Leveraging 5G to help COVID-19 epidemic prevention and control
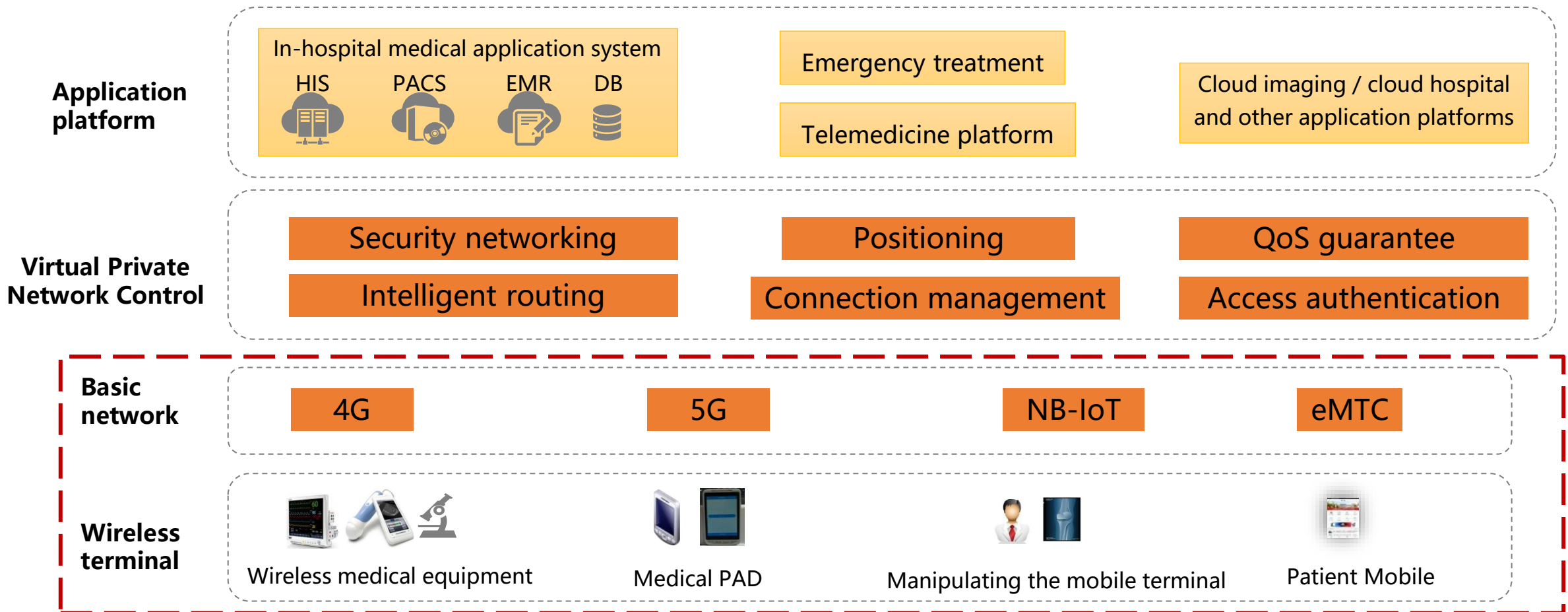
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5G Smart Healthcare Concept

5G smart healthcare: refers to the information, mobile and remote medical services provided in the areas of disease diagnosis, monitoring and treatment based on the 5G technology, making full use of limited medical human and equipment resources

Application platform

In-hospital medical application system

HIS PACS EMR DB

Emergency treatment

Telemedicine platform

Cloud imaging / cloud hospital and other application platforms

Virtual Private Network Control

Security networking

Intelligent routing

Positioning

Connection management

QoS guarantee

Access authentication

Basic network

4G 5G NB-IoT eMTC

Wireless terminal

Wireless medical equipment

Medical PAD

Manipulating the mobile terminal

Patient Mobile

Construction of 5G smart medical system for major public health emergencies

Technology research and development of smart medical technology based on 5G new network architecture

Build 5G smart medical demonstration network

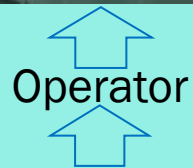Build evaluation and verification environment

Promote the industrialization of key network equipment and prototype systems that meet the needs of smart medical collaboration

Accelerate the application and promotion of 5G in outbreak warning, pre-hospital emergency, remote real-time consultation, remote surgery, wireless monitoring, mobile rounds

5G smart medical system for COVID-19 epidemic

➤ ● Chinese operators realized full coverage of 5G networks in newly built hospitals within 3 days.

➤ ● Realize dozens of 5G medical application scenarios within 20 days

Achieve network coverage

Operator

Equipment supplier

- ● Use existing resources
- ● Minimalist installation
- ● Minimal opening: near-end deployment and commissioning, AI acceptance
  - ➢ Open the first 5G base station in 7 hours

5G medical application scenario landing

Medical treatment scene

Monitoring temperature scene

Video conference scene

- ● Integrated delivery
- ● Network joint debugging
  - ➢ Public network: operators & equipment vendors
  - ➢ Hospital intranet: hospital IT and information department
- ● Cloud platform
  - ➢ Huawei Cloud/Alibaba Cloud/Tencent Cloud/
  - ➢ Tianyi Cloud/Wo Cloud/He Cloud

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Applications of 5G in the COVID-19 epidemic prevention and control

From diagnosis and treatment to prevention and control, **18** types of applications can help to suppress the development of the epidemic.

Remote diagnosis and treatment	Medical assistance	Medical care	Supervision, prevention and control
• Teleconsultation • Remote CT • Remote ultrasound • Remote ECG monitoring • Cloud detection and analysis	• Patient Transfer vehicle • Mobile cart rounds • Disinfection /distribution car • Operation assistance • Wear protective clothing	• Remote visit • Psychological counseling • Work deployment and training • Progress Live	• Infrared body temperature monitoring • Patrol robot monitoring • Drone monitoring • Wearing equipment monitoring

5G remote diagnosis and treatment

Share doctor resources, reduce doctor exposure risks, and provide patients with efficient and timely diagnosis and treatment.

Teleconsultation

100 hospitals help each other; 3000 patients receive timely treatment

Remote CT

20 hospitals help each other; 2000 patients received timely consultation

Remote ultrasound

Zhejiang People's Hospital performs B-ultrasound examination for patients in Wuhan Fangcang Hospital, 700km apart

Remote ECG monitoring

Reduction of 30,000 examination beds/day per system in medium-sized hospitals

Cloud detection and analysis

Real-time 5G transmission back to the cloud for detection; Mobile laboratory completes 1800+ nucleic acid tests

5G medical assistance

Reduce the labor intensity of hospital workers, reduce the risk of contact infection, and fulfill the needs of hospital patients in a timely manner

Patient Transfer vehicle

Disinfection car

Delivery car

Mobile cart rounds

Wear protective clothing

5G+4K patient transfer vehicle, 15 hospitals, 400+ suspected or confirmed case transfer

5G+disinfection truck/medicine delivery/transportation truck: reduce personnel infection risk and labor intensity, 180+ hospitals, 7% reduction in caregiver workload

5G high bandwidth & mobility supports intelligent rounds, 1100+ ward rounds 9% reduction in risk exposures

5G protective clothing wear self-test/equipment operation guidance, 1000+ medical workers 20,000+ secondary protection checks

5G medical care

Relieve patients' panic about the epidemic, relieve the psychological pressure of hospital workers.

Remote visit

Psychological counseling

Work deployment and training

Progress Live

5G Video Remote Visiting/Psychological Nursing. For patients and relatives: used for remote visits to patients in isolation wards. For the hospital: used for medical care to check the patient's situation; Doctors can also conduct video remote psychological consultation. Has landed in many hospitals, video visits, VR visits.

5G response to epidemic situation deployment and new skills transfer.
700+ National Work Deployment Conference.
600+ hospital training.
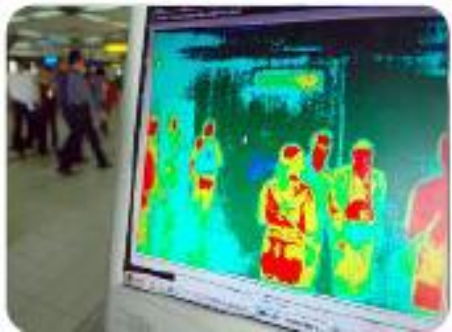100 + national training.

5G high-bandwidth supports multiple forms of live . Just 16 days, the construction progress of "Cloud Supervisor" was broadcast live, with a total of 115 million views

5G supervision, prevention and control

Real-time monitoring of the temperature of urban mobile personnel and management of the concentration of personnel

| **Infrared body temperature monitoring** | **Patrol robot monitoring** | **Headset monitoring** | **Wearing equipment monitoring** |

Fixed entrance prevention and control in public places. 4000+ hospitals, enterprises, and public transportation hubs has deployed.

5G infrared temperature measurement mobile device, mobile epidemic prevention and control in public places. 5000+ areas have been deployed, including many hospitals and public places

Thanks！