
Appendix: Annotated Typescript of a Sample MYCIN Consultation

A.1 Instructions for Users at the Start of an Infectious Disease Consultation (Optional)

[Here, as elsewhere, the responses typed by the user follow a double-asterisk prompt.]

MYCIN 3-Jun-78 . . .

Special options (type ? for help):

**

Instructions? (Y or N)

** YES

This is a computer program named MYCIN that has been designed to advise you regarding an appropriate choice of infectious disease therapy. It is understood that you have a patient who may have an infection. Please answer the following questions, terminating each response with RETURN. To correct typing errors, use the DELETE key to delete single characters, <ctrl>W to delete a word, and <ctrl>Q to delete the whole line.

If you are not certain of your answer, you may modify the response by inserting a certainty factor (a number from 1 to 10) in parentheses after your response. Absolute certainty (10) is assumed for every unmodified answer. It is likely that some of the following questions cannot be answered with certainty.

You may change an answer to a previous question in two ways. If the program is waiting for a response from you (that is, has typed **), enter CHANGE followed by the number(s) of the question(s) whose answers will be altered. You may also change a previous answer at any time (even when the program is not waiting for a response from you) by typing <ctrl>F (Fix), which will cause the program to interrupt its computation and ask what you want to change. (If the response to <ctrl>F is not immediate, try typing the RETURN key in addition.) Try to avoid going back because the process requires reconsidering the patient from the beginning and therefore may be slow.

Note that you may also enter UNK (for UNKnown) if you do not know the answer to a question, ? if you wish to see a more precise definition of the question or some examples of recognized responses, ?? if you want to see all recognized responses, the word RULE if you would like to see the decision rule which has generated the question being asked, the word WHY if you would like to see a more detailed explanation of the question, or the letters QA if you would like to interrupt the consultation in order to ask questions regarding the decisions made so far in the consultation. If you are ever puzzled about what options are available to you during a consultation, enter the word HELP and a list of options will be listed for you.

Sample Response [user input follows the **]

Does the patient have a risk factor for tuberculosis?

**?

One or more of the following are considered risk factors for TB: a) positive PPD (5TU), b) history of close contact with a person having active TB, c) household member with a past history of active TB, d) chest X-ray showing apical scarring, e) granulomas seen on biopsy of any organ tissue.

expected responses are: YES NO

Enter HELP for user options.

** YES

SUMMARY:

(type ctrl-O to abort printout)

UNK - Answer not known.
 ? - Rephrases the question and gives examples of recognized responses.
 ?? - Prints a list of all recognized responses.
 RULE - Prints the current decision rule.
 QA - Program enters question-answering mode.
 CHANGE # - Go back and re-request answer to question number #.
 COMMENT - Enter comments about any aspect of the system's performance. Your comments will be forwarded to those in charge of the MYCIN program.
 WHY - Gives high-level explanation of the current reasoning chain that provoked this question.
 HOW # - Explains HOW the system will achieve a goal referred to by number # in a previous explanation.
 EXPLAIN - Provides a more detailed explanation of a previous answer given by a WHY command.
 FORGET - Resets the explanation of the reasoning chain back to lowest level, as if you never used the WHY/EXPLAIN commands.
 STOP - Halts the program without completing the consultation.
 SAVE - Halts the program, saving the current patient on a disk file, retrievable at a later date.
 HELP - Prints this list.

A.2 Infectious Disease Consultation Session

[This is a typescript of a MYCIN consultation on an actual patient treated at Stanford. MYCIN was not used to suggest treatment. Spaces have been added for readability, and comments (in italics) have been inserted. Otherwise it is a verbatim transcript. User's responses follow double asterisks.]

-----PATIENT-538-----

1) Patient's name:

** PT538

[Name, age, sex, and race are always asked because they are INITIALDATA.]

2) Age:

** 34 YEARS

3) Sex:

** MAEL

= MALE

[MYCIN corrects misspellings.]

4) Race:

** WHY

[The user asks for an explanation. In this instance it is trivial.]

[i.e. WHY is it important to determine the race of PATIENT-538?]

[1.0] The race of a patient is one of the 5 standard parameters that identify a patient.

This may be useful later in the consultation. For example, it is relevant in determining the organisms (other than those seen on cultures or smears) which might be causing the infection.

[back to question 4...]

** CAUCASIAN

[This is the answer to the question about race.]

Please supply one answer under each heading. If your response is not

understood, you will be prompted by the standard questioning method.
(enter ? for normal prompting, * for questions that are not applicable.)

Please enter the results of positive cultures using the following table.

site	culture number	date collected	date positive	method of collection [urine,sputum only]
------	----------------	----------------	----------------	--

5)**DONE

[The next question asks for several items in tabular form since they are found together in the hospital record.]

Please enter the results of pending cultures in the following table.

site	culture number	date collected	stain examined	method of collection [urine,sputum only]
------	----------------	----------------	-----------------	--

6)** CSF 1234 30-Jan-77 YES *

stain of smear	morph	[MYCIN follows up on the stain of the smear and the morphology.]
----------------	-------	--

[type DONE if no organism was seen on the smear]

7)**DONE

[No information about stain or morphology is available. MYCIN now follows up question 6, asking about other positive cultures.]

site	cul #	date coll.	smear examined?	coll. method
------	-------	------------	-----------------	--------------

8)**DONE

[There are no more positive cultures.]

Please enter negative cultures in the following table.

site	culture number	date collected	method of collection [urine,sputum only]
------	----------------	-----------------	--

9)**DONE

[There are no negative cultures.]

10) Do you suspect Pt538 may have an infection at a site from which you have not obtained culture specimens?

** NO

Please enter information on current antimicrobials.

drug name	route of administration	date started
11)** CEPHALOTHIN	IV	23-Jan-77

12)**DONE

Please enter information on prior antimicrobials.

drug name	route of administration	date started	date stopped
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13)**DONE

[Considering organisms (other than those isolated from cultures) which might be present. . .]

14) Has Pt538 recently had symptoms of persistent headache or other abnormal neurologic symptoms (dizziness, lethargy, etc.)?

** YES

15) Has Pt538 recently had objective evidence of abnormal neurologic signs (nuchal rigidity, coma, seizures, etc.) documented by physician observation or examination?

** YES

The CSF cultures will be considered to be associated with MENINGITIS.

16) Please give the date on which clinical evidence (symptoms, signs, or laboratory tests) of the meningitis first appeared.

** 29-Jan-77 22:15

17) Does Pt538 have an abnormal chest X-ray?

** NO

18) Does Pt538 have one or more of the following risk factors for TB: a) positive intermediate strength PPD, b) history of close contact with a person with active TB, c) a household member with a past history of active TB, d) apical scarring on chest X-ray, e) history of granulomas on biopsy of liver, lymph node, or other organs?

** NO

19) Does Pt538 have any cutaneous lesions or rash on physical examination?

** NO

20) Does Pt538 have evidence of ocular nerve dysfunction?

** NO

21) Is Pt538 a compromised host (e.g. alcoholic, sickle-cell-disease, immunosuppressed)?

** YES

22) Is Pt538 immunosuppressed (e.g. corticosteroid therapy, cytotoxic drug therapy, radiation therapy, leukemia, lymphoma)?

** NO

23) For how many days has Pt538 had abnormal neurologic signs?

** 7.2 HOURS

[Note that the answer was given in hours. MYCIN has to be flexible enough to convert units.]

24) For how many days has Pt538 had neurologic symptoms?

** 1 DAYS

25) Has Pt538 had recent evidence of tender or enlarged salivary glands?

** NO

26) Has Pt538 been exposed to any contagious disease recently (e.g. meningococcal disease, mumps) ?

** NO

Please enter CSF findings in the following table

CSF WBC	Percent PMN	Protein	CSF Glucose	Peripheral Glucose
27)** 100	99	280	5	UNKNOWN

[Note that some information is missing.]

28) Do you know the results of a recent CBC of Pt538?

** YES

Please enter CBC results in the following table

WBC in 1000's	Percent PMN	Percent BANDS
29)** 1.9	UNKNOWN	UNKNOWN

30) Has Pt538 had any injury or insult to, or defect in the central-nervous-system (excluding neurosurgery)?

** NO

31) Has Pt538 ever undergone any type of surgery?

** YES

32) Does Pt538 have a history of NEUROSURGERY?

** NO

33) Does Pt538 live in a crowded environment?

** NO

34) Do you suspect recent alcoholic history in Pt538?

** NO

35) Is meningitis a hospital-acquired infection?

** WHY

[This is a more interesting question, requiring presentation of the rule that caused question 35 to be asked. Note that the first five clauses of the rule have been investigated and question 35 is motivated by the last clause. MYCIN first rephrases the question to give the user its interpretation of the WHY.]

[i.e. WHY is it important to determine whether the infection was acquired while the patient was hospitalized?]

[2.0] This will aid in determining the organisms (other than those seen on cultures or smears) which might be causing the infection.

It has already been established that

[2.1] the infection which requires therapy is meningitis, and

[2.2] organisms were not seen on the stain of this pending CSF culture, and

[2.3] the type of the infection is bacterial, and

[2.4] neurosurgery is not one of the relevant items from the history of Pt538, and

[2.5] the age of Pt538 is greater than 10 days

Therefore, if

[2.6] the infection was acquired while the patient was hospitalized

then

there is evidence that the organisms (other than those seen on cultures or smears) which might be causing the infection is e.coli (.75) staphylococcus-coag-pos (.3) pseudomonas-aeruginosa (.3) klebsiella-pneumoniae (.5)

Author: Yu

[RULE545]

[back to question 35. . .]

[MYCIN now requests the answer to question 35 again. Instead of answering, the user asks how clause 2.3 was confirmed.]

** HOW 2.3

[i.e. HOW was it established that the type of the infection is bacterial?]

[Rather than printing the contents of the rules, MYCIN shows the rule numbers and the strength of positive and negative evidence from each rule.]

The following rules concluded about:

the likelihood that the type of the infection is bacterial

	Rule	Yes	No
[2.7]	RULE148	(.19)	
[2.8]	RULE500	(.51)	
[2.9]	RULE501	(.95)	
[3.0]	RULE502	(.97)	
[3.1]	RULE526	(.98)	
[3.2]	RULE504	(.97)	
[3.3]	RULE524	(.98)	

Thus, it has been established that the type of the infection is bacterial.

[back to question 35...]

** HOW 2.5

[i.e. HOW was it established that the age of pt538 is greater than 10 days?]

In answer to question 2 you said that the age of pt538 is 34 years

Thus, it has been established that the age of pt538 is greater than 10 days.

[back to question 35. . .]

** Y

36) Is Pt538's clinical history consistent with EPIGLOTTITIS?

** NO

37) Is Pt538's clinical history consistent with OTITIS-MEDIA?

** NO

38) Has Pt538 ever undergone splenectomy?

** NO

39) Is Pt538 a burn patient?

** WHY

[Another explanation is requested.]

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[i.e. WHY is it important to determine whether PATIENT-538 has been seriously burned?]

[4.0] This will aid in determining the organisms (other than those seen on cultures or smears) which might be causing the infection.
It has already been established that
[4.1] the infection which requires therapy is meningitis, and
[4.2] organisms were not seen on the stain of this pending CSF culture,
and

[4.3] the type of the infection is bacterial

Therefore, if

[4.4] pt538 has been seriously burned

then

there is suggestive evidence (.5) that pseudomonas-aeruginosa is one of the organisms (other than those seen on cultures or smears) which might be causing the infection

Author: Yu

[RULE578]

[back to question 39. . .]

** WHY

[In this case, the user asks another WHY question, backing up the subgoal tree.]

[i.e. WHY is it important to determine the organisms (other than those seen on cultures or smears) which might be causing the infection?]

[5.0] ... in order to determine the therapeutic regimen of PATIENT-538.

If

[5.1] information has been gathered about organisms isolated from the patient, organisms noted on smears of the patient, negative cultures of the patient, suspected infections without microbiological evidence, current drugs of the patient and prior drugs of the patient, and

[5.2] an attempt has been made to deduce the organisms which require therapy, and

[5.3] You have given consideration to organisms (other than those seen in cultures or smears) which might be present, and found at least one organism which requires therapy.

then

determine the best therapy recommendation from among the drugs likely to be effective against the significant organisms

[RULE092]

[back to question 39. . .]

** Y

[MYCIN now prints its intermediate conclusions about the likely causes of the infection.]

I have found evidence (RULE545 RULE557) that treatment should cover for E.coli causing meningitis.

I have found evidence (RULE545 RULE557 RULE578) that treatment should cover for Pseudomonas-aeruginosa causing meningitis.

I have found evidence (RULE545 RULE557) that treatment should cover for Klebsiella-pneumoniae causing meningitis.

I have found evidence (RULE507) that treatment should cover for Diplococcus-pneumoniae causing meningitis.

[Now MYCIN begins to ask questions related to appropriate therapy.]

40) Does Pt538 have focal neurological signs?

** UNKNOWN

[Some questions are motivated by the organism under consideration. Thus the following lines sometimes provide useful contextual information to a user.]

[Determining which drugs are desirable for use against the E.coli. . .]

[Determining which drugs are desirable for use against the Pseudomonas-aeruginosa. . .]

[Determining which drugs are desirable for use against the Klebsiella-pneumoniae. . .]

[Determining which drugs are desirable for use against the Diplococcus-pneumoniae. . .]

My therapy recommendations will be designed to treat for organisms that either are very likely or, although less likely, would have a significant effect on therapy selection if they were present. It is important to cover for the following probable infection(s) and associated organism(s):

INFECTION-1 is MENINGITIS

- + <ITEM-1> E.COLI [from clinical evidence only]
- + <ITEM-2> PSEUDOMONAS-AERUGINOSA [from clinical evidence only]
- + <ITEM-3> KLEBSIELLA-PNEUMONIAE [from clinical evidence only]
- + <ITEM-4> DIPLOCOCCUS-PNEUMONIAE [from clinical evidence only]

41) Does Pt538 have a clinically significant allergic reaction to any antimicrobial agent?

** NO

[Considering AMPICILLIN-AND-GENTAMICIN for use against INFECTION-1...]

42) Do you have reason to suspect that Pt538 may have impaired renal function?

** NO

43) Pt538's weight in kilograms (or <number> POUNDS):

** 70

[Finally, MYCIN prints the best therapy it has found to maximize the chances of effective coverage of the cause(s) of the infection while minimizing the number of drugs, their toxicity, and side effects.]

[REC-1] My preferred therapy recommendation is as follows:

In order to cover for Items <1 2 3 4>:

Give the following in combination:

1) AMPICILLIN

Dose: 3.5g (28.0 ml) q4h IV [calculated on basis of 50 mg/kg]

2) GENTAMICIN

Dose: 119 mg (3.0 ml, 80mg/2ml ampule) q8h IV [calculated on basis of 1.7 mg/kg plus consider giving 5 mg q24h Intrathecal

Comments: Monitor serum concentrations

Since high concentrations of penicillins can inactivate aminoglycosides, do not mix these two antibiotics in the same IV bottle.

Do you wish to see the next choice therapy?

** YES

[Other therapies can be examined.]

Which, if any, of the above drugs do you wish eliminated from consideration?

** AMPICILLIN

[Considering GENTAMICIN for use against INFECTION-1...]

[Considering PENICILLIN for use against INFECTION-1...]

[REC-2] Next best therapy recommendation:

In order to cover for Items <1 2 3>:

Give: GENTAMICIN

Dose: 119 mg (3.0 ml, 80mg/2ml ampule) q8h IV [calculated on basis of 1.7 mg/kg] plus consider giving 5 mg q24h Intrathecal

Comments: Monitor serum concentrations

In order to cover for Item <4>:

Give: PENICILLIN

Dose: 3.5 million units (7.0 ml) q4h IV [calculated on basis of 50000 units/kg]

RECOMMENDATION-2 is equivalent to RECOMMENDATION-1.

Would you like to see details of this comparison?

** YES

Looking at the coverage of the 'most likely' items, we see that:

RECOMMENDATION-1 consists of 1 first choice drug (AMPICILLIN for ITEM-1 and ITEM-4) and 1 third choice drug (GENTAMICIN for ITEM-1, ITEM-2 and ITEM-3)

RECOMMENDATION-2 consists of 1 first choice drug (PENICILLIN for ITEM-4) and 1 third choice drug (GENTAMICIN for ITEM-2, ITEM-1 and ITEM-3)

ORGANISMS	RECOMMENDATION-1	RECOMMENDATION-2
'most likely'	Drug -- Choice Ranking	Drug -- Choice Ranking
ITEM-1	AMPICILLIN-AND-GENTAMICIN--1st	GENTAMICIN--3rd
ITEM-2	GENTAMICIN--2nd	GENTAMICIN--2nd
ITEM-3	GENTAMICIN--3rd	GENTAMICIN--3rd
ITEM-4	AMPICILLIN--1st	PENICILLIN--1st

(The desirability of a drug is defined to be its lowest ranking for the items it covers.)

Do you wish to see the next choice therapy?

** NO

A.3 Answers to User's Questions About This Consultation and About the Knowledge Base

Please ask any simple-English questions regarding the above consultation session or the overall knowledge of the consultation system. When discussing the consultation above, please refer to organisms, cultures, etc. by their numeric names (e.g., ORGANISM-1). Questions which were asked during the consultation may be specified by the numbers that preceded them above, (e.g., WHY DID YOU ASK QUESTION 1?). Control-O will abort type-out, or cancel the current question. Type HELP for a list of the options available. Enter the word STOP when you have no further questions.

Type HELP for the list of question options.

** HELP

QA-OPTIONS:

(Type ctrl-O to abort printout)

ADVICE --	Prints suggestions for using the QA system effectively.
QT --	Prints examples of question types recognized by the system.
EQ <numbers> --	Prints an explanation of the specified question(s) from the consultation, e.g., EQ 8 13.
LP <object type> --	Prints list of attributes associated with object type, e.g., LP CULTURE. (Object types are patient, infection, culture, organism, and drug.)
PR <numbers> --	Prints specified rule(s), e.g., PR 373 49 87 2.
EXPLTHER --	Prints a short description of the therapy program.
REC --	Prompts user for alternative therapy RECOMMENDATION and compares it to MYCIN's recommendation.
RX <infection> <organism identities> --	Prints treatment lists for specified organisms causing the indicated infection, e.g., RX MENINGITIS ENTEROCOCCUS.
JUSTIFICATION --	When rules are printed out, include their justifications.
LITERATURE --	When rules are printed out, include their literature references.
NOJUST --	Stop giving justification and/or literature with rules.
TERSE --	Print rules in terse format.
VERBOSE --	Turns off terse printing of rules.
STOP --	Escape from QA-module.
HELP --	Prints this list.

** JUSTIFICATION

** LITERATURE

** WHY DID YOU TREAT E.COLI?

ITEM-1 is E.coli associated with meningitis. I decided to treat ITEM-1 on the basis of clinical evidence only.

The following rules concluded about:

the likelihood that e.coli is one of the organisms (other than those seen on cultures or smears) which might be causing the infection

RULE545 was used to conclude that e.coli is one of the organisms (other than those seen on cultures or smears) which might be causing the infection (.74). The last question asked before the conclusion was made was 35.

RULE557 was used to conclude that e.coli is one of the organisms (other than those seen on cultures or smears) which might be causing the infection (.93). The last question asked before the conclusion was made was 37.

[A summary of why E. coli was treated shows the parameters associated with E. coli as a likely cause of the infection.]

The parameters most frequently used in these rules were:

the infection which requires therapy
 whether a smear of the culture was examined
 whether organisms were seen on the stain of the culture
 the type of the infection

Would you like a summary of ALL the parameters used by these rules?

** YES

Parameter (rules with this parameter)

the white count from the patient's peripheral CBC (in thousands) (557)
 whether the results of a recent CBC of the patient are available (557)
 whether the infection was acquired while the patient was hospitalized (545)
 the age of the patient (545)
 the relevant items from the history of the patient (545)
 the type of the infection (545, 557)
 whether organisms were seen on the stain of the culture (545, 557)
 whether a smear of the culture was examined (545, 557)
 the infection which requires therapy (545, 557)

[The next question is about MYCIN's knowledge in general, not about the conclusions drawn for the case just discussed.]

** HOW DO YOU USE THE TYPE OF THE INFECTION?

The following rules use:

the type of the infection

154, 578, 574, 572, 570, 565, 564, 559, 557, 553, 551, 549, 547, 545, 543, 541, 539, 537, 535, 533, 531, 529, 523, 520, 519, 517, 515, 513, 511, 507, 300, 289, 288, 287, 280, 174, 167

The parameter most frequently concluded by these rules is:

the organisms (other than those seen on cultures or smears) which might be causing the infection

Would you like a summary of ALL the parameters concluded by these rules?

** NO

Which of the rules do you wish to see?

** 280

RULE280

[This rule applies to all cultures, and is tried in order to find out about the organisms (other than those seen on cultures or smears) which might be causing the infection]

- If:
- 1) The infection which requires therapy is meningitis, and
 - 2) The type of the infection is fungal, and
 - 3) Organisms were not seen on the stain of the culture, and
 - 4) The patient is not a compromised host, and
 - 5) The patient has been to an area that is endemic for coccidiomycoses, and
 - 6) The race of the patient is one of: black asian indian, and
 - 7) The cryptococcal antigen in the CSF was not positive

Then: There is suggestive evidence (.5) that cryptococcus is not one of the organisms (other than those seen on cultures or smears) which might be causing the infection

Author: YU

Justification: Dark-skinned races, especially Filipino, Asian, and Black (in that order) have an increased susceptibility to coccidiomycoses meningitis.

Literature: Stevens, D.A. et al. Miconazole in Coccidiomycosis. Am J Med, 60:191-202, Feb 1976.

A.4 Therapy Recommendation Consultation Session

[If the infection and organism identities are known, MYCIN can still be helpful in recommending appropriate therapy.]

MYCIN 3-Jun-78 . . .

Special options (type ? for help):

** REC

Instructions? (Y or N)

** YES

This program recommends therapy for a patient with infectious diseases. You will be asked a few facts about the patient which will be used to determine the dosages and appropriateness of giving certain antibiotics. Then you will be prompted for the infection(s) that you want treated and the organism(s) which you feel may be responsible for each infection.

MYCIN cannot make a recommendation without knowing the infection(s) and organism(s) to be treated. Other information is requested for the purpose of refining therapy selection, but is not essential; you may answer UNKNOWN to any of these questions.

Case 2, AA, 47-24-31, VMC, A 3 year old female with one day history of headache, lethargy, fever to 104. L.P.: Protein 25, glucose 95 110 cells with 96% polys. Pe: Meningismus, petechiae on arms and shoulders.

28-NOV-77 11:05:51

[consultation of 23-JUN-76 12:00]

-----PATIENT-683-----

1) Patient's name: (first-last)

** PT683

2) Age:

** 3.5

3) Sex:

** FEMALE

4) Is Pt683 currently receiving therapy with any antimicrobial agent?

** NO

5) During the present illness, has Pt683 been treated with an antimicrobial agent which is no longer being administered?

** NO

Infection: MENINGITIS

Organism: VIRUS

[Determining which drugs are desirable for use against the Virus. . .]

Are there any other organisms which might be causing this meningitis?

** YES

Organism: HEMOPHILUS-INFLUENZAE

6) Has the lab reported the in-vitro antibiotic sensitivities of the hemophilus-influenzae causing the meningitis (ITEM-2)?

** N

[Determining which drugs are desirable for use against the Hemophilus-influenzae. . .]

7) Does Pt683 have a clinically significant allergic reaction to any antimicrobial agent?

** NO

Are there any other organisms which might be causing this meningitis?

** YES

Organism: NEISSERIA-MENINGITIDIS

8) Has the lab reported the in-vitro antibiotic sensitivities of the neisseria-meningitidis causing the meningitis (ITEM-3)?

** N

[Determining which drugs are desirable for use against the Neisseria-meningitidis. . .]

Are there any other organisms which might be causing this meningitis?

** NO

Are there additional infections for which you want therapy recommendations?

** NO

INFECTION-1 is MENINGITIS

+ ... VIRUS Supportive therapy.
+ <ITEM-2> HEMOPHILUS-INFLUENZAE
+ <ITEM-3> NEISSERIA-MENINGITIDIS

[Considering AMPICILLIN-AND-CHLORAMPHENICOL for use against INFECTION-1. . .]

9) What is the most recent creatinine clearance in ml/min which you feel is a true representation of Pt683's renal function?

** UNKNOWN

10) What is the most recent serum creatinine of Pt683 (in mg/100ml)?

** UNKNOWN

11) Pt683's weight in kilograms (or <number> POUNDS):

** 17.7

[REC-1] My preferred therapy recommendation is as follows:

In order to cover for Items <2 3>:

Give the following in combination:

1) AMPICILLIN

Dose: 886 mg (7.0 ml) q4h IV [calculated on basis of 50 mg/kg]

[The dose should be modified in SEVERE renal failure. I can adjust the dose only if a creatinine clearance or a serum creatinine is obtained, and the patient's weight is known.]

2) CHLORAMPHENICOL

Dose: 443 mg (4.4 ml) q6h IV [calculated on basis of 25 mg/kg]

Please ask any simple-English questions regarding the above consultation session or the overall knowledge of the consultation system. When discussing the consultation above, please refer to organisms, cultures, etc. by their numeric names (e.g. ORGANISM-1). Questions which were asked during the consultation may be specified by the numbers that preceded them above, (e.g., WHY DID YOU ASK QUESTION 1?). Control-O will abort type-out, or cancel the current question. Type HELP for a list of the options available. Enter the word STOP when you have no further questions.

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Type HELP for the list of question options.

** JUSTIFICATION

** LITERATURE

[MYCIN can compare its recommendation against one that the user would like to consider.]

** REC

For each item in turn, enter the drug you would have prescribed in RECOMMENDATION-1.

In order to minimize the number of drugs in your recommendation, you may not want to prescribe therapy for every item. Items which represent the most likely organisms are indicated with a plus sign (+).

- + ITEM-1—the virus **
- + ITEM-2—the hemophilus-influenzae ** CARBENICILLIN
- + ITEM-3—the neisseria-meningitidis ** CARBENICILLIN

[Checking for contraindications. . .]

[Considering CARBENICILLIN for use against INFECTION-1. . .]

[No contraindications found. . .]

[Now comparing your prescription to MYCIN's. . .]

ORGANISMS	MYCIN's regimen	Your regimen
"most likely"	Drug -- Choice Ranking	Drug -- Choice Ranking
ITEM-2	AMPICILLIN-AND-CHLORAMPHENICOL--1st	CARBENICILLIN--3rd
ITEM-3	AMPICILLIN--1st	CARBENICILLIN--2nd

(The desirability of a drug is defined to be its lowest ranking for the items it covers.)

[Giving one drug is often preferable to giving two. In this case, however, the one would not be as effective.]

Your recommendation for the most likely organism(s) is not optimal, since your prescription of 1 third choice drug (CARBENICILLIN for ITEM-3 and ITEM-2) should be avoided.

[You may refer to your regimen as RECOMMENDATION-2 in later questions.]

** STOP