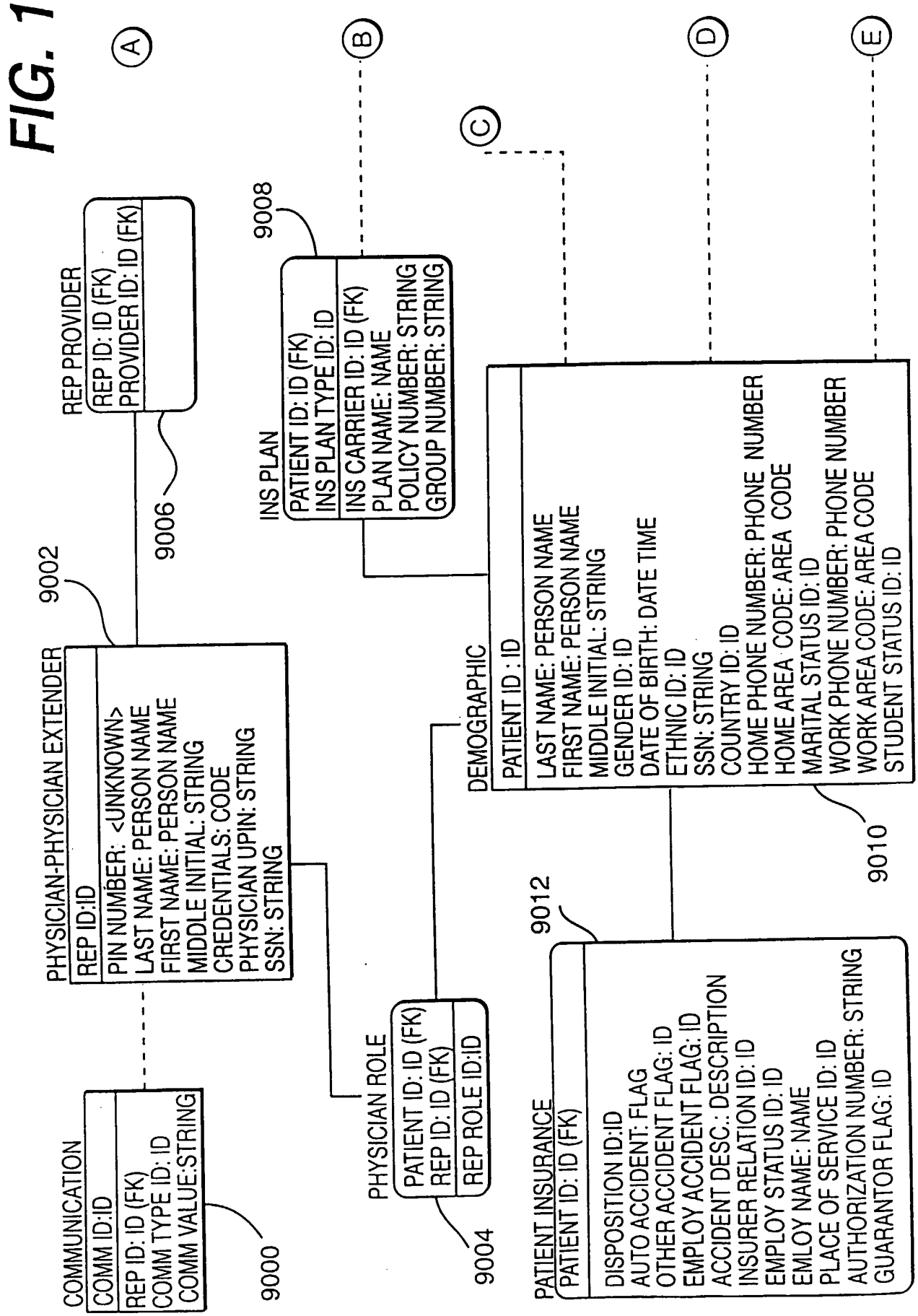
FIG. 1


A
B
C
D
E
REP PROVIDER
REP ID: ID (FK)
PROVIDER ID: ID (FK)
9006
9008
INS PLAN
PATIENT ID: ID (FK)
INS PLAN TYPE ID: ID
INS CARRIER ID: ID (FK)
PLAN NAME: NAME
POLICY NUMBER: STRING
GROUP NUMBER: STRING
9002
PHYSICIAN-PHYSICIAN EXTENDER
REP ID:ID
PIN NUMBER: <UNKNOWN>
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
CREDENTIALS: CODE
PHYSICIAN UPIN: STRING
SSN: STRING
DEMOGRAPHIC
PATIENT ID : ID
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
GENDER ID: ID
DATE OF BIRTH: DATE TIME
ETHNIC ID: ID
SSN: STRING
COUNTRY ID: ID
HOME PHONE NUMBER: PHONE NUMBER
HOME AREA CODE: AREA CODE
MARITAL STATUS ID: ID
WORK PHONE NUMBER: PHONE NUMBER
WORK AREA CODE: AREA CODE
STUDENT STATUS ID: ID
9010
COMMUNICATION
COMM ID:ID
REP ID: ID (FK)
COMM TYPE ID: ID
COMM VALUE:STRING
9000
PHYSICIAN ROLE
PATIENT ID: ID (FK)
REP ID: ID (FK)
REP ROLE ID:ID
9004
9012
PATIENT INSURANCE
PATIENT ID: ID (FK)
DISPOSITION ID:ID
AUTO ACCIDENT: FLAG
OTHER ACCIDENT FLAG: ID
EMPLOY ACCIDENT FLAG: ID
ACCIDENT DESC.: DESCRIPTION
INSURER RELATION ID: ID
EMPLOY STATUS ID: ID
EMLOY NAME: NAME
PLACE OF SERVICE ID: ID
AUTHORIZATION NUMBER: STRING
GUARANTOR FLAG: ID

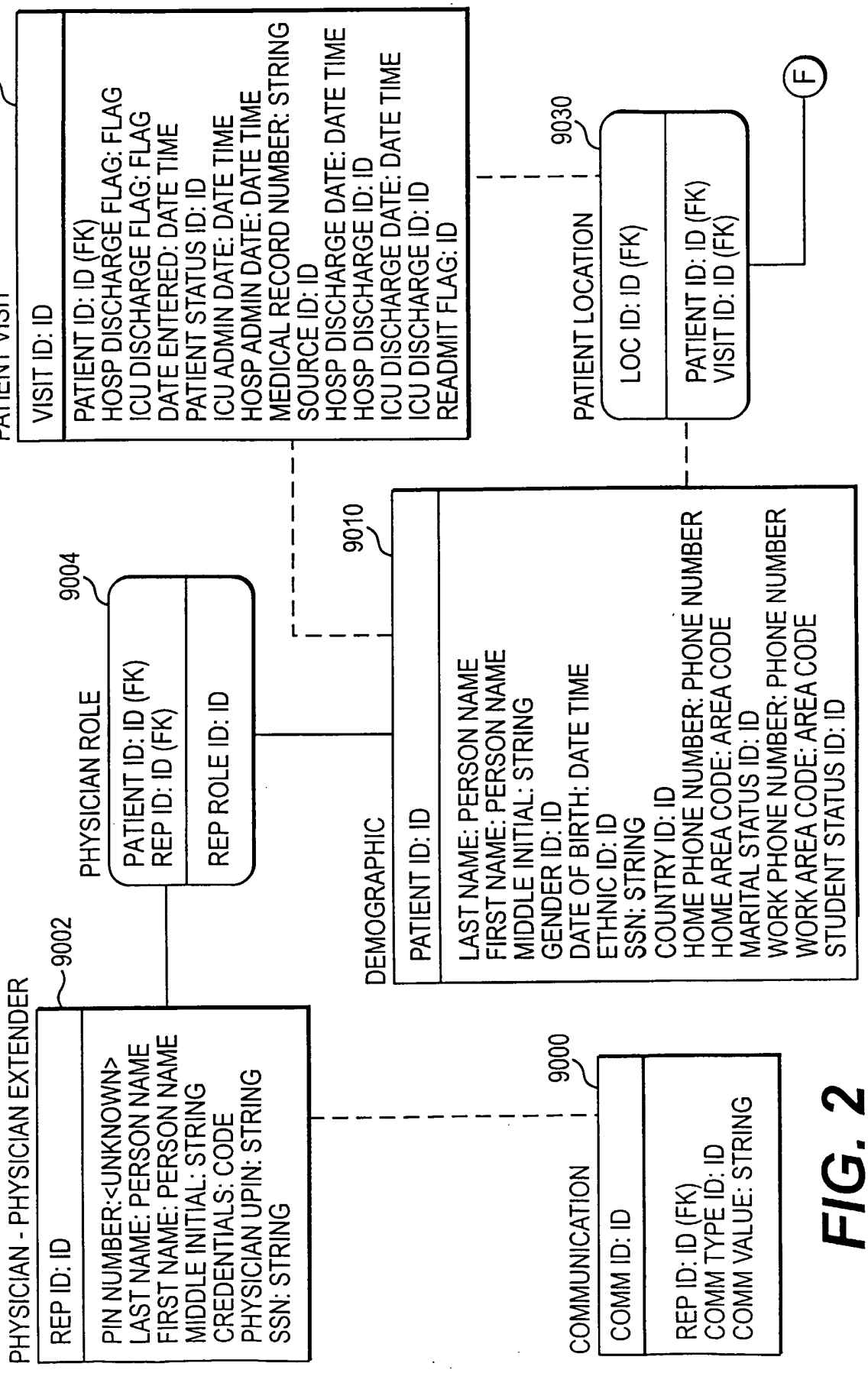

9017
PATIENT VISIT
VISIT ID: ID
PATIENT ID: ID (FK)
HOSP DISCHARGE FLAG: FLAG
ICU DISCHARGE FLAG: FLAG
DATE ENTERED: DATE TIME
PATIENT STATUS ID: ID
ICU ADMIN DATE: DATE TIME
HOSP ADMIN DATE: DATE TIME
MEDICAL RECORD NUMBER: STRING
SOURCE ID: ID
HOSP DISCHARGE DATE: DATE TIME
HOSP DISCHARGE ID: ID
ICU DISCHARGE DATE: DATE TIME
ICU DISCHARGE ID: ID
READMIT FLAG: ID
9030
PATIENT LOCATION
LOC ID: ID (FK)
PATIENT ID: ID (FK)
VISIT ID: ID (FK)
F
9004
PHYSICIAN ROLE
PATIENT ID: ID (FK)
REP ID: ID (FK)
REP ROLE ID: ID
9010
DEMOGRAPHIC
PATIENT ID: ID
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
GENDER ID: ID
DATE OF BIRTH: DATE TIME
ETHNIC ID: ID
SSN: STRING
COUNTRY ID: ID
HOME PHONE NUMBER: PHONE NUMBER
HOME AREA CODE: AREA CODE
MARITAL STATUS ID: ID
WORK PHONE NUMBER: PHONE NUMBER
WORK AREA CODE: AREA CODE
STUDENT STATUS ID: ID
9002
PHYSICIAN - PHYSICIAN EXTENDER
REP ID: ID
PIN NUMBER:<UNKNOWN>
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
CREDENTIALS: CODE
PHYSICIAN UPIN: STRING
SSN: STRING
9000
COMMUNICATION
COMM ID: ID
REP ID: ID (FK)
COMM TYPE ID: ID
COMM VALUE: STRING

FIG. 2

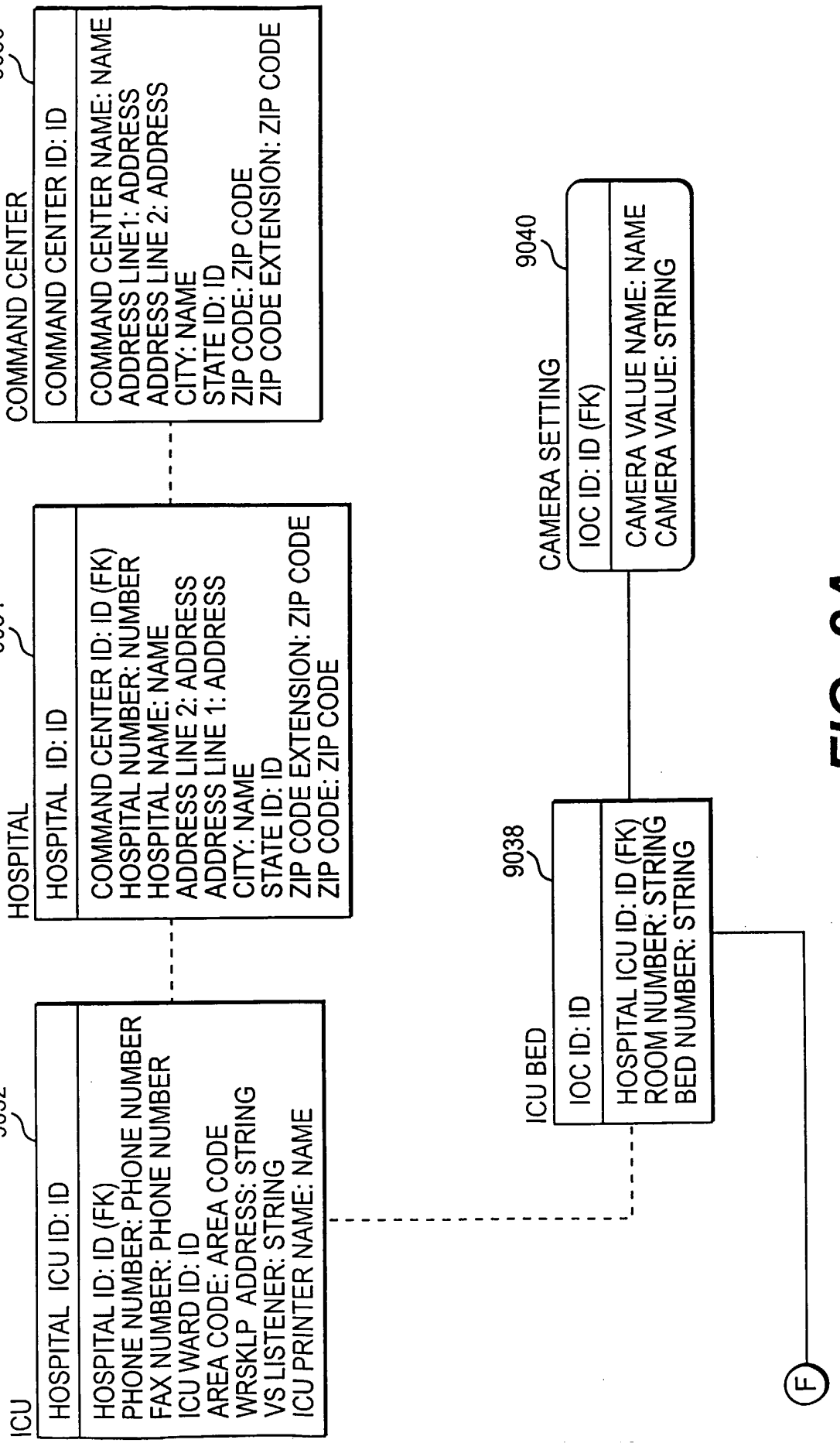

9036
COMMAND CENTER
COMMAND CENTER ID: ID
COMMAND CENTER NAME: NAME
ADDRESS LINE1: ADDRESS
ADDRESS LINE 2: ADDRESS
CITY: NAME
STATE ID: ID
ZIP CODE: ZIP CODE
ZIP CODE EXTENSION: ZIP CODE
9034
HOSPITAL
HOSPITAL ID: ID
COMMAND CENTER ID: ID (FK)
HOSPITAL NUMBER: NUMBER
HOSPITAL NAME: NAME
ADDRESS LINE 2: ADDRESS
ADDRESS LINE 1: ADDRESS
CITY: NAME
STATE ID: ID
ZIP CODE EXTENSION: ZIP CODE
ZIP CODE: ZIP CODE
9032
ICU
HOSPITAL ICU ID: ID
HOSPITAL ID: ID (FK)
PHONE NUMBER: PHONE NUMBER
FAX NUMBER: PHONE NUMBER
ICU WARD ID: ID
AREA CODE: AREA CODE
WRSKLP ADDRESS: STRING
VS LISTENER: STRING
ICU PRINTER NAME: NAME
9040
CAMERA SETTING
IOC ID: ID (FK)
CAMERA VALUE NAME: NAME
CAMERA VALUE: STRING
9038
ICU BED
IOC ID: ID
HOSPITAL ICU ID: ID (FK)
ROOM NUMBER: STRING
BED NUMBER: STRING
F

FIG. 2A

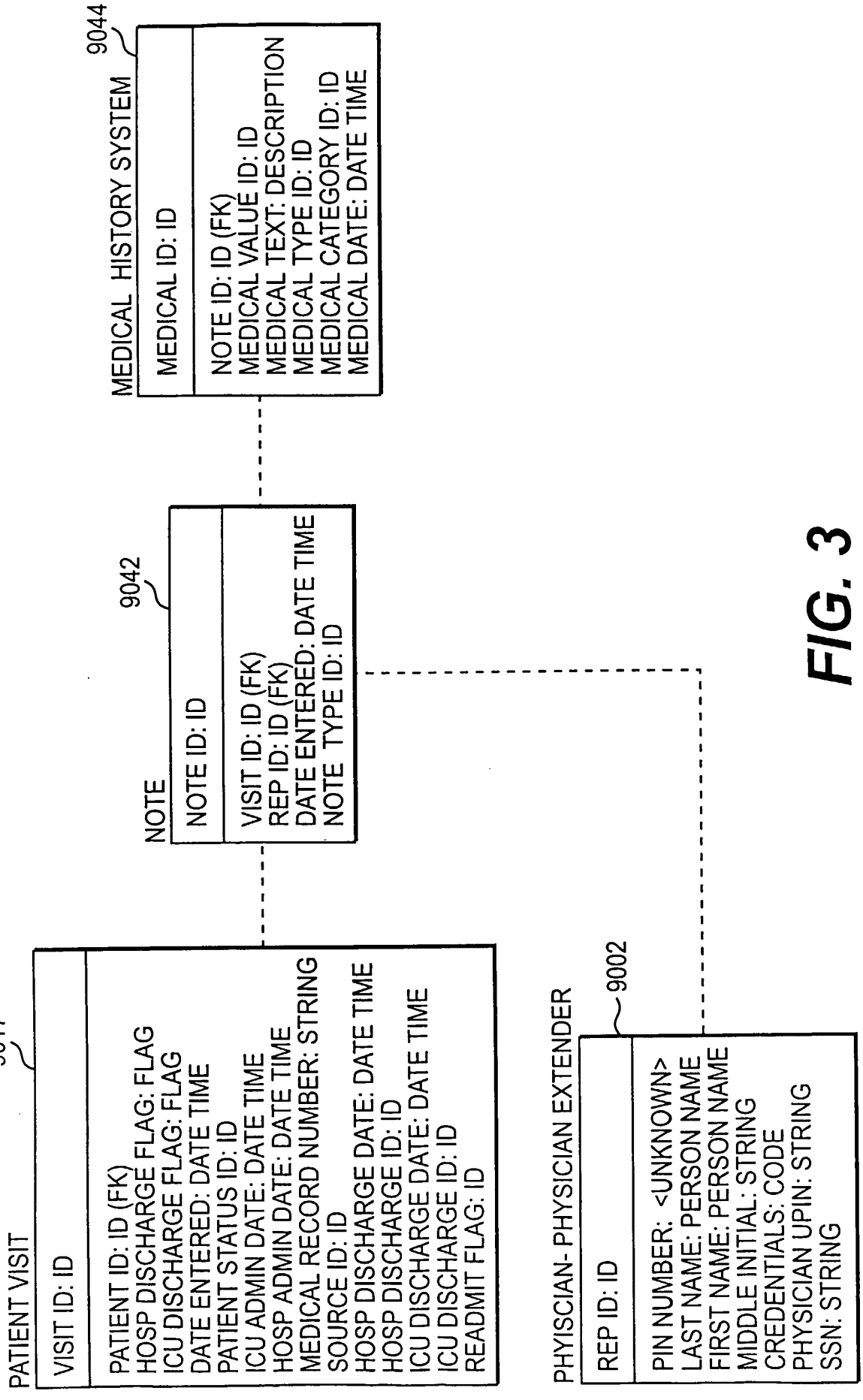

9044
MEDICAL HISTORY SYSTEM
MEDICAL ID: ID
NOTE ID: ID (FK)
MEDICAL VALUE ID: ID
MEDICAL TEXT: DESCRIPTION
MEDICAL TYPE ID: ID
MEDICAL CATEGORY ID: ID
MEDICAL DATE: DATE TIME
9042
NOTE
NOTE ID: ID
VISIT ID: ID (FK)
REP ID: ID (FK)
DATE ENTERED: DATE TIME
NOTE TYPE ID: ID
9017
PATIENT VISIT
VISIT ID: ID
PATIENT ID: ID (FK)
HOSP DISCHARGE FLAG: FLAG
ICU DISCHARGE FLAG: FLAG
DATE ENTERED: DATE TIME
PATIENT STATUS ID: ID
ICU ADMIN DATE: DATE TIME
HOSP ADMIN DATE: DATE TIME
MEDICAL RECORD NUMBER: STRING
SOURCE ID: ID
HOSP DISCHARGE DATE: DATE TIME
HOSP DISCHARGE ID: ID
ICU DISCHARGE DATE: DATE TIME
ICU DISCHARGE ID: ID
READMIT FLAG: ID
9002
PHYISCIAN- PHYSICIAN EXTENDER
REP ID: ID
PIN NUMBER: <UNKNOWN>
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
CREDENTIALS: CODE
PHYSICIAN UPIN: STRING
SSN: STRING

FIG. 3

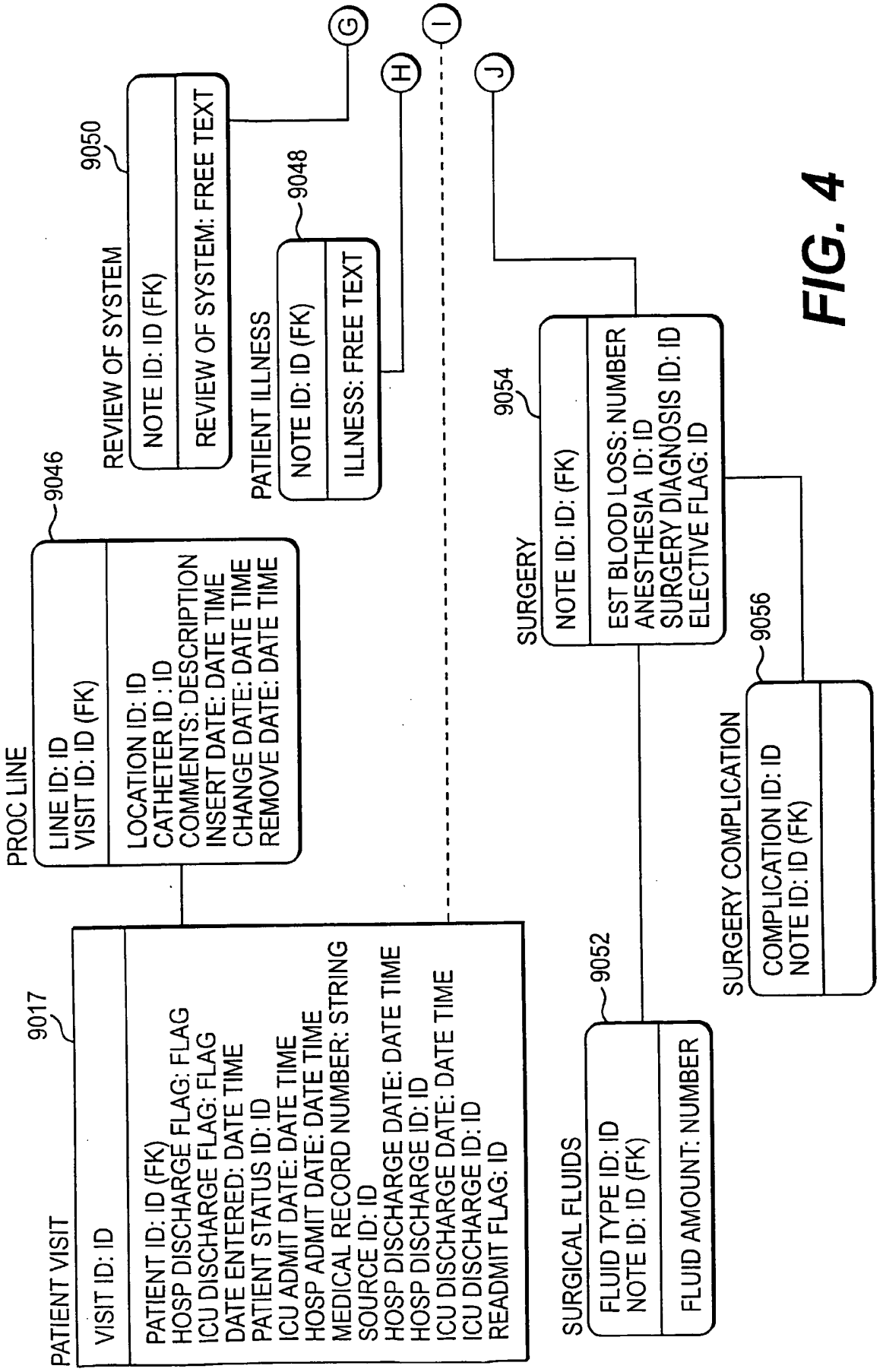

PATIENT VISIT
9017
VISIT ID: ID
PATIENT ID: ID (FK)
HOSP DISCHARGE FLAG: FLAG
ICU DISCHARGE FLAG: FLAG
DATE ENTERED: DATE TIME
PATIENT STATUS ID: ID
ICU ADMIT DATE: DATE TIME
HOSP ADMIT DATE: DATE TIME
MEDICAL RECORD NUMBER: STRING
SOURCE ID: ID
HOSP DISCHARGE DATE: DATE TIME
HOSP DISCHARGE ID: ID
ICU DISCHARGE DATE: DATE TIME
ICU DISCHARGE ID: ID
READMIT FLAG: ID
PROC LINE
9046
LINE ID: ID
VISIT ID: ID (FK)
LOCATION ID: ID
CATHETER ID : ID
COMMENTS: DESCRIPTION
INSERT DATE: DATE TIME
CHANGE DATE: DATE TIME
REMOVE DATE: DATE TIME
REVIEW OF SYSTEM
9050
NOTE ID: ID (FK)
REVIEW OF SYSTEM: FREE TEXT
PATIENT ILLNESS
9048
NOTE ID: ID (FK)
ILLNESS: FREE TEXT
SURGERY
9054
NOTE ID: ID: (FK)
EST BLOOD LOSS: NUMBER
ANESTHESIA ID: ID
SURGERY DIAGNOSIS ID: ID
ELECTIVE FLAG: ID
SURGICAL FLUIDS
9052
FLUID TYPE ID: ID
NOTE ID: ID (FK)
FLUID AMOUNT: NUMBER
SURGERY COMPLICATION
9056
COMPLICATION ID: ID
NOTE ID: ID (FK)
G
H
I
J

FIG. 4

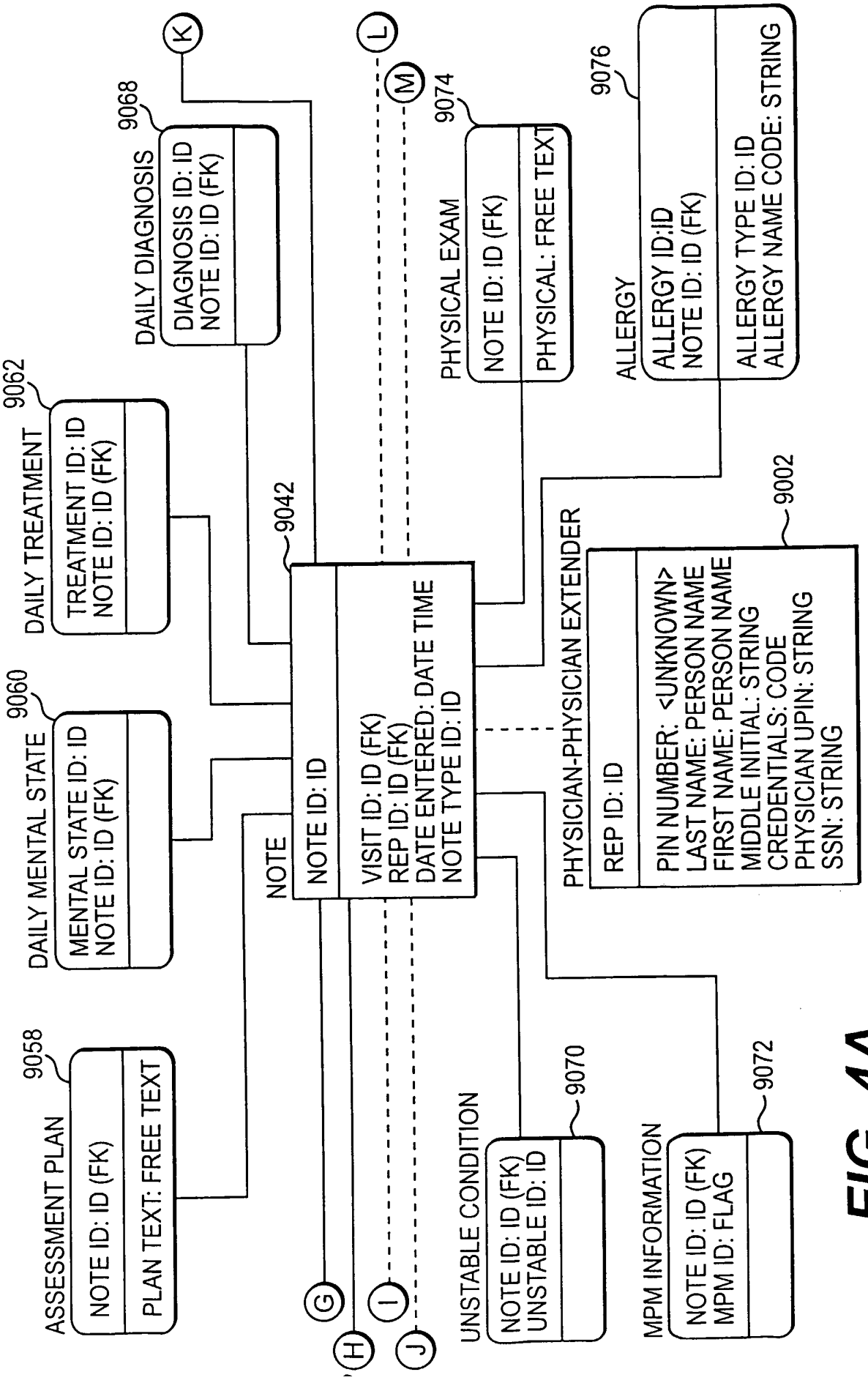

ASSESSMENT PLAN
NOTE ID: ID (FK)
PLAN TEXT: FREE TEXT
9058
DAILY MENTAL STATE
MENTAL STATE ID: ID
NOTE ID: ID (FK)
9060
DAILY TREATMENT
TREATMENT ID: ID
NOTE ID: ID (FK)
9062
DAILY DIAGNOSIS
DIAGNOSIS ID: ID
NOTE ID: ID (FK)
9068
NOTE
NOTE ID: ID
VISIT ID: ID (FK)
REP ID: ID (FK)
DATE ENTERED: DATE TIME
NOTE TYPE ID: ID
9042
PHYSICAL EXAM
NOTE ID: ID (FK)
PHYSICAL: FREE TEXT
9074
ALLERGY
ALLERGY ID:ID
NOTE ID: ID (FK)
ALLERGY TYPE ID: ID
ALLERGY NAME CODE: STRING
9076
PHYSICIAN-PHYSICIAN EXTENDER
REP ID: ID
PIN NUMBER: <UNKNOWN>
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
CREDENTIALS: CODE
PHYSICIAN UPIN: STRING
SSN: STRING
9002
UNSTABLE CONDITION
NOTE ID: ID (FK)
UNSTABLE ID: ID
9070
MPM INFORMATION
NOTE ID: ID (FK)
MPM ID: FLAG
9072
G
H
I
J
K
L
M

FIG. 4A

FIG. 4B

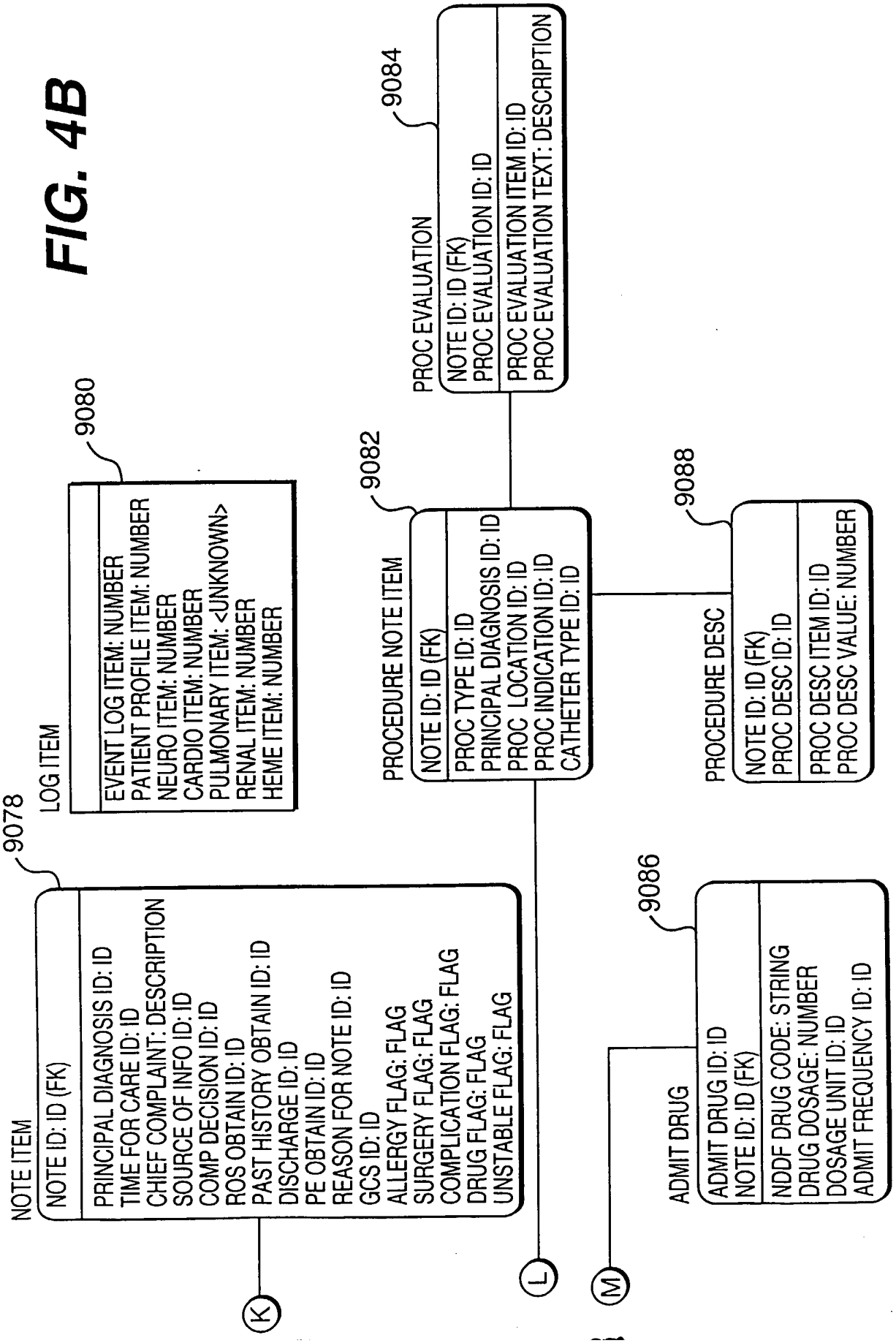

9078
NOTE ITEM
NOTE ID: ID (FK)
PRINCIPAL DIAGNOSIS ID: ID
TIME FOR CARE ID: ID
CHIEF COMPLAINT: DESCRIPTION
SOURCE OF INFO ID: ID
COMP DECISION ID: ID
ROS OBTAIN ID: ID
PAST HISTORY OBTAIN ID: ID
DISCHARGE ID: ID
PE OBTAIN ID: ID
REASON FOR NOTE ID: ID
GCS ID: ID
ALLERGY FLAG: FLAG
SURGERY FLAG: FLAG
COMPLICATION FLAG: FLAG
DRUG FLAG: FLAG
UNSTABLE FLAG: FLAG
9080
LOG ITEM
EVENT LOG ITEM: NUMBER
PATIENT PROFILE ITEM: NUMBER
NEURO ITEM: NUMBER
CARDIO ITEM: NUMBER
PULMONARY ITEM: <UNKNOWN>
RENAL ITEM: NUMBER
HEME ITEM: NUMBER
9082
PROCEDURE NOTE ITEM
NOTE ID: ID (FK)
PROC TYPE ID: ID
PRINCIPAL DIAGNOSIS ID: ID
PROC LOCATION ID: ID
PROC INDICATION ID: ID
CATHETER TYPE ID: ID
9084
PROC EVALUATION
NOTE ID: ID (FK)
PROC EVALUATION ID: ID
PROC EVALUATION ITEM ID: ID
PROC EVALUATION TEXT: DESCRIPTION
9086
ADMIT DRUG
ADMIT DRUG ID: ID
NOTE ID: ID (FK)
NDDF DRUG CODE: STRING
DRUG DOSAGE: NUMBER
DOSAGE UNIT ID: ID
ADMIT FREQUENCY ID: ID
9088
PROCEDURE DESC
NOTE ID: ID (FK)
PROC DESC ID: ID
PROC DESC ITEM ID: ID
PROC DESC VALUE: NUMBER
K
L
M

FIG. 5

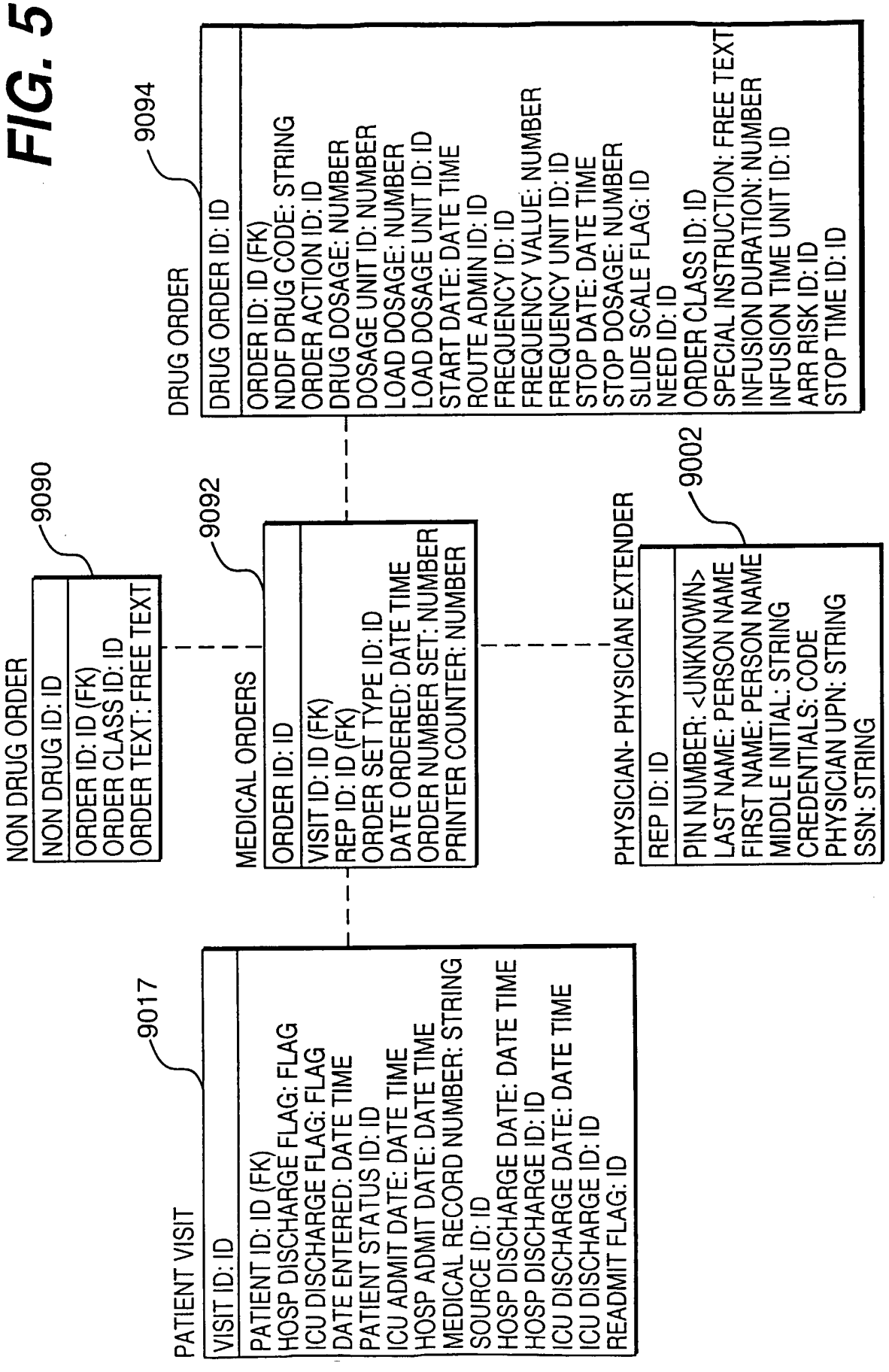

9094
DRUG ORDER
DRUG ORDER ID: ID
ORDER ID: ID (FK)
NDDF DRUG CODE: STRING
ORDER ACTION ID: ID
DRUG DOSAGE: NUMBER
DOSAGE UNIT ID: NUMBER
LOAD DOSAGE: NUMBER
LOAD DOSAGE UNIT ID: ID
START DATE: DATE TIME
ROUTE ADMIN ID: ID
FREQUENCY ID: ID
FREQUENCY VALUE: NUMBER
FREQUENCY UNIT ID: ID
STOP DATE: DATE TIME
STOP DOSAGE: NUMBER
SLIDE SCALE FLAG: ID
NEED ID: ID
ORDER CLASS ID: ID
SPECIAL INSTRUCTION: FREE TEXT
INFUSION DURATION: NUMBER
INFUSION TIME UNIT ID: ID
ARR RISK ID: ID
STOP TIME ID: ID
9090
NON DRUG ORDER
NON DRUG ID: ID
ORDER ID: ID (FK)
ORDER CLASS ID: ID
ORDER TEXT: FREE TEXT
9092
MEDICAL ORDERS
ORDER ID: ID
VISIT ID: ID (FK)
REP ID: ID (FK)
ORDER SET TYPE ID: ID
DATE ORDERED: DATE TIME
ORDER NUMBER SET: NUMBER
PRINTER COUNTER: NUMBER
9002
PHYSICIAN- PHYSICIAN EXTENDER
REP ID: ID
PIN NUMBER: <UNKNOWN>
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
CREDENTIALS: CODE
PHYSICIAN UPN: STRING
SSN: STRING
9017
PATIENT VISIT
VISIT ID: ID
PATIENT ID: ID (FK)
HOSP DISCHARGE FLAG: FLAG
ICU DISCHARGE FLAG: FLAG
DATE ENTERED: DATE TIME
PATIENT STATUS ID: ID
ICU ADMIT DATE: DATE TIME
HOSP ADMIT DATE: DATE TIME
MEDICAL RECORD NUMBER: STRING
SOURCE ID: ID
HOSP DISCHARGE DATE: DATE TIME
HOSP DISCHARGE ID: ID
ICU DISCHARGE DATE: DATE TIME
ICU DISCHARGE ID: ID
READMIT FLAG: ID

FIG. 6

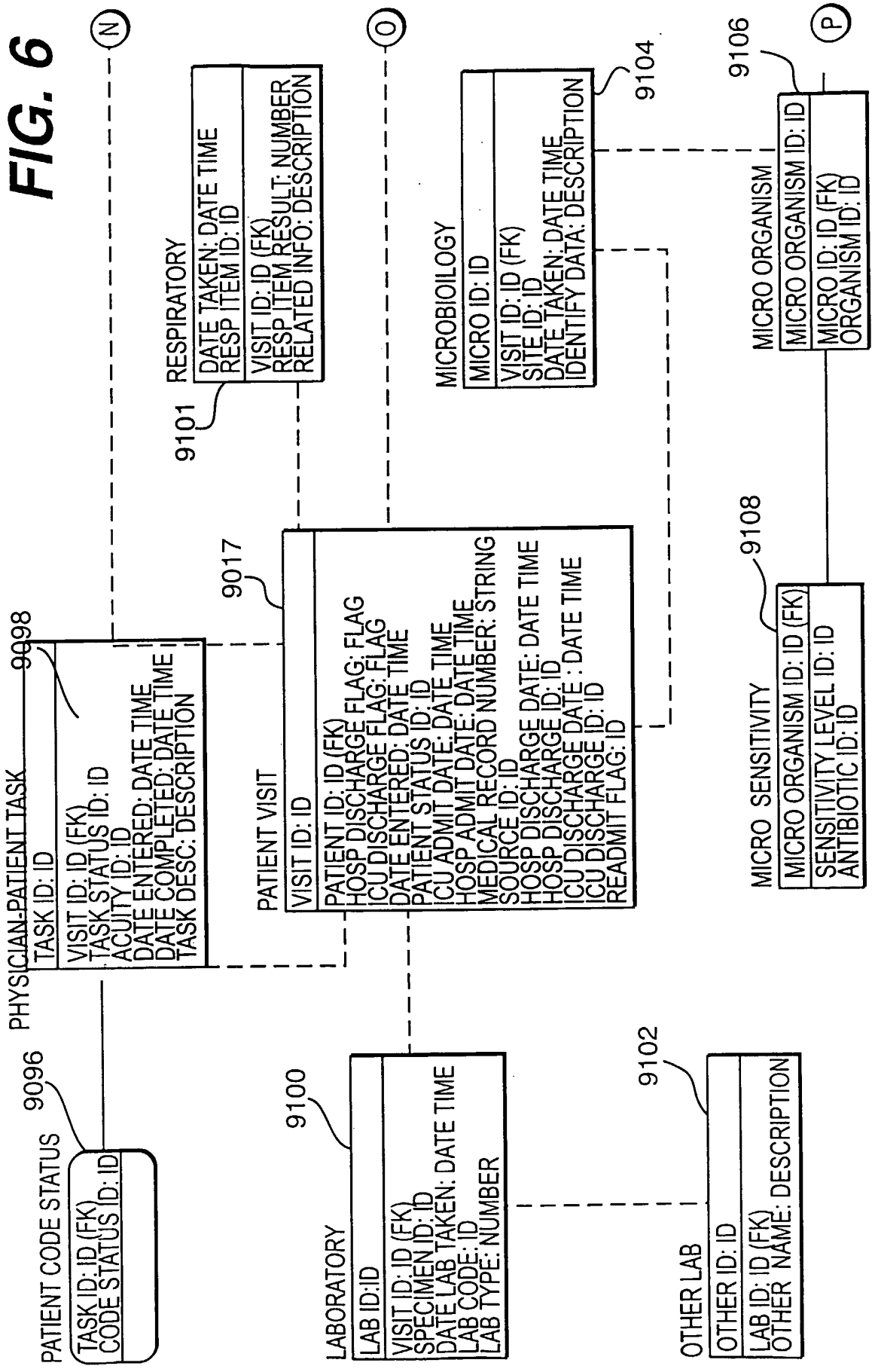

N
O
P
RESPIRATORY
DATE TAKEN: DATE TIME
RESP ITEM ID: ID
VISIT ID: ID (FK)
RESP ITEM RESULT: NUMBER
RELATED INFO: DESCRIPTION
9101
MICROBIOILOGY
MICRO ID: ID
VISIT ID: ID (FK)
SITE ID: ID
DATE TAKEN: DATE TIME
IDENTIFY DATA: DESCRIPTION
9104
MICRO ORGANISM
MICRO ORGANISM ID: ID
MICRO ID: ID (FK)
ORGANISM ID: ID
9106
PHYSICIAN-PATIENT TASK
TASK ID: ID
VISIT ID: ID (FK)
TASK STATUS ID: ID
ACUITY ID: ID
DATE ENTERED: DATE TIME
DATE COMPLETED: DATE TIME
TASK DESC: DESCRIPTION
9098
PATIENT VISIT
VISIT ID: ID
PATIENT ID: ID (FK)
HOSP DISCHARGE FLAG: FLAG
ICU DISCHARGE FLAG: FLAG
DATE ENTERED: DATE TIME
PATIENT STATUS ID: ID
ICU ADMIT DATE: DATE TIME
HOSP ADMIT DATE: DATE TIME
MEDICAL RECORD NUMBER: STRING
SOURCE ID: ID
HOSP DISCHARGE DATE: DATE TIME
HOSP DISCHARGE ID: ID
ICU DISCHARGE DATE : DATE TIME
ICU DISCHARGE ID: ID
READMIT FLAG: ID
9017
MICRO SENSITIVITY
MICRO ORGANISM ID: ID (FK)
SENSITIVITY LEVEL ID: ID
ANTIBIOTIC ID: ID
9108
PATIENT CODE STATUS
TASK ID: ID (FK)
CODE STATUS ID: ID
9096
LABORATORY
LAB ID:ID
VISIT ID: ID (FK)
SPECIMEN ID: ID
DATE LAB TAKEN: DATE TIME
LAB CODE: ID
LAB TYPE: NUMBER
9100
OTHER LAB
OTHER ID: ID
LAB ID: ID (FK)
OTHER NAME: DESCRIPTION
9102

FIG. 6A

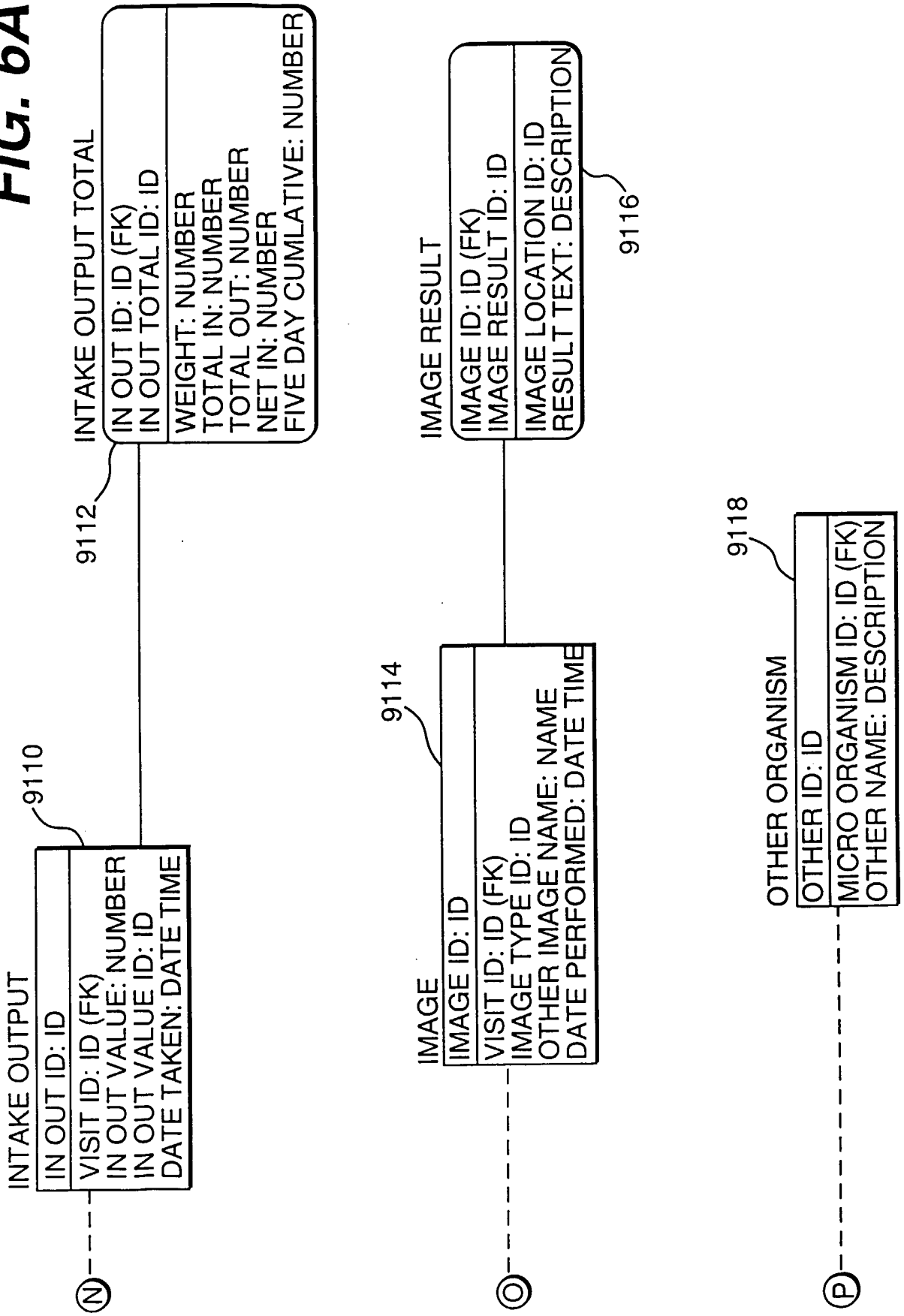

INTAKE OUTPUT TOTAL
IN OUT ID: ID (FK)
IN OUT TOTAL ID: ID
WEIGHT: NUMBER
TOTAL IN: NUMBER
TOTAL OUT: NUMBER
NET IN: NUMBER
FIVE DAY CUMLATIVE: NUMBER
9112
IMAGE RESULT
IMAGE ID: ID (FK)
IMAGE RESULT ID: ID
IMAGE LOCATION ID: ID
RESULT TEXT: DESCRIPTION
9116
9110
INTAKE OUTPUT
IN OUT ID: ID
VISIT ID: ID (FK)
IN OUT VALUE: NUMBER
IN OUT VALUE ID: ID
DATE TAKEN: DATE TIME
9114
IMAGE
IMAGE ID: ID
VISIT ID: ID (FK)
IMAGE TYPE ID: ID
OTHER IMAGE NAME: NAME
DATE PERFORMED: DATE TIME
9118
OTHER ORGANISM
OTHER ID: ID
MICRO ORGANISM ID: ID (FK)
OTHER NAME: DESCRIPTION
N
O
P

FIG. 7

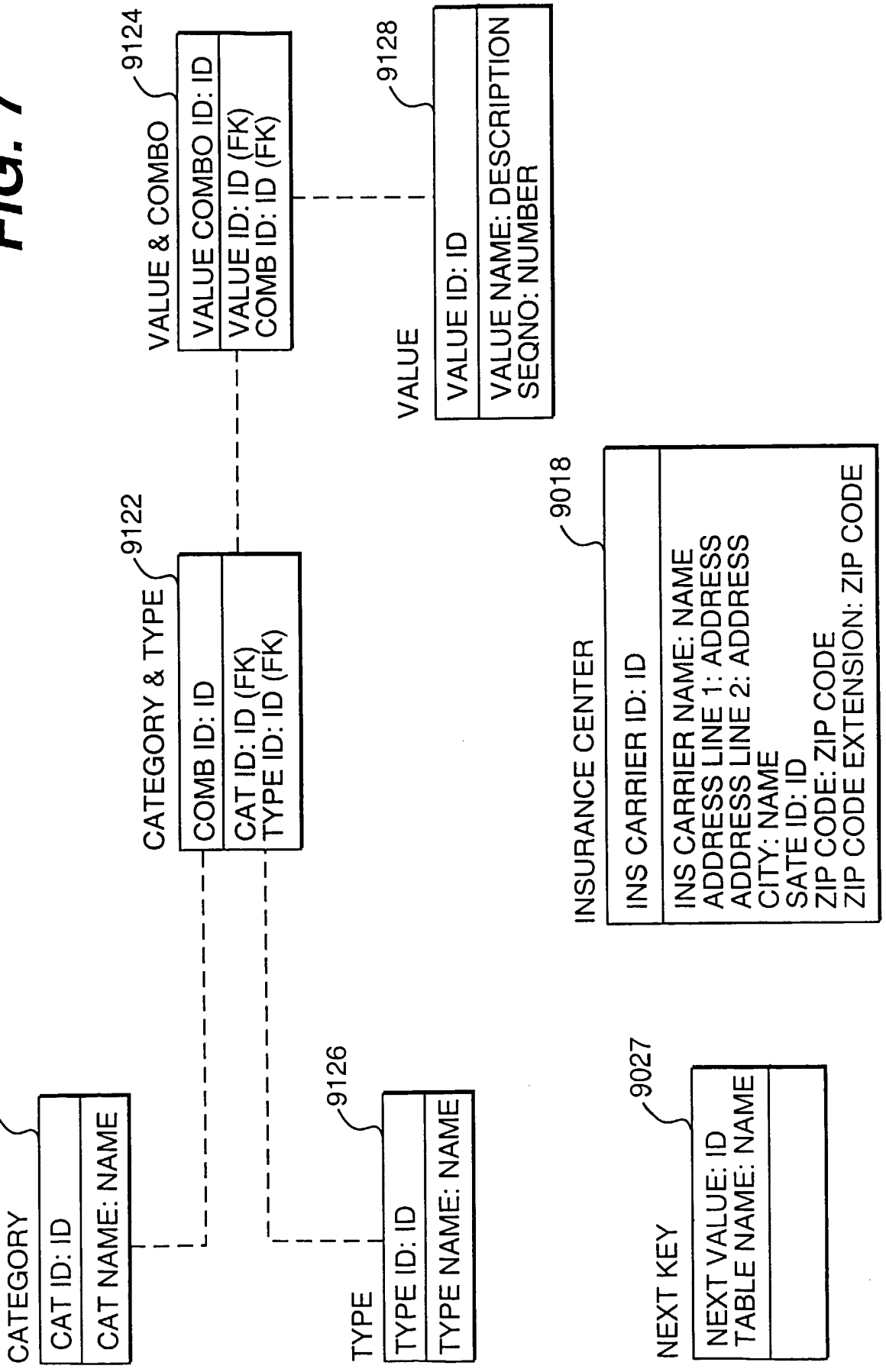

9124
VALUE & COMBO
VALUE COMBO ID: ID
VALUE ID: ID (FK)
COMB ID: ID (FK)
9128
VALUE
VALUE ID: ID
VALUE NAME: DESCRIPTION
SEQNO: NUMBER
9122
CATEGORY & TYPE
COMB ID: ID
CAT ID: ID (FK)
TYPE ID: ID (FK)
9018
INSURANCE CENTER
INS CARRIER ID: ID
INS CARRIER NAME: NAME
ADDRESS LINE 1: ADDRESS
ADDRESS LINE 2: ADDRESS
CITY: NAME
SATE ID: ID
ZIP CODE: ZIP CODE
ZIP CODE EXTENSION: ZIP CODE
9120
CATEGORY
CAT ID: ID
CAT NAME: NAME
9126
TYPE
TYPE ID: ID
TYPE NAME: NAME
9027
NEXT KEY
NEXT VALUE: ID
TABLE NAME: NAME

FIG. 8

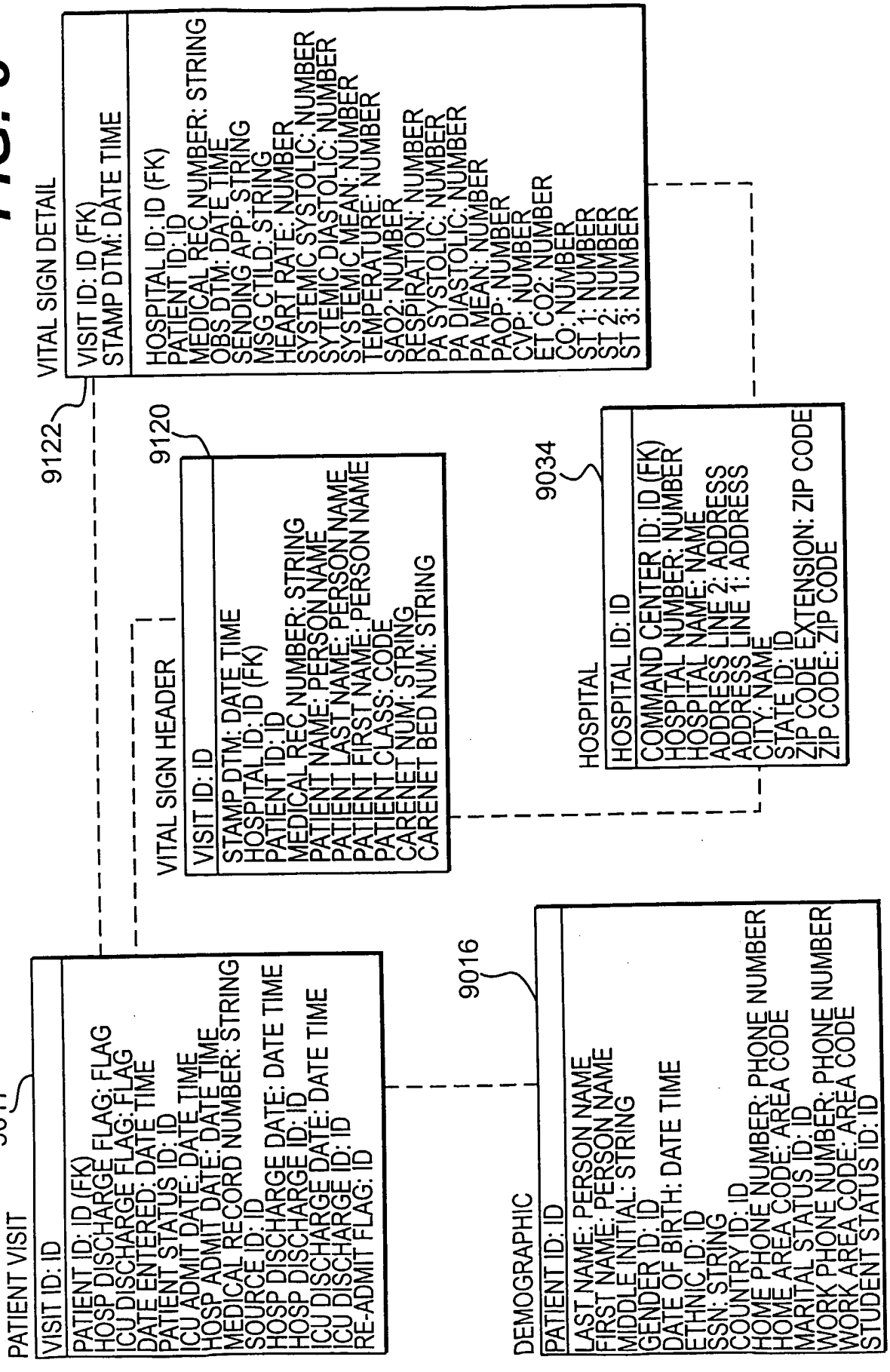
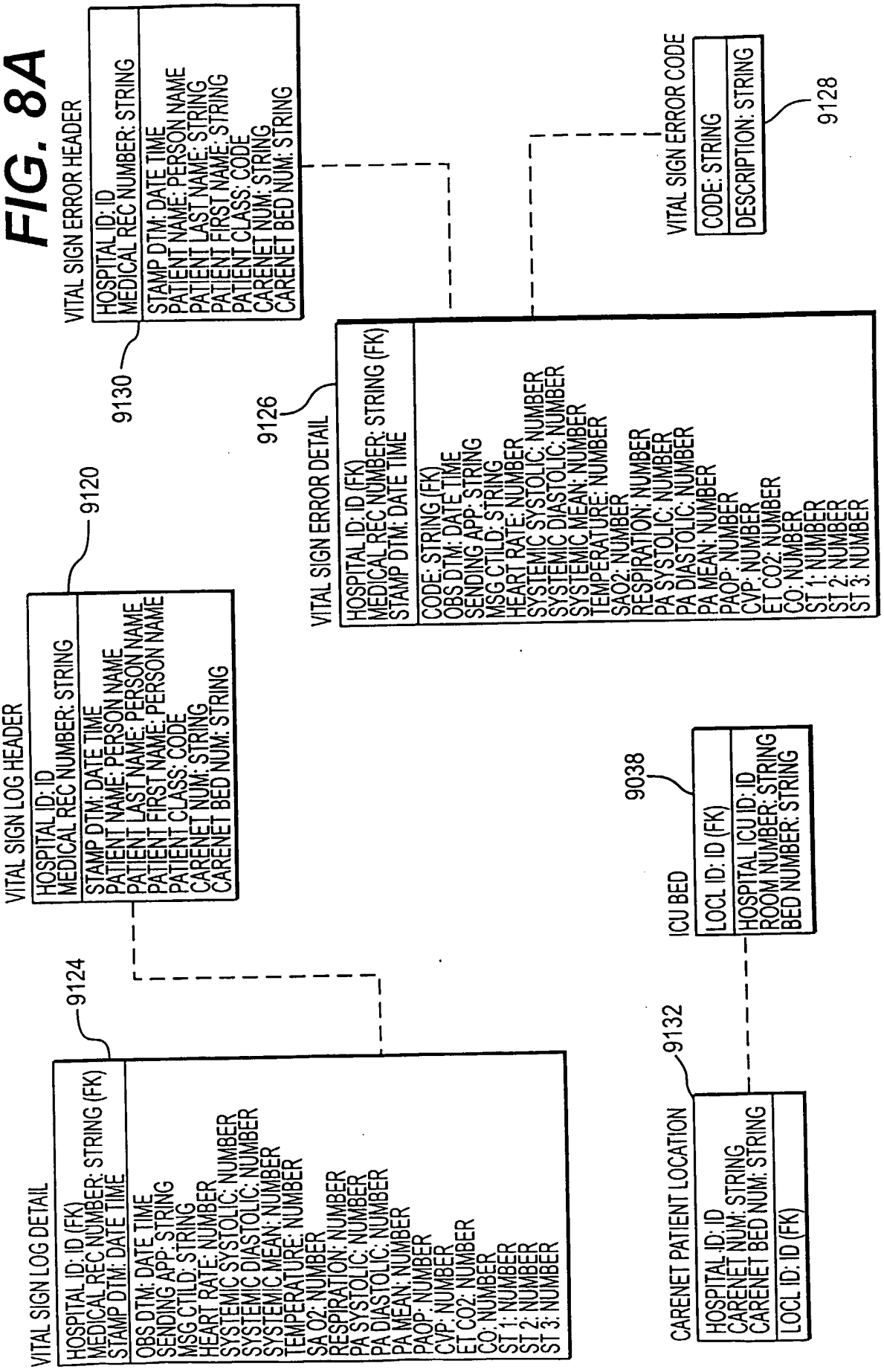

PATIENT VISIT
9017
VISIT ID: ID
PATIENT ID: ID (FK)
HOSP DISCHARGE FLAG: FLAG
ICU DISCHARGE FLAG: FLAG
DATE ENTERED: DATE TIME
PATIENT STATUS ID: ID
ICU ADMIT DATE: DATE TIME
HOSP ADMIT DATE: DATE TIME
MEDICAL RECORD NUMBER: STRING
SOURCE ID: ID
HOSP DISCHARGE DATE: DATE TIME
HOSP DISCHARGE ID: ID
ICU DISCHARGE DATE: DATE TIME
ICU DISCHARGE ID: ID
RE-ADMIT FLAG: ID
9122
VITAL SIGN DETAIL
VISIT ID: ID (FK)
STAMP DTM: DATE TIME
HOSPITAL ID: ID (FK)
PATIENT ID: ID
MEDICAL REC NUMBER: STRING
OBS DTM: DATE TIME
SENDING APP: STRING
MSG CTILD: STRING
HEART RATE: NUMBER
SYSTEMIC SYSTOLIC: NUMBER
SYSTEMIC DIASTOLIC: NUMBER
SYSTEMIC MEAN: NUMBER
TEMPERATURE: NUMBER
SAO2: NUMBER
RESPIRATION: NUMBER
PA SYSTOLIC: NUMBER
PA DIASTOLIC: NUMBER
PA MEAN: NUMBER
PAOP: NUMBER
CVP: NUMBER
ET CO2: NUMBER
CO: NUMBER
ST 1: NUMBER
ST 2: NUMBER
ST 3: NUMBER
9120
VITAL SIGN HEADER
VISIT ID: ID
STAMP DTM: DATE TIME
HOSPITAL ID: ID (FK)
PATIENT ID: ID
MEDICAL REC NUMBER: STRING
PATIENT LAST NAME: PERSON NAME
PATIENT FIRST NAME: PERSON NAME
PATIENT CLASS: CODE
CARENET NUM: STRING
CARENET BED NUM: STRING
9034
HOSPITAL
HOSPITAL ID: ID
COMMAND CENTER ID: ID (FK)
HOSPITAL NUMBER: NUMBER
HOSPITAL NAME: NAME
ADDRESS LINE 2: ADDRESS
ADDRESS LINE 1: ADDRESS
CITY: NAME
STATE ID: ID
ZIP CODE EXTENSION: ZIP CODE
ZIP CODE: ZIP CODE
9016
DEMOGRAPHIC
PATIENT ID: ID
LAST NAME: PERSON NAME
FIRST NAME: PERSON NAME
MIDDLE INITIAL: STRING
GENDER ID: ID
DATE OF BIRTH: DATE TIME
ETHNIC ID: ID
SSN: STRING
COUNTRY ID: ID
HOME PHONE NUMBER: PHONE NUMBER
HOME AREA CODE: AREA CODE
MARITAL STATUS ID: ID
WORK PHONE NUMBER: PHONE NUMBER
WORK AREA CODE: AREA CODE
STUDENT STATUS ID: ID

FIG. 8A


VITAL SIGN ERROR HEADER
HOSPITAL ID: ID
MEDICAL REC NUMBER: STRING
STAMP DTM: DATE TIME
PATIENT NAME: PERSON NAME
PATIENT LAST NAME: STRING
PATIENT FIRST NAME: STRING
PATIENT CLASS: CODE
CARENET NUM: STRING
CARENET BED NUM: STRING
9130
VITAL SIGN ERROR CODE
CODE: STRING
DESCRIPTION: STRING
9128
9126
VITAL SIGN ERROR DETAIL
HOSPITAL ID: ID (FK)
MEDICAL REC NUMBER: STRING (FK)
STAMP DTM: DATE TIME
CODE: STRING (FK)
OBS DTM: DATE TIME
SENDING APP: STRING
MSG CTLD: STRING
HEART RATE: NUMBER
SYSTEMIC SYSTOLIC: NUMBER
SYSTEMIC DIASTOLIC: NUMBER
SYSTEMIC MEAN: NUMBER
TEMPERATURE: NUMBER
SAO2: NUMBER
RESPIRATION: NUMBER
PA SYSTOLIC: NUMBER
PA DIASTOLIC: NUMBER
PA MEAN: NUMBER
PAOP: NUMBER
CVP: NUMBER
ET CO2: NUMBER
CO: NUMBER
ST 1: NUMBER
ST 2: NUMBER
ST 3: NUMBER
9120
VITAL SIGN LOG HEADER
HOSPITAL ID: ID
MEDICAL REC NUMBER: STRING
STAMP DTM: DATE TIME
PATIENT NAME: PERSON NAME
PATIENT LAST NAME: PERSON NAME
PATIENT FIRST NAME: PERSON NAME
PATIENT CLASS: CODE
CARENET NUM: STRING
CARENET BED NUM: STRING
9038
ICU BED
LOCL ID: ID (FK)
HOSPITAL ICU ID: ID
ROOM NUMBER: STRING
BED NUMBER: STRING
9124
VITAL SIGN LOG DETAIL
HOSPITAL ID: ID (FK)
MEDICAL REC NUMBER: STRING (FK)
STAMP DTM: DATE TIME
OBS DTM: DATE TIME
SENDING APP: STRING
MSG CTLD: STRING
HEART RATE: NUMBER
SYSTEMIC SYSTOLIC: NUMBER
SYSTEMIC DIASTOLIC: NUMBER
SYSTEMIC MEAN: NUMBER
TEMPERATURE: NUMBER
SA O2: NUMBER
RESPIRATION: NUMBER
PA SYSTOLIC: NUMBER
PA DIASTOLIC: NUMBER
PA MEAN: NUMBER
PAOP: NUMBER
CVP: NUMBER
ET CO2: NUMBER
CO: NUMBER
ST 1: NUMBER
ST 2: NUMBER
ST 3: NUMBER
9132
CARENET PATIENT LOCATION
HOSPITAL ID: ID
CARENET NUM: STRING
CARENET BED NUM: STRING
LOCL ID: ID (FK)

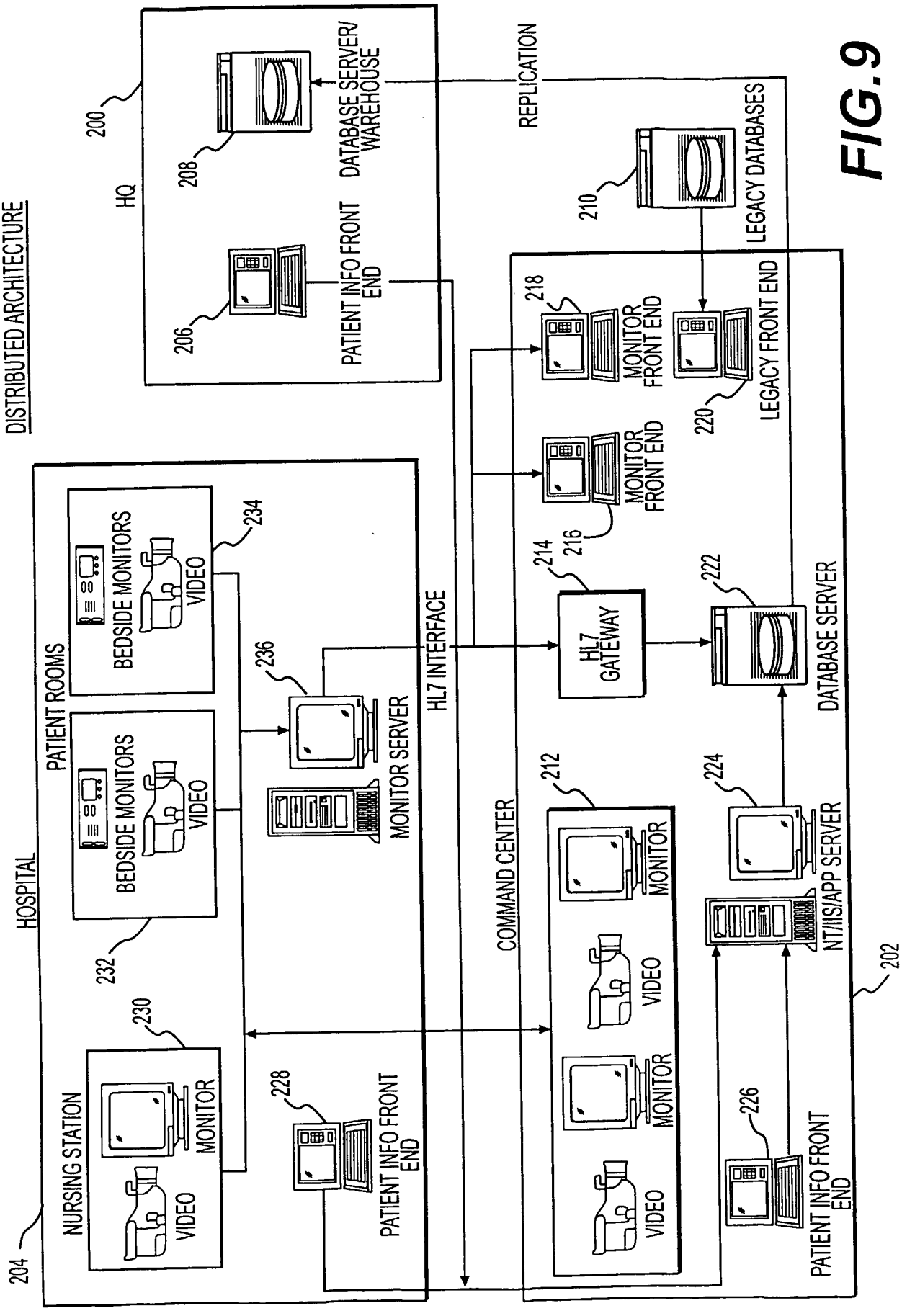

DISTRIBUTED ARCHITECTURE
HQ
200
DATABASE SERVER/ WAREHOUSE
208
PATIENT INFO FRONT END
206
REPLICATION
LEGACY DATABASES
210
MONITOR FRONT END
218
LEGACY FRONT END
220
MONITOR FRONT END
216
214
HL7 GATEWAY
222
DATABASE SERVER
HOSPITAL
PATIENT ROOMS
BEDSIDE MONITORS
VIDEO
234
236
MONITOR SERVER
HL7 INTERFACE
COMMAND CENTER
212
MONITOR
VIDEO
MONITOR
VIDEO
224
NT/IIS/APP SERVER
232
230
NURSING STATION
MONITOR
VIDEO
228
PATIENT INFO FRONT END
226
PATIENT INFO FRONT END
204
202

FIG.9

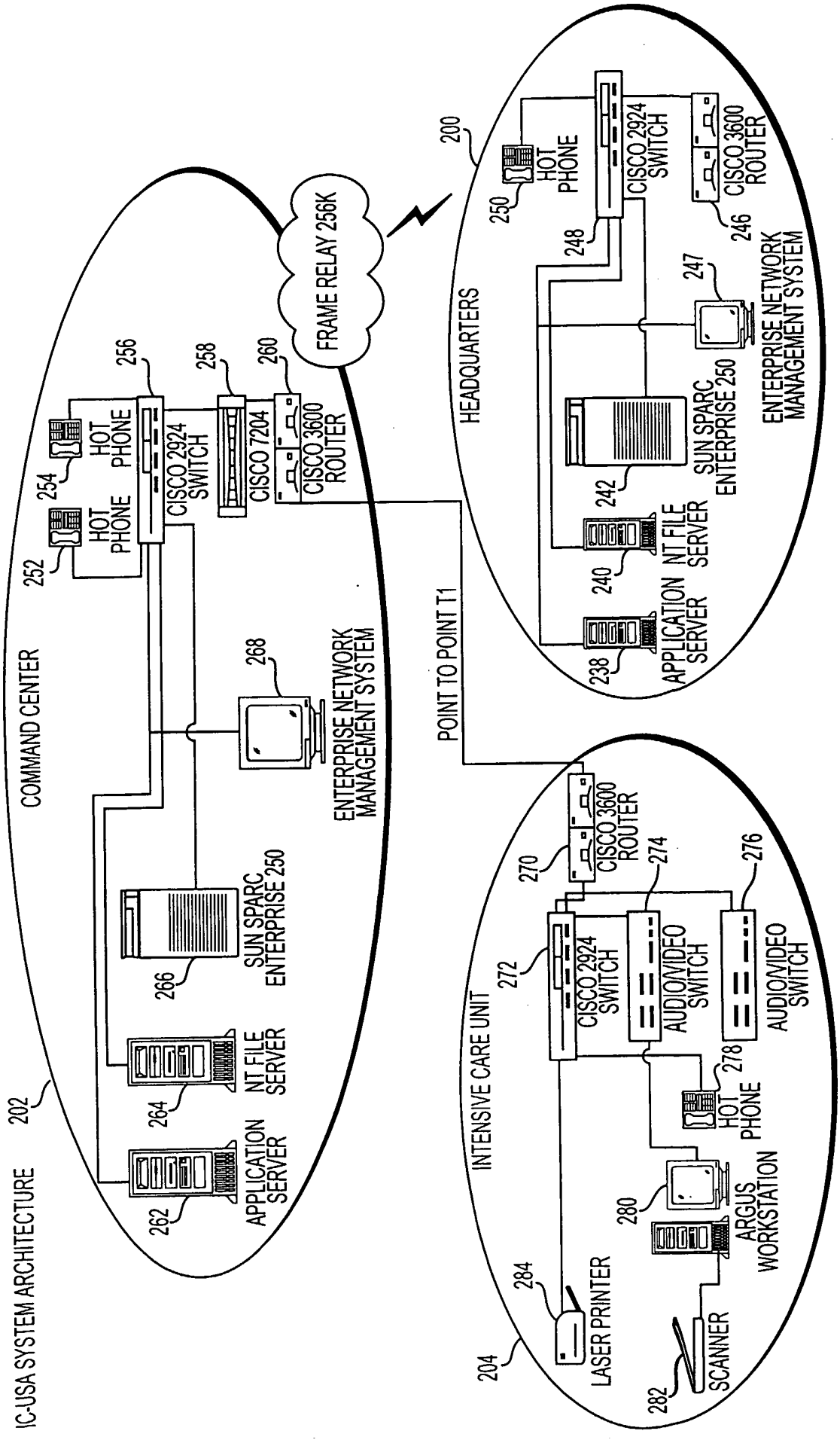

IC-USA SYSTEM ARCHITECTURE
202
COMMAND CENTER
HOT PHONE
254
HOT PHONE
252
256
CISCO 2924 SWITCH
258
CISCO 7204
260
CISCO 3600 ROUTER
FRAME RELAY 256K
268
ENTERPRISE NETWORK MANAGEMENT SYSTEM
SUN SPARC ENTERPRISE 250
266
NT FILE SERVER
264
APPLICATION SERVER
262
POINT TO POINT T1
200
HEADQUARTERS
HOT PHONE
250
CISCO 2924 SWITCH
248
CISCO 3600 ROUTER
246
247
ENTERPRISE NETWORK MANAGEMENT SYSTEM
SUN SPARC ENTERPRISE 250
242
NT FILE SERVER
240
APPLICATION SERVER
238
INTENSIVE CARE UNIT
CISCO 3600 ROUTER
270
274
276
CISCO 2924 SWITCH
272
AUDIO/VIDEO SWITCH
AUDIO/VIDEO SWITCH
278
HOT PHONE
280
ARGUS WORKSTATION
284
LASER PRINTER
204
SCANNER
282

FIG.10

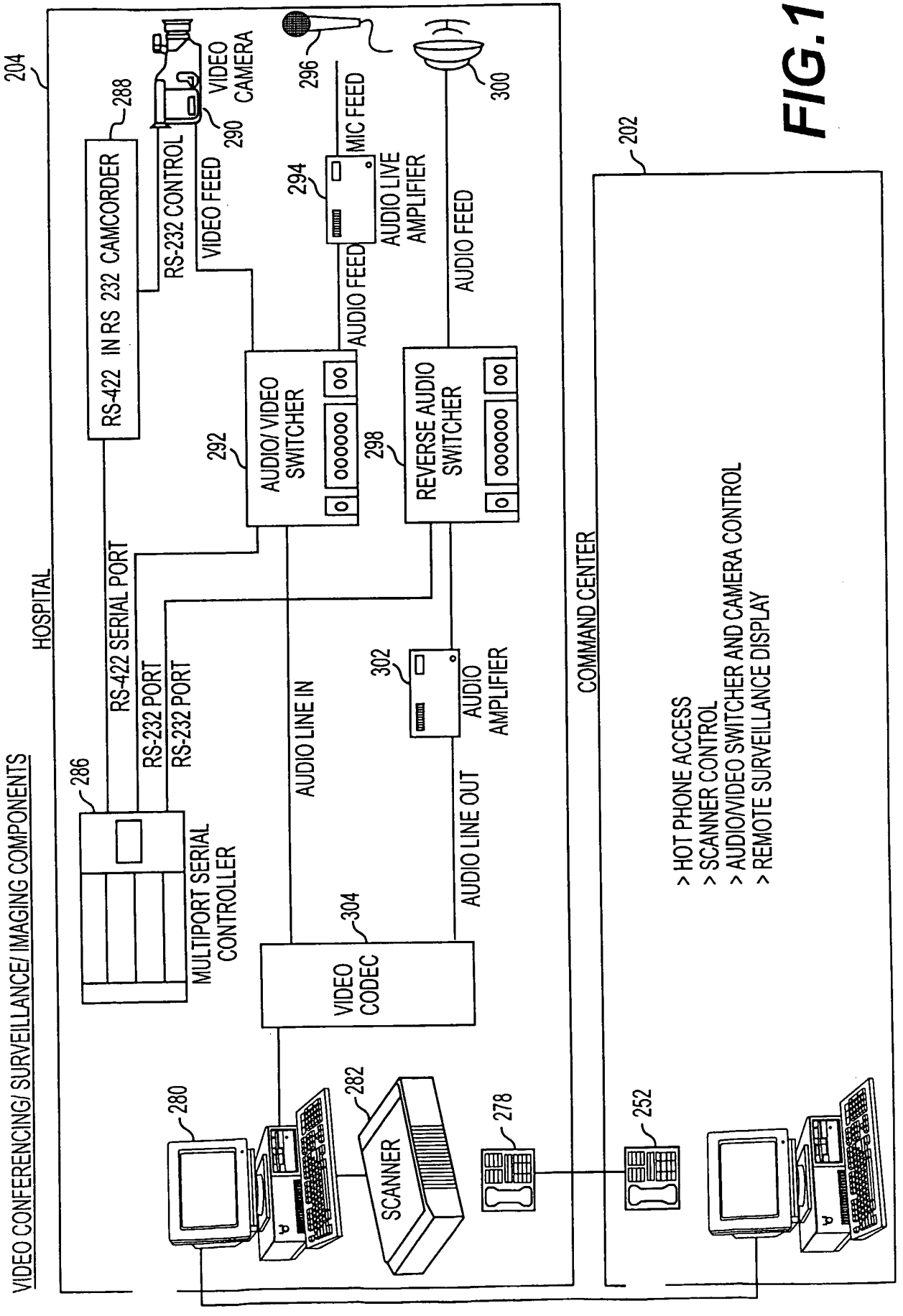

VIDEO CONFERENCING/ SURVEILLANCE/ IMAGING COMPONENTS
HOSPITAL
204
RS-422 IN RS 232 CAMCORDER
288
VIDEO CAMERA
290
RS-232 CONTROL
VIDEO FEED
296
MIC FEED
294
AUDIO LIVE AMPLIFIER
AUDIO FEED
300
AUDIO FEED
202
AUDIO/ VIDEO SWITCHER
292
REVERSE AUDIO SWITCHER
298
RS-422 SERIAL PORT
RS-232 PORT
RS-232 PORT
AUDIO LINE IN
302
AUDIO AMPLIFIER
AUDIO LINE OUT
286
MULTIPORT SERIAL CONTROLLER
304
VIDEO CODEC
COMMAND CENTER
> HOT PHONE ACCESS
> SCANNER CONTROL
> AUDIO/VIDEO SWITCHER AND CAMERA CONTROL
> REMOTE SURVEILLANCE DISPLAY
280
282
SCANNER
278
252

FIG.11

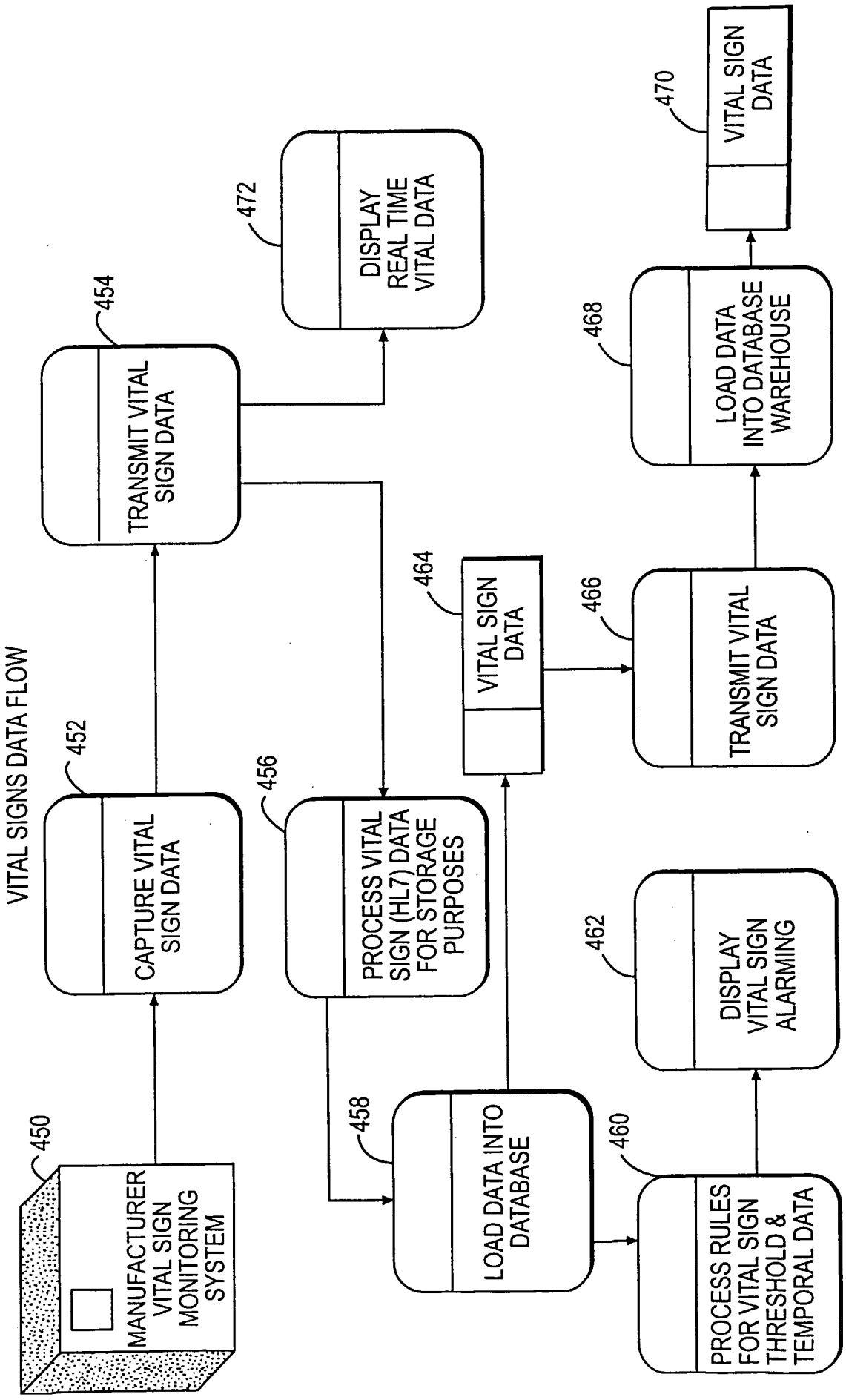

VITAL SIGNS DATA FLOW
450
MANUFACTURER VITAL SIGN MONITORING SYSTEM
452
CAPTURE VITAL SIGN DATA
454
TRANSMIT VITAL SIGN DATA
456
PROCESS VITAL SIGN (HL7) DATA FOR STORAGE PURPOSES
458
LOAD DATA INTO DATABASE
460
PROCESS RULES FOR VITAL SIGN THRESHOLD & TEMPORAL DATA
462
DISPLAY VITAL SIGN ALARMING
464
VITAL SIGN DATA
466
TRANSMIT VITAL SIGN DATA
468
LOAD DATA INTO DATABASE WAREHOUSE
470
VITAL SIGN DATA
472
DISPLAY REAL TIME VITAL DATA

FIG. 12

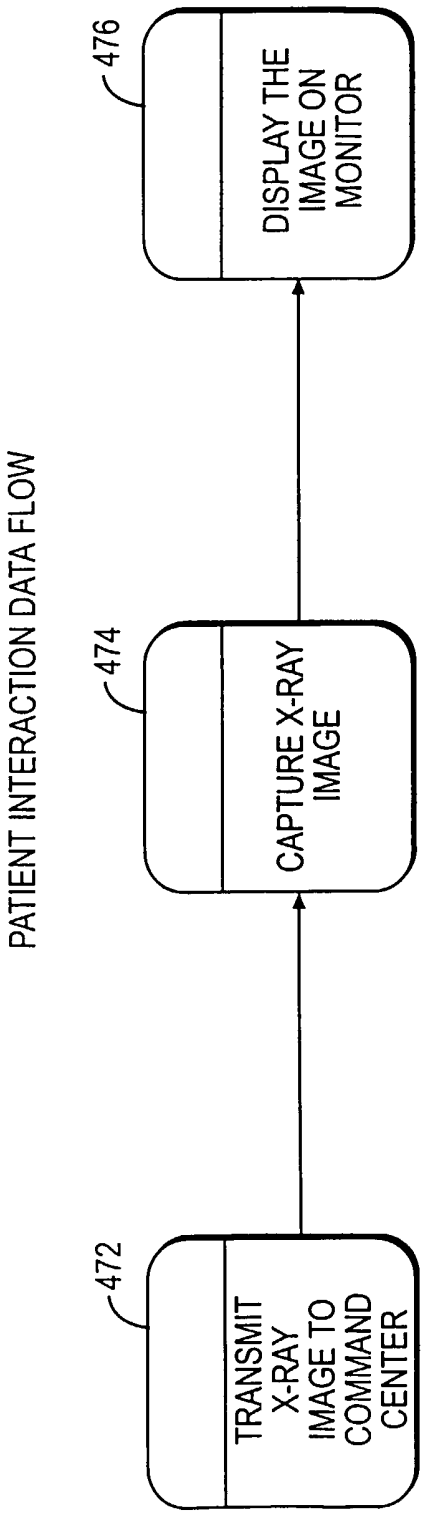


FIG. 13A

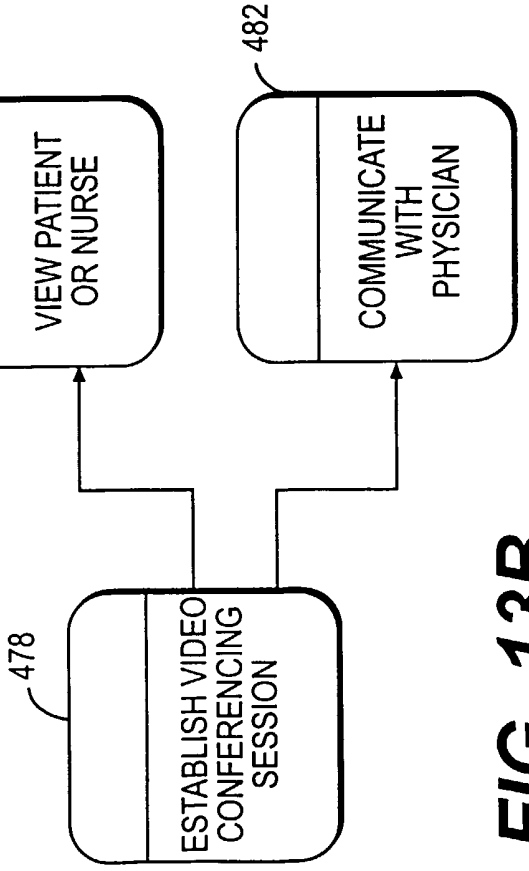


FIG. 13B

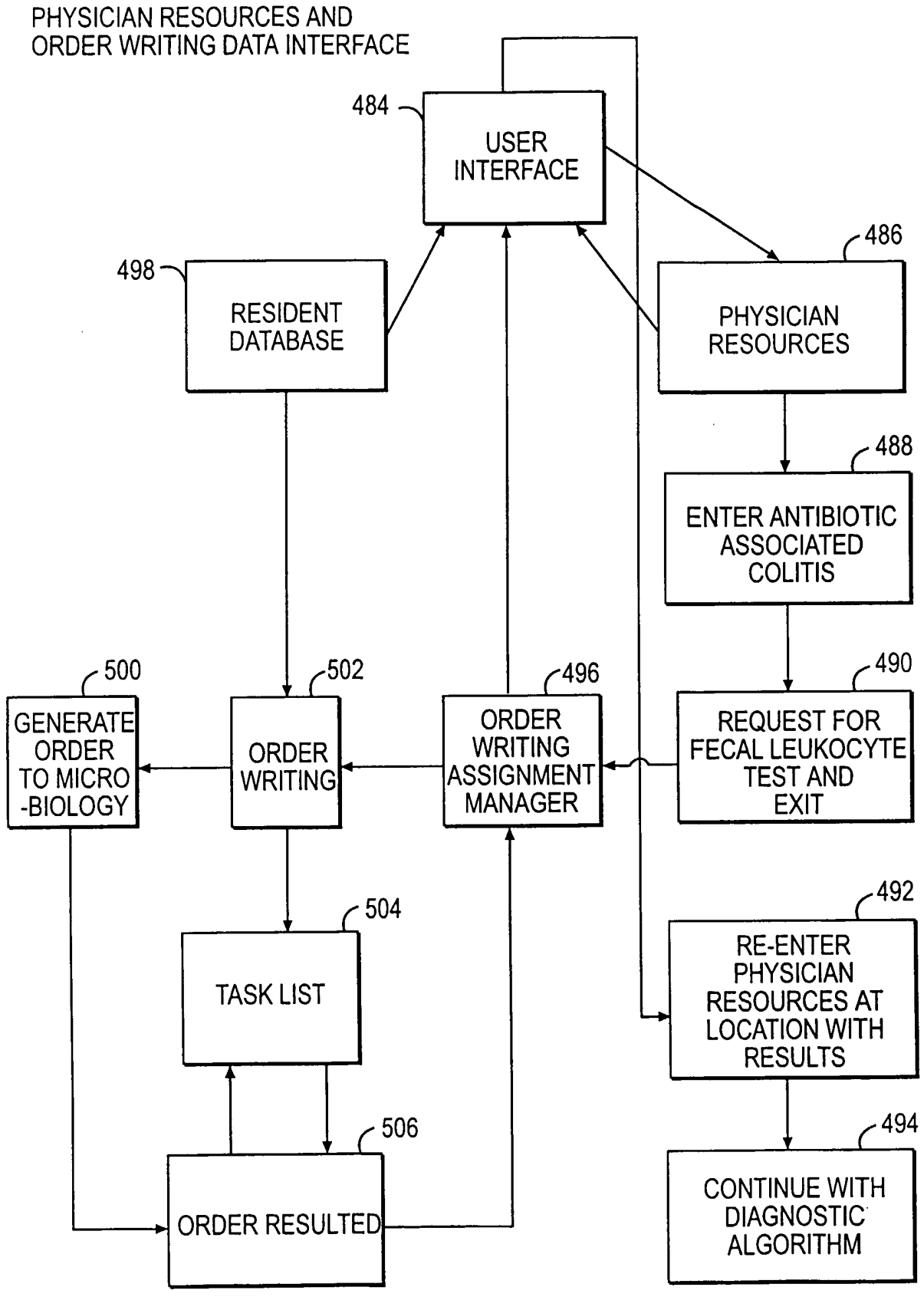

PHYSICIAN RESOURCES AND
ORDER WRITING DATA INTERFACE
484
USER INTERFACE
498
RESIDENT DATABASE
486
PHYSICIAN RESOURCES
488
ENTER ANTIBIOTIC ASSOCIATED COLITIS
500
GENERATE ORDER TO MICRO -BIOLOGY
502
ORDER WRITING
496
ORDER WRITING ASSIGNMENT MANAGER
490
REQUEST FOR FECAL LEUKOCYTE TEST AND EXIT
504
TASK LIST
492
RE-ENTER PHYSICIAN RESOURCES AT LOCATION WITH RESULTS
506
ORDER RESULTED
494
CONTINUE WITH DIAGNOSTIC ALGORITHM

FIG. 14

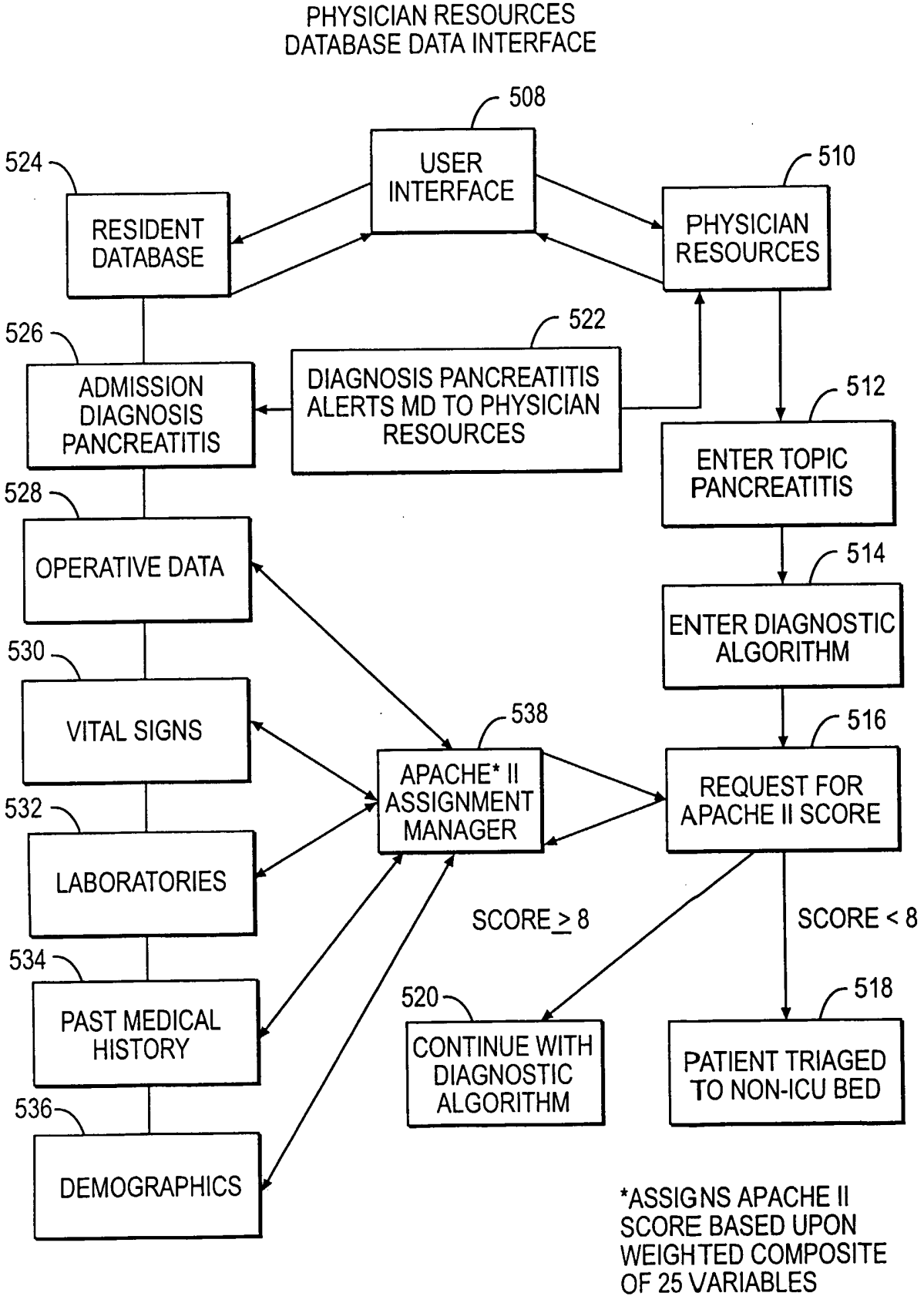

PHYSICIAN RESOURCES
DATABASE DATA INTERFACE
508
USER INTERFACE
524
RESIDENT DATABASE
510
PHYSICIAN RESOURCES
526
ADMISSION DIAGNOSIS PANCREATITIS
522
DIAGNOSIS PANCREATITIS ALERTS MD TO PHYSICIAN RESOURCES
512
ENTER TOPIC PANCREATITIS
528
OPERATIVE DATA
514
ENTER DIAGNOSTIC ALGORITHM
530
VITAL SIGNS
538
APACHE* II ASSIGNMENT MANAGER
516
REQUEST FOR APACHE II SCORE
532
LABORATORIES
SCORE ≥ 8
SCORE < 8
534
PAST MEDICAL HISTORY
520
CONTINUE WITH DIAGNOSTIC ALGORITHM
518
PATIENT TRIAGED TO NON-ICU BED
536
DEMOGRAPHICS
*ASSIGNS APACHE II SCORE BASED UPON WEIGHTED COMPOSITE OF 25 VARIABLES

FIG. 15

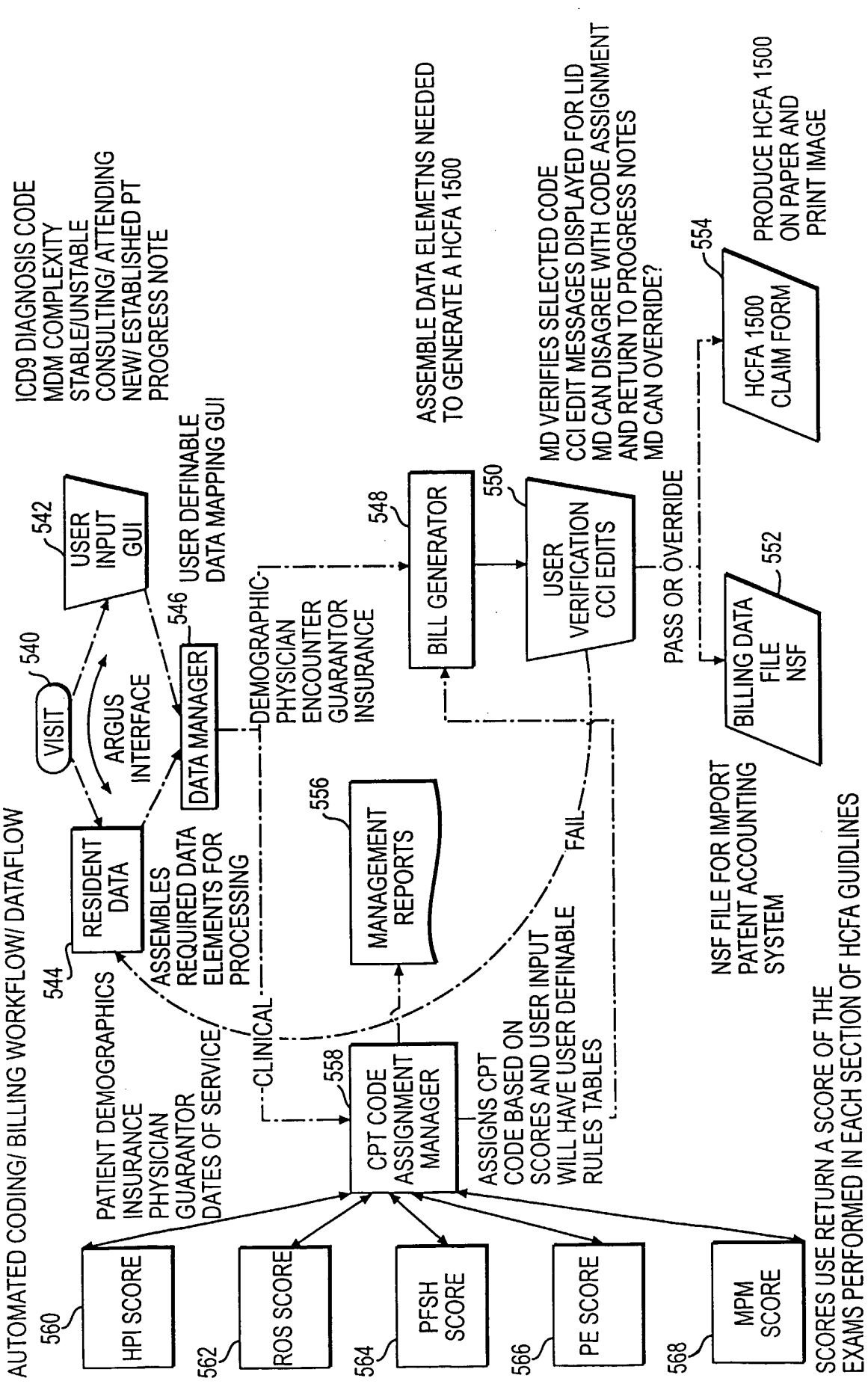

AUTOMATED CODING/ BILLING WORKFLOW/ DATAFLOW
ICD9 DIAGNOSIS CODE
MDM COMPLEXITY
STABLE/UNSTABLE
CONSULTING/ ATTENDING
NEW/ ESTABLISHED PT
PROGRESS NOTE
542
USER INPUT GUI
USER DEFINABLE DATA MAPPING GUI
546
540
VISIT
ARGUS INTERFACE
DATA MANAGER
DEMOGRAPHIC
PHYSICIAN
ENCOUNTER
GUARANTOR
INSURANCE
548
BILL GENERATOR
ASSEMBLE DATA ELEMETNS NEEDED
TO GENERATE A HCFA 1500
550
USER VERIFICATION CCI EDITS
MD VERIFIES SELECTED CODE
CCI EDIT MESSAGES DISPLAYED FOR LID
MD CAN DISAGREE WITH CODE ASSIGNMENT
AND RETURN TO PROGRESS NOTES
MD CAN OVERRIDE?
PASS OR OVERRIDE
554
HCFA 1500 CLAIM FORM
PRODUCE HCFA 1500
ON PAPER AND
PRINT IMAGE
552
BILLING DATA FILE NSF
NSF FILE FOR IMPORT
PATENT ACCOUNTING
SYSTEM
544
RESIDENT DATA
ASSEMBLES REQUIRED DATA ELEMENTS FOR PROCESSING
PATIENT DEMOGRAPHICS
INSURANCE
PHYSICIAN
GUARANTOR
DATES OF SERVICE
CLINICAL
556
MANAGEMENT REPORTS
FAIL
558
CPT CODE ASSIGNMENT MANAGER
ASSIGNS CPT CODE BASED ON SCORES AND USER INPUT WILL HAVE USER DEFINABLE RULES TABLES
SCORES USE RETURN A SCORE OF THE EXAMS PERFORMED IN EACH SECTION OF HCFA GUIDLINES WILL HAVE USER DEFINABLE TABLES
560
HPI SCORE
562
ROS SCORE
564
PFSH SCORE
566
PE SCORE
568
MPM SCORE

FIG. 16

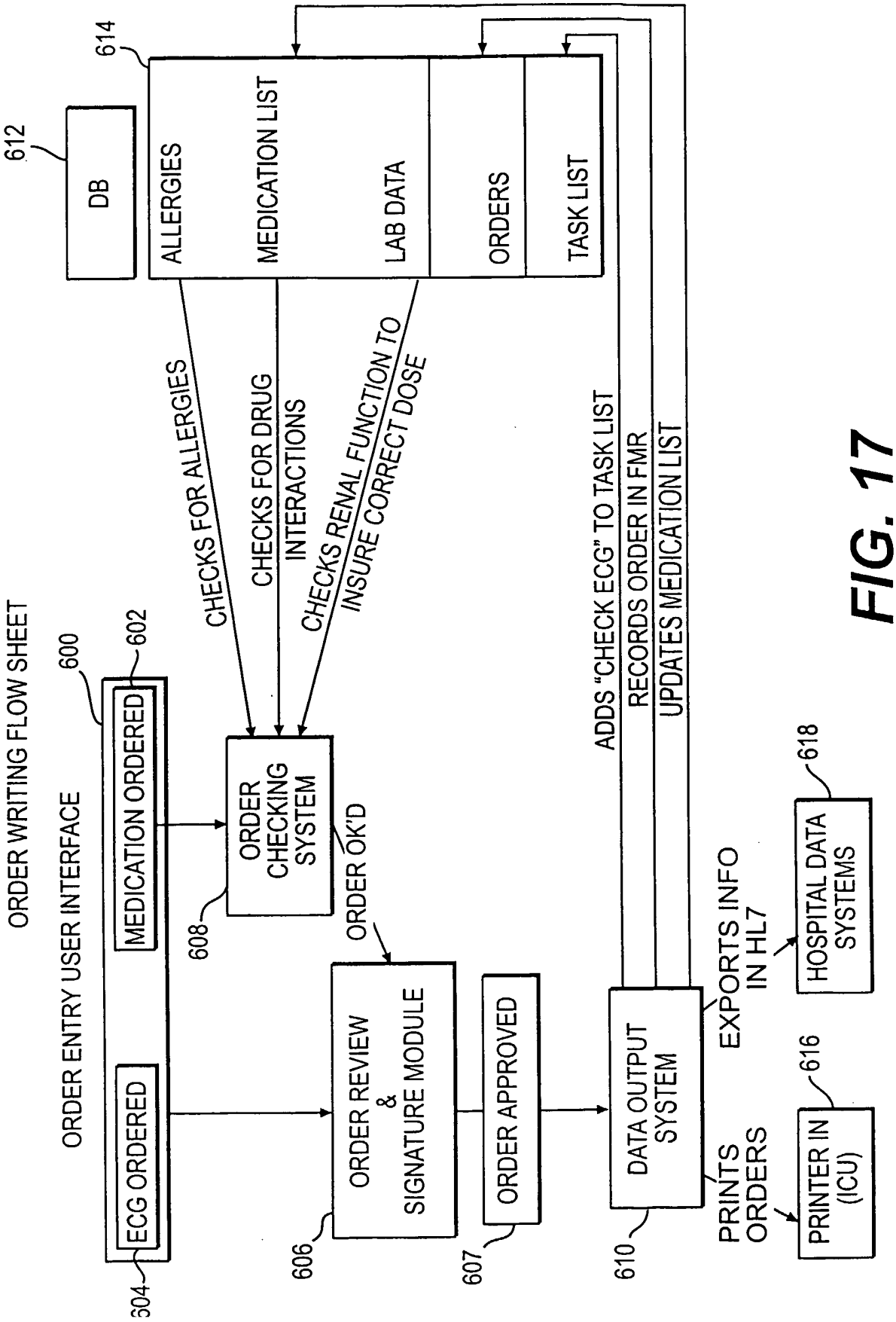

ORDER WRITING FLOW SHEET
ORDER ENTRY USER INTERFACE
600
602
MEDICATION ORDERED
ECG ORDERED
604
608
ORDER CHECKING SYSTEM
ORDER OK'D
606
ORDER REVIEW & SIGNATURE MODULE
607
ORDER APPROVED
610
DATA OUTPUT SYSTEM
612
DB
614
ALLERGIES
MEDICATION LIST
LAB DATA
ORDERS
TASK LIST
CHECKS FOR ALLERGIES
CHECKS FOR DRUG INTERACTIONS
CHECKS RENAL FUNCTION TO INSURE CORRECT DOSE
ADDS "CHECK ECG" TO TASK LIST
RECORDS ORDER IN FMR
UPDATES MEDICATION LIST
EXPORTS INFO IN HL7
618
HOSPITAL DATA SYSTEMS
PRINTS ORDERS
616
PRINTER IN (ICU)

FIG. 17

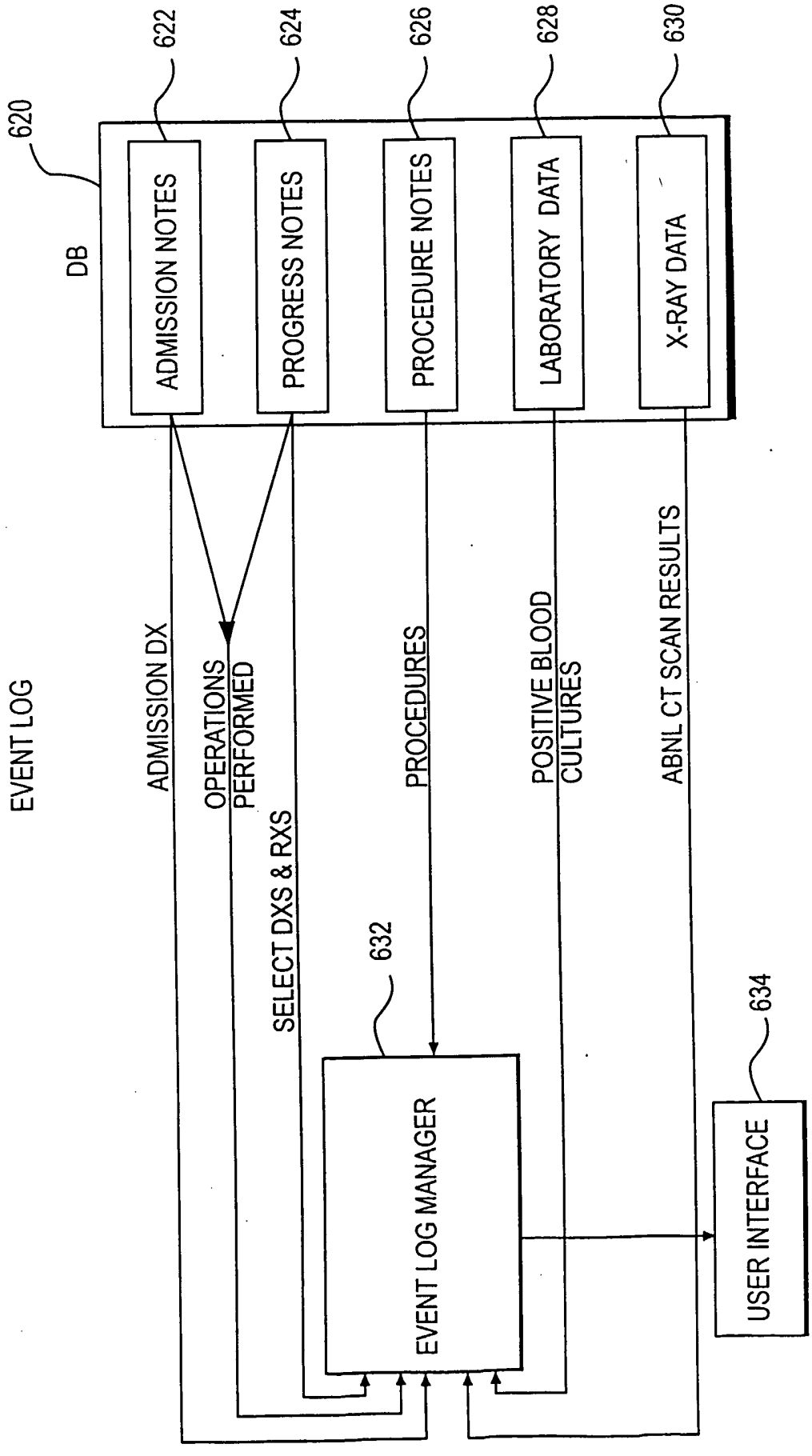
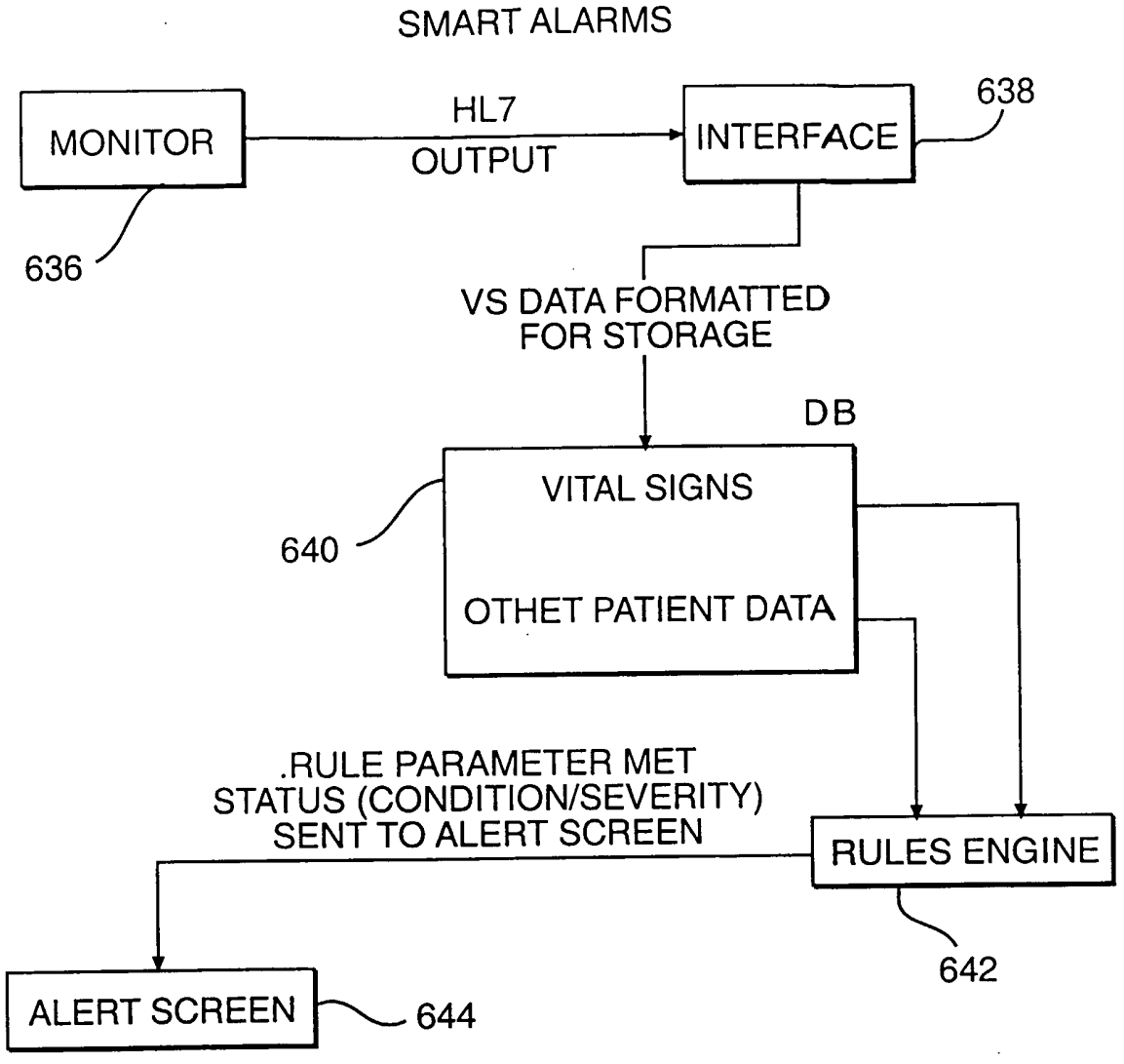


FIG. 18

THE EVENT LOG PRESENTS IN A SINGLE LOCATION KEY CLINICAL INFORMATION FROM THROUGHOUT A PATIENT'S STAY IN THE ICU. THE EVENT LOG PROVIDES CARE GIVERS WITH A SNAPSHOT VIEW OF ALL SALIENT EVENTS SINCE ADMISSION. ALL RELEVANT DATA ARE PRESENTED CHRONOLOGICALLY.

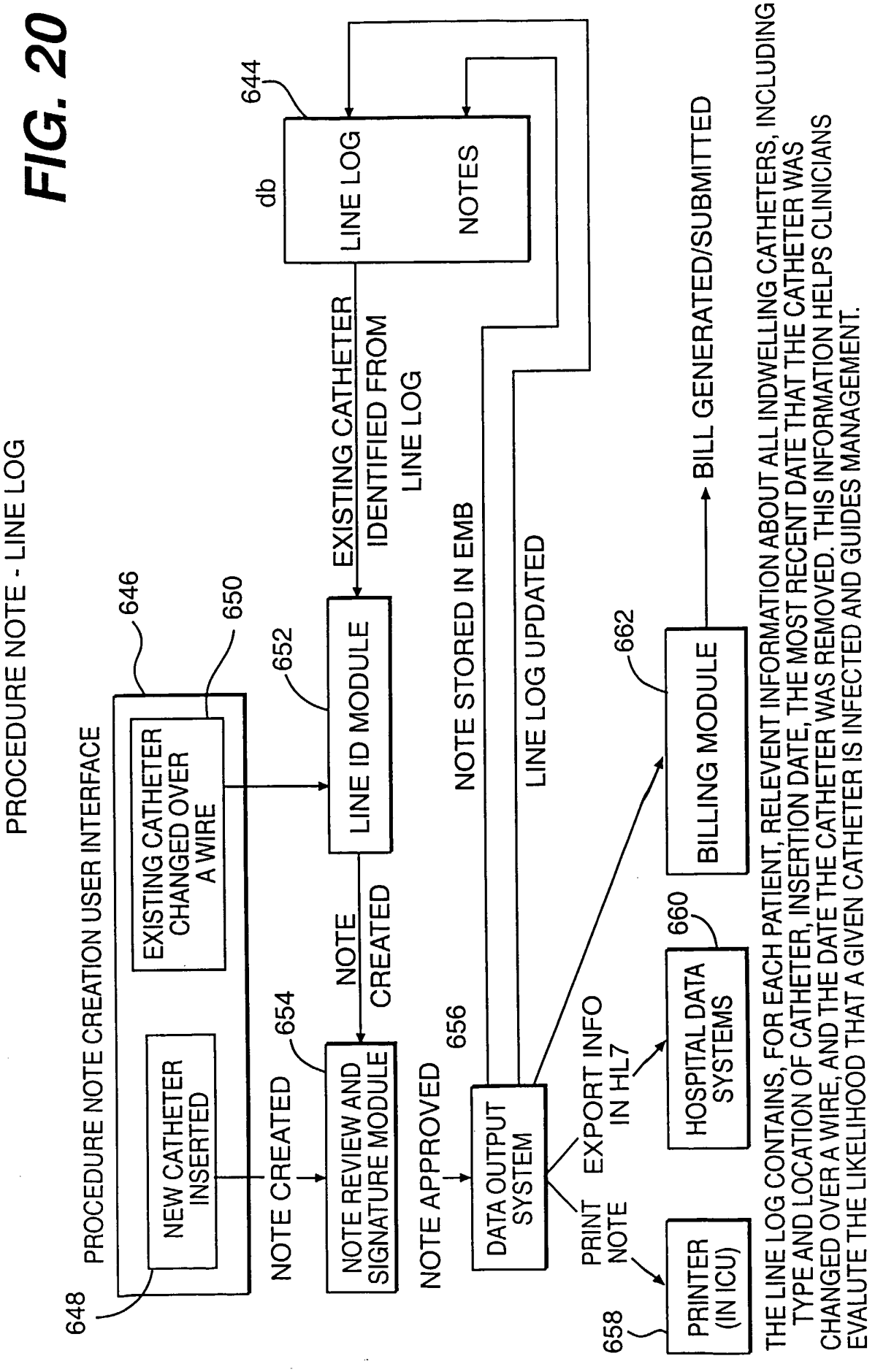


THE SMART ALARM SYSTEM CONSTANTLY MONITORS PHYSIOLOGIC DATA (COLLECTED ONCE A MINUTE FROM THE BEDSIDE MONITORS) AND OTHER CLINICAL INFORMATION. THE RULES ENGINE SEARCHES FOR PATTERNS OF DATA INDICATIVE OF CLINICAL DETERIORATION. EXAMPLES INCLUDE CHANGES IN VITAL SIGNS OVER TIME (e.g. A 25% INCREASE IN THE HR AND A 20% DECREASE IN BP), PARALLEL REDUCTIONS IN URINE OUTPUT AND CENTRAL VENOUS PRESSURE THAT SUGGEST DEVELOPING HYPOVOLEMIA, AND PROGRESSIVE REDUCTIONS IN HEMOGLOBIN CONCENTRATION OVER TIME THAT INDICATE A NEED TO EXCLUDE ACTIVE BLEEDING (AND A POSSIBLE NEED TO ADMINISTER BLOOD). WHEN RULE CONDITIONS ARE MET, RELEVANT INFORMATION IS DISPLAYED ON THE SYSTEM "ALERT SCREEN".

THE RATIONALE UNDERLYING SMART ALARMS IS TO FACILIATE DETECTION OF IMPENDING PROBLEMS AND TO AUTOMATE PROBLEM DETECTION.
THE SYSTEM BALANCES ALARM SENSITIVITY AND SPECIFICITY IN ORDER TO MAXIMIZE THE BENEFIT OF THE ALARMS TO THE INTENSIVIST.

FIG. 19

FIG. 20


PROCEDURE NOTE - LINE LOG
PROCEDURE NOTE CREATION USER INTERFACE
646
650
652
644
db
LINE LOG
NOTES
EXISTING CATHETER IDENTIFIED FROM LINE LOG
EXISTING CATHETER CHANGED OVER A WIRE
LINE ID MODULE
NOTE CREATED
NOTE
NEW CATHETER INSERTED
NOTE CREATED
654
NOTE REVIEW AND SIGNATURE MODULE
NOTE APPROVED
656
NOTE STORED IN EMB
LINE LOG UPDATED
DATA OUTPUT SYSTEM
662
BILL GENERATED/SUBMITTED
BILLING MODULE
PRINT NOTE
EXPORT INFO IN HL7
660
HOSPITAL DATA SYSTEMS
658
PRINTER (IN ICU)
648
THE LINE LOG CONTAINS, FOR EACH PATIENT, RELEVENT INFORMATION ABOUT ALL INDWELLING CATHETERS, INCLUDING TYPE AND LOCATION OF CATHETER, INSERTION DATE, THE MOST RECENT DATE THAT THE CATHETER WAS CHANGED OVER A WIRE, AND THE DATE THE CATHETER WAS REMOVED. THIS INFORMATION HELPS CLINICIANS EVALUTE THE LIKELIHOOD THAT A GIVEN CATHETER IS INFECTED AND GUIDES MANAGEMENT.

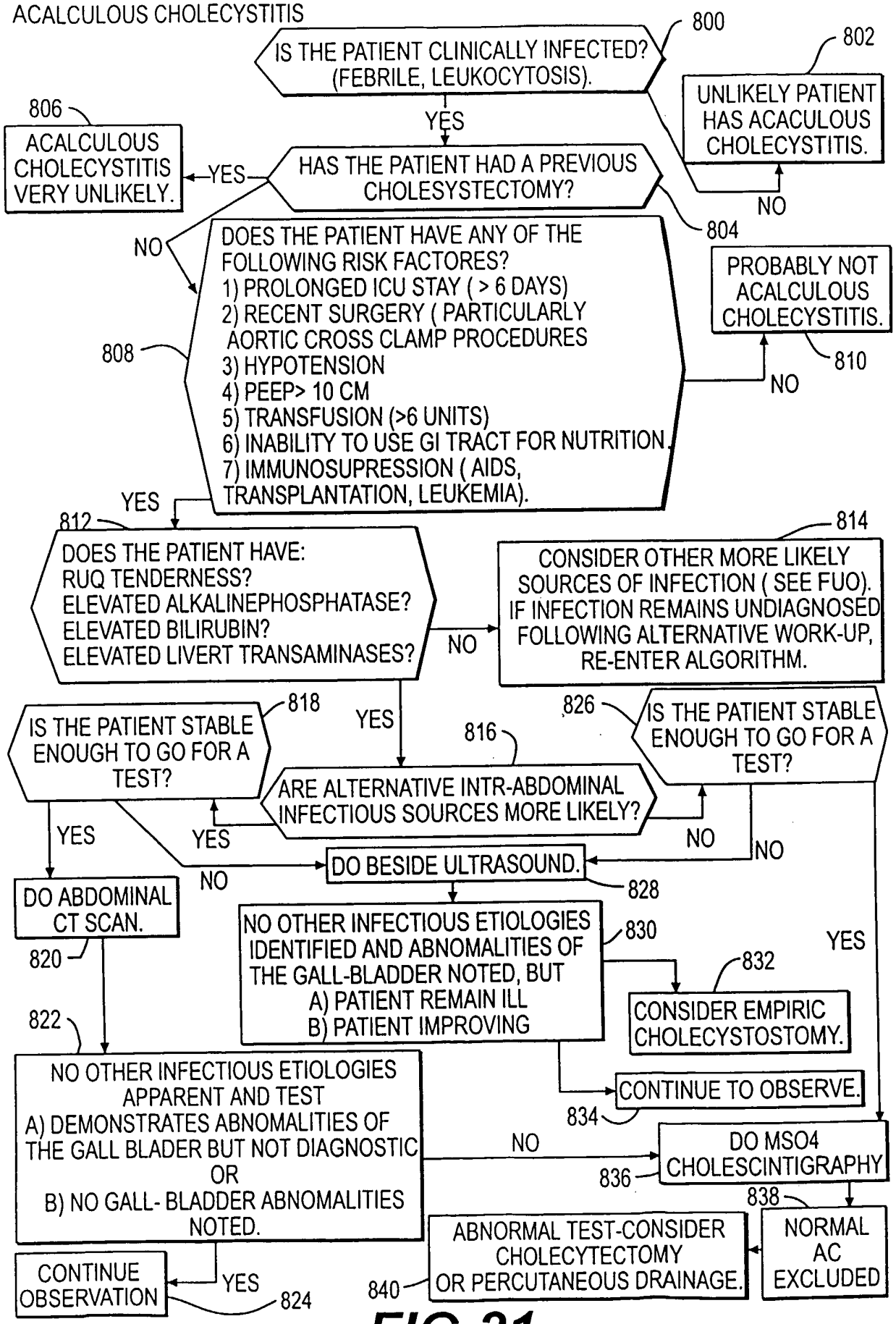

ACALCULOUS CHOLECYSTITIS
IS THE PATIENT CLINICALLY INFECTED? (FEBRILE, LEUKOCYTOSIS).
800
UNLIKELY PATIENT HAS ACACULOUS CHOLECYSTITIS.
802
YES
NO
HAS THE PATIENT HAD A PREVIOUS CHOLESYSTECTOMY?
804
YES
ACALCULOUS CHOLECYSTITIS VERY UNLIKELY.
806
NO
DOES THE PATIENT HAVE ANY OF THE FOLLOWING RISK FACTORES?
1) PROLONGED ICU STAY (> 6 DAYS)
2) RECENT SURGERY (PARTICULARLY AORTIC CROSS CLAMP PROCEDURES
3) HYPOTENSION
4) PEEP> 10 CM
5) TRANSFUSION (>6 UNITS)
6) INABILITY TO USE GI TRACT FOR NUTRITION
7) IMMUNOSUPRESSION (AIDS, TRANSPLANTATION, LEUKEMIA).
808
PROBABLY NOT ACALCULOUS CHOLECYSTITIS.
810
NO
YES
DOES THE PATIENT HAVE:
RUQ TENDERNESS?
ELEVATED ALKALINEPHOSPHATASE?
ELEVATED BILIRUBIN?
ELEVATED LIVERT TRANSAMINASES?
812
NO
CONSIDER OTHER MORE LIKELY SOURCES OF INFECTION (SEE FUO). IF INFECTION REMAINS UNDIAGNOSED FOLLOWING ALTERNATIVE WORK-UP, RE-ENTER ALGORITHM.
814
YES
IS THE PATIENT STABLE ENOUGH TO GO FOR A TEST?
818
ARE ALTERNATIVE INTR-ABDOMINAL INFECTIOUS SOURCES MORE LIKELY?
816
IS THE PATIENT STABLE ENOUGH TO GO FOR A TEST?
826
YES
YES
NO
NO
DO BESIDE ULTRASOUND.
828
NO
DO ABDOMINAL CT SCAN.
820
NO OTHER INFECTIOUS ETIOLOGIES IDENTIFIED AND ABNOMALITIES OF THE GALL-BLADDER NOTED, BUT
A) PATIENT REMAIN ILL
B) PATIENT IMPROVING
830
YES
CONSIDER EMPIRIC CHOLECYSTOSTOMY.
832
CONTINUE TO OBSERVE.
834
NO OTHER INFECTIOUS ETIOLOGIES APPARENT AND TEST
A) DEMONSTRATES ABNOMALITIES OF THE GALL BLADER BUT NOT DIAGNOSTIC
OR
B) NO GALL- BLADDER ABNOMALITIES NOTED.
822
NO
DO MSO4 CHOLESCINTIGRAPHY
836
838
NORMAL AC EXCLUDED
ABNORMAL TEST-CONSIDER CHOLECYTECTOMY OR PERCUTANEOUS DRAINAGE.
840
CONTINUE OBSERVATION
YES
824

FIG.21

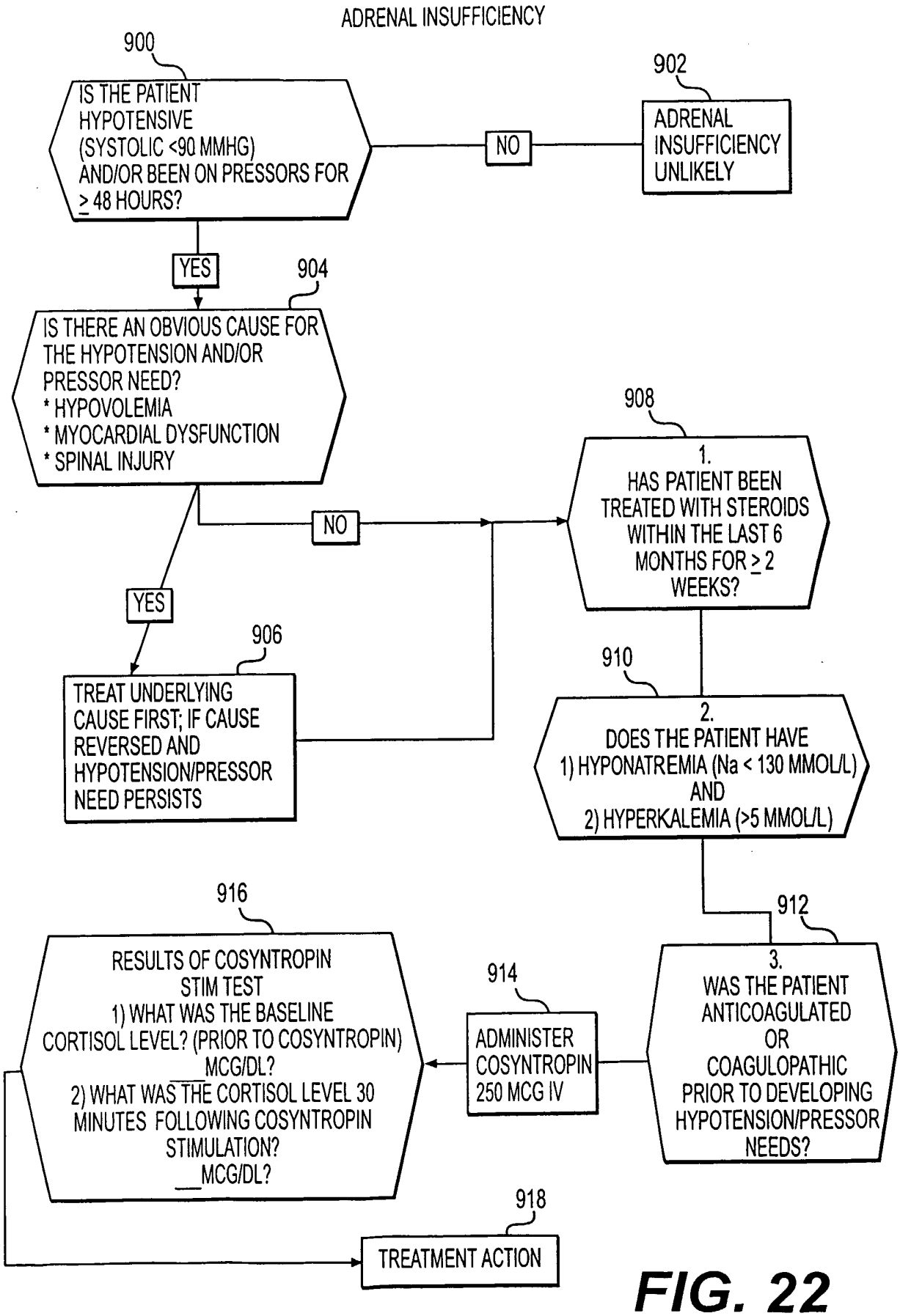
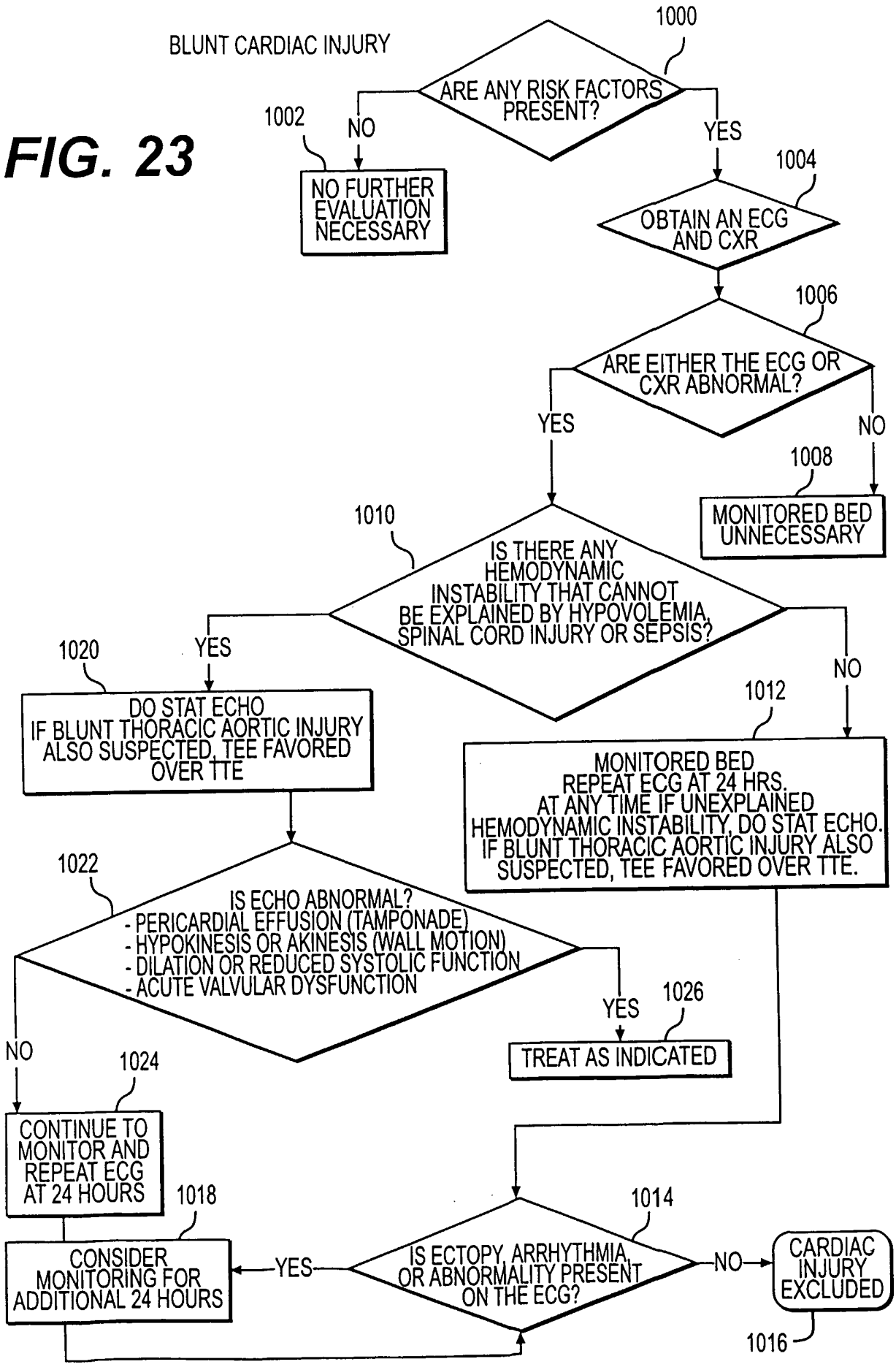

ADRENAL INSUFFICIENCY
900
IS THE PATIENT HYPOTENSIVE (SYSTOLIC <90 MMHG) AND/OR BEEN ON PRESSORS FOR ≥ 48 HOURS?
NO
902
ADRENAL INSUFFICIENCY UNLIKELY
YES
904
IS THERE AN OBVIOUS CAUSE FOR THE HYPOTENSION AND/OR PRESSOR NEED?
* HYPOVOLEMIA
* MYOCARDIAL DYSFUNCTION
* SPINAL INJURY
NO
908
1. HAS PATIENT BEEN TREATED WITH STEROIDS WITHIN THE LAST 6 MONTHS FOR ≥ 2 WEEKS?
YES
906
TREAT UNDERLYING CAUSE FIRST; IF CAUSE REVERSED AND HYPOTENSION/PRESSOR NEED PERSISTS
910
2. DOES THE PATIENT HAVE 1) HYPONATREMIA (Na < 130 MMOL/L) AND 2) HYPERKALEMIA (>5 MMOL/L)
912
3. WAS THE PATIENT ANTICOAGULATED OR COAGULOPATHIC PRIOR TO DEVELOPING HYPOTENSION/PRESSOR NEEDS?
914
ADMINISTER COSYNTROPIN 250 MCG IV
916
RESULTS OF COSYNTROPIN STIM TEST
1) WHAT WAS THE BASELINE CORTISOL LEVEL? (PRIOR TO COSYNTROPIN) __MCG/DL?
2) WHAT WAS THE CORTISOL LEVEL 30 MINUTES FOLLOWING COSYNTROPIN STIMULATION? __MCG/DL?
918
TREATMENT ACTION

FIG. 22

FIG. 23


BLUNT CARDIAC INJURY
1000
ARE ANY RISK FACTORS PRESENT?
NO
1002
NO FURTHER EVALUATION NECESSARY
YES
1004
OBTAIN AN ECG AND CXR
1006
ARE EITHER THE ECG OR CXR ABNORMAL?
YES
NO
1008
MONITORED BED UNNECESSARY
1010
IS THERE ANY HEMODYNAMIC INSTABILITY THAT CANNOT BE EXPLAINED BY HYPOVOLEMIA, SPINAL CORD INJURY OR SEPSIS?
YES
1020
DO STAT ECHO IF BLUNT THORACIC AORTIC INJURY ALSO SUSPECTED, TEE FAVORED OVER TTE
NO
1012
MONITORED BED REPEAT ECG AT 24 HRS. AT ANY TIME IF UNEXPLAINED HEMODYNAMIC INSTABILITY, DO STAT ECHO. IF BLUNT THORACIC AORTIC INJURY ALSO SUSPECTED, TEE FAVORED OVER TTE.
1022
IS ECHO ABNORMAL?
- PERICARDIAL EFFUSION (TAMPONADE)
- HYPOKINESIS OR AKINESIS (WALL MOTION)
- DILATION OR REDUCED SYSTOLIC FUNCTION
- ACUTE VALVULAR DYSFUNCTION
YES
1026
TREAT AS INDICATED
NO
1024
CONTINUE TO MONITOR AND REPEAT ECG AT 24 HOURS
1018
CONSIDER MONITORING FOR ADDITIONAL 24 HOURS
YES
1014
IS ECTOPY, ARRHYTHMIA, OR ABNORMALITY PRESENT ON THE ECG?
NO
CARDIAC INJURY EXCLUDED
1016

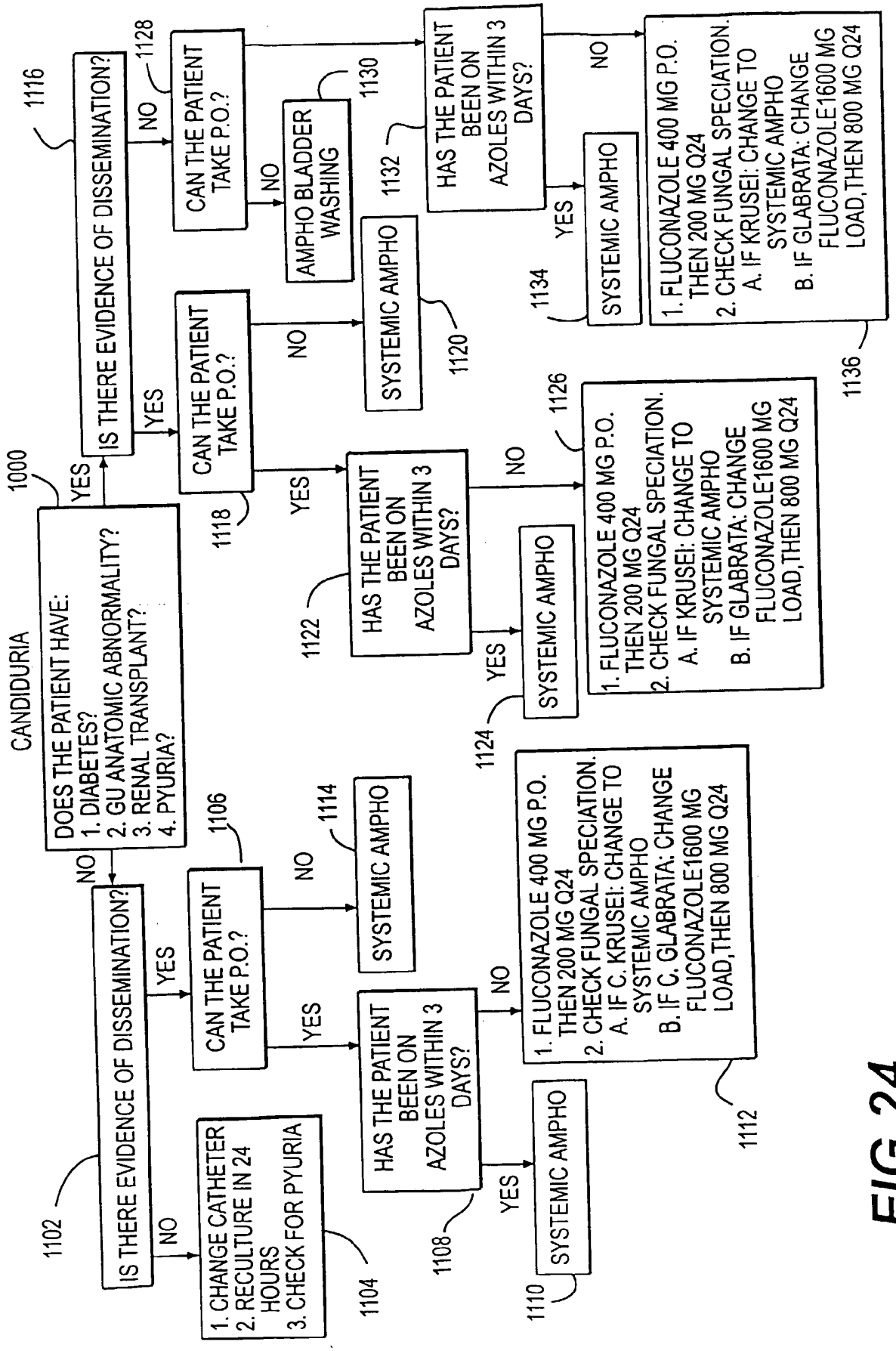
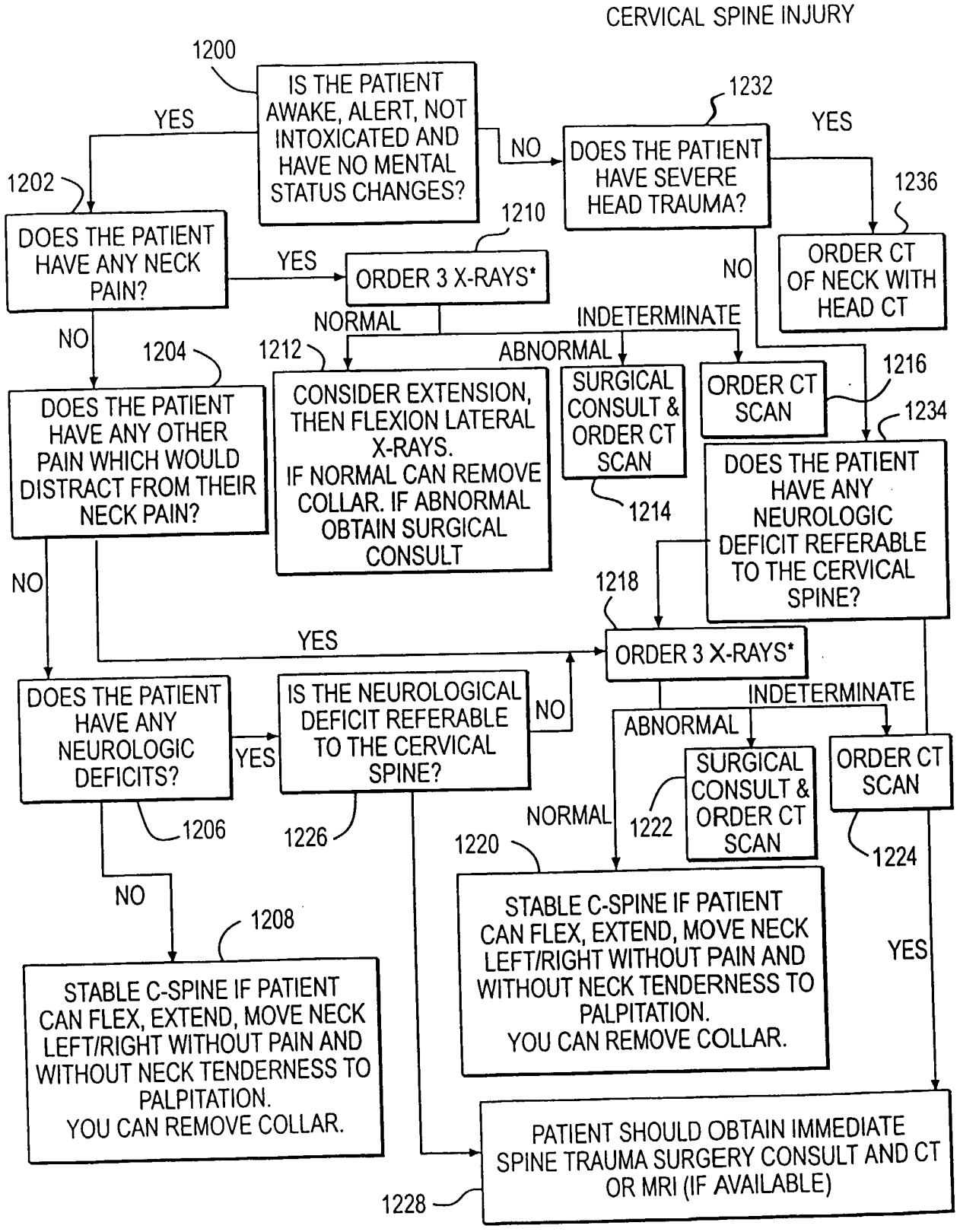

CANDIDURIA
DOES THE PATIENT HAVE:
1. DIABETES?
2. GU ANATOMIC ABNORMALITY?
3. RENAL TRANSPLANT?
4. PYURIA?
1000
YES
NO
IS THERE EVIDENCE OF DISSEMINATION?
1102
YES
NO
1. CHANGE CATHETER
2. RECULTURE IN 24 HOURS
3. CHECK FOR PYURIA
1104
CAN THE PATIENT TAKE P.O.?
1106
YES
NO
HAS THE PATIENT BEEN ON AZOLES WITHIN 3 DAYS?
1108
YES
NO
SYSTEMIC AMPHO
1110
1. FLUCONAZOLE 400 MG P.O. THEN 200 MG Q24
2. CHECK FUNGAL SPECIATION.
A. IF C. KRUSEI: CHANGE TO SYSTEMIC AMPHO
B. IF C. GLABRATA: CHANGE FLUCONAZOLE1600 MG LOAD,THEN 800 MG Q24
1112
SYSTEMIC AMPHO
1114
IS THERE EVIDENCE OF DISSEMINATION?
1116
YES
NO
CAN THE PATIENT TAKE P.O.?
1118
YES
NO
HAS THE PATIENT BEEN ON AZOLES WITHIN 3 DAYS?
1122
YES
NO
SYSTEMIC AMPHO
1124
1. FLUCONAZOLE 400 MG P.O. THEN 200 MG Q24
2. CHECK FUNGAL SPECIATION.
A. IF KRUSEI: CHANGE TO SYSTEMIC AMPHO
B. IF GLABRATA: CHANGE FLUCONAZOLE1600 MG LOAD,THEN 800 MG Q24
1126
SYSTEMIC AMPHO
1120
CAN THE PATIENT TAKE P.O.?
1128
NO
AMPHO BLADDER WASHING
1130
HAS THE PATIENT BEEN ON AZOLES WITHIN 3 DAYS?
1132
YES
NO
SYSTEMIC AMPHO
1134
1. FLUCONAZOLE 400 MG P.O. THEN 200 MG Q24
2. CHECK FUNGAL SPECIATION.
A. IF KRUSEI: CHANGE TO SYSTEMIC AMPHO
B. IF GLABRATA: CHANGE FLUCONAZOLE1600 MG LOAD,THEN 800 MG Q24
1136

FIG.24



* 1) LATERAL VIEW REVEALING THE BASE OF THE OCCIPUT TO THE UPPER BORDER OF THE FIRST THORACIC VERTEBRA,
2) ANTEROPOSTERIOR VIEW REVEALING SPINOUS PROCESSES OF THE SECOND CERVICAL THROUGH THE FIRST THORACIC VERTEBRA, AND
3) AN OPEN MOUTH ODONTOID VIEW REVEALING THE LATERAL MASSES OF THE FIRST CERVICAL VERTEBRA AND ENTIRE ODONTOID PROCESS.

FIG. 25

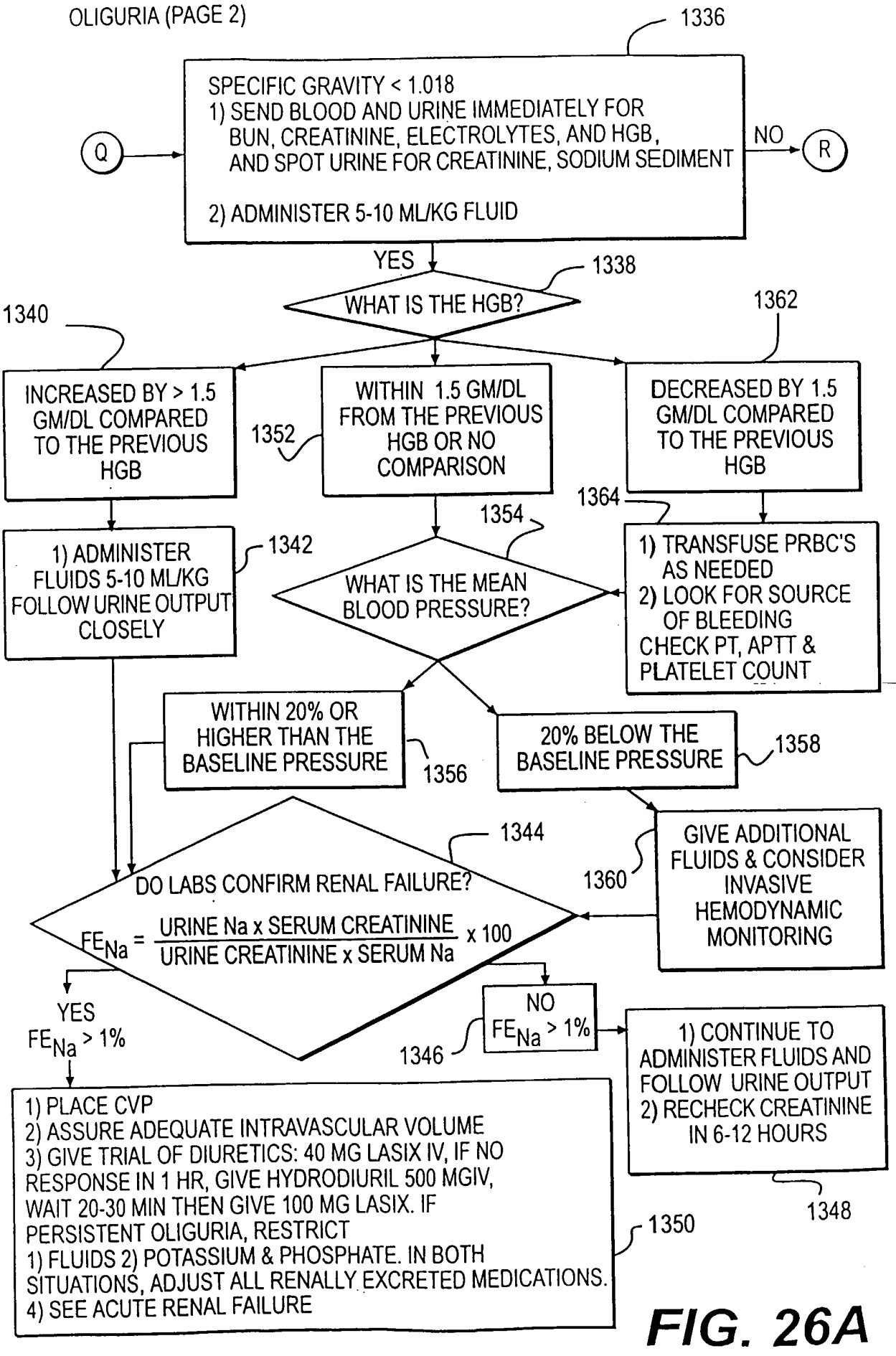

OLIGURIA (PAGE 2)
1336
SPECIFIC GRAVITY < 1.018
1) SEND BLOOD AND URINE IMMEDIATELY FOR BUN, CREATININE, ELECTROLYTES, AND HGB, AND SPOT URINE FOR CREATININE, SODIUM SEDIMENT
2) ADMINISTER 5-10 ML/KG FLUID
Q
NO
R
YES
1338
WHAT IS THE HGB?
1340
1362
INCREASED BY > 1.5 GM/DL COMPARED TO THE PREVIOUS HGB
WITHIN 1.5 GM/DL FROM THE PREVIOUS HGB OR NO COMPARISON
1352
DECREASED BY 1.5 GM/DL COMPARED TO THE PREVIOUS HGB
1364
1) ADMINISTER FLUIDS 5-10 ML/KG FOLLOW URINE OUTPUT CLOSELY
1342
1354
WHAT IS THE MEAN BLOOD PRESSURE?
1) TRANSFUSE PRBC'S AS NEEDED
2) LOOK FOR SOURCE OF BLEEDING
CHECK PT, APTT & PLATELET COUNT
WITHIN 20% OR HIGHER THAN THE BASELINE PRESSURE
1356
20% BELOW THE BASELINE PRESSURE
1358
1344
DO LABS CONFIRM RENAL FAILURE?
$FE_{Na} = \frac{\text{URINE Na x SERUM CREATININE}}{\text{URINE CREATININE x SERUM Na}} \times 100$
1360
GIVE ADDITIONAL FLUIDS & CONSIDER INVASIVE HEMODYNAMIC MONITORING
YES
FE_{Na} > 1%
NO
FE_{Na} > 1%
1346
1) CONTINUE TO ADMINISTER FLUIDS AND FOLLOW URINE OUTPUT
2) RECHECK CREATININE IN 6-12 HOURS
1348
1) PLACE CVP
2) ASSURE ADEQUATE INTRAVASCULAR VOLUME
3) GIVE TRIAL OF DIURETICS: 40 MG LASIX IV, IF NO RESPONSE IN 1 HR, GIVE HYDRODIURIL 500 MGIV, WAIT 20-30 MIN THEN GIVE 100 MG LASIX. IF PERSISTENT OLIGURIA, RESTRICT
1) FLUIDS 2) POTASSIUM & PHOSPHATE. IN BOTH SITUATIONS, ADJUST ALL RENALLY EXCRETED MEDICATIONS.
4) SEE ACUTE RENAL FAILURE
1350

FIG. 26A

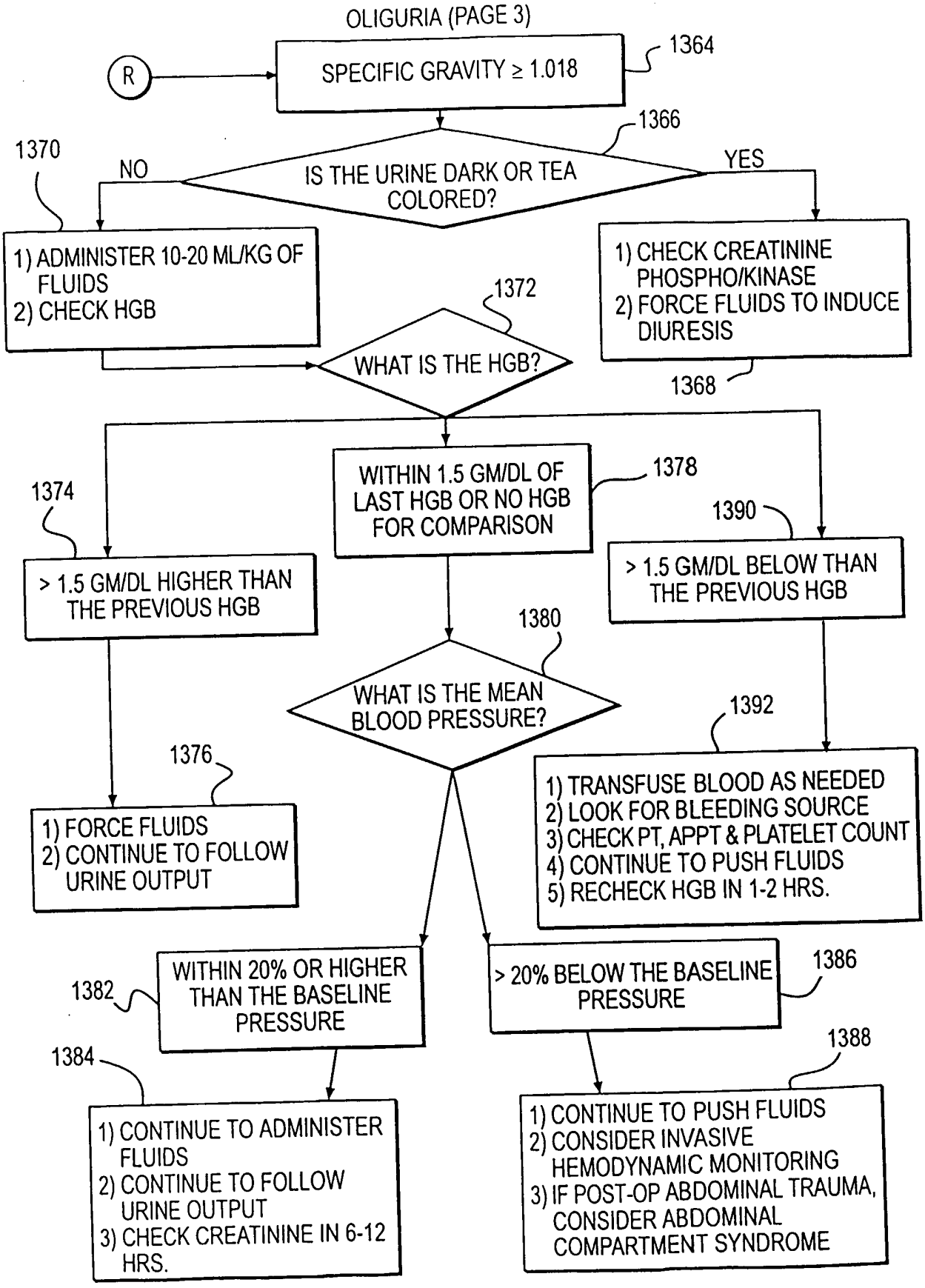

OLIGURIA (PAGE 3)
R
SPECIFIC GRAVITY ≥ 1.018
1364
1366
IS THE URINE DARK OR TEA COLORED?
NO
YES
1370
1) ADMINISTER 10-20 ML/KG OF FLUIDS
2) CHECK HGB
1) CHECK CREATININE PHOSPHO/KINASE
2) FORCE FLUIDS TO INDUCE DIURESIS
1368
1372
WHAT IS THE HGB?
WITHIN 1.5 GM/DL OF LAST HGB OR NO HGB FOR COMPARISON
1378
1374
> 1.5 GM/DL HIGHER THAN THE PREVIOUS HGB
1390
> 1.5 GM/DL BELOW THAN THE PREVIOUS HGB
1380
WHAT IS THE MEAN BLOOD PRESSURE?
1392
1376
1) FORCE FLUIDS
2) CONTINUE TO FOLLOW URINE OUTPUT
1) TRANSFUSE BLOOD AS NEEDED
2) LOOK FOR BLEEDING SOURCE
3) CHECK PT, APPT & PLATELET COUNT
4) CONTINUE TO PUSH FLUIDS
5) RECHECK HGB IN 1-2 HRS.
WITHIN 20% OR HIGHER THAN THE BASELINE PRESSURE
1382
> 20% BELOW THE BASELINE PRESSURE
1386
1384
1388
1) CONTINUE TO ADMINISTER FLUIDS
2) CONTINUE TO FOLLOW URINE OUTPUT
3) CHECK CREATININE IN 6-12 HRS.
1) CONTINUE TO PUSH FLUIDS
2) CONSIDER INVASIVE HEMODYNAMIC MONITORING
3) IF POST-OP ABDOMINAL TRAUMA, CONSIDER ABDOMINAL COMPARTMENT SYNDROME

FIG. 26B

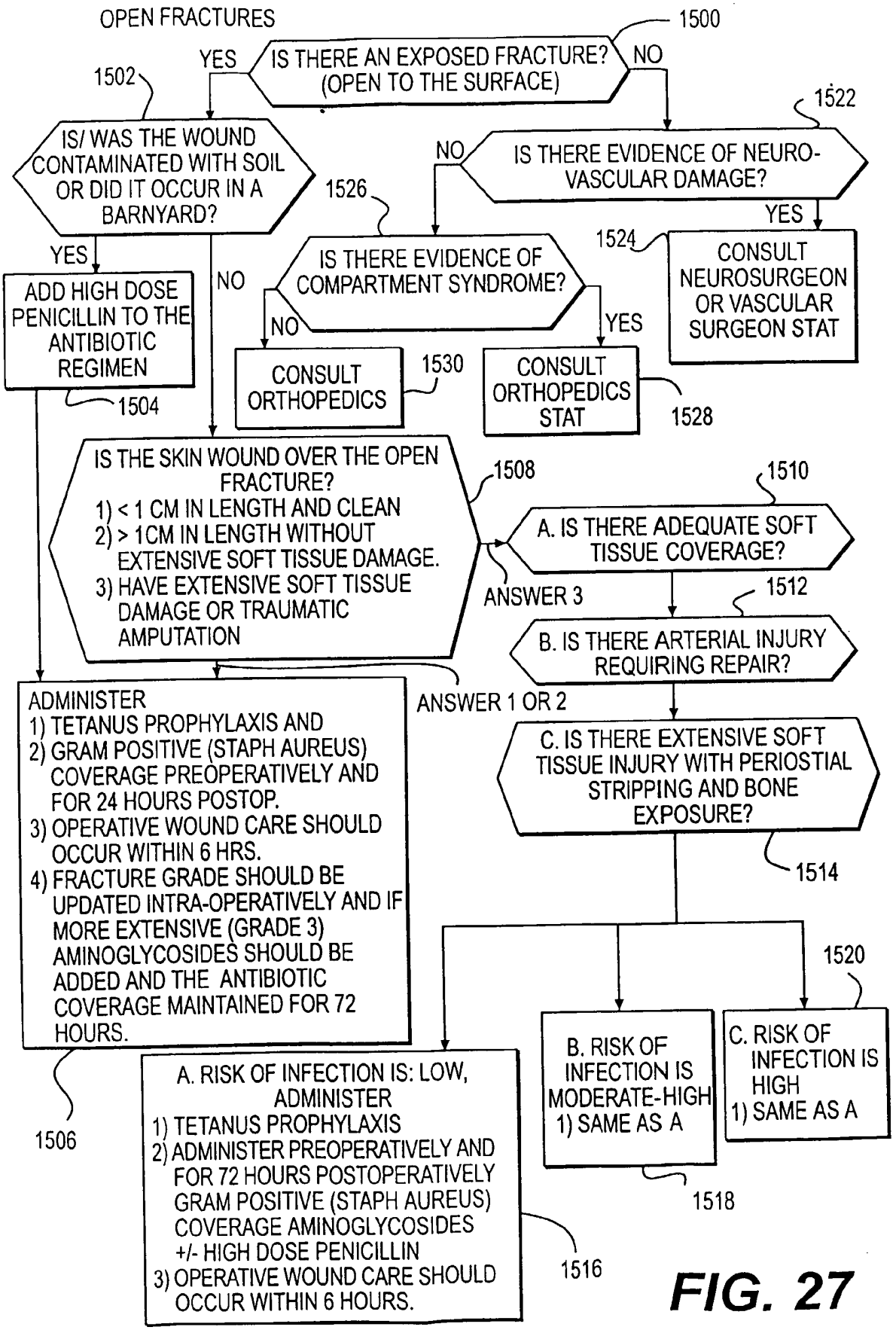

OPEN FRACTURES
1500
IS THERE AN EXPOSED FRACTURE? (OPEN TO THE SURFACE)
YES
NO
1502
IS/ WAS THE WOUND CONTAMINATED WITH SOIL OR DID IT OCCUR IN A BARNYARD?
1522
IS THERE EVIDENCE OF NEURO-VASCULAR DAMAGE?
NO
YES
1526
IS THERE EVIDENCE OF COMPARTMENT SYNDROME?
1524
CONSULT NEUROSURGEON OR VASCULAR SURGEON STAT
YES
NO
ADD HIGH DOSE PENICILLIN TO THE ANTIBIOTIC REGIMEN
1504
CONSULT ORTHOPEDICS
1530
CONSULT ORTHOPEDICS STAT
1528
IS THE SKIN WOUND OVER THE OPEN FRACTURE?
1) < 1 CM IN LENGTH AND CLEAN
2) > 1CM IN LENGTH WITHOUT EXTENSIVE SOFT TISSUE DAMAGE.
3) HAVE EXTENSIVE SOFT TISSUE DAMAGE OR TRAUMATIC AMPUTATION
1508
1510
A. IS THERE ADEQUATE SOFT TISSUE COVERAGE?
ANSWER 3
1512
B. IS THERE ARTERIAL INJURY REQUIRING REPAIR?
ANSWER 1 OR 2
C. IS THERE EXTENSIVE SOFT TISSUE INJURY WITH PERIOSTIAL STRIPPING AND BONE EXPOSURE?
1514
ADMINISTER
1) TETANUS PROPHYLAXIS AND
2) GRAM POSITIVE (STAPH AUREUS) COVERAGE PREOPERATIVELY AND FOR 24 HOURS POSTOP.
3) OPERATIVE WOUND CARE SHOULD OCCUR WITHIN 6 HRS.
4) FRACTURE GRADE SHOULD BE UPDATED INTRA-OPERATIVELY AND IF MORE EXTENSIVE (GRADE 3) AMINOGLYCOSIDES SHOULD BE ADDED AND THE ANTIBIOTIC COVERAGE MAINTAINED FOR 72 HOURS.
1506
1520
A. RISK OF INFECTION IS: LOW, ADMINISTER
1) TETANUS PROPHYLAXIS
2) ADMINISTER PREOPERATIVELY AND FOR 72 HOURS POSTOPERATIVELY GRAM POSITIVE (STAPH AUREUS) COVERAGE AMINOGLYCOSIDES +/- HIGH DOSE PENICILLIN
3) OPERATIVE WOUND CARE SHOULD OCCUR WITHIN 6 HOURS.
1516
B. RISK OF INFECTION IS MODERATE-HIGH
1) SAME AS A
1518
C. RISK OF INFECTION IS HIGH
1) SAME AS A

FIG. 27

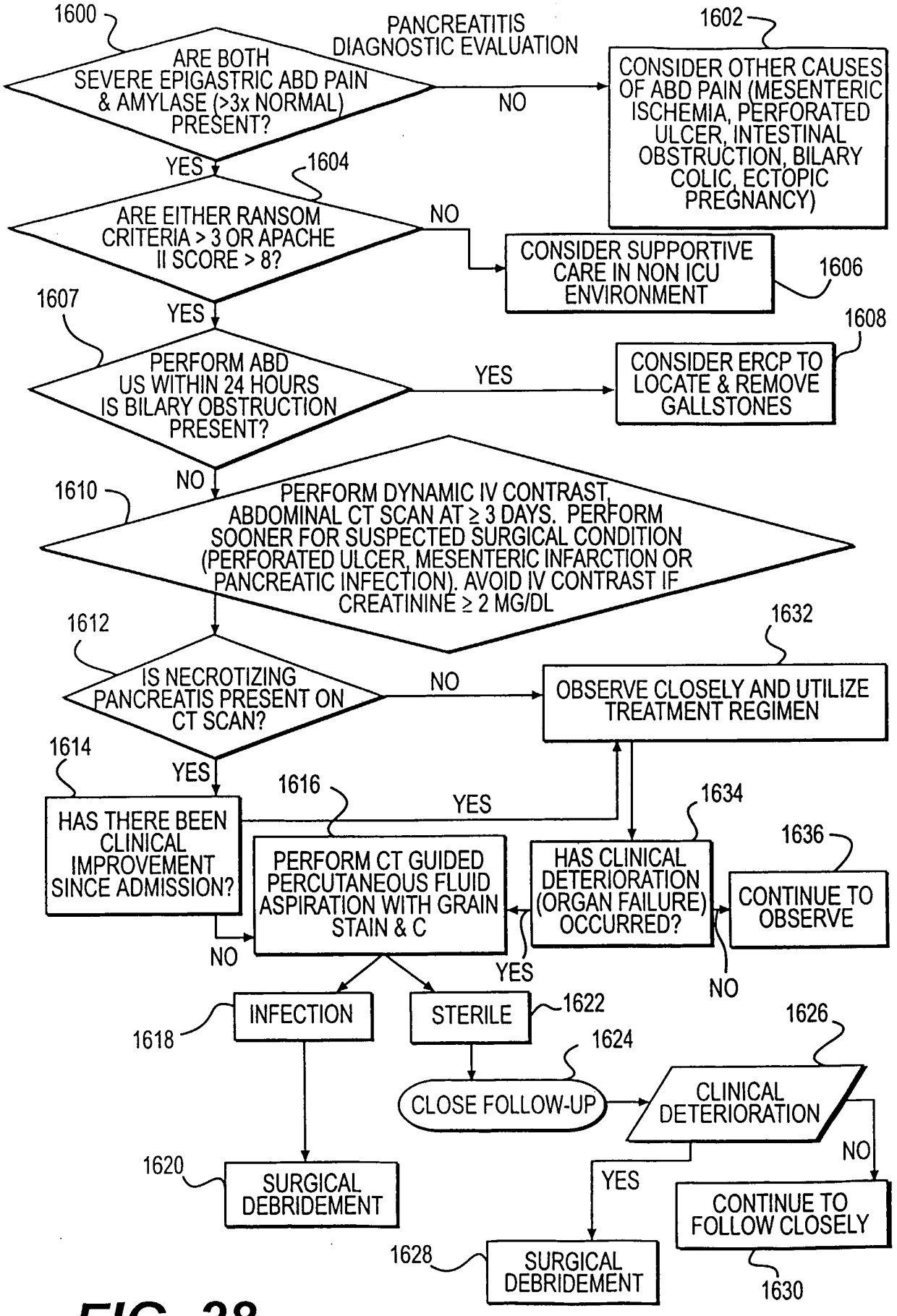

1600
PANCREATITIS DIAGNOSTIC EVALUATION
ARE BOTH SEVERE EPIGASTRIC ABD PAIN & AMYLASE (>3x NORMAL) PRESENT?
NO
1602
CONSIDER OTHER CAUSES OF ABD PAIN (MESENTERIC ISCHEMIA, PERFORATED ULCER, INTESTINAL OBSTRUCTION, BILARY COLIC, ECTOPIC PREGNANCY)
YES
1604
ARE EITHER RANSOM CRITERIA > 3 OR APACHE II SCORE > 8?
NO
CONSIDER SUPPORTIVE CARE IN NON ICU ENVIRONMENT
1606
1607
YES
PERFORM ABD US WITHIN 24 HOURS IS BILARY OBSTRUCTION PRESENT?
YES
1608
CONSIDER ERCP TO LOCATE & REMOVE GALLSTONES
NO
1610
PERFORM DYNAMIC IV CONTRAST, ABDOMINAL CT SCAN AT ≥ 3 DAYS. PERFORM SOONER FOR SUSPECTED SURGICAL CONDITION (PERFORATED ULCER, MESENTERIC INFARCTION OR PANCREATIC INFECTION). AVOID IV CONTRAST IF CREATININE ≥ 2 MG/DL
1612
IS NECROTIZING PANCREATIS PRESENT ON CT SCAN?
NO
1632
OBSERVE CLOSELY AND UTILIZE TREATMENT REGIMEN
1614
YES
HAS THERE BEEN CLINICAL IMPROVEMENT SINCE ADMISSION?
1616
YES
1634
1636
PERFORM CT GUIDED PERCUTANEOUS FLUID ASPIRATION WITH GRAIN STAIN & C
HAS CLINICAL DETERIORATION (ORGAN FAILURE) OCCURRED?
CONTINUE TO OBSERVE
NO
YES
NO
1618
INFECTION
STERILE
1622
1626
1624
CLOSE FOLLOW-UP
CLINICAL DETERIORATION
NO
1620
SURGICAL DEBRIDEMENT
YES
CONTINUE TO FOLLOW CLOSELY
1628
SURGICAL DEBRIDEMENT
1630

FIG. 28

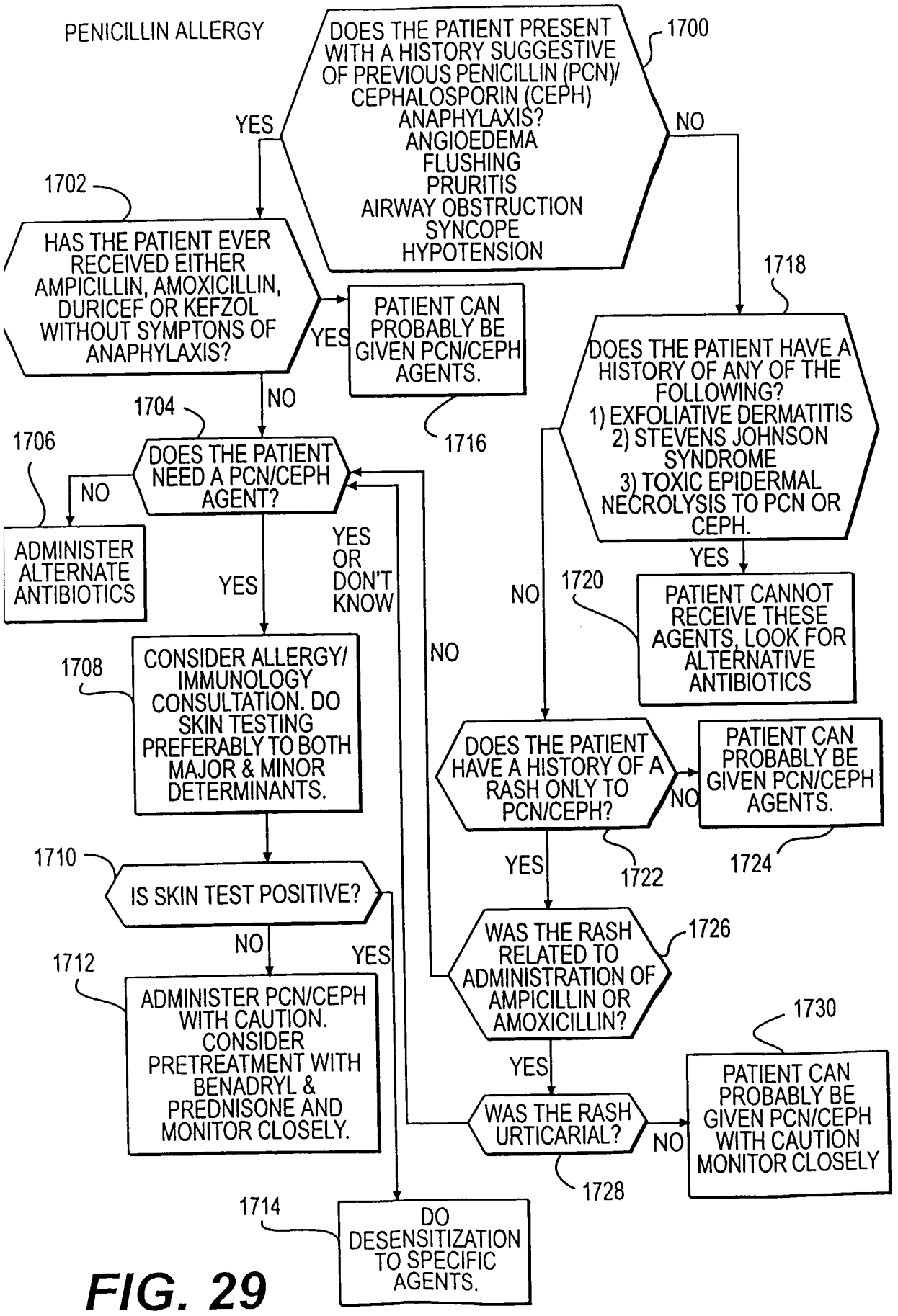

PENICILLIN ALLERGY
DOES THE PATIENT PRESENT WITH A HISTORY SUGGESTIVE OF PREVIOUS PENICILLIN (PCN)/ CEPHALOSPORIN (CEPH) ANAPHYLAXIS? ANGIOEDEMA FLUSHING PRURITIS AIRWAY OBSTRUCTION SYNCOPE HYPOTENSION
1700
YES
NO
1702
HAS THE PATIENT EVER RECEIVED EITHER AMPICILLIN, AMOXICILLIN, DURICEF OR KEFZOL WITHOUT SYMPTONS OF ANAPHYLAXIS?
YES
PATIENT CAN PROBABLY BE GIVEN PCN/CEPH AGENTS.
1716
NO
1704
DOES THE PATIENT NEED A PCN/CEPH AGENT?
1706
NO
ADMINISTER ALTERNATE ANTIBIOTICS
YES
YES OR DON'T KNOW
1708
CONSIDER ALLERGY/ IMMUNOLOGY CONSULTATION. DO SKIN TESTING PREFERABLY TO BOTH MAJOR & MINOR DETERMINANTS.
1710
IS SKIN TEST POSITIVE?
NO
YES
1712
ADMINISTER PCN/CEPH WITH CAUTION. CONSIDER PRETREATMENT WITH BENADRYL & PREDNISONE AND MONITOR CLOSELY.
1714
DO DESENSITIZATION TO SPECIFIC AGENTS.
1718
DOES THE PATIENT HAVE A HISTORY OF ANY OF THE FOLLOWING? 1) EXFOLIATIVE DERMATITIS 2) STEVENS JOHNSON SYNDROME 3) TOXIC EPIDERMAL NECROLYSIS TO PCN OR CEPH.
YES
NO
1720
PATIENT CANNOT RECEIVE THESE AGENTS, LOOK FOR ALTERNATIVE ANTIBIOTICS
NO
DOES THE PATIENT HAVE A HISTORY OF A RASH ONLY TO PCN/CEPH?
NO
PATIENT CAN PROBABLY BE GIVEN PCN/CEPH AGENTS.
1724
YES
1722
WAS THE RASH RELATED TO ADMINISTRATION OF AMPICILLIN OR AMOXICILLIN?
1726
YES
WAS THE RASH URTICARIAL?
NO
1728
1730
PATIENT CAN PROBABLY BE GIVEN PCN/CEPH WITH CAUTION MONITOR CLOSELY

FIG. 29

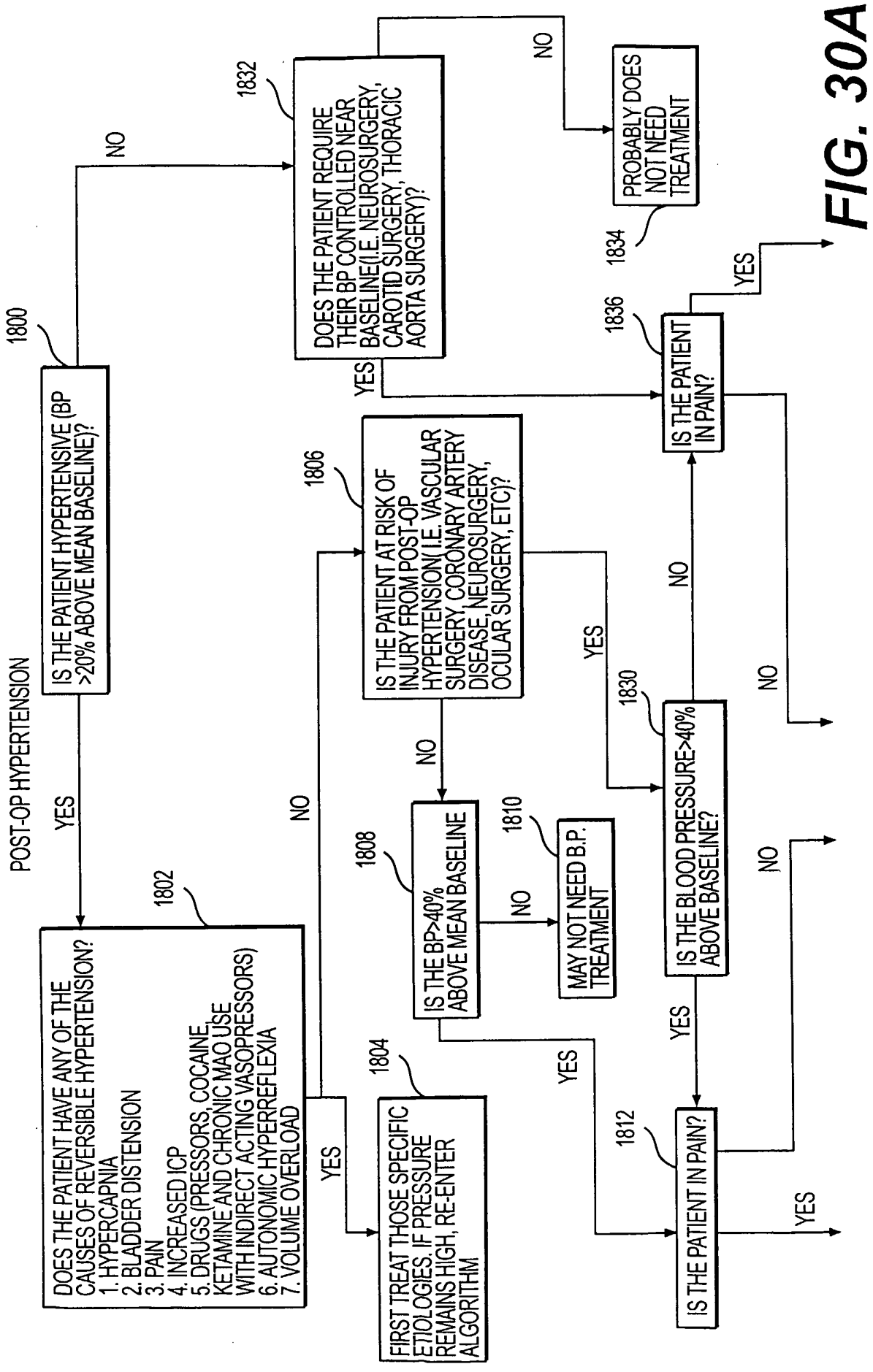

POST-OP HYPERTENSION
1800
IS THE PATIENT HYPERTENSIVE (BP >20% ABOVE MEAN BASELINE)?
YES
NO
1802
DOES THE PATIENT HAVE ANY OF THE CAUSES OF REVERSIBLE HYPERTENSION?
1. HYPERCAPNIA
2. BLADDER DISTENSION
3. PAIN
4. INCREASED ICP
5. DRUGS (PRESSORS, COCAINE, KETAMINE AND CHRONIC MAO USE WITH INDIRECT ACTING VASOPRESSORS)
6. AUTONOMIC HYPERREFLEXIA
7. VOLUME OVERLOAD
YES
NO
1804
FIRST TREAT THOSE SPECIFIC ETIOLOGIES. IF PRESSURE REMAINS HIGH, RE-ENTER ALGORITHM
1806
IS THE PATIENT AT RISK OF INJURY FROM POST-OP HYPERTENSION(I.E. VASCULAR SURGERY, CORONARY ARTERY DISEASE, NEUROSURGERY, OCULAR SURGERY, ETC)?
YES
NO
1808
IS THE BP>40% ABOVE MEAN BASELINE
NO
1810
MAY NOT NEED B.P. TREATMENT
1832
DOES THE PATIENT REQUIRE THEIR BP CONTROLLED NEAR BASELINE(I.E. NEUROSURGERY, CAROTID SURGERY, THORACIC AORTA SURGERY)?
NO
1834
PROBABLY DOES NOT NEED TREATMENT
YES
1836
IS THE PATIENT IN PAIN?
YES
NO
1830
IS THE BLOOD PRESSURE>40% ABOVE BASELINE?
YES
NO
1812
IS THE PATIENT IN PAIN?
YES
NO

FIG. 30A

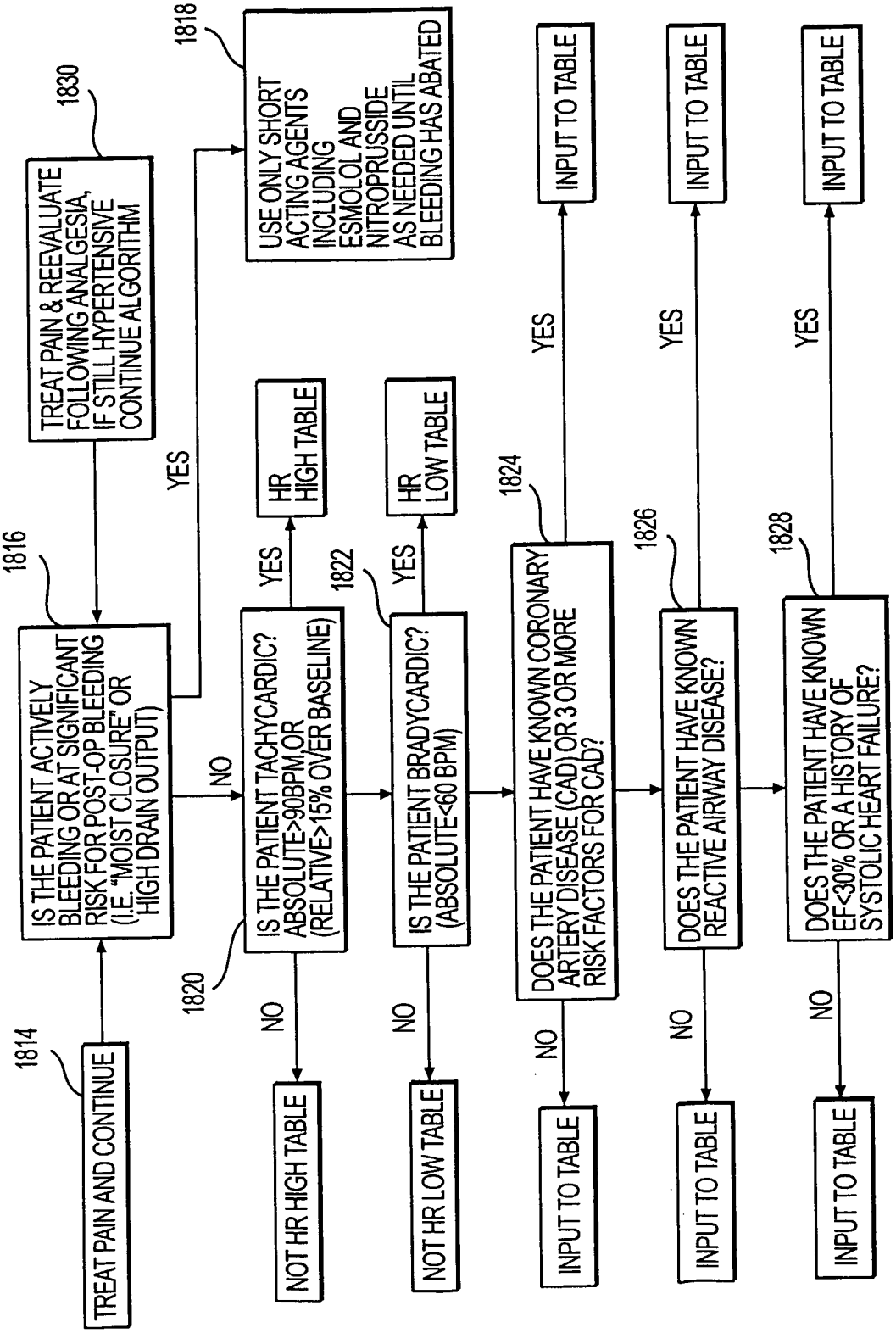

1814
TREAT PAIN AND CONTINUE
1816
IS THE PATIENT ACTIVELY BLEEDING OR AT SIGNIFICANT RISK FOR POST-OP BLEEDING (I.E. "MOIST CLOSURE" OR HIGH DRAIN OUTPUT)
1818
USE ONLY SHORT ACTING AGENTS INCLUDING ESMOLOL AND NITROPRUSSIDE AS NEEDED UNTIL BLEEDING HAS ABATED
1820
IS THE PATIENT TACHYCARDIC? ABSOLUTE>90BPM OR (RELATIVE>15% OVER BASELINE)
1822
IS THE PATIENT BRADYCARDIC? (ABSOLUTE<60 BPM)
1824
DOES THE PATIENT HAVE KNOWN CORONARY ARTERY DISEASE (CAD) OR 3 OR MORE RISK FACTORS FOR CAD?
1826
DOES THE PATIENT HAVE KNOWN REACTIVE AIRWAY DISEASE?
1828
DOES THE PATIENT HAVE KNOWN EF<30% OR A HISTORY OF SYSTOLIC HEART FAILURE?
1830
TREAT PAIN & REEVALUATE FOLLOWING ANALGESIA, IF STILL HYPERTENSIVE CONTINUE ALGORITHM
YES
NO
HR HIGH TABLE
HR LOW TABLE
NOT HR HIGH TABLE
NOT HR LOW TABLE
INPUT TO TABLE
INPUT TO TABLE
INPUT TO TABLE
INPUT TO TABLE
INPUT TO TABLE

FIG. 30B

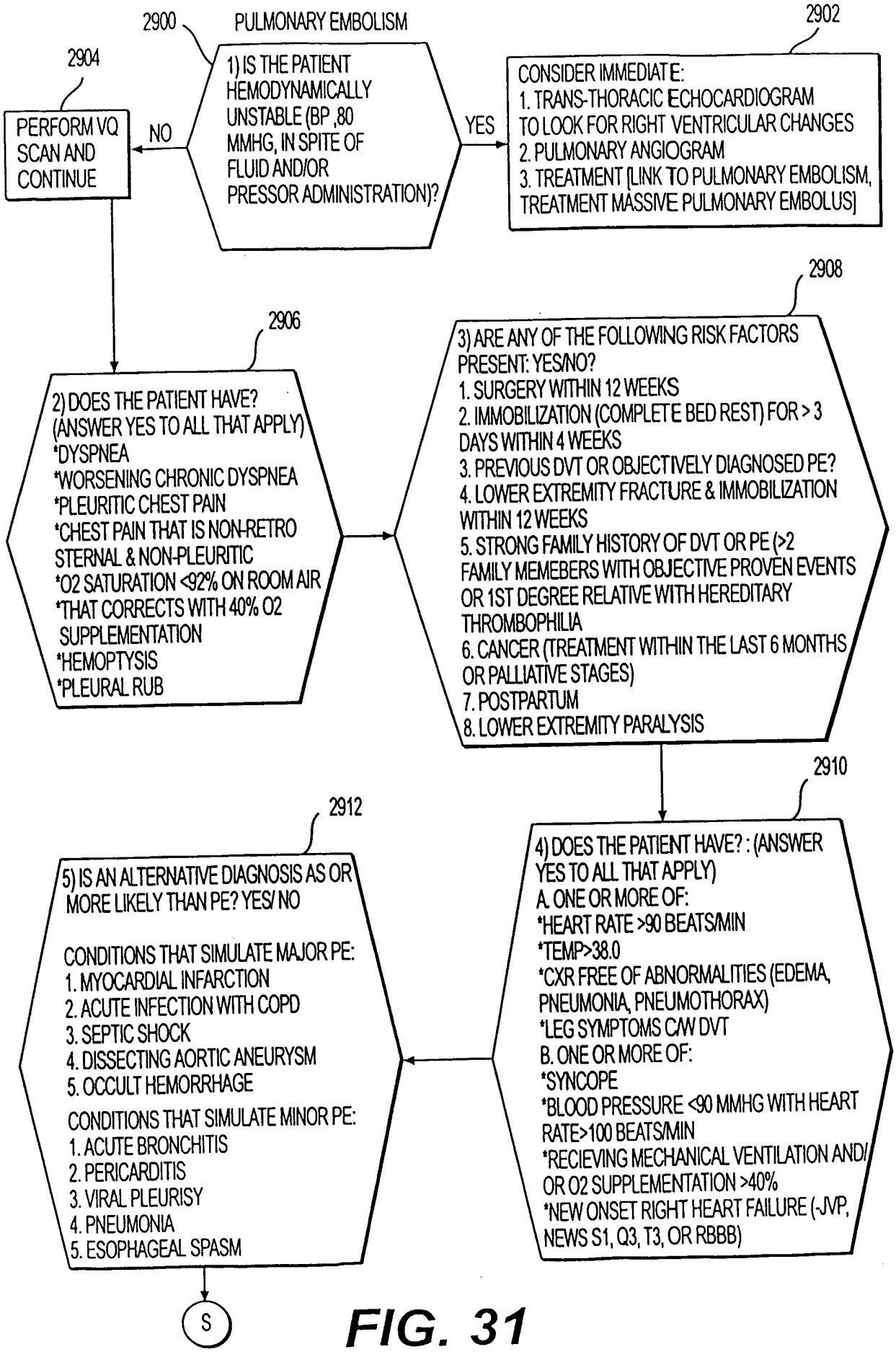

2900
PULMONARY EMBOLISM
1) IS THE PATIENT HEMODYNAMICALLY UNSTABLE (BP ,80 MMHG, IN SPITE OF FLUID AND/OR PRESSOR ADMINISTRATION)?
NO
YES
2902
CONSIDER IMMEDIATE:
1. TRANS-THORACIC ECHOCARDIOGRAM TO LOOK FOR RIGHT VENTRICULAR CHANGES
2. PULMONARY ANGIOGRAM
3. TREATMENT [LINK TO PULMONARY EMBOLISM, TREATMENT MASSIVE PULMONARY EMBOLUS]
2904
PERFORM VQ SCAN AND CONTINUE
2906
2) DOES THE PATIENT HAVE? (ANSWER YES TO ALL THAT APPLY)
*DYSPNEA
*WORSENING CHRONIC DYSPNEA
*PLEURITIC CHEST PAIN
*CHEST PAIN THAT IS NON-RETRO STERNAL & NON-PLEURITIC
*O2 SATURATION <92% ON ROOM AIR
*THAT CORRECTS WITH 40% O2 SUPPLEMENTATION
*HEMOPTYSIS
*PLEURAL RUB
2908
3) ARE ANY OF THE FOLLOWING RISK FACTORS PRESENT: YES/NO?
1. SURGERY WITHIN 12 WEEKS
2. IMMOBILIZATION (COMPLETE BED REST) FOR > 3 DAYS WITHIN 4 WEEKS
3. PREVIOUS DVT OR OBJECTIVELY DIAGNOSED PE?
4. LOWER EXTREMITY FRACTURE & IMMOBILIZATION WITHIN 12 WEEKS
5. STRONG FAMILY HISTORY OF DVT OR PE (>2 FAMILY MEMEBERS WITH OBJECTIVE PROVEN EVENTS OR 1ST DEGREE RELATIVE WITH HEREDITARY THROMBOPHILIA
6. CANCER (TREATMENT WITHIN THE LAST 6 MONTHS OR PALLIATIVE STAGES)
7. POSTPARTUM
8. LOWER EXTREMITY PARALYSIS
2910
4) DOES THE PATIENT HAVE? : (ANSWER YES TO ALL THAT APPLY)
A. ONE OR MORE OF:
*HEART RATE >90 BEATS/MIN
*TEMP>38.0
*CXR FREE OF ABNORMALITIES (EDEMA, PNEUMONIA, PNEUMOTHORAX)
*LEG SYMPTOMS C/W DVT
B. ONE OR MORE OF:
*SYNCOPE
*BLOOD PRESSURE <90 MMHG WITH HEART RATE>100 BEATS/MIN
*RECIEVING MECHANICAL VENTILATION AND/OR O2 SUPPLEMENTATION >40%
*NEW ONSET RIGHT HEART FAILURE (-JVP, NEWS S1, Q3, T3, OR RBBB)
2912
5) IS AN ALTERNATIVE DIAGNOSIS AS OR MORE LIKELY THAN PE? YES/ NO
CONDITIONS THAT SIMULATE MAJOR PE:
1. MYOCARDIAL INFARCTION
2. ACUTE INFECTION WITH COPD
3. SEPTIC SHOCK
4. DISSECTING AORTIC ANEURYSM
5. OCCULT HEMORRHAGE
CONDITIONS THAT SIMULATE MINOR PE:
1. ACUTE BRONCHITIS
2. PERICARDITIS
3. VIRAL PLEURISY
4. PNEUMONIA
5. ESOPHAGEAL SPASM
S

FIG. 31

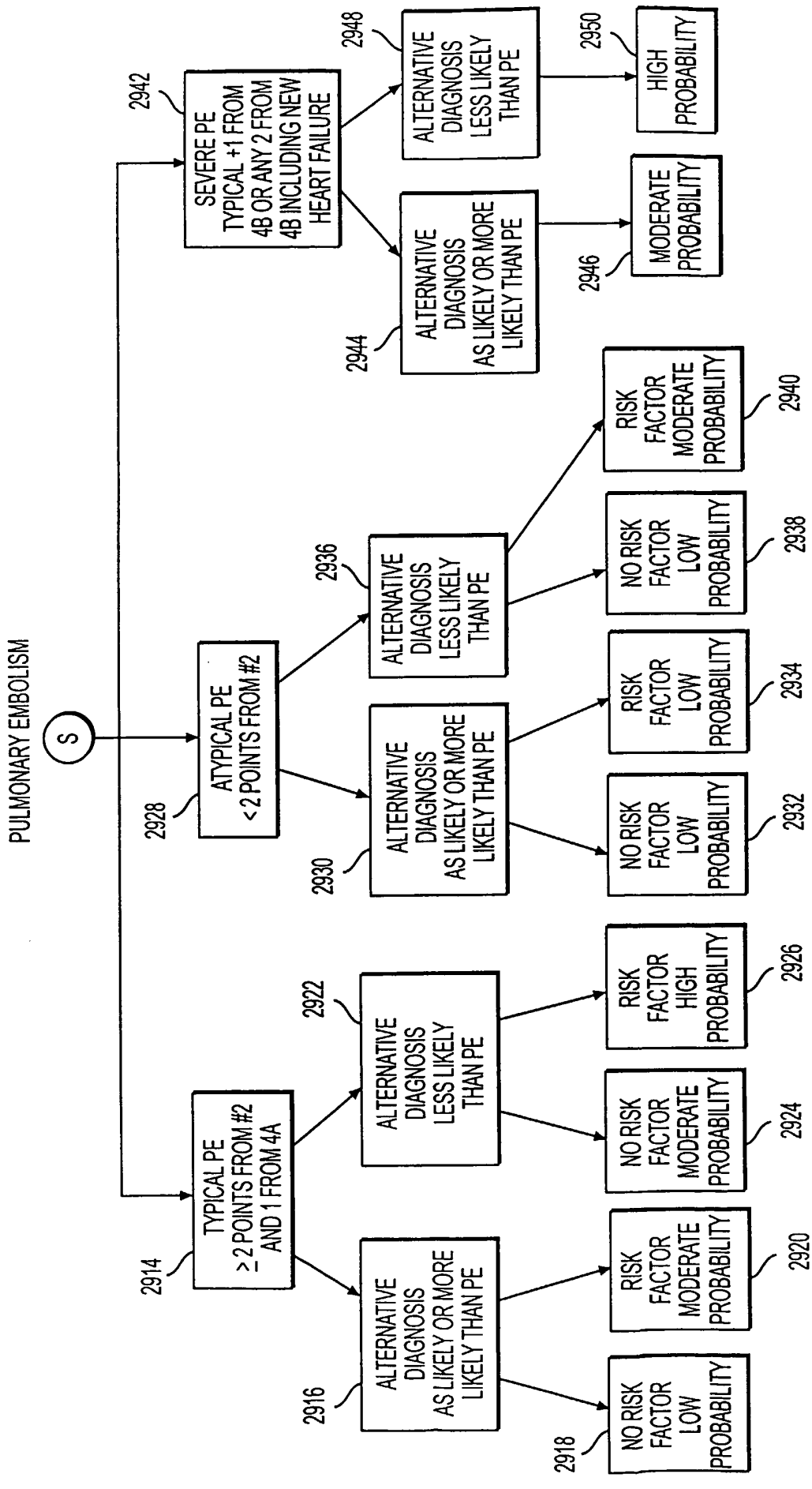

PULMONARY EMBOLISM
S
TYPICAL PE
≥ 2 POINTS FROM #2
AND 1 FROM 4A
2914
ATYPICAL PE
< 2 POINTS FROM #2
2928
SEVERE PE
TYPICAL +1 FROM
4B OR ANY 2 FROM
4B INCLUDING NEW
HEART FAILURE
2942
ALTERNATIVE
DIAGNOSIS
AS LIKELY OR MORE
LIKELY THAN PE
2916
ALTERNATIVE
DIAGNOSIS
LESS LIKELY
THAN PE
2922
ALTERNATIVE
DIAGNOSIS
AS LIKELY OR MORE
LIKELY THAN PE
2930
ALTERNATIVE
DIAGNOSIS
LESS LIKELY
THAN PE
2936
ALTERNATIVE
DIAGNOSIS
AS LIKELY OR MORE
LIKELY THAN PE
2944
ALTERNATIVE
DIAGNOSIS
LESS LIKELY
THAN PE
2948
NO RISK
FACTOR
LOW
PROBABILITY
2918
RISK
FACTOR
MODERATE
PROBABILITY
2920
NO RISK
FACTOR
MODERATE
PROBABILITY
2924
RISK
FACTOR
HIGH
PROBABILITY
2926
NO RISK
FACTOR
LOW
PROBABILITY
2932
RISK
FACTOR
LOW
PROBABILITY
2934
NO RISK
FACTOR
LOW
PROBABILITY
2938
RISK
FACTOR
MODERATE
PROBABILITY
2940
MODERATE
PROBABILITY
2946
HIGH
PROBABILITY
2950

FIG. 31A

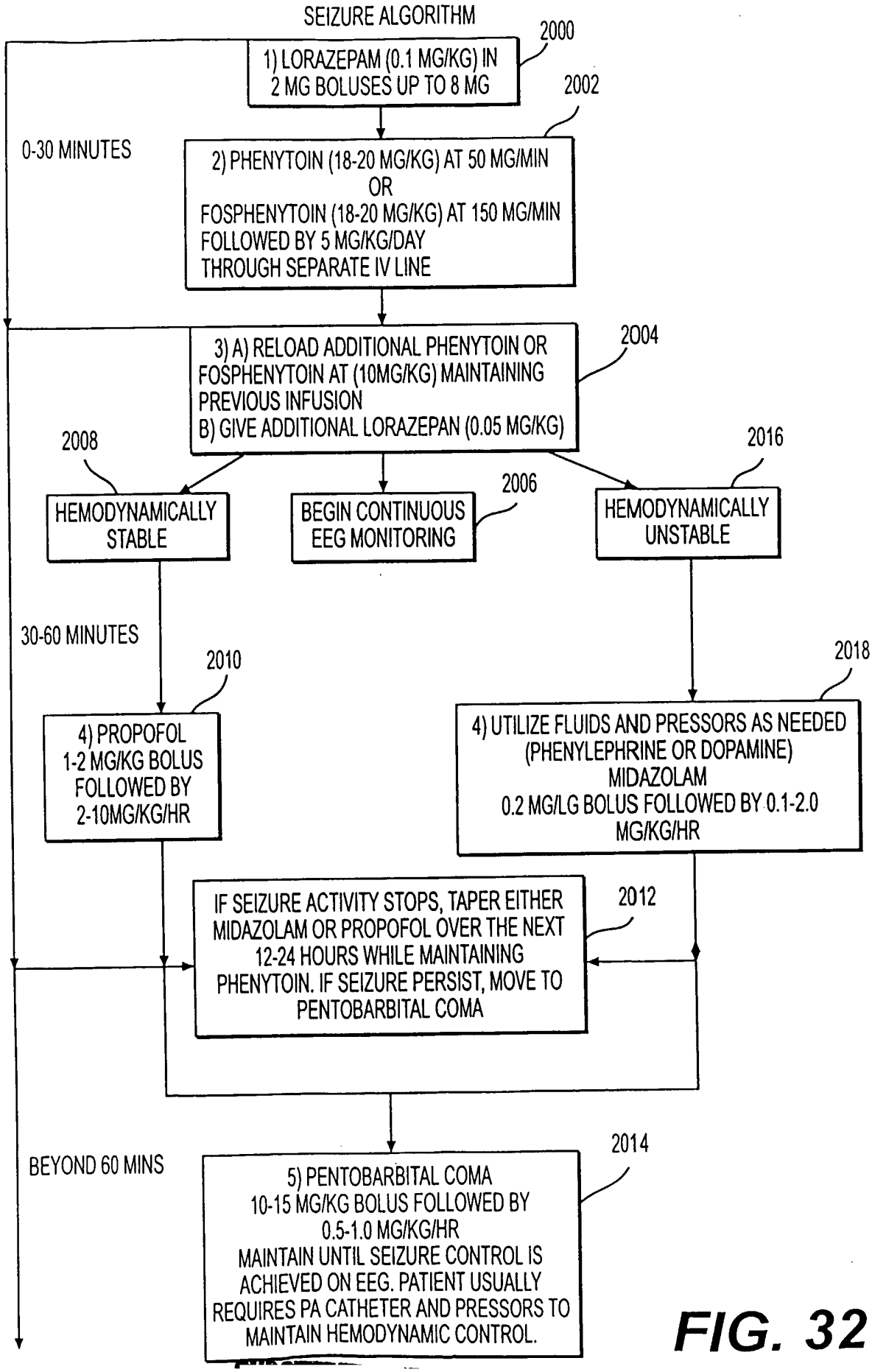

SEIZURE ALGORITHM
1) LORAZEPAM (0.1 MG/KG) IN 2 MG BOLUSES UP TO 8 MG
2000
2002
0-30 MINUTES
2) PHENYTOIN (18-20 MG/KG) AT 50 MG/MIN OR FOSPHENYTOIN (18-20 MG/KG) AT 150 MG/MIN FOLLOWED BY 5 MG/KG/DAY THROUGH SEPARATE IV LINE
3) A) RELOAD ADDITIONAL PHENYTOIN OR FOSPHENYTOIN AT (10MG/KG) MAINTAINING PREVIOUS INFUSION
B) GIVE ADDITIONAL LORAZEPAN (0.05 MG/KG)
2004
2008
2016
HEMODYNAMICALLY STABLE
BEGIN CONTINUOUS EEG MONITORING
2006
HEMODYNAMICALLY UNSTABLE
30-60 MINUTES
2010
2018
4) PROPOFOL 1-2 MG/KG BOLUS FOLLOWED BY 2-10MG/KG/HR
4) UTILIZE FLUIDS AND PRESSORS AS NEEDED (PHENYLEPHRINE OR DOPAMINE) MIDAZOLAM 0.2 MG/LG BOLUS FOLLOWED BY 0.1-2.0 MG/KG/HR
IF SEIZURE ACTIVITY STOPS, TAPER EITHER MIDAZOLAM OR PROPOFOL OVER THE NEXT 12-24 HOURS WHILE MAINTAINING PHENYTOIN. IF SEIZURE PERSIST, MOVE TO PENTOBARBITAL COMA
2012
BEYOND 60 MINS
2014
5) PENTOBARBITAL COMA 10-15 MG/KG BOLUS FOLLOWED BY 0.5-1.0 MG/KG/HR MAINTAIN UNTIL SEIZURE CONTROL IS ACHIEVED ON EEG. PATIENT USUALLY REQUIRES PA CATHETER AND PRESSORS TO MAINTAIN HEMODYNAMIC CONTROL.

FIG. 32

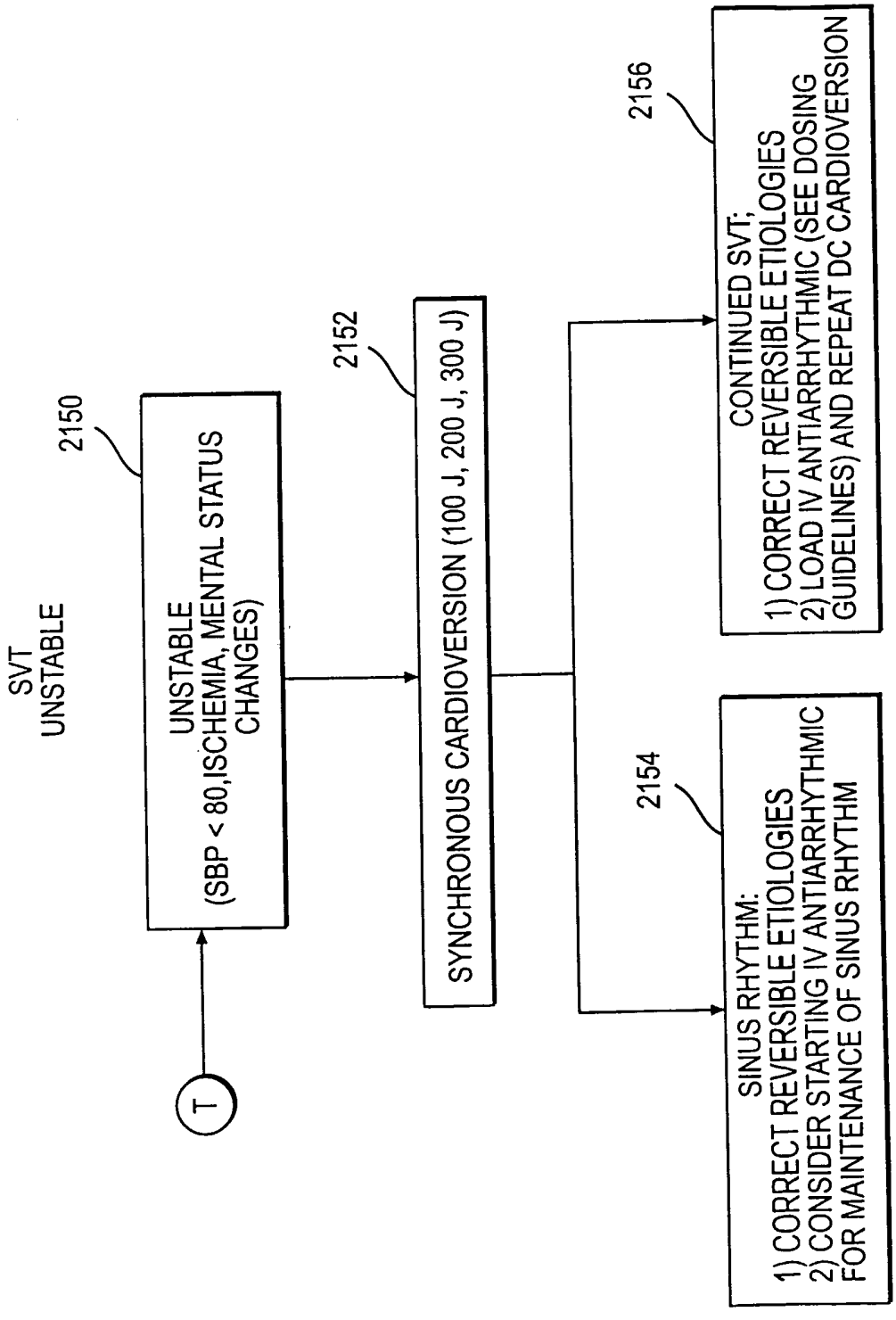

SVT
UNSTABLE
2150
UNSTABLE
(SBP < 80,ISCHEMIA, MENTAL STATUS CHANGES)
T
2152
SYNCHRONOUS CARDIOVERSION (100 J, 200 J, 300 J)
2154
SINUS RHYTHM:
1) CORRECT REVERSIBLE ETIOLOGIES
2) CONSIDER STARTING IV ANTIARRHYTHMIC FOR MAINTENANCE OF SINUS RHYTHM
2156
CONTINUED SVT;
1) CORRECT REVERSIBLE ETIOLOGIES
2) LOAD IV ANTIARRHYTHMIC (SEE DOSING GUIDELINES) AND REPEAT DC CARDIOVERSION

FIG. 33A

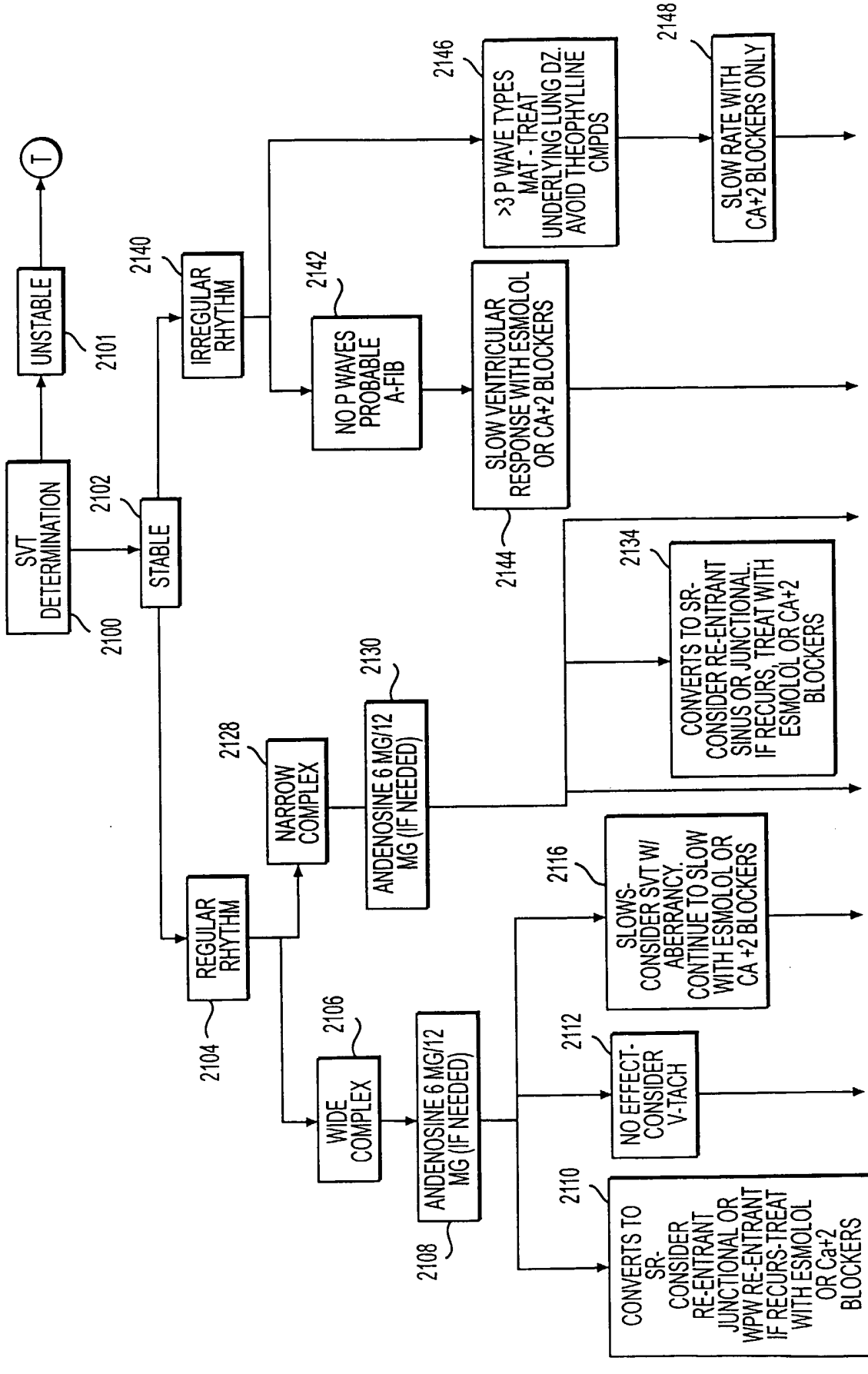

SVT DETERMINATION
2100
UNSTABLE
2101
T
STABLE
2102
REGULAR RHYTHM
2104
IRREGULAR RHYTHM
2140
NO P WAVES PROBABLE A-FIB
2142
SLOW VENTRICULAR RESPONSE WITH ESMOLOL OR CA+2 BLOCKERS
2144
>3 P WAVE TYPES MAT - TREAT UNDERLYING LUNG DZ. AVOID THEOPHYLLINE CMPDS
2146
SLOW RATE WITH CA+2 BLOCKERS ONLY
2148
NARROW COMPLEX
2128
ANDENOSINE 6 MG/12 MG (IF NEEDED)
2130
CONVERTS TO SR- CONSIDER RE-ENTRANT SINUS OR JUNCTIONAL. IF RECURS, TREAT WITH ESMOLOL OR CA+2 BLOCKERS
2134
WIDE COMPLEX
2106
ANDENOSINE 6 MG/12 MG (IF NEEDED)
2108
SLOWS- CONSIDER SVT W/ ABERRANCY. CONTINUE TO SLOW WITH ESMOLOL OR CA +2 BLOCKERS
2116
NO EFFECT- CONSIDER V-TACH
2112
CONVERTS TO SR- CONSIDER RE-ENTRANT JUNCTIONAL OR WPW RE-ENTRANT IF RECURS-TREAT WITH ESMOLOL OR Ca+2 BLOCKERS
2110

FIG. 33B

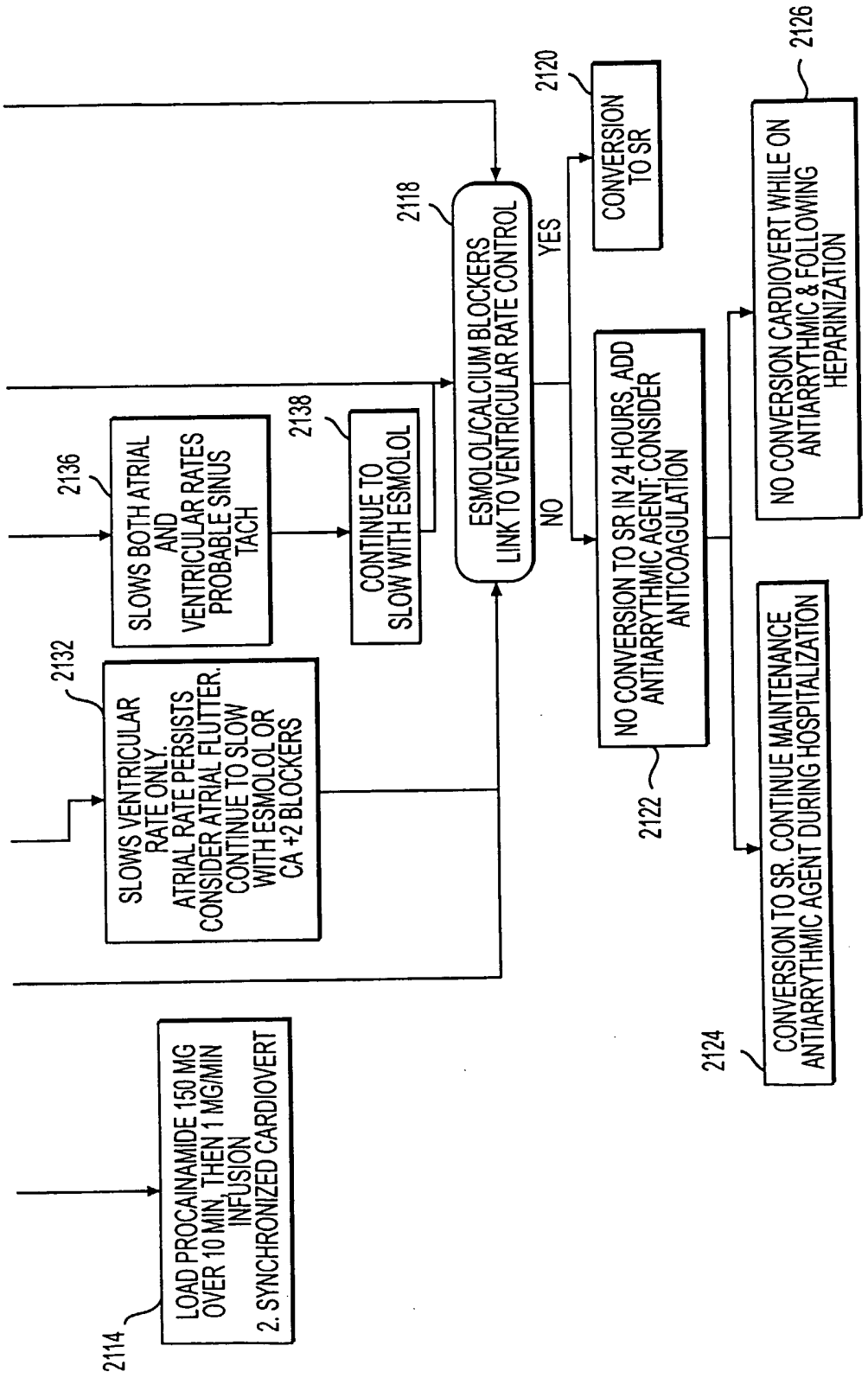
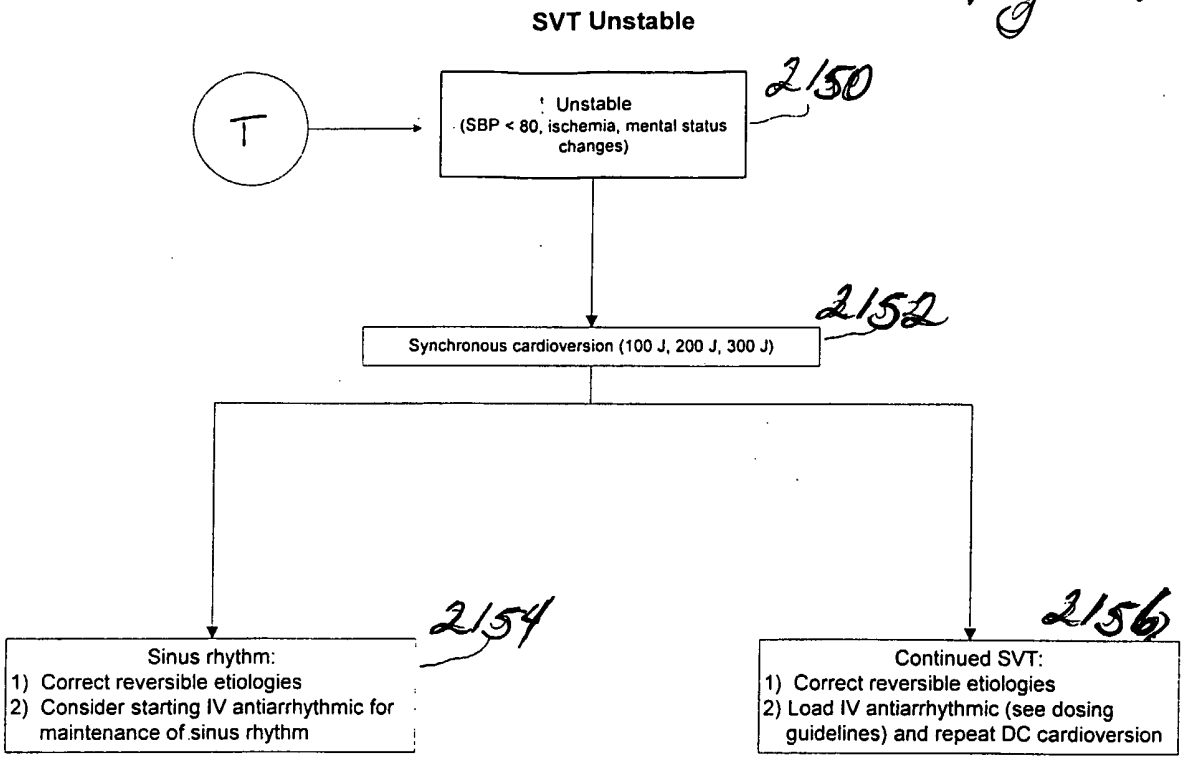

LOAD PROCAINAMIDE 150 MG OVER 10 MIN, THEN 1 MG/MIN INFUSION
2. SYNCHRONIZED CARDIOVERT
2114
SLOWS VENTRICULAR RATE ONLY.
ATRIAL RATE PERSISTS.
CONSIDER ATRIAL FLUTTER.
CONTINUE TO SLOW WITH ESMOLOL OR CA +2 BLOCKERS
2132
SLOWS BOTH ATRIAL AND VENTRICULAR RATES PROBABLE SINUS TACH
2136
CONTINUE TO SLOW WITH ESMOLOL
2138
ESMOLOL/CALCIUM BLOCKERS LINK TO VENTRICULAR RATE CONTROL
2118
YES
NO
CONVERSION TO SR
2120
NO CONVERSION TO SR IN 24 HOURS, ADD ANTIARRYTHMIC AGENT; CONSIDER ANTICOAGULATION
2122
CONVERSION TO SR. CONTINUE MAINTENANCE ANTIARRYTHMIC AGENT DURING HOSPITALIZATION
2124
NO CONVERSION CARDIOVERT WHILE ON ANTIARRYTHMIC & FOLLOWING HEPARINIZATION
2126

FIG. 33C

Fig. 33A


SVT Unstable
T
Unstable
(SBP < 80, ischemia, mental status changes)
2150
Synchronous cardioversion (100 J, 200 J, 300 J)
2152
Sinus rhythm:
1) Correct reversible etiologies
2) Consider starting IV antiarrhythmic for maintenance of sinus rhythm
2154
Continued SVT:
1) Correct reversible etiologies
2) Load IV antiarrhythmic (see dosing guidelines) and repeat DC cardioversion
2156

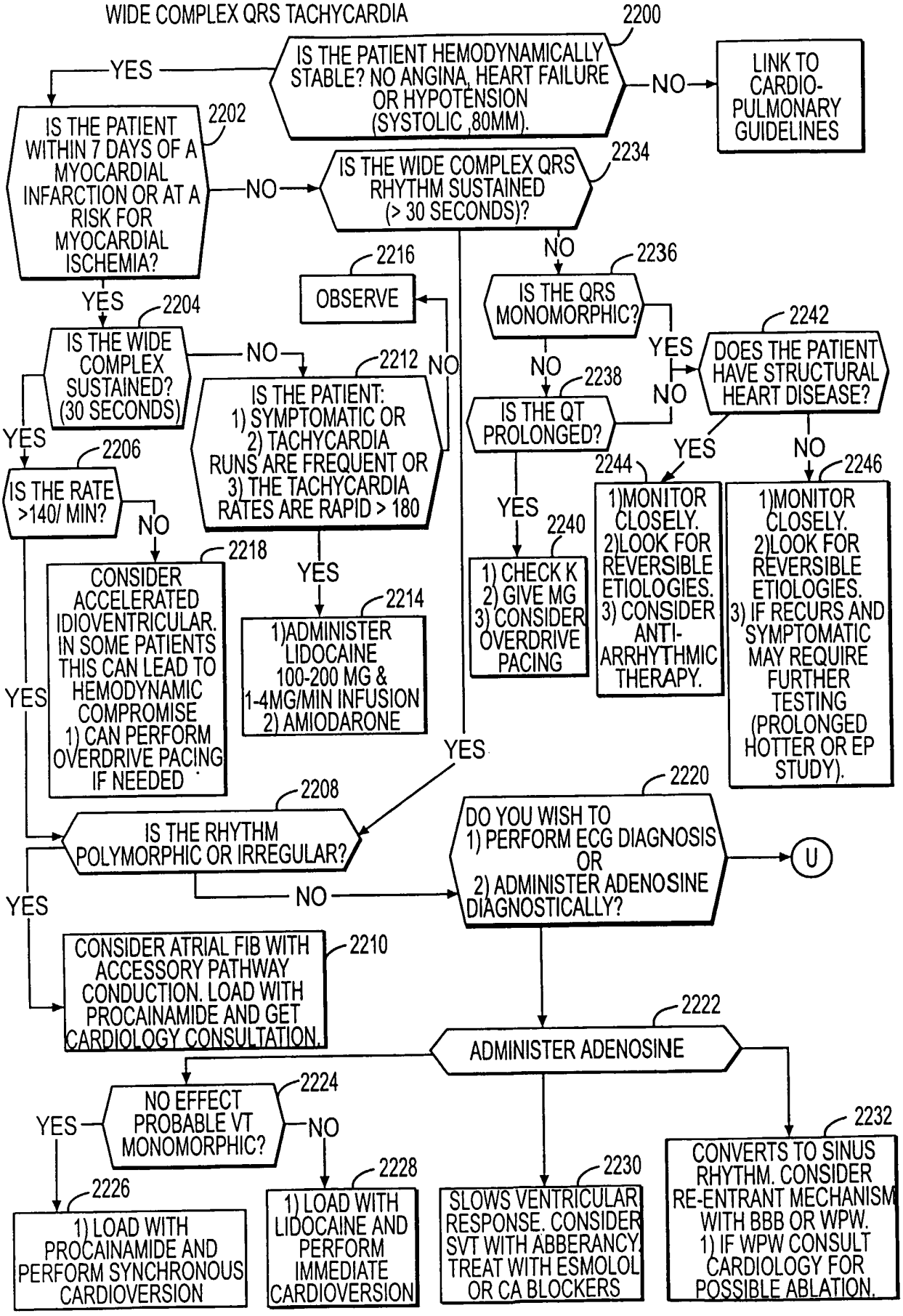

WIDE COMPLEX QRS TACHYCARDIA
2200
IS THE PATIENT HEMODYNAMICALLY STABLE? NO ANGINA, HEART FAILURE OR HYPOTENSION (SYSTOLIC ,80MM).
YES
NO
LINK TO CARDIO-PULMONARY GUIDELINES
2202
IS THE PATIENT WITHIN 7 DAYS OF A MYOCARDIAL INFARCTION OR AT A RISK FOR MYOCARDIAL ISCHEMIA?
NO
2234
IS THE WIDE COMPLEX QRS RHYTHM SUSTAINED (> 30 SECONDS)?
NO
2236
IS THE QRS MONOMORPHIC?
YES
2242
DOES THE PATIENT HAVE STRUCTURAL HEART DISEASE?
NO
2238
IS THE QT PROLONGED?
NO
YES
2244
1)MONITOR CLOSELY. 2)LOOK FOR REVERSIBLE ETIOLOGIES. 3) CONSIDER ANTI-ARRHYTHMIC THERAPY.
NO
2246
1)MONITOR CLOSELY. 2)LOOK FOR REVERSIBLE ETIOLOGIES. 3) IF RECURS AND SYMPTOMATIC MAY REQUIRE FURTHER TESTING (PROLONGED HOTTER OR EP STUDY).
YES
2240
1) CHECK K 2) GIVE MG 3) CONSIDER OVERDRIVE PACING
YES
2216
OBSERVE
NO
YES
2204
IS THE WIDE COMPLEX SUSTAINED? (30 SECONDS)
NO
2212
IS THE PATIENT: 1) SYMPTOMATIC OR 2) TACHYCARDIA RUNS ARE FREQUENT OR 3) THE TACHYCARDIA RATES ARE RAPID > 180
YES
2206
IS THE RATE >140/ MIN?
NO
2218
CONSIDER ACCELERATED IDIOVENTRICULAR. IN SOME PATIENTS THIS CAN LEAD TO HEMODYNAMIC COMPROMISE 1) CAN PERFORM OVERDRIVE PACING IF NEEDED
YES
2214
1)ADMINISTER LIDOCAINE 100-200 MG & 1-4MG/MIN INFUSION 2) AMIODARONE
YES
2208
IS THE RHYTHM POLYMORPHIC OR IRREGULAR?
NO
2220
DO YOU WISH TO 1) PERFORM ECG DIAGNOSIS OR 2) ADMINISTER ADENOSINE DIAGNOSTICALLY?
U
YES
2210
CONSIDER ATRIAL FIB WITH ACCESSORY PATHWAY CONDUCTION. LOAD WITH PROCAINAMIDE AND GET CARDIOLOGY CONSULTATION.
2222
ADMINISTER ADENOSINE
2224
NO EFFECT PROBABLE VT MONOMORPHIC?
YES
NO
2226
1) LOAD WITH PROCAINAMIDE AND PERFORM SYNCHRONOUS CARDIOVERSION
2228
1) LOAD WITH LIDOCAINE AND PERFORM IMMEDIATE CARDIOVERSION
2230
SLOWS VENTRICULAR RESPONSE. CONSIDER SVT WITH ABBERANCY. TREAT WITH ESMOLOL OR CA BLOCKERS
2232
CONVERTS TO SINUS RHYTHM. CONSIDER RE-ENTRANT MECHANISM WITH BBB OR WPW. 1) IF WPW CONSULT CARDIOLOGY FOR POSSIBLE ABLATION.

FIG. 34

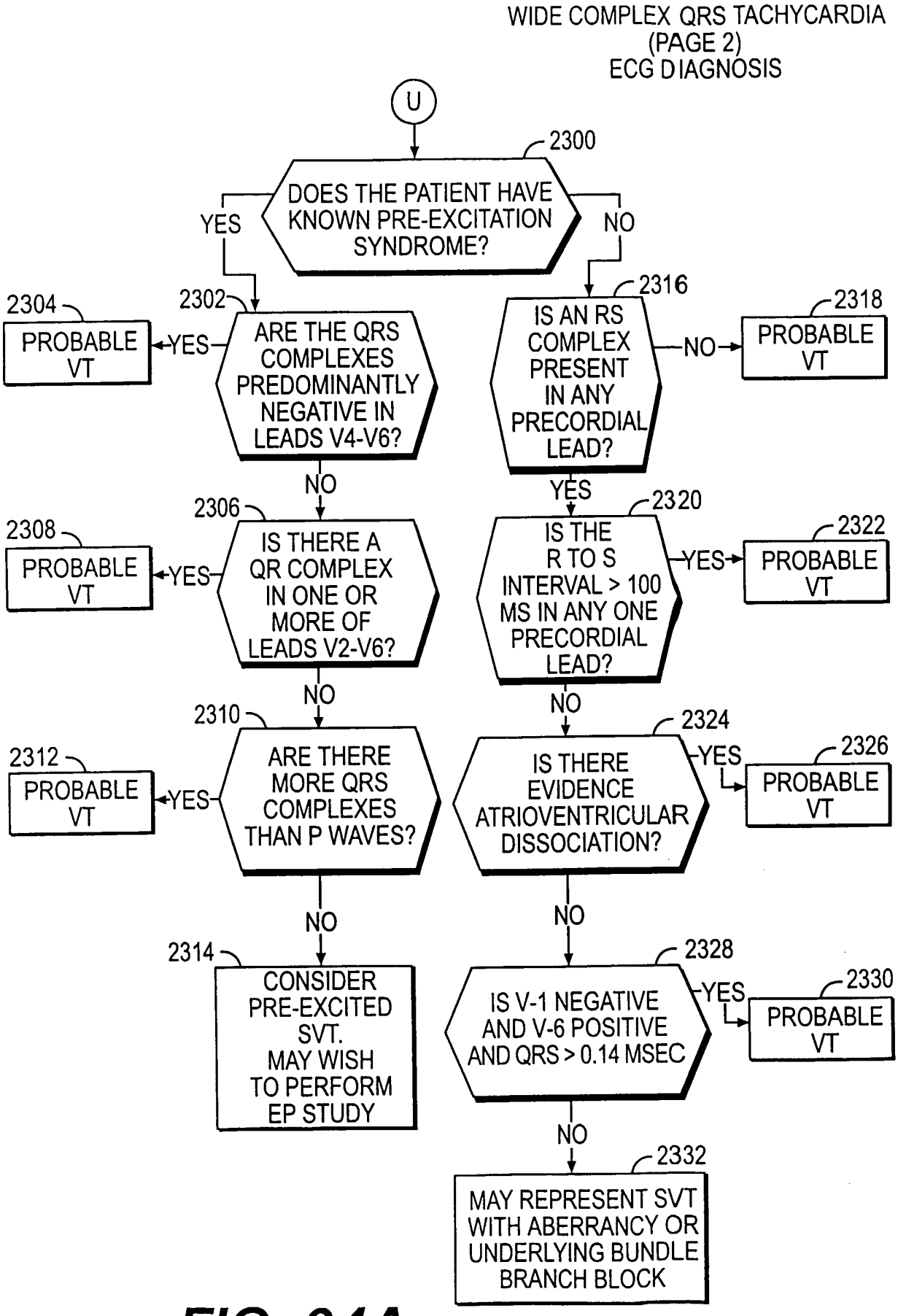

WIDE COMPLEX QRS TACHYCARDIA
(PAGE 2)
ECG DIAGNOSIS
U
2300
DOES THE PATIENT HAVE KNOWN PRE-EXCITATION SYNDROME?
YES
NO
2302
ARE THE QRS COMPLEXES PREDOMINANTLY NEGATIVE IN LEADS V4-V6?
2304
PROBABLE VT
YES
NO
2306
IS THERE A QR COMPLEX IN ONE OR MORE OF LEADS V2-V6?
2308
PROBABLE VT
YES
NO
2310
ARE THERE MORE QRS COMPLEXES THAN P WAVES?
2312
PROBABLE VT
YES
NO
2314
CONSIDER PRE-EXCITED SVT. MAY WISH TO PERFORM EP STUDY
2316
IS AN RS COMPLEX PRESENT IN ANY PRECORDIAL LEAD?
NO
2318
PROBABLE VT
YES
2320
IS THE R TO S INTERVAL > 100 MS IN ANY ONE PRECORDIAL LEAD?
YES
2322
PROBABLE VT
NO
2324
IS THERE EVIDENCE ATRIOVENTRICULAR DISSOCIATION?
YES
2326
PROBABLE VT
NO
2328
IS V-1 NEGATIVE AND V-6 POSITIVE AND QRS > 0.14 MSEC
YES
2330
PROBABLE VT
NO
2332
MAY REPRESENT SVT WITH ABERRANCY OR UNDERLYING BUNDLE BRANCH BLOCK

FIG. 34A

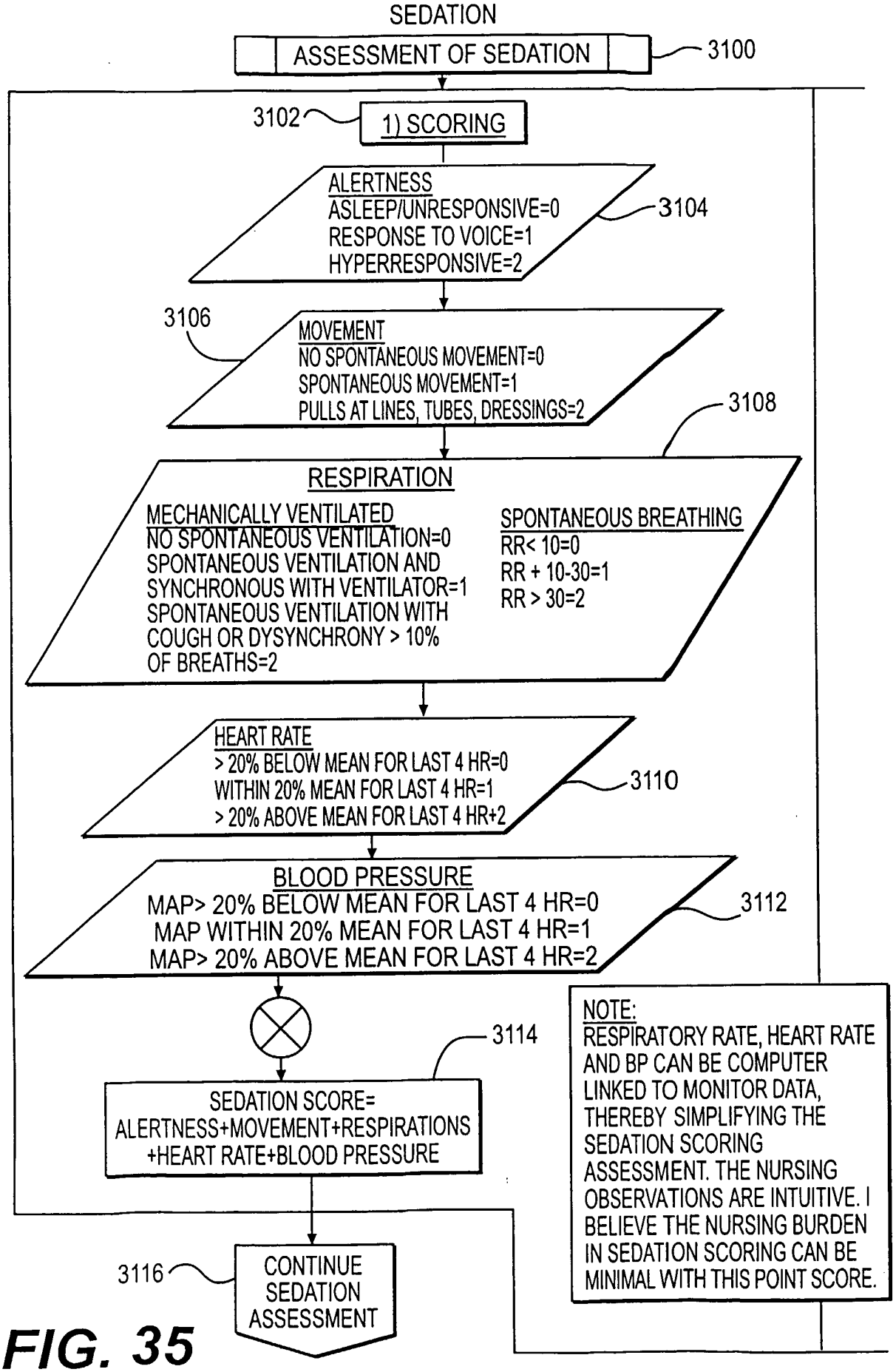

SEDATION
ASSESSMENT OF SEDATION
3100
3102
1) SCORING
ALERTNESS
ASLEEP/UNRESPONSIVE=0
RESPONSE TO VOICE=1
HYPERRESPONSIVE=2
3104
3106
MOVEMENT
NO SPONTANEOUS MOVEMENT=0
SPONTANEOUS MOVEMENT=1
PULLS AT LINES, TUBES, DRESSINGS=2
3108
RESPIRATION
MECHANICALLY VENTILATED
NO SPONTANEOUS VENTILATION=0
SPONTANEOUS VENTILATION AND SYNCHRONOUS WITH VENTILATOR=1
SPONTANEOUS VENTILATION WITH COUGH OR DYSYNCHRONY > 10% OF BREATHS=2
SPONTANEOUS BREATHING
RR< 10=0
RR + 10-30=1
RR > 30=2
HEART RATE
> 20% BELOW MEAN FOR LAST 4 HR=0
WITHIN 20% MEAN FOR LAST 4 HR=1
> 20% ABOVE MEAN FOR LAST 4 HR+2
3110
BLOOD PRESSURE
MAP> 20% BELOW MEAN FOR LAST 4 HR=0
MAP WITHIN 20% MEAN FOR LAST 4 HR=1
MAP> 20% ABOVE MEAN FOR LAST 4 HR=2
3112
3114
SEDATION SCORE=
ALERTNESS+MOVEMENT+RESPIRATIONS
+HEART RATE+BLOOD PRESSURE
NOTE:
RESPIRATORY RATE, HEART RATE AND BP CAN BE COMPUTER LINKED TO MONITOR DATA, THEREBY SIMPLIFYING THE SEDATION SCORING ASSESSMENT. THE NURSING OBSERVATIONS ARE INTUITIVE. I BELIEVE THE NURSING BURDEN IN SEDATION SCORING CAN BE MINIMAL WITH THIS POINT SCORE.
3116
CONTINUE SEDATION ASSESSMENT

FIG. 35

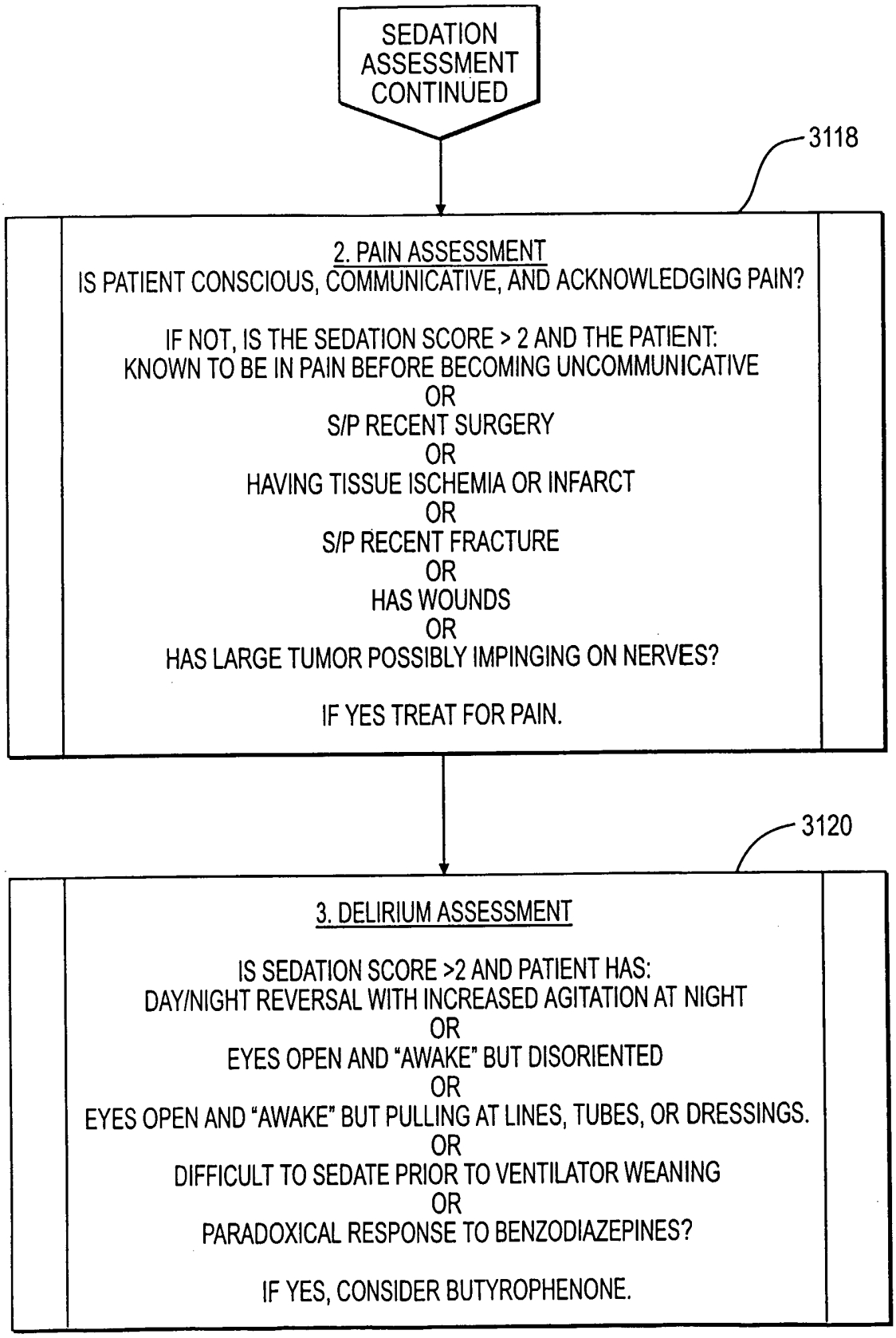

SEDATION ASSESSMENT CONTINUED
3118
2. PAIN ASSESSMENT
IS PATIENT CONSCIOUS, COMMUNICATIVE, AND ACKNOWLEDGING PAIN?
IF NOT, IS THE SEDATION SCORE > 2 AND THE PATIENT:
KNOWN TO BE IN PAIN BEFORE BECOMING UNCOMMUNICATIVE
OR
S/P RECENT SURGERY
OR
HAVING TISSUE ISCHEMIA OR INFARCT
OR
S/P RECENT FRACTURE
OR
HAS WOUNDS
OR
HAS LARGE TUMOR POSSIBLY IMPINGING ON NERVES?
IF YES TREAT FOR PAIN.
3120
3. DELIRIUM ASSESSMENT
IS SEDATION SCORE >2 AND PATIENT HAS:
DAY/NIGHT REVERSAL WITH INCREASED AGITATION AT NIGHT
OR
EYES OPEN AND "AWAKE" BUT DISORIENTED
OR
EYES OPEN AND "AWAKE" BUT PULLING AT LINES, TUBES, OR DRESSINGS.
OR
DIFFICULT TO SEDATE PRIOR TO VENTILATOR WEANING
OR
PARADOXICAL RESPONSE TO BENZODIAZEPINES?
IF YES, CONSIDER BUTYROPHENONE.

FIG. 35A

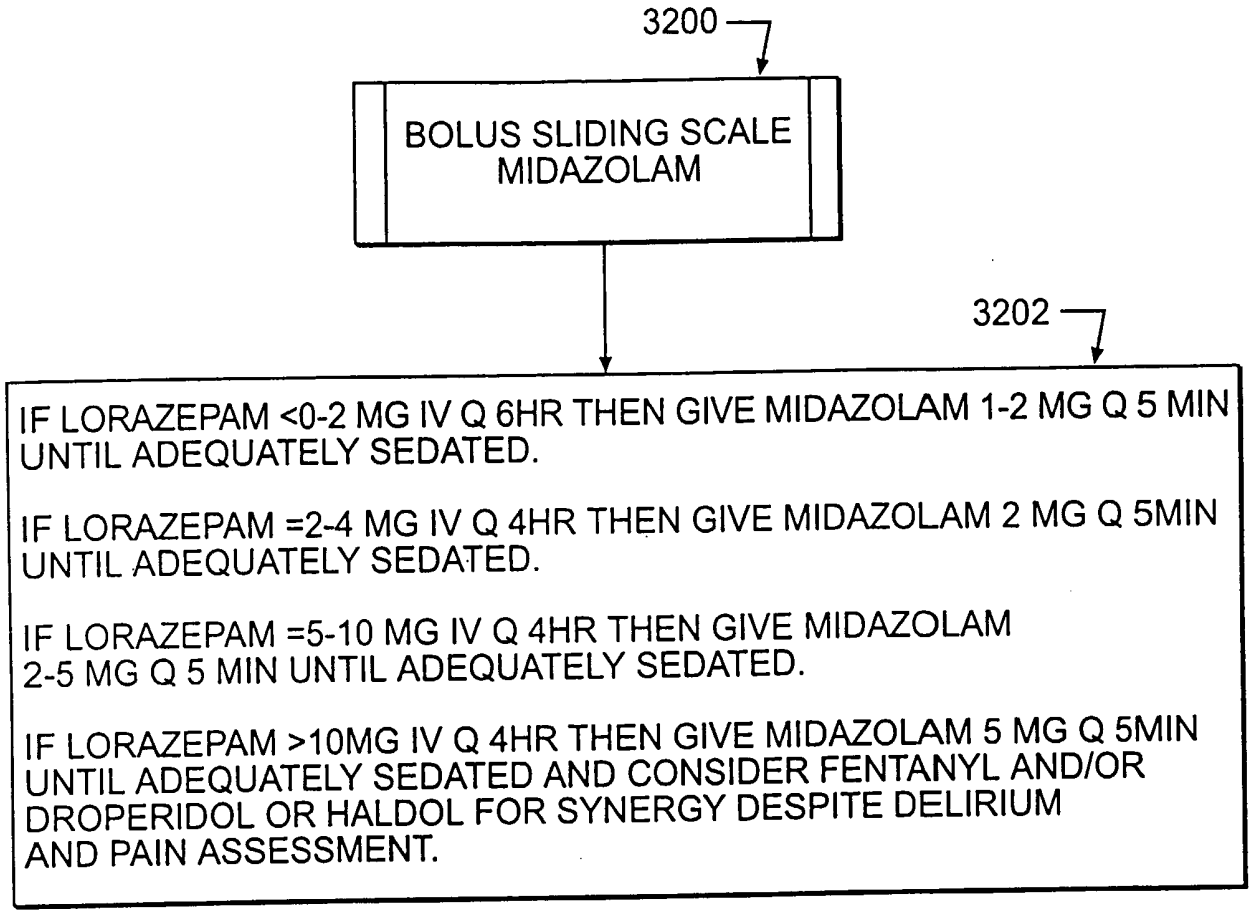

3200
BOLUS SLIDING SCALE MIDAZOLAM
3202
IF LORAZEPAM <0-2 MG IV Q 6HR THEN GIVE MIDAZOLAM 1-2 MG Q 5 MIN UNTIL ADEQUATELY SEDATED.
IF LORAZEPAM =2-4 MG IV Q 4HR THEN GIVE MIDAZOLAM 2 MG Q 5MIN UNTIL ADEQUATELY SEDATED.
IF LORAZEPAM =5-10 MG IV Q 4HR THEN GIVE MIDAZOLAM 2-5 MG Q 5 MIN UNTIL ADEQUATELY SEDATED.
IF LORAZEPAM >10MG IV Q 4HR THEN GIVE MIDAZOLAM 5 MG Q 5MIN UNTIL ADEQUATELY SEDATED AND CONSIDER FENTANYL AND/OR DROPERIDOL OR HALDOL FOR SYNERGY DESPITE DELIRIUM AND PAIN ASSESSMENT.

FIG.36

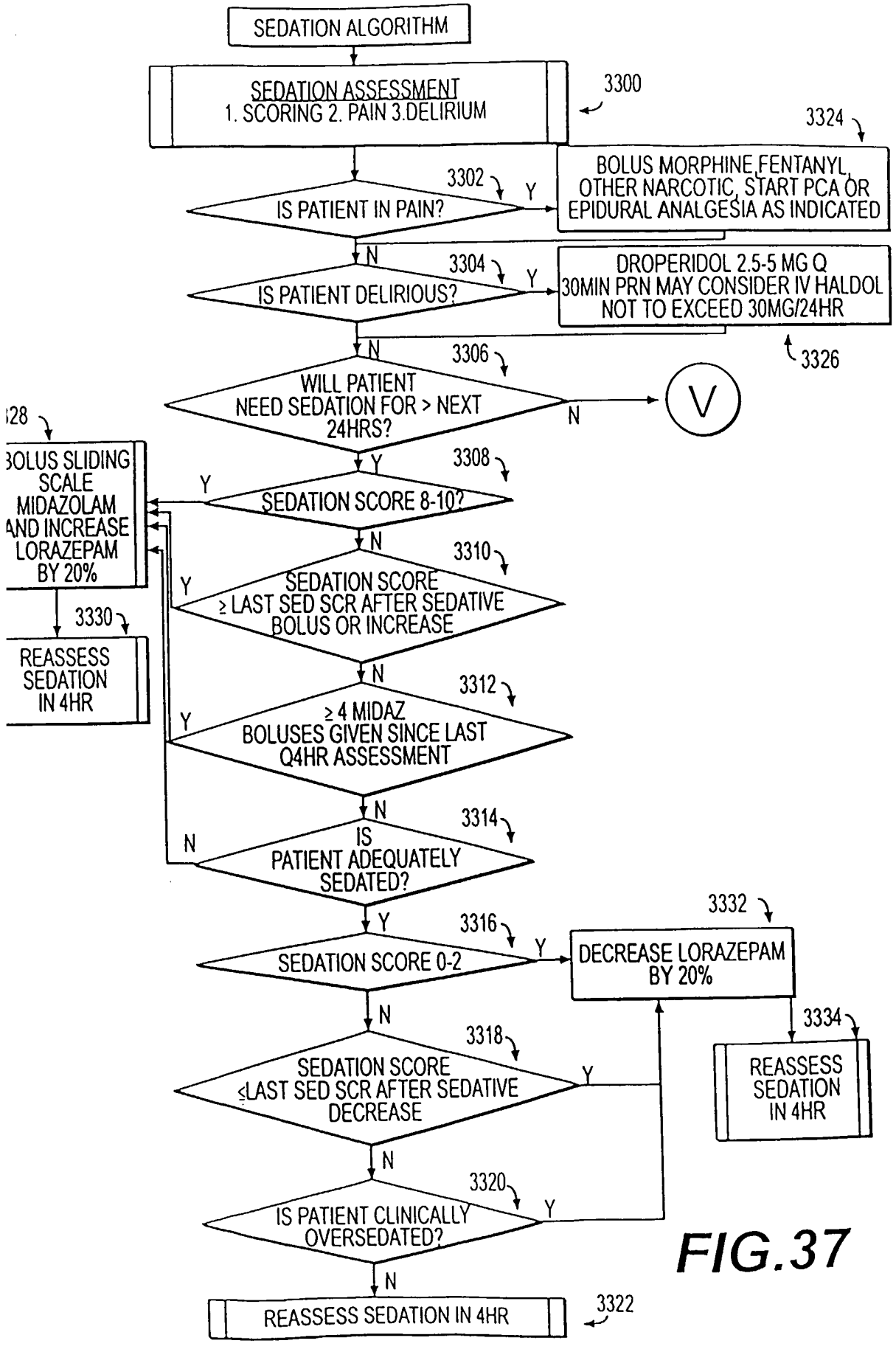

SEDATION ALGORITHM
SEDATION ASSESSMENT
1. SCORING 2. PAIN 3.DELIRIUM
3300
3324
BOLUS MORPHINE,FENTANYL, OTHER NARCOTIC, START PCA OR EPIDURAL ANALGESIA AS INDICATED
3302
IS PATIENT IN PAIN?
Y
N
3304
IS PATIENT DELIRIOUS?
DROPERIDOL 2.5-5 MG Q 30MIN PRN MAY CONSIDER IV HALDOL NOT TO EXCEED 30MG/24HR
3326
3306
WILL PATIENT NEED SEDATION FOR > NEXT 24HRS?
V
3308
SEDATION SCORE 8-10?
3310
SEDATION SCORE ≥ LAST SED SCR AFTER SEDATIVE BOLUS OR INCREASE
3312
≥ 4 MIDAZ BOLUSES GIVEN SINCE LAST Q4HR ASSESSMENT
3314
IS PATIENT ADEQUATELY SEDATED?
3316
SEDATION SCORE 0-2
3318
SEDATION SCORE ≤LAST SED SCR AFTER SEDATIVE DECREASE
3320
IS PATIENT CLINICALLY OVERSEDATED?
3322
REASSESS SEDATION IN 4HR
3328
BOLUS SLIDING SCALE MIDAZOLAM AND INCREASE LORAZEPAM BY 20%
3330
REASSESS SEDATION IN 4HR
3332
DECREASE LORAZEPAM BY 20%
3334
REASSESS SEDATION IN 4HR

FIG.37

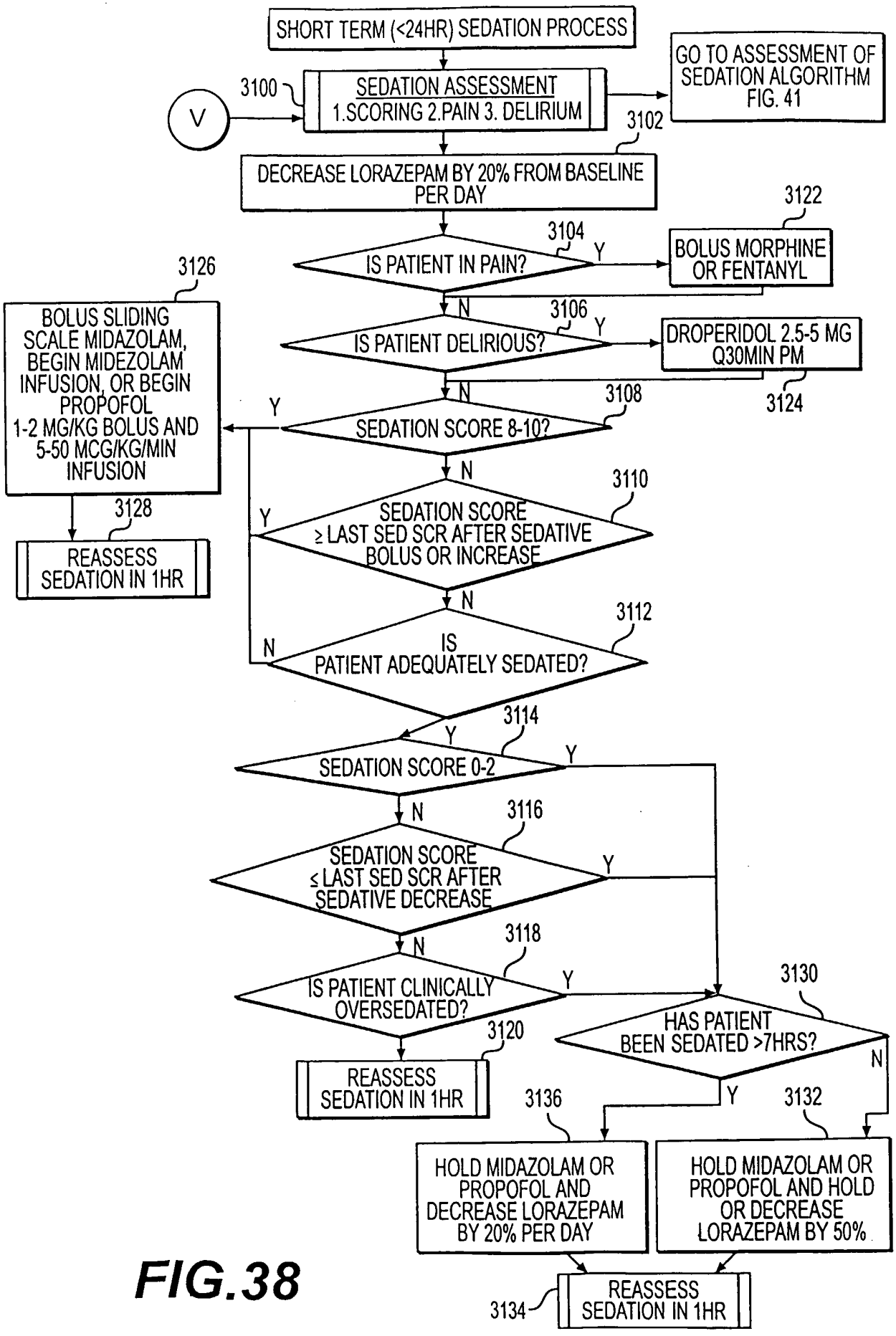

SHORT TERM (<24HR) SEDATION PROCESS
3100
SEDATION ASSESSMENT
1.SCORING 2.PAIN 3. DELIRIUM
GO TO ASSESSMENT OF SEDATION ALGORITHM FIG. 41
V
3102
DECREASE LORAZEPAM BY 20% FROM BASELINE PER DAY
3122
3104
IS PATIENT IN PAIN?
Y
BOLUS MORPHINE OR FENTANYL
3126
N
3106
IS PATIENT DELIRIOUS?
Y
DROPERIDOL 2.5-5 MG Q30MIN PM
BOLUS SLIDING SCALE MIDAZOLAM, BEGIN MIDEZOLAM INFUSION, OR BEGIN PROPOFOL 1-2 MG/KG BOLUS AND 5-50 MCG/KG/MIN INFUSION
N
3124
3108
Y
SEDATION SCORE 8-10?
N
3110
SEDATION SCORE ≥ LAST SED SCR AFTER SEDATIVE BOLUS OR INCREASE
Y
3128
REASSESS SEDATION IN 1HR
N
3112
N
IS PATIENT ADEQUATELY SEDATED?
Y
3114
SEDATION SCORE 0-2
Y
N
3116
SEDATION SCORE ≤ LAST SED SCR AFTER SEDATIVE DECREASE
Y
N
3118
IS PATIENT CLINICALLY OVERSEDATED?
Y
3130
HAS PATIENT BEEN SEDATED >7HRS?
N
3120
REASSESS SEDATION IN 1HR
Y
3136
3132
HOLD MIDAZOLAM OR PROPOFOL AND DECREASE LORAZEPAM BY 20% PER DAY
HOLD MIDAZOLAM OR PROPOFOL AND HOLD OR DECREASE LORAZEPAM BY 50%
3134
REASSESS SEDATION IN 1HR

FIG.38

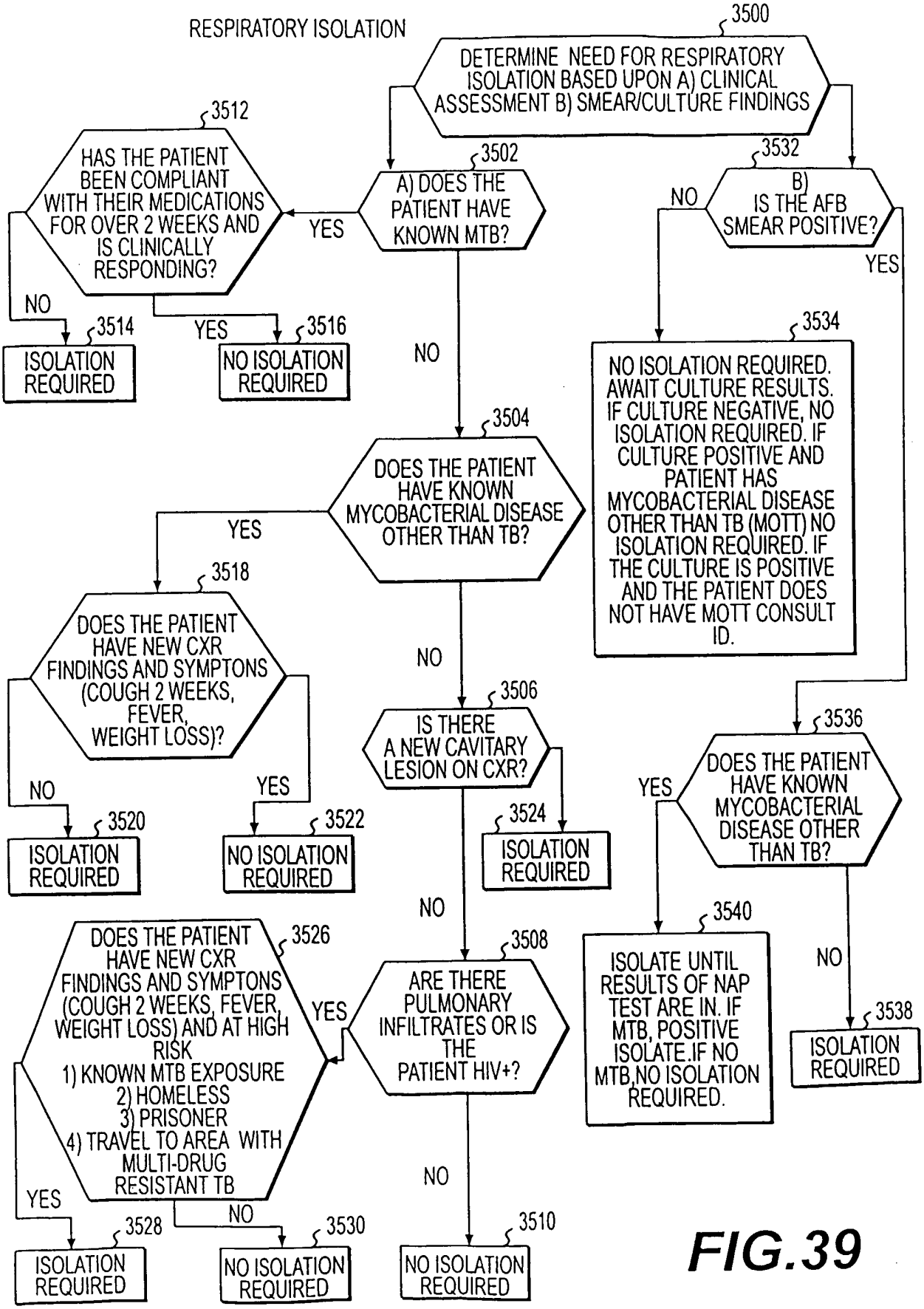

RESPIRATORY ISOLATION
3500
DETERMINE NEED FOR RESPIRATORY ISOLATION BASED UPON A) CLINICAL ASSESSMENT B) SMEAR/CULTURE FINDINGS
3502
A) DOES THE PATIENT HAVE KNOWN MTB?
YES
3512
HAS THE PATIENT BEEN COMPLIANT WITH THEIR MEDICATIONS FOR OVER 2 WEEKS AND IS CLINICALLY RESPONDING?
NO
3514
ISOLATION REQUIRED
YES
3516
NO ISOLATION REQUIRED
NO
3532
B) IS THE AFB SMEAR POSITIVE?
YES
3534
NO ISOLATION REQUIRED. AWAIT CULTURE RESULTS. IF CULTURE NEGATIVE, NO ISOLATION REQUIRED. IF CULTURE POSITIVE AND PATIENT HAS MYCOBACTERIAL DISEASE OTHER THAN TB (MOTT) NO ISOLATION REQUIRED. IF THE CULTURE IS POSITIVE AND THE PATIENT DOES NOT HAVE MOTT CONSULT ID.
3536
DOES THE PATIENT HAVE KNOWN MYCOBACTERIAL DISEASE OTHER THAN TB?
YES
3540
ISOLATE UNTIL RESULTS OF NAP TEST ARE IN. IF MTB, POSITIVE ISOLATE.IF NO MTB,NO ISOLATION REQUIRED.
NO
3538
ISOLATION REQUIRED
NO
3504
DOES THE PATIENT HAVE KNOWN MYCOBACTERIAL DISEASE OTHER THAN TB?
YES
3518
DOES THE PATIENT HAVE NEW CXR FINDINGS AND SYMPTONS (COUGH 2 WEEKS, FEVER, WEIGHT LOSS)?
NO
3520
ISOLATION REQUIRED
YES
3522
NO ISOLATION REQUIRED
NO
3506
IS THERE A NEW CAVITARY LESION ON CXR?
3524
ISOLATION REQUIRED
NO
3508
ARE THERE PULMONARY INFILTRATES OR IS THE PATIENT HIV+?
YES
3526
DOES THE PATIENT HAVE NEW CXR FINDINGS AND SYMPTONS (COUGH 2 WEEKS, FEVER, WEIGHT LOSS) AND AT HIGH RISK
1) KNOWN MTB EXPOSURE
2) HOMELESS
3) PRISONER
4) TRAVEL TO AREA WITH MULTI-DRUG RESISTANT TB
YES
3528
ISOLATION REQUIRED
NO
3530
NO ISOLATION REQUIRED
NO
3510
NO ISOLATION REQUIRED

FIG.39

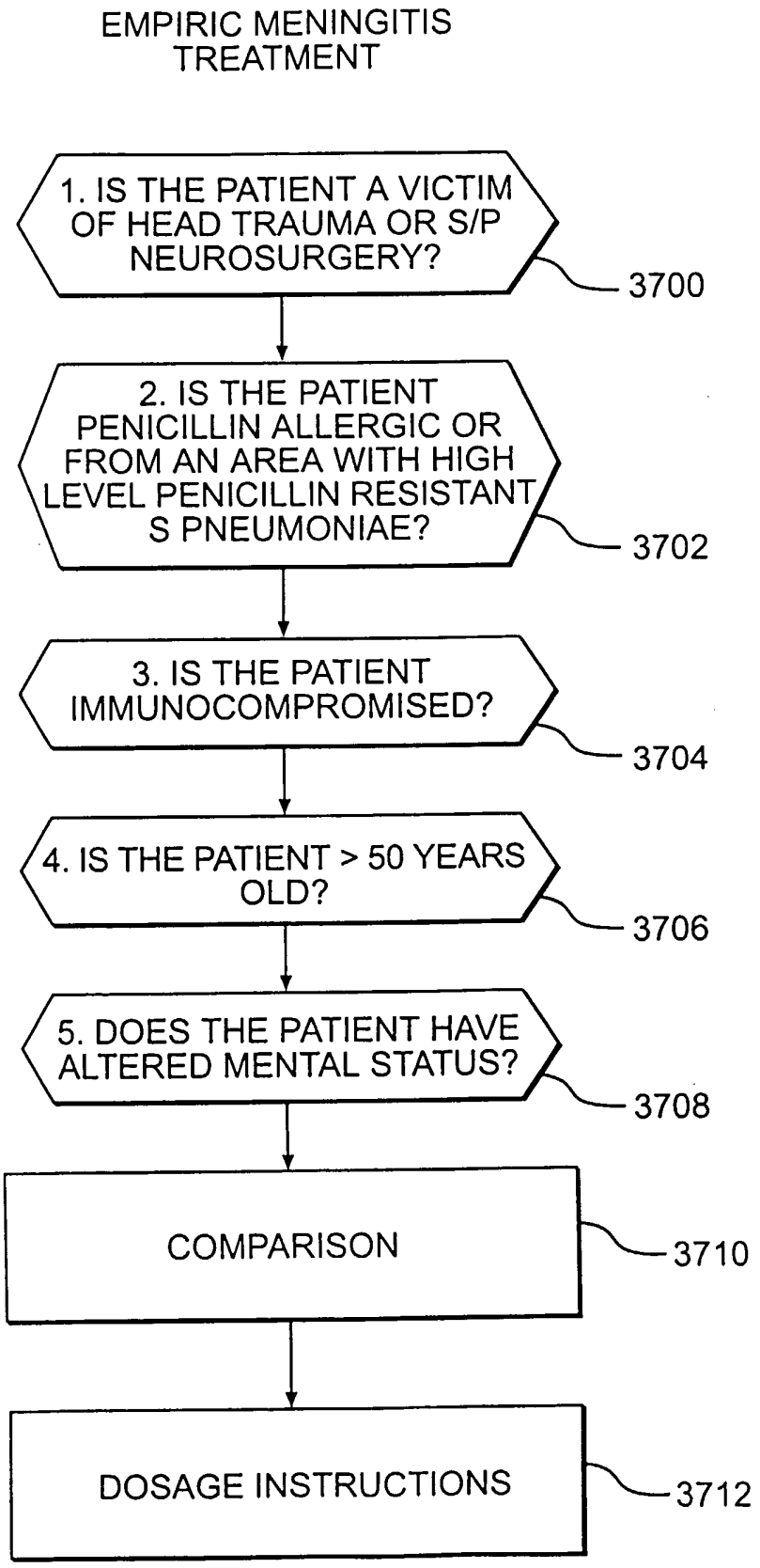

EMPIRIC MENINGITIS TREATMENT
1. IS THE PATIENT A VICTIM OF HEAD TRAUMA OR S/P NEUROSURGERY?
3700
2. IS THE PATIENT PENICILLIN ALLERGIC OR FROM AN AREA WITH HIGH LEVEL PENICILLIN RESISTANT S PNEUMONIAE?
3702
3. IS THE PATIENT IMMUNOCOMPROMISED?
3704
4. IS THE PATIENT > 50 YEARS OLD?
3706
5. DOES THE PATIENT HAVE ALTERED MENTAL STATUS?
3708
COMPARISON
3710
DOSAGE INSTRUCTIONS
3712

FIG.40

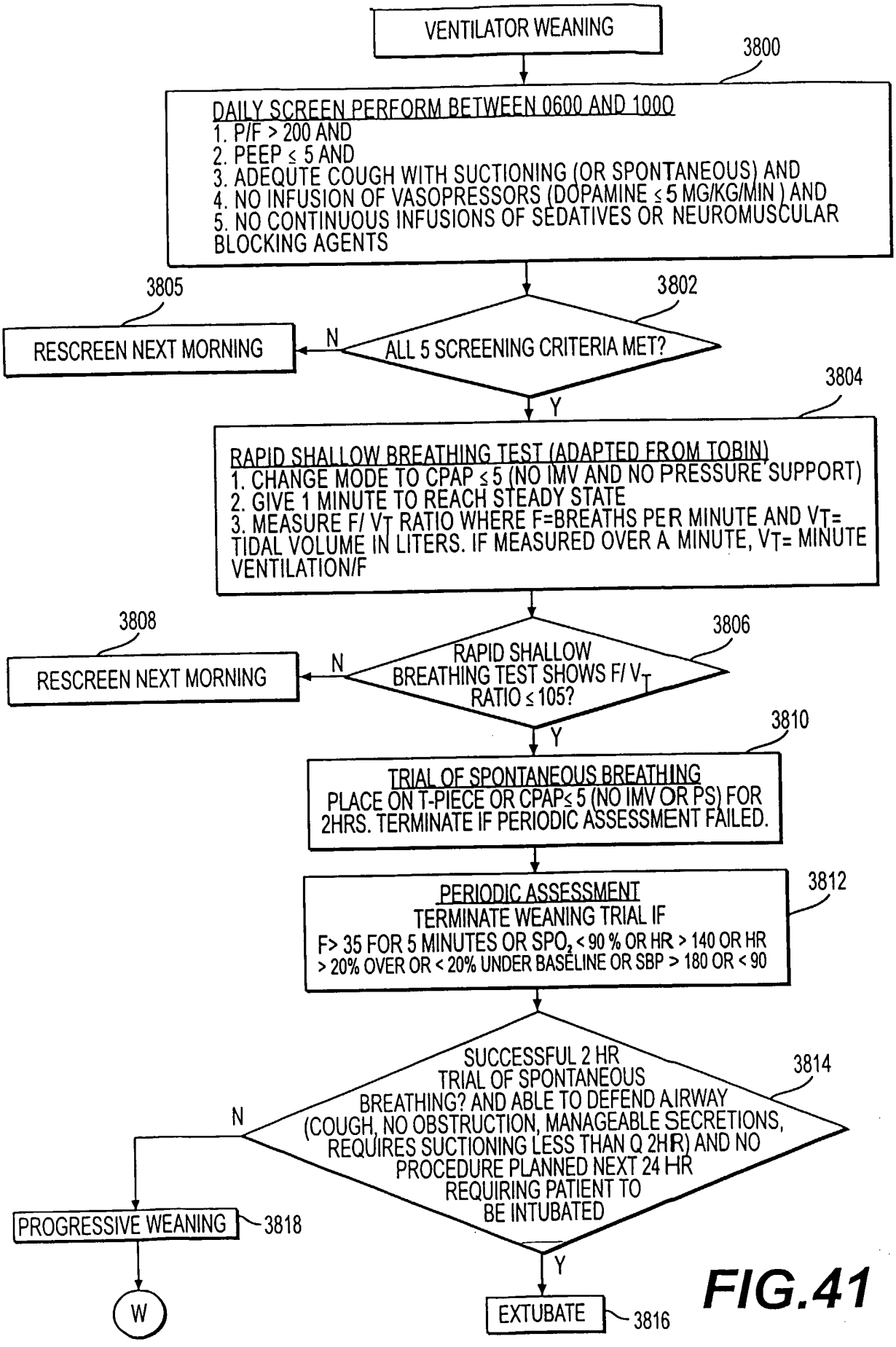

VENTILATOR WEANING
3800
DAILY SCREEN PERFORM BETWEEN 0600 AND 1000
1. P/F > 200 AND
2. PEEP ≤ 5 AND
3. ADEQUTE COUGH WITH SUCTIONING (OR SPONTANEOUS) AND
4. NO INFUSION OF VASOPRESSORS (DOPAMINE ≤ 5 MG/KG/MIN) AND
5. NO CONTINUOUS INFUSIONS OF SEDATIVES OR NEUROMUSCULAR BLOCKING AGENTS
3802
ALL 5 SCREENING CRITERIA MET?
N
3805
RESCREEN NEXT MORNING
Y
3804
RAPID SHALLOW BREATHING TEST (ADAPTED FROM TOBIN)
1. CHANGE MODE TO CPAP ≤ 5 (NO IMV AND NO PRESSURE SUPPORT)
2. GIVE 1 MINUTE TO REACH STEADY STATE
3. MEASURE F/ VT RATIO WHERE F=BREATHS PER MINUTE AND VT= TIDAL VOLUME IN LITERS. IF MEASURED OVER A MINUTE, VT= MINUTE VENTILATION/F
3806
RAPID SHALLOW BREATHING TEST SHOWS F/ VT RATIO ≤ 105?
N
3808
RESCREEN NEXT MORNING
Y
3810
TRIAL OF SPONTANEOUS BREATHING
PLACE ON T-PIECE OR CPAP≤ 5 (NO IMV OR PS) FOR 2HRS. TERMINATE IF PERIODIC ASSESSMENT FAILED.
3812
PERIODIC ASSESSMENT
TERMINATE WEANING TRIAL IF
F> 35 FOR 5 MINUTES OR SPO2 < 90 % OR HR > 140 OR HR > 20% OVER OR < 20% UNDER BASELINE OR SBP > 180 OR < 90
3814
SUCCESSFUL 2 HR TRIAL OF SPONTANEOUS BREATHING? AND ABLE TO DEFEND AIRWAY (COUGH, NO OBSTRUCTION, MANAGEABLE SECRETIONS, REQUIRES SUCTIONING LESS THAN Q 2HR) AND NO PROCEDURE PLANNED NEXT 24 HR REQUIRING PATIENT TO BE INTUBATED
N
PROGRESSIVE WEANING
3818
W
Y
EXTUBATE
3816

FIG.41

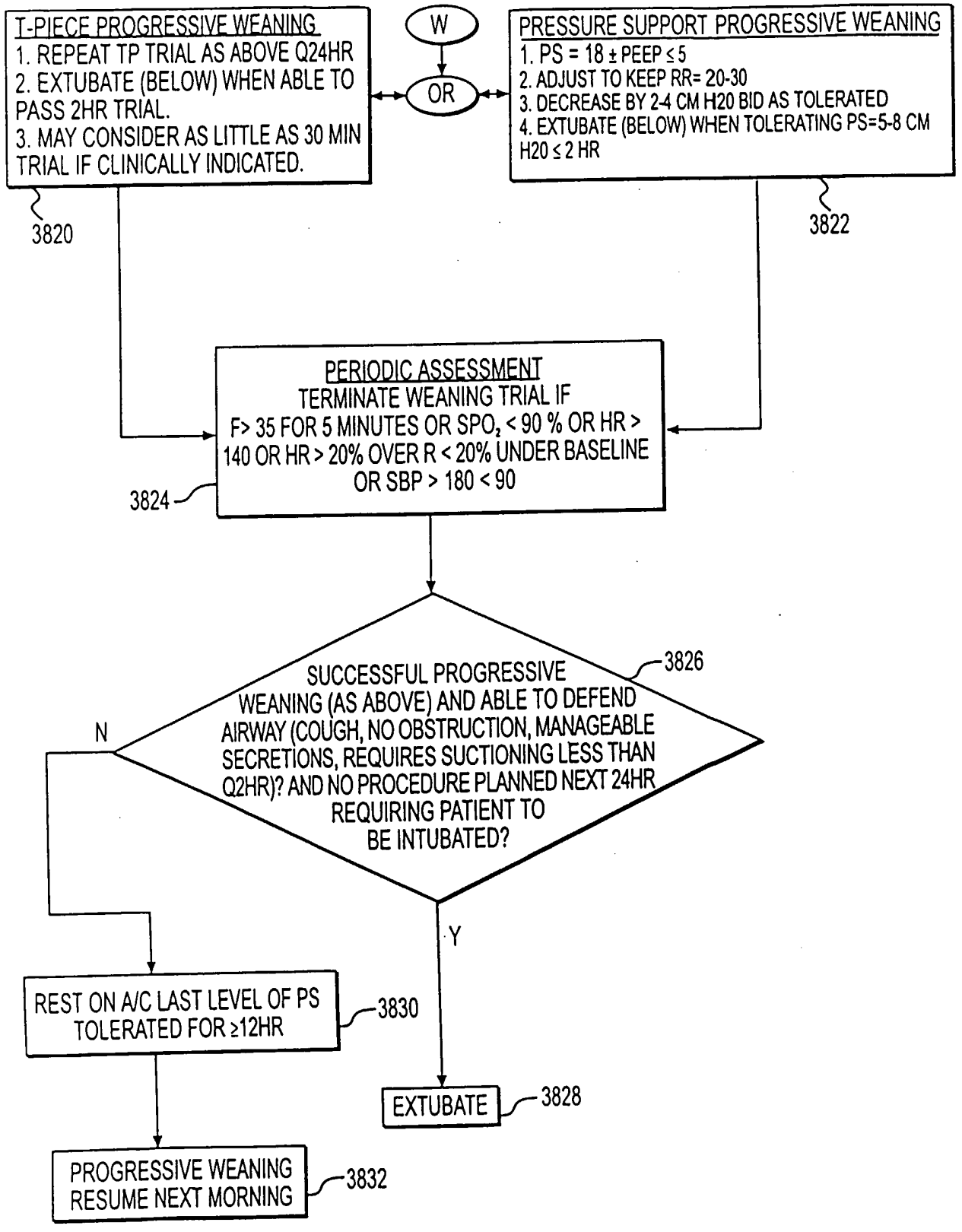

T-PIECE PROGRESSIVE WEANING
1. REPEAT TP TRIAL AS ABOVE Q24HR
2. EXTUBATE (BELOW) WHEN ABLE TO PASS 2HR TRIAL.
3. MAY CONSIDER AS LITTLE AS 30 MIN TRIAL IF CLINICALLY INDICATED.
3820
W
OR
PRESSURE SUPPORT PROGRESSIVE WEANING
1. PS = 18 ± PEEP ≤ 5
2. ADJUST TO KEEP RR= 20-30
3. DECREASE BY 2-4 CM H20 BID AS TOLERATED
4. EXTUBATE (BELOW) WHEN TOLERATING PS=5-8 CM H20 ≤ 2 HR
3822
PERIODIC ASSESSMENT
TERMINATE WEANING TRIAL IF
F> 35 FOR 5 MINUTES OR SPO2 < 90 % OR HR > 140 OR HR > 20% OVER R < 20% UNDER BASELINE OR SBP > 180 < 90
3824
SUCCESSFUL PROGRESSIVE WEANING (AS ABOVE) AND ABLE TO DEFEND AIRWAY (COUGH, NO OBSTRUCTION, MANAGEABLE SECRETIONS, REQUIRES SUCTIONING LESS THAN Q2HR)? AND NO PROCEDURE PLANNED NEXT 24HR REQUIRING PATIENT TO BE INTUBATED?
3826
N
Y
REST ON A/C LAST LEVEL OF PS TOLERATED FOR ≥12HR
3830
EXTUBATE
3828
PROGRESSIVE WEANING RESUME NEXT MORNING
3832

FIG.41A

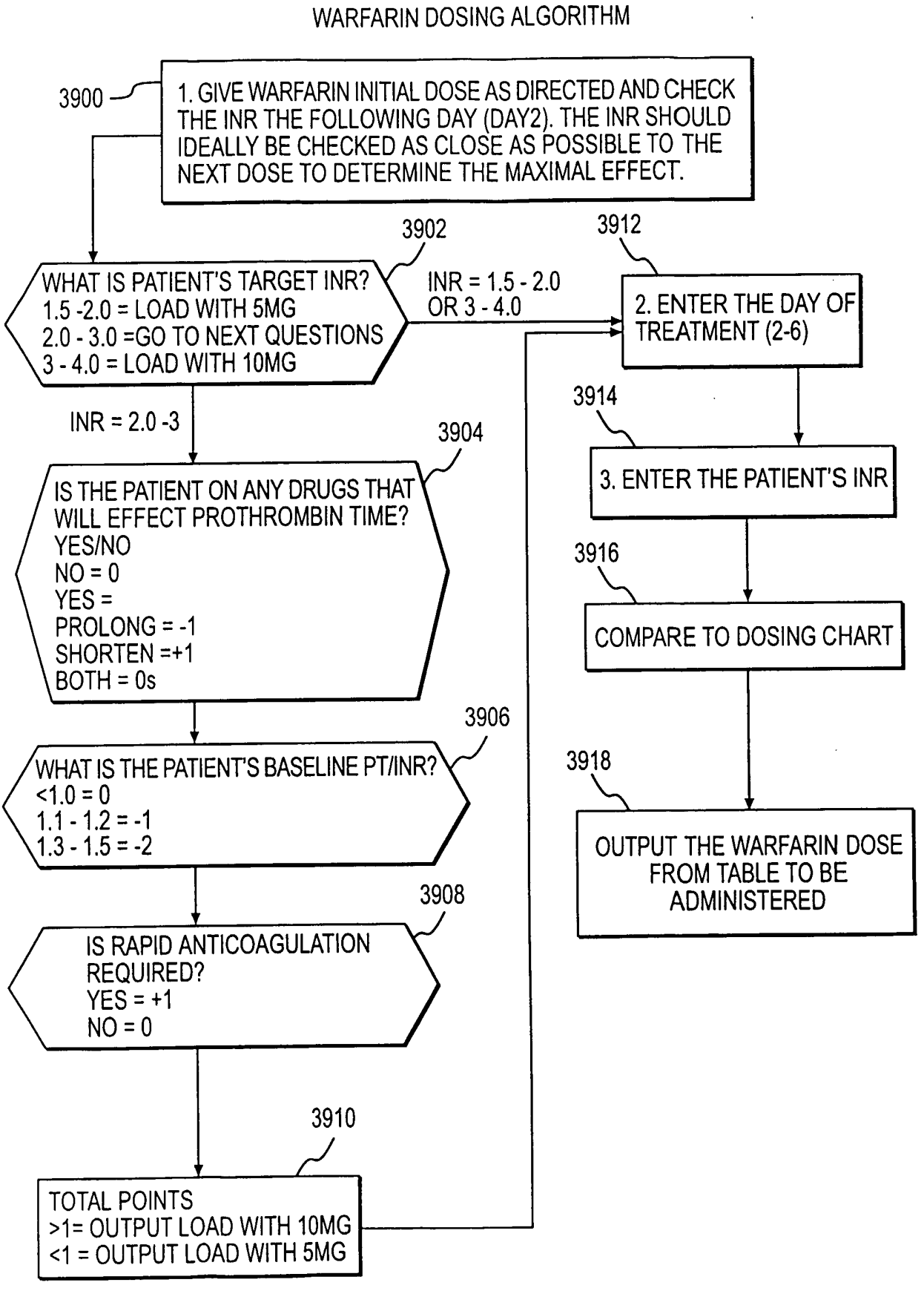

WARFARIN DOSING ALGORITHM
3900
1. GIVE WARFARIN INITIAL DOSE AS DIRECTED AND CHECK THE INR THE FOLLOWING DAY (DAY2). THE INR SHOULD IDEALLY BE CHECKED AS CLOSE AS POSSIBLE TO THE NEXT DOSE TO DETERMINE THE MAXIMAL EFFECT.
3902
WHAT IS PATIENT'S TARGET INR?
1.5 -2.0 = LOAD WITH 5MG
2.0 - 3.0 =GO TO NEXT QUESTIONS
3 - 4.0 = LOAD WITH 10MG
INR = 1.5 - 2.0 OR 3 - 4.0
3912
2. ENTER THE DAY OF TREATMENT (2-6)
INR = 2.0 -3
3904
IS THE PATIENT ON ANY DRUGS THAT WILL EFFECT PROTHROMBIN TIME?
YES/NO
NO = 0
YES =
PROLONG = -1
SHORTEN =+1
BOTH = 0s
3914
3. ENTER THE PATIENT'S INR
3916
COMPARE TO DOSING CHART
3906
WHAT IS THE PATIENT'S BASELINE PT/INR?
<1.0 = 0
1.1 - 1.2 = -1
1.3 - 1.5 = -2
3918
OUTPUT THE WARFARIN DOSE FROM TABLE TO BE ADMINISTERED
3908
IS RAPID ANTICOAGULATION REQUIRED?
YES = +1
NO = 0
3910
TOTAL POINTS
>1= OUTPUT LOAD WITH 10MG
<1 = OUTPUT LOAD WITH 5MG

FIG.42

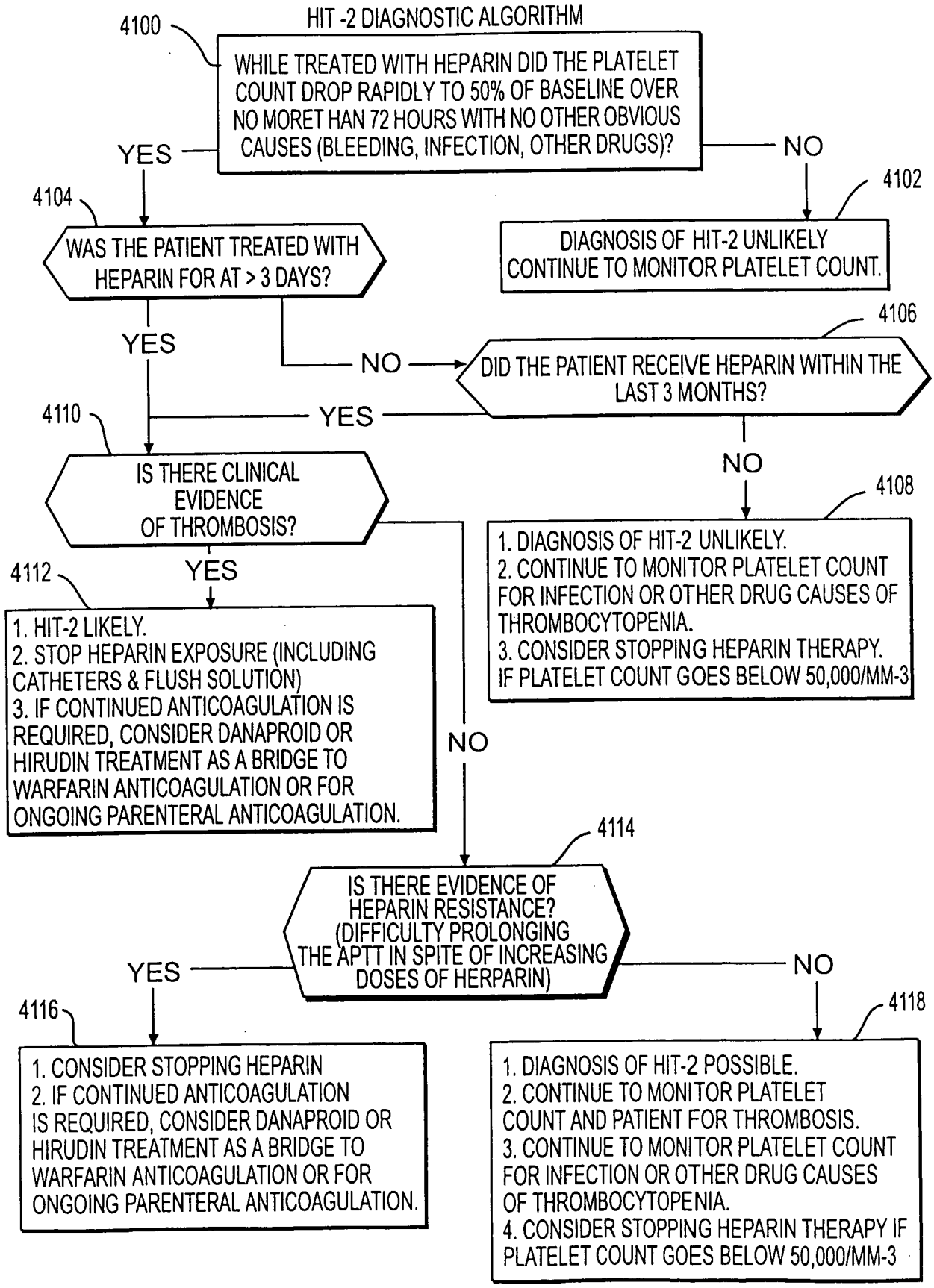

HIT -2 DIAGNOSTIC ALGORITHM
4100
WHILE TREATED WITH HEPARIN DID THE PLATELET COUNT DROP RAPIDLY TO 50% OF BASELINE OVER NO MORET HAN 72 HOURS WITH NO OTHER OBVIOUS CAUSES (BLEEDING, INFECTION, OTHER DRUGS)?
YES
NO
4102
DIAGNOSIS OF HIT-2 UNLIKELY CONTINUE TO MONITOR PLATELET COUNT.
4104
WAS THE PATIENT TREATED WITH HEPARIN FOR AT > 3 DAYS?
YES
NO
4106
DID THE PATIENT RECEIVE HEPARIN WITHIN THE LAST 3 MONTHS?
YES
NO
4108
1. DIAGNOSIS OF HIT-2 UNLIKELY.
2. CONTINUE TO MONITOR PLATELET COUNT FOR INFECTION OR OTHER DRUG CAUSES OF THROMBOCYTOPENIA.
3. CONSIDER STOPPING HEPARIN THERAPY. IF PLATELET COUNT GOES BELOW 50,000/MM-3
4110
IS THERE CLINICAL EVIDENCE OF THROMBOSIS?
YES
NO
4112
1. HIT-2 LIKELY.
2. STOP HEPARIN EXPOSURE (INCLUDING CATHETERS & FLUSH SOLUTION)
3. IF CONTINUED ANTICOAGULATION IS REQUIRED, CONSIDER DANAPROID OR HIRUDIN TREATMENT AS A BRIDGE TO WARFARIN ANTICOAGULATION OR FOR ONGOING PARENTERAL ANTICOAGULATION.
4114
IS THERE EVIDENCE OF HEPARIN RESISTANCE? (DIFFICULTY PROLONGING THE APTT IN SPITE OF INCREASING DOSES OF HERPARIN)
YES
NO
4116
1. CONSIDER STOPPING HEPARIN
2. IF CONTINUED ANTICOAGULATION IS REQUIRED, CONSIDER DANAPROID OR HIRUDIN TREATMENT AS A BRIDGE TO WARFARIN ANTICOAGULATION OR FOR ONGOING PARENTERAL ANTICOAGULATION.
4118
1. DIAGNOSIS OF HIT-2 POSSIBLE.
2. CONTINUE TO MONITOR PLATELET COUNT AND PATIENT FOR THROMBOSIS.
3. CONTINUE TO MONITOR PLATELET COUNT FOR INFECTION OR OTHER DRUG CAUSES OF THROMBOCYTOPENIA.
4. CONSIDER STOPPING HEPARIN THERAPY IF PLATELET COUNT GOES BELOW 50,000/MM-3

FIG.43

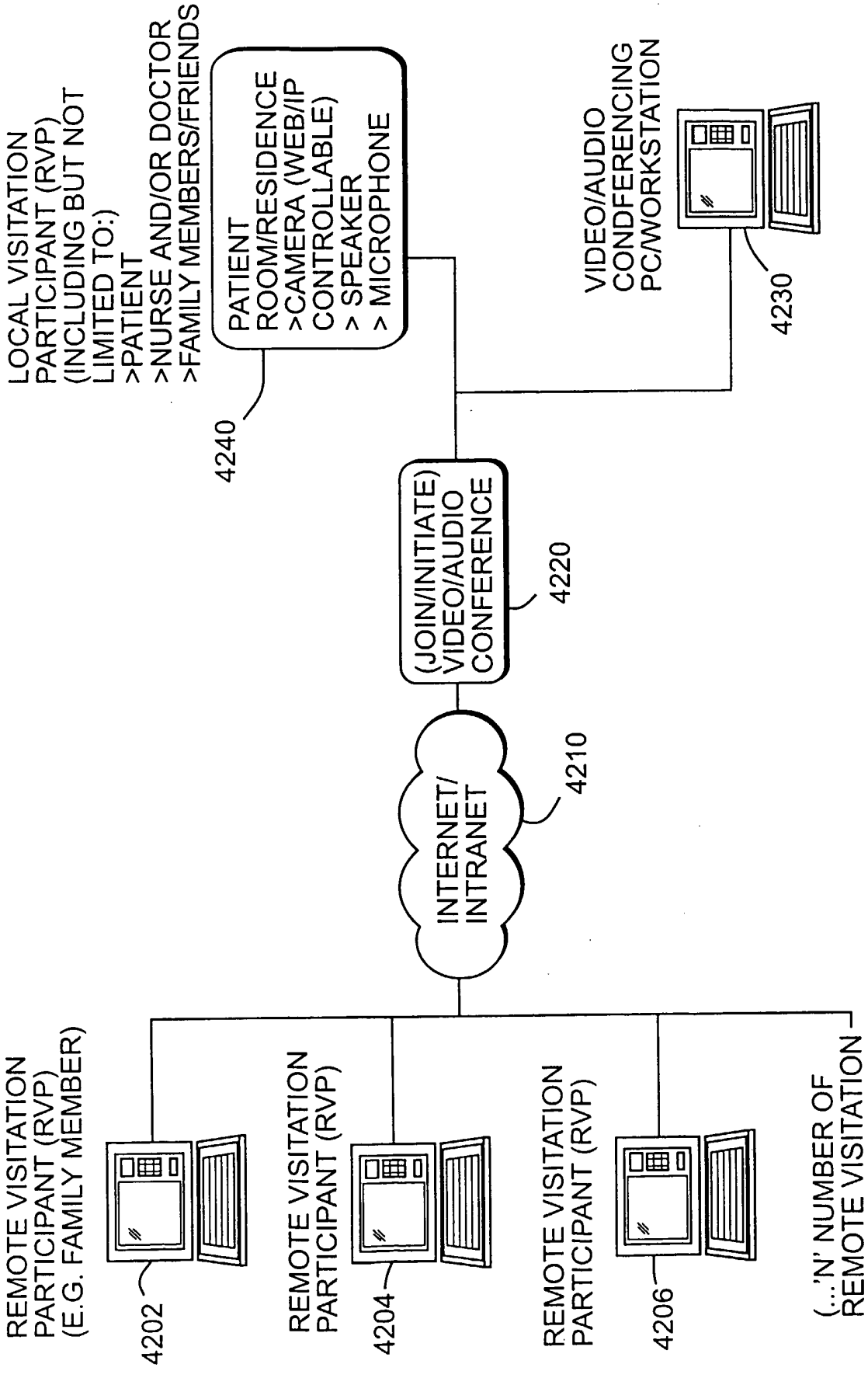

LOCAL VISITATION PARTICIPANT (RVP) (INCLUDING BUT NOT LIMITED TO:) >PATIENT >NURSE AND/OR DOCTOR >FAMILY MEMBERS/FRIENDS
PATIENT ROOM/RESIDENCE >CAMERA (WEB/IP CONTROLLABLE) > SPEAKER > MICROPHONE
4240
VIDEO/AUDIO CONDFERENCING PC/WORKSTATION
4230
(JOIN/INITIATE) VIDEO/AUDIO CONFERENCE
4220
INTERNET/ INTRANET
4210
REMOTE VISITATION PARTICIPANT (RVP) (E.G. FAMILY MEMBER)
4202
REMOTE VISITATION PARTICIPANT (RVP)
4204
REMOTE VISITATION PARTICIPANT (RVP)
4206
(...'N' NUMBER OF REMOTE VISITATION PARTICIPANTS)

FIG.44