



|    | Cluster descriptor                  | Topic division                                  | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |   |   |
|----|-------------------------------------|-------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|---|
| 1  | Virtual Reality                     | Technology use in neurological rehabilitation   |      |      |      |      |      |      |      |      |      |      |      |      | •    |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    |   |   |
| 2  | Heart failure                       | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    |   |   |
| 3  | Cardiac rehab                       | mHealth, secondary prevention & clinical trials |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | • |   |
| 4  | Lead extraction                     | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | • |   |
| 5  | Blood pressure reactivity           | mHealth, secondary prevention & clinical trials |      |      |      |      | •    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |   |
| 6  | Remote monitoring                   | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | • |   |
| 7  | Arrhythmias                         | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    |      |      | •    | •    | •    | •    | •    | •    | •    | • |   |
| 8  | Stroke Care                         | Technology use in neurological rehabilitation   |      |      |      |      |      |      |      |      |      | •    |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    |      | •    |      |   |   |
| 9  | Blood pressure telemonitoring       | mHealth, secondary prevention & clinical trials |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | • |   |
| 10 | Electronic medical record           | Wearable technology applications                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    |      |      | •    |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | • |   |
| 11 | Wearable technologies               | Wearable technology applications                |      |      |      |      |      |      |      |      |      |      |      |      |      | •    |      |      |      |      | •    | •    | •    |      |      | •    |      | •    | •    | •    | •    | •    | •    | •    | • |   |
| 12 | Radiology in patients with CIEDs    | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | • | • |
| 13 | Activity tracking                   | mHealth, secondary prevention & clinical trials |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | • | • |
| 14 | Bypass surgery                      | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      | •    |      |      | •    | •    | •    | •    |      |      |      |      |      | •    |      |      |      |      |      |      |   |   |
| 15 | Cardiac resynchronisation therapy   | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | •    | • |   |
| 16 | Cardiac reactivity (gaming)         | mHealth, secondary prevention & clinical trials |      |      | •    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |   |
| 17 | Heart failure telemonitoring        | CIEDS & electrophysiology                       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    |      |      | •    | •    | •    | •    | •    | •    | •    | •    | • | • |
| 18 | Gamification                        | Technology use in neurological rehabilitation   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    |      | •    |      |      | •    | •    |      |      |      |      |      |      |      |      |      |      |   |   |
| 19 | Out-of-hospital cardiac arrest      | Emergency cardiovascular care                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | •    | •    | •    | • | • |
| 20 | Software analysis of cardiac output | Wearable technology applications                |      |      |      |      |      |      |      |      |      |      |      |      | •    |      |      |      |      |      | •    |      | •    |      | •    |      |      |      |      | •    |      |      |      |      |   |   |

**Supplementary Figure 3** Analysis of the activity of digital health innovation within cardiovascular research (1990-2021) as reflected in referencing patterns of citing articles. Moderate activity is represented by the symbol • and strong activity is represented by ••. The colour-coding reflects the divisions of the topic as shown in Figure 4. CVD: cardiovascular disease, CIEDs: cardiac implantable electronic devices.

**Supplementary Table 1** Clusters of author collaboration<sup>1</sup>.

| Cluster       | Author name (number of documents, number of links, total link strength*)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Research Focus                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| #1<br>(n=30)  | Auricchio, Angelo (24, 22, 14); Birgersdotter-Green, Ulrika (18, 4, 4); Blomstrom-Lundqvist, Carina (19, 21, 17); Bongiorno, Maria Grazia (27, 23, 17); Brachmann, Johannes (10, 7, 3); Brugada, Josep (10, 17, 9); Burri, Haran (15, 18, 11); Costa, Roberto (10, 9, 4); Cowie, Martin (24, 9, 8); Cronin, Edmond (10, 11, 9); Dagues, Nikolaos (20, 24, 19); Dickstein, Kenneth (14, 15, 12); Epstein, Laurence (12, 18, 7); Glikson, Michael (10, 15, 4); Heidebuchel, Hein (13, 20, 10); Hindricks, Gerhard (31, 23, 23); Kautzner, Josef (15, 22, 12); Kirchhof, Paulus (11, 16, 7); Lampert, Rachel (11, 9, 6); Lewalter, Thorsten (13, 21, 11); Nielsen, Jens Corsedis (18, 19, 11); Passman, Rod (10, 11, 6); Richter, Sergio (10, 2, 9); Russo, Andrea (10, 11, 8); Sanders, Prashanthan (13, 6, 3); Slotwiner, David (10, 20, 7); Taborsky, Milos (15, 14, 10) Vardas, Panos (20, 23, 17); Varma, Niraj (37, 38, 31); Witte, Klaus (10, 1, 4) | -Arrhythmias<br>-Cardiac electrophysiology<br>-Cardiac pacing                                            |
| #2<br>(n=22)  | Asirvatham, Samuel (32, 12, 21); Boehmer, John (13, 6, 5); Bordachar, Pierre (16, 5, 14); Cha, Yong-Mei (32, 17, 32); Deharo, Jean-Claude (21, 19, 12); Desimone, Christopher (12, 12, 12); Felmlee, Joel (10, 5, 10); Friedman, Paul (63, 18, 56); Haissaguerre, Michel (11, 3, 10); Hayes, David (27, 27, 25); Hodge, David (11, 14, 10); Khairy, Paul (10, 2, 2); Kramer, Daniel (12, 5, 3); Madhavan, Malini (13, 13, 12); Marijon, Eloi (10, 5, 2); Mcleod, Christopher (11, 9, 11); Mueller, Paul (11, 5, 8); Mulpuru, Siva (12, 8, 10); Ploux, Sylvain (13, 3, 12); Saxon, Leslie (15, 8, 6); Singh, Jagmeet (10, 3, 2); Swetz, Keith (10, 2, 4)                                                                                                                                                                                                                                                                                                 | -Atrial fibrillation<br>-Imaging<br>-ECG<br>-CIED lead management & extraction                           |
| #3<br>(n=22)  | Biffi, Mauro (31, 31, 30); Boriani, Giuseppe (68, 44, 58); Calo, Leonardo (13, 12, 10); Capucci, Alessandro (14, 17, 12); Cumis, Antonio (23, 23, 21); D'Onofrio, Antonio (26, 19, 24); Diemberger, Igor (15, 14, 15); Gargaro, Alessio (15, 12, 15); Giacomelli, Daniele (14, 9, 12); Iacopini, Saverio (10, 16, 8); Landolina, Maurizio (17, 17, 16); Lunati, Maurizio (10, 13, 8); Morichelli, Loredana (12, 13, 12); Padeletti, Luigi (11, 23, 11); Palmisano, Pietro (10, 13, 10); Ricci, Renato Pietro (37, 29, 35); Sanitni, Massimo (10, 11, 8); Valsecchi, Sergio (22, 17, 16); Vitolo, Marco (11, 9, 11); Zanolto, Gabriele (21, 17, 18); Ziacchi, Matteo (14, 16, 14)                                                                                                                                                                                                                                                                        | -Atrial fibrillation<br>-Cardiac resynchronization therapy                                               |
| #4<br>(n=22)  | Abella, Benjamin (13, 5, 11); Albert, Nancy (10, 8, 8); Asch, David (14, 5, 8); Audebert, Heinrich (27, 5, 16); Blewer, Audrey (13, 6, 13); Bosworth, Hayden (16, 2, 2); Bowles, Kathryn (12, 1, 2); Chumbler, Neale (11, 2, 2); Demaerschalk, Bart (15, 2, 1); Fonarow, Gregg (30, 14, 21); Heidenreich, Paul (12, 12, 10); Hernandez, Adrian (12, 7, 7); Leary, Marion (17, 7, 15); Liu, Jun (10, 2, 3); Merchant, Raina (13, 7, 11); Peterson, Eric (17, 14, 11); Riegel, Barbara (13, 8, 5); Rumsfeld, John (14, 12, 8); Schenkel, Johannes (16, 2, 13); Schwamm, Lee (13, 10, 7); Spindler, Helle (10, 1, 1); Wang, Wei (11, 2, 1)                                                                                                                                                                                                                                                                                                                 | -Cardiopulmonary resuscitation<br>-Emergency cardiovascular care<br>-Telemedicine within stroke care     |
| #5<br>(n=18)  | Brunetti, Natale Daniele (16, 4, 11); Capomolla, Soccorso (10, 5, 8); Di Biase, Matteo (10, 1, 8); Ellis, Christopher (11, 1, 1); Fedele, Francesco (11, 8, 7); Giordano, A (15, 6, 15); Glisenti, F (15, 5, 12); Hobbs, Richard (10, 2, 5); Johnson, Paul (12, 2, 6); Kario, Kazuomi (11, 3, 3); Lip, Gregory (31, 23, 16); McManus, Richard (10, 3, 6); Natale, Andrea (11, 4, 4); Omboni, Stefano (16, 4, 7); Parati, Gianfranco (27, 15, 13); Scalvini, Simonetta (31, 9, 25); Zanelli, Emanuella (16, 5, 16)                                                                                                                                                                                                                                                                                                                                                                                                                                       | -Telecardiology<br>-Thromboembolic disease management<br>-Chronic HF<br>-Blood pressure monitoring       |
| #6<br>(n=15)  | Essebag, Vidal (12, 5, 11); Healey, Jeff (16, 17, 13); Hussein, Ayman (11, 6, 10); Kennergren, Charles (15, 21, 12); Korantzopoulos, Panagiotis (10, 9, 5); Krahn, Andrew (13); Mittal, Suneet (26, 29, 18); Philippon, Francois (19, 14, 12); Poole, Jeanne (11, 23, 8); Rickard, John (11, 12, 9); Schaller, Robert (10, 6, 1); Tarakji, Khandoun (37, 27, 34); Verma, Atul (13, 11, 12); Wazni, Oussama (20, 12, 18); Wilkoff, Bruce (57, 31, 49)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -Cardiac resynchronization therapy<br>-Transvenous Lead Extractions<br>-Atrial fibrillation              |
| #7<br>(n=15)  | Gasior, Mariusz (13, 4, 13); Grabowski, Marcin (19, 10, 17); Jachec, Wojciech (13, 8, 13); Kalarus, Zbigniew (16, 17, 16); Kutarski, Andrzej (17, 10, 17); Lenarczyk, Radoslaw (10, 8, 10); Opolski, Grzegorz (22, 11, 22); Piotrowicz, Ewa (39, 22, 35); Piotrowicz, Ryszard (36, 20, 35); Polewicz, Anna (15, 5, 13); Potpara, Tanjana (10, 13, 10); Steckiewicz, R (13, 2, 3); Szalewska, Dominika (10, 5, 6); Tajstra, Mateusz (12, 3, 11); Zareba, Wojciech (12, 12, 10)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -Telemonitoring in HF<br>-Stroke prevention in atrial fibrillation<br>-Cardiac resynchronization therapy |
| #8<br>(n=14)  | Ashley, Euan (11, 3, 5); Clark, Robyn (26, 3, 14); Cleland, John (27, 6, 15); Clifford, Gari (12, 3, 3); Harrington, Robert (10, 4, 9); Inglis, Sally (17, 3, 14); Martin, Seth (19, 2, 1); Peiris, David (14, 6, 11); Perel, Pablo (16, 9, 9); Prabhakaran, Dorairaj (10, 7, 9); Prieto-Merino, David (10, 6, 8); Tandon, Nikhil (10, 4, 8); Tarassenko, Lionel (11, 5, 5); Turakhia, Mintu (26, 19, 18)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -mHealth and telemonitoring in HF<br>-ECG data analysis                                                  |
| #9 (n=11)     | Chow, Clara (44, 14, 41); Islam, Shariful (10, 7, 9); Jiang, Yannan (20, 3, 17) Lear, Scott (15, 5, 1); Maddison, Ralph (31, 8, 25); Redfern, Julie (49, 13, 45); Santo, Karla (12, 7, 12); Stewart, Ralph (11, 3, 11); Thiagalingam, Aravinda (25, 7, 24); Wang, Jing (13, 1, 1); Robyn Whittaker (21, 9, 19)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -Digital health innovations for secondary prevention of CHD                                              |
| #10<br>(n=11) | Baddour, Larry (50, 18, 44); Carrillo, Roger (24, 13, 12); Desimone, Daniel (16, 9, 15); Greenspon, Arnold (17, 16, 13); Henrikson, Charles (10, 5, 6); Miro, Jose (15, 6, 9); Prutkin, Jordan (10, 6, 9); Sohail, Muhammed Rizwan (56, 23, 48); Steckelberg, James (18, 10, 18); Uslan, Daniel (15, 11, 15); Wilson, Walter (23, 11, 23)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -Infections associated with CIEDs                                                                        |

\*Total link strength represents the instances of co-authorships within the network.

<sup>1</sup> Smaller clusters that are not included in the table (n ≤ 10), can be visualised in the interactive map using the link under Figure 9.

**Supplementary Table 2** Most cited papers (WoS dataset)

| <b>Title</b>                                                                                                                                    | <b>Authors (year)</b>   | <b>Journal</b>                                      | <b>Citation count (global)</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------|--------------------------------|
| Flexible polymer transistors with high pressure sensitivity for application in electronic skin and health monitoring                            | Schwartz, Tee (1)       | Nature Communications                               | 1364                           |
| Reducing children's television viewing to prevent obesity - A randomized controlled trial                                                       | Robinson (2)            | JAMA                                                | 1266                           |
| Kubios HRV - Heart rate variability analysis software                                                                                           | Tarvainen, Niskanen (3) | Computer Methods and Programs in Biomedicine        | 1159                           |
| Youth Risk Surveillance- United States, 2013                                                                                                    | Kann, Kinchen (4)       | MMWR Surveillance Summaries                         | 1077                           |
| Two-dimensional strain - A novel software for real-time quantitative echocardiographic assessment of myocardial function                        | Leitman, Lysyansky (5)  | Journal of the American Society of Echocardiography | 985                            |
| Medication Adherence: WHO Cares?                                                                                                                | Brown and Bussell (6)   | Mayo Clinic Proceedings                             | 924                            |
| Effects of robot-assisted therapy on upper limb recovery after stroke: a systematic review                                                      | Kwakkel, Kollen (7)     | Neurorehabilitation and Neural Repair               | 932                            |
| Robot-Assisted Therapy for Long-Term Upper-Limb Impairment after Stroke                                                                         | Lo, Guarino (8)         | New England Journal of Medicine                     | 832                            |
| Robot-assisted movement training compared with conventional therapy techniques for the rehabilitation of upper-limb motor function after stroke | Lum, Burgar (9)         | Archives of Physical Medicine and Rehabilitation    | 770                            |
| Telemonitoring in Patients with Heart Failure                                                                                                   | Chaudhry, Mattera (10)  | New England Journal of Medicine                     | 742                            |

**Supplementary Table 3** Most cited papers by local citation count (document co-citation output)

| Title                                                                                                                                                                                                                                                                                                          | Authors (year)           | Journal                                         | Citation count (local) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------|------------------------|
| Telemonitoring in Patients with Heart Failure                                                                                                                                                                                                                                                                  | Chaudhry, Mattera (10)   | New England Journal of Medicine                 | 332                    |
| 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)Developed with the special contribution of the Heart Failure Association (HFA) of the ESC | Ponikowski, Voors (11)   | European Heart Journal                          | 291                    |
| Update on Cardiovascular Implantable Electronic Device Infections and Their Management: A Scientific Statement From the American Heart Association                                                                                                                                                             | Baddour, Epstein (12)    | Circulation                                     | 270                    |
| The post-stroke hemiplegic patient. 1. a method for evaluation of physical performance                                                                                                                                                                                                                         | Fugl-Meyer, Jääskö (13)  | Scandinavian Journal of Rehabilitation Medicine | 245                    |
| Impact of Remote Telemedical Management on Mortality and Hospitalizations in Ambulatory Patients With Chronic Heart Failure The Telemedical Interventional Monitoring in Heart Failure Study                                                                                                                   | Koehler, Winkler (14)    | Circulation                                     | 232                    |
| 16-year trends in the infection burden for pacemakers and implantable cardioverter-defibrillators in the United States: 1993 to 2008                                                                                                                                                                           | Greenspon, Patel (15)    | Journal of the American College of Cardiology   | 229                    |
| Wireless pulmonary artery haemodynamic monitoring in chronic heart failure: a randomised controlled trial                                                                                                                                                                                                      | Abraham, Adamson (16)    | Lancet                                          | 201                    |
| Noninvasive home telemonitoring for patients with heart failure at high risk of recurrent admission and death: the Trans-European Network-Home-Care Management System (TEN-HMS) study                                                                                                                          | Cleland, Louis (17)      | Journal of the American College of Cardiology   | 198                    |
| Implant-based multiparameter telemonitoring of patients with heart failure (IN-TIME): a randomised controlled trial                                                                                                                                                                                            | Hindricks, Taborsky (18) | Lancet                                          | 196                    |
| Transvenous lead extraction: Heart Rhythm Society expert consensus on facilities, training, indications, and patient management: this document was endorsed by the American Heart Association (AHA)                                                                                                            | Wilkoff, Love (19)       | Heart Rhythm                                    | 190                    |

**Supplementary Table 4** Articles with strongest bursts of citation in the literature (document co-citation output)

| Title                                                                                                                                                                                 | Author(s) (year)          | Journal                                   | Begin | End  | Strength |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------|-------|------|----------|
| Noninvasive home telemonitoring for patients with heart failure at high risk of recurrent admission and death: the Trans-European Network-Home-Care Management System (TEN-HMS) study | Cleland, Louis (17)       | Journal of American College of Cardiology | 2006  | 2014 | 36.55    |
| Structured telephone support or telemonitoring programmes for patients with chronic heart failure                                                                                     | Inglis, Clark (20)        | Cochrane Database of Systematic Reviews   | 2011  | 2015 | 31.81    |
| Randomized trial of a daily electronic home monitoring system in patients with advanced heart failure: the Weight Monitoring in Heart Failure (WHARF) trial                           | Goldberg, Piette (21)     | American Heart Journal 2003               | 2005  | 2012 | 30.79    |
| Telemonitoring or structured telephone support programmes for patients with chronic heart failure: systematic review and meta-analysis                                                | Clark, Inglis (22)        | BMJ                                       | 2008  | 2013 | 26.47    |
| A Meta-Analysis of Remote Monitoring of Heart Failure Patients                                                                                                                        | Klersy, De Silvestri (23) | Journal of American College of Cardiology | 2010  | 2016 | 24.48    |

**Supplementary Table 5** Major research streams (clusters) as determined by co-citation of references in the literature of digital health applications in cardiovascular medicine. eMR: electronic medical record; BP: Blood pressure; HRV: heart rate variability

| Author descriptor<br><br>Other descriptors<br>extracted from titles of<br>citing articles                                                 | -size<br>-silhouette score<br>-mean year<br>(reference)<br>-year range<br>(reference)<br>-mean year (citing)<br>-year range (citing) | Influential references                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                              | Citing articles with highest<br>coverage                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                           |                                                                                                                                      | Local citation count                                                                                                                                                                                                                                                                                                                    | Citation burst strength<br>(strength, duration of burst)                                                                                                                                                                                                                                                                                                                                                                                                               | Centrality                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                  |
| <i>Virtual Reality</i><br><br>-chronic stroke<br>-stroke rehabilitation<br>-robot-assisted therapy                                        | -S=795<br>-SS=0.983<br>-MY (ref)=2005<br>-YR (ref)=1964-2020<br>-MY (citing)=2015<br>-YR (citing)=1997-2021                          | 1. Fugl-Meyer, Jääskö (13) (245)<br>2. Laver, George (24) (162)<br>3. Lo, Guarino (8) (123)<br>4. Kwakkel, Kollen (7) (121)<br>5. Folstein, Folstein (25) (99)<br>6. Langhorne, Coupar (26) (97)<br>7. Bohannon, Larkin (27) (97)<br>8. Langhorne, Bernhardt (28) (94)<br>9. Saposnik, Teasell (29) (87)<br>10. Lum, Burgar (30) (85)   | 1. Hesse, Werner (31) (20.13, 2007-2014)<br>2. Volpe, Krebs (32) (19.5, 2001-2014)<br>3. Kwakkel, Kollen (7) (19.4, 2009-2015)<br>4. Krebs, Hogan (33) (19.27, 2000-2013)<br>5. Aisen, Krebs (34) (18.32, 1999-2013)<br>6. Lum, Burgar (30) (18.1, 2005-2014)<br>7. Burgar, Lum (35) (17.72, 2001-2012)<br>8. Prange, Jannink (36) (17.34, 2008-2014)<br>9. Lo, Guarino (8) (17.26, 2011, 2016)<br>10. Fasoli, Krebs (37) (16.38, 2006-2012)                           | 1. Piron, Turolla (38) (0.03)<br>2. Housman, Scott (39) (0.02)<br>3. Volpe, Krebs (40) (0.02)                                                                                | 1. Laver, Lange (41) (54)<br>2. Basteris, Nijenhuis (42) (50)<br>3. Laver, George (43) (44)<br>4. Kwakkel, Kollen (7) (36)<br>5. Masiero, Celia (44) (34)<br>6. Duret and Gracies (45) (34)<br>7. Brokaw, Murray (46) (31)<br>8. Sivan, O'Connor (47) (31)<br>9. Acosta, Dewald (48) (30)<br>10. Mehrholz, Hadrich (49) (30)     |
| <i>Heart failure</i><br><br>-home telemonitoring<br>-heart failure patients<br>-virtual reality                                           | -S=552<br>-SS=0.881<br>-MY (ref)=2007<br>-YR (ref)=1975-2020<br>-MY (citing)=2016<br>-YR (citing)=2005-2021                          | 1. Chaudhry, Mattera (10) (332)<br>2. Ponikowski, Voors (11) (291)<br>3. Koehler, Winkler (14) (232)<br>4. Cleland, Louis (17) (198)<br>5. Inglis, Clark (20) (151)<br>6. Ong, Romano (50) (141)<br>7. Clark, Inglis (22) (140)<br>8. Klersy, De Silvestri (23) (123)<br>9. Goldberg, Piette (21) (110)<br>10. Inglis, Clark (51) (110) | 1. Cleland, Louis (17) (36.55, 2006-2014)<br>2. Inglis, Clark (20) (31.81, 2011-2015)<br>3. Goldberg, Piette (21) (30.79, (2005-2012)<br>4. Clark, Inglis (22) (26.47, 2008-2013)<br>5. Klersy, De Silvestri (23) (24.48, 2010, 2016)<br>6. Louis, Turner (52) (23.4, 2005-2011)<br>7. McMurray, Adamopoulos (53) (21.93, 2014-2017)<br>8. Roger, Go (54) (18.53, 2012-2015)<br>9. Jerant, Azari (55) (18.27, 2003-2010)<br>10. Benatar, Bondmass (56) (18, 2006-2014) | 1. Jerant, Azari (55) (0.02)<br>2. Artinian, Harden (57) (0.02)<br>3. Higgins, Altman (58) (0.02)<br>4. Hsieh and Shannon (59) (0.02)<br>5. Finkelstein, Speedie (60) (0.02) | 1. Flodgren, Rachas (61) (96)<br>2. Inglis, Clark (62) (89)<br>3. Inglis, Clark (20) (85)<br>4. Di Lenarda, Casolo (63)<br>5. Aronow and Shamliyan (64) (39)<br>6. Lin, Yuan (65) (36)<br>7. Dickinson, Allen (66) (35)<br>8. Banchs and Scher (67) (34)<br>9. Givertz, Stevenson (68) (33)<br>10. Bertini, Marcantoni (69) (33) |
| <i>Cardiac rehabilitation</i><br><br>-coronary heart disease<br>-secondary prevention<br>-cardiovascular disease<br>-medication adherence | -S=487<br>-SS=0.896<br>-MY (ref)=2009<br>-YR (ref)=1954-2020<br>-MY (citing)=2018<br>-YR (citing)=1995-2021                          | 1. Chow, Redfern (70) (131)<br>2. Heran, Chen (71) (128)<br>3. Varnfield, Karunanithi (72) (107)<br>4. Burke, Ma (73) (101)<br>5. Craig, Marshall (74) (76)<br>6. Kroenke, Spitzer (75) (69)<br>7. Piepoli, Hoes (76) (69)<br>8. Eysenbach and Consort (77) (66)<br>9. Maddison, Pfaeffli (78) (66)<br>10. Free, Phillips (79) (66)     | 1. Chow, Redfern (70) (13.05, 2017-2021)<br>2. McMurray, Adamopoulos (53) 12.22, 2013-2016)<br>3. Burke, Ma (73) (9.94, 2016-2021)<br>4. Zutz, Ignaszewski (80) (9.24, 2012-2016)<br>5. Chan, Tetzlaff (81) (8.99, 2017-2021)<br>6. Neubeck, Lowres (82) (7.9, 2013-2018)<br>7. Fjeldsoe, Marshall (83) (7.17 2014-2018)<br>8. Thakkar, Kurup (84) (7.04, 2016-2021)<br>9. Lester, Ritvo (85) (7.03, 2015-2018)<br>10. Dale, Whittaker (86) (7, 2017-2021)             |                                                                                                                                                                              | 1. Flodgren, Rachas (61) (52)<br>2. Burke, Ma (73) (38)<br>3. Dale, Whittaker (86) (29)<br>4. Devi, Singh (87) (26)<br>5. Adler, Martin (88) (25)<br>6. Jin, Khonsari (89) (24)<br>7. Clark, Conway (90) (23)<br>8. (91) (22)<br>9. Brouwers, Kraal (92) (21)<br>10. Frederix, Vanhees (93) (21)                                 |
| <i>Lead extraction</i><br><br>-risk factor<br>-transvenous lead extraction                                                                | -S=424<br>-SS=0.954<br>-MY (ref)=2009<br>-YR (ref)=1972-2020                                                                         | 1. Baddour, Epstein (12) (270)<br>2. Greenspon, Patel (15) (229)<br>3. Wilkoff, Love (19) (190)<br>4. Sohail, Uslan (94) (164)                                                                                                                                                                                                          | 1. Sohail, Uslan (94) (11.77, 2010-2014)<br>2. BLOOM, HEEKE (103) (11.72, 2010-2015)                                                                                                                                                                                                                                                                                                                                                                                   | 1. Boriani, Maniadakis (109) (0.04)<br>2. DerSimonian and Laird (110) (0.02)                                                                                                 | 1. Kusumoto, Schoenfeld (95) (91)<br>2. Blomström-Lundqvist, Traykov (111) (89)<br>3. Kusumoto, Schoenfeld (95) (71)                                                                                                                                                                                                             |

|                                                                                                                                             |                                                                                                              |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -infective endocarditis<br>-heart failure<br>-antibacterial envelope                                                                        | -MY (citing)=2017<br>-YR (citing)=2010-2021                                                                  | 5. Kusumoto, Schoenfeld (95) (160)<br>6. Klug, Balde (96) (160)<br>7. Mond and Proclemer (97) (148)<br>8. Voigt, Shalaby (98) (134)<br>9 .Sohail, Henrikson (99) (117)<br>10. Voigt, Shalaby (100) (116)<br>11.de Oliveira, Martinelli (101) (112)<br>12. Poole, Gleva (102) (105)                                                               | 3. Baddour, Epstein (12) (11.4 2012-2016)<br>4. Sohail, Uslan (104) (10.39, 2010-2014)<br>5. Habib, Lancellotti (105) (10.26, 2017-2021)<br>6. Chamis, Peterson (106) (10.07, 2010-2015)<br>7. Poole, Gleva (102) (9.32, 2014-2017)<br>8. .Sohail, Uslan (107) (9.17, 2010-2016)<br>9. Greenspon, Patel (15) (9.06, 2013-2018)<br>10. Al-Khatib, Lucas (108) (9.03, 2010-2015)                                                                                                                              | 4. Padfield, Steinberg (112) (55)<br>5. Palmeri, Kramer (113) (54)<br>6. Frausing, Kronborg (114) (49)<br>7. Polyzos, Konstantelias (115) (48)<br>8. Palraj, Farid (116) (47)<br>9. Arnold and Chu (117) (46)<br>10. Han, Hawkins (118) (45)               |                                                                                                                                                                                                                                                                                                                                                        |
| <i>Blood pressure reactivity</i><br><br>-type-a-behaviour<br>-challenging task<br>-contingent reinforcement<br>-physiological reactivity    | -S=417<br>-SS=0.985<br>-MY (ref)=1984<br>-YR (ref)= 1945-2000<br>-MY (citing)=1993<br>-MY (citing)=1991-1997 | 1. Falkner, Kushner (119) (10)<br>2. Borghi, Boschi (120) (7)<br>3. Braden, Leatherbury (121) (7)<br>4. Park and Menard (122) (6)                                                                                                                                                                                                                | 1. Falkner, Kushner (119) (6.77, 1991-1995)<br>2. Borghi, Boschi (120) (4.56, 1991-2001)<br>3. Braden, Leatherbury (121) (4.53, 1993-2003)<br>4. Park and Menard (122) (3.98, 1991-1998)                                                                                                                                                                                                                                                                                                                    | 1. Anderson and Armstead (123) (0.03)<br>2. Anderson, Land (124) (0.03)<br>3. Beaglehole, Salmond (125) (0.02)                                                                                                                                             | 1. Lyness (126) (77)<br>2. Murphy, Alpert (127) (64)<br>3. Saab, Tischenkel (128) (48)<br>4. Miller and Sita (129) (39)<br>5. Miller, Frieze (130) (37)<br>6. Miller (131) (29)<br>7. Sorof, Forman (132) (26)<br>8. Treiber, Raunikar (133) (26)<br>9. Musante, Raunikar (134) (21)                                                                   |
| <i>Remote monitoring</i><br><br>-atrial high-rate episode<br>-atrial fibrillation<br>-cardiac rehabilitation<br>-embolic stroke             | -S=404<br>-SS=0.902<br>-MY (ref)=2010<br>-YR (ref)=1989-2020<br>-MY (citing)=2016<br>-YR (citing)=2007-2021  | 1. Abraham, Adamson (16) (201)<br>2. Hindricks, Taborsky (18) (196)<br>3. Varma, Epstein (135) (183)<br>4. Crossley et al., 2011) (149)<br>5. Healey, Connolly (136) (136)<br>6. Slotwiner, Varma (137) (123)<br>7. Saxon, Hayes (138) (118)<br>8. Yancy, Jessup (139) (116)<br>9. Landolina, Perego (140) (111)<br>10. Mabo, Victor (141) (104) | 1. Raatikainen, Uusimaa (142) (21.37, 2009-2016)<br>2. Varma, Epstein (135) (21.13, 2011-2016)<br>3. Ricci, Morichetli (143) (19.32, 2008-2015)<br>4. Wilkoff, Auricchio (144) (18.98, 2009-2015)<br>5. Lazarus (145) (17.92, 2008-2014)<br>6. Schoenfeld, Compton (146) (17.86, 2007-2016)<br>7. Crossley et al., 2011) (16.39, 2012-2016)<br>8. Wilkoff, Auricchio (147) (16.2, 2010-2013)<br>9. Marzegalli, Lunati (148) (15.96, 2009-2015)<br>10. Fauchier, de Bouët du Portal (149) (15.89, 2007-2014) | 1. Wilkoff, Auricchio (144) (0.02)<br>2. Gladstone, Spring (150) (0.02)<br>3. Hindricks, Pokushalov (151) (0.02)<br>4. Adams, Bendixen (152) (0.02)                                                                                                        | 1. Dubner, Auricchio (153) (56)<br>2. Flodgren, Rachas (154) (43)<br>3. Imberti, Tosetti (155) (41)<br>4. Braunschweig, Anker (156) (37)<br>5. Sanna (157) (32)<br>6. Heywood, Jermyn (158) (31)<br>7. Lucà, Cipolletta (159) (30)<br>8. Freedman, Hindricks (160) (30)<br>9. Noseworthy, Kaufman (161) (29)<br>10. Alvarez, Cronin (162) (29)         |
| <i>Arrhythmias</i><br><br>-atrial fibrillation<br>-detecting atrial fibrillation<br>-heart failure<br>-heart rhythm<br>-diagnostic accuracy | -S=211<br>-SS=0.975<br>-MY (ref)=2015<br>-YR (ref)=1981-2020<br>-MY (citing)=2019<br>-YR (citing)=2006-2021  | 1. Lau, Lowres (163) (70)<br>2. Lowres, Neubeck (164) (49)<br>3. Tison, Sanchez (165) (45)<br>4. Bumgarner, Lambert (166) (44)<br>5. Barrett, Komatireddy (167) (40)<br>6. Haberman, Jahn (168) (40)<br>7.Chan, Wong (169) (38)<br>8. McManus, Lee (170) (34)<br>9. Turakhia, Desai (171) (33)<br>10. Svennberg, Engdahl (172) (31)              | 1. Scully, Lee (173) (10.52, 2013-2017)<br>2. Boulos, Wheeler (174) (8.48, 2012-2016)<br>3. McManus, Lee (170) (7.07, 2016-2019)<br>4. Poh, McDuff (175) (5.34, 2015-2018)<br>5. Tarakji, Wazni (176) (4.95, 2016-2019)<br>6. Verkruysse, Svaasand (177) (4.34, 2015-2018)<br>7. Haberman, Jahn (178) (4.32, 2016-2019)                                                                                                                                                                                     | 1. Bosworth, Powers (182) (0.04)<br>2. McManus, Chong (183) (0.04)<br>3. Boriani, Laroche (184) (0.04)<br>4. Turakhia, Hoang (185) (0.03)<br>5. Ades, Pashkow (179) (0.02)<br>6. Heidbuchel and Hindricks (186) (0.02)<br>7. Merchant, Abella (187) (0.02) | 1. Varma, Cygankiewicz (188) (144)<br>2. Lopez Perales, Van Spall (189)(29)<br>3. Li, White (190)(23)<br>4. Tadi, Mehrang (191) (21)<br>5. Freedman, Hindricks (160) (20)<br>6. König, Bollmann (192)(19)<br>7. Krittanawong, Johnson (193) (18)<br>8. Pereira, Tran (194) (17)<br>9. Folke, Andelius (195) (16)<br>10. McConnell, Turakhia (196) (15) |

|                                                                                                                               |                                                                                                             |                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                               |                                                                                                             |                                                                                                                                                                                                                                                                                                                                           | 8. Ades, Pashkow (179) (4.29, 2003-2015)<br>9. Bruining, Caiani (180) (4.25, 2016-2019)<br>10. Jonathan and Leahy (181) (4.05, 2012-2015)                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                          |
| <i>Stroke Care</i><br><br>-integrative stroke care<br>-acute stroke<br>-telemedic pilot project                               | -S=191<br>-SS=0.978<br>-MY (ref)=2006<br>-YR (ref)=1960-2018<br>-MY (citing)=2012<br>-YR (citing)=1999-2020 | 1. Braun and Clarke (197) (74)<br>2. Audebert, Schenkel (198) (56)<br>3. Go, Mozaffarian (199) (55)<br>4. Schwamm, Holloway (200)(43)<br>5. Meyer, Raman (201)(43)<br>6. Marler (202) (42)<br>7. Audebert, Kukla (203) (41)<br>8. Shafqat, Kvedar (204) (39)<br>9. Handschu, Littmann (205) (34)<br>10. Levine and Gorman (206) (33)      | 1. Shafqat, Kvedar (204) (18.89, 2003-2013)<br>2. Audebert, Kukla (203) (15, 2005-2010)<br>3. Wang, Lee (207) (14.38, 2005-2013)<br>4. Wiborg and Widder (208) (13.41, 2005-2010)<br>5. LaMonte, Bahouth (209) (13.1, 2004-2010)<br>6. Meyer, Raman (201) (13.06, 2009-2016)<br>7. Schwamm, Rosenthal (210) (12.65, 2005-2010)<br>8. Audebert, Kukla (211) (12.02, 2007-2010)<br>9. Schwamm, Holloway (212) (11.95, 2010-2014)<br>10. Demaerschalk, Miley (213) (11.95, 2007-2015) | 1. Audebert, Berger (214) (39)<br>2. Schwamm, Audebert (215) (37)<br>3. Schwamm, Holloway (212) (35)<br>4. Demaerschalk, Miley (213) (32)<br>5. Demaerschalk (216) (28)<br>6. Levine and Gorman (206) (23)<br>7. Johansson and Wild (217) (18)<br>8. Pervez, Silva (218) (18)<br>9. Wechsler, Demaerschalk (219) (18)<br>10. Ickenstein, Horn (220) (16) |
| <i>Blood pressure telemonitoring</i><br><br>-hypertension management<br>-home blood pressure telemonitoring<br>-heart failure | -S=188<br>-SS=0.922<br>-MY (ref)=2008<br>-YR (ref)=1986-2019<br>-MY (citing)=2016<br>-YR (citing)=2005-2021 | 1. Shamseer, Moher (221) (107)<br>2. Chobanian, Bakris (222) (61)<br>3. Green, Cook (223) (57)<br>4. Morisky, Green (224) (39)<br>5. McManus, Mant (225) (38)<br>6. Margolis, Asche (226) (35)<br>7. Hippisley-Cox, Coupland (227) (34)<br>8. Lewington, Clarke (228) (31)<br>9. Bodenheimer, Wagner (229) (29)<br>10. Wootton (230) (28) | 1. Wootton (230) (8.63, 2014-2017)<br>2. Friedman, Kazis (231) (7.21, 2006-2011)<br>3. Rogers, Small (232) (7.21, 2006-2011)<br>4. Chobanian, Bakris (222) (6.66, 2005-2013)<br>5. Shea, Weinstock (233) (6.63, 2010-2016)<br>6. Ekeland, Bowes (234) (6.39, 2014-2017)<br>7. Bodenheimer, Wagner (229) (6.39, 2011-2016)<br>8. Artinian, Washington (235) (6.02, 2005-2010)<br>9. McKinstry, Hanley (236) (6.02, 2015-2018)<br>10. Scherr, Zweiker (237) (5.57, 2007-2010)        | 1. Chobanian, Bakris (222) (0.03)<br>2.Green, Cook (238) (0.02)<br>3. Pickering, Hall (239) (0.02)                                                                                                                                                                                                                                                       |
|                                                                                                                               |                                                                                                             |                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1. Flodgren, Rachas (154) (33)<br>2. Omboni and Ferrari (240) (23)<br>3. Burke, Ma (73) (19)<br>4. Paré, Jaana (241) (18)<br>5. Parati and Omboni (242) (16)<br>6. Omboni, Panzeri (243) (16)<br>7.Mc Kinstry, Hanley (244) (16)<br>8. Ringeval, Wagner (245)(15)<br>9. Oliveira, Paula (246) (15)                                                       |

|                                         |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Electronic medical record</i>        | -S=169<br>-SS=0.969<br>-MY (ref)=2005<br>-YR (ref)=1976-2019<br>-MY (citing)=2017<br>-YR (citing)=1994-2021   | 1. D'Agostino, Vasan (247) (81)<br>2. Yusuf, Hawken (248) (75)<br>3. Charlson, Pompei (249) (62)<br>4. Lloyd-Jones (250) (52)<br>5. Wilson, D'Agostino (251) (49)<br>6. Conroy, Pyörälä (252) (40)<br>7. Craig, Dieppe (253) (39)<br>8. Grundy (254) (29)<br>9. Hannun, Rajpurkar (255) (29)<br>10. James, Oparil (256) (25)                        | 1. James, Oparil (256) (6.99, 2015-2018)<br>2. Stone, Robinson (257) (6.64, 2015-2018)<br>3. Cleeman (258) (5.73, 2007-2013)<br>4. Wilson, D'Agostino (251) (5.55, 1999-2008)<br>5. Garg, Adhikari (259) (5.09, 2010-2013)<br>6. LeCun, Bengio (260) (4.93, 2017-2021)<br>7. Craig, Dieppe (253) (4.93, 2015-2018)<br>8. Cabana, Rand (261) (3.73, 2011-2017)<br>9. (262) (3.61, 2017-2021)                                                                           | 1. Pashos, Normand (263) (28)<br>2. Krittanawong, Johnson (193) (15)<br>3. Wasimuddin, Elleithy (264) (14)<br>4. Davis, Abidi (265) (12)<br>5. Ting, Peng (266) (10)<br>6. Seetharam, Kagiya (267) (10)<br>7. (268) (10)                                                                                                                    |
| <i>Wearable technologies</i>            | -S=169<br>-SS=0.982<br>-MY (ref)=2002<br>-YR (ref)=1961-2019<br>-MY (citing)=2017<br>-YR (citing)=1991-2021   | 1. Allen (269) (95)<br>2. Camm (270) (91)<br>3. Pantelopoulou and Bourbakis (271) (48)<br>4. Inan, Migeotte (272) (42)<br>5. Shaffer and Ginsberg (273) (41)<br>6. Rajendra Acharya, Paul Joseph (274) (41)<br>7. Patel, Park (275) (33)<br>8. (276) (29)<br>9. Tamura, Maeda (277) (28)<br>10. Schäfer and Vagedes (278) (26)                      | 1. (270) (10.35, 2002-2010)<br>2. Hamilton and Tompkins (279) (7.31, 2010-2017)<br>3. Tamura, Maeda (277) (6.41, 2016-2021)<br>4. Lee, Chen (280) (5.75, 2008-2014)<br>5. (281) (4.22, 2008-2011)<br>6. Hung and Zhang (282) (4.22, 2008-2011)<br>7. Patel, Park (275) (3.77, 2014-2021)                                                                                                                                                                              | 1. Akselrod, Gordon (283) (0.08)<br>2. Carroll, Turner (284) (0.07)<br>3. Rajendra Acharya, Paul Joseph (274) (0.06)<br>4. Billman (285) (0.03)                                                                                                                                                                                             |
| <i>Radiology in patients with CIEDs</i> | -S=160<br>-SS=0.988<br>-MY (cited)=2009<br>-YR (ref)=1982-2020<br>-MY (citing)=2018<br>-YR (citing)=2010-2021 | 1. Indik, Gimbel (296) (75)<br>2. Brignole, Auricchio (297) (72)<br>3. Crossley, Poole (298) (71)<br>4. Russo, Costa (299) (63)<br>5. Kalin and Stanton (300) (60)<br>6. Hurkmans, Kneijens (301) (55)<br>7. Nazarian, Hansford (302) (50)<br>8. Wilkoff, Bello (303) (46)<br>9. Beinart and Nazarian (304) (42)<br>10. Epstein, Abraham (305) (40) | 1. Nazarian, Hansford (302) (9.96, 2015-2019)<br>2. Wilkoff, Bello (303) (8.81, 2012-2018)<br>3. Levine, Gomes (306) (7.59, 2010-2018)<br>4. Sommer, Naehle (307) (7.38, 2015-2018)<br>5. Gimbel, Bello (308) (7.38, 2015-2018)<br>6. Higgins, Gard (309) (6.99, 2015-2018)<br>7. Kalin and Stanton (300) (6.79, 2014-2018)<br>8. Roguin, Schwitter (310) (6.43, 2010-2015)<br>9. Cohen, Brinton (311) (6.2, 2014-2018)<br>10. Roguin, Zviman (312) (6.07, 2008-2017) | 1. Indik, Gimbel (313) (43)<br>2. Yeung, Chacko (314) (32)<br>3. Muthalaly, Nerlekar (315) (32)<br>4. Nyotowidjojo, Skinner (316) (23)<br>5. Zecchin, Severgnini (317) (22)<br>6. Kalb, Indik (318) (22)<br>7. Jung, Jäckle (319) (22)<br>8. Ipek and Nazarian (320) (20)<br>9. Shah, Patel (321) (20)<br>10. Miften, Mihailidis (322) (20) |
| <i>Activity tracking</i>                | -S=156<br>-SS=0.972<br>-MY (ref)=2011<br>-YR (ref)=1974-2019<br>-MY (citing)=2018<br>-YR (citing)=2010-2021   | 1. Widmer, Collins (323) (53)<br>2. Garber, Blissmer (324) (52)<br>3. Moher, Liberati (325) (46)<br>4. Bravata, Smith-Spangler (326) (45)<br>5. Shcherbina, Mattsson (327) (44)<br>6. Egger, Smith (328) (36)<br>7. Haskell, Lee (329) (34)<br>8. Wallen, Gomersall (330) (33)<br>9. Martin, Feldman (331) (30)<br>10. Evenson, Goto (332) (28)     | 1. Evenson, Goto (332) (8.12, 2017-2021)<br>2. Higgins (333) (7.52, 2012-2015)<br>3. Graves, Ridgers (334) (7.13, 2013-2016)<br>4. Haskell, Lee (329) (6.85, 2014-2018)<br>5. Deutsch, Borbely (335) (5.66, 2011-2015)<br>6. Germano, Hoes (336) (5.16, 2014-2018)<br>7. Lanningham-Foster, Foster (337) (4.86, 2011-2014)<br>8. Ferguson, Rowlands (338) (4.6, 2016-2019)<br>9. Graf, Pratt (339) (4.32, 2011-2014)                                                  | 1. Wang, Blackburn (340) (0.03)<br>2. Egger, Smith (328) (0.02)<br>3. Dooley, Golaszewski (341) (0.02)<br>4. Bunn, Navalta (342) (0.02)                                                                                                                                                                                                     |
|                                         |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1. Fuller, Colwell (343) (26)<br>2. Müller, Wang (344) (22)<br>3. LeBlanc, Chaput (345) (18)<br>4. Nelson and Allen (346) (18)<br>5. Chow and Yang (287) (18)<br>6. Shrestha, Kukkonen-Harjula (347) (15)<br>7. Nelson, Low (348) (14)<br>8. Ringeval, Wagner (245) (13)<br>9. Lobelo, Kelli (349) (12)<br>10. Budig, Hölthke (350) (12)    |

|                                          |                                                                                                                |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Bypass surgery</i>                    | -S=145<br>-SS=0.987<br>-MY (cited)=1997<br>-YR (ref)=1968-2008<br>-MY (citing)=2007<br>-YR (citing)= 1997-2021 | 1. Ware and Sherbourne (351) (25)<br>2. Krumholz, Parent (352) (24)<br>3. (353) (18)<br>4. Rosamond, Flegal (354) (18)<br>5. Vinson, Rich (355) (14)<br>6. Thompson, Buchner (356) (14)<br>7. Stewart, Marley (357) (11)<br>8. McMurray and Stewart (358) (7)<br>9. Hailey, Roine (359) (7)                                        | 1. Krumholz, Parent (352) (11.62, 2003-2013)<br>2. Shah, Der (353) (11.4, 2003-2008)<br>3. Vinson, Rich (355) (8.56, 2003-2009)<br>4. Rosamond, Flegal (354) (7.73, 2009-2015)<br>5. Stewart, Marley (357) (6.5, 2003-2010)<br>6. Ware and Sherbourne (351) (4.89, 2003-2009)<br>7. McMurray and Stewart (358) (4.41, 2006-2009)<br>8. Hailey, Roine (359) (4.31, 2004-2009)                                                                                | 1. Balas, Jaffrey (360) (32)<br>2. Barnason, Zimmerman (361) (30)<br>3. Barnason, Zimmerman (362) (30)<br>4. LaFramboise, Toderio (363) (19)<br>5. Brennan, Moore (364) (19)<br>6. Fonarow, Abraham (365) (13)<br>7. Louis, Turner (366) (13)<br>8. Zimmerman and Barnason (367) (13)<br>9. Artinian, Harden (368) (12)<br>10. Strömberg (369) (10)                                |
| <i>Cardiac resynchronisation therapy</i> | -S=136<br>-SS=0.927<br>-MY (ref)=2007<br>-YR (ref)= 1992-2018<br>-MY (citing)=2016<br>-YR (citing)=2001-2021   | 1. Brignole, Auricchio (370) (136)<br>2. Moss, Zareba (371) (133)<br>3. Bardy, Lee (372) (127)<br>4. Cleland, Daubert (373) (98)<br>5. Bristow, Saxon (374) (92)<br>6. Moss, Hall (375) (62)<br>7. Priori, Blomström-Lundqvist (376) (52)<br>8. Moss, Hall (377) (49)<br>9. Moss, Schuger (378) (44)<br>10. Tang, Wells (379) (43) | 1. Epstein, Dimarco (380) (9.1, 2011-2017)<br>2. Moss, Hall (377) (5.78, 2009-2015)<br>3. Tang, Wells (379) (5.67, 2013-2017)<br>4. Abraham, Fisher (381) (5.49, 2003-2011)<br>5. McMurray, Solomon (382) (5.43, 2017-2021)<br>6. Bristow, Saxon (374) (5.2, 2009-2017)<br>7. Bardy, Lee (372) (5.02, 2008-2013)<br>8. Cleland, Daubert (373) (5.02, 2007-2015)<br>9. McAnulty, Halperin (383) (4.75, 2015-2018)<br>10. Moss, Zareba (371) (4.7, 2008-2013) | 1. Bristow, Saxon (374) (0.03)<br>1. Hussein and Wilkoff (384) (23)<br>2. Alvarez, Cronin (162) (19)<br>3. Tseng, Kunze (385) (17)<br>4. Linde, Bongiorni (386) (16)<br>5. Sandhu, Levy (387) (15)<br>6. Gopinathannair, Cornwell (388) (14)<br>7. Ng Chee and Mela (389) (13)<br>8. Chia and Foo (390) (13)<br>9. Boriani, De Ponti (391) (12)<br>10. Saad, Hentschel (392) (120) |
| <i>Cardiac reactivity (gaming)</i>       | -S=119<br>-SS=0.996<br>-MY (ref)=1981<br>-YR (ref)=1959-1990<br>-MY (citing)=1991<br>-YR (citing)=1990-1992    | 1. Krantz and Manuck (393) (13)<br>2. Dembroski, MacDougall (394) (4)<br>3. Keys, Taylor (395) (4)<br>4. Houston, Smith (396) (4)                                                                                                                                                                                                  | 1. Krantz and Manuck (393) (8.74, 1990-1996)<br>1. Krantz and Manuck (393) (0.02)                                                                                                                                                                                                                                                                                                                                                                           | 1. Lundberg, Rasch (397) (38)<br>2. Svebak, Knardahl (398) (37)<br>3. Larkin, Zayfert (399) (34)<br>4. Larkin, Manuck (400) (27)                                                                                                                                                                                                                                                   |
| <i>--physiological reactivity</i>        |                                                                                                                |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>-type-a-behaviour pattern</i>         |                                                                                                                |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>Oldest</i>                            |                                                                                                                |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                    |

|                                            |                             |                                                                      |                                             |                                     |                                                                          |
|--------------------------------------------|-----------------------------|----------------------------------------------------------------------|---------------------------------------------|-------------------------------------|--------------------------------------------------------------------------|
| <i>Heart failure telemonitoring</i>        | -S=119<br>-SS=0.989         | 1. Pan and Tompkins (401) (186)<br>2. Goldberger, Amaral (402) (156) | 1. Oresko, Jin (404) (5.02, 2013-2018)      | 1. Pan and Tompkins (401) (0.03)    | 1. Factor, Gelernter (411) (30)<br>2. Mamaghanian, Khaled (412) (17)     |
| <i>-wireless telemonitoring</i>            | -MY (ref)=2000              | 3. Moody and Mark (403) (78)                                         |                                             |                                     | 3. Ibaida, Khalil (413) (16)                                             |
| <i>-principal components analysis</i>      | -YR (ref)=1975-2018         | 4. Oresko, Jin (404) (35)                                            |                                             |                                     | 4. Mamaghanian, Khaled (414) (16)                                        |
| <i>-cardiac abnormalities</i>              | -MY (citing)=2017           | 5. Hochreiter and Schmidhuber (405) (29)                             |                                             |                                     | 5. Wasimuddin, Elleithy (264) (15)                                       |
|                                            | -YR (citing)=1992-2021      | 6. Kiranyaz, Ince (406) (28)                                         |                                             |                                     | 6. Ryan, Sullivan (415) (12)                                             |
|                                            | <i>Computer based stuff</i> | 7. Miao, Cheng (407) (19)                                            |                                             |                                     | 7. Faezipour, Saeed (416) (10)                                           |
|                                            |                             | 8. Gradl, Kugler (408) (18)                                          |                                             |                                     | 8. Kanoun, Mamaghanian (417) (10)                                        |
|                                            |                             | 9. Acharya, Oh (409) (17)                                            |                                             |                                     | 9. Ryan, O'Sullivan (418) (9)                                            |
|                                            |                             | 10. Luz, Schwartz (410) (17)                                         |                                             |                                     | 10. Faezipour, Saeed (419) (9)                                           |
| <i>Gamification</i>                        | -S=113<br>-SS=0.968         | 1. Adams Jr, Fonarow (420) (17)<br>2. Grady, Dracup (421) (15)       | 1. Grady, Dracup (421) (5.99, 2005-2012)    |                                     | 1. Finkelstein and Wood (427) (20)<br>2. Finkelstein and Wood (428) (16) |
| <i>-Xbox gaming platform</i>               | -MY (ref)=2001              | 3. Massie and Shah (422) (10)                                        | 2. Massie and Shah (422) (5.73, 2005-2011)  |                                     | 3. Finkelstein and Dennison (429) (14)                                   |
| <i>-congestive heart failure</i>           | -YR (ref)=1964-2011         | 4. Haddad, Hunt (423) (10)                                           |                                             |                                     | 4. Finkelstein, Cha (430) (14)                                           |
| <i>-African American</i>                   | -MY (citing)=2007           | 5. Rosamond, Flegal (424) (8)                                        | 3. Rosamond, Flegal (424) (4.72, 2007-2011) |                                     | 5. Fonarow, Abraham (431) (14)                                           |
| <i>-organised program</i>                  | -YR (citing)=2004-2011      | 6. Finkelstein and Cha (425) (6)                                     |                                             |                                     | 6. Baker, Persell (432) (13)                                             |
| <i>-lifesaving treatment</i>               |                             | 7. Stewart, Pearson (426) (6)                                        | 4. Stewart, Pearson (426) (3.87, 2005-2008) |                                     | 7. Kleinpell and Avitall (433) (13)                                      |
|                                            |                             |                                                                      |                                             |                                     | 8. Finkelstein, Wood (434) (12)                                          |
|                                            |                             |                                                                      |                                             |                                     | 9. Fonarow, Abraham (365) (12)                                           |
|                                            |                             |                                                                      |                                             |                                     | 10. Müller-Nordhorn and Willich (435) (12)                               |
| <i>Out-of-hospital cardiac arrest</i>      | -S=110<br>-SS=0.988         | 1. Ringh, Rosenqvist (436) (54)<br>2. Zijlstra, Stieglis (437) (36)  | 1. Brooks, Simmons (441) (7.25, 2017-2021)  |                                     | 1. Berg, Cheng (447) (32)<br>2. Greif, Bhanji (448) (27)                 |
|                                            | -MY (ref)=2010              | 3. Hasselqvist-Ax, Riva (438) (32)                                   | 2. Rumsfeld, Brooks (446) (5.51, 2017-2021) |                                     | 3. Semeraro, Greif (449) (27)                                            |
| <i>-first responder</i>                    | -YR (ref)=1988-2020         | 4. Perkins, Handley (439) (31)                                       |                                             |                                     | 4. Sarkisian, Mickley (450) (27)                                         |
| <i>-cardiopulmonary resuscitation</i>      | -MY (citing)=2020           | 5. Pijls, Nelemans (440) (31)                                        |                                             |                                     | 5. Scquizzato, Pallanch (451) (16)                                       |
| <i>-citizen responded</i>                  | -YR (citing)=2000-2021      | 6. Brooks, Simmons (441) (25)                                        |                                             |                                     | 6. Derkenne, Jost (452) (15)                                             |
| <i>-cardiovascular care science</i>        |                             | 7. Sasson, Rogers (442) (25)                                         |                                             |                                     | 7. Lyznicki, Williams (453) (15)                                         |
|                                            |                             | 8. Berglund, Claesson (443) (25)                                     |                                             |                                     | 8. Matinrad, Granberg (454) (13)                                         |
|                                            |                             | 9. Caputo, Muschietti (444) (24)                                     |                                             |                                     | 9. Folke, Andelius (455) (13)                                            |
|                                            |                             | 10. Monsieurs, Nolan (445) (21)                                      |                                             |                                     | 10. Metelmann, Metelmann (456) (13)                                      |
| <i>Software analysis of cardiac output</i> | -S=108<br>-SS=0.996         | 1. Bland and Altman (457) (98)<br>2. Agatston, Janowitz (458) (10)   | 1. Germano, Kiat (459) (5.89, 1998-2009)    | 1. Bland and Altman (457) (0.06)    | 1. Prisant, Bottini (464) (54)                                           |
|                                            | -MY (ref)=1989              | 3. Germano, Kiat (459) (10)                                          |                                             | 2. Devereux, Pickering (462) (0.02) | 2. Burkert, Fredrikson (465) (15)                                        |
| <i>-ventricular volume</i>                 | -YR (ref)=1958-2013         | 4. Critchley and Critchley (460) (4)                                 |                                             | 3. Alderman, Ooi (463) (0.02)       | 3. Lum and Coel (466) (7)                                                |
| <i>-quantitative gated SPECT software</i>  | -MY (citing)=2007           | 5. DePuey, Nichols (461) (4)                                         |                                             |                                     | 4. Knollmann, Helmig (467) (7)                                           |
| <i>-segmental wall motion</i>              | -YR (citing)=1992-2020      |                                                                      |                                             |                                     |                                                                          |
| <i>-ejection fraction</i>                  |                             |                                                                      |                                             |                                     |                                                                          |

## Supplementary Methods Search query for WoS

TI=((heart OR cardiovascular OR cardiac OR cardiorespiratory OR cardiopulmonary OR cardiometabolic OR stroke OR myocardial OR coronary) AND (“health technology” OR “health technologies” OR “healthcare technology” OR “healthcare technologies” OR “electronic healthcare” OR “digital healthcare” OR “health tech” OR “mobile application\*” OR “mobile app\*” OR “digital device\*” OR “electronic device\*” OR “web-based” OR “web based” OR cybermedicine OR cybertherapy OR “online community” OR “online platform\*” OR webinar\* OR telehealth OR telemedicine OR “telehealth app\*” OR “telemedicine app\*” OR robot OR “videogame\*” OR “video game\*” OR “computer game\*” OR wii OR gamification OR “immersive technology” OR VR/AR OR “immersive technologies” OR “immersive tech” OR “virtual reality” OR “virtual realities” OR “augmented reality” OR “augmented realities” OR “mixed reality” OR “mixed realities” OR “smart speaker” OR “smart device\*” OR avatar\* OR chatbot\* OR “voice search” OR “voice activation” OR ehealth OR “electronic health” OR “digital health” OR emedicine OR “electronic medicine” OR “digital medicine” OR mhealth OR “mobile health” OR “text message” OR “text messaging” OR “text-messaging” OR “short message service” OR SMS OR “video-assisted” OR “video health” OR Twitter OR “social media” OR “Youtube” OR “Instagram” OR “facebook” OR tiktok OR smartphone\* OR “smart technology” OR “smart technologies” OR “smart sensor” OR “body sensor\*” OR “wireless sensor\*” OR “voice technology” OR “voice technologies” OR iphone OR ipad OR “mobile phone\*” OR “cell phone\*” OR “android phone\*” OR “telemedical” OR “health tracker\*” OR “fitness tracker\*” OR “fitness watch” OR “apple watch” OR fitbit OR garmin OR “activity tracker\*” OR “electronic prescribing” OR “E-prescription” or eprescription\* OR evisit OR “E-visit” OR “health information technology” OR “health information technologies” OR “blockchain” OR “health wearables” OR “wearables” OR “wearable devices” OR “wearable technology” OR “wearable technologies” OR telecardiology OR telemonitored OR telemonitor OR telerehabilitation OR “health monitoring system” OR “healthcare monitoring system” OR “Internet of things” OR bluetooth“ OR electronic database” OR “texting” OR “software” OR “webpage” OR “website” OR “internet-based” OR “electronic medical record\*” OR “personal health record\*” OR “electronic health record\*” OR “health monitoring device” OR “personal monitoring device” OR “home monitoring device” OR “fitness app\*” OR “sleep tracking device” OR “sleep tracking app\*”)) OR

((TI=(obesity OR diabetes OR nutrition OR “physical activity” OR “physical inactivity” OR diet OR dietary OR “blood pressure” OR hypertensive OR hypertension OR smoking OR alcohol OR overweight OR sedentary OR cholesterol OR triglycerides OR lipid\* OR dyslipidemia OR dyslipidaemia OR stress OR hypercholesterolaemia) AND AB=(cardiovascular or cardiac)) AND TI=(“health technology” OR “health technologies” OR “healthcare technology” OR “healthcare technologies” OR “electronic healthcare” OR “digital healthcare” OR “health tech” OR “mobile application\*” OR “mobile app\*” OR “digital device\*” OR “electronic device\*” OR “web-based” OR “web based” OR cybermedicine OR cybertherapy OR “online community” OR “online platform\*” OR webinar\* OR telehealth OR telemedicine OR “telehealth app\*” OR “telemedicine app\*” OR robot OR “videogame\*” OR “video game\*” OR “computer game\*” OR wii OR gamification OR “immersive technology” OR VR/AR OR “immersive technologies” OR “immersive tech” OR “virtual reality” OR “virtual realities” OR “augmented reality” OR “augmented realities” OR “mixed reality” OR “mixed realities” OR “smart speaker” OR “smart device\*” OR avatar\* OR chatbot\* OR “voice search” OR “voice activation” OR ehealth OR “electronic health” OR “digital health” OR emedicine OR “electronic medicine” OR “digital medicine” OR mhealth OR “mobile health” OR “text message” OR “text messaging” OR “text-messaging” OR “short message service” OR SMS OR “video-assisted” OR “video health” OR Twitter OR “social media” OR “Youtube” OR “Instagram” OR “facebook” OR tiktok OR smartphone\* OR “smart technology” OR “smart technologies” OR “smart sensor” OR “body sensor\*” OR “wireless sensor\*” OR “voice technology” OR “voice technologies” OR iphone OR ipad OR “mobile phone\*” OR “cell phone\*” OR “android phone\*” OR “telemedical” OR “health tracker\*” OR “fitness tracker\*” OR “fitness watch” OR “apple watch” OR fitbit OR garmin OR “activity tracker\*” OR “electronic prescribing” OR “E-prescription” or eprescription\* OR evisit OR “E-visit” OR “health information technology” OR “health information technologies” OR “blockchain” OR “health wearables” OR “wearables” OR “wearable devices” OR “wearable technology” OR “wearable technologies” OR telecardiology OR telemonitored OR telemonitor\* OR telerehabilitation OR “health monitoring system” OR “healthcare monitoring system” OR “Internet of things” OR bluetooth“ OR electronic database” OR “texting” OR “software” OR “webpage” OR “website” OR “internet-based” OR “electronic medical record\*” OR “personal health record\*” OR “electronic health record\*” OR “health monitoring device” OR “personal monitoring device” OR “home monitoring device” OR “fitness app\*” OR “sleep tracking device” OR “sleep tracking app\*”)) OR

AB=(“heart disease” OR “heart attack” OR “heart failure” OR “heart arrhythmia\*” OR “heart valve” OR cardiovascular OR cardiac OR cardiorespiratory OR cardiometabolic) AND (“health technology” OR “health technologies” OR “healthcare technology” OR “healthcare technologies” OR “electronic healthcare” OR “digital healthcare” OR “health tech” OR “mobile application\*” OR “mobile app\*” OR “digital device\*” OR “electronic device\*” OR “web-based” OR “web based” OR Cybermedicine OR cybertherapy OR “online community” OR “online platform\*” OR telehealth OR telemedicine OR “telehealth app\*” OR “telemedicine app\*” OR “videogame\*” OR “video game\*” OR “computer game\*” OR wii OR gamification OR “immersive technology” OR VR/AR OR “immersive technologies” OR “immersive tech” OR “virtual reality” OR “virtual realities” OR “augmented reality” OR “augmented realities” OR “mixed reality” OR “mixed realities” OR “smart speaker” OR “smart device\*” OR avatar\* OR chatbot\* OR “voice search” OR “voice activation” OR ehealth OR “digital health” OR emedicine OR “digital medicine” OR mhealth OR “mobile health” OR “text message” OR “text messaging” OR “text-messaging” OR “short message service” OR SMS OR “video-assisted” OR “video health” OR Twitter OR “social media” OR “Youtube” OR “Instagram” OR tiktok OR smartphone\* OR “smart technology” OR “smart technologies” OR “smart sensor” OR “body sensor\*” OR “wireless sensor\*” OR “voice technology” OR “voice technologies” OR iphone OR ipad OR “mobile phone\*” OR “cell phone\*” OR “android phone\*” OR “telemedical” OR “health tracker\*” OR “fitness tracker\*” OR “fitness watch” OR “apple watch” OR smartwatch OR “apple watch” OR fitbit OR garmin OR “activity tracker\*” OR “electronic prescribing” OR “E-prescription” or eprescription\* OR evisit OR “E-visit” OR “health information technology” OR “health information technologies” OR “blockchain” OR “health wearables” OR “wearables” OR “wearable devices” OR “wearable technology” OR “wearable technologies” OR telecardiology OR telemonitored OR telemonitor\* OR telerehabilitation OR “health monitoring system” OR “healthcare monitoring system” OR “Internet of things” OR Bluetooth OR “health monitoring device” OR “personal monitoring device” OR “home monitoring device” OR “fitness app\*” OR “sleep tracking device” OR “sleep tracking app\*” OR smartwatch)) OR

AK=(“heart disease” OR “heart attack” OR “heart failure” OR “heart arrhythmia\*” OR “heart valve” OR cardiovascular OR cardiac OR cardiorespiratory OR cardiometabolic) AND (“health technology” OR “health technologies” OR “healthcare technology” OR “healthcare technologies” OR “electronic healthcare” OR “digital healthcare” OR “health tech” OR “mobile application\*” OR “mobile app\*” OR “digital device\*” OR “electronic device\*” OR “web-based” OR “web based” OR Cybermedicine OR cybertherapy OR “online community” OR “online platform\*” OR webinar\* OR telehealth OR telemedicine OR “telehealth app\*” OR “telemedicine app\*” OR “videogame\*” OR “video game\*” OR “computer game\*” OR wii OR gamification OR “immersive technology” OR VR/AR OR “immersive technologies” OR “immersive tech” OR “virtual reality” OR “virtual realities” OR “augmented reality” OR “augmented realities” OR “mixed reality” OR “mixed realities” OR “smart speaker” OR “smart device\*” OR avatar\* OR chatbot\* OR “voice search” OR “voice activation” OR ehealth OR “electronic health” OR “digital health” OR emedicine OR “digital medicine” OR mhealth OR “mobile health” OR “text message” OR “text messaging” OR “text-messaging” OR “short message service” OR SMS OR “video-assisted” OR “video health” OR Twitter OR “social media” OR “Youtube” OR “Instagram” OR “facebook” OR tiktok OR smartphone\* OR “smart technology” OR “smart technologies” OR “smart sensor” OR “body sensor\*” OR “wireless sensor\*” OR “voice technology” OR “voice technologies” OR iphone OR ipad OR “mobile phone\*” OR “cell phone\*” OR “android phone\*” OR “telemedical” OR “health tracker\*” OR “fitness tracker\*” OR “fitness app\*” OR “sleep tracking device” OR “sleep tracking app\*” OR “fitness watch” OR “apple watch” OR fitbit OR garmin OR “activity tracker\*” OR “electronic prescribing” OR “E-prescription” or eprescription\* OR evisit OR “E-visit” OR “health information technology” OR “health information technologies” OR “blockchain” OR “health wearables” OR “wearables” OR “wearable devices” OR “wearable technology” OR “wearable technologies” OR telecardiology OR telemonitored OR telemonitor\* OR telerehabilitation OR “health monitoring system” OR “healthcare monitoring system” OR “health monitoring device” OR “personal monitoring device” OR “home monitoring device” OR “Internet of things” OR Bluetooth OR smartwatch))

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