# 《"健康中国"智慧医疗生态体系发展战略研究》参考

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## [动态信息]

## 1. Telehealth Use Among Medicare Beneficiaries Drops to 15% in Q2 2022

【mhealthintelligence】In the second quarter of 2022, about 15 percent of Medicare beneficiaries used telehealth, down from 48 percent in Q2 2020, according to a new data analysis from the Centers for Medicare and Medicaid Services (CMS).CMS recently released its Medicare Telehealth Trends Report, which includes information from Medicare Fee-for-Service (FFS) Part B claims and Medicare enrollment data. The data is from

Jan. 1, 2020, to June 30, 2022.

链接：

https://mhealthintelligence.com/news/telehealth-use-among-medicare-beneficiaries-drops-to-15-in-q2-2022

# [文献速递]

## 1. Demystifying artificial intelligence in pharmacy

作者：Nelson, Scott D. ； Walsh, Colin G. ； Olsen, Casey A. ； McLaughlin, Andrew J. ； LeGrand, Joseph R. ； Schutz, Nick ； Lasko, Thomas A.；

来源：American journal of health-system pharmacy: AJHP

摘要：Purpose. To provide pharmacists and other clinicians with a basic understanding of the underlying principles and practical applications of artificial intelligence (AI) in the medication-use process.

链接：

https://pan.ckcest.cn/rcservice//doc?doc_id=109814

## 2. Current and emerging artificial intelligence applications for pediatric abdominal imaging

作者：Jonathan R.,Dillman；Elan,Somasundaram；Samuel L.,Brady；Lili,He；

摘要：Abstract Artificial intelligence (AI) uses computers to mimic cognitive functions of the human brain, allowing inferences to be made from generally large datasets. Traditional machine learning (e.g., decision tree analysis, support vector machines) and deep learning (e.g., convolutional neural networks) are two commonly employed AI approaches both outside and within the field of medicine. Such techniques can be used to evaluate medical images for the purposes of automated detection and segmentation, classification tasks (including diagnosis, lesion or tissue characterization, and prediction), and image reconstruction. In this review

article we highlight recent literature describing current and emerging AI methods applied to abdominal imaging (e.g., CT, MRI and US) and suggest potential future applications of AI in the pediatric population.

链接：

https://pan.ckcest.cn/rcservice//doc?doc_id=109816

## 3. The emerging role of artificial intelligence in multiple sclerosis imaging

作者：Afzal, H. M. Rehan; Luo, Suhuai; Ramadan, Saadallah; Lechner-Scott, Jeannette;

来源：Multiple sclerosis: clinical and laboratory research

摘要：Background: Computer-aided diagnosis can facilitate the early detection and diagnosis of multiple sclerosis (MS) thus enabling earlier interventions and a reduction in long-term MS-related disability. Recent advancements in the field of

artificial intelligence (AI) have led to the

improvements in the classification, quantification and

identification of diagnostic patterns in medical images

for a range of diseases, in particular, for MS.

Importantly, data generated using AI techniques are

analyzed automatically, which compares favourably with

labour-intensive and time-consuming manual methods.

Objective: The aim of this review is to assist MS

researchers to understand current and future

developments in the AI-based diagnosis and prognosis of

MS. Methods: We will investigate a variety of AI

approaches and various classifiers and compare the

current state-of-the-art techniques in relation to

lesion segmentation/detection and prognosis of disease.

After briefly describing the magnetic resonance imaging

(MRI) techniques commonly used, we will describe AI

techniques used for the detection of lesions and MS

prognosis. Results: We then evaluate the clinical

maturity of these AI techniques in relation to MS.

Conclusion: Finally, future research challenges are identified in a bid to encourage further improvements of the methods.

链接:

https://pan.ckcest.cn/rcservice//doc?doc_id=109815

# 4. Harnessing artificial intelligence in cardiac rehabilitation, a systematic review

作者：Sara Sotirakos; Basem Fouda; Noor Adeebah Mohamed Razif; Niall Cribben; Cormac Mulhall; Aisling O'Byrne; Bridget Moran; Ruairi Connolly

来源：Future cardiology

摘要：Aim: This systematic review aims to evaluate the current body of research surrounding the efficacy of artificial intelligence (AI) in cardiac rehabilitation. Presently, AI can be incorporated into personal devices such as smart watches and smartphones, in diagnostic

and home monitoring devices, as well as in certain inpatient care settings. Materials & methods: The PRISMA?guidelines were followed in this review. Inclusion and exclusion criteria were set using the Population, Intervention, Comparison and Outcomes (PICO) tool. Results: Eight studies meeting the inclusion criteria were found. Conclusion: Incorporation of AI into healthcare, cardiac rehabilitation delivery, and monitoring holds great potential for early detection of cardiac events, allowing for home-based monitoring, and improved clinician decision making.Lay abstractArtificial intelligence (AI) involves the use of technologies capable of making decisions based on data provided. AI can be used in healthcare to provide actionable data for a clinician by analyzing patterns in patient data to predict outcomes and guide treatment. Cardiovascular disease is the leading cause of death worldwide.

Cardiac rehabilitation is a therapy proven to reduce mortality and morbidity from cardiovascular disease. This study outlines three cases of AI based healthcare tools in cardiac rehabilitation. This includes the provision of personalized, home-based cardiac rehabilitation, the early detection of cardiac events through smart watch monitoring and by providing clinician decision making support in cardiac failure rehabilitation.

链接：

https://pan.ckcest.cn/rcservice//doc?doc_id=109818

## 5. Enhancing preclinical drug discovery with artificial intelligence

作者：Vijayan, R. S. K.；Kihlberg, Jan；Cross, Jason B.；Poongavanam, Vasanthanathan；

来源：Drug discovery today

摘要：Artificial intelligence (AI) is becoming an

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integral part of drug discovery. It has the potential
to deliver across the drug discovery and development
value chain, starting from target identification and
reaching through clinical development. In this review,
we provide an overview of current AI technologies and a
glimpse of how AI is reimagining preclinical drug
discovery by highlighting examples where AI has made a
real impact. Considering the excitement and hyperbole
surrounding AI in drug discovery, we aim to present a
realistic view by discussing both opportunities and
challenges in adopting AI in drug discovery.

链接：

https://pan.ckcest.cn/rcservice//doc?doc_id=109819


# 6. How Artificial Intelligence Use Is Expanding in Health Care

作者：Jonathan Bees

来源：NEJM catalyst innovations in care delivery.

摘要：Comments from NEJM Catalyst Insights Council members on a survey on artificial intelligence for care delivery. Artificial intelligence (AI) and machine learning (ML) use for health care delivery has gained momentum. In a December 2021 surveyof NEfM Catalyst Insights Council members — who are clinicians, clinical leaders, and executives at organizations around the world that are directly involved in care delivery — 30% of survey respondents globally say that their organization currently uses AI applications and another 25% expect to do so within 2 years. Results for U.S. respondents are slightly higher, with 35% reporting current use of AI applications, which is eight percentage points higher than in our 2019 survey on the same topic (Figure 1).

链接：

https://pan.ckcest.cn/rcservice//doc?doc_id=109817

7. Artificial intelligence for stepwise diagnosis and

monitoring of COVID-19

作者：Hengrui,Liang；Yuchen,Guo；Xiangru,Chen；Keng-

Leong,Ang；Yuwei,He；Na,Jiang；Qiang,Du；Qingsi,Zeng；

Ligong,Lu；Zebin,Gao；Linduo,Li；Quanzheng,Li；Fangxing,Nie；

Guiguang,Ding；Gao,Huang；Ailan,Chen；Yimin,Li；Weijie,Guan；

Ling,Sang；Yuanda,Xu；Huai,Chen；Zisheng,Chen；Shiyue,Li；

Nuofu,Zhang；Ying,Chen；Danxia,Huang；Run,Li；Jianfu,Li；

Bo,Cheng；Yi,Zhao；Caichen,Li；Shan,Xiong；Runchen,Wang；

Jun,Liu；Wei,Wang；Jun,Huang；Fei,Cui；Tao,Xu；Fleming Y.

M.,Lure；Meixiao,Zhan；Yuanyi,Huang；Qiang,Yang；

Qionghai,Dai；Wenhua,Liang；Jianxing,He；Nanshan,Zhong；

来源：European radiology.

摘要：Abstract Background Main challenges for COVID-19

include the lack of a rapid diagnostic test, a suitable

tool to monitor and predict a patient's clinical course

and an efficient way for data sharing among multicenters.

We thus developed a novel artificial intelligence system

based on deep learning (DL) and federated learning (FL)

for the diagnosis, monitoring, and prediction of a patient's clinical course. Methods CT imaging derived from 6 different multicenter cohorts were used for stepwise diagnostic algorithm to diagnose COVID-19, with or without clinical data. Patients with more than 3 consecutive CT images were trained for the monitoring algorithm. FL has been applied for decentralized refinement of independently built DL models. Results A total of 1,552,988 CT slices from 4804 patients were used. The model can diagnose COVID-19 based on CT alone with the AUC being 0.98 (95% CI 0.97 – 0.99), and outperforms the radiologist's assessment. We have also successfully tested the incorporation of the DL diagnostic model with the FL framework. Its auto-segmentation analyses co-related well with those by radiologists and achieved a high Dice's coefficient of 0.77. It can produce a predictive curve of a patient's clinical course if serial CT assessments are available. Interpretation The

system has high consistency in diagnosing COVID-19 based on CT, with or without clinical data. Alternatively, it can be implemented on a FL platform, which would potentially encourage the data sharing in the future. It also can produce an objective predictive curve of a patient's clinical course for visualization. Key Points ? CoviDet could diagnose COVID-19 based on chest CT with high consistency; this outperformed the radiologist's assessment. Its auto-segmentation analyses co-related well with those by radiologists and could potentially monitor and predict a patient's clinical course if serial CT assessments are available. It can be integrated into the federated learning framework. ? CoviDet can be used as an adjunct to aid clinicians with the CT diagnosis of COVID-19 and can potentially be used for disease monitoring; federated learning can potentially open opportunities for global collaboration.

链接：

## 8. Trustworthy Artificial Intelligence in Medical Imaging

作者：Hasani N.；Morris M.A.；Rhamim A.；Summers R.M.；Jones E.；Siegel E.；Saboury B.；

来源：PET clinics

摘要：Trust in artificial intelligence (AI) by society and the development of trustworthy AI systems and ecosystems are critical for the progress and implementation of AI technology in medicine. With the growing use of AI in a variety of medical and imaging applications, it is more vital than ever to make these systems dependable and trustworthy. Fourteen core principles are considered in this article aiming to move the needle more closely to systems that are accurate, resilient, fair, explainable, safe, and transparent: toward trustworthy AI.

链接：

https://pan.ckcest.cn/rcservice//doc?doc_id=109821

# [科技报告]

## 1. Virtual Care Transformation Study: Insights from organizations at every stage in the virtual care journey

发表时间：2022 年

摘要：Organizations recognize the power of virtual care and aspire to use it in a transformational way—in fact, the amount of employers who expect to offer a virtual-first plan as part of their benefits options will more than double in the next 3 years. This is just one of many insights from our survey of hundreds of U.S.-based employers, which examined the current and future state of virtual care transformation across organizations.

链接：

https://pan.ckcest.cn/rcservice//doc?doc_id=109822