

FIG. 1

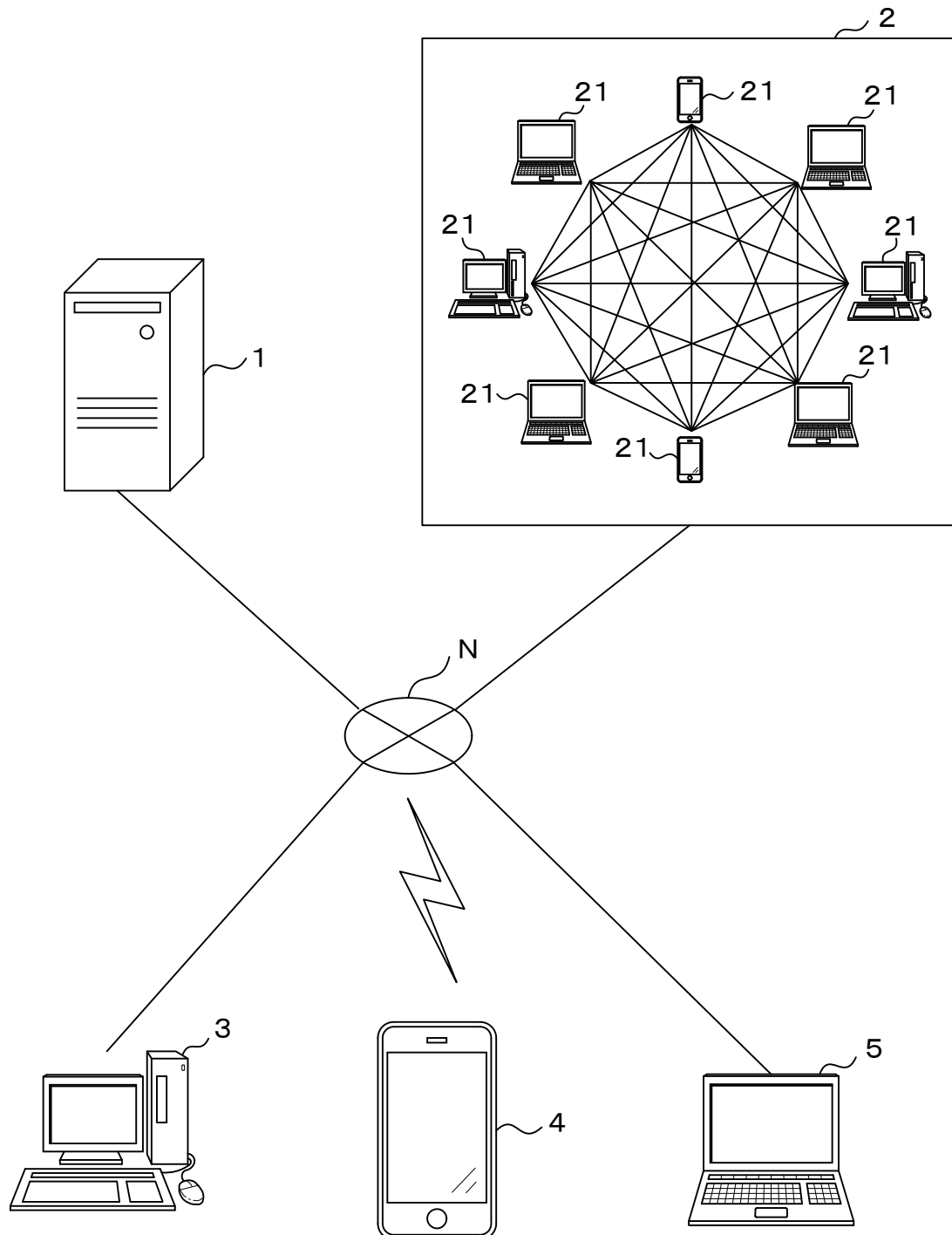


FIG. 2

1

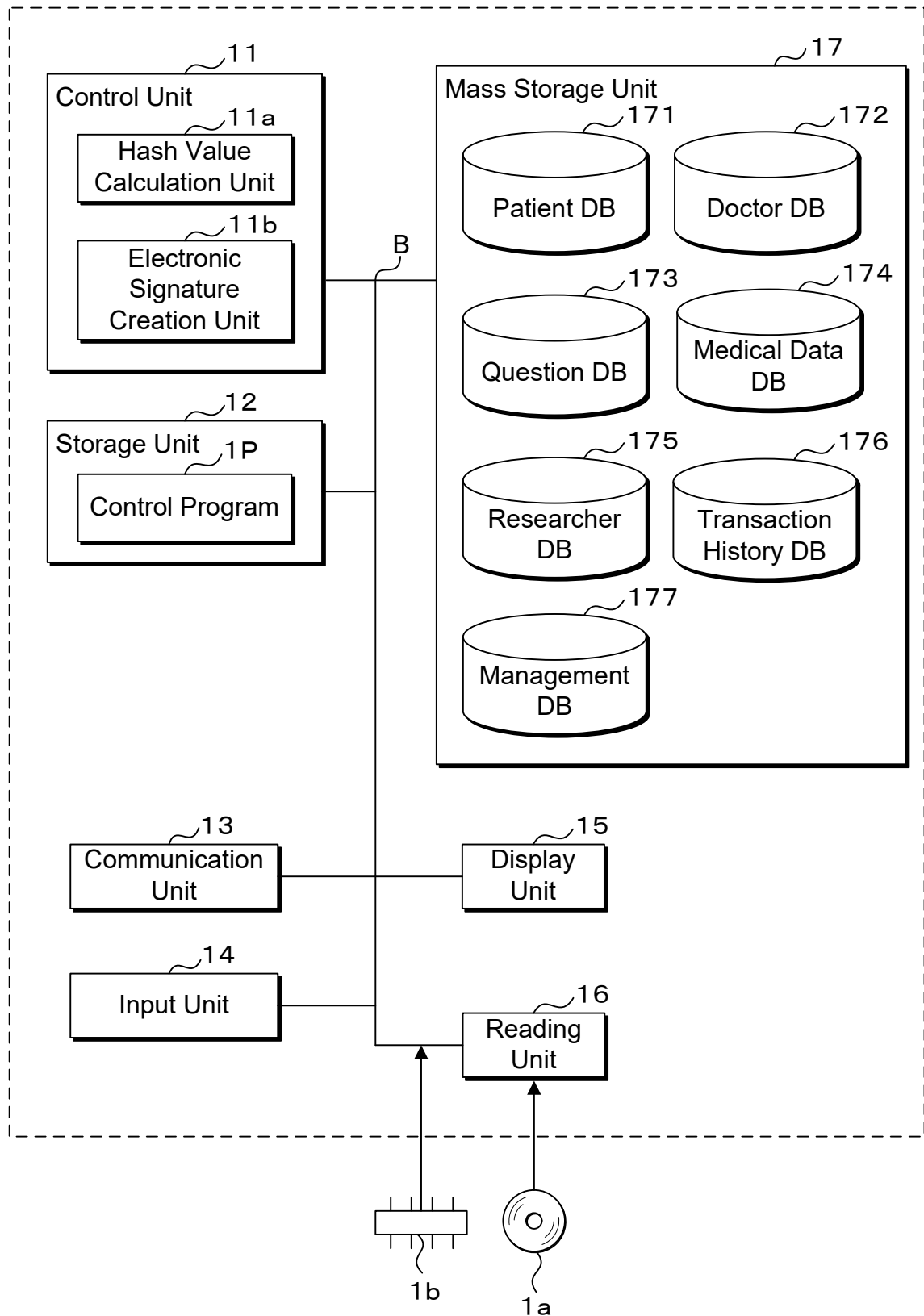


FIG . 3

171

Patient DID	Name	Date of birth	Postal code	Address	Phone number	E-mail address	Registration date and time
0x93c2f44e...	***	*****	*****	***	*****	*****	*****
0x01c2f56a...	***	*****	*****	***	*****	*****	*****

172

Doctor DID	Name	Medical institution name	Medical department name
0xrt62f66e...	***	*****	Psychiatry
0xgh67f4h7...	***	*****	Surgery

FIG . 4

173		174				
Patient DID	Question type	Question data				
0x93c2f44e ...	PDQ—39	*****				
	EQ—5D	*****				
*****	MDS—UPDRS	*****				

Medical data ID	Patient DID	Medical data	Hash value	Doctor DID	Signature date and time column	BC recording date and time	Status
1603902637	0x93c2f44e...						Submitted
1603238467	*****	*****		0xrt62f66e...	*****		Signed
1603990876	*****	*****	*****	0xrt62f66e...	*****	*****	Recorded in BC

FIG . 5

		175						
Researcher DID	Research institution ID	Name	A date of birth	Postal code	Address	A phone number	E-mail address	Registration date and time
0x93c2f44e...	0001	***	***	***	***	***	***	***
0x01c2f56a...	0002	***	***	***	***	***	***	***

		176				
Research institution ID	Medical data ID	Patient DID	Researcher DID	Transaction date and time		
0001	1603905893	0x01c2f56a...	0x93c2f44e...	*****		
0002	1234905353	*****	*****	*****		

FIG . 6

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Management ID	Medical data ID	Patient DID	Researcher DID	Request status	Request date and time
00001	1603905893	0x93c2f44e...	0x93c2f44e...	Waiting for approval	
00002	1234905353	0x01c2f56a...	0x01c2f56a...	Approved	*****

Patient approval date and time	Approval type	Patient disapproval date and time	Patient withdrawal date and time
*****	Disclosure & sharing	—	—

FIG. 7

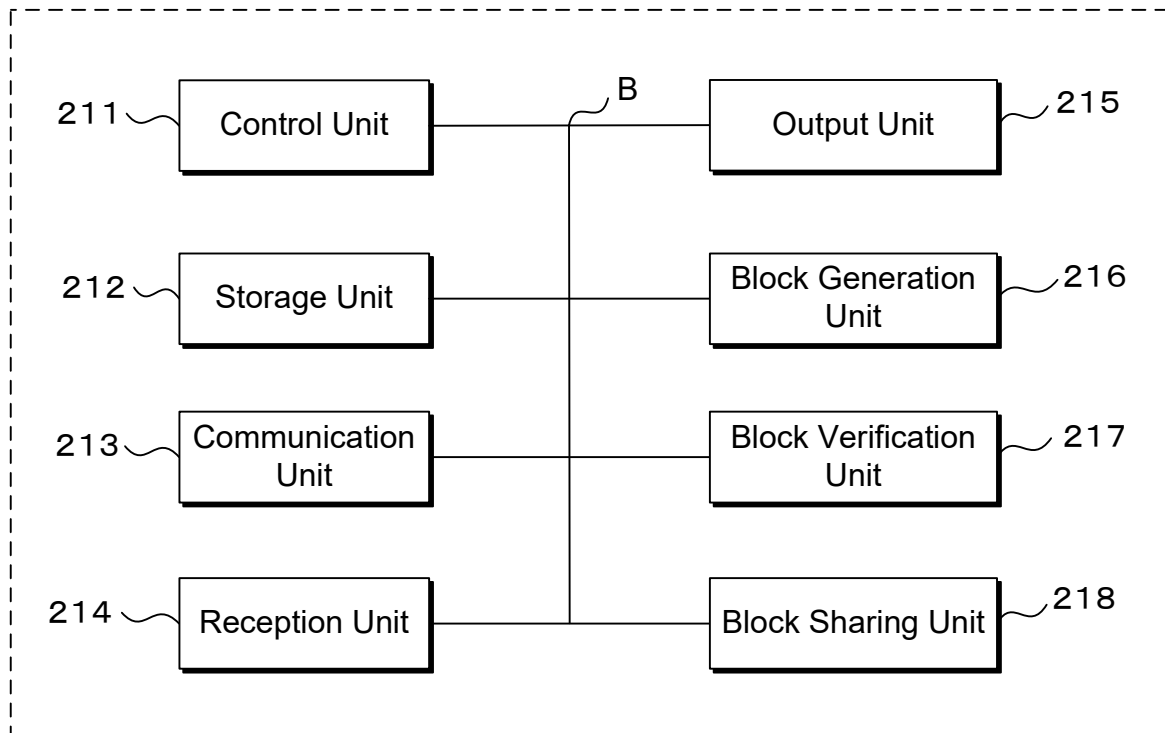
21

FIG. 8

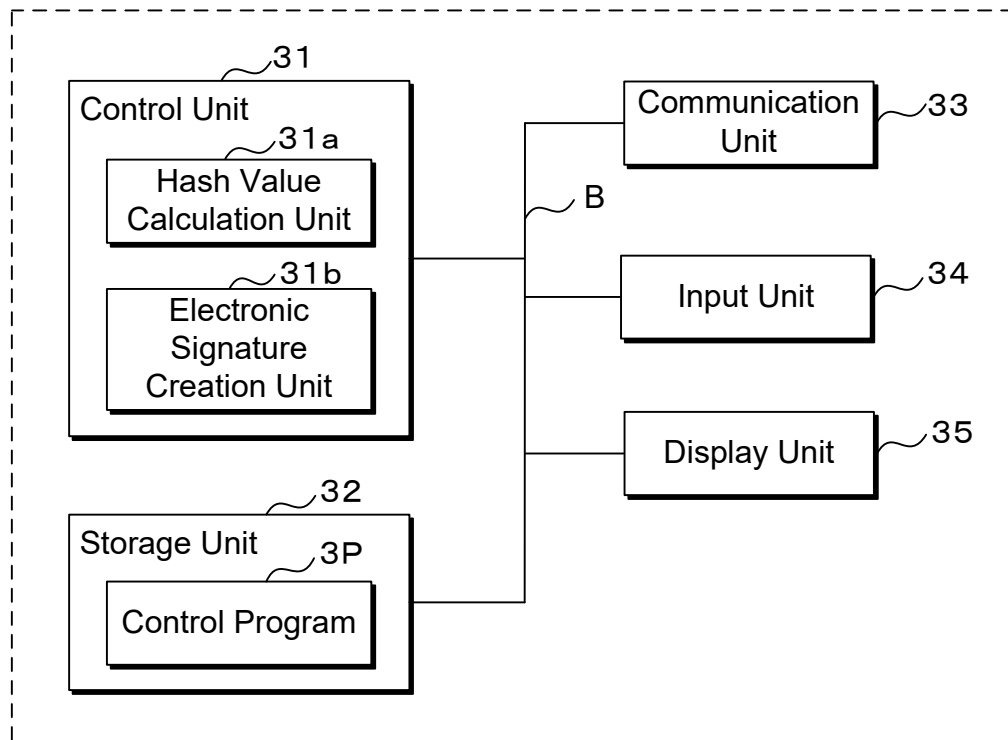
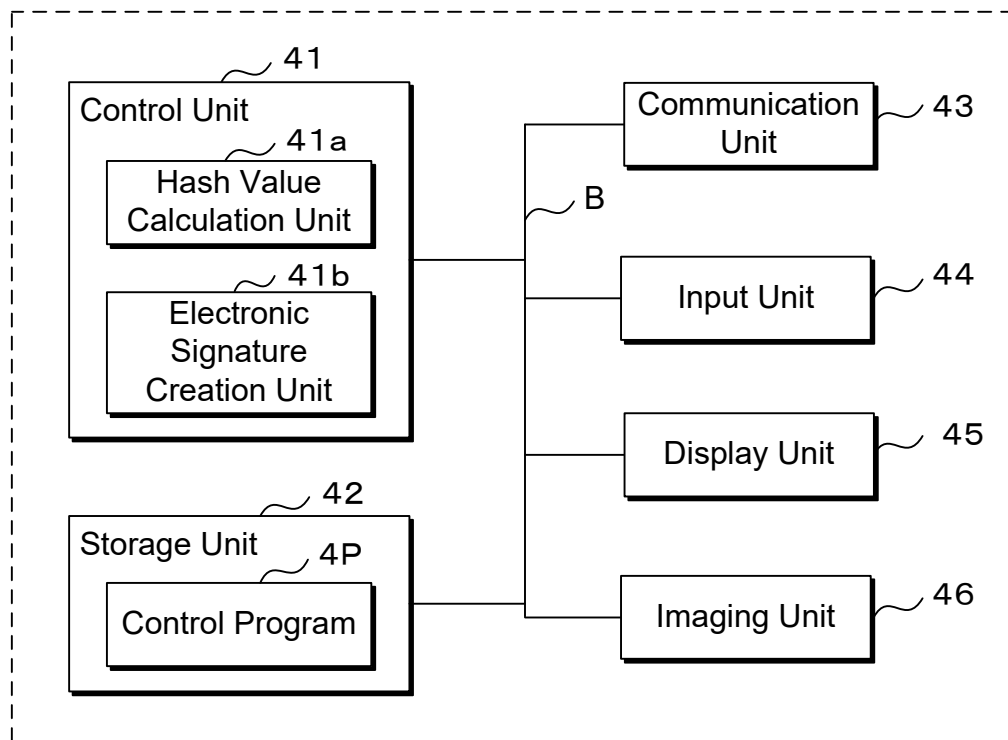
34

FIG. 9

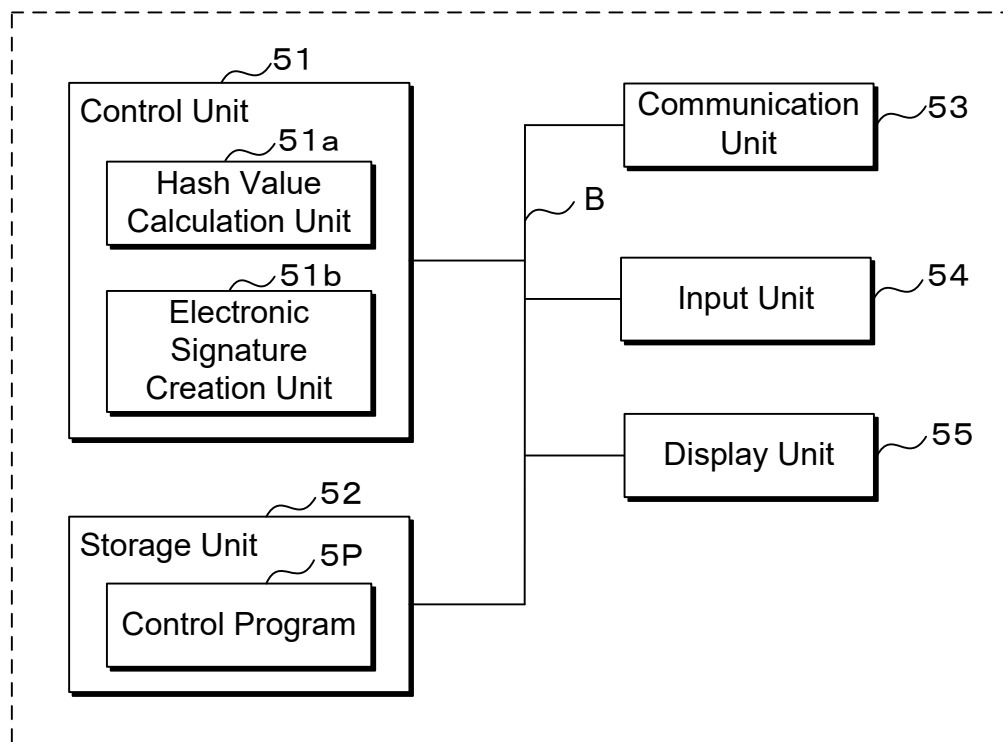
5

FIG . 10

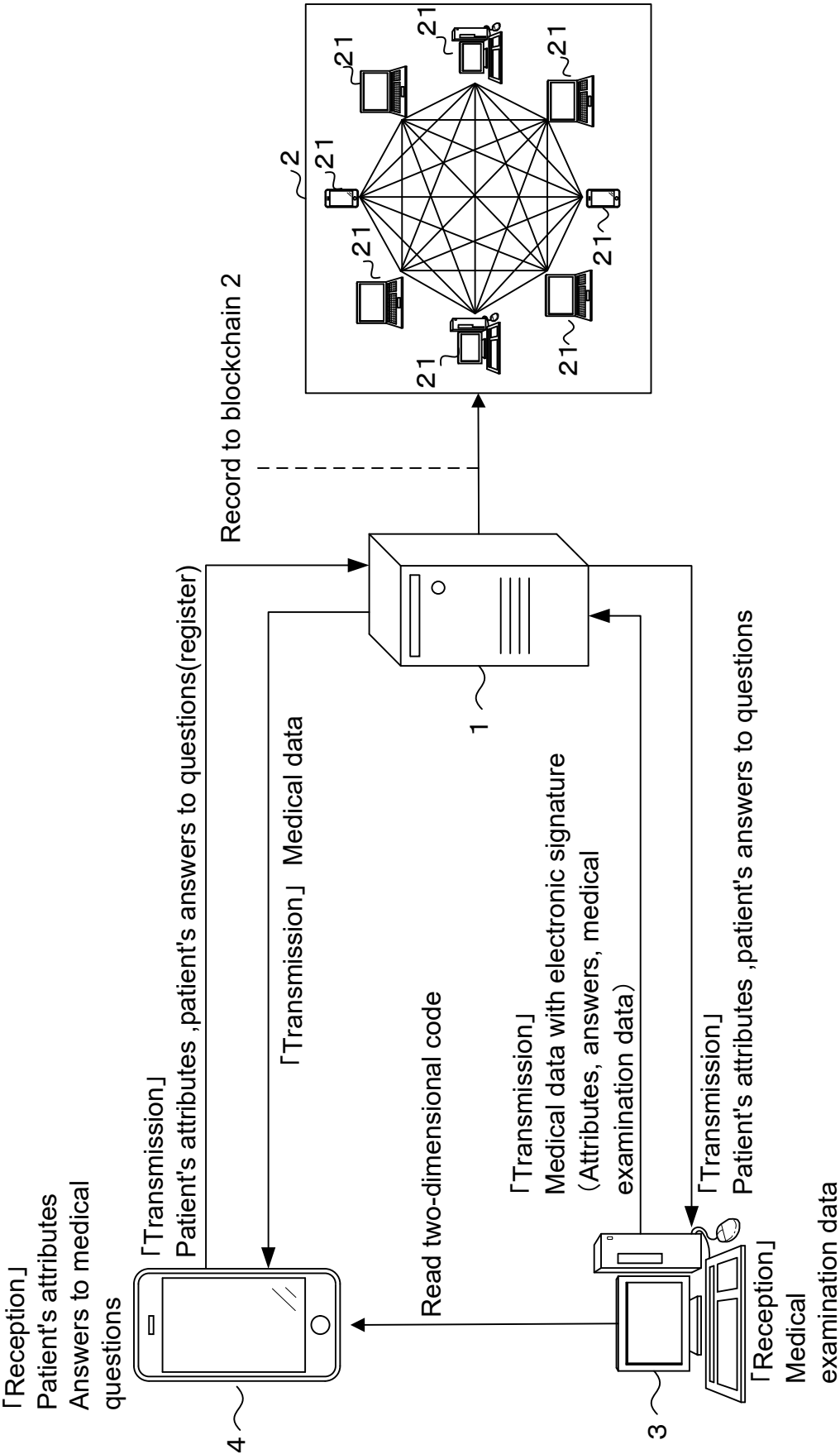


FIG. 11

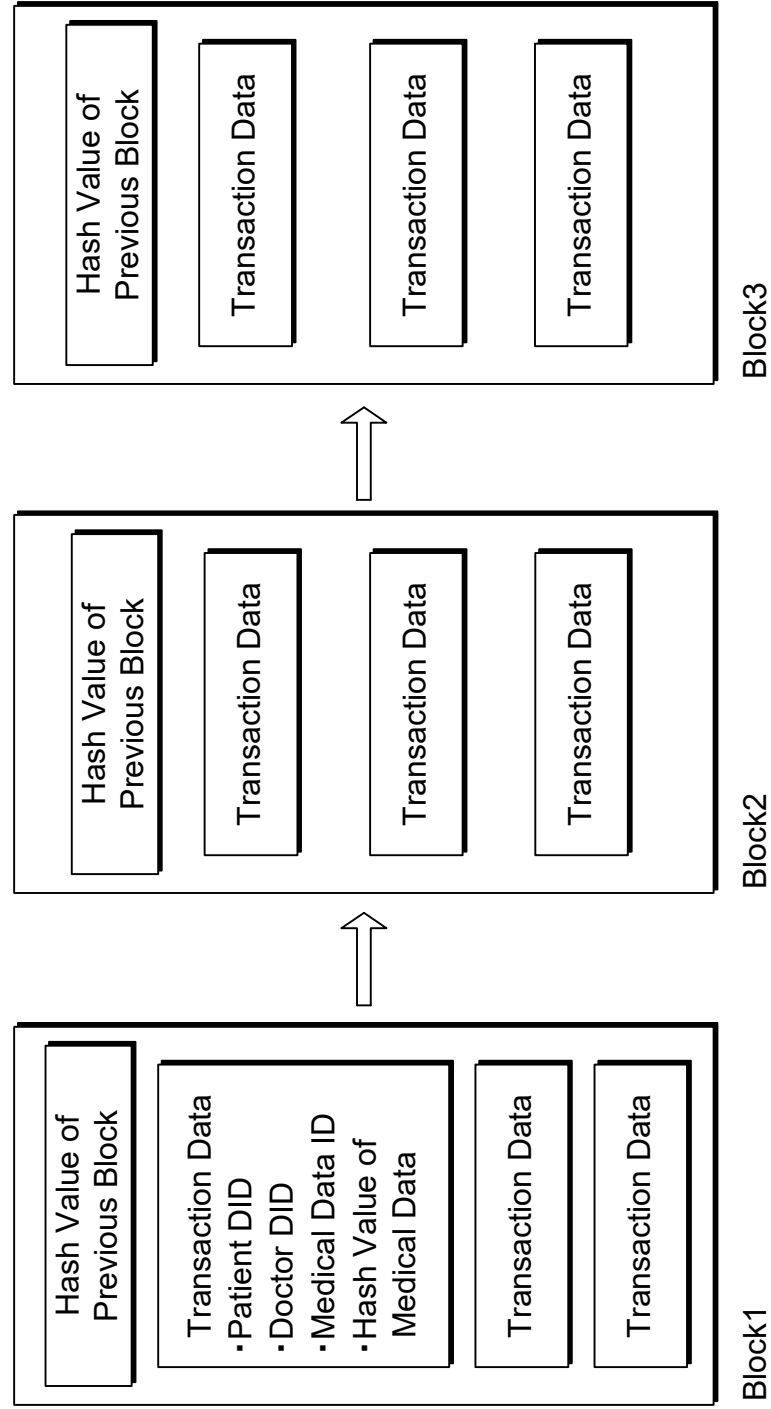


FIG. 12

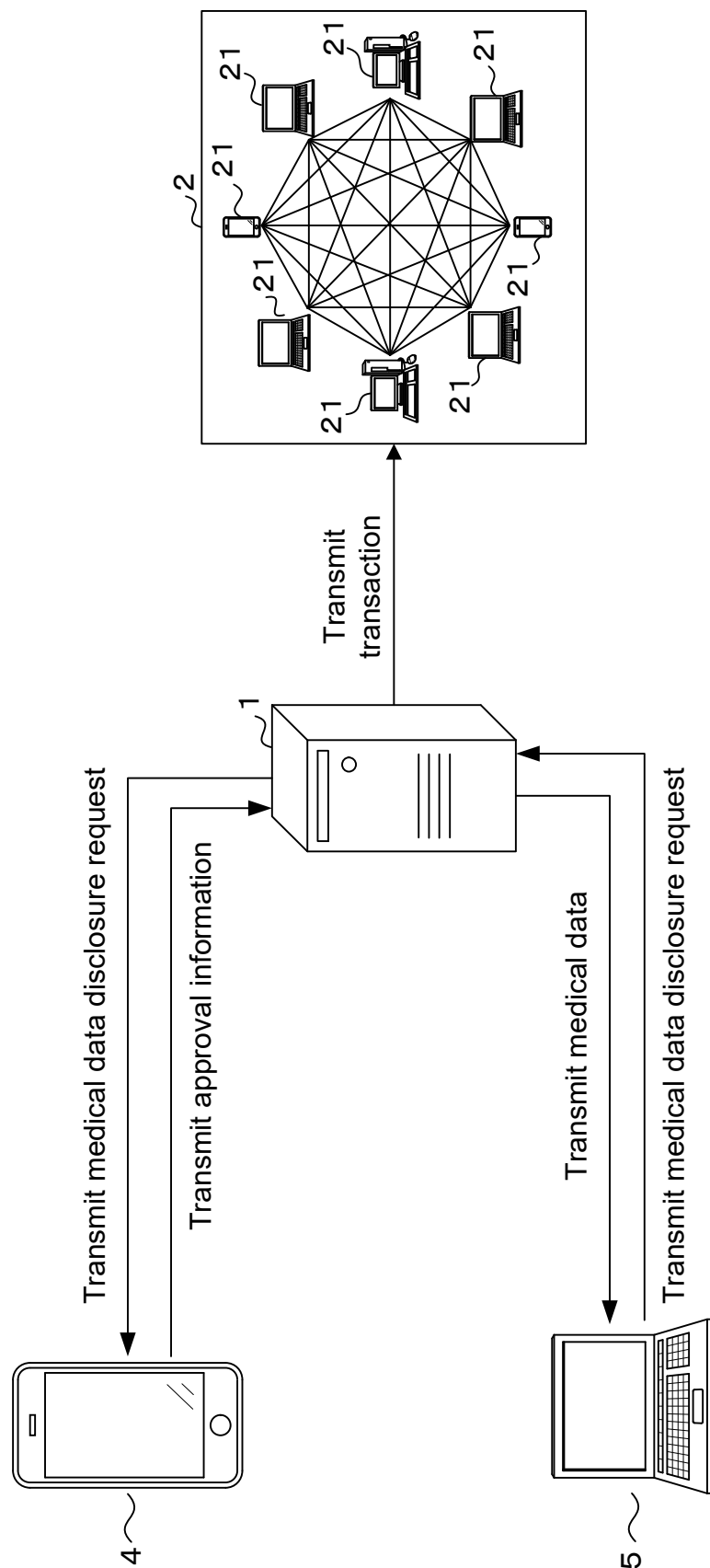


FIG. 13

11b 11c

PDQ-39

Save
Submit

Last Saved 2020/11/10, 21:43

Due to having Parkinson's disease, how often during the last month have you...

1. Had difficulty doing the leisure activities which you would like to do?

☐ Never
☐ Sometimes
☐ Often
☒ Occasionally

2. * * * * *

* * * * *

☐ * * * * *
☐ * * * * *
☐ * * * * *
☒ * * * * *

3.

☐ * * * * *
☐ * * * * *

11a

FIG. 14

Ask patient to submit data

Patient information

12a

Generate QR code

12b

Get data from patient

12c



12d

Name

Tanaka Hanako

Sex

Female

Patient DID

0x93c2f44e95e31cdd429684490c5e5d1588e5a6bd

Date of Birth

1977/08/03

Address

Tokyo

Submitted PRO

PDQ-39

View

MDS-UPDRS

View

EQ-5D

No data

12e

Diagnostic result

Severity classification

III

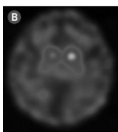
V

Medical diagnostic images

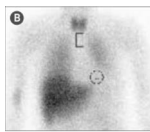
MRI

Photo

DAT Scan



Cardiac MIBG Scintigraphy



Brain Perfusion SPECT

Photo

Method

Result

Olfactory test

T&T Olfactometer

V

Level: 3

V

12f

Prescription information

Levodopa-Carbidopa-Tablet

V

Add

Edit

Levodopa-Carbidopa-Tablet

Blood pressure

Low: 70 mmHg

V

High: 120 mmHg

V

Pulse

80 pulses/min

V

Sign & Transmit Data back to Patient

Sign and transmit

12g

Successfully signed and transmitted

12h

FIG. 15

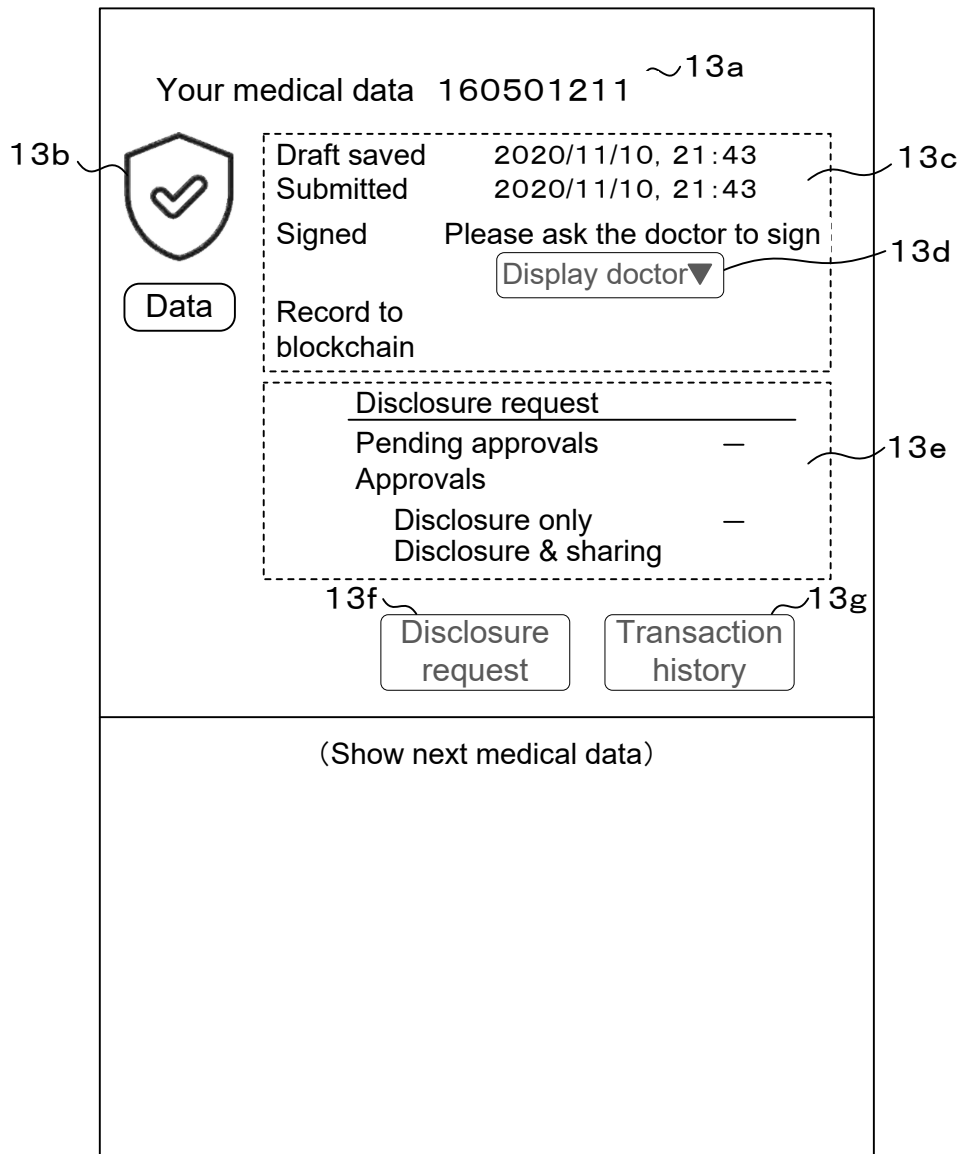


FIG. 16

The interface displays medical data for user 160501211. It includes a transaction history table with columns for status and time. A 'Doctor non-display' dropdown menu is shown. Below the table, there are buttons for 'Data' and 'Carve'. A section titled 'Record to blockchain' contains a table with disclosure request options. At the bottom, there are buttons for 'Disclosure request' and 'Transaction history', and a link to 'Show next medical data'.

Your medical data 160501211 ~ 13a

13b 

Draft saved	2020/11/10, 21:43
Submitted	2020/11/10, 21:43
Signed	2020/11/10, 21:44

13c

13d **Doctor non-display ▼**

Doctor Yamada Tarou
 Medical institution Yamada Hospital
 Doctor DID 0xab2e1e5199113b
 b7xxxxxxx

Data
Carve

Record to blockchain

Disclosure request	
Pending approvals	—
Approvals	—
Disclosure only	—
Disclosure & sharing	—

13e

13f **Disclosure request** **Transaction history** 13g

(Show next medical data)

FIG. 17

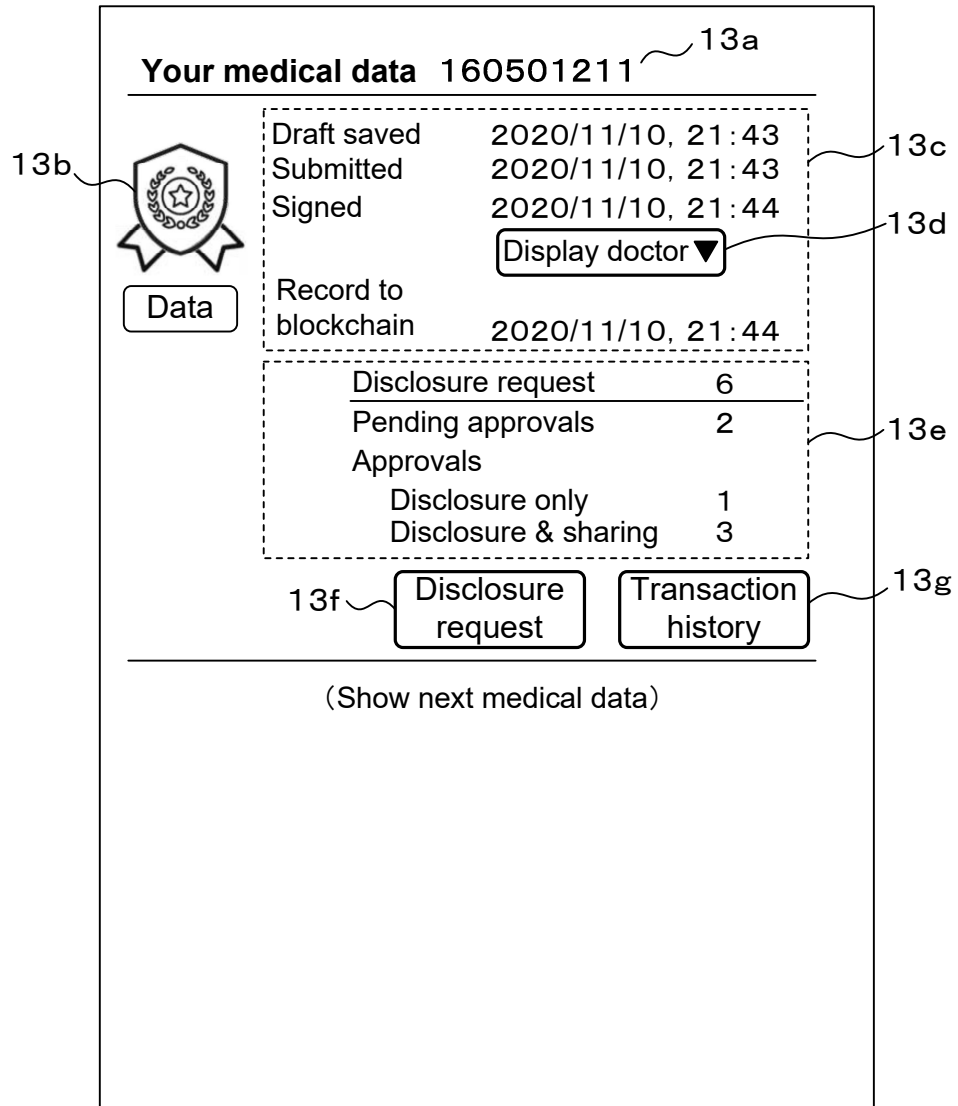


FIG. 18

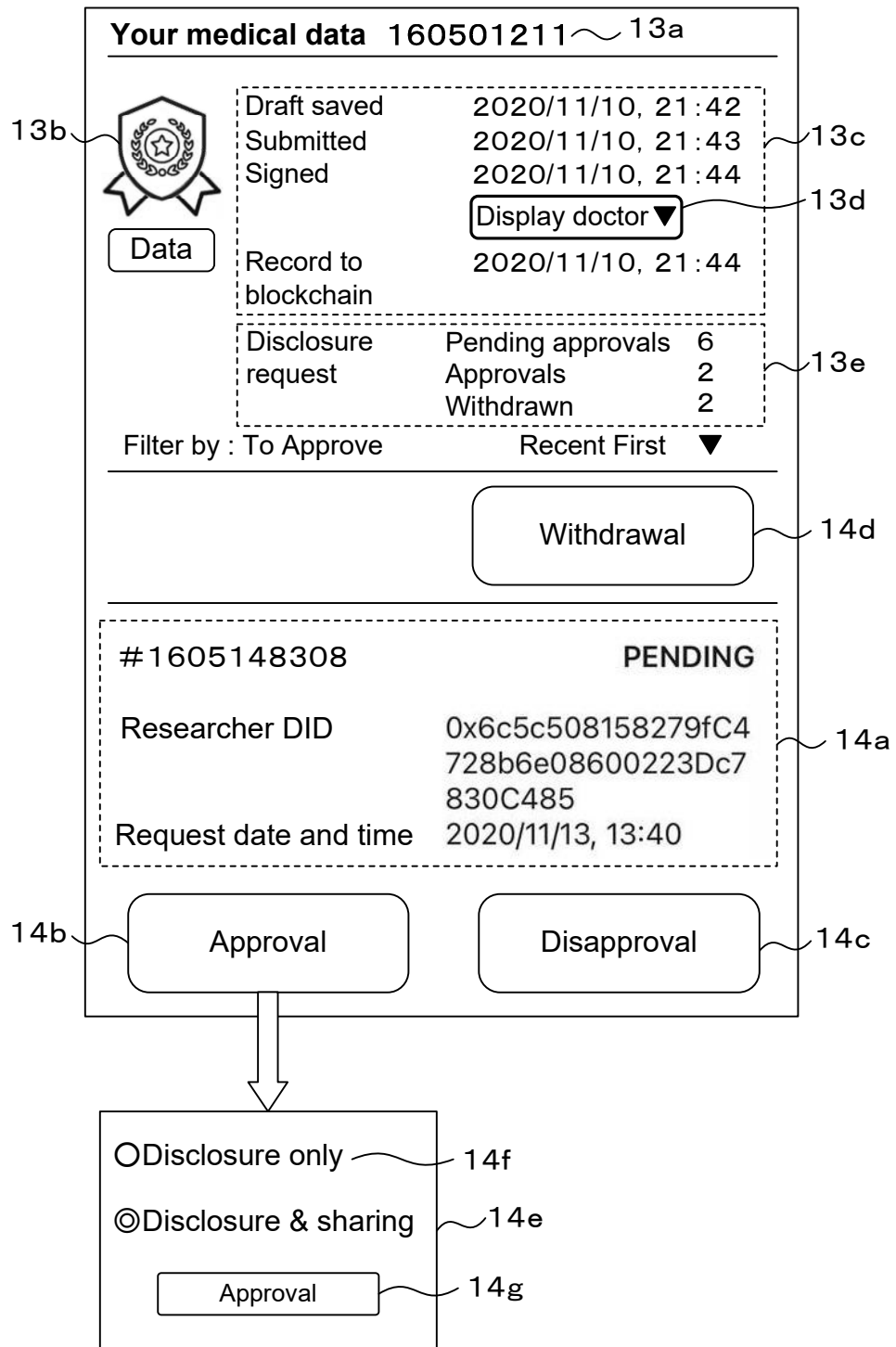


FIG. 19

Your medical data 160501211 ~ 13a



13b

Draft saved	2020/11/10, 21:42
Submitted	2020/11/10, 21:43
Signed	2020/11/10, 21:44

13c

13d

Display doctor ▼

Record to blockchain	2020/11/10, 21:44
----------------------	-------------------

13e

Disclosure request	Pending approvals	6
	Approvals	2

Data

Filter by: 0x00549d7.... Recent First ▼

15a

Researcher DID	d981344018609cc33
Patient DID	0x00540d7bdc209130e1b2e4c2da9f77a6905167f7
Transaction history date and time	2020/11/12, 13:29
Hash value	<u>0x04d169291784170e7db8ee945100823f9cd1f1399bc24b59ee8613f7622f630a</u>
Researcher DID	* * * * *
Patient DID	* * * * *
Transaction history date and time	* * * * *
Hash value	* * * * *

FIG. 20

Your medical data 160501211
13a



Draft saved	2020/11/10, 21:42
Submitted	2020/11/10, 21:43
Signed	2020/11/10, 21:44

Display doctor ▼

Record to blockchain 2020/11/10, 21:44

Disclosure request	Pending approvals	6
	Approvals	2

Low blood pressure	80
Pulse	80
Severity classification	II

Prescription information
Ropinirole-Patch-32mg

PDQ-39

Due to having Parkinson's disease, how often during the last month have you...

1. Had difficulty doing * * * * *

* * * * *

2. Had difficulty looking * * * * *

* * * * *

FIG . 21

17 a

Medical data Researcher : Suzuki taro

17 b

17 c

17 d

Research institution ID	Data owner	Data type	Request status	Action	Doctor's signature date and time	Researcher's request date and time	Patient's approval date and time	Patient's disapproval date and time	Patient's withdrawal date and time
#1603905893	0x27ab...d990	Medical data	Data not requested	Data request	2020/10/29 02:27				
#1603951680	0x1262...37e8	Medical data	Approved (viewing & sharing)	View	2020/10/29 15:08	2020/10/29 15:12	2020/10/29 15:12		
#1604544291	0x1262...37e8	Medical data	Withdrawn	Data request	2020/11/05 11:48	2020/11/05 11:58	2020/11/05 11:59		2020/11/05 12:03
#1605012211	0x2418...cc33	Medical data	Data not requested	Data request	2020/11/10 21:44				
#1605083281	0x2d5e...0b03	Medical data	Pending	Data request	2020/11/11 17:32	2020/11/12 17:35			

FIG . 22

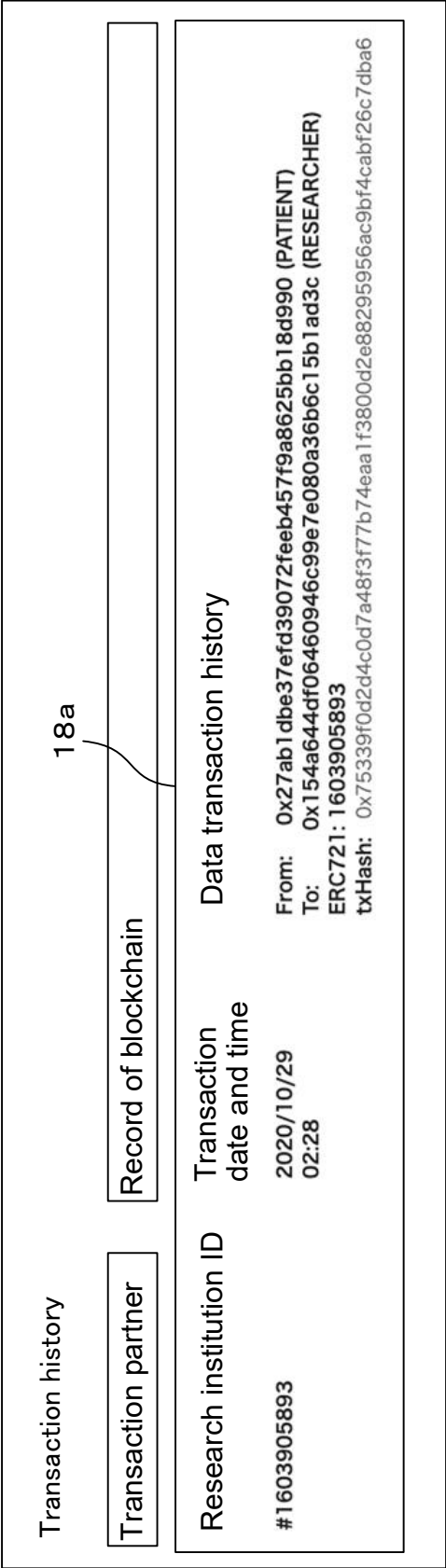


FIG. 23

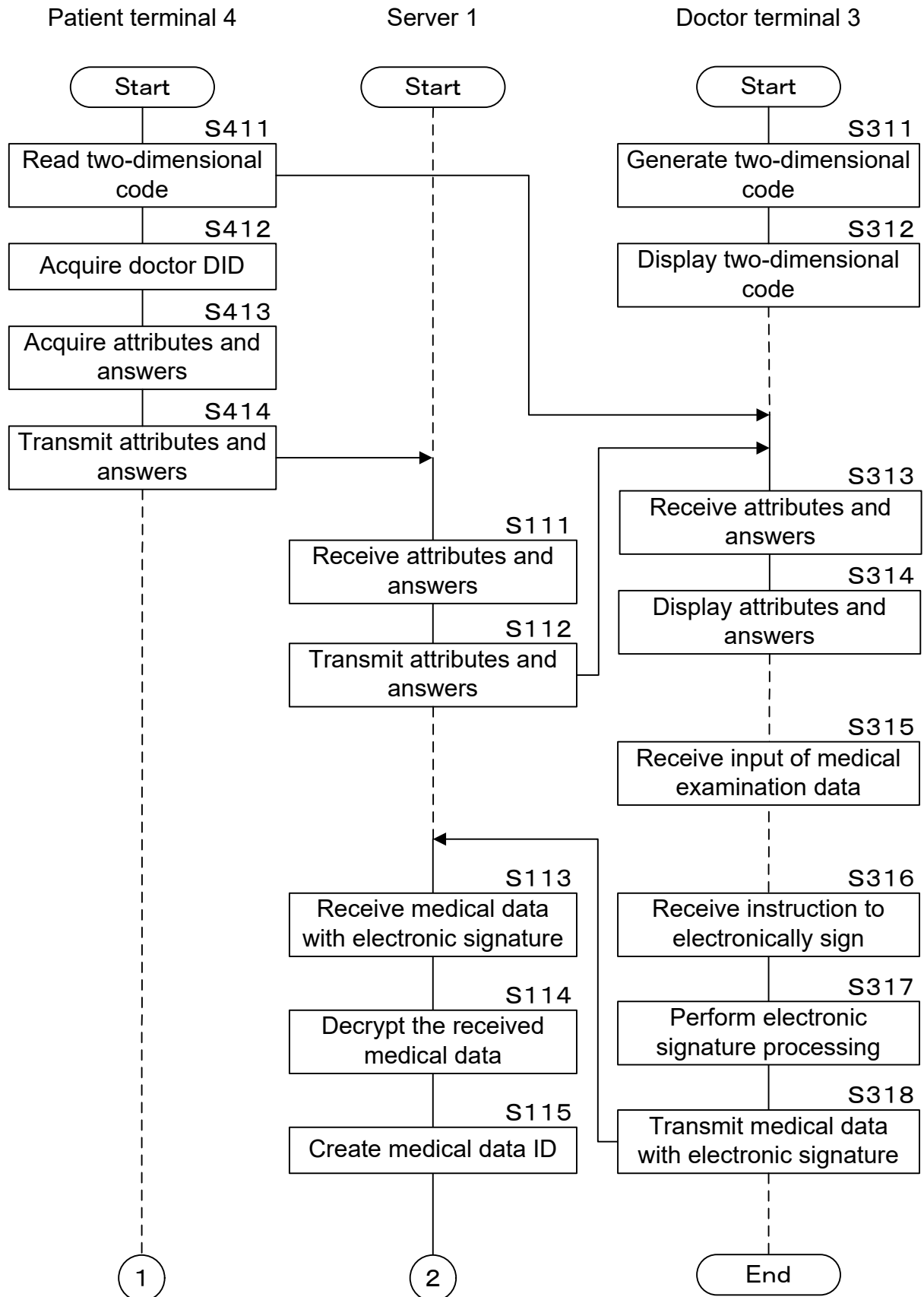


FIG. 24

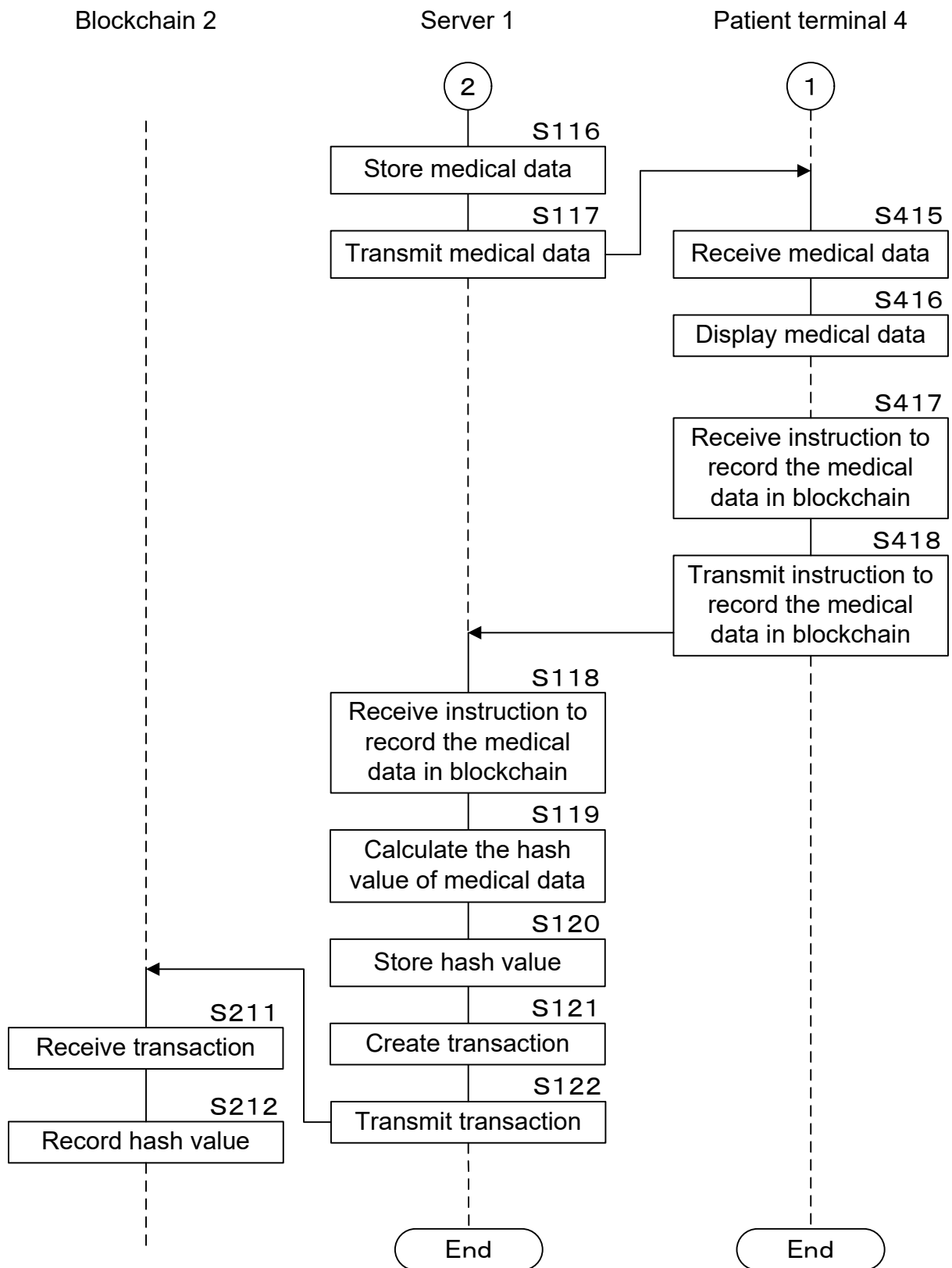


FIG. 25

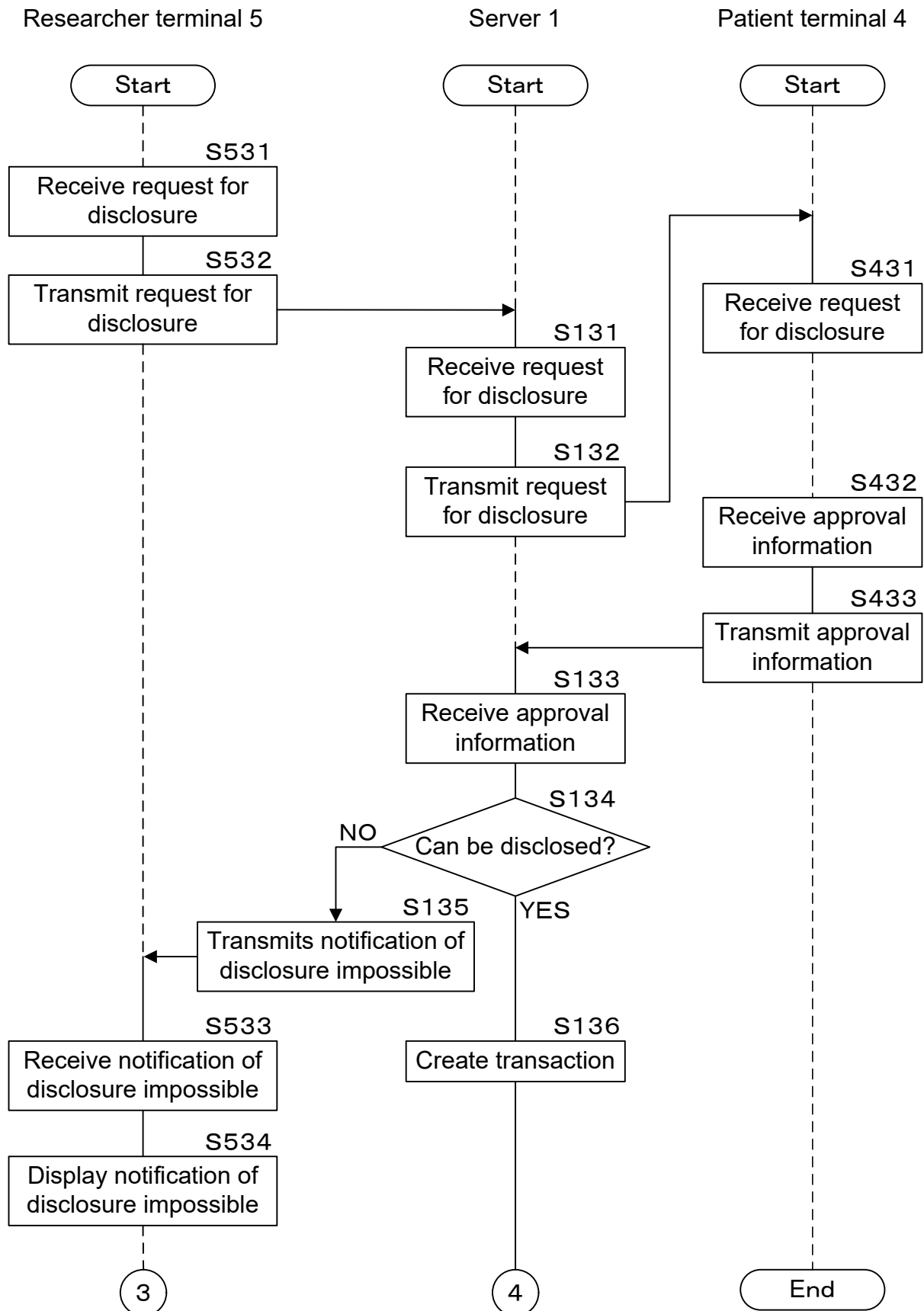


FIG. 26

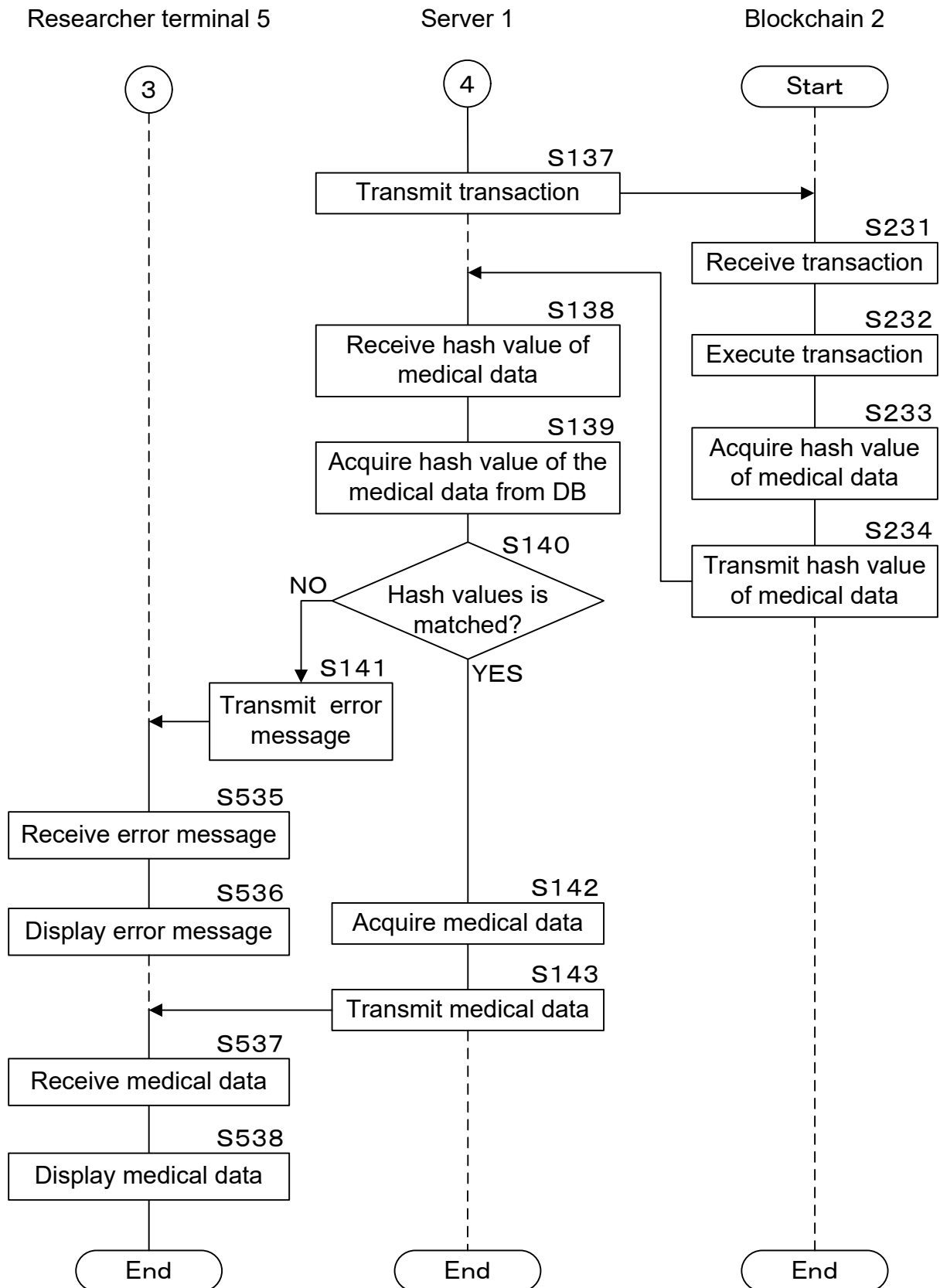


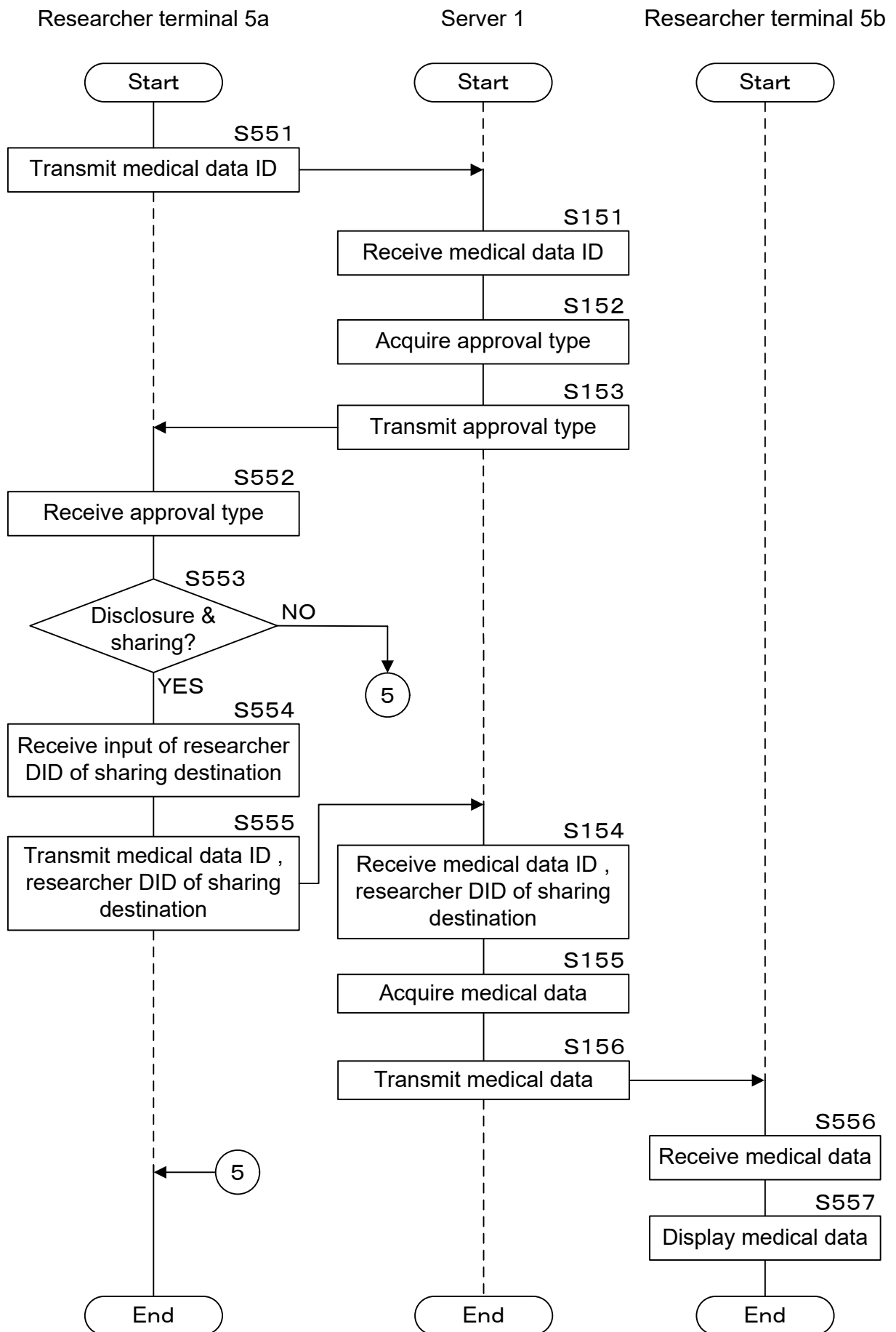
FIG. 27

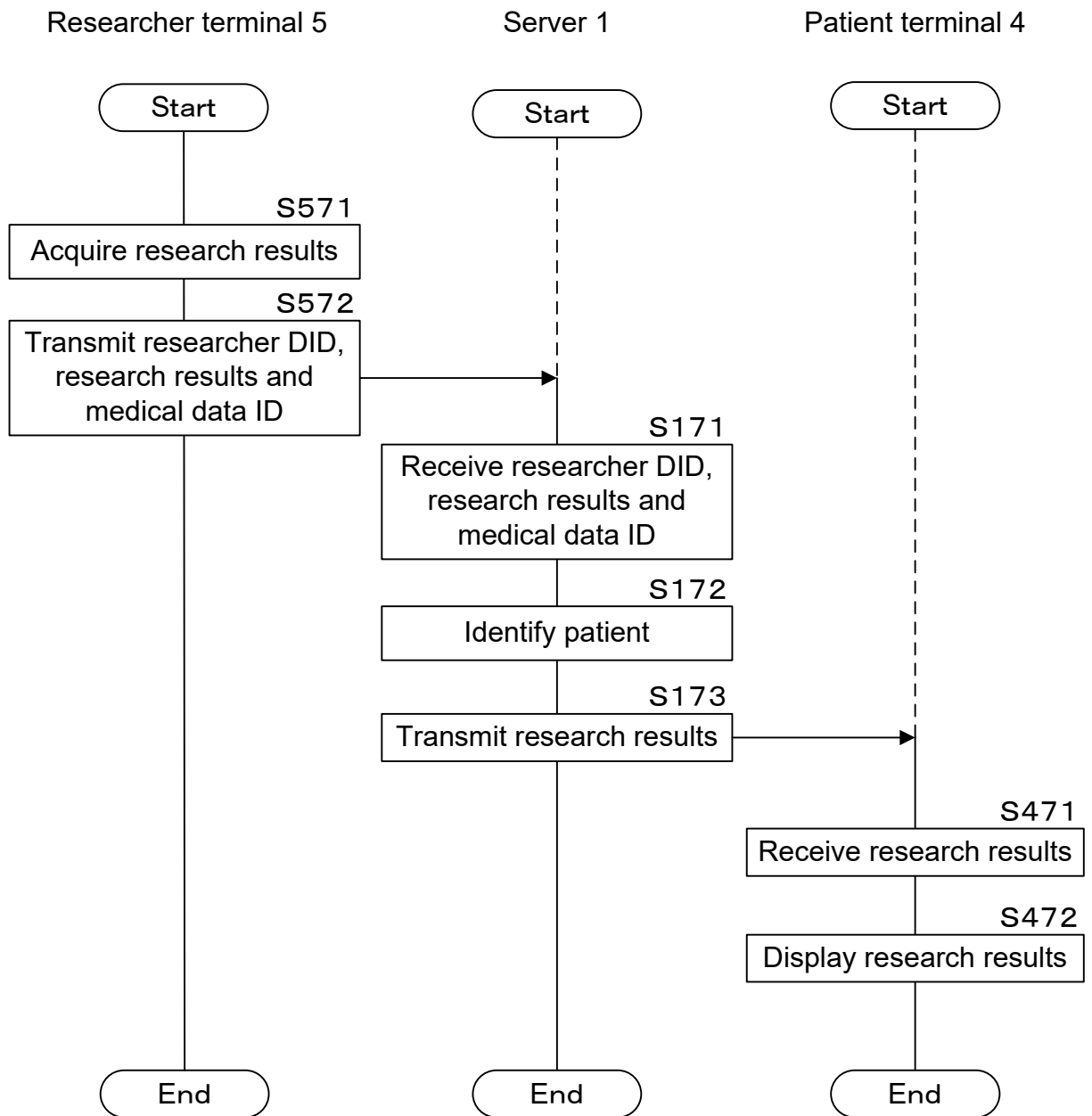
FIG. 28

FIG. 29

Medical data

Patient information

DID 0x126209aeb8e6affce4b72359d5153eb5914937e8 ~ 19a

Medical data

Severity
classification

I : 2012/06/08
II : 2017/10/31
III : 2020/03/04
... : ...

PDQ-39
MDS-UPDRS
EQ-5D

View
View
No data

19c

19b

Medical diagnostic images

MRI
Photo
19d

DAT Scan
19d

Cardiac MIBG Scintigraphy
19d

Brain Perfusion SPECT
Photo
19d

Olfactory test OSIT-J

13
12
11
10
9

1
2
3
4
5
6

19e

19f

Prescription information

2018/03/05~2019/02/05
2019/03/05~
.....

Levodopa 100mg-Carbidopa 10mg-Tablet
Levodopa 250mg-Carbidopa 25mg-Tablet
.....

Blood pressure

mmHg
120
100
80
60
40

1
2
3
4
5
6

High 19g

Low

Pulse

Pulses/min
100
80
60

1
2
3
4
5
6

19h

Download

Download 19i

FIG . 30

Management ID	Medical data ID	Patient DID	Researcher DID	Request status	Request date and time	Patient approval date and time
00001	1603905893	0x93c2f44e...	0x93c2f44e...	Waiting for approval		
00002	1234905353	0x01c2f56a...	0x01c2f56a...	Approved	*****	*****

Approval type	Patient disapproval date and time	Patient withdrawal date and time	Consent information	Re-disclosure period
			Re-disclosure is possible	Nov. 1, 2023 ~ Nov. 30, 2043
Disclosure & sharing	—	—	Re-disclosure is impossible	—

FIG. 31

FIG. 32

Researcher terminal 5

Server 1

Patient terminal 4

