lecture and one two-hour laboratory per week. Continuati of Bio. 224.

235 APPLIED PSYCHOLOGY: PATIENT BEHAVIOR (1 quarter hour)
One hour of lecture per week. The psychology of patient handling, wi respect to refractive error and numerous ocular and visual anomalie Patient management with respect to age (infancy to the elderly) a counseling, generally. Special attention is given to how the doctor explai and informs the patient of clinical entities, particularly "referral typ cases. Emphasis will be given to the commonest conditions met with practice, including cataract, glaucoma, retinal separation, multip sclerosis, strabismus, and refractive error.

* 310 PRINCIPLES OF MEDICINE IV: PEDIATRICS AND PEDIATRIC OPTOMETR (3 quarter hours)
Three hours of lecture per week. The course will be concerned with growt and development of the young; childhood diseases; hereditary and geneti disorders of the eye and adnexa in pediatric ophthalmic medicin emotional components in pediatrics; disease processes and therapeutic of the eye and adenxa. The ophthalmic examination of infants an children; ophthalmic optics and dispensing for refractive errors and th correction of refractive errors, the correction of low vision problems i children.

312 NEUROANATOMY & NEUROPHYSIOLOGY II (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. A laboratory course dealing with the electrical properties of the body and the means of measuring and interpreting electrical activity of the ner[illegible]stem and the muscular system: EEG, EMG, ERG, EOG.

* 313 ADVANCED PRINCIPLES OF PHARMACOLOGY & THERAPEUTICS (2 quarter hours)
Two hours of lecture per week. The course covers principles of phar-

macology, including drug absorption, distribution, metabolism, and excretion. The autonomic nervous system will be covered and an introduction to drug dosage forms and drug dosage regimens.

320 PRINCIPLES OF MEDICINE V: GERONTOLOGY & GERIATRICS (3 quarter hours)
Three hours of lecture per week. The processes of aging; diseases of the elderly. Disease processes and therapeutics of the aging eye and adnexa. Ophthalmic optics and correction of refractive errors in the geriatric patients, aphakia, correction of low vision problems in the elderly.

321 PRINCIPLES OF MEDICINE VI: NEUROLOGY (2 quarter hours)
Two hours of lecture per week. Introduction to neurology, including the peripheral nervous system, diseases of the spinal cord and brain; clinical examination of the nervous system; special senses; neurological symptoms; diseases of the cranial nerves; common psychiatric disorders, neurosis, psychosis, alcoholism, anxiety, etc.

323 PHARMACOLOGY: OCULAR & SYSTEMIC PHARMACOLOGY (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. A course covering basic concepts of current ocular pathological problems. Included are consideration of local and systemic treatment of ocular pathologies, use of diagnostic agents, and ocular side effects of non-ocular drugs.

330 PRINCIPLES OF MEDICINE VII: DERMATOLOGY (2 quarter hours)
Two hours of lecture per week. Appreciation of skin disorders with emphasis on ocular or adnexa implications. Topics will include collagen diseases, pre-cataract skin changes, psoriasis, facial tumors, tumors of eyelid, eyelashes, eyebrows, eczemas; Seborrheic, atropic and allergic dermatitis; Steven-Johnson and dry eye syndrome; Xeroderma, Lipoid Storage Diseases, Xanthalasma; Seborrheic exfoliation. Viral diseases of skin with ocular manifestation, including Vaccinia, Herpes Simplex, Herpes Zoster, Chickenpox, measles, Verrucae; Bullous Dermatoses, disturbances of pigmentation, nutritional disturbances and drug reactions.

333 PHARMACOLOGY: CLINICAL PHARMACOLOGY (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. An advanced course designed to integrate the student's knowledge of pathology and pharmacology. Special emphasis will be placed on further developing differential diagnostic skills, the skills necessary to manage and/or monitor patients who manifest diagnosed ocular conditions and/or systemic conditions with ocular and visual complications, and in addition, to develop further screening techniques for detecting high incidence general health problems.

432 VISION SCIENCE SEMINAR: CURRENT PROBLEMS (2 quarter hours)
Two hours of lecture per week. Various topics concerning aspects of vision science are discussed in terms of current problems.

OPTOMETRY DEPARTMENT

110 BASIC OPTOMETRY (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. Introduction to the use of the trial frame, trial case, retinoscope, ophthalmoscope, ophthalmometer and other instruments used in the visual analysis. Normal refractive states and deviations are studied along with common visual anomalies. Techniques of taking the principal optometric data and the case history are introduced, followed by the evaluation of single findings and the inference of deviant processes from patterns of findings.

111 PREVENTATIVE AND COMMUNITY OPTOMETRY: EPIDEMIOLOGY AND RESEARCH METHODOLOGY (4 quarter hours)
Four hours of lecture per week. Statistical methods as applied to data obtained in optometric examinations and visual science. Measures of central tendency, variability, correlation, standard errors, and tests of significance of commonly used statistics including introduction to the analysis of variance. Experimental design and logic of controlled experimentation, reliability of observations, statistical versus experimental means of controlled experimentation, analysis, interpretation and communication of experimental results.

120 INTERMEDIATE OPTOMETRY I (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. A continuation of 110.

121 PREVENTATIVE AND COMMUNITY OPTOMETRY: JURISPRUDENCE (2 quarter hours)
Two hours of lecture per week. Prevailing statutory and common laws relevant to rights and responsibilities of the optometrist are presented and the legal principles with which an optometrist should be familiar are discussed.

130 INTERMEDIATE OPTOMETRY II (5 quarter hours)
Four hours of lecture and one two-hour laboratory per week. A continuation of 120.

131 HISTORY OF OPTOMETRY (1 quarter hour)
One hour of lecture per week. The development of the profession of optometry from antiquity to the present is surveyed. The role of certain optometric organizations, as well as noted figures in the history of vision science and optometry are studied for perspective.

210 ADVANCED OPTOMETRY I (4 quarter hours)
Three hours of lecture and one two-hour laboratory. The procedures and rationales of graphical, normative and functional visual analysis are studied and compared. Selected optometrics are compared in relation to the diagnosis and treatment of various visual problems.

220 ADVANCED OPTOMETRY II (4 quarter hours)
Three hours of lecture and one two-hour laboratory. A continuation of 210.

222 OPHTHALMIC OPTICS I (2 quarter hours)
Two hours of lecture per week. Fundamentals of ophthalmic mechanics, pertinent mathematics, practical training in the fabrication of common types of ophthalmic lenses and spectacles. Dispensing procedures of fit-

ting and adjusting of spectacles to various facial contours are included. Tool kits are required.

230 ADVANCED OPTOMETRY III (5 quarter hours)
Four hours of lecture and one two-hour laboratory. A continuation of 220.

232 OPHTHALMIC OPTICS II (2 quarter hours)
One hour of lecture and one two-hour laboratory per week. A continuation of Opt. 222. Tool kits are required.

310 CONTACT LENS PRACTICE I (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. The history and development of contact lenses, lectures on the anatomy and physiology of the cornea and eyelids, optics, instrumentation, and lens design. Symptomatology with emphasis on differential diagnosis is presented. Flurorescein analysis of diagnostic lens/cornea relationships is emphasized. Material concerning lens modification procedures, verification of lenses, and fitting techniques is presented in the laboratory.

311 ORTHOPTICS & VISION TRAINING I (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. A study of the influence of vision on human potential, performance, and behavior at various levels of development.

320 CONTACT LENS PRACTICE II (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. Advanced optics, bifocal lenses, scleral lenses, and contact lens telescopic systems are presented. Prerequisite: Optometry 310.

321 ORTHOPTICS & VISION TRAINING II (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. Fundamental principles and modern concepts of vision training and orthoptic procedures are presented as they apply to improvement of vision function, reestablishment of efficient binocular vision, and modification of behavior through performance and achievement gains in the individual.

331 PREVENTATIVE & COMMUNITY OPTOMETRY: ENVIRONMENTAL VISION (3 quarter hours)
Three hours of lecture per week. An analysis of the role of the optometrist and the practice of optometry in industry and other public, military, and educational settings where large groups of individuals are sharing a common environment.

332 VISION SCIENCE LABORATORY (2 quarter hours)
A group of courses from which the student elects one. Each course includes two hours of lecture or one hour of lecture and one two-hour laboratory per week and is research oriented, with classroom activity devoted to clarifying and discussing laboratory techniques. Offered to appeal to student interests in pursuing special research topics in greater depth in areas such as Physical Optics, Geometrical Optics, Physiological Optics, Psychological Optics, and Experimental Optometry.

333 LIMITED VISION (PARTIAL SIGHT) (4 quarter hours)
Three hours of lecture and one two-hour laboratory per week. Differential procedures of evaluation of patients with severe and intractable visual deficits. Anatomical, physiological, and psychological aspects are integrated in considering the most suitable optic compensation.

401 PREVENTATIVE & COMMUNITY OPTOMETRY: ECONOMICS & PRACTICE MANAGEMENT (4 quarter hours)
Four hours of lecture per week. Professional and economic aspects of the ethical practice of optometry are studied in detail. Special attention is given to selection of a practice location, planning and equipping the office, fee structures, office and personnel management, records systems, and effective communications at the professional level. The basic concepts of ethical professional conduct and their application to standards of practice are considered from the points of view of the individual optometrist, the patient, the profession, and the public.

402 PREVENTATIVE & COMMUNITY OPTOMETRY: PUBLIC HEALTH (2 quarter hours)
Two hours of lecture per week. A general introduction to the principles of public health, the concepts of epidemiology, and the structure and functioning of local, state, and federal health departments and agencies.

410 OPTOMETRY SEMINAR: CURRENT PROBLEMS (3 quarter hours)
Three hours of lecture per week. Modern techniques used in various aspects of optometry, including contact lenses, general refraction, pathology, etc.

411 CLINICAL CASE ANALYSIS I (2 quarter hours)
Two hours of lecture per week. Analysis of patient cases, including general, and various specialty areas.

420 OPTOMETRY SEMINAR (2 quarter hours)
Two hours of lecture per week. A continuation of 410.

421 CLINICAL CASE ANALYSIS II (2 quarter hours)
Two hours of lecture per week. A continuation of 411.

430 OPTOMETRY SEMINAR: CURRENT PROBLEMS (3 quarter hours)
Three hours of lecture per week. A continuation of 420.

431 CLINICAL CASE ANALYSIS III (2 quarter hours)
Two hours of lecture per week. A continuation of 421.

CLINIC DEPARTMENT.

Satisfactory completion of all course work in the Optometry Department (excluding History of Optometry) and Clinic Department in the First and Second Professional Years is prerequisite to the Third Professional Year Clinic Department work. Additionally, the three-quarter, Second Professional Year general and ocular pathology series; the Second Professional Year course in Pharmacology and Therapeutics; and the Second Professional Year course in Applied Psychology, all in the Biomedical Department, are prerequisites for Third Professional Year clinic assignments.

110 CLINIC ORIENTATION (1 quarter hour)
One two-hour laboratory per week. An orientation to the clinic by means of participation in school screenings and external clinics, to the extent of recording and assisting upper classmen in performance of clinical routines. This one-hour course is extended over the first three quarters of the optometry program and is designed to afford the beginner an appreciation of the social aspects of vision care.

210 CLINICAL PROCEDURES (1 quarter hour)
One two hour clinic laboratory per week. This course is an introduction to clinical procedures, emphasizing patient handling, case histories, record keeping, preliminary testing, and instrumentation. This one-hour course is extended over the Fall, Winter and Spring quarters of the Second Professional Year.

* 310 CLINICAL PRACTICE I (3 quarter hours)
↓ One hour of lecture and two four-hour laboratories per week. Extensive familiarization with clinical facilities and procedures and individually supervised experience in the coordination and application of various theories and techniques of optometry in the out-patient clinic. The taking of case histories, measurement of visual skills, refractive status, status of accommodation and convergence and their coordination, pathology and visual fields examination, subnormal vision, eikonometry, prescribing and dispensing.

320 CLINICAL PRACTICE II (4 quarter hours)
One hour of lecture and three four-hour laboratories per week. A continuation of 310.

330 CLINICAL PRACTICE III (4 quarter hours)
One hour of lecture and three four-hour laboratories per week. A continuation of 320.

331 SPECIALTY CLINICS (2 quarter hours)
Two four-hour laboratories per week. Introduction to clinical procedures in Contact Lenses and in Orthoptics and Vision Training.

400 CLINICAL PRACTICE IV (5 quarter hours)
One hour of lecture and four four-hour laboratories per week. A continuation of 330.

401 SPECIALTY CLINIC (2 quarter hours)
A topic selected from a wide variety of subjects. A minimum of two quarter hours of credit each must be completed in Contact Lenses and in Orthoptics and Vision Training, during the fourth year, as well as a minimum of one quarter hour of credit in Pathology. Additional clinic rotations may be selected from Geriatrics, Low Vision, Dermatology, Neurology, Pediatrics, Neurophysiology, or any other approved clinical area.

410 GENERAL CLINIC PRACTICE V (5 quarter hours)
One hour of lecture and four four-hour laboratories per week. A continuation of 400.

411 SPECIALTY CLINICS (2 quarter hours)
Two four-hour laboratories per week. A continuation of 401.

420 GENERAL CLINIC PRACTICE VI (6 quarter hours)
One hour of lecture and five four-hour laboratories per week. A continuation of 410.

421 SPECIALTY CLINICS (3 quarter hours)
Three four-hour laboratories per week. A continuation of 411.

430 GENERAL CLINIC PRACTICE VII (5 quarter hours)
† One hour of lecture and four four-hour laboratories per week. A continuation of 420.

* 431 SPECIALTY CLINICS (2 quarter hours)
Two four-hour laboratories per week. A continuation of 421.

FOURTH-YEAR EXTERNSHIPS. The externship program is designed for fourth-year clinicians in optometry to broaden and supplement their experience in evaluating, diagnosing, and treating conditions of the eye and visual system. Externships are five weeks in duration, and they may be scheduled during any of the four quarters of the fourth professional year. Fourth-year students are required to take at least one externship prior to graduation. A student who is unable to participate in an assigned externship for exceptional reasons must consult with the Dean of Faculty.

It is permissible for a fourth-year student to participate in more than one externship, or in an externship of longer than five weeks in duration. No more than one quarter may be spent in any one location.

The externship program provides a wide range of geographical locations in hospital, private clinic, and private practice settings. In all cases the extern serves under the direct supervision of optometric, osteopathic, or medical physicians who hold at least temporary appointments to the adjunct faculty of the College.

Eligibility requirements for externship participation are as follows:

1. The student must be in good standing (i.e., not subject to termination for disciplinary reasons); and
2. Not on probation (either academic or disciplinary); and
3. Be a regular student (i.e., pursuing a course of study leading to certification or to a degree offered by the College); and
4. Must have satisfactorily completed all courses in the O.D. degree curriculum through the spring quarter of the third year; and
5. Must have passed clinical competency evaluation.

EXTERNAL STUDIES PROGRAM COURSES

133E VEGETATIVE PHYSIOLOGY: OCULAR BIOCHEMISTRY (3 quarter hours)
Three hours of lecture per week. Analysis of the intraocular fluids, aqueous chemistry and flow; secretory mechanism, intraocular pressure; vitreous structure and protein; lens and its function related to its composition. Lens proteins, metabolism cataract. The cornea and sclera; neurological aspects of sensation; metabolism, nutrition and growth processes; retinal metabolism, glycolysis.

316E GENERAL PHARMACOLOGY (3 quarter hours)
Three hours of lecture per week. A comprehensive course covering contemporary therapeutic principles and agents. Included are origins, chemical nature, mechanism of actions and interactions, major effects, and absorption and fate of the most commonly used drugs.

326E OCULAR PHARMACOLOGY (3 quarter hours)
Three hours of lecture per week. A course covering basic concepts of current ocular pathological problems. Included are consideration of local and systemic treatment of ocular pathologies, use of diagnostic agents, and ocular side effects of non-ocular drugs.

336E CLINICAL PHARMACOLOGY (3 quarter hours)
Two hours lecture and one two-hour laboratory per week. An advanced course designed to integrate the student's knowledge of pathology and

UNIVERSITY OF MINNESOTA

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Medical School

UNIVERSITY OF MINNESOTA

Medical Student Government and Student Societies

The Medical Student Council, the student governing body, is composed of representatives from each class and from several minority groups that are elected each year. Council members meet regularly and frequently to discuss problems common to the student body and to plan a variety of projects and service activities. The council represents the interests of the medical students to the administration and the faculty. The medical students, through the council, have adopted an honor code covering examination procedures. Upon admission to the Medical School, each student, after suitable briefing, signs a statement indicating that he or she is well acquainted with the provisions of this code and agrees to abide by it. The Ethics Committee of the Medical Student Council is responsible for investigating reports of any suspected violations of this code.

There are several medical fraternities available for men and one medical sorority available for women. These organizations play a major role in the social life of many medical students.

The national medical scholastic society, Alpha Omega Alpha, selects academically high-ranking students from the junior and senior classes for election to membership. The James Moore Society is composed of 25 students elected by the membership on the basis of research interest and achievement. The group meets monthly at the home of one of several faculty members for discussions of medical subjects and other topics of current interest. The Cyrus P. Barnum, Jr., Society, an organization of students working toward the combined M.D.-Ph.D. degree, meets regularly for scientific and informative evening discussions to which speakers are invited.

The American Medical Student Association (AMSA), an integral part of the Medical Student Council, is incorporated as one of the major activities of the council. The association chairperson acts as local AMSA chapter president. This group sponsors certain school-wide functions through the student council. The membership fee is nominal, and members receive monthly copies of the national periodical.

The wives of many medical students are active in the Women's Auxiliary of the Student American Medical Association (WA-SAMA). This group holds monthly meetings featuring speakers who discuss topics of interest.

IV. M.D. PROGRAM

The Medical School provides the faculty and facilities for instruction of students in the course in medicine. The primary goal of medical education is to produce good physicians possessing sound training in quantitative human biology. Beyond the Medical School and the award of the M.D. degree, all graduates are obliged, by requirements for specialization and/or licensure, to undertake additional formal education or training. And beyond these formal programs are the continuing education activities that individuals in practice must demand of themselves. Much of the success of the sequence of undergraduate-graduate-continuing education, called the continuum of medical education, is dependent on individual responsibility and initiative. Therefore, to encourage such development in medical students, the concept of the student as learner is emphasized in the curriculum.

The course of study for the M.D. degree consists of a core program of 8 academic quarters and a track (option, elective) program of 5 academic quarters. Within the core program, the first 4 quarters, termed Phase A, include course work in basic medical sciences, behavioral science, and introductory experiences with patients. The next 4 academic quarters of the core program, termed Phase B, consist of integrated interdepartmental courses organized and taught along organ, system, and topical lines. In the Phase D portion of the curriculum students, with the help of an adviser, plan a program of elective courses. All students must include in this program experience in both medicine and surgery that will be suitable preparation for advanced clinical responsibilities in subsequent training after completion of work for the M.D. degree. Students making satisfactory progress may, after adviser, track, and special committee review, be approved to complete Phase D in less than 5 academic quarters (minimum 3 quarters of study) providing they make arrangement for a first year of graduate study in a teaching hospital. Alternatively, students may complete Medical School in 5 quarters in Phase D with no restriction or requirement as to type of graduate program activity. Students are required to take and pass parts I and II of the National Board Examinations as a requirement for graduation and the M.D. degree.

Phase A

In the first 4 quarters of the Medical School program, studies cover the structure and function of the human organism and the emotional, social and psychological development of the individual. In Phase A, the student begins clinical activities through tutorial assignments and clinical correlation sessions in Introduction to Clinical Medicine. The Phase A program is intended to involve the student physician in individual synthesis and correlation of the basic sciences with clinical applications and in direct, personal confrontation with human illness and patient care. The required program in Phase A consists of the following courses:

Fall Quarter and Winter Quarter (A-1 and A-2)

- Gross Anatomy (Anat 5100-5101)
- Human Histology (Anat 5103-5104)
- Embryology (Anat 5106-5107)
- Medical Biochemistry (MdBc 5100-5101)
- Introduction to Clinical Medicine (InMd 5100-5101)
- Behavioral Science (AdPy 5107-5108)

Spring Quarter and Summer Quarter (A-3 and A-4)

- Medical Physiology (Phsl 5110-5111)
- Pathology (Path 5101)
- Neuroanatomy (Anat 5111)

Introduction to Clinical Medicine (InMd 5002-5003)
Microbiology (MicB 5205-5206)
Pharmacology (Phcl 5110-5111) 8 cr. See p 56

In both fall and winter quarters, students may elect to attend one of several weekly small group meetings at which topics of personal concern, current interest, or medical importance are brought up for discussion.

Phase B

The 4-quarter sequence of Phase B begins in the fall and consists of integrated, interdepartmental courses designed to highlight fundamental principles in clinical medicine and to emphasize pathophysiologic concepts. The courses are organized in relation to organs, systems, or topics. Two courses in the Phase B sequence, Student as Physician and Human Behavior, are designed, respectively, to increase the student's clinical skills and knowledge and to enhance the student's awareness of psychopathology and psychological factors related to illness.

Core activities in some courses consist of small group discussions, with lectures and other formal presentations optional. Extensive syllabi and reference lists are provided for each student. The student is encouraged to exercise independent and mature judgment in the learning process by arranging her or his own activities. The student may utilize this time for study in the Learning Center, participation in additional clinical experiences, or completion of elective courses available to students in Phase B. The formal Medical School activities in Phase B are divided into three categories:

1. Core Time—Lectures or small group discussions related to a specific organ, system, or topic, and weekly clinical tutorials. Attendance is expected.
2. Optional Activities—Supplementary scheduled activities, such as lectures that expand material offered in the core or, in some cases where lectures are optional, films, additional clinical experiences, laboratories, demonstrations, clinical rounds, teaching rounds, or clinical-pathological conferences. Attendance is voluntary.
3. Electives—Courses offered throughout the year covering various topics of interest to medical students but not necessarily related to the core program.

The required program in Phase B consists of the following courses:

REQUIRED PHASE B COURSES

InMd 5110—Medical Genetics	2 cr
InMd 5220—Cardiovascular	3 cr
InMd 5221—Respiratory	3 cr
InMd 5228—Ear, Nose, and Throat	2 cr
InMd 5212—Human Behavior	5 cr
InMd 5231—Gut	4 cr
InMd 5234—Biometry and Epidemiology	1 cr
InMd 5226—Blood	3 cr
InMd 5222—Fluid and Electrolytes	3 cr
InMd 5223—Kidney and Urinary Tract	3 cr
InMd 5230—Nervous System and Muscle Disorders	5 cr
InMd 5232—Bones, Joints, and Connective Tissue	4 cr
InMd 5224—Endocrine and Metabolism	4 cr
InMd 5225—Reproduction	4 cr
InMd 5227—Skin	2 cr

InMd 5229 Eye 2 cr
InMd 5233 Human Sexuality 3 cr

Student as Physician Tutorials

Medicine Tutorial	Cr ar
Pediatrics Tutorial	Cr ar
Obstetrics-Gynecology Tutorial	Cr ar
Psychiatry Tutorial	Cr ar
Surgery Tutorial	Cr ar
Family Practice and Community Health	Cr ar
Physical Medicine and Rehabilitation	Cr ar
Laboratory Medicine	Cr ar

Phase D

Phase D is designed to extend the curriculum goals of relevance, flexibility, and the student as learner. Prior to completion of Phase B, students select a track and an adviser within that track for the balance of the Medical School program. Students are reminded not to confuse the selection of a track at this point with their eventual need to choose a practice specialty. The six broadly defined career pathways or tracks, encompassing all disciplines and providing varied options for all students, are the following:

Track 1—Medicine, Pediatrics, Medical Specialties including Obstetrics
Track 2—Surgical Specialties
Track 3—Psychiatry and Behavioral Sciences
Track 4—Neurological Sciences
Track 5—Family Practice
Track 6—Medical Investigation and Special Programs

The student, with the help of an adviser, develops an individualized elective program of study related to personal interests and career goals. Each student's program is approved and progress monitored by the appropriate track committee.

There are electives strongly recommended for the several tracks. In general, and as a logical extension of the core material and tutorial format in Phase B, each student is advised to spend 12 to 18 weeks in externship-type electives such as those offered in medicine, neurology, obstetrics, pediatrics, psychiatry, and surgery. The balance of the individual program is drawn from the extensive elective courses offered by each Medical School department. Students may consider elective work in other medical schools, in the United States or elsewhere. Up to 1 quarter of credit for such activities may be approved by the adviser and track committee. The flexibility of the elective program and the general nature of the pathways provide an opportunity for creative and interested students to avail themselves of the widest possible spectrum of educational activities to further their professional growth.

Students are eligible to begin Phase D on completion of Phases A and B and after taking part I of the national boards. Students with deficiencies in Phase A or B or who have taken but not passed part I are reviewed by the Scholastic Standing Committee for a decision as to arrangement of their continuing academic program. The content of Phase D, approved by the adviser and Phase D track committee, is determined by a review of each student's educational needs in light of his or her projected career goals. There are no restrictions on the type of internship or first-year training program for students graduating in 4 years. In the standard 13-quarter curriculum, in the case of 3-quarter programs, students must provide evidence that they will spend their first postdoctoral year (internship or first year of graduate training) in a university or other major affiliated teaching hospital.

Lydia Nerbergs, M.D.
Thomas O'Hare, M.D.
Richard T. Olson, M.D.
Charles Ostrow, M.D.
Rene Pelletier, M.D.
Charles Roach, M.D.
Robert Sigelman, M.D.
James Standafer, M.D.
Alfred Steidl, M.D.
Richard Student, M.D.
Byron Teska, M.D.
James Thompson, M.D.
Jon Tierney, M.D.
Elliot Troup, M.D.
Paul Wicklund, M.D.

Clinical Instructor

Peter Arny, M.D.
Judith Bennington, M.D.
John E. Bergstedt, M.D.
Herbert Billman, M.D.
Dwayne Bron
Christopher Brown, M.D.
Emmett Carpel, M.D.
Richard Carroll, M.D.
David Chirek, M.D.
Raymond Croissant, M.D.
Mickie Haddad, M.D.
David Hendrickson, M.D.
Donald Herrick, M.D.
George O. Hilgerman, M.D.
Herbert T. Hobday, M.D.
Douglas Holmen, M.D.
James Householder, M.D.
Martin Kaplan, M.D.
Aaron Nathanson, M.D.
Mark Norman, M.D.
Robert Ostrow, M.D.
Jerome Poland, M.D.
Thomas Purcell, M.D.
Wesley Sondreal, M.D.
Robert Warshawsky, M.D.

ELECTIVE COURSES

5180. EXTERNSHIP IN OPHTHALMOLOGY. (Cr ar; prereq regis med)

5190. OPHTHALMOLOGY RESEARCH PROBLEMS. (Cr ar; prereq regis med)

ADVANCED CREDIT COURSES

8101. CLINICAL OPHTHALMOLOGY
8102. EXTERNAL DISEASES
8103. MEDICAL OPHTHALMOLOGY
8104. RADIOLOGY OF THE EYE, ORBIT, AND HEAD
8105. MOTILITY
8106. STRABISMUS MANAGEMENT
8107. OCULAR ANATOMY
8121. REFRACTION
8122. PHYSIOLOGIC OPTICS
8131. PRACTICAL OCULAR SURGERY
8132. DIDACTIC OCULAR SURGERY
8141. OCULAR PATHOLOGY CONFERENCE
8142. OPHTHALMIC PATHOLOGY LABORATORY
8143. PATHOLOGY OF THE EYE
8151. BASIC AND APPLIED OPHTHALMOLOGY
8152. OPHTHALMOLOGY LABORATORY
8153. RESEARCH IN OPHTHALMOLOGY
8154. SEMINAR IN OPHTHALMOLOGY
8155. SPECIAL TOPICS IN OPHTHALMOLOGY
8701. NEUROOPHTHALMOLOGY

Medical student may take any or none of these courses

Orthopaedic Surgery (OrSu)

Roby C. Thompson, Jr., M.D., professor and head

Professor

David S. Bradford, M.D.
Robert B. Winter, M.D.

Clinical Professor

Ramon B. Gustilo, M.D.
Harry B. Hall, M.D.
Sheldon M. Lagaard, M.D.

Associate Professor

Thomas H. Comfort, M.D.
James H. House, M.D., M.S.
Robert F. Premer, M.D.

Clinical Associate Professor

Robert M. Barnett, M.D.
Lester W. Carlander, M.D.
Frederick D. Drill, M.D.
Arnold L. Hamel, M.D.
Walter Indock, M.D.
Richard H. Jones, M.D.
Lowell Kleven, M.D.
Lowell Lutter, M.D.
Harvey E. O'Phelan, M.D.
Wayne W. Thompson, M.D.

Assistant Professor

Alfred F. Behrens, M.D.
John E. Lonstein, M.D.
Jack K. Mayfield, M.D.
Theodore R. Oegema, Jr., Ph.D.

Clinical Assistant Professor

Richard J. Aadalen, M.D.
Gordon Aamoth, M.D.
Paul Arneson, M.D.
Frank S. Bibb, M.D., M.S.
Vincent E. Eilers, M.D.
David W. Florence, M.D.
Daniel Gailhore, M.D.
John A. Hartwig, M.D.
Edward H. Kelly, M.D.
Charles C. Lai, M.D.
Donald R. Lennin, M.D., M.S.
Lloyd Leider, M.D.
Edward McEllistrem, M.D.
John E. McMahon, M.D.
Joseph M. Tamborrino, M.D.

Instructor

Khalid B. Ahmed, M.D.
John H. Scarpino, M.D.

Clinical Instructor

John J. Beer, M.D.
Roland Birsebak, M.D.
Joseph Bocklage, M.D.
Charles J. Cooley, M.D.
Michael W. Davis, M.D.
Leo DeSouza, M.D.
Richard B. Edwards, M.D.
Philip Haley, M.D.
James E. Johanson, M.D.
Richard J. Johnson, M.D.
Stephen Kusiach, M.D.
John Larkin, M.D.
Dick R. Lavender, M.D.
Thomas Lyman, M.D.
Donald Madsen, M.D.
James D. Pugh, M.D.
Jerry Reese, M.D.
George E. Ressler, M.D.
Richard Stimmel, M.D.
Ivan Scholl, M.D.
Peter Strand, M.D.
Warren S. Strehlow, M.D.
Francis J. Trost, M.D.
John Wilson, M.D.

The major goals of the orthopedic surgery courses are to provide the medical student with the foundation necessary for performing a basic neuromusculoskeletal examination of the patient, for correlating the clinical expressions of disease with basic science knowledge, and for recognizing those patient problems that require immediate appraisal and resolution. In a number of clinical electives the student experience has the option of participating in the diagnostic and therapeutic management of patients with orthopedic and traumatic disabilities; this advanced experience provides an understanding of fundamental orthopedic principles, the scope of orthopedic surgery, and the opportunities for both clinical and basic investigation in orthopedic surgery.

ELECTIVE COURSES

5180. ORTHOPEDICS I. (Cr ar; prereq regis med)

5185. ORTHOPEDICS II—EXTERNSHIP IN ORTHOPEDIC SURGERY. (Cr ar; prereq regis med)

5186. RESEARCH PROBLEMS IN ORTHOPEDIC SURGERY. (Cr ar; prereq regis med)

5187. EXTERNSHIP IN ORTHOPEDIC SURGERY AND FRACTURES—St. Paul-Ramsey Hospital. (Cr ar; prereq regis med)

5188. EXTERNSHIP IN ORTHOPEDIC SURGERY AND FRACTURES—Gillette State Hospital, St. Paul. (Cr ar; prereq regis med)

5189. EXTERNSHIP IN ORTHOPEDIC SURGERY AND FRACTURES—Fairview-St. Mary's Hospitals. (Cr ar; prereq regis med)

5190. EXTERNSHIP IN ORTHOPEDIC SURGERY AND FRACTURES—Veterans Hospital. (Cr ar; prereq regis med)

5191. ORTHOPEDIC EXTERNSHIP AT HENNEPIN COUNTY GENERAL HOSPITAL. (Cr ar; prereq regis med)

E. E. BACH, O.D.
PHILLIP W. BACH, O.D., PH.D.
OPTOMETRY
SUITE 204 DENALI PROFESSIONAL CENTER
3401 DENALI STREET
ANCHORAGE, ALASKA 99503

HESS

January 29, 1984

The Honorable Mae Tischer
Chairman, Health, Education and
Social Services Committee
Alaska State House of Representatives
Pouch V
Juneau, Alaska 99811

Dear Representative Tischer:

The attached draft committee substitute for HB 225 incorporates the following changes requested by your committee:

1. Specific exclusion of controlled substances and surgery (Sections 4 and 5)

2. Listing of categories of drugs that will be permitted (Sec. 1)

3. Specific requirements for certification, with mandated continuing education after certification (Section 1)

Previous versions of the bill had changes in AS 08.64 (medical practice act) that appear no longer necessary, since the 1983 revision of the medical practice act adds language (AS 08.64.170(a)(4)) stating that "A person who is licensed or authorized under another chapter of this title may engage in a practice that is authorized under that chapter."

In Section 1, we have added the further limitation that drugs be topically applied only. (In North Carolina and Florida, optometrists can use systemic drugs. The topical limitation will effectively restrict Alaskan optometrists to mild cases of anterior eye pathology.)

In Section 2, we have revised AS 08.72.240(9) (Grounds for imposition of disciplinary sanctions) to make it consistent with the intent of the bill.

Section 3 adds non-compliance with certification provisions as grounds for disciplinary sanctions.

The attached article from the Journal of Medical Education shows the contrast between the median 15 hours of eye medicine received by general physicians (who can and do use these drugs) and the 200 hours required of optometrists under this draft substitute. This understates the comparison, for the 200 hours does not include the detailed courses in ocular anatomy, physiology and pathology which form a portion of the basic medical science training received by the optometrist.

Please let me know if we can provide further information.

Very truly yours,

Phillip W. Bach

Phillip W. Bach, O.D., Ph.D.
FOR THE LEGISLATIVE COMMITTEE
ALASKA OPTOMETRIC ASSOCIATION

PWB/lr

2 Attach

Original sponsors: Hurlbert and Martin

IN THE HOUSE

BY THE HEALTH, EDUCATION AND SOCIAL SERVICES COMMITTEE

CS FOR HOUSE BILL NO. 225 (HESS)

IN THE LEGISLATURE OF THE STATE OF ALASKA

THIRTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to the practice of optometry and authorizing the use of certain drugs by optometrists."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 08.72 is amended by adding a new section to read:

Sec. 08.72.277. USE OR PRESCRIPTION OF LEGEND DRUGS. (a) A licensee may not use, dispense or prescribe legend drugs under this chapter without a license endorsement issued by the board, certifying his competance to use such drugs.

(b) A licensee may not use, dispense or prescribe any drug identified by the United States Drug Enforcement Administration as a controlled substance.

(c) A licensee may not use, dispense or prescribe a legend drug that is not prepared and marketed for topical application to the human eye or eyelid. Topical drugs which may be used under this section shall be limited to the following categories:

(1) Anesthetics;

(2) Antihistamines;

(3) Anti-infectives

(4) Anti-glaucoma agents;

(5) Antivirals;

(6) Corticosteroids;

(7) Cycloplegics;

(8) Decongestants;

(9) Hyperosmotics;

(10) Mydriatics.

(d) An applicant for certification under (a) of this section shall furnish transcript credits or other evidence, acceptable to the board, showing that he has completed not less than 200 hours of didactic instruction, practical training and supervised experience devoted exclusively to the subjects specified in (1) - (3) of this subsection, given by an accredited school or college of optometry or medicine, and indicating that he has passed written and practical examinations in these subjects. The subjects are

(1) general and ocular pharmacology;

(2) review of ocular pathology and differential diagnosis;

(3) treatment of pathology of the eye and its adnexa, including the use of legend drugs.

(e) An endorsement issued under (a) of this section shall expire with the license to which it attaches and may be renewed upon evidence of satisfactory completion of continuing education specified by regulation of the board for holders of such an endorsement.

* Sec. 2. AS 08.72.240(9) is amended to read:

(9) failed to refer a patient to the appropriate health care practitioner [AFTER ASCERTAINING THE POSSIBLE PRESENCE OF OCULAR DISEASE.] <u>for conditions beyond the scope of his training;</u>

* Sec. 3. AS 08.72.240 is amended by adding a new paragraph to read:

(10) used, dispensed or prescribed a legend drug except as provided under AS 08.72.277.

* Sec. 4. AS 08.72.300(2) is amended to read:

(2) "optometry" is the examination [, OTHER THAN BY THE USE OF DRUGS,] of the human eyes and the visual system for the purpose of ascertaining a departure from the normal, ascertaining the status of the human visual system, including refractive and functional abilities, or ascertaining the presence of ocular disease and any other departure from the normal which requires referral to other health care practitioners; or the diagnosis of an optical deficiency or deformity, visual or muscular anomaly of the human eye; or the diagnosis and treatment, including the use of drugs but excluding the use of surgery, of inflammations, infections and injuries of the eyes and eyelids; [,] or the prescription or application of lenses, prisms or ocular exercises for the correction or relief of the human eye;

* Sec. 5. AS 08.72.300(3) is amended to read:

(3) "practicing optometry" is an examination [, OTHER THAN BY THE USE OF DRUGS,] of the human eyes and visual system for the purpose of ascertaining a departure from the normal, ascertaining the status of the human visual system, including refractive and functional abilities, or ascertaining the presence of ocular disease and any other departure from the normal which requires referral to other health care practitioners; or the diagnosis of an optical deficiency or deformity, visual or muscular anomaly of the human eye; or the diagnosis and treatment, including the use of

drugs but excluding the use of surgery, of inflammations, infections and injuries of the eyes and eyelids; [,] or the prescription or application of lenses, prisms or ocular exercises for the correction or relief of the human eye; [,] or the holding of oneself out as being able to do so;

* Sec. 6. AS 08.72.300 is amended by adding a new paragraph to read:

(7) "legend drugs" means drugs whose containers must bear a label prohibiting dispensing without a prescription.

notion and has emphasized to trainees that the hospital does not endorse them as being competent to engage in family practice. However, since state laws permit an M.D. licensee to do any type of practice he wishes, it is the feeling of the director that the public would be better served by potential family practitioners having some rather than no additional training. Since there are a number of physicians seeking some training to change their specialty, consideration should be given to longer hospital training periods or a return to specially designed preceptorships to accommodate them.

With respect to those family doctors in retraining, the program would be improved by a more specific set of goals and more careful monitoring of achievements than has as yet been accomplished. The author is aware of two other programs offering similar training. At Creighton University School of Medicine rural family doctors are trained in a specific area, for example, cardiology techniques such as Swan-Ganz catheter insertion. At the Medical College of Pennsylvania inactive physicians or physicians in administrative positions are being trained in primary care.

Conclusions

A pilot miniresidency in family practice has been in operation at Santa Monica Hospital Medical Center since 1979. Many of the applicants were practicing in other specialties and seeking to make a change to family practice. It is unrealistic to expect that the available two- to six-week period can accomplish this objective, and there is a need for a different kind of program to accommodate such circumstances. Training goals for family doctor residency refresher training must be more specific and evaluations more formal than is now the case in the Santa Monica experience.

Ophthalmology Teaching in Medical Schools

Robert E. Kalina, M.D., Henry J. L. Van Dyk, M.D., and George W. Weinstein, M.D.

The Association of University Professors of Ophthalmology (AUPO) was founded in 1965 and is made up of the chairmen of all departments or divisions of ophthalmology in U.S. medical schools (1). A major interest of the body, individually and collectively, is medical student education.

Some members of the AUPO believe that recent medical school graduates are less well prepared in ophthalmology than those of the more distant past. Also reduced familiarity with ophthalmology by physicians in future generations has been cited as a potential problem in the legislative and legal arenas (2).

The results of two AUPO surveys of ophthalmology teaching are reported here.

Survey Techniques

Questionnaires were mailed in 1974 and again in 1979 to the members of the AUPO. Each member was asked to complete the form or to forward it to the individual in his unit most responsible for medical student education. Confidentiality was optional and was elected by some.

The survey document used in 1979 duplicated the questions of 1974 and in addition

This survey was supported in part by a grant to the University of Washington from Research to Prevent Blindness, Inc.

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inquired about the usage and usefulness of the *Ophthalmology Study Guide for Students and Practitioners of Medicine*, a joint publication of the AUPO and the American Academy of Ophthalmology and Otolaryngology (AAOO) which first appeared in 1976 and now is in its third edition (3). This guide is based upon seven objective areas thought to represent essential knowledge requirements for all physicians. These objectives were developed as a result of a survey of 1,600 respondents representing medicine at undergraduate and graduate levels of general and specialty orientation (4, 5).

Results

Responses were received from 74 of 102 member schools in 1974 (73 percent) and from 81 of 110 schools in 1979 (74 percent) (Figure 1). There was a decline in mean required curriculum hours from 25 in 1974 to 20 in 1979, while the median declined from 18 to 15. Hours actually assigned to the department or division of ophthalmology decreased proportionately from a mean of 22 in 1974 to 20 in 1979. Assigned hours were used most frequently for lectures or demonstrations.

All responding institutions offered medical student electives in ophthalmology in 1979, but only a minority of students chose them (mean 25 percent, median 15 percent). Use of audiovisual self-instruction units rose from 66 percent in 1974 to 82 percent in 1979.

The study guide, not available in 1974, had been adopted as a syllabus by 58 percent of institutions in 1979, while 28 percent used another syllabus, usually prepared locally. In most cases the study guide was purchased by the student and used for self-instruction and as a supplement to lectures. The microfiche illustrations, newly added in the third edition (1978), had been found useful by students in 67 percent of schools using the study guide.

Discussion

The surveys reported here were prompted in part by suspicion among the AUPO members that curriculum time devoted to ophthalmology had suffered during the widespread curriculum revisions which have taken place in U.S. medical schools during recent years.

Although data are not available from the preceding era, the results of the study reported here indicate that currently assigned time for

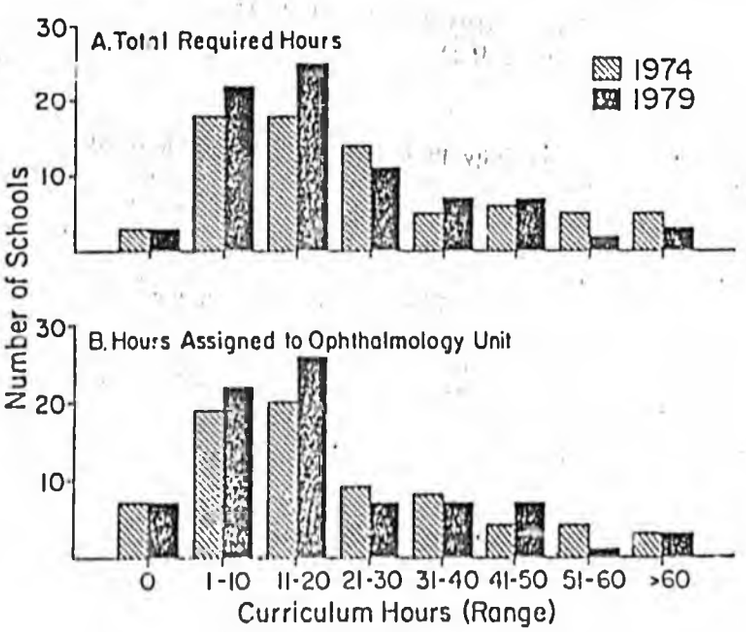

FIGURE 1
Minimum requirements for ophthalmology in U.S. medical schools.

teaching ophthalmology is limited and gradually declining. One logical extension might be a declining ability for appropriate diagnosis, management, or referral of patients with eye disorders, who form a significant segment of those seeking primary care.

The results of these surveys may not include ophthalmology teaching done in the primary care clinical setting. It seems likely that such on-site instruction would be effective and appear relevant to students in that the patient-problem-teacher loop is shortest there; but the authors believe that such teaching events are rare, often unscheduled, and likely to be the first to suffer from time constraints.

Knowledge that curriculum time was limited and that competition for it was keen was one of the prime motivating factors for the development of the AAOO/AUPO study guide. Standardization of objectives to be achieved was presumed then as now to be a laudatory goal. However, the availability of clearly defined objectives has coincided with apparent duced national curricular emphasis upon ophthalmology.

Not only is the curricular time available to ophthalmology small, but also surprisingly few students (25 percent) choose ophthalmology electives. The reasons for limited elective participation may range from the influence of counselors to lack of available electives. Whatever the cause, the effect must be negative upon student appreciation for what the specialty offers. In view of the excess of candidates for the limited number of ophthalmology residency positions, a main concern is that students who will practice other specialties, especially primary care, learn proper diagnosis and treatment of some ophthalmic disorders so that they may avoid inappropriate referral to medical or nonmedical practitioners.

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To be published in "Medical Aspects of Human Sexuality"
90 Park Avenue
New York, N.Y. 10016

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The author gratefully acknowledges the kind assistance of Ms. Maggie Rider and Ms. Deborah Holifield in the preparation of this manuscript. Depo-Provera used in some of the work reported upon was supplied by The Upjohn Company.

People do not decide voluntarily what will arouse them sexually. Rather, in maturing, they discover the nature of their own sexual orientation and interests. Persons differ from one another in terms of a) the types of partners whom they find to be erotically appealing and b) the types of behaviors that they find to be erotically appealing. They also differ in intensity of sexual drive, the degree of difficulty that they experience in trying to resist sexual temptations, and in their attitudes about whether or not such temptations should be resisted.

When persons experience strong erotic desires to engage in types of sexual behaviors that could cause themselves or others harm (eg; sadistic, coercive or masochistic sexual involvements), or when they experience strong erotic attractions toward unacceptable sexual partners (eg; children), psychiatric help may become a consideration. This is particularly so when a person reports an inability to successfully resist sexual temptations through "will power" alone, even though in terms of conscience and intellect he may want to resist, and in addition may have been trying very hard to do so.

Some psychiatric diagnoses can be made then, simply by asking cooperative persons about the range of behaviors that they find to be erotically appealing, and about the difficulty they experience in trying to resist succumbing to such sexual temptations. This line of questioning can identify persons who meet the DSM-III diagnostic criteria for sexual exhibitionism, sexual sadism, sexual masochism, transvestism, and compulsive voyeurism.[1] Each of these represents an unconventional form of sexual appetite. Such questioning can also identify the compulsive paraphilic rapist. These men, unlike the average man, often experience great difficulty resisting erotic temptations to repeatedly expose themselves, to repeatedly have themselves beaten, to repeatedly peep in windows, or to repeatedly rape, depending upon the nature of their particular sexual compulsion. Masturbation cannot fully satisfy these cravings because what they crave is not just sexual release, but a specific type of sexual activity.

Another way in which sexual problems, possibly requiring psychiatric assistance, can be identified is by inquiring about the types of sexual partners that a person finds to be erotically appealing, and about how difficult it is to resist the temptation to become involved sexually with such partners. Some men, for example, report that they are attracted sexually to both children and adults, but that when they have a satisfying adult relationship they are able to resist the temptation of becoming sexually intimate with a child. Some such men, however, during periods of time in their lives when they do not have a satisfying adult relationship, do become involved sexually with children. Nicholas Groth has referred to men who find both adults and children to be erotically appealing as regressed pedophiles.[2] There are other men who experience absolutely no erotic attraction whatsoever towards adults, but who have a great deal of difficulty resisting the sexual temptations that they experience towards children. Nicholas Groth has referred to these men as fixed pedophiles. Some men who experience pedophilic desires report feeling sexually driven to repeatedly seek out intimate relationships with children whereas others

seem most vulnerable primarily in situations where a child is already easily and readily available.

Pedophilia, then, is simply a term used to indicate that an adult finds children to be sexually appealing. This condition, for unknown reasons, seems to occur almost exclusively in men. If it is only children and not adults that a man finds to be sexually appealing then the term fixed pedophilia can be used. If a man is attracted sexually only to boys, a diagnosis of homosexual pedophilia can be made, whereas, if he is attracted only to girls a diagnosis of heterosexual pedophilia may be in order. If gender is not a factor, the appropriate diagnosis is bi-sexual pedophilia.

Some men who are attracted sexually to children desire not to be, and would like to change. Under such circumstances, their sexual attraction to children is said to be ego-dystonic. If a man's sexual attraction towards children does not conflict with his conscience and personal moral convictions, then his pedophilic desires are said to be ego-systonic. In very rare instances, some men experience erotically sadistic desires towards children. Under such circumstances a diagnosis of sexual sadism should also be made.

Following is a brief verbatim quote from a man whose sexual orientation can be characterized as fixated, ego-dystonic, homosexual pedophilic. This man was also found, on chromosomal analysis, to have Klinefelter's Syndrome. Normally persons are erotically attracted to members of the opposite sex. In Klinefelter's Syndrome, in several ways, it is unclear which sex is the opposite sex.[3] Klinefelter's patients manifest a 47 XXY chromosomal karyotype pattern. Thus, genetically, Klinefelter's patients can be thought of either as males (XY) with an extra X chromosome, or as females (XX) with an extra Y chromosome. That some patients with Klinefelter's syndrome experience ambiguity regarding sexual or gender preference at a psychological level is not incongruous with the gender ambiguity manifested at the genetic level. The comments of this homosexual pedophilic Klinefelter's patient give some sense of how tortured and conflicted he feels by the sexual lusts and cravings that he experiences towards young boys.

> "What starts a person like myself doing what I do? Why me? Why can't I be normal like everybody else? You know, did God put this as a punishment or something towards me. I am ashamed. Why can't I just go out and have a good time with girls. I feel empty when a female is present. An older "gay" person would turn me off. I have thought about suicide. I think after this long period of time I have actually seen where I have an illness. It is getting uncontrollable to the point where I can't put up with it anymore. Its a sickness, I know its a sickness, but as far as society is concerned you are a criminal and should be punished. Even if I go to jail for 12 or 15 years, or whatever, I am still going to be the same when I get out."

This last statement was not meant to be defiant.

Etiology of Pedophilic Sexual Desires

How is it that sexual orientation and interests are acquired? It appears that both life experience and constitution play a role. Many years ago, Dr. John Money reported a tragic case in which one of two genetically identical male twins was so severely damaged at the time of circumcision several months after birth that a total penectomy was required. That child was then reared as a girl. The child's chromosomal pattern, of course, remained unchanged and she has now reached her teenaged years. She has developed breasts by virtue of having been administered estrogens and surgically an artificial vagina has been created. According to Diamond, however, she nevertheless experiences considerable difficulty adjusting as a female, and she is in some ways ambivalent about her status.[4] This has led him to conclude that although social forces can indeed play some role in the development of gender identity and sexual orientation, this is so only within the very circumscribed limits set by biological heritage. Still, at age 19 this twin raised as a female apparently feels herself to be a women in terms of gender identity and also experiences at least some level of sexual attraction towards age appropriate males. Thus, although she is a woman with an XY rather than an XX chromosomal karyotype, as a consequence presumably of how she had been raised, she feels herself to be a woman and she finds men to be sexually appealing.

There are many additional examples showing that environment and life experience can play at least some role in the development of gender identity and in the development of sexual orientation and interest. Nicholas Groth and others have shown that many men who experience pedophilic erotic urges as adults were themselves sexually involved with adults when they were children.[2] Why sexual involvements with an adult during childhood seems to put one at risk of experiencing pedophilic sexual urges later on in life is unknown.

Biology, too, can play a role in the development of sexual orientation and interest. In most species of birds, for example, only the male sings. Such songs are ones of courtship, apparently designed to attract females. However, if a female zebra finch is given testosterone at crucial times during early development she too will sing.[5] There are numerous other similiar examples.

In humans, sexual behavior is often a response to subjectively experienced erotic desires and fantasies. Although it appears that specific sexual tastes or preferences may sometimes be modified by virtue of early life experiences, the phenomenon of sexual desire itself is apparently unlearned and rooted deeply in biology. Males do not have to be taught, for example, how to attain an erection. Furthermore, just as is true of language and dialect, once acquired sexual desires are not readily modified. There is no reason to believe that it is any easier for the fixated homosexual pedophile to lose his interest in children and to become sexually aroused by females, than it would be for the average male to lose his interest in women and to instead begin lusting for young boys.

It is just as reasonable to ask whether one might be put at risk of developing unconventional sexual interests such as pedophilia by virtue of

the presence of certain biological abnormalities, as it is reasonable to ask whether one can be put at such risk by being exposed early on in life to certain environmental events. One way of addressing this issue would be to determine whether or not there is an increased prevalence of biological abnormalities of the sort thought to be related to human sexuality, amongst a group of men who experience unconventional sexual interests.

Table 1 shows the frequency of various sorts of biological abnormalities in a group of 41 men, all of whom met the DSM-III diagnostic criteria for some form of paraphilia, ("sexual deviation disorder").[3] The majority of these men were either pedophiles or exhibitionists. As documented in Table 1, and confirmed by statistical analysis, there does appear to be an association between certain kinds of biological abnormalities and the presence of unconventional kinds of sexual interests such as pedophilia.

Recently, as shown in Figure I, Dr. Gary Gaffney of the Johns Hopkins Hospital in a soon to be published study, documented an abnormal pattern of leutinizing hormone (LH) release over time in response to the intravenous administration of a bolus of leutinizing-hormone-releasing-factor (LHRF) in a group of pedophilic patients. The development of new technologies such as positron emission tomography may help document which areas of the brain become metabolically active during sexual arousal.[4] Such techniques may also be able to determine whether the brains of men who experience pedophilic sexual urges differ in regional metabolism from the brains of men who experience more conventional sexual attractions.

Assessing the "Sex Offender": The distinction between (1) diminished mental capacities, (2) personality traits, and (3) sexual orientation

Sexual involvements with children are against the law. Thus, a person may be defined as a "sex offender" by virtue of having behaved in a particular way. Many such men are referred for psychiatric evaluation following legal transgressions. However, a diagnosis such as pedophilia cannot be made simply by considering behavior alone. Rather, for purposes of diagnosis and for proper treatment, the physician must try to appreciate the state of mind which contributed to the individuals behavior.

Like any behavior, sexual behavior with a child can occur for a variety of reasons. For example, a person with schizophrenia may behave in a particular way in response to hallucinations "telling him to do so," whereas the alcoholic's behavior may be a reflection of diminished judgement secondary to intoxication. A mentally retarded individual may become involved sexually with a child (who incidently, may be of the same approximate mental age as he) because of the lack of availability of adult partners and the lack of capacity to fully appreciate and understand the wrongful nature of his actions. In none of these instances would a primary diagnosis of pedophilia necessarily apply.

In DSM-II, conditions such a pedophilia used to be considered sub-categories of a specific personality type (ie; the so-called antisocial personality disorder). DSM-III acknowledges that this is by no means necessarily so. Diagnosing a person as a pedophile says something about

the nature of his sexual desires. It says nothing whatsoever, however, about temperment, or about traits of character such as kindness versus cruelty, caring versus uncaring, sensitive versus insensitive, conscientious versus lacking in conscience, and so on. Thus, a diagnosis of pedophilia does not necessarily mean that a person is lacking in conscience, diminished in cognitive capabilities, or somehow "characterologically flawed." Rather, he may be a concerned person dealing less than successfully with sexual temptations of a sort which are very foreign to most men.

It is easy for a non-smoker to argue that any smoker could stop if he or she really wanted to; in the case of the pregnant smoker, if not for her own sake than surely for the sake of not damaging her unborn child. It is easy for a non-obese person to argue that successful dieting can be accomplished through will power alone. Patients on kidney dialysis made thirsty by the procedure often have great difficulty maintaining necessary fluid restrictions even though not doing so can be life threatening to them.[7] The more thirsty they are made by the procedure, the more difficulty they experience in limiting fluid intake. The researchers who documented this finding concluded that limits to fluid intake set by physicians may not suffice because they differ from those set by the patients own physiology. It is easy however, for a person who is not thirsty to argue that such patients could resist the temptation to consume excessive amounts of fluid if they really wanted to do so. Similarly, it is easy for a person who is not tempted sexually by children to argue that any pedophile could stop having sex with children if he really wanted to, and would simply make up his mind to do so. When it comes to appetites, or drives, such as hunger, thirst, pain, the need for sleep, or sex, however, biological regulatory systems may exist that can cause an individual to experience desires to satisfy those hungers in ways that cannot invariably be successfully resisted by "will-power" alone. Persons can become so discomforted by cravings related to such appetites that they feel compelled to act in ways that diminish their discomfort. Thus, in each of the above instances, professional assistance is often required.

Professional assistance may be extremely crucial in the case of the pedophile because it is imperative that he stop his prior behavioral patterns immediately, one hundred percent of the time, and forever. Though necessary, this can nevertheless be a very formidable goal to have to achieve. It is a goal made possibly even more difficult if the individual in question does not believe that sexual involvements with children are morally wrong (ie; if he finds his pedophilic desires to be ego-syntonic). It may also be more difficult to achieve, if in addition to desiring sex with children, the individual in question is one for whom the children in his life form the sole basis for love, affection, companionship, intimacy and other deeply rooted human needs.

When a person falls deeply in love with another person, be it a child or an adult, it becomes easy for that person to convince himself that the relationship is good and healthy and not harmful or wrong. One of the major issues in trying to understand human behavior relates to where the line should be drawn between considering a person to be the passive product of life experience and constitution versus considering him by virtue of his

having subjective consciousness to be an active agent capable of transcending prior determinants. Most of us feel a strong emotional bond with children. Why some men experience intense erotic feelings in the context of their otherwise healthy relationships with children, in a way that is not so for most men, and why in the absence of professional assistance it is so difficult for some such men to change is not fully understood.

Treatment of Pedophilia

Four major modalities have been proposed for the treatment of pedophilia. They are psychotherapy, behavior therapy, surgery and medication. Classical psychodynamic theory assumes that all men would ordinarily develop conventional erotic attractions towards age appropriate partners of the opposite sex, but that this does not occur in some instances because unhealthy early life experiences interfere with the normal process of psychological maturation. Therapy utilizes the process of introspection to try to figure out what went wrong, with the expectation that newly acquired insights will then facilitate the problem being rectified.

It is doubtful that persons can come to fully understand the basis of their own sexual interests through the process of introspection alone. The average man probably cannot figure out simply by thinking about it, why he prefers women rather than men. Similarly, it is not certain that the pedophile can figure out the basis of his own sexuality. Furthermore, even if he could, knowing why one is hungry, be it for food or for children, doesn't make one any less hungry. Nor does it make it any easier for one to resist the temptations experienced by virtue of one's own appetites. Finally, there is little convincing evidence showing that the traditional psychotherapies alone are an invariably effective means for treating pedophilia.

Behavior therapies tend to be less concerned with the historical anticedents of pedophilia than with the question of what can be done about it. The feature common to most behavioral approaches is an attempt to extinguish erotic feelings associated with children, while simultaneously teaching an individual to become sexually aroused by formerly non-arousing age appropriate partners. Although in laboratory situations behaviorists have shown that some pedophilic men no longer demonstrate physiological evidence of sexual arousal when looking at pictures of naked children, and that they can begin to show arousal to age appropriate stimuli, it has not been well established that such changes invariably carry over into the non-laboratory situation. Most of us can appreciate how difficult it would be to try to stop feeling the sexual attractions that we have experienced as natural throughout our lives.

Two types of surgery have been proposed as a treatment for pedophilia, (1) stereotactic neurosurgery and (2) removal of the testes. Neurosurgery for this purpose is still investigational and will not be discussed here, but its rationale has been explored in an excellent review article by Dr. Kurt Freund.[8]

Removal of the testes (castration) has been suggested as a treatment for pedophilia because the testes are the major source of testosterone production in the body. There has been much confusion about castration, a procedure which does not remove the male genitals, but which instead is simply intended to lower testosterone. Lowering testosterone is one way of lowering sexual libido. The idea of lowering testosterone in the case of the pedophile is to try to decrease the intensity of his sexual cravings for children. Some critics have argued that castrating the "sex offender" is like cutting off the hand of the thief. This is in no way so. Cutting off the penis would be analogous to cutting off the hand of the thief. Removal of the testes lowers testosterone, which in turn can lower the intensity of consciously experienced erotic desires. In human beings such desires constitute a motivating basis for sexual behavior.

Testosterone is an extremely powerful hormone. If the testes of a male fail to produce adequate amounts in early embryonic life he will be born with the external anatomical appearance of a female. Thus, testosterone causes external anatomical masculinization of the fetus and also produces certain changes in the endocrinological functioning of the male brain. The marked increase in testosterone level which occurs at the time of puberty in males is associated with the development of increased pubic and facial hair, deepening of the voice, an increase of muscle mass, and a marked increase in sexual libido.

In animals, lowering testosterone by means of removing the testes usually eventually leads to total cessation of virtually all sexual behavior, although sometimes this may take as long as two years to occur.[8] In humans, the relationship between very low testosterone levels and low sexual libido is fairly well established. This evidence comes from a variety of sources including studies on hypogonadal men, data from persons with adreno-genital disorders, studies on drugs which lower testosterone as a side effect, and from several well controlled studies looking at the effects of administering testosterone in an attempt to increase sexual libido.[9-11]

In an article entitled, "Therapeutic Sex Drive Reduction" Dr. Kurt Freund reviewed data regarding removal of the testes in humans as a method of lowering testosterone.[8] Several studies with long followup periods from a variety of European and Scandinavian countries documented that lowering testosterone in this way did indeed frequently lower both sexual libido, and subsequent frequencies of improper sexual activities. In one study in Denmark, for example, Sturup reported upon a 30 year investigation on 900 castrated "sex offenders" involving over 4,000 followup examinations documenting less than a 3% recidivism rate.[12] Ficher Van Rossum, in Holland, Kinmark and Oster in Sweden and Cornu in Switzerland reported comparable findings, as did several other investigators.[13-15] The study in Holland involved 237 men with a 1.3% recidivism rate. The Swedish studies with similarly low recidivism rates, evaluated 307 men. In the Swiss study there was a 5.8% recidivism rate among 121 men following castration contrasted with 52% recidivism in the non-castrated control group. Followups ranged from 5 to 30 years. Bremer reported a 58% recidivism rate in the 5 years prior to treatment in a group of men who showed only a 7.3% recidivism rate during the 5 years post-surgery.[16] Thus the surgical

method of lowering testosterone did seem to enable many men to better control their sexual behaviors. Furthermore, many of these men did not lose the capacity to perform sexually following castration. Perhaps this finding seems somewhat less surprising if one considers the analogy of suppressing hunger. In being less hungry a person may feel less driven to seek out food, thereby making dieting easier, but under such circumstances he would not lose the ability to eat.

Today it is no longer necessary to perform castration in order to reduce testosterone levels. Rather, this can now be done pharmacologically in a graduated way without the physical or psychological trauma of surgery. In Europe and the Scandinavian countries cyproterone acetate has been used for this purpose and there are several "blind" as well as non-blind studies supporting its effectiveness.[17,18] In the United States, since Dr. John Money first began doing so in 1967 the drug most often employed as a pharmacological method for lowering testerone has been medroxyprogesterone acetate (Depo-Provera).[19-23]

Depo-Provera can be injected intramuscularly once per week. There it binds to the muscle from which it is then gradually released over the course of several days into the blood stream. At this time the initial starting dosage used in the Hopkins clinic has been 500 mgs IM once per week of the 100 mg per cc concentration. No more than 250 cc is given into a single injection site. Major side effects have been weight gain and in some cases hypertension. The drug, which is not feminizing, may cause an increased incidence of breast cancer in female beagle dogs, and of uterine cancer in monkeys. It has been used in over 80 countries of the world as a female contraceptive; supported in its use for this purpose by the World Health Organization. No studies showing an increased risk of cancer in males (either humans or animals) have been reported.

There is no doubt that Depo-Provera consistently decreases serum testosterone levels significantly. This can be confirmed by means of a simple blood test. Lowering testosterone can in turn lower sexual libido, which in turn seems to enable some men to more appropriately control their sexual behaviors. The idea of using Depo-Provera in the case of the pedophile is to try to decrease the intensity of his sexual cravings, thereby hopefully making it easier for him to successfully resist unwanted temptations.

Most pedophiles receiving Depo-Provera also attend group counseling sessions similiar to the type often used with alcoholics. That is, men are expected to acknowledge being tempted to something that they realize they must not do. They then discuss amongst themselves strategies intended to help enable them to resist such temptations successfully (ie; whom to call, what situations to avoid, early warning signs, and so on). The medication is intended to make resisting such temptations somewhat easier.

What is not yet fully established regarding the use of Depo-Provera is optimal dosage, which of the paraphilias will respond most adequately, long term side effects, compliance rates, and precise long term recidivism percentages. There is little reason to believe, however, that recidivism rates should be any higher than those low rates documented when surgical

removal of the testes was used as a method for lowering testosterone. It is not clear why in some cases Depo-Provera fails to be of help. Like any effective medication, Depo-Provera seems to help some men, fails to help some for whom it had been considered appropriate, and for others should not even be considered appropriate in the first place.

Of over 130 men treated at Hopkins over the past year for some form of paraphilia (mostly pedophilia and exhibitionism) less than 5% have relapsed. In addition, compliance rates have been better than 90%. There has been some concern about whether Depo-Provera should be given to men who are on legal probation. If it is not an effective drug then it should not be used at all. If it is effective as it often seems to be, then it is difficult to see why a person should be denied the opportunity to take it just because he is on probation, or perhaps even incarcerated. Some incarcerated men report that Depo-Provera frees them from intrusive obsessional sexual preoccupations.

It appears then that Depo-Provera can be used to help some men help themselves. Some pedophiles report being unable to successfully resist sexual temptations through "will-power" alone even with the assistance of professional counseling. Such individuals should be afforded the opportunity to see whether or not Depo-Provera confers upon them an increased capacity for self control, thereby enabling their behavior to be more a reflection of their intellectual desires and conscience than of their lusts and passions.

Some critics have argued that psychotrophic drugs such as Depo-Provera may in some way be "mind controlling". No drugs used in psychiatry are capable of "mind control" in the sense of being able to transform a conservative into a liberal, a Democrat into a Republican, a Jewish person into a Catholic, and so on. The only medical indications for which psychotrophic drugs are used is (a) to decrease suffering (as in the case of antidepressant medications), (b) to restore function (as in the case of "antipsychotic medications"), or (c) to increase, rather than decrease, a persons capacity to successfully exercise self-control (as in the case of Depo-Provera).[24]

Pedophilia refers to a particular type of sexual orientation. By virtue of experiencing such desires, desires that many pedophiles wish they did not have, professional assistance is often needed. When such men seek help, understanding, empathy, and professional competence is required, not stigmatization or unenlightened scorn.

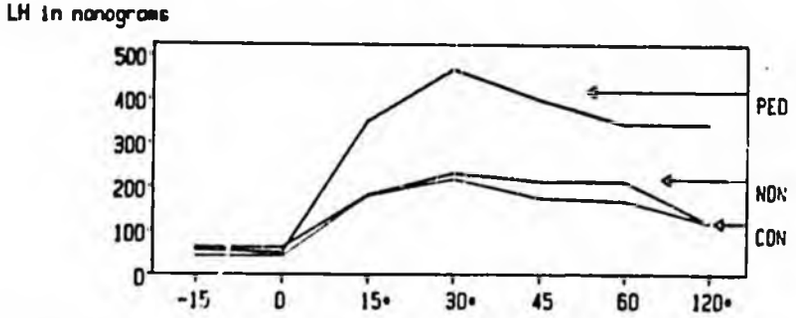
Table 1

Biological abnormalities in a group of 41 Consecutively Assessed Paraphilic Male Patients

	Abnormality	*Number of Patients Showing this type of abnormality
1.	Chromosomal Anomalies	7 (most common = XXY)
2.	Hormone Abnormalities	
	A. Testosterone	18 (4 low) (14 high)
	B. FSH	8 (high)
	C. LH	14 (2 low) (12 high)
3.	Abnormality of Brain Structure (on CT Scan)	7
4.	Abnormal Electrical Activity of Brain (on EEG)	4
5.	Abnormal Neurological Examination	5
		N = 63
6.	"NC" Abnormalities Detected (excludes dyslexia, schizophrenia, and learning disorders)	

*Some patients had more than one type of abnormality.

LH RESPONSE TO LH-RH IN PEDOPHILIA



PED: Pedophilic (7)
NON: Non-pedophilic paraphilic (5)
CON: Control (5)

100 mcg. LH-RH given at Time = 0

*p < 0.05 H-test

Figure 1. Abnormal release of leutenizing hormone (LH) over time in response to the intraveneous injection of a bolus of 100 micrograms of leutenizing hormone releasing factor (LHRF) in a group of 7 male pedophilic patients. The control groups consisted of (a) 5 men with conventional sexual interests, and (b) 5 men with unconventional sexual interests (paraphilias) other than pedophilia. LHRF was injected at time zero.

* = statistically significant at the .05 level

Ped = pedophiliacs

Non = nonpedophilic paraphilics

Con = conventional sexual interests

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Psychiatric Clinics at The Johns Hopkins Hospital

Larry E. Tune, editor

Sexual Deviation Syndromes

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CASE PRESENTATION (VOYEURISM)*

The patient, a white man in his early forties, entered hospital in the fall of 1980 to begin treatment for voyeurism. Although he had experienced the urge to spy upon naked or partially clad women as early as age 6, it was not until his late teens that this interest became a consuming preoccupation. Since his late teens, he had spent as many as five or six evenings a week "peeping" through windows at women disrobing, usually masturbating himself while doing so. Never desiring further contact with any of them, he never attempted entry into a home, nor had he wished to be observed while watching.

The patient found voyeurism more erotically arousing than sexual intercourse with a consenting partner. Voyeuristic urges were with him much of the time, and he reported frequently having to make an effort to inhibit erection when in the presence of an attractive female.

Voyeurism, usually performed alone, but occasionally with a group of other men, caused him numerous problems over the years. While in college, the amount of time consumed "peeping" caused decreased academic performance, and similar activities during his second term in the Navy led to a less than honorable discharge.

His first wife committed suicide, possibly in part as a response to discovery of his sexual predilections. His second wife obtained a legal separation after discovering that he had been masturbating while watching his daughter sleeping, a behavior that troubled him a great deal afterwards, once his sexual desires had been relieved by orgasm. Although arrested twice for voyeurism, once in 1967 and again in 1976, he had never broken the law in any other way; he is responsibly employed; and he is otherwise a pleasant and conscientious person. A devout man of above average intelligence, he had often prayed for "divine inspiration to help solve his problem." In spite of compulsory court-ordered psychotherapy following each of his arrests, he continued experiencing voyeuristic urges until hospitalization. Upset about the recent separation from his wife, the patient had referred himself for hospitalization. He had not been apprehended recently and was facing no legal charges at the time of admission.

Family history was unremarkable except that his father was 69 years old when the patient was born, and during childhood the patient had been separated from his mother for five years after she contracted tuberculosis. Physical examination was essentially normal, but his luteinizing hormone (LH) level was 98 ng/ml (normal, 36–64).

While still hospitalized the patient began treatment with weekly intramuscular injections of 500 mg of medroxyprogesterone acetate, which suppressed his serum testosterone to below normal levels. For the last seven months he has continued weekly injections on an outpatient basis. Since the third week of treatment he has been reporting relief from incessant voyeuristic urges and thoughts, along with cessation of related behaviors. He and his wife have reunited, and he has been speaking to church groups and other interested organizations about his apparent success in treatment.

* Case discussed at Psychiatric Grand Rounds, February 2, 1981.

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DISCUSSION

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM III), voyeurism involves the repetitive seeking out of situations in which an individual observes unsuspecting women who are either naked, in the act of disrobing, or engaging in sexual activity (1). The act of looking ("peeping") is accompanied by sexual excitement, frequently with orgasm, usually produced concurrently by masturbation, or later in response to the memory of what was witnessed. Further sexual contact does not occur, with the memory or act of looking, rather than intercourse, constituting the final basis for sexual gratification.

Approximately 25% of known voyeurs are married, dramatizing the desire of these men to spy upon women who do not know they are being observed. Although voyeuristic behavior usually begins around puberty, related fantasies may be experienced much earlier. Untreated, the behavior is ordinarily chronic, which is not surprising since it is sexually motivated, and the sex drive does not cease. Factors predisposing to development of voyeurism are unknown, with associated complications usually resulting from discovery or arrest. The prevalence of voyeurism in the general population has not been ascertained, but thus far it has been reported only in men. Visual stimulation can be an integral part of conventional sexual activity, but in those instances optimal sexual arousal does not require that the observed partner be unsuspecting, nor is observing the final desired act.

Rationale for Treatment

Voyeurism is classified as one of the paraphilias (sexual deviation disorders). Other paraphilias include pedophilia (sexual craving for children), exhibitionism, transvestism (cross dressing for erotic pleasure), zoophilia (sexual attraction towards animals), erotic masochism, and raptophilia (paraphilic, or compulsive, rape). Behaviors engaged in by persons manifesting one of these syndromes can bring them into conflict with the law, raising the issue of whether punishment or treatment is more appropriate. In considering the possibility of treatment one must try to determine whether the behavior in question was an expression of a recognizable and treatable psychiatric syndrome (2). Not all sex offenses (a legal term) are committed by persons manifesting a sexual deviation disorder, or paraphilia (a medical term). Sex offenses can be committed for a variety of reasons depending upon the state of mind that led the offender to act.

Some sex offenders may be treatable even when their behavior is not the manifestation of a sexual deviation disorder, but rather the reflection of another psychiatric condition. For example, rape could be perpetrated by a deluded person out of touch with reality, responding to the auditory hallucinations of schizophrenia. In this case, phenothiazine medication might be helpful, whereas lithium carbonate might aid the person responding in a sexually inappropriate manner to the heightened erotic appetite of mania. Treatment with antabuse and counseling might benefit the alcoholic who becomes sexually disinhibited when intoxicated, and education might be useful to the mentally retarded individual who must learn to express his sexual urges appropriately.

In contrast to the examples just cited, some sexual offenses are enacted as a response to intense and persistent unconventional sexual cravings, that is, secondary to a sexual deviation disorder. Most men with conventional heterosexual interests have no desire for erotic intimacy with a seven-year-old boy (as does the homosexual pedophile), or to expose themselves repeatedly on a street corner (as does the exhibitionist). In addition, few men experience an overwhelming desire to peek in windows—a desire sufficiently intense to lead to repeated risk to job, reputation, family, and possibly encarceration. Thus, the belief that exhibitionists, paraphilic rapists, pedophiles, or voyeurs are simply "normal, self-indulgent men" with conventional sexual interests, men who are merely misbehaving (requiring punishment rather than treatment) seems incorrect, as well as rehabilitatively ineffectual.

Diagnosis

Diagnosis of a sexual deviation syndrome can be made by examining a person's thoughts, feelings, and behavior. Persons with sexual deviation syndromes such as pedophilia or voyeurism experience repeated persistent fantasies about unconventional sexual activities. The homosexual pedophile (often impotent with women), repeatedly fantasizes about young boys, whereas the voyeur is preoccupied with thoughts of "peeping." Asking an individual about his masturbatory fantasies can give a clue regarding his sexual interests, because erotic arousal and erection for the purpose of masturbation may be difficult in the absence of sexually stimulating mental imagery.

Accompanying the unconventional sexual fantasies experienced by persons with sexual deviations are intense erotic cravings. These cravings lead to a discomforting feeling when frustrated; a discomfort which can be relieved temporarily if deviant fantasies are enacted. Thus, the temptation to act can become difficult to resist. If a person experiences a strong desire to engage in illegal sexual involvements, there is considerable risk he may get into trouble repeatedly because his unconventional sexual drive keeps reoccurring. The paraphilic rapist who craves coercive sexual activities may repeatedly rape in spite of incarceration because punishment does little to reduce his intense unconventional sexual drive. Although many men can become sexually aroused by descriptions or scenes of coercive sexual acts, most do not have the constant ruminations that characterize a craving, and most do not have to resist repeatedly the temptation to rape in order to stay out of trouble. Groth reported that although about 25% of child molesters re-

ferred to his clinic were "first offenders" according to the law, first conviction rarely constituted the first such incident in the offender's life (3).

Rape, sexual involvement with children, public exposure of genitals, and "peeping" are behaviors, and in and of themselves do not allow one to make the diagnosis of a sexual deviation syndrome. Men with conventional sexual desires, for instance, may occasionally look through a window at a partially clad woman; an occasional incident of this sort does not make one a voyeur. However, when such behaviors are a reflection of ongoing sexual preoccupations and cravings to act repeatedly in those ways, a diagnosis of paraphilia can be made. Karl Jaspers described deviant sexual cravings as intolerable states, similar to addictions, that demand action in order to be alleviated (4).

Individual paraphilic syndromes tend to be relatively stable, just as is conventional heterosexuality. Voyeurs do not become transformed into pedophiles, transvestites or exhibitionists. Sexual behavior seems to be a relatively stereotyped response to one's erotic interests, and these appear to be relatively stable throughout an individual's adulthood.

Types of Treatment

Conventional heterosexuality can be conceptualized as a syndrome, comprising erotic thoughts, feelings, and associated behaviors, just as is exhibitionism or voyeurism. Thus, use of the term "treatment" involves making a value judgment. Some (e.g., NAMBLR—The National Association for Man-Boy Love Relationships) have argued that sexual involvement with children causes no harm, and should not be considered sick or bad. Most persons in our culture disagree. Those who do use the term "treatment" feel that it should become a consideration when one's sexual behaviors compromise the rights of well-being of others. Four general types of treatment have been proposed: psychotherapy, behavior therapy, surgery and medication.

Psychodynamic therapies usually assume that sexually deviant behaviors are the result of unconscious conflicts, and that "uncovering" these conflicts allows a person to better understand himself. However, it seems doubtful whether persons can really come to fully understand the basis of their own sexual interests. Eicher, for example, discovered that feelings of gender identity may be related to the presence or absence of H-Y antigen (5). In addition, understanding the etiology of one's sexual urges doesn't necessarily change them. There is little evidence that traditional psychotherapies are consistently effective in treating paraphilic syndromes.

Behavior therapies are less concerned with the historical antecedents of unconventional sexual behaviors than with the question of what can be done about them. A variety of techniques have been attempted. A common feature involves efforts to diminish the appeal of previously erotic deviant stimuli (such as children), while at the same time teaching an individual to become sexually aroused by a more appropriate partner, or sexually satisfied in a more appropriate way. This is clearly a formidable task, analogous to trying to teach a man with conventional heterosexual interests to become erotically attracted to boys. Most of the literature on behavioral treatment of sexual deviation consists of anecdotal case reports without proper controls. However, Marks was able to document good results at two-year follow-up with behavioral treatment of transvestites (men who dress in women's clothing for erotic pleasure), but he obtained poor results using the very same behavioral technique with transsexuals (men who feel themselves to be women trapped in the body of the wrong sex) (6). A recent review by Blair and Lanyon suggests that exhibitionism may sometimes respond well to a behavioral approach (7).

Two types of surgery, neurosurgery and orchidectomy, have been used to treat paraphiliacs, often when violent physical assault has been a significant component of the sexual syndrome. A recent article by Freund reviewed the literature dealing with the effects of such surgery on animals and humans (8). For humans undergoing neurosurgery to try to decrease deviant sexual desires the population size is too small to allow generalization of results, but in animals specific brain areas seem to be important contributors to sexual behavior. While castration is an unacceptable form of treatment in the United States, its use as an option to incarceration in other countries dramatically decreased the recidivism rate of deviant sexual acts (though not to zero), sometimes without causing total impotence (9).

Two medications used to treat sexual deviations are cyproterone acetate, which is unavailable in this country, and medroxyprogesterone acetate. Both decrease levels of serum testosterone. The intent is to try to decrease the intensity and frequency of sexual fantasies and preoccupations, making self-control easier. Neither drug acts specifically on deviant urges, but rather each appears to be a suppressant of sexual desire in general. Counseling is ordinarily given in conjunction with medication to help the patient cope with difficulties resulting from his deviant sexual needs.

Associated Biological and Characterological Pathologies: Questions of Etiology

Goy and McEwen, at a conference at The Massachusetts Institute of Technology, suggested that biological factors may contribute more than previously recognized to human sexual behavior (11). Recently, an entire issue of *Science* (Vol. 211, No 4488) addressed this topic, as well as related issues. Biological factors in animals significantly influence sexually related activities. In some species of birds, normally only males sing, but if a female zebra finch that has been administered estradiol while just an embryo is given androgen hormones as an adult, she will do so also, and will have an increased number of cells in the nucleus robustus archistraitalis and other brain areas (12). She will also display distinctly male courtship behavior. Adult female rats who were exposed to testosterone at a specific time *in utero* will show sexual mounting behavior that normally predominates in male rats (13). In humans, there is evidence that some women initiate sexual activity most often during the ovulatory period of the menstrual cycle (14). Because sexual behavior is so intimately related to biology and species preservation, as well as to psychological and experiential factors, it is reasonable to look for organic pathologies in men experiencing unconventional sexual cravings.

Table 1 lists associated pathologies found in a group of 22 consecutively assessed paraphilic patients. Most were referred to Hopkins by their attorneys, or by the courts, though a few were self-referred. Eighteen of the twenty-two evidenced a variety of abnormalities that included structural brain damage, elevated testosterone levels, genetic anomalies, seizure disorders, and pituitary hormone dysfunctions. As a safeguard against selection bias, appropriate control group data are needed for comparison purposes, especially regarding the variance of testosterone levels in "normal" men. "Normal" laboratory values of testosterone are based on small sample sizes, and conceivably could be in error. However, it is clear that many sex offenders seen here at Hopkins have evidenced significant organic pathology. This finding makes plausible the hypothesis that biological vulnerabilities in some individuals may predispose them to develop unconventional sexual desires (15). As the data presented are preliminary this is only a hypothesis, and further research is planned.

Factors contributing to the development of normal, as well as unconventional, sexual desires are poorly understood. In addition to the possible role of biogenic elements, there is evidence that particular sorts of early life experiences (e.g., being a victim of child abuse), may also sometimes be relevant (16). Many pedophiles have been sexually molested themselves as children (3).

Expression of sexual desire can be influenced by many aspects of a person's character. Thus, whether a pedophile is physically assaultive toward children may depend not only upon his sexual feelings, but also upon whether he is assaultive in general. There is no evidence that persons with deviant sexual cravings are more assaultive (except for paraphilic sadists and rapists) than persons with more conventional orientations. A study in Detroit of over 1,252 sex offenses against children, for

TABLE 1

Associated Findings in 22 Consecutively Referred Male Patients with Sexual Disorders

Patient	Diagnosis	Associated Findings	
1	Exhibitionism	Elevated testosterone: 912 ng/ml	History of head injury in auto accident, grand mal seizures
2	Homosexual pedophilia	905 ng/ml	
3	Heterosexual pedophilia	1263 ng/ml	Mild ventriculomegaly. Cortical atrophy most pronounced in area of right sylvian fissure. 24 hour urine pregnanetriol = 3.1 ng
4	Raptophilia	916 ng/ml	Grand mal seizures
5	Homosexual pedophilia	1230 ng/ml	
6	Hypersexuality	880 ng/ml	Family history of adrenogenital syndrome
7	Voyeurism	Elevated LH: 98 ng/ml	
8	Homosexual pedophilia	77 ng/ml	Generalized muscular hypotonia
9	Homosexual pedophilia	Cortical atrophy (on CAT scan, secondary to auto accident)	Grand mal seizures, recurrent slow delta wave and sharp activity over frontal anterior region (more pronounced on right)
10	Hypersexuality		Cortical blindness, mild mental retardation
11	Homosexual pedophilia		Cortical blindness
12	Heterosexual pedophilia		Visual spatial defects. Right sided partial hemiparesis of upper extremity with spasm
13	Homosexual pedophilia	Dyslexia	
14	Homosexual pedophilia	Dyslexia	Childhood lisp requiring speech therapy
15	Homosexual pedophilia	Childhood learning disorder	Strabismus
16	Homosexual pedophilia	Kleinfelter's syndrome	90% mosaic (previously undiagnosed). Elevated FSH and LH
17	Sexual sadism	Basal ganglion dysfunction	Oculomotor abnormality. Gait disturbance
18	Homosexual pedophilia	Schizophrenia	
19	Homosexual pedophilia	No abnormalities detected	
20	Voyeurism		
21	Voyeurism		
22	Homosexual pedophilia		

Testosterone was considered elevated if blood levels were more than 2 standard deviations above the mean (mean = 575 ± 15[illegible] SD). Ordinarily 2.5% of men would be expected to have such an elevation. In this sample 27% (6 of 22) had elevations. Normal 24 hour urine pregnanetriol = <2.5 ng

example, found that the great majority did not result in physical injury (3). Although outdated psychiatric classification schemes listed sexual deviation as a form of sociopathy, persons with unconventional sexual desires may show no other evidence of antisocial character traits.

Pharmacological Treatment With Medroxyprogesterone Acetate

Medroxyprogesterone acetate can be injected intramuscularly, usually weekly, frequently at an initial dosage of 500 mg. It is then slowly absorbed into the blood stream and carried to receptor sites, reducing circulating levels of testosterone by decreasing testicular output. It does not appear to affect testosterone production by the adrenal gland, but does prevent the compensatory elevation of follicle-stimulating hormone (FSH) and LH ordinarily expected as a response to decreased testicular output. Dosage can be titrated to obviate total impotence, and the medication is not feminizing. Major side effects are weight gain and mild lethargy, but cold sweats, nightmares, myalgia, dyspnea, hyperglycemia, azospermia, hypertension, and breast cancer (in dogs) have all been reported. Most effects seem fully reversible when medication is discontinued, although long-term follow-up in excess of ten years has not yet been possible. The 100 mg/ml concentration has greater bioavailability and is less painful than the 400 mg/ml solution. No more than 250 mg should be administered into a single injection site.

A number of carefully documented studies conducted by Dr. John Money suggest that administration of this drug decreases the frequency of erotic imagery and the intensity of erotic cravings, as well as the frequency of erection and masturbation (17). Following treatment, a number of paraphilic patients have stopped deviant behavior entirely, reporting relief from pressure to enact troublesome sexual urges, while still maintaining the capacity for intercourse.

Table II summarizes changes in sexual behavior in 20 chronic paraphilic patients treated with medroxyprogesterone acetate. These data suggest that the drug can be helpful in a high proportion of cases, provided the patient is compliant in taking it. Compliance may depend partially upon the nature and intensity of the deviant cravings themselves, and also upon other aspects of a person's character and behavior such as his tendency to abuse alcohol, his capacity to form affectionate relationships, his temperament, and his attitude about treatment. Certain syndromes such as pedophilia may be more or less difficult to treat than others such as exhibitionism.

When patients stop taking the medication, their hunger for deviant sexual activities seems to return, putting them at risk of again engaging in behaviors which satisfy that hunger. Thus, the treatment seems to work by suppressing sexual appetite, rather than by acting as a temporary catalyst until psychological counseling can become effective. Although psychological counseling may not diminish erotic cravings, some patients report that it does help them in their efforts to establish a more appropriate sexual pattern. Brief psychiatric hospitalization for three or four weeks at the beginning of treatment may aid subsequent compliance.

Future Research

Medroxyprogesterone acetate has not yet been subjected to a double-blind clinical trial. This should be done, possibly using intramuscular injections of fluphenazine decanoate (a medication with similar side effects that does not reduce testosterone) as a pharmacologically active control. This should provide additional information regarding the effects of testosterone levels upon sexual feelings and thoughts.

Further advances toward understanding the relationship between biology and sexual experience should come about as a result of development of the position emission scanner (PET scanner). Rather than showing brain structure, this device provides a picture which varies in color depending upon the rate of metabolic activity in various brain areas. It will be informative to learn what regions of the brain are metabolically active during sexual arousal; whether these areas differ in persons experiencing unconventional sexual desires; and what the effects of treatment with medroxyprogesterone acetate are upon brain activity.

Only by learning more about what motivates "sex offenders" will it be possible to find out how to prevent voyeurism and other improper sexual acts. Present approaches, including incarceration, have not proven helpful, and it is important to meet the need that exists within the community to deal effectively with these kinds of problems. It is hoped that the Hopkins program for studying and treating these conditions will continue to prove useful. Treating such patients can present difficulties because of stigma and prejudice sometimes directed toward persons and institutions doing so, but it is clear that many of these people, such as the patient under discussion, legitimately need and deserve help. More than 50 centers in the United States treat such patients (18).

Medicolegal Issues

The topic of sexual deviation and its treatment raises a number of medicolegal and ethical concerns. In a recent editorial in *The American Journal of Psychiatry* Seymour Halleck questioned whether a person facing incarceration can provide truly voluntary consent to receive treatment, knowing that refusal will lead to imprisonment (19). Admittedly, such decisions can be difficult. However, a person does not lose the capacity to choose just because a decision is difficult. Cancer patients sometimes have to choose between taking unpleasant chemical agents or dying. Furthermore, there is legal precedent for requiring individuals to take medication (e.g., measles vaccine), when not doing so threatens the well-being of others. Were persons incarcerated, or facing incarceration, to be denied access to antiandrogenic medications, based upon the idea that they are incapable

TABLE II

Changes in Sexually Deviant Behaviors in 20 Chronic Paraphilic Male Patients Treated With Medroxyprogesterone Acetate*

Patient	Diagnosis	Average frequency of sexually deviant behaviors before treatment†	Length of drug treatment‡	Occurrence of Deviant Behaviors	
				During treatment	After treatment
1	Homosexual pedophilia	once/week	5 years, 9 months	None	No relapse
2	Homosexual pedophilia	twice/month 1 known arrest	1 year	None	Relapsed
3	Heterosexual exhibitionism	2 times/week	10 months	None	Relapsed
4	Homosexual masochism	4 times/week	3 months	None	Relapsed
5	Bisexual pedophilia	2 times/week	3 months	None	Relapsed
6	Transvestism homosexual incest	7 times/week 2 known incidents	1 year, 4 months	None	Relapsed
7	Heterosexual sadism	once every 2 weeks for 25 years	3 years, 3 months	None	Still in treatment
8	Homosexual pedophilia	2 times/week 6 arrests in 6 years	10 months	None	Relapsed
9	Homosexual pedophilia	Once every 2 months 4 arrests in 6 years	2 years	None	Still in treatment
10	Homosexual pedophilia	once/week 14 arrests in 29 years	3 years, 9 months	Relapsed	Treatment continue
11	Homosexual pedophilia	2 times/week 7 known arrests	4 years, 2 months	None	Still in treatment
12	Voyeurism heterosexual pedophilia	2 times/week (pedophilia) 5–8 arrests	5 years, 3 months	None	Relapsed
13	Homosexual pedophilia	2 times/week since age 10	5 years, 9 months	None	No relapse
14	Homosexual pedophilia	once/month numerous arrests, 4 convictions, 4 parole violations	3 years, 8 months	Relapsed	Treatment continue
15	Homosexual pedophilia, exhibitionism	probably several incidents/year	3 years, 9 months	None	No relapse
16	Homosexual pedophilia	once/week	1 year, 1 month	None	Relapsed
17	Heterosexual voyeurism	once/month	1 year	Relapsed (while intoxicated)	Treatment continue (in prison)
18	Heterosexual exhibitionism	5 times/day since age 11 numerous arrests	2 years, 2 months	None	Relapsed
19	Heterosexual exhibitionism	2 times/week	2 years, 1 month	None	Relapsed
20	Heterosexual exhibitionism	4 times/week binges of 20/day	2 years, 3 months	None	Still in treatment

Adapted from Reference 10

* Deviant behavior was considered to have occurred if the patient was accused of having it, or admitted to it, even if it did not come to the attention of the law

† Based on institutional records and patients' statements

‡ Patients who stopped medication did so against advice, except in the cases of patients 13 and 15

of voluntary consent, it is likely that civil libertarians would protest. It can be argued that administering medication to a willing convicted person (even as part of an investigative study, provided it may directly benefit him) is very different from using him to study the effects of a drug (e.g., rabies vaccine) unrelated to his potential benefit.

Another medicolegal issue raised in considering the matter of sexual deviation relates to the concept of "free will," a concept whose meaning has been pondered by philosophers for centuries. Society, through its laws, needs to hold individuals accountable for their own behavior. Some persons are able to control their sexual behavior without help, but persons are likely to differ in the intensity and quality of their erotic desires. Many paraphilic men, prior to treatment with medication, report that their desires are so intense that they are unable to resist temptation successfully. Many of the same men report that their desires become sufficiently diminished while taking medication that they are able to stop deviant activity (and they do). Some state that while taking medication they feel for the first time that they have a choice about whether or not to act. There are other psychiatric syndromes as well (e.g., compulsive handwashing) in which, prior to treatment, persons seem to lack the capacity to stop certain behaviors on their own. Such data clearly present difficult legal and ethical dilemmas.

The psychiatric literature is sometimes misleading to guiding the law about the topic of sexual deviation. Many psychiatric texts, for example, state that rape

not a sexually motivated crime, but rather an act of anger and hostility directed toward women. While it is true that some rapists have hostile motives, and that some suffer from sexual dysfunctions such as premature ejaculation, the motivation to rape can be sexual rather than hostile. Furthermore, to argue that rape is not at least partially a sexually motivated act makes little sense when a man has obtained an erection and forces intercourse. The following verbatim excerpts from letters written by a convicted paraphilic rapist document that rape is sometimes very much a sexually motivated act (which is not to suggest that rape is nonassaultive).

> Sir, I am 32 years old and in the penitentiary for several rapes. All my life I've felt I wasn't normal ... being the sex maniac I've been ... messed up in sexual thought and behavior for God only knows how long. Since I was 4 or 5 years old, sex has been 90% of my thoughts. After I was married I would have sex with my wife every night, then I would go masturbate. Sex was all I could think of. The rapes started when I [saw] a naked woman through a window. Since that time it's been 8 or 10, maybe more. The only way to stop the thoughts was to have sex or ejaculate. Sometimes I masturbated. After (each rape) I felt ashamed. I tried to stop and could for a month or longer, but ended up doing it again. It was as if I was being driven. I know it [doesn't] sound true or logical, but at a certain point, I could not control myself. The important thing to me now is getting relief from sexual thoughts. My wife said I could have come to her with this. How could I tell a woman I have something this bad? She never denied me sex. When I was arrested, I was so glad it was finally over. The only things against the law I've ever done is because of sex. I don't like to hurt people. Some people have told me I'm just a dirty person, and I did those things because I wanted to and enjoyed it. This is not true. Maybe I did want to in a way, subconsciously or something. But I did not enjoy being that kind of a person. I have cried and hated myself. At a certain point understanding fails me. I can't comprehend. What makes a person want to do these things?

Summary

Sexual deviation syndromes (paraphilias) are diagnosable psychiatric syndromes manifested by 1) recurrent persistent deviant fantasies, 2) intense erotic cravings that are noxious when frustrated, and 3) relatively stereotyped behaviors in the sense that exhibitionists expose themselves, whereas voyeurs "prep." These syndromes follow a predictable course, often respond to biological treatments, and may have associated organic pathologies, but their etiologies are poorly understood. Sexual offenses, as defined legally, may or may not be perpetrated by persons with one of these syndromes. When offending behavior is related to such a syndrome, medroxyprogesterone acetate may be helpful, provided the patient is compliant. It is not known whether this medication can help when such behavior is unrelated to deviant sexual cravings, as when rape is committed in response to anger and hostility—something which may occur more rarely than many psychiatric texts suggest. Legal demands for justice and safety as well as medical concerns for understanding care must both be considered, because each is important. When a person seeks help, as did the patient presented, his difficulties should be appreciated rather than scorned as perversions.

ACKNOWLEDGMENT

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THE BIOSEXUAL PSYCHOHORMONAL CLINIC
EVALUATION SERVICES

Before a patient can be accepted into the treatment program of the Biosexual Psychohormonal Clinic an evaluation appointment is necessary.

Evaluations before possible admission into the program are performed through the outpatient services, Meyer Building, of the Johns Hopkins Hospital. Appointments are made through Ms. Maggie Rider, (301) 955-6292. The service is ordinarily performed only on Wednesday mornings beginning at 8:30 a.m., and will generally be completed by noon.

The cost of this visit is currently $160 for the evaluation, plus $120 for lab fees (blood will be drawn and a number of lab tests will be performed). Payment is expected at the time of the visit. However, insurance may cover part or all of the fees. You will be expected to file a claim for reimbursement. Medical Assistance is accepted. However, if your Medical Assistance originates from another state we will need prior confirmation that your home state will cover our costs. When a service is not available in one state but is available in another the home state will frequently allow this cost to be paid from their funds. Should you have major medical insurance coverage please be sure to bring the necessary forms at the time of the appointment. If documented financial need can be provided sometimes a deferred payment plan can be arranged. A deposit is required to hold an appointment date.

Inpatient evaluations are often done for those patients who reside outside the state of Maryland. This type of evaluation consists of an in hospital stay of approximately three to four weeks. Treatment plans are formulated and begun during this time, as well as plans for continuing care after discharge, based on the individual needs and circumstances.

In some cases emergency evaluations can be arranged, performed on an outpatient basis. Costs are based on the time spent with a physician, plus the lab fees. An approximate fee would be in the vicinity of $200, plus the $120 lab fee.

Currently the waiting time before being seen for these services is approximately:

_____for outpatient evaluation, _____for inpatient evaluation, and

_____for emergency evaluation.

Below is a suggested reading list of references from the medical journals regarding the treatment of sexual disorders. On request (there is a charge of $10) we will supply reprints of the articles by Dr. Berlin).

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THE BIOSEXUAL PSYCHOHORMONAL CLINIC EVALUATION SERVICES
Request for Services Information Sheet

THE JOHNS HOPKINS HOSPITAL
BALTIMORE, MARYLAND

NAME_____ ADDRESS_____

PHONE (work)_____(home)_____ _____

DATE OF BIRTH_____ S.S.#_____ MARITAL STATUS_____

FATHER'S NAME_____MOTHER'S MAIDEN NAME_____

EDUCATIONAL LEVEL_____ MEDICATIONS_____

NAMES AND ADDRESSES (If appropriate) _____

ATTORNEY:_____PHONE_____

PAROLE OFFICER:_____PHONE_____

PSYCHIATRIST (or mental health professional):
_____PHONE_____

FAMILY PHYSICIAN_____PHONE_____

WHO REFERRED YOU TO THIS PROGRAM?_____

REASON YOU WANT TO BE SEEN HERE_____
(Name specific behavior)

INSURANCE COMPANY:_____ POLICY NUMBER:_____

DO YOU WISH AN APPOINTMENT FOR ___OUTPATIENT EVALUATION, ___INPATIENT EVALUATION, OR

___ EMERGENCY APPOINTMENT (see other side of sheet for expected time of appointment)

A copy of your legal history and current charges must be forwarded to us in advance of your appointment. (If applicable) Your appointment may be cancelled if not received.

Additionally, a report from any psychiatrist or mental health professional who may have treated you in the past is required. You will need to provide a release of information to the appropriate person in order for them to forward this background to us. Please have the materials sent to the address below.
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Treatment of Sex Offenders with Antiandrogenic Medication: Conceptualization, Review of Treatment Modalities, and Preliminary Findings

BY FRED S. BERLIN, M.D., PH.D., AND CARL F. MEINECKE

Sexual deviation disorders, or paraphilias, are diagnosable psychiatric syndromes manifested by 1) recurrent fantasies about deviant sex, 2) intense associated cravings, and 3) stereotypic behavioral responses. Pedophiles seek out children in response to their erotic thoughts and urges, whereas exhibitionists expose themselves. Paraphiliac syndromes ordinarily follow a chronic course and may be associated with biological pathology, but etiological factors are poorly understood. Treatment becomes a consideration when the well-being or rights of others are compromised. Proposed treatments have included psychotherapy, behavior therapy, surgery, and medication. Medroxyprogesterone acetate, which reduces testosterone, may diminish sexual preoccupation and urges, making self-control easier.

The sexual deviation disorders, or paraphilias, include voyerism, exhibitionism, erotic sadism, and pedophilia (sexual attraction to children). They are considered psychiatric syndromes by the medical profession and are listed as diagnostic categories in the official psychiatric nomenclature. However, persons who manifest the behaviors characteristic of these syndromes often come into conflict with society, which considers them criminal offenders. This paper examines the rationale for treating these conditions medically rather than punitively and reviews the treatments available, especially use of the antiandrogenic agent medroxyprogesterone acetate (Depo-Provera). It also alludes briefly to some of the medicolegal implications of providing treatment. Rather than detailing data from any single study, this paper will present an overview of relevant issues plus some case reports and preliminary findings.

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DIAGNOSIS OF A PARAPHILIAC SYNDROME

One way of arriving at a diagnosis is to appreciate the presence of a syndrome, which is a cluster of features that appear together consistently. Historically, it has proven helpful to identify and label such syndromes. Mania, for example, can be diagnosed by recognizing a syndrome that includes delusions of grandeur, sustained mood change, hyperactivity, and prolonged insomnia. Disease syndromes such as these tend to follow a relatively predictable course and often respond in a predictable way to treatment.

According to *DSM-III*, a diagnosis of paraphilia can be made by identifying such a syndrome. This is done by examining a person's cognitive, emotional, and behavioral state. Cognitive examination reveals recurrent persistent fantasies about deviant sex. Examination of the feeling state discloses erotic cravings perceived as noxious when frustrated. The frustration can be relieved temporarily if deviant fantasies are carried out. Behavioral examination shows relatively stereotyped sexual activity because erotic pleasure is maximized only when deviant fantasies are enacted precisely. The exhibitionist, therefore, exposes himself in response to his fantasies and urges on repeated occasions, often in a stereotypic manner. The pedophile, frequently impotent in adult sexual relationships, seeks out young children, sometimes of a particular age, sex, and appearance, in keeping with his fantasies. One would not ordinarily expect a pedophile to develop some other paraphiliac syndrome, such as exhibitionism or erotic sadism, any more than one would expect an adult with conventional heterosexual desires to suddenly begin fantasizing about and seeking out young children. The expression of deviant sexual desires can be modified depending on the character traits of the individual experiencing them. Paraphiliac syndromes typically manifest themselves initially at puberty and follow a chronic course that may, however, be altered by treatment. At present their etiology is unknown, although certain types of early life experiences are thought to be possible contributory factors in some instances. The etiology of erotic desires and fantasies that influence conventional heterosexual behavior, as well as knowledge about what makes a stimulus sexually appealing, is also poorly understood.

TABLE 1
Associated Findings in 17 Consecutively Referred Male Patients with Sexual Disorders

Patient*	Sexual Disorder	Associated Findings
1	Sexual sadism	Oculomotor abnormality suggestive of basal ganglion dysfunction; unexplained gait disturbance
2	Homosexual pedophilia	Dyslexia; childhood lisp requiring speech therapy
3	Homosexual pedophilia	Cortical atrophy (history of head injury secondary to automobile accident); grand mal seizures; recurrent runs of slow delta waves and sharp activity over frontal anterior brain regions (more pronounced on right side)
4	Homosexual pedophilia	No associated abnormalities detected
5	Hypersexuality	Family history of adrenogenital syndrome; elevated testosterone (1040 ng/100 ml)†
6	Voyeurism	No associated abnormalities detected
7	Homosexual pedophilia	Klinefelter's syndrome (previously undiagnosed); XXY present in 90% of cells; elevated FSH and LH; decreased testosterone; XXY genotype
8	Homosexual pedophilia	Strabismus; childhood learning disorder (originally misclassified as mental retardation)
9	Heterosexual pedophilia	Schizophrenia
10	Homosexual pedophilia	No associated abnormalities detected
11	Exhibitionism	Elevated testosterone (912 ng/100 ml); head injury in automobile accident, comatose several months; grand mal seizures
12	Heterosexual pedophilia	Brain damage secondary to automobile accident at age four; right-sided partial hemiparesis of upper extremity with spasm
13	Homosexual pedophilia	Elevated testosterone (905 ng/100 ml)
14	Heterosexual pedophilia	Near total blindness secondary to brain damage in an automobile accident
15	Heterosexual pedophilia	Elevated testosterone (1263 ng/100 ml); mild generalized ventriculomegaly and cortical atrophy most pronounced in area of the right sylvian fissure (by CT scan); elevated 24-hour urine pregnanetriol (3.1 mg; normal<2.5 mg)
16	Homosexual pedophilia	Elevated LH (77 ng/ml; normal range is 36 to 64); generalized muscular hypotonia
17	Paraphiliac rape	Elevated testosterone (916 ng/100 ml); grand mal seizures

*Patient 2 was seen at the Maudsley Hospital in London; the others were seen at the Johns Hopkins Hospital in Baltimore.
†Testosterone was considered elevated if blood levels were more than 2 standard deviations above the mean (mean = 575 ± 130). Ordinarily, 2½% of men would be expected to have such an elevation; in this sample 29% of the men (5 of 17) had elevated testosterone.

In addition to the triad of cognitive, emotional, and behavioral findings, physical and laboratory examinations may reveal associated organic pathologies. Preliminary data from our center suggest that there may be an unusually high frequency of genetic, hormonal, or neurological anomalies (see table 1). It may be that biological vulnerabilities in some individuals predispose them to develop unconventional sexual desires (1). However, this hypothesis requires further confirmation by comparison with a control population.

Diagnosis of a paraphiliac syndrome cannot be made on the basis of sexual behavior alone because similar behaviors can occur for a variety of reasons. For example, rape could be committed in response to recurrent urges and fantasies about having coercive sex; in such cases the diagnosis of paraphilia would be appropriate. However, rape could also be initiated by a hallucinating person in response to voices telling him to do so, by a mentally retarded person with conventional rather than deviant sexual desires who "doesn't know any better," or by a hostile, angry individual to humiliate a woman. Such differential diagnosis is important because treatment may be different for a hallucinating, retarded, or impulsive angry person than it is for a paraphiliac. Not all sex offenses (a legal term) are committed by persons manifesting a sexual deviation disorder or paraphilia (a medical term).

METHODS FOR TREATING PARAPHILIAC PATIENTS

Our review of the relevant literature revealed over 230 references pertaining to treatment of sexual deviations. In addition to the medication therapies, psychodynamic therapy, behavior modification, and surgery have been tried.

Psychodynamic theory generally assumes that sexually deviant behaviors occur because of unresolved unconscious conflicts, and treatment is directed at uncovering such conflicts (2–4). To our knowledge there have been no well-controlled clinical trials to demonstrate that any of the individual or group psychodynamic methods result in sustained behavioral change in these conditions, and achieving insight into how they may have developed does not necessarily alter them. In point of fact, most of us have little understanding about why particular things arouse us sexually (5, 6). The causes of sexual cravings are probably multifactorial and are often unknown. Lichen and associates (7), for example, have shown that feelings of gender identity in some transsexuals may be correlated with the presence or absence of H-Y antigen.

Behavior therapists are often less concerned with the antecedent causes of unconventional sexual be-

havior than with what can be done about it (8–10). A number of techniques, including hypnosis and biofeedback, have been advocated. Usually the principle is to try to make an unacceptable erotic stimulus less appealing while the person is trained to become sexually aroused by a formerly neutral, or aversive, stimulus. This can be done in the case of pedophilia by following erotic thoughts about children with a mild electric shock and by instructing the patient to masturbate while looking at pictures of a nude, age-appropriate partner. Although this approach is occasionally successful, results are more often disappointing. Most of the literature on psychodynamic or behavioral treatment of sex offenders has consisted of uncontrolled individual case reports without long-term follow-up. It appears that brief changes in behavior are relatively easy to accomplish, but long-term maintenance of such change is achieved far less frequently. Nevertheless, behavior therapy has on occasion been helpful, and it should not be dismissed entirely as a form of treatment. Marks and associates (11), for example, showed good results at two-year follow-up in the treatment of transvestites but poor results with transsexuals.

Biological therapies have included surgical castration, intramuscular injections of medroxyprogesterone acetate, or oral administration of cyproterone acetate (the latter is currently unavailable in the United States) (12–14). Forced castration is clearly not acceptable as treatment in this country but has met with some success elsewhere (15–17). Castration in animals leads to a reduction of sexual behaviors and often causes total impotence. Brain surgery has also been attempted as a treatment for sexually deviant behaviors, presumably with the idea of ablating pathways thought to be involved in sexual desire, but this approach has met with only limited success (18).

When medication has been used to try to reduce sexual cravings, efforts have been made to titrate the dosage so as not to cause total impotence. The medication currently in use investigatively in the United States is medroxyprogesterone acetate (19). It is an antiandrogenic agent that can be administered once or twice per week intramuscularly to be gradually absorbed into the bloodstream, causing a reduction in circulating levels of the male sex hormone, testosterone. Effects appear to be fully reversible within a few months after the medication is stopped, although it has not yet been used widely enough for us to be sure this is entirely true. Major side effects are weight gain and mild lethargy; cold sweats, nightmares, dyspnea, hyperglycemia, hypogonadism, and leg cramps have also been reported. High doses can cause breast cancer in female beagle dogs, but the drug does not appear to do so in humans, and it does not cause men to become feminized in appearance (20). The 100 mg/ml concentration of medroxyprogesterone acetate has a better bioavailability and is less painful when injected than the 400 mg/ml concentration. Besides decreasing testosterone secretion by the testes, the medication appears to act centrally on the brain as well. This hypothesis is supported by two observations. First, increasing doses of medication seem to decrease erotic fantasies even when serum testosterone levels remain unchanged. Second, there is no compensatory elevation of FSH or LH production by the pituitary gland as a response to lowered levels of testicular testosterone production. Because medroxyprogesterone acetate is given by injection, it is easy to monitor treatment compliance. Psychiatric counseling is ordinarily given in conjunction with the medication to help patients cope with the difficulties encountered as a consequence of their unconventional sexual desires. Most men are hospitalized during the initial phase of treatment.

EVIDENCE THAT MEDICATION CAN BE HELPFUL

Because of difficulties in carrying out research with persons whose behaviors, if untreated, can cause others distress, a controlled double-blind study on the use of medication has not been done. This is necessary before firm conclusions about therapeutic efficacy, or mode of action, can be made. Recently the Evaluation Research Group, a private corporation, was funded by the National Center for the Prevention and Control of Rape to formulate a model to evaluate the relative effectiveness of various sex offender treatment programs (21). In the meantime, there are some data available in support of the hypothesis that medroxyprogesterone acetate can reduce the intensity of deviant sexual urges and the frequency of accompanying erotic fantasies. Evidence from some of the major studies conducted at this center will be reviewed briefly.

In one study (22) conducted at Johns Hopkins Hospital under the direction of Dr. John Money, 10 paraphiliac men were given medroxyprogesterone acetate intramuscularly approximately once per week. Data were gathered from structured personal interviews with patients and family members who made themselves available and from social agencies and institutional records. Evaluations made before and after treatment suggested that medroxyprogesterone acetate decreased the reported frequency of erotic imagery, as well as the frequency of erection and ejaculation. In addition, some men stopped offensive sexual behavior entirely, sometimes for as long as a couple of years, reporting relief from the psychological pressure to act on their paraphiliac urges. Presumably the decreased frequency of erotic thoughts comes about, at least in part, as a consequence of lowered levels of testosterone.

In a follow-up study to the one just cited, 20 men with histories of chronically recurrent paraphiliac behavior were placed on medroxyprogesterone acetate for varying lengths of time. Details of the study protocol itself are described elsewhere (23). Additional data obtained by subsequent interview and review of the records of the same 20 men who participated in that study are detailed here for the first time (see table 2). Only 3 of the 20 patients showed recurrences of sexually deviant behavior while taking medication, in

TABLE 2
Changes in Sexually Deviant Behaviors in 20 Chronic Paraphiliac Male Patients Treated with Medroxyprogesterone Acetate[a]

Patient	Age (years)	Diagnosis	Average Frequency of Sexually Deviant Behaviors Before Treatment[b]	Drug Treatment[c]		Occurrence of Sexually Deviant Behaviors	
				Length	Maximum Dosage	During Treatment	After Treatment
1	34	Homosexual pedophilia	Once/week	5 years, 9 months	500 mg/week	None	Treatment dropout; no relapse less than 1 year after treatment
2	31	Homosexual pedophilia	Twice/month; 1 known arrest	1 year	300 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
3	30	Heterosexual exhibitionism	Twice/week	10 months	250–300 mg/week	None	Treatment dropout; relapsed more than 1 year after treatment
4	34	Homosexual masochism	4 times/week	3 months	200 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
5	27	Bisexual pedophilia	Twice/week	3 months	400 mg/week	None	Treatment dropout; relapsed more than one year after treatment
6	43	Transvestism; homosexual incest	7 times/week; 2 incidents	1 year, 4 months, intermittently	150 mg every other week	None	Relapsed less than 1 year after treatment
7	52	Heterosexual sadism	Once every 2 weeks for 25 years	3 years, 5 months	600 mg/week	None	Treatment continues; no relapses
8	29	Homosexual pedophilia	Twice/week; 6 arrests in 6 years	10 months	500 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
9	36	Homosexual pedophilia	Once every 2 months; 4 arrests in 6 years	2 years	500 mg/week	None	Treatment continues; no relapses
10	56	Homosexual pedophilia	Once/week; 14 arrests in 29 years	3 years, 9 months	300 mg/week	Relapsed	Treatment continues
11	40	Homosexual pedophilia	Twice/week; 7 known arrests	4 years, 2 months	400 mg/week	None	Treatment continues; no relapses
12	45	Voyeurism; heterosexual pedophilia	— Twice/week, 5–8 arrests; numerous institutionalizations	5 years, 3 months	300 mg/week	None	Relapsed less than 1 year after treatment; treatment now resumed
13	27	Homosexual pedophilia	Twice/week since age 10	5 years, 9 months	200 mg/week	None	Treatment completed; no relapse more than 1 year after treatment
14	41	Homosexual pedophilia	Once/month; numerous arrests; 4 convictions; 4 reported parole violations	3 years, 8 months	500 mg/week	Relapsed	Treatment continues
15	37	Homosexual pedophilia; exhibitionism	Record unclear; probably several incidents/year	3 years, 9 months	350 mg/week	None	Treatment completed; no relapse less than 1 year after treatment
16	26	Homosexual pedophilia	Once/week	1 year, 1 month	200 mg/week	None	Treatment dropout; relapsed more than 1 year after treatment
17	24	Heterosexual voyeurism	Once/month	1 year	400 mg/week	Relapsed after alcohol consumption	Treatment continues; in prison
18	40	Heterosexual exhibitionism	Five times/day since age 11; first arrest at age 21; numerous others	2 years, 2 months	200 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
19	29	Heterosexual exhibitionism	Twice/week	2 years, 1 month	250 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
20	46	Heterosexual exhibitionism	Four times/week; binges of 20/day	2 years, 3 months	300 mg/week	None	Treatment continues; no relapses

[a] Sexually deviant behavior was considered to have occurred if the patient was accused of having or admitted having a deviant sexual contact (for example, an episode of public sexual exposure). Any occurrence of such behavior was counted as a relapse once treatment had been initiated, even if it did not come to the attention of the law or an official complaint.

[b] Based on institutional records and patients' statements.

[c] Study participants who stopped taking medroxyprogesterone acetate did so at their own request or on medical advice, except in the cases of patients 13 and 14. Some patients were irregularly compliant with medication even during the period when it was being prescribed.

one such case, relapse was clearly related to alcohol abuse. The recidivism rate jumped dramatically when patients discontinued their medication regimen. Of the 11 patients who discontinued medroxyprogesterone acetate against medical advice, 10 relapsed. Two who discontinued treatment with approval have thus far not relapsed. Whether the marked number of patients in this study who eventually relapsed would have remained symptom free had they been required to continue taking medication (perhaps, for example, as a condition of parole) is not known. Reasons for the high attrition rate have yet to be analyzed, although it is clear that some patients found the routine of weekly injections and frequent investigational blood tests burdensome.

The preliminary impression based on these data and other cases now being analyzed is that in general, these men appear to do well in response to antiandrogenic medication as long as they continue taking it and as long as their problems are rather clearly confined to unconventional sexual cravings. They seem to do less well if they have been noncompliant about taking the medication or if in addition to having such cravings they abuse drugs and alcohol, are sexually impulsive, or have a history of other sorts of sociopathy or violence. Some paraphiliacs are concerned about the consequences to others of their unconventional cravings, whereas some are not. Thus, prognosis may depend not only on the effects of medication on the deviant thoughts and cravings comprising the syndrome, but also on other features of the person manifesting the syndrome, such as his attitude about treatment and commitment to it.

Although anecdotal clinical reports are of limited research value, three brief case examples are presented here to help illustrate the types of patients who have been receiving medication.

CASE REPORTS

Case 1 (sadistic paraphilia). Mr. A, a 47-year-old man, complained of being unable to obtain sexual satisfaction unless he hurt his wife. His preoccupation with sadistic fantasies made it difficult for him to concentrate, even at work. He believed his actions to be wrong and consistently felt disgusted and remorseful afterward, often working overtime to avoid the opportunity to harm her. However, every few weeks his cravings would build up to a point where he could not control them. During 25 years of marriage, he had frequently handcuffed his wife, shaved her head, stuck pins in her back, and struck her—although never so forcefully as to require medical or legal attention. Alternative means of obtaining sexual satisfaction such as masturbation led to erection, but ejaculation could not be achieved unless he hurt her. Neurological examination showed evidence of nonprogressive basal ganglia dysfunction, and he had a mild gait disturbance.

Mr. A began treatment voluntarily 4 years ago after he became frightened he might seriously harm or even kill his wife. Since that time there has not been even a single recurrence of the sexual sadism that had occurred previously for nearly 25 years. Conventional sexual activities have become a regular part of Mr. A's marriage, and as before, there has been no extramarital involvement. He believes he can control his paraphiliac desires, which he said have become much less intense, only with help from antiandrogenic medication. He has found considerable relief from the obsessive erotic urges that he had previously experienced as noxious rather than pleasurable. With treatment his serum testosterone has been maintained at below-normal levels.

Case 1 was an example of sadistic sexual desire qualitatively deviant from accepted cultural norms. Case 2 is an example of quantitative deviance, that is, of significantly heightened sexual drive.

Case 2 (hypersexuality). Mr. B, a 17-year-old, stated that he was preoccupied with erotic fantasies to such a degree that they interfered with work and family relationships. His wife confirmed his report that he sometimes demanded intercourse as often as 15 times in a single day. There was a family history of andrenogenital syndrome, and his mother had taken thyroid medication when pregnant. The patient's serum testosterone level was 880 ng/100 ml, above the normal (i.e., more than 2 SD) postpubertal range of 225–875 ng/100 ml as reported by the laboratory performing the assay. No cause could be detected, although receptor site sensitivity to testosterone has not yet been tested (24). Treatment with 400 mg per week of medroxyprogesterone acetate reduced the elevated testosterone level to a prepubertal value of 70 ng/100 ml. The patient reported relief from intrusive fantasies, as well as improved work and interpersonal relationships.

Case 3 (paraphiliac rape). Mr. C, a 32-year-old man with adult-onset idiopathic epilepsy since age 19 but seizure free for the past 3 years, was referred for treatment after committing two rapes. Although never charged previously, he admitted to a lengthy history of similar behavior satisfying legal criteria for rape, beginning at age 20. His first sexual experience was at the age of 6 or 7 with a 14-year-old babysitter who had asked him to watch her masturbate while clothed in her undergarments. Since then, he has fantasized several times daily about similar encounters, often masturbating while doing so. At the age of 15 he broke into the office of a gynecologist who had been dating his sister to steal textbooks to "learn more about the female body." He had a steady girlfriend at the time of hospital admission but he had never found sexual activities with her sufficiently satisfying. He usually masturbated about four or five times per day while fantasizing about various women performing autoerotic acts. In his fantasies he would always imagine forcing a woman previously unknown to him to masturbate while clad in her undergarments. He had been too embarrassed to ever tell any of his regular girlfriends about his erotic preoccupation, and he rarely sought a second encounter with any women whom he had forced to have sex, feeling compelled instead to repeat the episode with a fresh partner.

The patient maintained an apartment separate from his girlfriend. Three or four times per week he would try to meet a new woman (preferably slim and wearing pants rather than a skirt) whom he would persuade to join him at his apartment to smoke marijuana; he never used threats up to that point. Subsequently, however, he would threaten to harm the woman unless she removed all the clothing from below her waist except her panties and masturbated while he watched and masturbated himself. On some occasions he would have intercourse, but this was the exception rather than the rule. Each episode invariably followed this same pattern: he estimated that there had been more than 60 such episodes since he was age 20. On some occasions he would threaten his victim with a knife as well as verbally, but in those instances when she refused to be intimidated, he always allowed her to leave without becoming physically assaultive. As far as we could determine, on no occasion did he injure a woman physically, and none of his erotic fantasies was sadistic in the sense of wanting to inflict pain. After each episode he would escort the woman out, "trying to be kind, apologizing, and making sure she was okay," with no further threats. He reported that he would then invariably vomit, feeling "disgusted, sick, and remorseful" and vow never again to act in such a manner. However, in a few days his fantasies and urges would recur with renewed intensity and the whole pattern would be repeated.

Mr. C believed coercion of another person was wrong. Worried about the troubles his actions could cause him, and appeared to have some concern for his victims. Nevertheless, he stated that his erotic thoughts and cravings consistently proved to be more than he could resist. In his words, "It's like an insatiable drive, like a pressure that is always on me. Sometimes I can push it off by masturbating, but eventually I feel driven to repeat this thing over and over." His serum testosterone level was found to be 916 ng/100 ml (well above the reported normal 3 SD range of 275 to 875). Because we are only now beginning a careful, rigorously supervised treatment protocol, it is too soon to know whether success can be achieved.

DISCUSSION

Persons who engage in dangerous or offensive sexual behaviors pose a variety of medicolegal problems, especially if juveniles or nonconsenting adults are involved. Some persons undoubtedly misuse other people with little concern for them and may require quarantine or punishment. Others (just as is true of some drug addicts, cigarette smokers, or overeaters) may be in a sense victims of intense cravings that are quite resilient and therefore difficult, if not impossible, to resist. Such persons must still assume responsibility for their own actions, but when they seek medical help they should be treated with an appreciation for their difficulties rather than with stigmatization, scorn, or contempt (25). This requires that helping professionals be able to deal with their own feelings. Although many treatments, including psychodynamic and behavioral therapies, have been tried in the past, only recently has the potential for help in the form of medication become available. Some might argue that in a way paraphiliac behavior is no more a reflection of disease than is conventional sexual activity. In a nonjudgmental sense, this may be true. However, syndromes are often labeled diseases when they impair functioning or cause suffering. Since paraphiliac behaviors can infringe on the rights and well-being of nonconsenting persons, causing suffering, it seems proper to make a value judgment about them, that is, that they must stop and because the cravings associated with such behavior can often be alleviated by medication, the term "treatment" still seems appropriate. Unconventional sexual activities between consenting adults that cause no harm do not ordinarily require psychiatric care.

Preliminary data on the use of medroxyprogesterone acetate to treat sex offenders clearly suggest that a means must be found to ensure continued compliance with the treatment regimen before one can feel relatively confident about efficacy. There is precedent, however, for solving compliance problems by requiring persons to take medication by legal mandate (e.g., smallpox vaccine), when not doing so poses a threat to the well-being of others. Exploration of such a solution, should it be considered, would have to be done with due care so as not to infringe on human rights by imposing treatment. Nonetheless, one would not want to deny a convicted offender the right to receive treatment, when this could be done safely, as an option to imprisonment. In trying to provide treatment to patients, protection of potential victims must be considered. However, society as well as the sex offender will likely benefit if the offender can be treated successfully rather than being imprisoned and then released unchanged. There is no evidence, except in the case of the paraphiliac sadist or rapist, that having a paraphiliac syndrome increases the probability of physical violence, and some paraphiliacs seem reasonably well adjusted at work and in other spheres of social endeavor (26).

People do not decide voluntarily what will arouse them sexually. Data presented here suggest that nonlearned biological as well as learned environmental factors may play an etiological role in the development of sexually deviant behaviors. Better understanding of causal factors may eventually lead to more specific forms of treatment. At a symposium at the Massachusetts Institute of Technology Goy and McEwen (27) reviewed evidence suggesting that nonlearned biological factors may be more important determinants of human sexual behavior than is generally appreciated. Improved understanding of possible genetic, hormonal, or neurochemical bases for human sexual pathology should be sought in pursuing further the rationale for treatment with medication. The new positron emission tomographic scanner may help provide additional clues regarding brain functioning during sexual arousal. Currently, treatment with medroxyprogesterone acetate involves using it as a suppressant of sexual desire in general. It seems to decrease the intensity of sexual urges but does not change them qualitatively. If there is an unlearned biological basis for deviant

sexual activity, an ideal medication might suppress deviant sexual cravings alone without affecting more conventional erotic interests. When medroxyprogesterone acetate is discontinued, allowing the sexual appetite to heighten or return, behaviors engaged in to satisfy that appetite are also likely to be reinstituted. Thus, when not taking medication, many paraphiliac men report being unable to use willpower to stop deviant sexual behaviors, and do not. While receiving injections, many of the very same men report that they are then able to stop, and do.

Given our present level of knowledge of the paraphilias, it is still too soon to predict with confidence the future of hormonal treatment programs. It is unclear whether the compliance problems evidenced by some patients can indeed be solved. It is possible that even with improved compliance, future results may yet fail to support preliminary impressions of good therapeutic efficacy. Certainly many more data are needed. Even so, it is already clear that several patients have experienced marked reductions in sexually deviant activity and fantasy while taking medroxyprogesterone acetate. This suggests that the idea of considering at least some sexual offenses to be a behavioral manifestation of intense aberrant drives, possibly related to a dysfunction in brain and representing a condition that is potentially treatable with medication, merits continued investigation. It is hoped that legal demands for justice can be reconciled with medical concerns for understanding care.

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THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
THE JOHNS HOPKINS HOSPITAL

DEPARTMENT OF PSYCHIATRY and BEHAVIORAL SCIENCES

The Henry Phipps Psychiatric Clinic
601 N. Broadway
BALTIMORE, MARYLAND 21205

BIOSEXUAL PSYCHOHORMONAL CLINIC

The Biosexual Psychohormonal Clinic is designed to treat patients with the following problems:

Homosexual Pedophile — Voyeurism — Exhibitionism
Sexual Sadism — Heterosexual Pedophile — Hypersexuality
Transvestism — Other Psychosexual Disorders

Clients usually come to treatment because they are court-referred, self-referred or via other sources, i.e., family or community agencies.

The patient is evaluated by a team of professionals (social workers, nurses, physicians) in our Wednesday A.M. clinic. This assessment may or may not include a physical exam, lab work, and use of information from other agencies. Some of our recommendations may include long term care in a structured facility, inpatient care on our unit at the Johns Hopkins Hospital, referrals to other agencies, outpatient psychotherapy, followup residence at a psychiatric half-way house, vocational rehabilitation referral, and/or Depo-Provera injections.

If, as a result of our evaluation, the patient is admitted to our inpatient service the client is subject to a more complete psychiatric evaluation, physical exam, blood chemistry and may be started on Depo-Provera on a trial basis. (See Dr. Berlin's publication for explanation of Depo-Provera and how the medication is used). The patient is observed closely regarding progress and prognosis. Standard insurances such as Blue Cross/Blue Shield will often cover costs of inpatient or outpatient care and assessment.

When the patient is discharged from our inpatient service he is followed by our outpatient department and Depo-Provera plus psychiatric counseling and continuing reassessment is given weekly or bi-weekly, according to patient needs. Our other responsibilities may also include testifying in court, keeping in contact with probation officers and referring families for counseling.

Currently we are in our "infancy" in our research and investigational treatment of sex offenders. We are interested in knowing about other programs also.

Please send any information to:

Ann Falck, HN or Melinda Stein, RN
Meyer 5
Johns Hopkins Hospital
600 N. Wolfe Street
Baltimore, Maryland 21205

BIOSEXUAL PSYCHOHORMONAL CLINIC

Hours: 9:00 - 12 noon
Wednesdays only

By Appointment Only. For further information and/or appointment, contact Ms. Maggie Rider at (301) 955-6292.

THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
THE JOHNS HOPKINS HOSPITAL

DEPARTMENT OF PSYCHIATRY
and
BEHAVIORAL SCIENCES

The Henry Phipps Psychiatric Clinic
600 N. Wolfe Street
BALTIMORE, MARYLAND 21205

Antiandrogenic and Counseling Treatment of Sex Offenders

RATIONALE FOR DEPO-PROVERA TREATMENT OF SEX OFFENDERS (PARAPHILIACS)

Studies begun at Johns Hopkins in 1963 have shown that sex offenders or paraphiliacs, for example, pedophiliacs, treated with the antiandrogenic hormone, Depo-Provera, plus counseling have gained in self-regulation of sexual behavior. Depo-Provera suppresses or lessens the frequency of erection and ejaculation and also lessens the feeling of libido and the mental imagery of sexual arousal. To illustrate: for the pedophiliac there will be a decreased erotic "turn-on" to children. Metaphorically, this medication can be thought of as an appetite suppressant for the sex drive, intended to make self-governancy easier, usually with the help of adjunctive individual or couple counseling.

ANTIANDROGENIC EFFECT OF DEPO-PROVERA

Depo-Provera, a long-acting, injectable form of medroxyprogesterone acetate manufactured by Upjohn, is a synthetic progestin which is classified pharmacologically as an antiandrogen. Antiandrogen inhibits the release of androgen, the so-called male hormone, from the testicles. Some progestinic hormone is normally present in the male body but at a very low level. Increasing the level allows progestin to compete with androgen and to take over. Androgen is a sexual activator. Progestin is sexually inert. It therefore induces a period of sexual quiescence in which the sex drive is at rest.

MODE OF ENDOCRINE ACTION

In terms used by endocrinologists, Depo-Provera inhibits, through its effect upon neural pathways in the brain, the release of luteinizing hormone (LH) from the pituitary gland. LH is the chemical messenger which normally stimulates the testicles to produce androgen. Hence, the ultimate effect of Depo-Provera is to reduce the level of androgen, especially testosterone, in the blood stream. Typically, in the adult male, Depo-Provera reduces the blood level of testosterone to that of a normal prepubertal boy (from approximately 575 nanograms/100milliliters to 125/nanograms/100 milliliters).

BRAIN EFFECT

In addition to lowering the level of testosterone, Depo-Provera like all progestinic hormones, acts on the brain. In small doses, as in the treatment of sex offenders, the influence on sexual pathways in the brain, though mild, has the great advantage of being sexually calming or tranquilizing. The patient feels relief from an urge that was formerly insistent, commanding, and not subject to voluntary control.

PERIPHERAL PHYSIOLOGICAL EFFECTS

Depo-Provera, through decreasing the testosterone level, temporarily decreases penile erection and ejaculation, and the production of sperm (spermatogenesis). This means that a man probably could not father a child while taking the medication. The medicine is not feminizing (men do not grow breasts). In addition, the sexual

accessory organs, the prostate and seminal vesicles, temporarily shrink. Increased drowsiness, and weight gain, as well as increased blood pressure can occur. Other occasional side effects are discussed in papers published as a result of work in this clinic. Those papers are available.

REVERSIBILITY OF CHANGES — The changes attributed to the medication are reversible upon cessation of treatment; within 7 - 10 days erectile and ejaculatory capacity begin to return, along with the subjective experience of more sexual drive. However, as use of this medication is still relatively new for sex offenders (first use was in 1966), the possibility of irreversible or more long-term side effects cannot be completely excluded.

DOSAGE LEVEL — Tailored for the specific patient, intramuscular injections of Depo-Provera range from 100 milligrams to 800 milligrams every seven days. The typical weekly maintenance dosage of Depo-Provera for sex offenders is 500 milligrams.

HORMONAL MONITORING — Hormonal measures of testosterone and LH (Luteinizing Hormone) initially can be monitored periodically to gauge the effectiveness of the dosage. The recent application of radioimmunological techniques to the assay of testosterone and LH has made such endocrine monitoring precise, reliable, rapid, and relatively inexpensive, as compared to prior methods.

NO INCREASED TOLERANCE — Most patients do not require a progressively increasing dosage, because there is no tolerance build-up to Depo-Provera. However, some may require dosage changes.

COMPARISON WITH SURGICAL CASTRATION — Prior to the discovery, manufacture, and medical use of antiandrogen, the method of reducing the level of testosterone in men was surgical castration. Used in many societies throughout history, castration is disfavored in contemporary American legal-medical management of sex offenders. Obviously, surgical castration is irreversible. It is also less effective than hormonal antiandrogenic therapy. Castration also increases levels of LH from the brain whereas medication lowers these levels.

BEHAVIORAL EFFECTS OF DEPO-PROVERA TREATMENT — In some cases, it is possible for patients to be weaned off Depo-Provera. Since the weaning is a step-by-step lowering of the hormone dosage, it is possible for the patient to discover how completely he has become relieved of the tendency to engage in the sex offending behavior, both in actuality and imagination. In some cases, there is long-lasting remission, so that the patient is no longer compelled to commit sex offenses, but is enabled to have a sex life with a socially suitable consenting partner instead. Some patients prefer to continue on a low, maintenance dosage of the medication so as to ensure a maximal guarantee of no relapse. Those patients who establish a strongly pair-bonded relationship with a permanent partner appear to be additionally guaranteed against relapse. The counseling component of treatment facilitates this achievement and is essential. If for some patients the medication aids only as a sexual appetite suppressant, then stopping the medication would increase the risk of relapse. If the person should again become tempted to repeat his strong, unconventional sexual compulsion (eg; for children, or to expose publicly), then resumption of treatment would be advised.

COMPLIANCE — Some patients, as in all specialties of medicine, are more faithful than others in adhering to medication schedules. Some overly confident patients drift into non-compliance. Other patients neglect specific instructions about their medication schedule. For this reason, it is advisable that as a condition of probation or parole, supervision be legally required so as to ensure strict compliance in adhering to the treatment schedule.

STATISTICAL ASSESSMENT — Sex offenders treated with Depo-Provera at Johns Hopkins are kept in long-term follow-up. Twenty have now been followed for between 5 months and 15 years. Of this group, 17 have proved able to self-regulate their sexual behavior while receiving the medication, and 3 have had relapses. Almost all who stopped medication against medical advise subsequently relapsed.

COUNSELING THERAPY — Counseling sessions are provided weekly, at first, and then may be tailored to individual needs. These sessions are intended to help the patient to establish a new life-style. They are also intended to help the patient cope with problems that have developed as a consequence of his prior life style. Therapy may occur either individually or with groups.

BIOSEXUAL PSYCHOHORMONAL CLINIC
Department of Psychiatry and Behavioral Sciences
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Head Nurse
Co-Director, Biosexual Psychohormonal Clinic

Melinda Stein, RN
Clinical Coordinator,
Biosexual Psychohormonal Clinic

THE BIOSEXUAL PSYCHOHORMONAL CLINIC
EVALUATION SERVICES

Before a patient can be accepted into the treatment program of the Biosexual Psychohormonal Clinic an evaluation appointment is necessary.

Evaluations before possible admission into the program are performed through the outpatient services, Meyer Building, of the Johns Hopkins Hospital. Appointments are made through Ms. Maggie Rider, (301) 955-6292. The service is ordinarily performed only on Wednesday mornings beginning at 8:30 a.m., and will generally be completed by noon.

The cost of this visit is currently $160 for the evaluation, plus $120 for lab fees (blood will be drawn and a number of lab tests will be performed). Payment is expected at the time of the visit. However, insurance may cover part or all of the fees. You will be expected to file a claim for reimbursement. Medical Assistance is accepted. However, if your Medical Assistance originates from another state we will need prior confirmation that your home state will cover our costs. When a service is not available in one state but is available in another the home state will frequently allow this cost to be paid from their funds. Should you have major medical insurance coverage please be sure to bring the necessary forms at the time of the appointment. If documented financial need can be provided sometimes a deferred payment plan can be arranged. A deposit is required to hold an appointment date.

Inpatient evaluations are often done for those patients who reside outside the state of Maryland. This type of evaluation consists of an in hospital stay of approximately three to four weeks. Treatment plans are formulated and begun during this time, as well as plans for continuing care after discharge, based on the individual needs and circumstances.

In some cases emergency evaluations can be arranged performed on an outpatient basis. Costs are based on the time spent with a physician, plus the lab fees. An approximate fee would be in the vicinity of $200, plus the $120 lab fee.

Currently the waiting time before being seen for these services is approximately:

_____for outpatient evaluation, _____for inpatient evaluation, and

_____for emergency evaluation.

Below is a suggested reading list of references from the medical journals regarding the treatment of sexual disorders. On request (there is a charge of $10) we will supply reprints of the articles by Dr. Berlin).

Berlin, FS and Coyle, GS: Sexual Deviation Syndromes. Johns Hopkins Medical Journal, 149, 119-125 (1981).

Berlin, FS and Meinecke, CF: Treatment of sex offenders with antiandrogenic medication: Conceptualization, review of treatment modalities, and preliminary findings. American Journal of Psychiatry 138:601-607, 1981.

Berlin, FS: Sex Offenders: A Biomedical Perspective and a Status Report on Biomedical Treatment, in "The Sexual Aggressor: Current Perspectives on Treatment", Greer, JG and Stuart, IR, eds. Van Nostrand Reinhold Co., New York 1983.

Freund, K: Therapeutic sex drive reduction. Acta Psychiatrica Scandinavica, 62, suppl. 287, 1-39, 1980.

THE BIOSEXUAL PSYCHOHORMONAL CLINIC EVALUATION SERVICES
Request for Services Information Sheet

THE JOHNS HOPKINS HOSPITAL
BALTIMORE, MARYLAND

NAME _____ ADDRESS _____

PHONE (work) _____ (home) _____

DATE OF BIRTH _____ S.S.# _____ MARITAL STATUS _____

FATHER'S NAME _____ MOTHER'S MAIDEN NAME _____

EDUCATIONAL LEVEL _____ MEDICATIONS _____

NAMES AND ADDRESSES (If appropriate)

ATTORNEY: _____ PHONE _____

PAROLE OFFICER: _____ PHONE _____

PSYCHIATRIST (or mental health professional):
_____ PHONE _____

FAMILY PHYSICIAN _____ PHONE _____

WHO REFERRED YOU TO THIS PROGRAM? _____

REASON YOU WANT TO BE SEEN HERE _____
(Name specific behavior)

INSURANCE COMPANY: _____ POLICY NUMBER: _____

DO YOU WISH AN APPOINTMENT FOR ___OUTPATIENT EVALUATION, ___INPATIENT EVALUATION, OR

___ EMERGENCY APPOINTMENT (see other side of sheet for expected time of appointment)

A copy of your legal history and current charges must be forwarded to us in advance of your appointment. (If applicable) Your appointment may be cancelled if not received.

Additionally, a report from any psychiatrist or mental health professional who may have treated you in the past is required. You will need to provide a release of information to the appropriate person in order for them to forward this background to us. Please have the materials sent to the address below.
All of the information received is held in strictest confidence. It will be used to give the examiner as full a picture as possible ahead of time about what has taken place in your life before coming to us.

An appointment will be sent to you at the address listed above unless you indicate otherwise. _____

Please return this sheet to:

Ms. Maggie Rider, Appointments Secretary
Meyer Building, 4-181
Johns Hopkins Hospital
600 North Wolfe Street
Baltimore, Maryland 21205

Mail this sheet back as soon as possible. Psychiatric and legal history may be forwarded under separate cover, along with a deposit of $50.

FEE SCHEDULE

CLINIC EVALUATION	$160
LAB - BLOOD WORK	120
CONSULTATIONS	90 (per hour)
RE-EVALUATION	75
GROUP THERAPY SESSION	35
DEPO-PROVERA INJECTION	27.50

(Fees are subject to change. Please inquire. Deferred payment plans considered with documented financial need.)

THE SEXUAL AGGRESSOR

Current Perspectives on Treatment

JOANNE G. GREER, Ph.D.
Office of the Inspector General
Department of Health and Human Services
Washington, D.C.
formerly, Deputy Chief,
National Center for Prevention and Control of Rape
National Institute of Mental Health
Rockville, Maryland

IRVING R. STUART, Ph.D.
Department of Psychology
Lehman College of the City University of New York
New York, New York

VAN NOSTRAND REINHOLD COMPANY
NEW YORK CINCINNATI TORONTO LONDON MELBOURNE

5

Sex Offenders: A Biomedical Perspective and a Status Report on Biomedical Treatment*

Fred S. Berlin, M.D., Ph.D.

Individuals may be considered sex offenders if they behave in particular ways, for example, by becoming sexually intimate with a child. In general, behavior, whether sexual or nonsexual, is a reflection of one's state of mind, as persons tend to act in response to their thoughts and feelings. Some states of mind can be considered pathological, for example, when an individual loses the capacity to determine whether heard voices are coming from the environment or are imaginary. This type of psychological impairment can occur in a variety of psychiatric syndromes such as schizophrenia, dementia, delirium, or manic depressive illness–each of which requires a different form of treatment. Persons mentally ill in these ways sometimes commit sex offenses. On the other hand, some persons commit sex offenses in response to intense, unconventional sexual hungers (e.g., for children). Individuals with deviant or unconventional sexual orientations may also require psychiatric help. Properly diagnosing whether a sex offense is the manifestation of a specific psychiatric syndrome such as schizophrenia, dementia, mania, exhibitionism, or pedophilia can be important in trying to provide optimal care. The etiological determinants of conventional, as well as of unconventional, erotic interests are undoubtedly multiple, but there is evidence that biological factors such a hormone levels or chromosomal makeup sometimes play a major contributory role with respect to the nature of an individual's sexual desires. Biological treatments which alter the physical milieu of the brain, for example, by decreasing the amount of the "male sex hormone" testosterone that is present, may sometimes be able to facilitate better self-control of sexual behavior. This, might be the case, for instance, if treatment that lowers testosterone levels results in a pedophile experiencing a decrease in the subjective intensity of his unconventional sexual appetite. There may be implications regarding how society through its laws should view some sex offenders if (a) it is the case that biological factors, such as

*The author gratefully acknowledges the kind and invaluable assistance of Ms. Maggie Rider, Ms. Claudia Halko, Ms. Deborah Holifield, Ms. Nancy Mace, Mr. Timothy Rider, and Dr. Phillip Slavney in the preparation of this manuscript.

chromosomal abnormalities, contribute to the development of unconventional erotic desires that may tempt persons to want to commit sex offenses, and if (b) it is also the case that surgical or antiandrogenic medication treatments can result in biological and psychological changes that provide such individuals with an increased capacity for self-control not previously present.

PART I: SYNDROMES AND THE IMPORTANCE OF DIFFERENTIAL DIAGNOSIS

Introduction

The present chapter discusses the importance of making a proper differential diagnosis in assessing "sex offenders" for potential treatment. It also explores the relationship between biological factors, such as hormone levels or chromosomal anomalies, and sexual phenomenology (i.e., the mental experiences, thoughts, lusts, and fantasies that constitute states of erotic desire). Currently available treatments are briefly reviewed from a biomedical perspective, with a particular emphasis on the use of surgery and medications. The idea of using pharmacological agents to treat sex offenders is relatively modern, although surgical procedures such as castration which, like some medications, diminish androgen levels have been employed for this purpose for quite a while. The following is a brief case vignette which serves as an example of the type of patient for whom medication treatment may be appropriate, as well as a basis for the subsequent discussion of the various issues and considerations, diagnostic and otherwise, which must be reflected upon in trying to provide optimal understanding and care.

Case Presentation

Mr. A., a 40-year-old white male, was referred by his attorney for assessment as a consequence of the patient's sexual involvement with a 13-year-old boy. Having been charged five years earlier with a similar offense, at the time of his assessment the patient was on court-mandated probation. Though apprehended only once before, he had been sexually active almost exclusively with young males, most ranging between the ages of 14 and 17 (but some as young as age 8), since he himself was 7 years old.

Sexual activity, which included undressing, fondling, mutual masturbation, and oral-genital contact occurred frequently with a variety of partners, sometimes as often as several times per month. In almost all cases the children were persuaded rather than coerced, but in two instances, while intoxicated, Mr. A. threatened the victims with a paring knife. The patient indicated that he had begun to drink frequently "to get up the courage to approach potential partners."

After each incident the patient felt ashamed and guilty, vowing that he would try not to act similarly in the future. However, in time, as his sexual urges began once again to intensify, he would give in to temptation. The mere happenstance of watching young boys in television commercials would sometimes elicit a strong urge to focus his attention towards the child's genital area. In describing the mental experiences that led him to act in these ways, the patient, in an interview with Dr. John Money, made the following comments:

> If I have seen an exceptionally nice looking boy I get aroused. I want to go over there, but then again I don't. I see him, and I want to get out of there because I know I am going to start fantasizing. I have noticed that the first thing is I drop my eyes to his genitals. It gets more intense, the fantasies, that is. I dream about a South Sea island, nothing but boys on the island. It is kind of like a fight between the good side and the bad side, like Dr. Jekyll and Mr. Hyde. Sometimes the way to cure it is to masturbate, and that takes care of it. There are other times when I get so aroused I just have to get it sexually together. It worries society. It worries me very much. I know it is wrong. I know what the legal issues are, but at the time I am not thinking of legal issues. All I can think about is getting the boy. I want to keep doing it, and doing it, and doing it. No matter how. Getting the boy. Sometimes I think, "Hey, what are you doing? I don't want to hurt anyone." I really do not want to hurt these children, but I am very afraid that I might.

In attempting to understand his condition, the patient made the following comments:

> What starts a person like myself doing what I do? Why me? Why can't I be normal like everybody else? You know. Did God put this as a punishment or something towards me? I am ashamed. Why can't I just go out and have a good time with girls? I feel edgy when a female is present. An older "gay" person would turn me off. I have thought about suicide. I think after this long period of time I have actually seen where I have an illness. It is getting uncontrollable, to the point where I can't put up with it anymore. It is a sickness. I know it's a sickness, but as far as they [society] is concerned, you are a criminal and should be punished. Even if I go to jail for 12 or 15 years, or whenever, I am still going to be the same when I get out.

This last statement was not meant to be defiant.

Physical and laboratory examination of the patient revealed a number of biological pathologies (see Table 5-1). These findings suggest that the patient has Klinefelter's syndrome, the significance of which will be discussed subsequently.