PART 4

APPENDICES

Appendix 1

Specimen page from <u>Medical</u> <u>Subject</u> <u>Headings</u>.

Specimen page from tree structure.

List of subheadings in use in 1967.

Specimen page from a "demand search bibliography".

Specimen search formulation.

Specimen "demand search request form".

SULFUR ISOTOPES (D1)

SULFURIC ACID (D1)

SUNBURN·(C14)

SUNLIGHT (G3)
XU HELIOTHERAPY (G3)
XR LIGHT (H)

SUNSTROKE (C14)

SUPERFETATION (G1)

SUPERSTITIONS (I)

SUPPOSITORIES (D13)

SUPPURATION (C1, C16)
X PUS (C1, C16)

SUPRASELLAR CYST see under
CRANIOPHARYNGIOMA (C2)

SURAMIN (D3)
X NAPHURIDE (D3)

SURFACE-ACTIVE AGENTS (D13)
XU TRITONS (D13)
XU TWEENS (D13)
XU WETTING AGENTS (D13)
XR ANTI-INFECTIVE AGENTS, LOCAL (D3)

SURFACE TENSION (H)

SURGERY (E4, G2)

SURGERY, MILITARY see under MILITARY
MEDICINE (G2)

SURGERY, MILITARY see under WOUNDS AND
INJURIES (C14)

SURGERY, MINOR (E4)

SURGERY, OPERATIVE (E4)
see also related
OPERATING ROOMS (G3)
POSTOPERATIVE COMPLICATIONS (C16)

SURGERY, ORAL (E4, E6, G2)
XU TUBERPLASTY (E4, E6, G2)
XU VESTIBULOPLASTY (E4, E6, G2)

SURGERY, PLASTIC (E4)

SURGERY, VETERINARY see under VETERINARY
MEDICINE (G2)

SURGICAL DIATHERMY see under
ELECTROCOAGULATION (E2)

SURGICAL EQUIPMENT (E4, E5)

SURGICAL INSTRUMENTS (E4)

SURGICAL INSURANCE see under INSURANCE,
HEALTH (I)

SURGICAL WOUND DEHISCENCE
(C16)

SURGICAL WOUND INFECTION
(C1, C14, C16)

SURITAL see THIAMYLAL (D6)

SURVIVAL (I)
XR MILITARY MEDICINE (G2)

SUSPENSIONS (D13)

SUSTAINED-RELEASE PREPARATIONS see
DELAYED-ACTION PREPARATIONS (D13)

SUTURE TECHNICS (E4)

SUTURES (E4)

SV40 VIRUS (B4)
X SIMIAN VIRUS 40 (B4)
X VACUOLATING AGENT (B4)

SWALLOWING see DEGLUTITION (G1)

SWEAT (A12)
XU PERSPIRATION (A12)

SWEAT GLANDS (A1)

SWEATING (G1)
XU DYSHIDROSIS (G1)
XU HYPERHIDROSIS (G1)
XU PERSPIRATION (G1)
XR CYSTIC FIBROSIS (C4, C5, C16)

SWEETENING AGENTS (D13)
XU CYCLAMATE (D13)
XU SACCHARIN (D13)

SWIFT'S DISEASE see ACRODYNIA (C10)

SWIMMING (E2)

SWIMMING POOLS (G3)

SWINE (B2)
XU HOGS (B2)

SWINE DISEASES (C15)

SWINE ERYSIPELAS see under ERYSIPELOID
(C1, C15)

SYCOSIS (C1, C12)

SYMBIOSIS (G1)

SYMBIOTES (B3)

SYMBOLISM (F)

SYMPATHECTOMY (E4)

SYMPATHETIC GANGLIA see under GANGLIA,
AUTONOMIC (A8)

Part of a page from
Medical Subject Headings

A9 - SENSE ORGANS

SENSE ORGANS (NON MESH)	A9.			
EAR	A9.22.	A1.72.26.		
EAR, EXTERNAL	A9.22.16.	A1.72.39.		
EAR CANAL	A9.22.16.1			
EAR, MIDDLE	A9.22.32.			
EAR OSSICLES	A9.22.32.1			
EUSTACHIAN TUBE	A9.22.32.1			
TENSOR TYMPANI	A9.22.32.1	A2.72.62.		
TYMPANIC MEMBRANE	A9.22.32.1			
LABYRINTH	A9.22.48.			
COCHLEA	A9.22.48.1			
ORGAN OF CORTI	A9.22.48.1	A8.75.32.1		
SEMICIRCULAR CANALS	A9.22.48.1			
VESTIBULAR APPARATUS	A9.22.48.1			
EYE	A9.44.	A1.72.52.1		
ANTERIOR CHAMBER	A9.44.4.			
AQUEOUS HUMOR	A9.44.4.1	A12.13.12.		
CONJUNCTIVA	A9.44.9.			
CORNEA	A9.44.14.			
DESCEMET'S MEMBRANE	A9.44.14.1			
EYEBROWS	A9.44.19.	A1.72.52.1		
EYELASHES	A9.44.24.	A1.72.52.1		
EYELIDS	A9.44.29.	A1.72.52.1		
LACRIMAL APPARATUS	A9.44.34.			
LENS, CRYSTALLINE	A9.44.39.			
RETINA	A9.44.44.			
FUNDUS OCULI	A9.44.44.1			
MACULA LUTEA	A9.44.44.1			
RODS AND CONES	A9.44.44.1	A8.75.32.1		
SCLERA	A9.44.49.			
UVEA	A9.44.54.			
CHOROID	A9.44.54.1			
CILIARY BODY	A9.44.54.1			
IRIS	A9.44.54.1			
PUPIL	A9.44.54.1			
TRABECULAR MESHWORK (EYE)	A9.44.54.1			
VITREOUS BODY	A9.44.59.			
NASAL MUCOSA	A9.66.	A4.60.13.	A4.60.39.1	A10.88.48.
TASTE BUDS	A9.88.	A3.54.42.1		

Specimen page from tree structure

INDEX MEDICUS SUBHEADINGS - 1967

Alphabetical Listing

*abnormalities (A)
*administration & dosage (D)
*adverse effects (D,E,H)
*analysis (A,B,D)
*anatomy & histology (A,B)
*biosynthesis (D)
*blood (C,D,F)
*blood supply (A)
*cerebrospinal fluid (C,D,F)
*chemically induced (C,F)
*classification (B,C,D,E,F,G,H,I)
*complications (C,F)
*congenital (C)
*cytology (A,B)
*diagnosis (C,F)
*diagnostic use (D)
*drug effects (A,B,F,G)
*drug therapy (C,F)
*education (F,G,H,I)
*embryology (A,B)
*enzymology (A,B)
*etiology (C,F)
*familial & genetic (C,F)
*growth & development (A,B)
*history (C,D,E,F,G,H,I,J,K,L,M)
*immunology (B,C)
*injuries (A)

*innervation (A)
*instrumentation (E,F,G,H)
*isolation & purification (B)
*metabolism (A,B,C,D,F)
*microbiology (A,C)
*mortality (C,E,F)
*nursing (C,F)
*occurrence (C,F)
*pathogenicity (B)
*pathology (A,C,F)
*pharmacodynamics (D)
*physiology (A,B,D,G)
*physiopathology (A,C,F)
*poisoning (D)
*prevention & control (C,F)
*radiation effects (A,B,G)
*radiography (A,C)
*radiotherapy (C,F)
*rehabilitation (C,F)
*surgery (A,C,F)
*therapeutic use (D,H)
*therapy (C,F)
*toxicity (D)
*transplantation (A)
*urine (C,D,F)
*veterinary (C,E)

B. SUBTILIS AND BACTERIOPHAGE, TRANSDUCTION, GENETICS. 6=BACTERIOPHAGE.
5=BIOCHEMICAL GENETICS, GENES, CHROMOSOMES DNA, OR RNA. 4=GENETICS OR RA
DIATION GENETICS.

ABEL P, TRAUTNER TA
FORMATION OF AN ANIMAL VIRUS WITHIN A BACTERIUM.
Z VERERBUNGSL 95:66-72, 10 APR 64
*BACILLUS SUBTILIS, *BACTERIOPHAGE, *DNA, BACTERIAL, *DNA, VIRAL,
EXPERIMENTAL LAB STUDY (4), GENETIC CODE (3), *VACCINIA VIRUS

APOSHIAN HV
A DTMPASE FOUND AFTER INFECTION OF BACILLUS SUBTILIS WITH PHAGE
SP5C.
BIOCHEM BIOPHYS RES COMMUN 18:230-5, 18 JAN 65
*BACILLUS SUBTILIS, *BACTERIOPHAGE, EXPERIMENTAL LAB STUDY (4),
METABOLISM, *NUCLEOTIDASES, NUCLEOTIDES, PHOSPHORUS ISOTOPES,
RADIOMETRY

BARAT M, ANAGNOSTOPOULOS C, SCHNEIDER AM
LINKAGE RELATIONSHIPS OF GENES CONTROLLING ISOLEUCINE, VALINE, AND
LEUCINE BIOSYNTHESIS IN BACILLUS SUBTILIS.
J BACT 90:357-69, AUG 65
AMINO ACID METABOLISM, AMINOHYDROLASES, ARGININE, *BACILLUS
SUBTILIS, BACTERIOPHAGE, CHROMOSOME MAPPING (3), DNA, BACTERIAL,
EXPERIMENTAL LAB STUDY (4), *GENES, HYDRO-LYASES, *ISOLEUCINE,
*LEUCINE, LYSINE, METHIONINE, MUTATION, OXIDOREDUCTASES,
PHENYLALANINE, THREONINE, ULTRAVIOLET RAYS, *VALINE

BAYREUTHER KE, ROMIG WR
POLYOMA VIRUS: PRODUCTION IN BACILLUS SUBTILIS.
SCIENCE 146:778-9, 6 NOV 64
*BACILLUS SUBTILIS, *BACTERIOPHAGE, *DNA, VIRAL, EXPERIMENTAL
LAB STUDY (4), GENETIC CODE (3), *POLYOMA VIRUS

BOTT K, STRAUSS B
THE CARRIER STATE OF BACILLUS SUBTILIS INFECTED WITH THE
TRANSDUCING BACTERIOPHAGE SP10.
VIROLOGY 25:212-25, FEB 65
*BACILLUS SUBTILIS, BACTERIOLYSIS, *BACTERIOPHAGE, CULTURE MEDIA,
*DNA, BACTERIAL, *DNA, VIRAL, EXPERIMENTAL LAB STUDY (4), IMMUNE
SERUMS, NUCLEOTIDYL TRANSFERASES, RNA, BACTERIAL, SPORES (3)

Specimen page from a
"demand search bibliography"

TITLE

B. subtilis and bacteriophage or transduction.

11-14 ELEM. SYMBOL	17 EXPL.	18 LEVEL	19-31 CATE-GORY NUMBER	ELEMENTS	TALLY	11-14 ELEM. SYMBOL	17 EXPL.	18 LEVEL	19-31 CATE-GORY NUMBER	ELEMENTS	TALLY
M1				Bacillus subtilis							
M5				Bacteriophage							
M6				Bacteriophage typing							
M10				Genetics							
M11				Radiation genetics							
M12				Bacteriolysis							
M13				Biochemical genetics							
M14				Genes							
M15				Chromosome mapping							
M16				Chromosomes							
M17				Mutation							
M18				Mutagens							
M19				DNA, bacterial							
M20				RNA, bacterial							
M21				DNA, viral							
M22				RNA, viral							
M23				Genetic code							

ELEMENTS A, J, I, N, Y, X, AND SUMMATIONS

SECT. 7 3-	ELEM. SYMBOL 11-14	33-36	37-40	41-44	45-48	49-56	SECT. 7 3-	ELEM. SYMBOL 11-14	33-36	37-40	41-44	45-48	49-56
	M30	SUM	M5	M23									
	M31	SUM	M5	M6									
	M32	SUM	M12	M23									

REQUEST STATEMENTS

SECT. 7	ELEM. SYMBOL 9-10	11-80 COLUMNS	FOUND
4	1	M1 * M30.	
5	1	M31 + M32.	
6	1	M31	

BATCH NO.	DS MODULE	COMMENTS	RG MODULE	COMMENTS

PHS-4667-2 (4-67)

MEDLARS SEARCH REQUEST

DATE
26 Sept 66

1. INDIVIDUAL WHO WILL ACTUALLY USE THE BIBLIOGRAPHY

Merlin G. Otteman MD USNR MC

TITLE

LCDR

ORGANIZATION

U. S. Naval Hospital Bethesda, Md NNMC

ADDRESS

U. S. Naval Hospital, Bethesda, Md. Dept. of Surgery

2. REQUEST SUBMITTED BY *(If different from above):*

Mary A. Dixon, Librarian, Edward Rhodes Stitt Library

3. DETAILED STATEMENT OF REQUIREMENTS *(Please be as specific as possible as to purpose, scope, definitions, limitations, etc.)*

A particularly long period of intestinal atony or ileus has been noted in patients following vagotomy and pyloroplasty in association with liver disease, chronic namely cirrhosis.

Am interested if there are any references noting this association.

4. TITLE OF PROJECT FOR WHICH SEARCH IS REQUESTED *(Omit if not applicable):*

5. MEDICAL TERMS PERTINENT TO REQUEST *(Optional).* DESCRIPTIONS CURRENTLY USED IN MEDLARS ARE PUBLISHED IN *Medical Subject Headings,* Part 2 of the JANUARY Issue of <u>INDEX MEDICUS.</u>

Vagotomy
Intestinal Ileus, Postoperative
Liver cirrhosis
Liver Diseases

6. LIMIT LANGUAGES TO	7. PRINT SPECIFICATIONS:
[X] ACCEPT ALL [ ] ENGLISH [ ] FOREIGN *(Specify):*	[ ] 3" X 5" CARDS [X] PAPER

Appendix 2

Sample of covering letter used to transmit random sample of articles.

Copy of Notes on Form for Document Evaluation.

Form to evaluate timeliness of the MEDLARS service.

Sample of completed Revised Statement of MEDLARS Request.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

8600 ROCKVILLE PIKE
BETHESDA, MD., 20014

NATIONAL LIBRARY OF MEDICINE

REFER TO: NLM-ISD

October 11, 1966

Richard G. Buckles
Guest Scientist
Naval Medical Research Institute
National Naval Medical Center
Bethesda, Md. 20014

Dear Mr. Buckles

Enclosed you will find a set of journal articles of possible relevance
to your recent request relating to: decompression sickness.

This set is composed largely of articles retrieved in the MEDLARS search
for your request. However, certain articles found by supplementary
searches may also have been included. Please carefully review the articles
and complete for each the attached Form for Document Evaluation. You may,
of course, keep the articles themselves for your own file. Please read
the brief Notes on Form for Document Evaluation before completing these
forms.

When you have reviewed all of the articles delivered to you, would you
please give your evaluation of the timeliness of the MEDLARS service, and,
if possible, a revised statement of your request, returning these along
with your completed evaluation forms.

We are indeed most grateful for your assistance in the conduct of this
important study, which has as its object the improvement of our literature
searching service to the biomedical community.

Sincerely,

F. Wilfrid Lancaster
Information Systems Evaluator
Information Systems Division
National Library of Medicine

Enclosures

Notes on Form for Document Evaluation

In <u>Item 1</u> on the <u>Form</u>, we are interested in discovering whether or not you were aware of the existence of the article before obtaining the MEDLARS search results. If you were, how did you become aware of its existence? It may be, for example, that the paper was sent to you by the author himself, that you regularly scan the journal in which it was published, that it was drawn to your attention by a colleague, or that it was found through a prior search of the literature. We would like to know what particular channel brought this document to your attention.

<u>Item 2</u> asks you to grade each document, <u>in relation to the information need</u> <u>that prompted your request to MEDLARS</u>, on the scale "of major value", "of minor value", "of no value", and to indicate reasons for making these evaluations. If you were able to name a number of relevant articles prior to the MEDLARS search, please make your present assessments in line with your earlier gradings (<u>see attached Record of Known Relevant Documents</u>). A "major value" article in this sample should be roughly equivalent in value to a "major value" article named in advance of search. Likewise for "minor value" documents.

It is particularly important that we obtain precise reasons for your judging an article "of no value". If you discover, for example, that the article does not relate to the subject of your information need, please indicate in what way the subject matter differs from that desired. If the mode of treatment differs from that needed (e.g. clinical rather than experimental or vice versa) please so indicate. In other cases you may doubt the value or validity of the work described. Whatever your reason for determining that an article is "of no value", please record this under 2(c).

2(d) should be checked in those cases in which you are unable to make a value judgment on the article, in relation to your information need, because of lack of familiarity with the language in which it is written. In these cases, we are interested in knowing whether or not you intend to take any steps (such as consulting an English abstract or having a complete or partial translation made) to learn the contents of the article. If you do not intend to go further with this article, we should like to know why. Is it that you doubt the value of work carried out in that particular field within the country concerned? Or do you feel that you have sufficient material on your topic from other sources to make a translation of this article unnecessary? You will probably want to review the entire set of citations retrieved before answering this question.

NATIONAL LIBRARY OF MEDICINE
Bethesda, Maryland

MEDLARS EVALUATION PROJECT

Timeliness of MEDLARS Service

Did delay in MEDLARS response to your request significantly reduce the

value of the search?

Yes   ☐   In what way? (Please explain)

No   ☐

REVISED STATEMENT OF MEDLARS REQUEST

    You have now had the opportunity to examine a sample of articles retrieved in response to your recent MEDLARS request. It would be very helpful in our evaluation if, having seen this sample, you would now re-phrase more precisely the wording of your original request:

o many clinical papers as a result of the original request. ossibly I should have added the words "experimental lab tudies" or a number of close defined searches might ave been better, such as

- *Lens development and biosynthesis of protein, RNA and DNA*
- *Experimental lab studies on eye ~~grow~~ embryology, growth and development.*

    If you do not feel that the original wording needs changing, please check this box:

☐

    Thank you for your continued cooperation.

F. Wilfrid Lancaster
Information Systems Evaluator
Information Systems Division
National Library of Medicine

Lens capsule and basement membranes (embryology)

Appendix 3

Sample of a completed "analysis worksheet" as
prepared during the analysis of Search #539. Similar
worksheets were prepared during the analysis of each
of the 302 searches.

SEARCH # 539

RECALL

	MAJOR	MINOR	TOTAL	MAJOR RECALL	MINOR RECALL	TOTAL RECALL
1. KNOWN BY REQUESTER		11	11		$\frac{8}{11} = 72.7\%$	$\frac{8}{11} = 72.7\%$
2. KNOWN BY REQUESTER NOT IM (INCLUDED IN 1.)		3	3		$\frac{2}{3} = 66.7\%$	$\frac{2}{3} = 66.7\%$
3. FOUND BY NLM, JUDGED RELEVANT						
4. 2 and 3 COMBINED				As 2.		
5. GRAND TOTAL		11	11		$\frac{8}{11} = 72.7\%$	$\frac{8}{11} = 72.7\%$

Recall for Section 5:

$$\frac{8}{11} = 72.7\%$$

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SEARCH # 539

PRECISION

TOTAL RETRIEVED	EXPECTED	SAMPLE	ASSESSED	RELEVANT	PRECISION RATIO	MAJOR ONLY
52	51-200	19	18	11	$\frac{11}{18} = 61.1\%$	$\frac{0}{18} = 0$
Section 5: 43					Section 5 $\frac{10}{15} = 66.7\%$	

	MAJOR	MINOR	NO VALUE	CANNOT ASSESS
Known Prior to MEDLARS Search		8		
Not Known Prior to MEDLARS Search		3	7	1

REQUEST   *Auditory monitoring of speech using the technique of delayed auditory feedback.*

SEARCH FORMULATION

```
┌ ACCOUSTICS
│ AUDIOMETRY
│ AUDITORY PERCEPTION
│ HEARING
│ HEARING TESTS
│ NOISE
│ PHONETICS
│ SOUND
│ SPEECH
│ SPEECH DISORDERS
│ STUTTERING
│ TAPE RECORDING
│ VOICE
│ VOICE TRAINING
│ SPEECH THERAPY
└ HEARING DISORDERS
```

AND
```
┌ CHRONAXY
│ CYBERNETICS
│ FEEDBACK
│
│ ┌ MODELS      ┐       ┌ TIME
│ │ NEURAL      │  AND  │ REACTION
│ └ ANALYZERS   ┘       └ TIME
```

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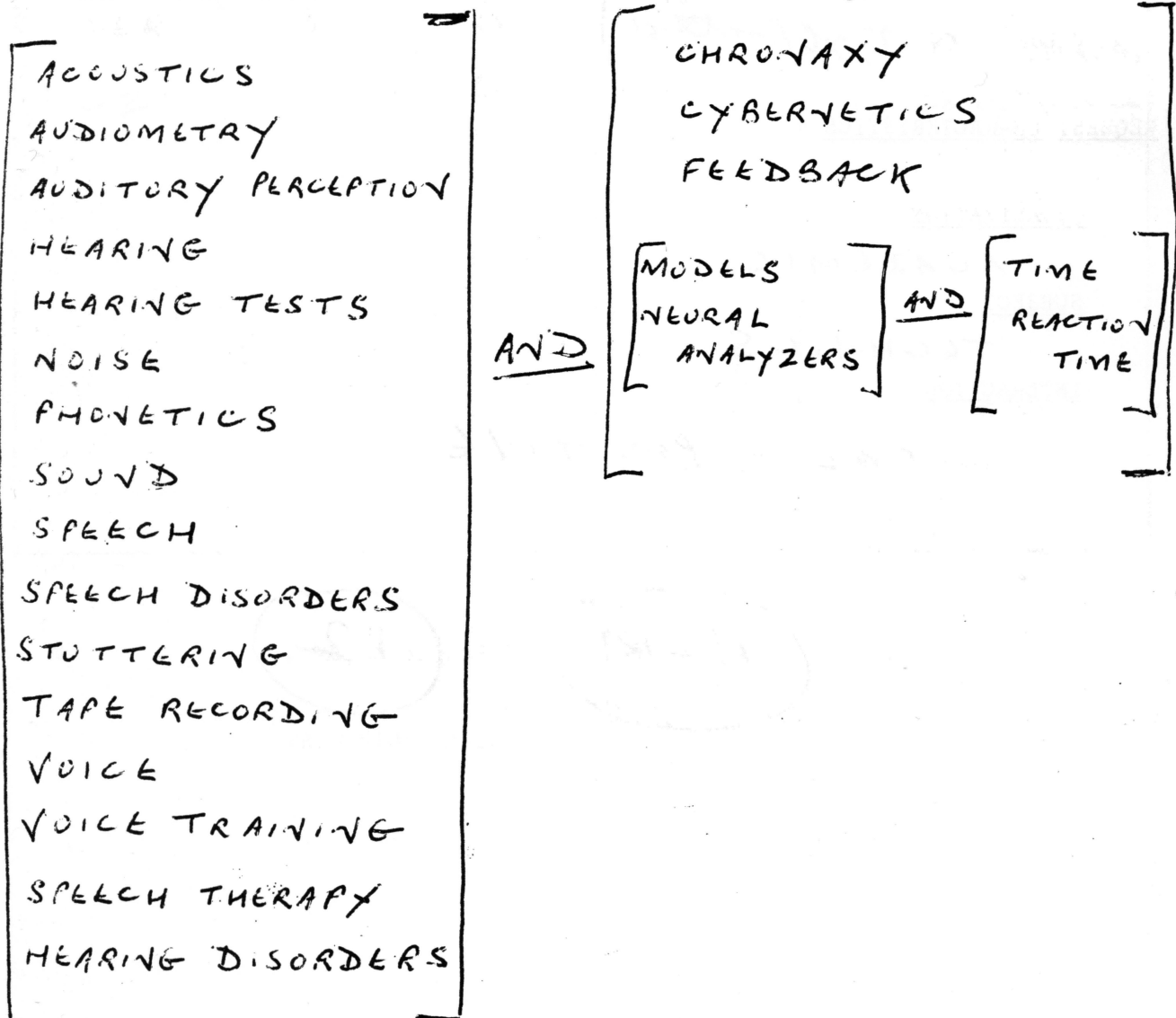
TIME FACTORS

    SEARCH REQUESTED: 3/22

    FORMULATED   4/5

    DS MODULE: 4/7

    REFORMULATED:

    DS MODULE:

    RG MODULE: 4/7

    DELIVERED: 4/10

    VALUE: Not affected

No evidence of reformulation

REQUEST CHARACTERISTICS

ORGANIZATION

    ACADEMIC

SUBJECT

    TECHNICS

INTERACTION

    LOCAL — POSITIVE

NLM   12

FOREIGN LANGUAGE MATERIAL

LANGUAGE RESTRICTION: *None*

TOTAL SAMPLE OF 19:

    13 ENGLISH
    6 FOREIGN

LANGUAGE	NUMBER OF ITEMS	ASSESSED	RELEVANT	ACTION ON UNASSESSED ITEMS
GER	5	5	2	None: unlikely to be of value
CZ	1	0		

FOREIGN ASSESSED: $\dfrac{5}{6}$

PRECISION RATIO: $\dfrac{2}{5}$

PREVIOUS AWARENESS

PREVIOUSLY AWARE OF _8_ OF THE $\overset{19}{\wedge}$ ITEMS

BECAME AWARE BECAUSE:

Found in Index Medicus : 8

	RETRIEVED AND OF VALUE	KNOWN PREVIOUSLY	NOVELTY RATIO
MAJOR			
MINOR	11	8	$\frac{3}{11}$
TOTAL	11	8	$\frac{3}{11}$

INDEXING EXHAUSTIVITY

(recognizing <u>IM</u> terms only)

> RECALL   ⟶
>
> PRECISION   ⟶

EFFECT OF REVISION OF SEARCH FORMULATION

> RECALL   ⟶
>
> PRECISION   ⟶

4-5-6

EFFECT OF ~~Ra-Rb-Rc~~ AS RANKING DEVICE

Section 5

	Total Retrieved	Recall Ratio	Precision Ratio
Complete Search	52	$\frac{8}{11} = 72.7\%$	$\frac{11}{18} = 61.1\%$
~~Rb~~ only	43	$\frac{8}{11} = 72.7\%$	$\frac{10}{15} = 66.7\%$
~~Rc only~~			
Rb and ~~Rc~~ Combined			

<u>COVERAGE</u>

Of the ¹⁵ articles, within the time span of MEDLARS, named by the requester,
11 ∧ were shown to be in the data base.

Missing items:

Psychonomic Science (3 articles):
journal not indexed

J Speech Hear Res — 1966
issue — not indexed into
base as of april 1967

SEARCH NO. 539   REQUESTER: FARGO

NUMBER	JOURNAL	DATE	LANGUAGE	SET	KNOWN BEFORE	DECISION
539/1	Arch Ohr Nas Kehlkopfheilk	12/63	GER	4	N	N V
539/2	ditto	11/63	GER	4	N	N V
539/3	Csk Otolaryng	4/64	CZ	4	N	U
539/4	Percept Motor Skills	10/65		5	N	MINOR
539/5	ditto	8/64		5	Y	MINOR
539/6	Mschr Ohrenheilk	7/64	GER	5	N	N V
539/7	J Psychol	?/65		5	Y	MINOR
539/8	J Laryng	7/64		5	N	N V
539/9	IEEE Trans Biomed Electronics	1-4/64		5	N	N V
539/10	HNO	7/64	GER	5	Y	MINOR
539/11	Folia Phoniat (Basel)	66		5	N	MINOR
539/12	Psychol Rev	7/65		5	N	N V
539/13	Quart J Exp Psychol	5/65		5	Y	MINOR
539/14	Amer J Ment Defic	3/65		5	N	N V
539/15	Activ Nerv Sup (Praha)	65		5	Y	MINOR
539/16	ditto	65		5	Y	MINOR
539/17	J Speech Hearing Dis	8/64		5	Y	MINOR
539/18	Fortschr Biozybern	64		4	N	MINOR
539/19	Z Psychol	1/65	GER	5	Y	MINOR

*Indicates item of some interest in relation to some other need or project.

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REASONS FOR NONRETRIEVAL OF WANTED ITEMS

(3 minor value)

CAUSE	NUMBER OF MISSED RETRIEVALS AFFECTED
Indexing	
Lack of specificity	1
Omitted important term	1
Computer processing	1

EXPLANATION

Article on effect of drugs on performance under delayed auditory feedback — deals with verbal, arithmetic and color tests — but indexed only under the general PSYCHOLOGICAL TESTS (non-depth journal : 4 terms assigned).

Article on "computer systems control of delayed auditory feedback": indexed under HEARING and SPEECH but not under FEEDBACK (term appears in title).

The third item matches the search formulation exactly — should have been retrieved on FEEDBACK and [SPEECH or HEARING] . Failure must be due to some aspect of machine processing

<u>CAUSE</u>	<u>NUMBER OF UNWANTED</u> <u>RETRIEVALS AFFECTED</u>
Index language Lack of specificity	7

<u>EXPLANATION</u>

It is not possible to express precisely the notion of "delayed auditory feedback". FEEDBACK and <u>HEARING</u> retrieved five articles on feedback mechanisms in the physiology of hearing (i.e., the "acoustic reflex feedback loop")

Moreover, the term FEEDBACK was not available in 1964. Presumably for this earlier material, the searcher used the term CYBERNETICS. CYBERNETICS <u>and</u> HEARING TESTS
                                                v
                                             HEARING

retrieved two relevant articles: hearing in information theory; binaural hearing during noise.

Appendix 4

Complete set of recall and precision ratios
for the 302 searches.

COMPLETE SET OF RECALL AND PRECISION RATIOS FOR THE 302 SEARCHES

#	Total Retrieved	PRECISION RATIO Overall	PRECISION RATIO Major Value	RECALL RATIO TOTAL Overall	RECALL RATIO TOTAL Major Value	RECALL RATIO BREAKDOWN Known by Requester	RECALL RATIO BREAKDOWN Found Manually	RECALL RATIO BREAKDOWN "Best Set" Overall	RECALL RATIO BREAKDOWN "Best Set" Major Value
1	344	19/24= 79.2%	6/24= 25%	15/17= 88.2%	5/7= 71.4%	As Total		As Total	As Total
2	11	8/9= 88.9%	2/9= 22.2%	3/4= 75%	2/3= 66.7%	As Total		2/2= 100%	1/1= 100%
3	209	17/22= 77.3%	11/22= 50%	11/12= 91.7%	9/9= 100%	4/4= 100%	7/8= 87.5%	As Total	As Total
4	32	18/25= 72%	11/25= 44%	1/4= 25%	1/3= 33.3%	0/1= 0*	As Total*	As Total	As Total
5	22	17/19= 89.5%	12/19= 63.2%	2/8= 25%	2/7= 28.6%	As Total		As Total	As Total
6	30	9/29= 31%	5/29= 17.2%	5/7= 71.4%	5/6= 83.3%	4/4= 100%	2/4= 50%	As Total	As Total
7	42	5/22= 22.7%	2/22= 9.1%	5/7= 71.4%	3/4= 75%	As Total		As Total	As Total
8	300 (1235)**	1/18= 5.6%	0/18= 0	0/15= 0		As Total		As Total	As Total
9	860	17/23= 73.9%	7/23= 30.4%	25/25= 100%	12/12= 100%	20/20= 100%	5/5= 100%	5/5= 100%	1/1= 100%
10	301	15/24= 62.5%	5/24= 20.8%	3/3= 100%	3/3= 100%	As Total	5/5= 100%	As Total	As Total

* The recall base component "Known by the requester" and the component found manually need not be mutually exclusive (i.e., they may overlap). In search #4, for example, the only item known by the requester was also among the four found independently by manual search.

** Where the "machine search" result (i.e., actual number of citations matching the search formulation) is different from the number of citations actually submitted to the requester (because of post-editing of printout or the decision to arbitrarily set a limit on the number of citations to be printed), the former figure is presented in parentheses in this column.

#	Total Retrieved	PRECISION RATIO		RECALL RATIO TOTAL		RECALL RATIO BREAKDOWN			
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	"Best Set" Overall	"Best Set" Major Value
11	1167 (1888)	0/26= 0	0/26= 0	1/2= 50%	1/2= 50%	1/1= 100%	0/1= 0	As Total	As Total
13	70	14/21= 66.7%	6/21= 28.6%	7/7= 100%	6/6= 100%	2/2= 100%	5/5= 100%	As Total	As Total
14	17	6/12= 50%	3/12= 25%	1/3= 33.3%	1/3= 33.3%	1/2= 50%	1/2= 50%	1/2= 50%	1/2= 50%
16	198	17/25= 68%	5/25= 20%	11/16= 68.7%	11/16= 68.7%	As Total		As Total	As Total
17	216	12/29= 41.4%	7/29= 24.1%	0/3= 0		As Total		As Total	
18	43	7/11= 63.6%	2/11= 18.2%	0/4= 0	0/4= 0	As Total	0/1= 0	As Total	As Total
19	40	5/28= 17.9%	3/28= 10.7%	2/4= 50%		None Supplied	As Total	As Total	
20	357	8/21= 38.1%	3/21= 14.3%	8/14= 57.1%	6/11= 54.5%	As Total		5/10= 50%	4/8= 50%
22	500 (775)	4/22= 18.2%	2/22= 9.1%	4/6= 66.7%	4/5= 80%	2/4= 50%	2/2= 100%	3/5= 60%	3/4= 75%
24	585	4/17= 23.5%	0/17= 0	3/5= 60%	1/2= 50%	1/1= 100%	2/4= 50%	As Total	As Total
25	61	7/22= 31.8%	4/22= 18.2%	3/4= 75%	3/3= 100%	0/1= 0	3/3= 100%	As Total	As Total
27	62	17/25= 68%	10/25= 40%	4/14= 28.6%	4/9= 44.4%	4/6= 66.7%	0/8= 0	1/9= 11.1%	1/6= 16.7%
29	21	16/19= 84.2%	9/19= 47.4%	5/7= 71.4%	3/5= 60%	2/3= 66.7%	3/4= 75%	4/5= 80%	2/3= 66.7%
30	57	4/17= 23.5%	1/17= 5.9%	0/1= 0	0/1= 0	None Known in Base	As Total	As Total	As Total
32	36	21/29= 72.4%	8/29= 27.6%	2/6= 33.3%	2/5= 40%	0/2= 0	2/4= 50%	2/5= 40%	2/4= 50%
33	37	20/24= 83.3%	16/24= 66.7%	3/6= 50%	3/3= 100%	2/4= 50%	2/3= 66.7%	2/3= 66.7%	2/2= 100%
34	285	13/27= 48.1%	1/27= 3.7%	0/8= 0	0/7= 0	0/3= 0	0/5= 0	0/5= 0	0/4= 0
36	53	13/18= 72.2%	6/18= 33.3%	6/7= 85.7%	6/6= 100%	As Total		As Total	As Total

| # | Total Retrieved | PRECISION RATIO | | RECALL RATIO — TOTAL | | RECALL RATIO BREAKDOWN | | | |
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	"Best Set" Overall	"Best Set" Major Value
38	492	13/20= 65%	7/20= 35%	2/4= 50%	2/2= 100%	None Supplied	As Total	As Total	As Total
39	42	15/27= 55.6%	3/27= 11.1%	2/4= 50%	1/1= 100%	1/1= 100%	1/3= 33.3%	As Total	As Total
40	22	5/17= 29.4%	2/17= 11.8%	1/6= 16.7%	1/6= 16.7%	0/3= 0	1/4= 25%	1/5= 20%	1/5= 20%
42	92	15/25= 60%	5/25= 20%	6/7= 85.7%	4/5= 80%	1/1= 100%	5/6= 83.3%	As Total	As Total
43	173	14/21= 66.7%	8/21= 38.1%	2/4= 50%	2/4= 50%	2/3= 66.7%	0/1= 0	As Total	As Total
44	6	4/4= 100%	0/4= 0	0/9= 0	0/4= 0	0/7= 0	0/3= 0	0/3= 0	0/1= 0
45	533	3/17= 17.6%	1/17= 5.9%	5/6= 83.3%	5/6= 83.3%	4/4= 100%	1/2= 50%	As Total	As Total
46	339 (690)	2/10= 20%	0/10= 0	0/2= 0	0/2= 0	0/1= 0	0/1= 0	As Total	As Total
47	79	4/29= 13.8%	4/29= 13.8%	4/6= 66.7%	4/6= 66.7%	1/1= 100%	3/5= 60%	As Total	As Total
48	139	17/24= 70.8%	3/24= 12.5%	5/13= 38.5%	2/5= 40%	0/6= 0	5/7= 71.4%	As Total	As Total
49	2	0/2= 0	0/2= 0	0/1= 0		0/1= 0		As Total	
51	25	7/13= 53.8%	3/13= 23.1%	0/2= 0		None Known in Base	As Total	As Total	
52	5	3/5= 60%	1/5= 20%	2/2= 100%	1/1= 100%	1/1= 100%	1/1= 100%	As Total	As Total
53	764	10/27= 37%	1/27= 3.7%	5/5= 100%		None Supplied	As Total	As Total	As Total
55	235	14/25= 56%	3/25= 12%	4/4= 100%	1/1= 100%	1/1= 100%	3/3= 100%	As Total	As Total
56	0	0/0= 100%	0/0= 100%	0/0= 100%	0/0= 100%	None Known	None Found	As Total	As Total
57	45	17/26= 65.4%	6/26= 23.1%	4/7= 57.1%	4/7= 57.1%	2/3= 66.7%	4/6= 66.7%	As Total	As Total

| # | Total Retrieved | PRECISION RATIO | | RECALL RATIO TOTAL | | RECALL RATIO BREAKDOWN | | "Best Set" | |
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	Overall	Major Value
59	256	16/22= 72.7%	11/22= 50%	2/5= 40%	1/2= 50%	None Known in Base	As Total	As Total	As Total
60	286	12/27= 44.4%	5/27= 18.5%	12/15= 80%	9/12= 75%	6/9= 66.7%	6/7= 85.7%	As Total	As Total
61	213	7/19= 36.8%	3/19= 15.8%	4/8= 50%	4/8= 50%	As Total		As Total	As Total
62	22	17/20= 85%	10/20= 50%	1/1= 100%	1/1= 100%	None Supplied	As Total	As Total	As Total
63	240	13/24= 54.2%	10/24= 41.7%	3/5= 60%	3/5= 60%	None Supplied	As Total	As Total	As Total
64	156	14/27= 51.9%	4/27= 14.8%	10/13= 76.9%	7/9= 77.8%	As Total		As Total	As Total
65	224	5/28= 17.9%	1/28= 3.6%	5/6= 83.3%	3/3= 100%	3/4= 75%	2/2= 100%	As Total	As Total
67	11	2/9= 22.2%	2/9= 22.2%	2/2= 100%	2/2= 100%	1/1= 100%	1/1= 100%	As Total	As Total
68	29	12/28= 42.9%	4/28= 14.3%	6/9= 66.7%	2/3= 66.7%	1/2= 50%	5/8= 62.5%	As Total	As Total
70	89	11/23= 47.8%	5/23= 21.7%	1/3= 33.3%	1/2= 50%	0/1= 0	1/2= 50%	1/2= 50%	1/1= 100%
71	283	4/8= 50%	3/8= 37.5%	12/14= 85.7%	10/12= 83.3%	5/6= 83.3%	7/8= 87.5%	As Total	As Total
72	264 (1398)	17/29= 58.6%	9/29= 31%	9/9= 100%	2/2= 100%	1/1= 100%	8/8= 100%	As Total	As Total
73	140	8/19= 42.1%	8/19= 42.1%	6/7= 85.7%	3/4= 75%	3/3=100%	3/4= 75%	As Total	As Total
76	104	8/23= 34.8%	0/23= 0	2/8= 25%	0/2= 0	As Total		2/6= 33.3%	0/1= 0
77	294	11/25= 44%	4/25= 16%	10/15= 66.7%	4/8= 50%	3/6= 50%	7/9= 77.8%	7/9= 77.8%	4/6= 66.7%
78	529	10/21= 47.6%	6/21= 28.6%	10/19= 52.6%	5/11= 45.5%	7/15= 46.7%	3/4= 75%	6/8= 75%	3/3= 100%
79	17	11/17= 64.7%	5/17= 29.4%	3/6= 50%	2/4= 50%	2/5= 40%	1/1= 100%	As Total	As Total
80	115	13/25= 52%	7/25= 28%	1/4= 25%	1/3= 33.3%	None Supplied	As Total	As Total	As Total

#	Total Retrieved	PRECISION RATIO Overall	PRECISION RATIO Major Value	RECALL RATIO TOTAL Overall	RECALL RATIO TOTAL Major Value	Known by Requester	RECALL RATIO BREAKDOWN Found Manually	"Best Set" Overall	"Best Set" Major Value
82	315	10/27= 37%	5/27= 18.5%	13/20= 65%	12/19= 63.2%	9/16= 56.2%	6/6= 100%	6/6= 100%	5/5= 100%
83	23	1/15= 6.7%	1/15= 6.7%	0/1= 0		None Supplied	As Total	As Total	
84	437	5/22= 22.7%	2/22= 9.1%	1/1= 100%	1/1= 100%	None Supplied	As Total	As Total	As Total
90	38	21/24= 87.5%	13/24= 54.2%	5/5= 100%	5/5= 100%	1/1= 100%	4/4= 100%	4/4= 100%	4/4= 100%
91	777	6/27= 22.2%	0/27= 0	2/4= 50%		None Known in Base	As Total	As Total	
92	500 (1147)	17/23= 73.9%	7/23= 30.4%	7/12= 58.3%	4/8= 50%	2/5= 40%	5/8= 62.5%	5/10= 50%	2/4= 50%
93	6	6/6= 100%	3/6= 50%	0/4= 0	0/1= 0	As Total		As Total	As Total
94	17	5/14= 35.7%	3/14= 21.4%	2/4= 50%	2/3= 66.7%	None Supplied	As Total	As Total	As Total
95	46	10/23= 43.5%	9/23= 39.1%	6/8= 75%	5/5= 100%	1/3= 33.3%	5/5= 100%	As Total	As Total
96	65	7/27= 25.9%	4/27= 14.8%	1/4= 25%	0/1= 0	1/1= 100%	0/3= 0	0/3= 0	0/1= 0
97	19	8/13= 61.5%	5/13= 38.5%	4/6= 66.7%	4/6= 66.7%	As Total		As Total	As Total
98	875	13/18= 72.2%	10/18= 55.6%	2/5= 40%	2/5= 40%	As Total		As Total	As Total
99	171	11/17= 64.7%	2/17= 11.8%	4/5= 80%	2/3= 66.7%	1/1= 100%	3/4= 75%	As Total	As Total
100	223	10/22= 45.5%	4/22= 18.2%	9/18= 50%	4/6= 66.7%	4/10= 40%	5/8= 62.5%	As Total	As Total
101	459	1/28= 3.6%	0/28= 0	3/11= 27.3%	1/4= 25%	As Total		As Total	As Total
102	99	2/25= 8%	1/25= 4%	6/11= 54.5%	2/6= 33.3%	2/6= 33.3%	4/5= 80%	As Total	As Total
103	87	6/23= 26.1%	1/23= 4.3%	2/3= 66.7%	2/2= 100%	1/1= 100%	2/3= 66.7%	As Total	As Total
104	16	2/15= 13.3%	1/15= 6.7%	1/1= 100%		None Known	As Total	As Total	As Total

Table: PRECISION RATIO, RECALL RATIO (TOTAL), and RECALL RATIO BREAKDOWN

#	Total Retrieved	PRECISION RATIO Overall	PRECISION RATIO Major Value	RECALL RATIO TOTAL Overall	RECALL RATIO TOTAL Major Value	Known by Requester	RECALL RATIO BREAKDOWN Found Manually	"Best Set" Overall	"Best Set" Major Value
105	12	0/10= 0	0/10= 0	0/2= 0	0/2= 0	None Known	As Total	As Total	As Total
106	260	14/22= 63.6%	9/22= 40.9%	4/6= 66.7%	4/5= 80%	None Supplied	As Total	As Total	As Total
107	15	5/13= 38.5%	0/13= 0	1/1= 100%	1/1= 100%	None Supplied	As Total	As Total	As Total
108	471	17/22= 77.3%	10/22= 45.5%	5/5= 100%	4/4= 100%	None Supplied	As Total	As Total	As Total
110	245	13/17= 76.5%	5/17= 29.4%	17/18= 94.4%	7/7= 100%	15/16= 93.7%	5/5= 100%	11/12= 91.7%	4/4= 100%
113	28	17/26= 65.4%	6/26= 23.1%	4/7= 57.1%	01= 0	3/5= 60%	2/3= 66.7%	2/3= 66.7%	
114	63	6/25= 24%	0/25= 0	1/2= 50%	1/2= 50%	None Known	As Total	As Total	As Total
115	0	0/0= 0	0/0= 0	0/4= 0	0/2= 0	None Supplied	As Total	As Total	As Total
116	505	22/25= 88%	12/25= 48%	8/9= 88.9%	7/8= 87.5%	3/4= 75%	5/5= 100%	5/5= 100%	4/4= 100%
117	404	11/22= 50%	5/22= 22.7%	3/5= 60%	3/3= 100%	None Known in Base	As Total	As Total	As Total
118	500 (775)	5/26= 19.2%	4/26= 15.4%	2/4= 50%	2/4= 50%	As Total	As Total	As Total	As Total
120	340	16/23= 69.6%	1/23= 4.3%	2/3= 66.7%	2/2= 100%	None Supplied	As Total	As Total	As Total
121	313	11/29= 37.9%	3/29= 10.3%	19/27= 70.4%	16/20= 80%	14/22= 63.6%	5/5= 100%	As Total	As Total
122	70	22/22= 100%	11/22= 50%	6/6= 100%	5/5= 100%	1/1= 100%	6/6= 100%	As Total	As Total
123	33	12/23= 52.2%	4/23= 17.4%	2/9= 22.2%	0/4= 0	2/4= 50%	0/6= 0	1/8= 12.5%	0/4= 0
124	378	8/25= 32%	2/25= 8%	6/6= 100%	4/4= 100%	3/3= 100%	4/4= 100%	5/5= 100%	3/3= 100%
125	53	19/24= 79.2%	13/24= 54.2%	3/7= 42.9%	2/3= 66.7%	2/4= 50%	1/3= 33.3%	5/5= 100%	As Total
126	125	5/23= 21.7%	2/23= 8.7%	2/4= 50%	2/3= 66.7%	None Supplied	As Total	As Total	As Total

#	Total Retrieved	PRECISION RATIO Overall	PRECISION RATIO Major Value	RECALL RATIO TOTAL Overall	RECALL RATIO TOTAL Major Value	RECALL RATIO BREAKDOWN Known by Requester	RECALL RATIO BREAKDOWN Found Manually	RECALL RATIO BREAKDOWN "Best Set" Overall	RECALL RATIO BREAKDOWN "Best Set" Major Value
128	13	10/12= 83.3%	6/12= 50%	1/6= 16.7%	1/5= 20%	As Total		As Total	As Total
132	103	8/14= 57.1%	6/14= 42.9%	1/3= 33.3%	1/2= 50%	None Supplied	As Total	As Total	As Total
133	285	3/22= 13.6%	1/22= 4.5%	3/6= 50%	3/3= 100%	2/2= 100%	2/5= 40%	As Total	As Total
134	24	18/18= 100%	9/18= 50%	4/7= 57.1%	4/6= 66.7%	2/3= 66.7%	2/4= 50%	As Total	As Total
136	500 (705)	4/17= 23.5%	1/17= 5.9%	2/3= 66.7%	2/2= 100%	1/2= 50%	2/2= 100%	As Total	As Total
137	173	12/13= 92.3%	0/13= 0	4/5= 80%	1/1= 100%	None Supplied	As Total	As Total	As Total
147	19	8/16= 50%	2/16= 12.5%	1/4= 25%		None Known in Base	As Total	As Total	
148	500 (526)	4/27= 14.8%	0/27= 0	4/5= 80%	1/1= 100%	1/1= 100%	3/4= 75%	3/4= 75%	
149	79	8/25= 32%	4/25= 16%	9/9= 100%	8/8= 100%	6/6= 100%	8/8= 100%	As Total	As Total
151	17	5/11= 45.5%	1/11= 9.1%	No Recall Base		None Known	None Found		
152	103	12/17= 70.6%	7/17= 41.2%	3/11= 27.3%	3/11= 27.3%	1/2= 50%	2/9= 22.2%	2/9= 22.2%	2/9= 22.2%
153	539	11/23= 47.8%	0/23= 0	10/14= 71.4%	9/11= 81.8%	8/10= 80%	3/5= 60%	3/5= 60%	3/4= 75%
155	250	13/23= 56.5%	6/23= 26.1%	6/12= 50%	3/7= 42.9%	3/7= 42.9%	4/6= 66.7%	4/6= 66.7%	2/4= 50%
157	53	4/18= 22.2%	1/18= 5.6%	1/2= 50%	1/1= 100%	1/1= 100%	0/1= 0	0/1= 0	
158	9	9/9= 100%	7/9= 77.8%	1/2= 50%	1/2= 50%	None Supplied	As Total	As Total	As Total
159	31	22/29= 75.9%	9/29= 31%	2/3= 66.7%	1/1= 100%	None Supplied	As Total	As Total	As Total
160	6	5/6= 83.3%	4/6= 66.7%	1/9= 11.1%	1/6= 16.7%	None Supplied	As Total	As Total	As Total

| # | Total Retrieved | PRECISION RATIO | | RECALL RATIO TOTAL | | RECALL RATIO BREAKDOWN | | "Best Set" | |
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	Overall	Major Value
162	14	7/12= 58.3%	5/12= 41.7%	2/10= 20%	1/5= 20%	2/5= 40%	0/5= 0	0/6= 0	0/4= 0
163	506	26/27= 96.3%	22/27= 81.5%	17/17= 100%	17/17= 100%	As Total		As Total	As Total
165	17	5/12= 41.7%	1/12= 8.3%	0/8= 0	0/2= 0	0/2= 0	0/6= 0	As Total	As Total
166	13	7/9= 77.8%	4/9= 44.4%	0/5= 0	0/5= 0	None Supplied	As Total	As Total	As Total
169	1	0/1= 0	0/1= 0	0/0= 100%	0/0= 100%	None Known in Base	None Found	As Total	As Total
171	33	33/33=. 100%	29/33= 87.9%	8/14= 57.1%	8/9= 88.9%	0/5= 0	8/9= 88.9%	8/9= 88.9%	8/9= 88.9%
172	6	3/5= 60%	1/5= 20%	0/3= 0	0/2= 0	None Supplied	As Total	As Total	As Total
173	96	8/15= 53.3%	0/15= 0	2/3= 66.7%	1/1= 100%	None Supplied	As Total	As Total	As Total
174	103	10/20= 50%	2/20= 10%	3/11= 27.3%	1/1= 100%	2/7= 28.6%	1/4= 25%	1/4= 25%	1/1= 100%
175	17	9/12= 75%	6/12= 50%	2/2= 100%	2/2= 100%	None Known	As Total	As Total	As Total
176	123	2/12- 16.7%	0/12= 0	1/1= 100%	1/1= 100%	None Supplied	As Total	As Total	As Total
177	50	3/23= 13%	2/23= 8.7%	1/5= 20%	1/5= 20%	None Supplied	As Total	As Total	As Total
179	375	10/25= 40%	2/25= 8%	8/8= 100%	3/3= 100%	1/1= 100%	7/7= 100%	As Total	As Total
180	71	5/11= 45.5%	3/11= 27.3%	2/2= 100%	2/2= 100%	1/1= 100%	1/1= 100%	As Total	As Total
181	34	4/23= 17.4%	3/23= 13%	3/5= 60%	3/5= 60%	2/2= 100%	2/4= 50%	2/4= 50%	2/4= 50%
182	42	9/23= 39.1%	7/23= 30.4%	2/3= 66.7%	2/2= 100%	None Known in Base	As Total	As Total	As Total
183	27	16/24= 66.7%	9/24= 37.5%	3/6= 50%	1/2= 50%	2/4= 50%	2/3= 66.7%	2/3= 66.7%	1/2= 50%
185	250 (927)	2/16= 12.5%	0/16= 0	1/7= 14.3%	1/2= 50%	0/3= 0	1/4= 25%	As Total	As Total

| # | Total Retrieved | PRECISION RATIO | | RECALL RATIO TOTAL | | RECALL RATIO BREAKDOWN | | | |
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	"Best Set" Overall	"Best Set" Major Value
187	157	13/17= 76.5%	9/17= 52.9%	3/3= 100%	3/3= 100%	1/1= 100%	2/2= 100%	As Total	As Total
188	9	9/9= 100%	9/9= 100%	3/8= 37.5%	3/7= 42.9%	None Known in Base	As Total	As Total	As Total
189	116	31/31= 100%	28/31= 90.3%	6/6= 100%	5/5= 100%	None Supplied	As Total	As Total	As Total
190	388 (628)	7/19= 36.8%	2/19= 10.5%	6/7= 85.7%	6/7= 85.7%	2/2= 100%	4/5= 80%	As Total	As Total
191	63	11/18= 61.1%	3/18= 16.7%	3/17= 17.6%	2/12= 16.7%	3/7= 42.9%	2/12= 16.7%	2/14= 14.3%	1/10= 10%
192	5	0/5= 0	0/5= 0	0/0= 100%	0/0= 100%	None Known	None Found	As Total	As Total
194	94	12/20= 60%	2/20= 10%	5/5= 100%	4/4= 100%	None Known in Base	As Total	As Total	As Total
195	112	14/18= 77.8%	4/18= 22.2%	3/6= 50%	3/6= 50%	1/1= 100%	2/5= 40%	As Total	As Total
197	87	8/22= 36.4%	2/22= 9.1%	1/1= 100%	1/1= 100%	None Supplied	As Total	As Total	As Total
198	142	15/17= 88.2%	7/17= 41.2%	7/8= 87.5%	5/6= 83.3%	None Known in Base	As Total	As Total	As Total
199	822	21/21= 100%	10/21= 47.6%	5/9= 55.6%	4/8= 50%	0/2= 0	5/7= 71.4%	As Total	As Total
200	96	10/21= 47.6%	8/21= 38.1%	7/8= 87.5%	6/6= 100%	3/3= 100%	6/7= 85.7%	As Total	As Total
201	500 (699)	3/27= 11.1%	0/27= 0	1/6= 16.7%	1/5= 20%	0/1= 0	1/5= 20%	As Total	As Total
202	33	7/21= 33.3%	2/21= 9.5%	1/4= 25%	0/1= 0	0/1= 100%	1/3= 33.3%	As Total	As Total
203	38	1/11= 9.1%	0/11= 0	0/3= 0	0/3= 0	0/1= 0	0/2= 0	As Total	As Total
206	259	20/22= 90.9%	15/22= 68.2%	5/8= 62.5%	4/7= 57.1%	0/3= 0	5/5= 100%	As Total	As Total
207	200	13/29= 44.8%	3/29= 10.3%	8/8= 100%	8/8= 100%	2/2= 100%	6/6= 100%	As Total	As Total
208	39	27/32= 84.4%	9/32= 28.1%	7/7= 100%	3/3= 100%	4/4= 100%	6/6= 100%	6/6= 100%	3/3= 100%

#	Total Retrieved	PRECISION RATIO		RECALL RATIO TOTAL		RECALL RATIO BREAKDOWN		"Best Set"	
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	Overall	Major Value
209	88	21/24= 87.5%	12/24= 50%	7/7= 100%	4/4= 100%	1/1= 100%	7/7= 100%	As Total	As Total
210	8 (307)	3/7= 42.9%	2/7= 28.6%	1/2= 50%	1/2= 50%	None Supplied	As Total	As Total	As Total
211	125	1/27= 3.7%	0/27= 0	1/1= 100%	1/1= 100%	As Total	None Found	As Total	As Total
212	278	4/12= 33.3%	2/12= 16.7%	11/11= 100%	7/7= 100%	9/9= 100%	4/4= 100%	5/5= 100%	2/2= 100%
213	1	0/1= 0	0/1= 0	0/5= 0	0/5= 0	As Total		As Total	As Total
214	273	5/26= 19.2%	1/26= 3.8%	10/11= 90.9%	7/7= 100%	5/5= 100%	5/6= 83.3%	9/10= 90%	6/6= 100%
215	174	14/24= 58.3%	5/24= 20.8%	5/6= 83.3%	5/6= 83.3%	As Total		As Total	As Total
216	44	6/28= 21.4%	1/28= 3.6%	1/1= 100%		None Known	As Total	As Total	As Total
217	20	2/16= 12.5%	2/16= 12.5%	1/2= 50%	1/2= 50%	None Known	As Total	As Total	As Total
220	104	4/7= 57.1%	2/7= 28.6%	1/2= 50%	1/1= 100%	None Known in Base	As Total	As Total	As Total
221	191	3/27= 11.1%	2/27= 7.4%	1/2= 50%	1/2= 50%	None Known	As Total	As Total	As Total
224	500 (803)	14/22= 63.6%	9/22= 40.9%	6/8= 75%	6/8= 75%	As Total	As Total	As Total	As Total
225	90	21/28= 75%	10/28= 35.7%	4/8= 50%	3/5= 60%	1/2= 50%	3/6= 50%	As Total	As Total
226	174	19/24= 79.2%	10/24= 41.7%	4/7= 57.1%	3/3= 100%	None Known	As Total	As Total	As Total
227	127	23/26= 88.5%	16/26= 61.5%	1/5= 20%	1/2= 50%	None Supplied	As Total	As Total	As Total
228	53	18/18= 100%	17/18= 94.4%	3/10= 30%	3/8= 37.5%	1/5= 20%	2/5= 40%	As Total	As Total
229	61	10/29= 34.5%	5/29= 17.2%	1/4= 25%	1/4= 25%	1/1= 100%	1/4= 25%	As Total	As Total
230	23	7/17= 41.2%	4/17= 23.5%	1/4= 25%	1/3= 33.3%	0/1= 0	1/4= 25%	As Total	As Total

#	Total Retrieved	PRECISION RATIO		RECALL RATIO TOTAL		Known by Requester	RECALL RATIO BREAKDOWN Found Manually	"Best Set"	
		Overall	Major Value	Overall	Major Value			Overall	Major Value
232	447	16/29= 55.2%	9/29= 31%	6/15= 40%	4/9= 44.4%	2/10= 20%	4/5= 80%	5/12= 41.7%	3/7= 42.9%
233	226	8/23= 34.8%	4/23= 17.4%	5/5= 100%	3/3= 100%	None Known	As Total	As Total	As Total
234	251	8/18= 44.4%	4/18= 22.2%	4/6= 66.7%	1/3= 33.3%	None Supplied	As Total	As Total	As Total
235	75	3/36= 8.3%	0/36= 0	4/6= 66.7%	3/4= 75%	1/1= 100%	3/5= 60%	As Total	As Total
236	344	11/17= 64.7%	3/17= 17.6%	8/8= 100%	8/8= 100%	None Supplied	As Total	As Total	As Total
237	500	8/25= 32%	3/25= 12%	6/6= 100%	6/6= 100%	None Supplied	As Total	As Total	As Total
238	87	18/23= 78.3%	6/23= 26.1%	6/7= 85.7%	5/6= 83.3%	None Supplied	As Total	As Total	As Total
239	264	10/15= 66.7%	8/15= 53.3%	8/8= 100%	8/8= 100%	1/1= 100%	7/7= 100%	As Total	As Total
240	121	6/20= 30%	5/20= 25%	4/4= 100%	4/4= 100%	None Known	As Total	As Total	As Total
242	304	5/25= 20%	2/25= 8%	12/13= 92.3%	9/9= 100%	5/5= 100%	7/8= 87.5%	As Total	As Total
243	1	1/1= 100%	1/1= 100%	0/1= 0	0/1= 0	None Known in Base	As Total	As Total	As Total
244	408	4/16= 25%	2/16= 12.5%	5/6= 83.3%	2/2= 100%	None Supplied	As Total	As Total	As Total
245	46	15/24= 62.5%	8/24= 33.3%	3/4= 75%	2/3= 66.7%	None Known	As Total	As Total	As Total
246	133	14/29= 48.3%	4/29= 13.8%	10/11= 90.9%	9/9= 100%	As Total		As Total	As Total
247	2	2/2= 100%	2/2= 100%	2/6= 33.3%	2/2= 100%	None Known	As Total	As Total	As Total
248	339	11/17= 64.7%	11/17= 64.7%	2/7= 28.6%	2/7= 28.6%	None Known	As Total	As Total	As Total
249	480	24/25= 96%	16/25= 64%	5/5= 100%	5/5= 100%	As Total	As Total	As Total	As Total
250	68 (80)	9/20= 45%	4/20= 20%	6/6= 100%	1/1= 100%	None Supplied	As Total	As Total	As Total

#	Total Retrieved	PRECISION RATIO		RECALL RATIO TOTAL		Known by Requester	Found Manually	"Best Set"	
		Overall	Major Value	Overall	Major Value			Overall	Major Value
251	105	7/27= 25.9%	3/27= 11.1%	3/6= 50%	3/6= 50%	2/4= 50%	2/3= 66.7%	As Total	As Total
252	4	4/4= 100%	4/4= 100%	1/4= 25%	1/2= 50%	None Known	As Total	As Total	As Total
256	333	16/27= 59.3%	8/27= 29.6%	3/4= 75%	1/1= 100%	1/1= 100%	2/3= 66.7%	As Total	As Total
259	426	4/23= 17.4%	0/23= 0	11/12= 91.7%	2/2= 100%	8/9= 88.9%	3/3= 100%	4/4= 100%	2/2= 100%
260	51	12/23= 52.2%	6/23= 26.1%	3/5= 60%	2/4= 50%	None Known	As Total	As Total	As Total
263	14	4/11= 36.4%	2/11= 18.2%	1/1= 100%	1/1= 100%	None Supplied	As Total	As Total	As Total
264	278	18/26= 69.2%	6/26= 23.1%	3/8= 37.5%	3/6= 50%	None Known	As Total	As Total	As Total
266	29	9/15= 60%	5/15= 33.3%	2/3= 66.7%	1/1= 100%	1/2= 50%	1/1= 100%	As Total	As Total
268	10	1/10= 10%	1/10= 10%	1/3= 33.3%	1/3= 33.3%	None Known in Base	As Total	As Total	As Total
269	22	6/11= 54.5%	6/11= 54.5%	7/13= 53.8%	7/10= 70%	4/10= 40%	4/4= 100%	4/4= 100%	4/4= 100%
270	9	9/9= 100%	1/9= 11.1%	No Recall Base		None Known	None Found		
271	13 (163)	6/10= 60%	5/10= 50%	0/1= 0	0/1= 0	None Supplied	As Total	As Total	
272	657	13/16= 81.2%	5/16= 31.2%	9/12= 75%	8/11= 72.7%	1/2= 50%	8/10= 80%	As Total	As Total
273	27	5/20= 25%	2/20= 10%	0/20= 0	0/16= 0	0/16= 0	0/5= 0	0/16= 0	0/13= 0
274	7	6/7= 85.7%	4/7= 57.1%	3/3= 100%	3/3= 100%	2/2= 100%	3/3= 100%	As Total	As Total
276	8	5/6= 83.3%	2/6= 33.3%	2/4= 50%	1/2= 50%	0/1= 0	2/3= 66.7%	As Total	As Total
277	500 (799)	21/23= 91.3%	11/23= 47.8%	16/16= 100%	15/15= 100%	As Total	As Total	As Total	As Total
278	91	16/21= 76.2%	6/21= 28.6%	3/10= 30%	3/9= 33.3%	1/7= 14.3%	2/3= 66.7%	3/4= 75%	3/4= 75%

#	Total Retrieved	PRECISION RATIO Overall	PRECISION RATIO Major Value	RECALL RATIO TOTAL Overall	RECALL RATIO TOTAL Major Value	RECALL RATIO BREAKDOWN Known by Requester	RECALL RATIO BREAKDOWN Found Manually	RECALL RATIO BREAKDOWN "Best Set" Overall	RECALL RATIO BREAKDOWN "Best Set" Major Value
281	343	14/20= 70%	4/20= 20%	7/9= 77.8%	5/7= 71.4%	1/1= 100%	6/8= 75%	As Total	As Total
301	489	3/18= 16.7%	2/18= 11.1%	14/27= 51.9%	12/19= 63.2%	10/17= 58.8%	6/13= 46.2%	10/19= 52.6%	9/15= 60%
302	2	0/2= 0	0/2= 0	0/0= 100%	0/0= 100%	None Known	None Found	As Total	As Total
303	36	0/22= 0	0/22= 0	0/2= 0		As Total		As Total	
304	56	10/18= 55.6%	6/18= 33.3%	6/8= 75%	5/6= 83.3%	5/6= 83.3%	3/4= 75%	3/4= 75%	3/3= 100%
305	405	19/26= 73.1%	15/26= 57.7%	1/8= 12.5%	1/4= 25%	As Total		As Total	As Total
306	93	11/25= 44%	3/25= 12%	2/6= 33.3%	1/1= 100%	0/1= 0	2/5= 40%	2/5= 40%	1/1= 100%
307	12	11/11= 100%	3/11= 27.3%	0/9= 0		0/1= 0	0/8= 0	As Total	
308	190	13/24= 54.2%	3/24= 12.5%	2/3= 66.7%		None Supplied	As Total	As Total	
451	50	4/22= 18.2%	0/22= 0	No Recall	Base	None Known	None Found		
452	131	9/25= 36%	5/25= 20%	1/4= 25%	1/4= 25%	None Supplied	As Total	As Total	As Total
453	33	10/25= 40%	5/25= 20%	1/3= 33.3%	1/3= 33.3%	None Supplied	As Total	As Total	
454	71	2/27= 7.4%	1/27= 3.7%	0/1= 0		None Known	As Total	As Total	
455	173	2/19= 10.5%	1/19= 5.3%	1/6= 16.7%	1/5= 20%	1/3= 33.3%	0/3= 0	1/4= 25%	1/3= 33.3%
456	267	19/28= 67.9%	8/28= 28.6%	3/7= 42.9%	1/3= 33.3%	None Supplied	As Total	As Total	As Total
457	245	6/25= 24%	3/25= 12%	7/8= 87.5%	4/4= 100%	1/1= 100%	6/7= 85.7%	As Total	As Total
458	722	2/22= 9.1%	1/22= 4.5%	18/20= 90%	8/9= 88.9%	16/16= 100%	3/5= 60%	3/5= 60%	1/2= 50%
460	207	14/18= 77.8%	10/18= 55.6%	13/17= 76.5%	10/11= 90.9%	8/9= 88.9%	6/9= 66.7%	6/10= 60%	5/6= 83.3%

#	Total Retrieved	PRECISION RATIO		RECALL RATIO TOTAL		RECALL RATIO BREAKDOWN		"Best Set"	
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	Overall	Major Value
461	165	5/26= 19.2%	1/26= 3.8%	3/6= 50%	1/2= 50%	1/2= 50%	2/4= 50%	3/5= 60%	1/1= 100%
462	24	8/16= 50%	4/16= 25%	3/6= 50%	2/3= 66.7%	2/3= 66.7%	2/5= 40%	As Total	As Total
463	42	0/25= 0	0/25= 0	0/0= 100%	0/0= 100%	None Known	None Found	As Total	As Total
465	502	25/25= 100%	2/25= 8%	1/1= 100%	1/1= 100%	None Known in Base	As Total	As Total	As Total
466	133	20/22= 90.9%	18/22= 81.8%	9/9= 100%	9/9= 100%	1/1= 100%	8/8= 100%	As Total	As Total
467	51	2/19= 10.5%	0/19= 0	2/3= 66.7%	0/1= 0	2/2= 100%	0/1= 0	As Total	As Total
469	45	7/29= 24.1%	3/29= 10.3%	6/7= 85.7%	4/4= 100%	3/3= 100%	3/4= 75%	As Total	As Total
470	96	11/26= 42.3%	5/26= 19.2%	4/5= 80%	3/4= 75%	2/2= 100%	2/3= 66.7%	As Total	As Total
471	233	4/23= 17.4%	3/23= 13%	7/9= 77.8%	2/4= 50%	2/2= 100%	5/7= 71.4%	As Total	As Total
472	58	20/24= 83.3%	11/24= 45.8%	4/8= 50%	4/8= 50%	None Known in Base	As Total	As Total	As Total
473	110	6/25= 24%	2/25= 8%	6/6= 100%	1/1= 100%	None Known in Base	As Total	As Total	As Total
474	34	11/28= 39.3%	5/28= 17.9%	0/2= 0	0/2= 0	None Known	As Total	As Total	As Total
477	75	10/22= 45.5%	0/22= 0	8/8= 100%	5/5= 100%	4/4= 100%	5/5= 100%	5/5= 100%	3/3= 100%
478	211	15/25= 60%	7/25= 28%	3/3= 100%	3/3= 100%	As Total		As Total	As Total
479	69	3/24= 12.5%	1/24= 4.2%	0/5= 0	0/4= 0	As Total		As Total	As Total
480	101	13/18= 72.2%	9/18= 50%	4/5= 80%	3/3= 100%	0/1= 0	4/4= 100%	As Total	As Total
481	76	10/17= 58.8%	1/17= 5.9%	3/3= 100%	2/2= 100%	None Known	As Total	As Total	As Total
482	1	1/1= 100%	1/1= 100%	1/3= 33.3%	1/2= 50%	1/1= 100%	0/2= 0	As Total	As Total

#	Total Retrieved	PRECISION RATIO Overall	PRECISION RATIO Major Value	RECALL RATIO TOTAL Overall	RECALL RATIO TOTAL Major Value	RECALL RATIO BREAKDOWN Known by Requester	Found Manually	"Best Set" Overall	"Best Set" Major Value
483	266	7/12= 58.3%	5/12= 41.7%	7/13= 53.8%	7/12= 58.3%	4/8= 50%	3/5= 60%	3/5= 60%	3/4= 75%
484	309 (367)	17/22= 77.3%	12/22= 54.5%	8/8= 100%	8/8= 100%	None Supplied	As Total	As Total	As Total
485	19	5/18= 27.8%	2/18= 11.1%	0/4= 0	0/3= 0	None Known in Base	As Total	As Total	As Total
486	322	21/23= 91.3%	5/23= 21.7%	4/6= 66.7%	3/5= 60%	As Total	As Total	As Total	As Total
488	18	11/14= 78.6%	4/14= 28.6%	2/3= 66.7%	2/3= 66.7%	0/1= 0	2/2= 100%	As Total	As Total
489	5	0/4= 0	0/4= 0	0/0= 100%	0/0= 100%	None Known	None Found	As Total	As Total
490	370	9/24= 37.5%	2/24= 8.3%	4/4= 100%	1/1= 100%	1/1= 100%	3/3= 100%	As Total	As Total
491	12	2/12= 16.7%	0/12= 0	0/7= 0	0/6= 0	As Total		As Total	As Total
492	32	6/22= 27.3%	1/22= 4.5%	1/4= 25%	1/3= 33.3%	0/1= 0	1/3= 33.3%	As Total	As Total
493	20	13/13= 100%	13/13= 100%	0/11= 0	0/11= 0	As Total		As Total	As Total
495	96	12/30= 40%	9/30= 30%	8/12= 66.7%	7/10= 70%	As Total	6/7= 85.7%	As Total	A Total
496	22	15/20= 75%	7/20= 35%	1/2= 50%	1/1= 100%	None Known in Base	As Total	As Total	As Total
497	159	13/26= 50%	2/26= 7.7%	0/6= 0	0/4= 0	0/2= 0	0/4= 0	As Total	As Total
498	499	7/17= 41.2%	3/17= 17.6%	2/3= 66.7%	1/1= 100%	None Known in Base	As Total	As Total	As Total
499	33	13/22= 59.1%	5/22= 22.7%	3/4= 75%	2/2= 100%	None Known in Base	As Total	As Total	As Total
501	415	12/22= 54.5%	7/22= 31.8%	0/5= 0	0/4= 0	As Total	As Total	As Total	As Total
502	686	15/25= 60%	9/25= 36%	6/9= 66.7%	4/6= 66.7%	0/2= 0	6/7= 85.7%	As Total	As Total
503	434	1/26= 3.8%	0/26= 0	0/1= 0	0/1= 0	As Total	None Found	As Total	As Total

#	Total Retrieved	PRECISION RATIO		RECALL RATIO TOTAL		RECALL RATIO BREAKDOWN			"Best Set"
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	Overall	Major Value
504	12	5/9= 55.6%	4/9= 44.4%	1/1= 100%	1/1= 100%	None Known in Base	As Total	As Total	As Total
505	70	16/23= 69.6%	9/23= 39.1%	8/14= 57.1%	5/8= 62.5%	6/9= 66.7%	2/5= 40%	4/8= 50%	3/6= 50%
506	25	14/20= 70%	9/20= 45%	3/9= 33.3%	2/7= 28.6%	2/4= 50%	1/5= 20%	1/5= 20%	0/3= 0
507	500 (857)	0/13= 0	0/13= 0	0/1= 0		None Known	0/1=0	As Total	
508	54	0/24= 0	0/24= 0	1/2= 50%		0/1= 0	1/1= 100%	As Total	As Total
509	121	15/26= 57.7%	7/26= 26.9%	6/7= 85.7%	4/4= 100%	1/1= 100%	5/6= 83.3%	As Total	As Total
510	359	22/22= 100%	8/22= 36.4%	6/8= 75%	5/7= 71.4%	As Total	As Total	As Total	As Total
511	500 (503)	8/21= 38.1%	3/21= 14.3%	4/7= 57.1%	3/5= 60%	2/3= 66.7%	2/4= 50%	2/4= 50%	2/4= 50%
513	500	17/25= 68%	5/25= 20%	7/8= 87.5%	6/6= 100%	2/2= 100%	5/6= 83.3%	5/6= 83.3%	4/4= 100%
521	27	3/24= 12.5%	1/24= 4.2%	1/1= 100%	1/1= 100%	As Total	None Found	As Total	As Total
522	134	10/22= 45.5%	5/22= 22.7%	6/6= 100%	5/5= 100%	None Known	As Total	As Total	As Total
523	10	6/10= 60%	1/10= 10%	1/1= 100%	1/1= 100%	None Known	As Total	As Total	As Total
524	52	9/23= 39.1%	5/23= 21.7%	3/6= 50%	2/4= 50%	2/4= 50%	2/3= 66.7%	As Total	2/4= 50%
525	4	4/4= 100%	4/4= 100%	2/6= 33.3%	2/4= 50%	1/1= 100%	1/5= 20%	As Total	As Total
526	180	5/15= 33.3%	2/15= 13.3%	5/9= 55.6%		As Total		As Total	As Total
527	231	11/25= 44%	7/25= 28%	2/9= 22.2%	2/7= 28.6%	0/3= 0	2/6= 33.3%	As Total	As Total
528	346	8/18= 44.4%	2/18= 11.1%	3/5= 60%	1/2= 50%	None Known	As Total	As Total	As Total
529	184	8/17= 47.1%	5/17= 29.4%	8/14= 57.1%	4/7= 57.1%	As Total		As Total	As Total

#	Total Retrieved	PRECISION RATIO		RECALL RATIO TOTAL		Known by Requester	RECALL RATIO BREAKDOWN		
		Overall	Major Value	Overall	Major Value		Found Manually	"Best Set" Overall	"Best Set" Major Value
530	10	3/8= 37.5%	3/8= 37.5%	4/11= 36.4%	4/8= 50%	4/5= 80%	1/7= 14.3%	1/7= 14.3%	1/4= 25%
531	43 (455)	8/16= 50%	3/16= 18.7%	0/1= 0		None Known	As Total	As Total	As Total
532	15	9/10= 90%	3/10= 30%	2/5= 40%	1/3= 33.3%	0/1= 0	2/4= 50%	As Total	As Total
534	113	9/20= 45%	6/20= 30%	2/3= 66.7%	1/2= 50%	None Known	As Total	As Total	As Total
535	143	3/10= 30%	1/10= 10%	2/5= 40%	2/4= 50%	None Known	As Total	As Total	As Total
539	52	11/18= 61.1%	0/18= 0	8/11= 72.7%		As Total	As Total	2/3= 66.7%	
540	32 (135)	10/30= 33.3%	6/30= 20%	1/2= 50%	1/1= 100%	None Known	As Total	As Total	As Total
541	20	8/8= 100%	8/8= 100%	3/3= 100%	3/3= 100%	1/1= 100%	2/2= 100%	As Total	As Total
545	66	3/23= 13%	1/23= 4.3%	5/6= 83.3%	1/1= 100%	2/3= 66.7%	3/3= 100%	3/3= 100%	
547	417	9/22= 40.9%	4/22= 18.2%	6/9= 66.7%	5/8= 62.5%	As Total	As Total	As Total	As Total
548	58	15/30= 50%	11/30= 36.7%	3/4= 75%	3/4= 75%	1/1= 100%	2/3= 66.7%	As Total	As Total
551	21	12/21= 57.1%	10/21= 47.6%	5/6= 83.3%	4/4= 100%	1/1= 100%	4/5= 80%	As Total	As Total
553	9	6/9= 66.7%	5/9= 55.6%	2/3= 66.7%	2/2= 100%	2/2= 100%	0/1= 0	As Total	As Total
555	500 (897)	9/18= 50%	7/18= 38.9%	1/3= 33.3%	1/2= 50%	1/2= 50%	0/2= 0	As Total	As Total
557	108	2/30= 6.7%	1/30= 3.3%	3/5= 60%	2/2= 100%	1/3= 33.3%	2/2= 100%	As Total	As Total
559	0	0/0= 0	0/0= 0	0/3= 0		None Known	As Total	As Total	As Total
560	19	8/17= 47.1%	4/17= 23.5%	1/4= 25%	1/4= 25%	0/2= 0	1/4= 25%	As Total	As Total
561	27	24/26= 92.3%	14/26= 53.8%	0/2= 0	0/1= 0	None Known	As Total	As Total	As Total

| # | Total Retrieved | PRECISION RATIO | | RECALL RATIO TOTAL | | RECALL RATIO BREAKDOWN | | | |
		Overall	Major Value	Overall	Major Value	Known by Requester	Found Manually	"Best Set" Overall	"Best Set" Major Value
567	500 (526)	21/25= 84%	2/25= 8%	4/8= 50%	1/3= 33.3%	0/2= 0	4/6= 66.7%	4/6= 66.7%	1/1= 100%
568	103	18/22= 81.8%	13/22= 59.1%	5/7= 71.4%	5/7= 71.4%	2/2= 100%	4/6= 66.7%	4/6= 66.7%	4/6= 66.7%
569	82	8/17= 47.1%	4/17= 23.5%	4/10= 40%	3/7= 42.9%	2/4= 50%	2/6= 33.3%	As Total	As Total
570	333	20/28= 71.4%	2/28= 7.1%	2/7= 28.6%	1/3= 33.3%	1/2= 50%	1/5= 20%	1/5= 20%	0/1= 0
603	121	0/19= 0	0/19= 0	1/3= 33.3%	1/2= 50%	None Supplied	As Total	As Total	As Total
606	336	24/26= 92.3%	11/26= 42.3%	1/9= 11.1%	1/5= 20%	As Total		As Total	As Total

Appendix 5

Specificity of search formulations:

(a)   Formulations nonspecific (precision failures)

(b)   Specific formulations (recall failures)

Search formulations nonspecific in relation to stated requests

(100 searches examined. 27 found to include instances of precision failures due to nonspecific formulations).

	Actual broadened search		Search strictly matching request	
	Of value	Of no value	Of value	Of no value
#117	11	11	11	10
#118	5	21	5	12
#155	13	10	13	8
#166	7	2	7	1
#173	8	7	5	6
#174	10	10	6	1
#177	3	20	1	18
#182	9	14	0	3
#200	10	11	10	9
#212	4	8	4	3
#213	0	1	0	0
#216	6	22	2	20
#221	3	24	3	18
#224	14	8	14	7
#230	7	10	6	7
#236	11	6	2	1
#238	18	5	5	4
#240	6	14	4	10
#245	15	9	11	8
#260	12	11	11	9

250

	Actual broadened search		Search strictly matching request	
	Of value	Of no value	Of value	Of no value
#268	1	9	1	0
#301	3	15	2	0
#304	10	8	10	7
#462	8	8	7	4
#478	15	10	14	8
#479	3	17	3	11
#483	7	5	7	4
TOTALS	122	169	101	102

Failure to broaden the searching strategy would have avoided 67/169 (39.6%) of the irrelevant articles while missing 21/122 (17.2%) of the relevant items.

Search-by-search analysis

#117

Request   Schizophrenia and autism: epidemiology, genetics, etiology.

Elaboration   The searcher included FACTOR ANALYSIS, STATISTICAL, which is not specific to epidemiology (i.e., she substituted one technic term for another).

Results   Recall was unaffected. Without the elaboration, retrieval of irrelevant documents would have been reduced by 1/11.

#118

Request   Immunochemistry of polypeptides

Elaboration   The requester appears interested in the immunochemical structure and antigenic structure of proteins and polypeptides. Several term combinations used by the searcher are nonspecific in relation to this request. The term TRYPSIN, presumably included as an enzyme that may act on peptide linkages, retrieved only irrelevant material. This is an example of an "agent" term substituted for the substance (peptide or protein) upon which it might act.

Also, the terms ANTIBODY FORMATION and ANTIGEN-ANTIBODY REACTIONS are not specific in relation to "antigenic structure". Combined with protein terms, they retrieved a number of irrelevant articles on immunization or studies of a clinical nature on human serum. This is an example of "process" terms substituted for "structure" terms.

Results   Recall was not improved. Without the elaboration, retrieval of irrelevant documents would have been reduced by 9/21.

#155

Request   Etiology of decompression sickness and nitrogen narcosis, including bubble nucleation, growth and stabilization, gas solubility and diffusivity in liquids and body tissue, and models of gas or solute exchange in the body.

Elaboration   The searcher substituted a general property term (CHEMISTRY, PHYSICAL) for the specific properties (solubility and diffusivity) requested.

Results   Recall was not improved. Without the elaboration, retrieval of irrelevant documents would have been reduced by 2/10.

252

#166

    Request   Hemangioma of the small intestine

    Elaboration   The disease category was elaborated to include HEMANGIOPERICYTOMA and HEMANGIOENDOTHELIOMA as well as HEMANGIOMA.

    Results   Recall unaffected. Without the elaboration, retrieval of irrelevant documents would have been reduced by 1/2.

#173

    Request   Correlation between dentistry and arthritis.

    Elaboration   The requester is interested in oral manifestations of arthritis, infectious arthritis, rheumatoid arthritis, rheumatic fever, osteoarthritis, and Reiter's disease. The disease category was expanded to include related syndromes (e.g., Sjogren's), gout, and spondylitis.

    Results   Without the elaboration, retrieval of irrelevant documents would have been reduced by 1/7 but retrieval of relevant documents would have been reduced by 3/8.

#174

    Request   Testicular biopsies in infertility and endocrine disease.

    Elaboration   The searcher exploded on two facets of the request simultaneously. This is likely to result in high recall but low precision. For the anatomical term TESTIS, disease terms (e.g., TESTICULAR DISEASES, TESTICULAR NEOPLASMS) and "component part" terms (e.g., LEYDIG CELLS, SERTOLI CELLS) were substituted. At the same time, there was a generalization in the technics facet from BIOPSY to general terms such as PATHOLOGY and HISTOLOGY.

    Results   Without the elaboration, retrieval of irrelevant documents would have been reduced by 9/10 while retrieval of relevant documents would have been reduced by 4/10.

#177

    Request   Obstetrical management of premature rupture of the fetal membranes.

    Elaboration   The requester is interested in a specific complication of pregnancy or labor, namely premature rupture of the fetal membranes. The searcher generalized in the "disease" category to "complications involving the fetal membranes", by the coordination of FETAL MEMBRANES and PREGNANCY COMPLICATIONS
         or
LABOR COMPLICATIONS

Results   Without the elaboration, retrieval of irrelevant documents
would have been reduced by 2/20 while retrieval of relevant documents would
have been reduced by 2/3.

#182

Request   Life span (turnover time) of cells in the kidney.

Elaboration   In this case the searcher was forced to be nonspecific
because the precise term that equates with "life span", LONGEVITY, does not
appear to have been applied to articles on cell lifetime. For this "dimen-
sional" term the searcher substituted the "effect" terms AGING and NECROSIS
and terms (TRITIUM and CARBON ISOTOPES) representing specific agents that
may be used in the measurement of cell lifetime.

Results   Without the elaboration, retrieval of relevant documents
would have been reduced by 11/14. However, recall would have been zero.

#200

Request   Endometrium: ultrastructure, fine structure, electron
microscopy, histochemistry, cytochemistry.

Elaboration   It is difficult to conduct a search on ultrastructure
because there is no specific term denoting "fine structure" in the voca-
bulary. For terms indicating "structure" the searcher substituted terms
representing "parts" by exploding on the term CYTOPLASM. Specificity was
further reduced by substituting a "disease" term (ENDOMETRIAL HYPERPLASIA)
for an organ term (ENDOMETRIUM).

Results   This elaboration did not improve recall. Without the
elaboration, retrieval of irrelevant documents would have been reduced by
2/11.

#212

Request   Adherence of patients to oral tuberculosis therapy (iso-
niazid and PAS) as indicated by periodic urine testing.

Elaboration   The requester is interested only in the specific
metabolic processes of absorption and excretion. The searcher generalized
to METABOLISM in general, and also substituted the entire FLUIDS and SECRE-
TIONS group of terms (including, for example, SPUTUM) for the specific
fluid, URINE, of interest.

Results   Without the elaboration, retrieval of irrelevant documents
would have been reduced by 5/8, while recall of relevant documents
would not have been affected.

#213

   Request   Effect of certain diuretic agents (thiazides, ethacrynic
acid, furosemide, and MK-870) on: (a) renal excretion of calcium, magne-
sium and phosphate, (b) gastrointestinal absorption of calcium, magnesium
and phosphate, (c) metabolic bone changes on calcium, magnesium and phos-
phate.

   Elaboration   Inexplicably the search was conducted only on
DIURETICS, ETHACRYNIC ACID and FUROSEMIDE, omitting many specific
thiazide terms of interest to the requester. Only one citation was
retrieved, on the generic term DIURETICS, and this proved to deal with
malachite green, a substance of no relevance to the request.

   Results   Retrieval would have been zero without the inclusion of
DIURETICS. The only article retrieved, however, was irrelevant (i.e.,
zero precision).

#216

   Request   Histology and ultrastructure of the olfactory mucosa.

   Elaboration   As noted previously (see analysis #200 above) it is
difficult to conduct a successful search relating to anatomical "structure"
because the vocabulary is deficient in terms in this area, although this
situation became less acute with the introduction of the subheadings CYTOLOGY
and ANATOMY & HISTOLOGY. Whereas in search #200, the analyst substituted
"part" terms by exploding on CYTOPLASM, the formulation for this search
relied mainly on "technic" terms by means of explosions on MICROSCOPY and
HISTOLOGICAL TECHNICS. These explosions inevitably retrieved unwanted
articles on methodology rather than findings. The searcher, unaccountably,
made no use of subheadings, although four of the six articles known to be
relevant, and indexed since the introduction of subheadings, could have
been retrieved on NASAL MUCOSA/CYTOLOGY and NASAL MUCOSA/INNERVATION.

   Results   Without the elaboration, retrieval of irrelevant articles
would have been reduced by 2/22 while retrieval of relevant articles would
have been reduced by 4/6.

#221

   Request   Medical articles relating to the Somali republic, espec-
ially tropical medicine, parasitology, microbiology, mycology, and enteric
infections.

   Elaboration   The searcher exploded on AFRICA, EASTERN (i.e., a
movement from a specific geographical heading to a generic). While the
move from SOMALIA to the single term AFRICA, EASTERN may be justified,
it is difficult to condone an explosion on the latter term, which retrieves
articles on other countries (e.g., ETHIOPIA) that can have no direct
bearing on the subject of the search.

Results   Without the elaboration, retrieval of irrelevant documents would have been reduced by 6/24. Recall would have been reduced by omitting AFRICA, EASTERN, but the additional geographical terms brought in by the explosion produced only noise.

#224

Request   Nonsurgical diagnosis and therapy of primary bone tumors, benign and malignant.

Elaboration   The searcher generalized in the "technic" category from "drug therapy" to an explosion on DRUG ADMINISTRATION. This covers terms (e.g., INJECTIONS, INTRAVENOUS) not exclusively diagnostic or therapeutic and retrieves articles on, for example, injection of carcinogenic agents into laboratory animals.

Results   No improvement in recall. Without the elaboration, retrieval of irrelevant items would have been reduced by 1/8.

#230

Request   Frozen serum and plasma.

Elaboration   The searcher expanded in the "anatomical term" category by including THROMBOPLASTIN, BLOOD COAGULATION FACTORS (including specific factor terms) and other terms not strictly related to plasma or serum.

Results   Without the elaboration, retrieval of irrelevant articles would have been reduced by 3/10 while retrieval of relevant articles would have been reduced by 1/7.

#236

Request   Corneal preservation methods

Elaboration   In addition to "preservation" terms, the searcher included "transplantation" terms in the formulation. That is, one group of technic terms (representing the use to which the preserved tissue is to be put) is substituted for another. Although some irrelevancies (articles dealing exclusively with technics of transplantation) will result, it seems essential to high recall that any search on preservation be expanded to cover transplantation.

Results   Without the elaboration, retrieval of irrelevant articles would have been reduced by 5/6, while retrieval of relevant articles would have been reduced by 9/11.

#238

   Request   Heart preservation methods

   Elaboration   As above (#236). "Transplantation" terms were substituted for "preservation" terms.

   Results   Without the elaboration, retrieval of irrelevant articles would have been reduced by 1/5, while retrieval of relevant items would have been reduced by 13/18.

#240

   Request   Radiation kidney (radiation nephritis), human and experimental.

   Elaboration   The request asks for a specific renal effect of radiation, namely nephritis. The searcher generalized from the specific disease term indicated by coordinating radiation terms with anatomic terms (kidney and kidney parts) and with a technic term (KIDNEY FUNCTION TESTS).

   Results   Without this elaboration, retrieval of irrelevant articles would have been less by 4/14, while retrieval of relevant articles would have been reduced by 2/6.

#245

   Request   Radiation pneumonitis and radiation pulmonary fibrosis, including pathology, physiology, radiography and therapy.

   Elaboration   As for #240, the searcher substituted anatomical terms (an explosion on LUNG) for the specific disease terms implied by the request. That is, she generalized from "radiation pneumonitis and radiation pulmonary fibrosis" to "adverse effects of radiation on the lung".

   Results   Without the elaboration, retrieval of irrelevant items would have been reduced by 1/9, while retrieval of relevant items would have fallen by 4/15.

#260

   Request   Reticuloendotheliosis (microgliomatosis, reticulosarcoma) of the retina or brain.

   Elaboration   By coordinating SARCOMA, RETICULUM CELL or RETICULOENDOTHELIOSIS with EYE NEOPLASMS, the searcher is substituting a disease term for an anatomical term (RETINA) and thus expanding the search from "reticuloendotheliosis of the retina" to "reticuloendotheliosis of the eye".

   Results   Without this generalization, retrieval of irrelevant items would have been less by 2/11, while retrieval of relevant items would have fallen by 1/12.

#268

    <u>Request</u>   Aspergillosis of the orbit

    <u>Elaboration</u>   The area of interest relates to one particular mycosis (covered by the term ASPERGILLOSIS) caused by one particular fungus (covered by the term ASPERGILLUS). It is therefore difficult to justify the searcher's expansion to "all fungal diseases of the orbit" by explosions on MYCOSES and FUNGI.

    <u>Results</u>   These explosions added nothing to the recall but sharply reduced precision from 1/1 (100%) to 1/10 (10%).

#301

    <u>Request</u>   Methods of evaluating performance of surgical sutures <u>in vivo</u>, methods of introducing infection into sutured wounds, and adverse effects of various suture materials.

    <u>Elaboration</u>   The searcher expanded the scope of the search from "adverse effects of suture materials" to "adverse effects of suture materials and suturing technics" -- by including the terms SUTURE TECHNICS and LIGATION. That is, "technic" terms are substituted for materials terms.

    <u>Results</u>   By omission of the elaboration, retrieval of irrelevant documents would have been reduced 100% (15/15), while retrieval of relevant documents would have dropped by 1/3.

#304

    <u>Request</u>   Effect of administration of chloramphenicol on pregnant females during the first trimester: animal or human studies.

    <u>Elaboration</u>   The requester is concerned with congenital abnormalities attributable to chloramphenicol. This was generalized to "chloramphenicol-induced abnormalities" (not necessarily congenital) by the coordination of CHLORAMPHENICOL <u>and</u> ABNORMALITIES.

    <u>Results</u>   Recall was not improved. Without the elaboration, retrieval of irrelevant articles would have been reduced by 1/8.

#462

    <u>Request</u>   Cerebral amyloidosis

    <u>Elaboration</u>   As well as coordinating AMYLOIDOSIS or AMYLOID SUBSTANCE with anatomical terms relating to the brain, the searcher also coordinated with "brain disease" terms. This brought out additional relevant articles, but also retrieved irrelevant items; for example, renal amyloidosis in paraplegic patients.

Results   Without the elaboration, retrieval of irrelevant articles would have been reduced by 4/8, while retrieval of relevant articles would have fallen by 1/8.

#478

Results   Experimental wound healing of skin, subcutaneous tissue, intestine and gingiva.

Elaboration   In an attempt to cover the aspect of wound healing in skin transplantation, the requester used a coordination of SKIN TRANS-PLANTATION and WOUND HEALING or REGENERATION. That is, from the hierarchical tree G1.92:

        REGENERATION
            BONE REGENERATION
            LIVER REGENERATION
            NERVE REGENERATION
            WOUND HEALING

the generic REGENERATION was substituted for the specific WOUND HEALING. REGENERATION and SKIN TRANSPLANTATION retrieved irrelevant articles, largely immunological studies, on graft rejection. The requester is not concerned with immunological studies nor indeed with skin transplantation per se unless the articles contain a substantial amount of information on the mechanism of wound healing.

Results   Without the expansion, retrieval of irrelevant articles would have been reduced by 2/10, while retrieval of relevant articles would have been reduced by 1/15.

#479

Request   Quantitative and kinetic aspects of viral antigen-antibody reactions.

Elaboration   To be specific, the searcher needed to specify that an antigen or antibody term should co-occur with a virus term and also with a term indicating kinetics or quantitative analysis. However, in some sub-searches a testing "technic" term was substituted for an antibody ("substance") term, in particular by exploding on SERODIAGNOSIS. This explosion brings in terms not exclusively related to antigen-antibody reactions. The combination RUBELLA and NEUTRALIZATION TESTS and MODELS, for example, retrieved irrelevant articles on such topics as experimental rubella virus infections in rhesus monkeys.

Results   Without the elaboration, retrieval of irrelevant documents would have been reduced by 6/17, while retrieval of relevant documents would not have been affected.

Request   Organ preservation, storage and banking.

Elaboration   The request is for "organ preservation" and not for "tissue preservation". The searcher departed from organs in the strict sense (the sense in which the term was used by the requester) by including such terms as BONE MARROW.

Results   Recall unaffected. Without the elaboration retrieval of irrelevant documents would have been reduced by 1/5.

APPENDIX 5 (b)

Specificity of search formulation

In a sample of 210 searches analyzed, only 9 were found in which recall failures were attributed directly to the specificity of a search formulation. In no case was the formulation more specific than warranted by the stated request. Rather, these are examples of (1) situations in which the searcher might reasonably have been expected to generalize in order to improve recall or (2) situations in which search generalization would be necessary in order to substantially improve recall. A brief summary of the analysis is given below.

38   Hospital medical staff organization and functions, including the infection committee, the quality of medical care, and continuing education in the hospital.

This search was conducted on the single terms HOSPITAL MEDICAL STAFF and EDUCATION, MEDICAL, CONTINUING. This retrieved a total of 492 items, of which approximately 65% were of some relevance. Because of the paucity of terms in the area of hospital management, and because hospital journals tend not to be indexed exhaustively, the searcher would have needed to search very broadly on HOSPITAL ADMINISTRA-TION (over 1300 postings), in addition to the two terms used, in order to approach 100% recall. Precision would, of course, have been very low.

48   Rehabilitation of hemiplegics; psychology of hemiplegia patients.

We have a low recall estimate of 38.5% for this search, largely because much of the relevant literature deals with rehabilitation of the "stroke" patient in general, rather than the hemiplegic in particular. The addition of the terms CEREBRAL HEMORRHAGE and CEREBROVASCULAR DISORDERS, as alternates to HEMIPLEGIA, would have raised recall to over 60%. Such a generalization might have improved recall to almost 80% if the term REHABILITATION had been applied to a number of articles to which it appears pertinent.

77   Stomach neoplasms: epidemiology, etiology, genetics

The searcher used only the terms STOMACH NEOPLASMS and CARCINOMA, SCIRRHOUS in the disease category, but coordinated these terms with a long list of terms in an attempt to cover all approaches to epidemiology and etiology. Consequently, there were many term combinations that were not specific to the request (e.g., STOMACH NEOPLASMS and NEGROES, STOMACH NEOPLASMS and MORTALITY), and precision was only 44% (294 articles retrieved). In this case, the searcher might have tried broadening in the disease category to GASTROINTESTINAL NEOPLASMS, coordinating this term with others strictly related to epidemiology or etiology. Recall might thus have been improved from 66% to around 73%.
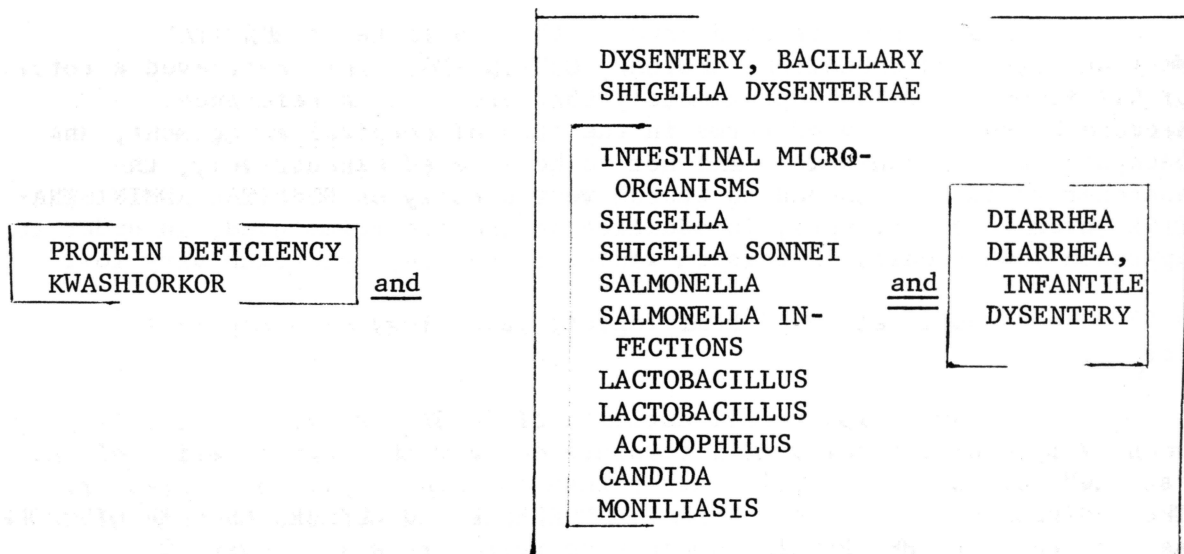
82   Factor analysis of surgery of temporal lobe epilepsy.
Specific factors are related to radiography, EEG, psychological tests
used before and after surgery, and prognosis.

The searcher coordinated all epilepsy terms with various
surgery terms, but only the terms EPILEPSY, TEMPORAL LOBE, and EPILEPSY,
TRAUMATIC with the appropriate diagnostic terms. It would be necessary
to generalize to EPILEPSY, as a coordinate with the diagnostic terms,
in order to improve recall substantially (from 65% to 85% approximately).
The total number of documents retrieved would, of course, be much
greater than the 315 actually retrieved, and the precision ratio would
probably be much lower than the 37% actually attained in this search.

115   Shigella, salmonella, lactobacillus, candida, or intestinal
microorganisms causing diarrhea or dysentery in cases of protein deficiency
or Kwashiorkor.

The searcher relied on a specific and exhaustive formulation,
as follows:

```
                              ┌──────────────────────┐
                              │ DYSENTERY, BACILLARY │
                              │ SHIGELLA DYSENTERIAE │
                              │ ┌──────────────────┐ │
                              │ │ INTESTINAL MICRO-│ │
                              │ │   ORGANISMS      │ │        ┌──────────────┐
                              │ │ SHIGELLA         │ │        │  DIARRHEA    │
┌───────────────────────┐    │ │ SHIGELLA SONNEI  │ │        │  DIARRHEA,   │
│ PROTEIN DEFICIENCY     │    │ │ SALMONELLA       │ │  and   │   INFANTILE  │
│ KWASHIORKOR           │and │ │ SALMONELLA IN-   │ │  ───   │  DYSENTERY   │
└───────────────────────┘    │ │   FECTIONS       │ │        └──────────────┘
                              │ │ LACTOBACILLUS    │ │
                              │ │ LACTOBACILLUS    │ │
                              │ │   ACIDOPHILUS    │ │
                              │ │ CANDIDA          │ │
                              │ │ MONILIASIS       │ │
                              │ └──────────────────┘ │
                              └──────────────────────┘
```

This retrieved nothing although there are articles of varying
degrees of relevance within MEDLARS. It would be necessary to generalize
to such combinations as KWASHIORKOR and GASTROENTERITIS in order to
obtain high recall in this search.

152   Anticoagulants for the treatment or prevention of pulmonary
embolus.

The search was conducted on PULMONARY EMBOLISM and a list of
anticoagulant terms. Recall would have improved, but only marginally
(from 27% to about 36%), by generalizing to THROMBOEMBOLISM.

155   Etiology of decompression sickness and nitrogen narcosis, including
bubble nucleation, growth and stabilization, gas solubility and diffusivity,
and analogue models or inert gas exchange.

The searcher might reasonably have generalized from individual inert gas terms to GASES in view of the fact that there is no intermediate generic term for "inert gases" as a group. However, this would only have improved recall from 50% to about 58%.

\# 166   Hemangioma of the small intestine

It appears that there are very few articles directly on the subject of hemangioma of the small bowel, although there are general articles on small bowel neoplasms that devote some attention to hemangioma, although not necessarily indexed under this specific term. To retrieve these the searcher might well have expanded to INTESTINAL NEOPLASMS and INTESTINE, SMALL.

#203   The use of gamma globulin in the treatment of bacteriologic diseases.

The searcher coordinated gamma globulin terms with terms for individual bacteriologic diseases. Unfortunately, some diseases (e.g., ASTHMA) may or may not be bacterial in origin. However, the index language does not distinguish the bacterial version from a version of different etiology. It would be necessary to expand to the whole of infectious disease, coordinated with gamma globulin terms, in order to obtain reasonable recall in this search.

Appendix 6

**Subheadings: application to cases of false coordination
and incorrect term relationship**

Appendix 6

Analysis of failures due to false coordinations and incorrect term relationships: possibility of solution by use of subheadings.

Number of searches analyzed: 45

False coordinations

Number of distinct examples encountered in 45 searches: 20

Number solvable by use of existing subheadings: 12

Number solvable by use of suggested new subheadings: 4

Number not readily solvable by subheadings: 4

Incorrect term relationships

Number of distinct examples encountered in 45 searches: 22

Number solvable by use of existing subheadings: 14

Number solvable by use of suggested new subheadings: 6

Number not readily solvable by subheadings: 2

FALSE COORDINATIONS

#230

    <u>Request</u>   Blood preservation: frozen serum and plasma

    <u>Formulation</u>

		GLYCERIN		SERUM ALBUMIN
BLOOD PRESERVATION	<u>and</u>	or	<u>and</u>	or
		FREEZING		PLASMA

    <u>Unwanted articles</u>   The "preservation" terms do not relate to the serum or plasma terms (e.g., articles dealing with preserved red blood cells transformed to plasma).

    <u>Solution</u>   A new subheading PRESERVATION applicable to all tissue terms in <u>MeSH</u>.

#239

    <u>Request</u>   Experimental renal hypertension in any animal

    <u>Formulation</u>   HYPERTENSION, RENAL <u>and</u> RAT

    <u>Unwanted articles</u>   There is no direct relation between "hypertension" and "rat". Determination of angiotension II in rat blood and the significance of this in the study of human hypertension.

    <u>Solution</u>   A new subheading EXPERIMENTAL. When added to a disease term, it would tend to ensure that this term is directly related to an animal term applied in indexing. HYPERTENSION, RENAL/EXPERIMENTAL <u>and</u> RAT would have avoided the false coordination mentioned above.

#240

    <u>Request</u>   Radiation damage to the kidney (radiation nephritis)

<u>Formulation</u>	RADIATION		HYDRONEPHROSIS
	INJURY	<u>and</u>	or
			KIDNEY DISEASES

    <u>Unwanted articles</u>   The "radiation injury" and kidney disease terms refer to two different patients.

    <u>Solution</u>   The existing subheading ETIOLOGY, applied to the kidney disease terms, would tend to reduce false coordinations of this type. A new subheading RADIATION-INDUCED would eliminate them.

#260

Request   Reticuloendotheliosis of retina or brain

Formulation   SARCOMA,   OPHTHALMIC
                RETICULUM CELL   and   NERVE

Unwanted articles   Neurological complications of malignant tumors
of the nasopharynx. The two terms refer to different patients.

Solution   There seems no simple way to avoid this type of false
coordination by the conventional use of subheadings.

#304

Request   Effect of administration of chloramphenicol to pregnant
female during first trimester.

                                        PREGNANCY or
Formulation   CHLORAMPHENICOL and   ABNORMALITIES or
                                        ABORTION, SEPTIC

Unwanted articles   Two types: 1. the chloramphenicol is not
directly related to pregnancy; it is used therapeutically after septic
abortion or after surgery for kidney abnormalities; 2. article on glucose-
6-phosphate-dehydrogenase deficiency in Thailand; fertility, neonatal
jaundice, bilirubin encephalopathy and acute hemolytic anemia are discussed,
chloramphenicol being mentioned as a possible etiological factor in the
latter (there is no reference to chloramphenicol in pregnancy).

Solution   Use of CHLORAMPHENICOL/ADVERSE EFFECTS would have avoided
retrieval of the first group, in which the relationship is that of CHLORAM-
PHENICOL/THERAPEUTIC USE only. This subheading could not, however, prevent
the second type of false coordination without joint use of the subheading
DRUG EFFECTS. CHLORAMPHENICOL/ADVERSE EFFECTS and PREGNANCY/DRUG EFFECTS
would have successfully avoided the second type of false coordination.

#452

Request   Complications (i.e., sequelae) of pancreatitis.

Formulation   PANCREATITIS and   CHOLELITHIASIS or
                                     JAUNDICE, OBSTRUCTIVE or
                                     COMMON BILE DUCT CALCULI

Unwanted articles   Various diagnostic procedures in hepatobiliary
disease. In each article, some patients have pancreatitis, others have
other conditions. There is no coincidence of pancreatitis and jaundice
or calculi or gallstones in the same patient.

Solution   The existing subheading COMPLICATIONS can solve this type

of problem when applied to both disease terms *anded* in the formulation. Thus, the use of PANCREATITIS /COMPLICATIONS *and* CHOLELITHIASIS /COMPLICATIONS, in a search formulation, will tend to retrieve articles in which the two terms relate to the same patient. It seems preferable, however, to use the subheading COMPLICATIONS solely for the concept of co-existing diseases, and to introduce a new subheading SEQUELAE to be used exclusively for conditions following as a consequence of other diseases and, possibly, conditions following as a consequence of various forms of therapy, exercise, etc.

#453

    <u>Request</u>   Perforation of the gallbladder

    <u>Formulation</u>   CHOLELITHIASIS <u>and</u>   RUPTURE, SPONTANEOUS

                                                     <u>or</u>

                                                  PERITONITIS

    <u>Unwanted articles</u>   Surgical and diagnostic studies in which the two terms are not directly related (i.e., the rupture or peritonitis does not follow as a consequence of the gallstones). For example, in one article the term RUPTURE, SPONTANEOUS applies to blood vessel rupture.

    <u>Solution</u>   In this case the searcher is interested in rupture or peritonitis solely as sequelae of cholelithiasis. A subheading SEQUELAE, appended to CHOLELITHIASIS, would have avoided this type of false coordination. The subheading ETIOLOGY may be used as a <u>companion</u> <u>subheading</u> in this context. That is, to express <u>condition</u> <u>B</u> following as a consequence of <u>condition</u> <u>A</u>, we can use A/SEQUELAE <u>and</u> B/ETIOLOGY (or A/COMPLICATIONS <u>and</u> B/ETIOLOGY).

#458

    <u>Request</u>   Effect of exercise on respiratory, circulatory and cardiovascular systems.

    <u>Formulation</u>   EXERTION <u>and</u> HYPERVENTILATION

    <u>Unwanted articles</u>   Discussion on gastrectomy: hyperventilation is used in assessing the pulmonary status of surgical patients; exercise is used in postoperative therapy. That is, there is no reference to hyperventilation following exertion.

    <u>Solution</u>   EXERTION/SEQUELAE <u>and</u> EXERTION/ADVERSE EFFECTS are the only relationships relevant to the request. They would prevent the false coordination mentioned above, in which the relationship is that of EXERTION/THERAPEUTIC USE (the term EXERCISE THERAPY is correct here).

#462

    <u>Request</u>   Cerebral amyloidosis.

Formulation   AMYLOIDOSIS and CEREBRAL SCLEROSIS, DIFFUSE

Unwanted articles   Rectal biopsy: no direct relation between the two terms.

Solution   There appears to be no simple way to avoid this type of false coordination by the conventional use of subheadings. On the other hand, the coordination of AMYLOIDOSIS with a brain disease term, to express "cerebral amyloidosis", is a searching strategy of doubtful value.

#457

Request   Neurological complications of kidney diseases.

Formulation   UREMIA and MYOSITIS

Unwanted articles   Serum calcium measurements in various diseases, including uremia and polymyositis (the two conditions do not refer to the same patient).

Solution   UREMIA/COMPLICATIONS and MYOSITIS/COMPLICATIONS

or

UREMIA/COMPLICATIONS and MYOSITIS/ETIOLOGY ("SEQUELAE"
would be preferable).

#466

Request   Lung transplantation

Formulation   LUNG and TRANSPLANTATION

Unwanted articles   Distribution of colloidal gold in rats with transplanted Guerin tumor (i.e., no lung transplantation).

Solution   Use of existing subheading TRANSPLANTATION. LUNG/TRANSPLANTATION would have avoided this false coordination.

#473

Request   Neurological and muscular complications of chickenpox or varicella. Infections precipitating myasthenia gravis.

Formulation   MYASTHENIA GRAVIS and infection terms

CHICKEN POX   neurological disease
VARICELLA-ZOSTER VIRUS   and   terms

Unwanted articles   The terms are not related (i.e., do not refer to the same patient).

Solution

CHICKEN POX/SEQUELAE   and   neurological disease term/ETIOLOGY

infection term/SEQUELAE   and   MYASTHENIA GRAVIS/ETIOLOGY

A problem still remains. Coordination of a virus term and MYASTHENIA
GRAVIS retrieves articles in which the two terms are essentially unrelated.
Assuming that a subheading SEQUELAE would be out of place appended to a
virus term, the combination MYASTHENIA GRAVIS/ETIOLOGY and a virus term
would still tend to ensure that the virus is an etiological factor in the
disease. The existing subheading COMPLICATIONS can be used in place of
SEQUELAE but is less precise.

#474

Request   Intestinal atony or ileus following vagotomy and pyloro-
plasty.

Formulation   PYLORIC STENOSIS   and   SURGERY, OPERATIVE
                                                POSTOPERATIVE COMPLICATIONS

and   INTESTINAL OBSTRUCTION.   OR

VAGOTOMY   and   INTESTINAL OBSTRUCTION

Unwanted articles   Case series in which the pyloric stenosis
or vagotomy and the intestinal obstruction refer to different patients.

Solution   1. VAGOTOMY/ADVERSE EFFECTS   and   INTESTINAL
                                                     OBSTRUCTION/ETIOLOGY

2. PYLORIC STENOSIS/SURGERY   and   SURGERY, OPERATIVE/ADVERSE EFFECTS

    and   INTESTINAL OBSTRUCTION/ETIOLOGY

This latter formulation is rather cumbersome. The problem could better
be solved by means of a new subheading POSTOPERATIVE COMPLICATIONS.
PYLORIC STENOSIS/POSTOPERATIVE COMPLICATIONS and INTESTINAL OBSTRUC-
TION/ETIOLOGY would tend to prevent the false coordinations noted above.

#478

Request   Experimental wound healing of skin, gingiva, or intestine.

Formulation   DUODENUM and WOUND HEALING

Unwanted articles   Not duodenal wound healing but healing of the
Ampulla of Vater after sphincterotomy, with and without suture of the
duodenal mucosa.

Solution   DUODENUM/INJURIES and WOUND HEALING would prevent this
type of false coordination.

#480

    <u>Request</u>   Instantaneous readoff of diagnosis or pattern of electrocardiograms by computer.

    <u>Formulation</u>   AUTOMATIC DATA PROCESSING <u>and</u> ELECTROCARDIOGRAPHY

    <u>Unwanted articles</u>   Electronics in gynecology and obstetrics: fetal heart recording and ADP of obstetrical records.

    <u>Solution</u>   ELECTROCARDIOGRAPHY/INSTRUMENTATION <u>and</u>
                                   AUTOMATIC DATA PROCESSING

#484

    <u>Request</u>   Complications following the use of oral contraceptives.

    <u>Formulation</u> MEDROXYPROGESTERONE <u>and</u> STERILITY, FEMALE

    <u>Unwanted articles</u>   Use of provera to delay implantation in rats. Phenylethylamines were tested to determine their antifertility effects.

    <u>Solution</u>   MEDROXYPROGESTERONE/ADVERSE EFFECTS

#489

    <u>Request</u>   Adreno-hepatic fusion (i.e., adrenal gland fused with the overlying liver)

    <u>Formulation</u>   ADRENAL GLANDS/ABNORMALITIES <u>and</u> LIVER/ABNORMALITIES

    <u>Unwanted articles</u>   Liver abnormalities and adrenal abnormalities discussed separately.

    <u>Solution</u>   There appears no simple way of avoiding this by the conventional use of subheadings. This type of false coordination will occur occasionally but should be within tolerable limits. <u>Note</u>: this is the only example discovered in which a false coordination occurred despite the correct use of subheadings in indexing and searching.

#513

    <u>Request</u>   Effect of irradiation on the infectivity and structure of viruses.

    <u>Formulation</u>   ONCOGENIC VIRUSES <u>and</u> RADIATION GENETICS

                     HERPESVIRUS INFECTIONS <u>and</u> ULTRAVIOLET RAYS

    <u>Unwanted articles</u>   The former term combination retrieved an article

on cancer etiology in which radiation and viruses are not directly related. The latter discusses a vaccine, inactivated by ultraviolet, used to protect against herpetic virus.

<u>Solution</u>   1. ONCOGENIC VIRUSES/RADIATION EFFECTS

2. The combination HERPESVIRUS INFECTIONS <u>and</u> ULTRAVIOLET RAYS was presumably included in the search formulation to retrieve articles relating to effect of ultraviolet on infectivity by herpesvirus, where the indexer has used the term HERPESVIRUS INFECTIONS and ULTRAVIOLET RAYS. There seems no good way of preventing a false coordination here (unless, of course, the subheading RADIATION EFFECTS is made applicable to infection terms, but this would conflict with the heading RADIOTHERAPY). Reliance on HERPES VIRUS/RADIATION EFFECTS would have prevented this failure.

INCORRECT TERM RELATIONSHIPS

#240

    <u>Request</u>   "Radiation kidney"

    <u>Formulation</u>   RADIATION INJURY <u>and</u> NEPHROBLASTOMA

    <u>Unwanted articles</u>   Not radiation-induced nephroblastoma but therapeutic use of radiation following nephrectomy.

    <u>Solution</u>   RADIATION INJURY/SEQUELAE <u>and</u> NEPHROBLASTOMA/ETIOLOGY

#249

    <u>Request</u>   Primary tumors or cysts of the heart, pericardium, and major blood vessels.

    <u>Formulation</u>   NEOPLASM RADIOTHERAPY <u>and</u> VENA CAVA, SUPERIOR

    <u>Unwanted articles</u>   Not radiotherapy of neoplasms of vena cava, but vena caval syndrome resulting from neoplasms of the lung.

    <u>Solution</u>   HEART NEOPLASMS/RADIOTHERAPY

#260

    <u>Request</u>   Reticuloendotheliosis of the retina or brain

    <u>Formulation</u>   SARCOMA, RETICULUM CELL <u>and</u> BRAIN DISEASES

    <u>Unwanted articles</u>   Reticulum cell sarcoma, with encephalopathy.

    <u>Solution</u>   There seems no convenient way of preventing this failure by use of subheadings. However, the coordination of two disease terms to express "reticuloendotheliosis of the brain" is a strategy of doubtful value.

#304

    <u>Request</u>   Effect of administration of chloramphenicol to pregnant

female during first trimester.

    Formulation   CHLORAMPHENICOL <u>and</u> AMNION
<div align="center"><u>or</u>
PREGNANCY
COMPLICATIONS</div>

    <u>Unwanted articles</u>   1. Antibiotics in the tissue culture of human amnion (not adverse effects of chloramphenicol). 2. Chloramphenicol used therapeutically in a case of attempted abortion.

    <u>Solution</u>   CHLORAMPHENICOL/ADVERSE EFFECTS

#452

    <u>Request</u>   Complications (i.e., sequelae) of pancreatitis

    <u>Formulation</u>   PANCREATITIS <u>and</u> POSTOPERATIVE COMPLICATIONS
<div align="center"><u>or</u>
CHOLELITHIASIS</div>

    <u>Unwanted articles</u>   Cases of postoperative pancreatitis (not postoperative complications following pancreatitis). Cases of pancreatitis and cholelithiasis in the same patient with no evidence of a relationship between the two. Cases of gallstones causing pancreatitis (i.e., the reverse relationship to the request).

    <u>Solution</u>   PANCREATITIS/SEQUELAE <u>and</u> POSTOPERATIVE COMPLICATIONS
<div align="center"><u>or</u>
CHOLELITHIASIS/ETIOLOGY</div>

#457

    <u>Request</u>   Neurological complications of kidney diseases.

    <u>Formulation</u>

AMINOACIDURIA, RENAL		HEADACHE
<u>or</u>		<u>or</u>
HYPERTENSION, RENAL		COMA
<u>or</u>	<u>and</u>	<u>or</u>
NEPHROSIS		DEPRESSION
<u>or</u>		<u>or</u>
NEPHRITIS		NEUROLOGIC
		MANIFESTATIONS

    <u>Unwanted articles</u>   1. The neurological manifestations result from drug therapy or diagnostic procedure and not directly from the kidney disease. 2. Renal aminoaciduria in patients with cerebral disease, not kidney failure leading to cerebral disease.

    <u>Solution</u>   Kidney disease term/SEQUELAE

Request   Cerebral amyloidosis

Formulation   AMYLOIDOSIS and CEREBRAL HEMORRHAGE

Unwanted articles   Not amyloidosis of the brain, but an autopsy report on a case of macroglobulinemia with amyloid degeneration. The patient died of cerebral hemorrhage.

Solution   There is no simple way of avoiding this failure by means of subheadings. However, as noted under #260, the coordination of two disease terms to express site of disease is a strategy of doubtful validity.

#473

Request   Infections precipitating myasthenia gravis

Formulation   MYASTHENIA GRAVIS and PITYRIASIS
                                        or
                                   PNEUMONIA

Unwanted articles   The two conditions co-exist but there is no suggestion that the infection leads to myasthenia gravis.

Solution   PNEUMONIA/SEQUELAE and MYASTHENIA GRAVIS/ETIOLOGY

#474

Request   Intestinal atony or ileus following vagotomy or pyloroplasty.

Formulation   PYLORIC STENOSIS and SURGERY, OPERATIVE
                                             or   and INTESTINAL
                                   POSTOPERATIVE   OBSTRUCTION
                                   COMPLICATIONS

                OR
VAGOTOMY and GASTROINTESTINAL MOTILITY

Unwanted articles   1. Cholelithiasis causing pyloric stenosis. 2. Pyloric stenosis and intestinal obstruction in patients following ingestion of chemical substances. (In neither of the above cases does surgery lead to intestinal obstruction). 3. Use of segments of the jejunum, together with vagotomy, in treatment of disabling post-gastrectomy symptoms; vagotomy does not lead to ileus or atony.

Solution   1. PYLORIC STENOSIS/SURGERY and SURGERY, OPERATIVE/ADVERSE EFFECTS and INTESTINAL OBSTRUCTION/ETIOLOGY

or

PYLORIC STENOSIS/POSTOPERATIVE COMPLICATIONS and INTESTINAL OBSTRUCTION/ETIOLOGY

(see discussion #474 under "false coordinations").

2. VAGOTOMY/ADVERSE EFFECTS and GASTROINTESTINAL MOTILITY

#481

Request   Statistical correlation between the American Society of Anesthesiologists' physical status category and the intra- or postoperative death rate.

Formulation   ANESTHESIA and MORTALITY

Unwanted articles   In an evaluation of treatment of 2000 cases of massively bleeding gastroduodenal ulcers, certain general factors (e.g., medications, vitamins, diet, anesthesia, surgical procedure) influencing incidence, type and outcome of patients are discussed. There is no direct discussion of anesthetic death.

Solution   ANESTHESIA/MORTALITY

#484

Request   Complications following the use of oral contraceptives.

Formulation   CONTRACEPTIVES, ORAL and STERILITY, FEMALE
or
MENSTRUATION DISORDERS

Unwanted articles   Therapeutic use of estrogens in treatment of sterility and menstruation disorders.

Solution   CONTRACEPTIVES, ORAL/ADVERSE EFFECTS, whereas the unwanted items would be indexed CONTRACEPTIVES, ORAL/THERAPEUTIC USE.

#513

Request   Effect of irradiation on the infectivity and structure of viruses.

Formulation   RADIATION and PLANT VIRUSES

Unwanted articles   Not the effect of radiation on viruses, but x-ray scattering used as an investigative tool.

Solution   PLANT VIRUSES/RADIATION EFFECTS