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(12) **United States Patent**  
**Ehrlich et al.**

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(45) **Date of Patent:** **Aug. 31, 2021**

(54) **METHODS AND SYSTEMS OF  
PRIORITIZING TREATMENTS,  
VACCINATION, TESTING AND/OR  
ACTIVITIES WHILE PROTECTING THE  
PRIVACY OF INDIVIDUALS**

H04W 12/069; H04W 4/80; G06N 7/005;  
G08B 21/02; G07C 9/28; G07C 9/22;  
G06F 1/163; G06F 3/14; G09G 5/36;  
(Continued)

(71) Applicants: **Gal Ehrlich**, Ramat-Gan (IL); **Maier Fenster**, Petach-Tikva (IL)

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(72) Inventors: **Gal Ehrlich**, Ramat-Gan (IL); **Maier Fenster**, Petach-Tikva (IL)

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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*Primary Examiner* — Anh V La

(65) **Prior Publication Data**

US 2021/0082583 A1 Mar. 18, 2021

(57) **ABSTRACT**

(30) **Foreign Application Priority Data**

Aug. 11, 2020 (IL) ..... 276648  
Aug. 11, 2020 (IL) ..... 276665  
Sep. 1, 2020 (IL) ..... 277083

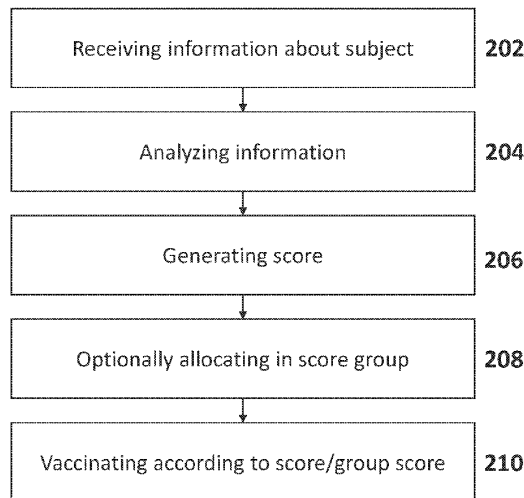
System and methods for anonymously selecting subjects for treatment against an infectious disease caused by a pathogen. The system comprises a plurality of electronic devices comprising instructions to generate an ID and, when in proximity of another such electronic device, one or both electronic devices transmit/receive the ID to/from the other electronic device. Then, a score is generated based on a plurality of such received IDs. Additionally, based on information received from a server, relevant treatment instructions are displayed to the subjects based on the received information and the score. The server comprises instructions for sending to the plurality of electronic devices the information to be displayed with the relevant treatment instructions, additionally the server and/or the electronic devices comprise instructions to generate a prediction of likelihood of a subject transmitting the pathogen, based on the score of the subject.

(51) **Int. Cl.**  
**G06Q 10/00** (2012.01)  
**G16H 50/80** (2018.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **G16H 50/80** (2018.01); **G06N 7/005** (2013.01); **G16H 50/30** (2018.01); **H04W 4/023** (2013.01); **H04W 4/029** (2018.02)

(58) **Field of Classification Search**  
CPC ..... G16H 50/80; G16H 50/30; G16H 15/00; G16H 10/60; H04W 4/023; H04W 4/029;

**37 Claims, 12 Drawing Sheets**



- (51) **Int. Cl.**  
**H04W 4/02** (2018.01)  
**G16H 50/30** (2018.01)  
**G06N 7/00** (2006.01)  
**H04W 4/029** (2018.01)
- (58) **Field of Classification Search**  
 CPC .. G09G 5/02; G09G 2354/00; G06K 7/10366;  
 H04L 9/30  
 USPC ..... 340/539.13, 539.12, 539.23, 539.11;  
 705/2  
 See application file for complete search history.

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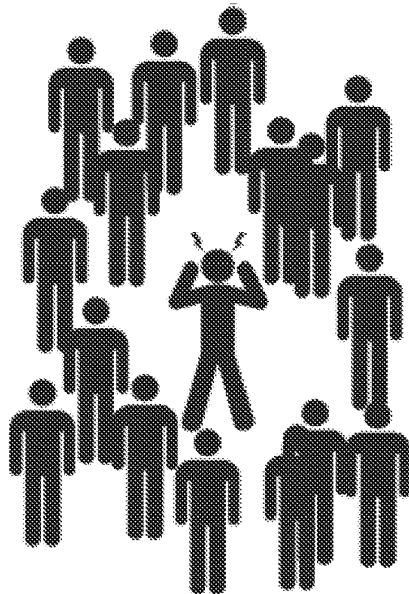
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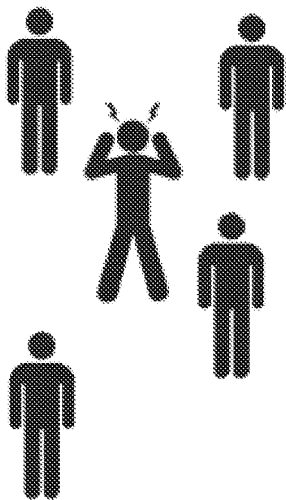
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Superspreader



Non-Superspreader

Figure 1

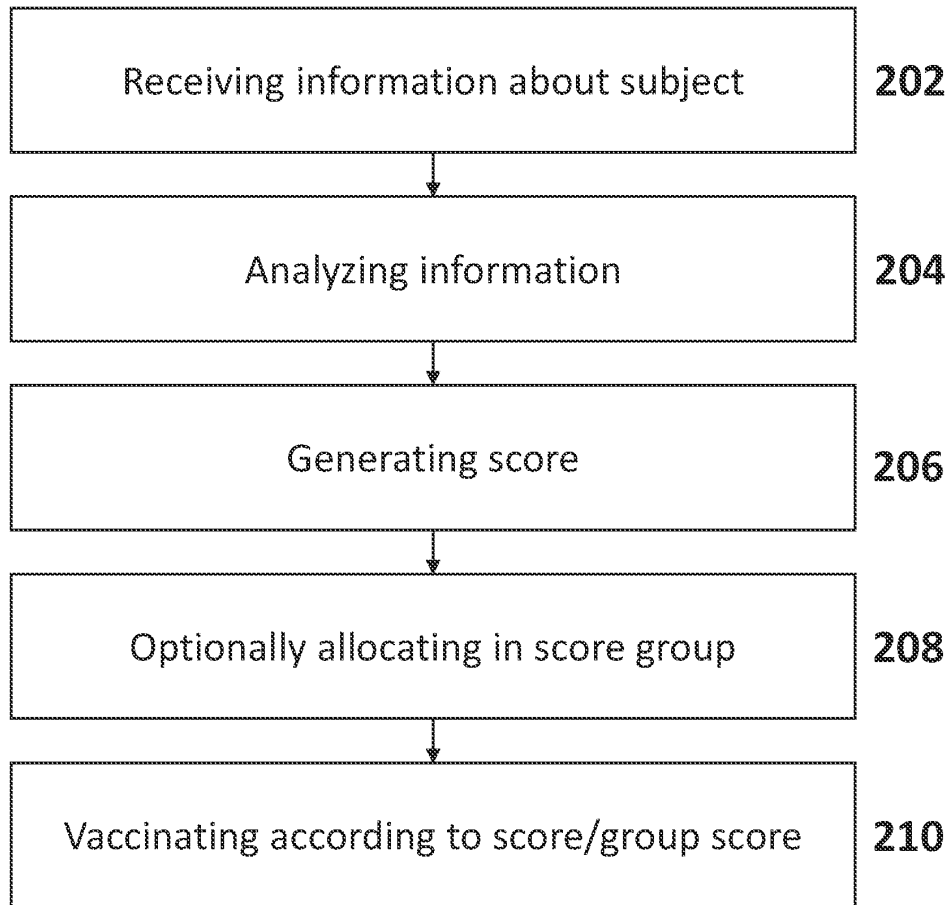


Figure 2

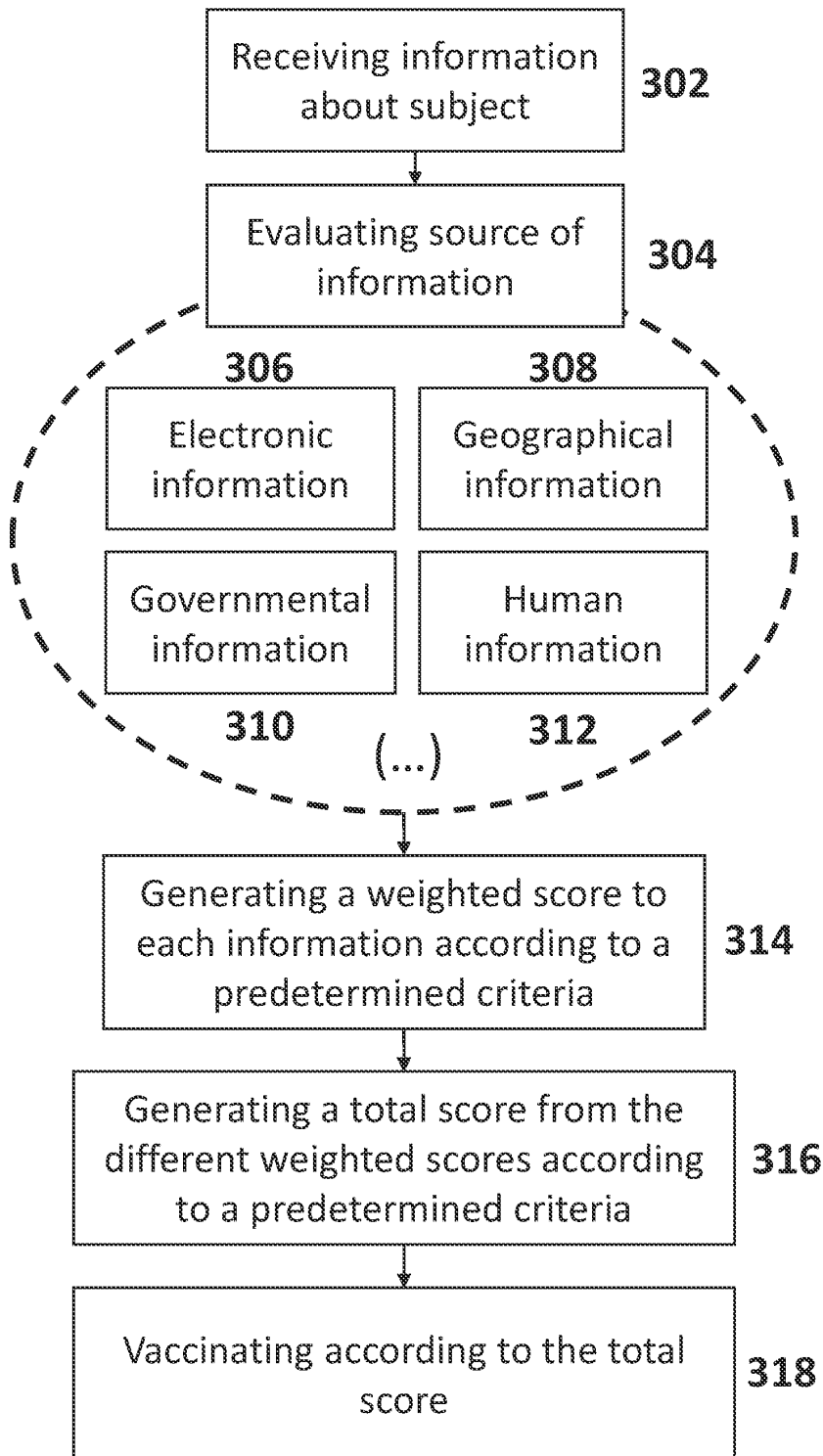


Figure 3

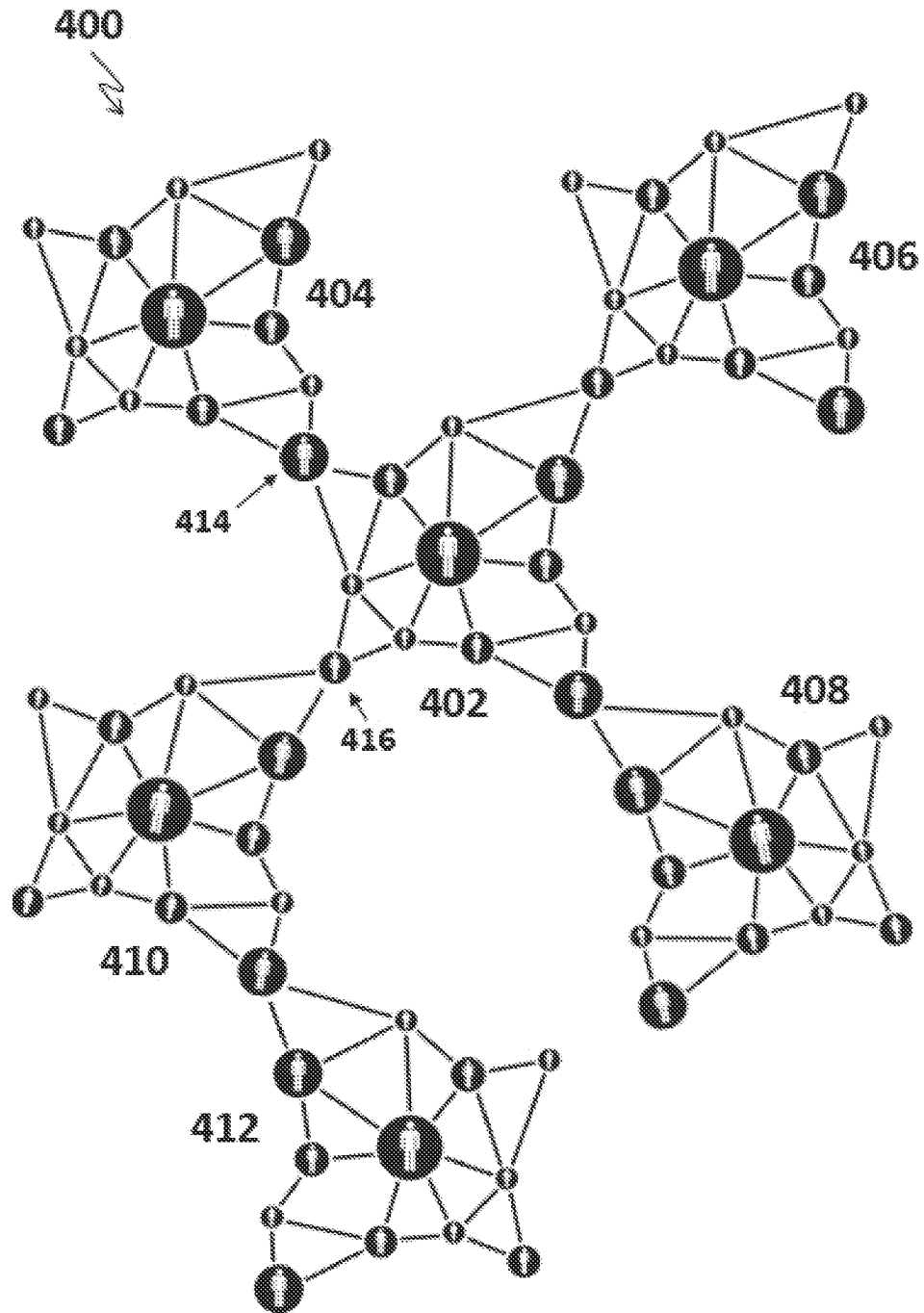


Figure 4



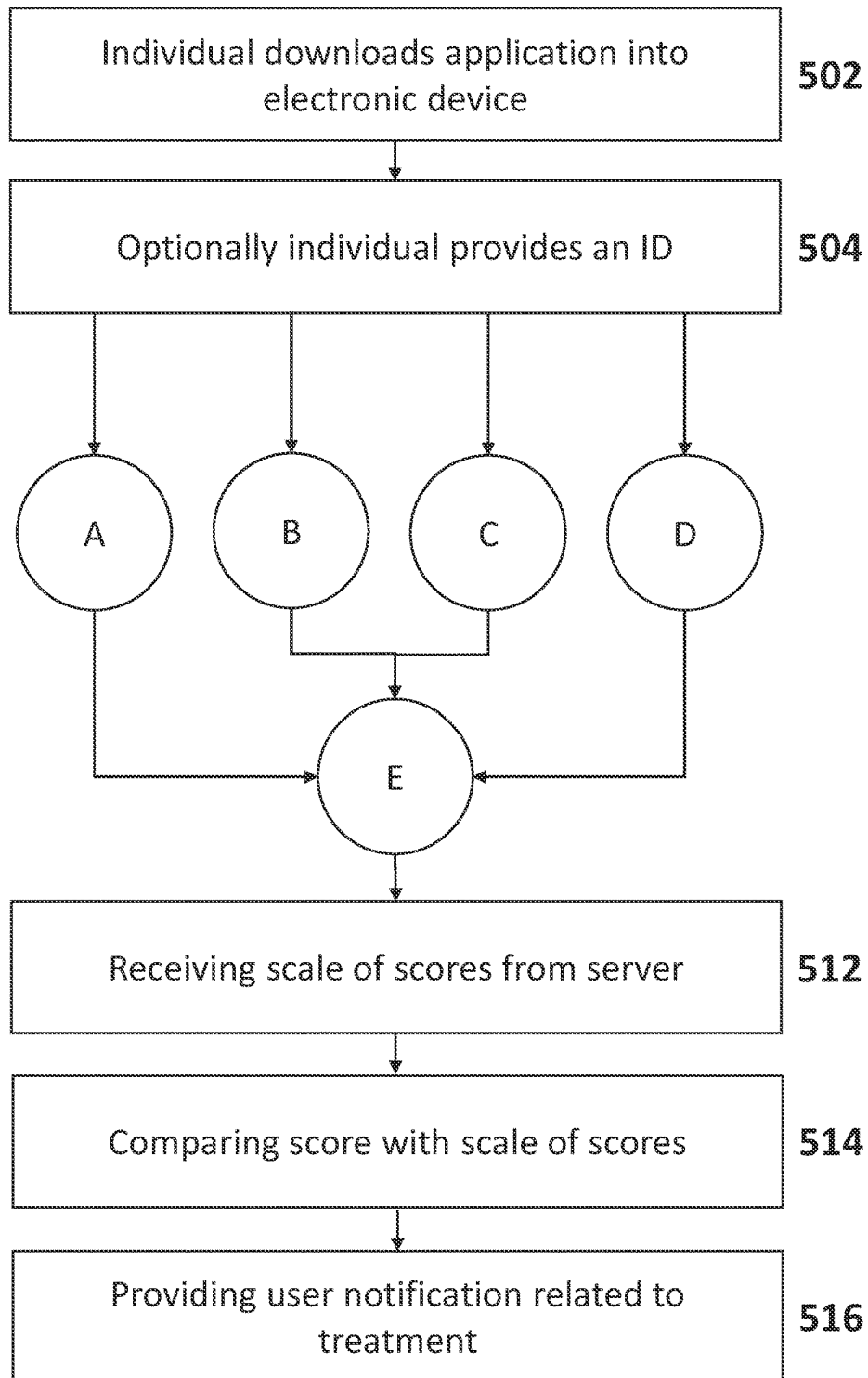


Figure 5a

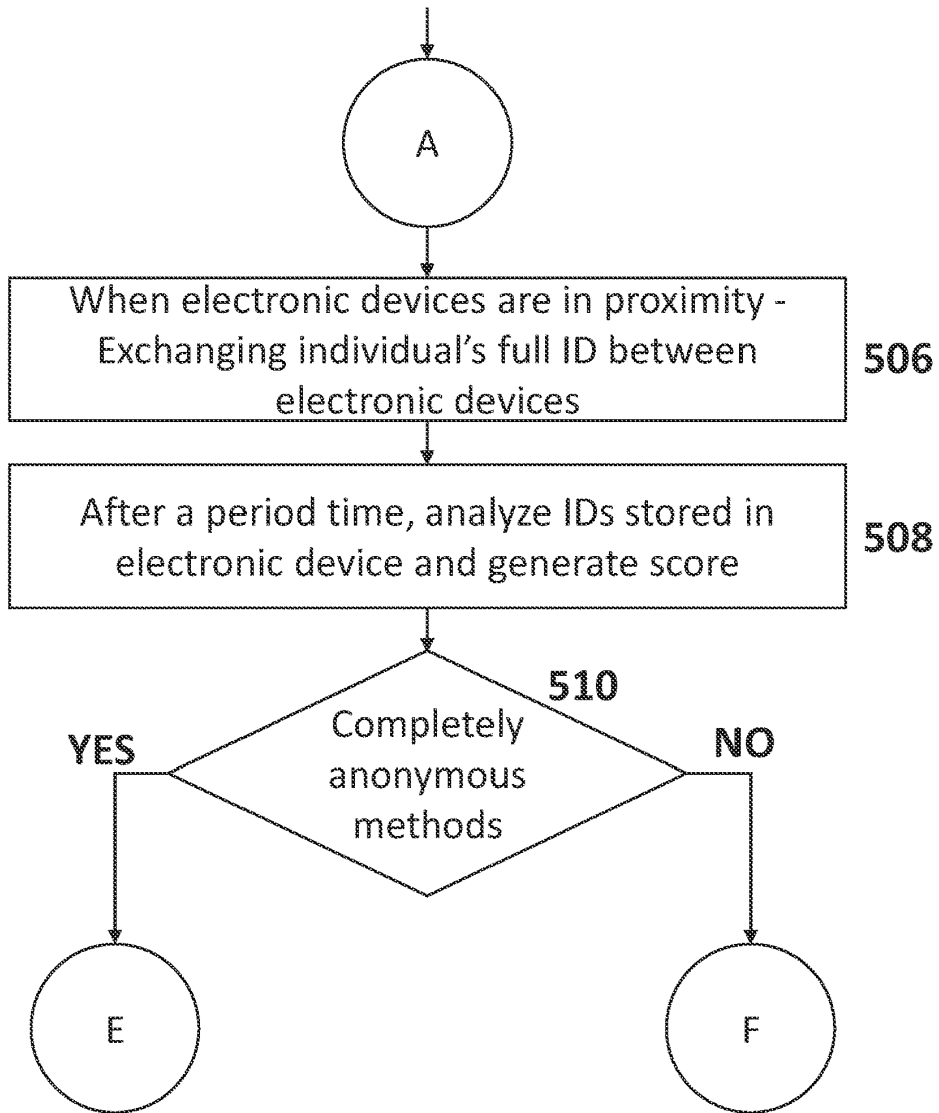


Figure 5b

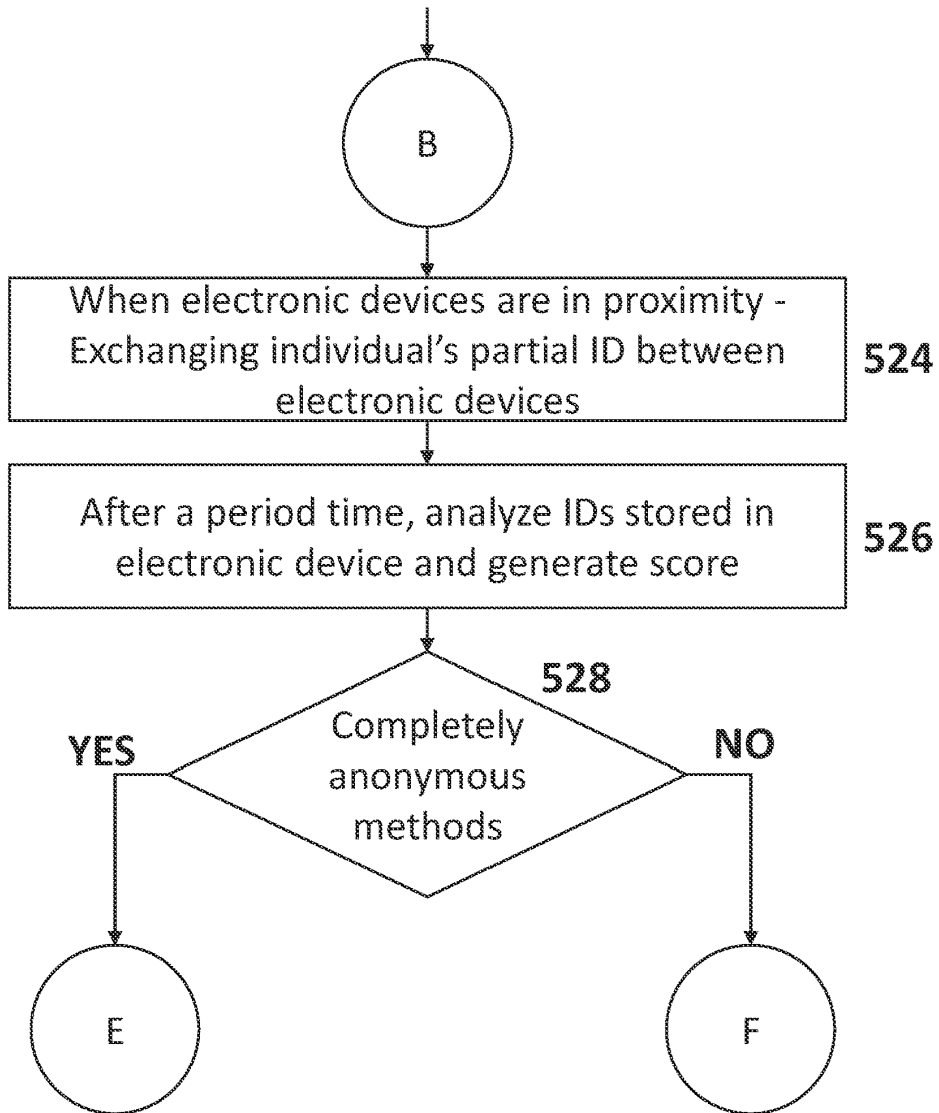


Figure 5c

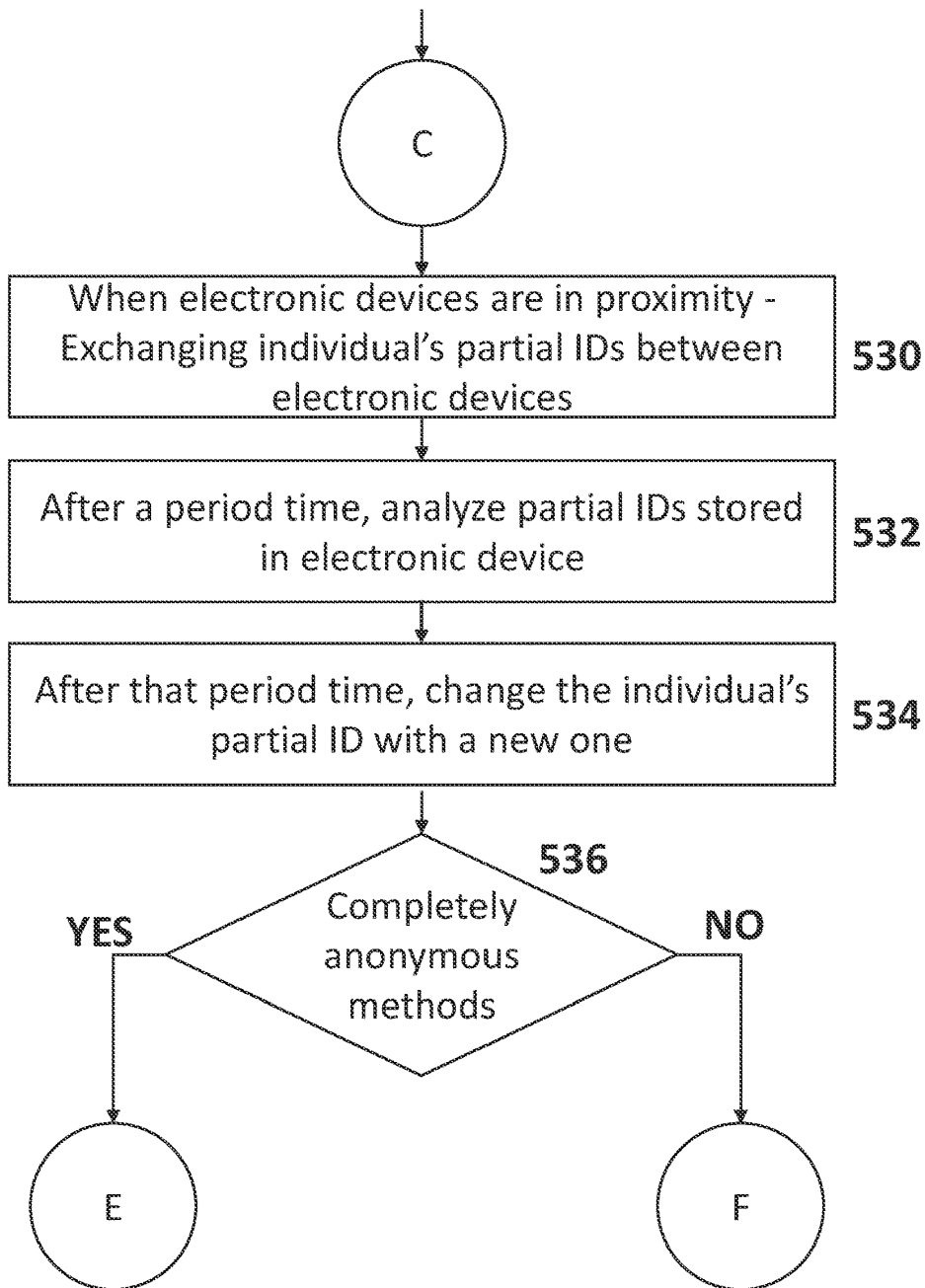


Figure 5d

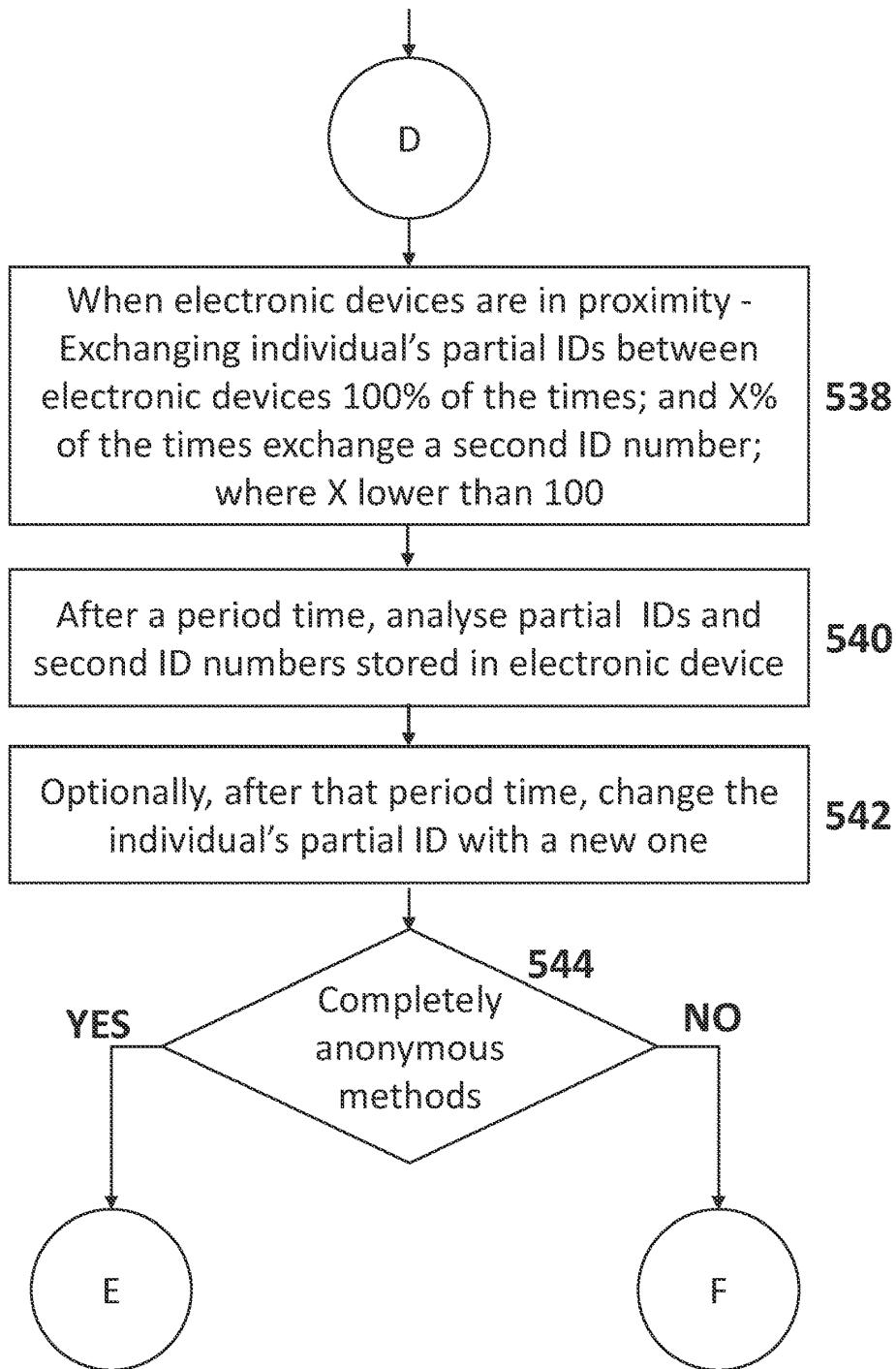


Figure 5e

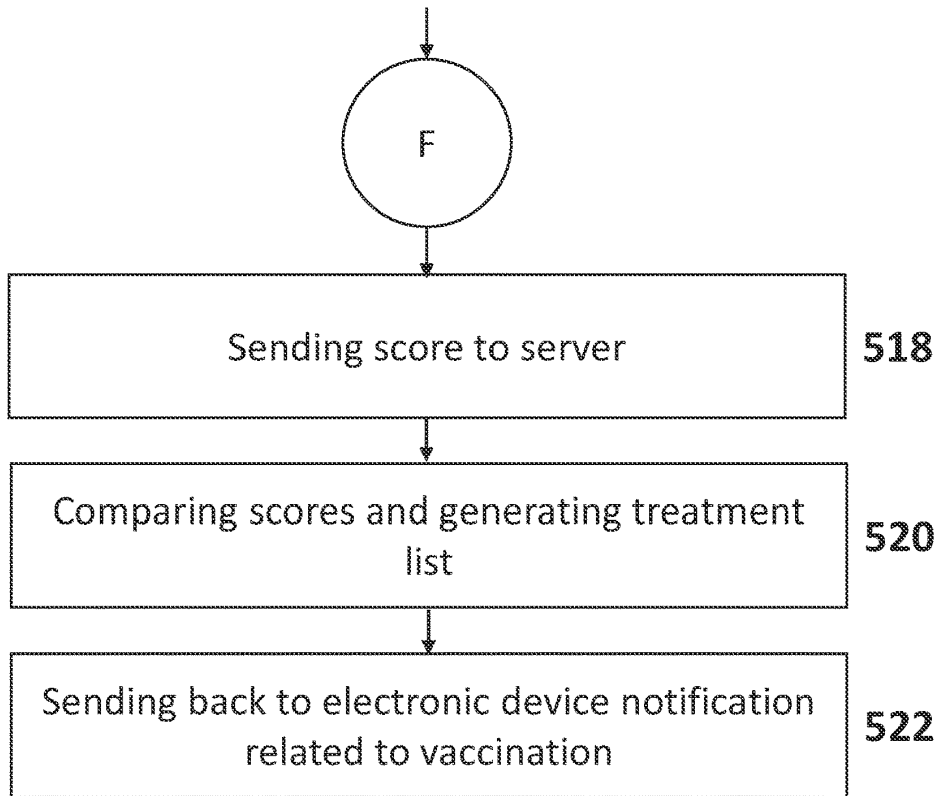


Figure 5f

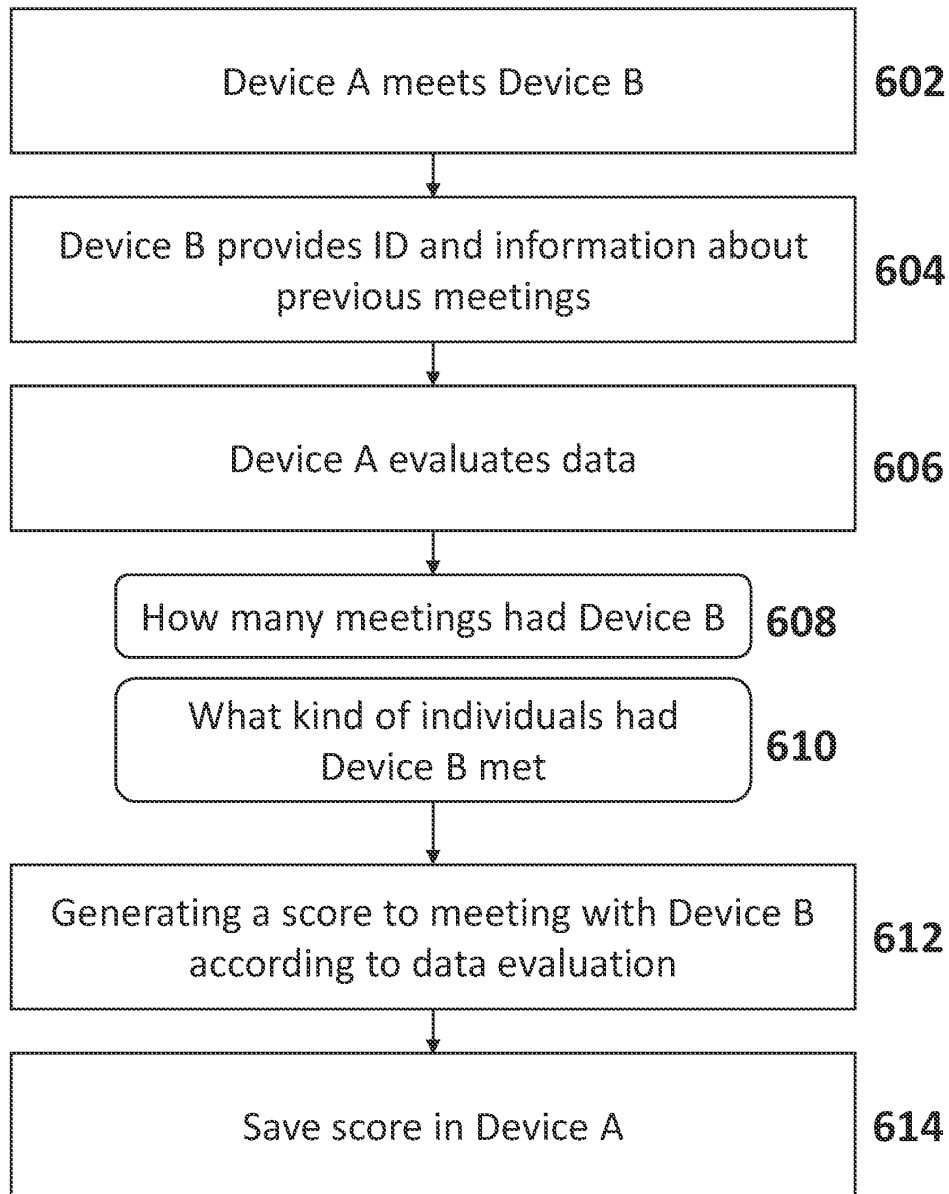


Figure 6

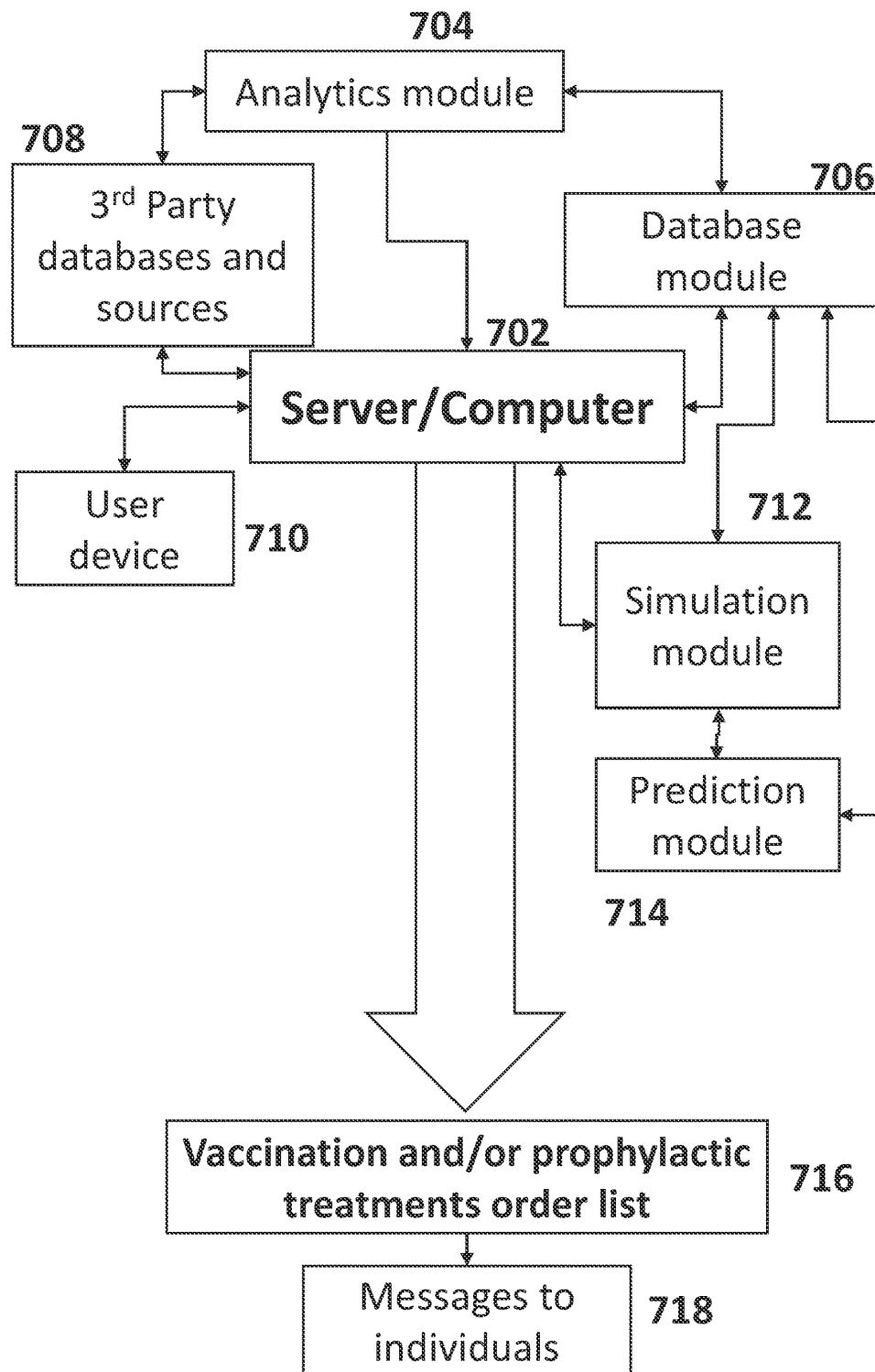


Figure 7