Angel Robot
AI Empowering Primary Care

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Healthcare Challenges in China

Check-in lines for seeing doctors

1.3 Billion People in China

1. Inconvenient Service Access
2. Excessive Service Cost

"I'm running nose…"
"Take a CT test first!"

Weak Primary Care System

Lack of Primary Care Physicians (PCPs)

Subpar Service Capability

Low Service Efficiency

Meridian Medical Network Corp.

Vision
Making Health & Wellness Services Universal + Sustainable
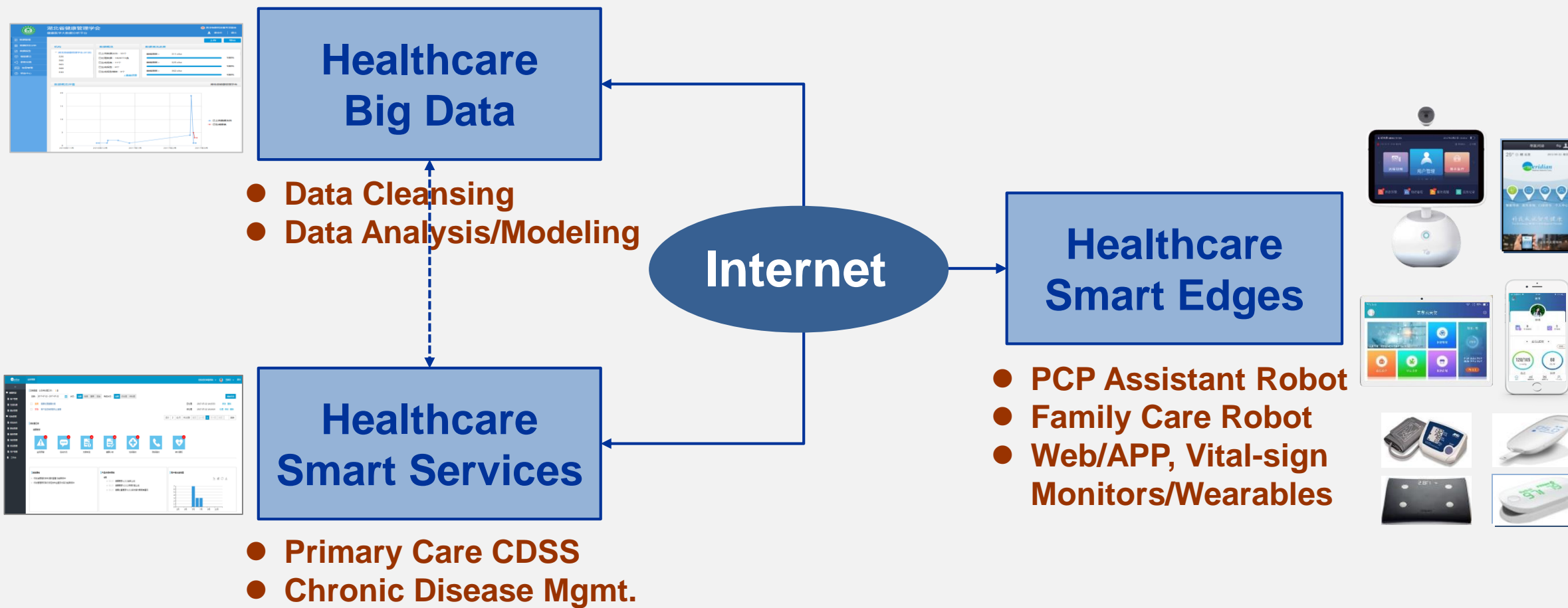
- **Meridian Medical Network Corp.** is a Healthcare IT company founded in Beijing, China in 2010 by seasoned executives who lived and worked in US/Silicon Valley for 20+ years
- Deep integration of **Big Data & AI** with **Medicine,** providing **Smart Healthcare System and Solutions** with nearly **100 million** people healthcare big data, **300+** hospitals for *AI-enabled Primary Care, Chronic Care and Elderly Care*

Meridian SMART Healthcare System

Data and Service Closed-Loop

Cloud Side ←----------------------------→ **Edge Side**

Healthcare Big Data

- Data Cleansing
- Data Analysis/Modeling

Internet

Healthcare Smart Edges

- PCP Assistant Robot
- Family Care Robot
- Web/APP, Vital-sign Monitors/Wearables

Healthcare Smart Services

- Primary Care CDSS
- Chronic Disease Mgmt.

Meridian Angel Robot for Primary Care

AI Empowering Primary Care / Family Care

PCPs   **Angel Robot**
(for PCP)

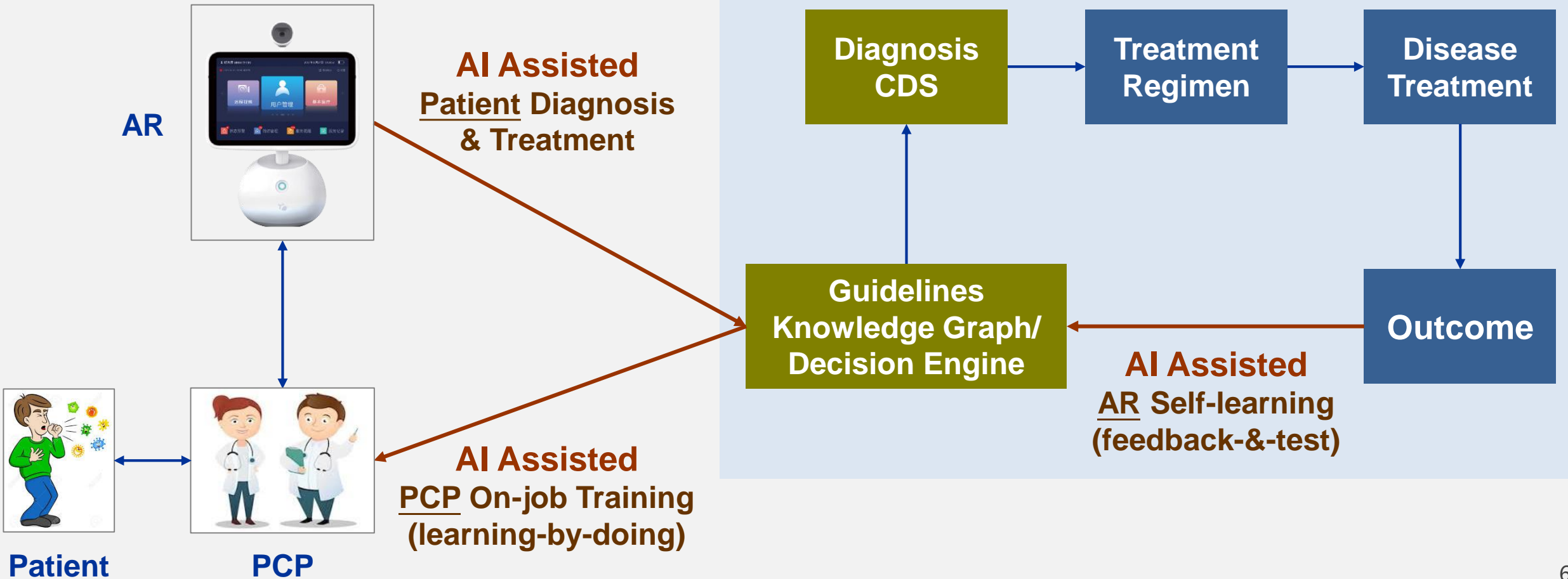**Angel Robot**   **Family**
(for Family)

AR for Primary Care: AI Assisted
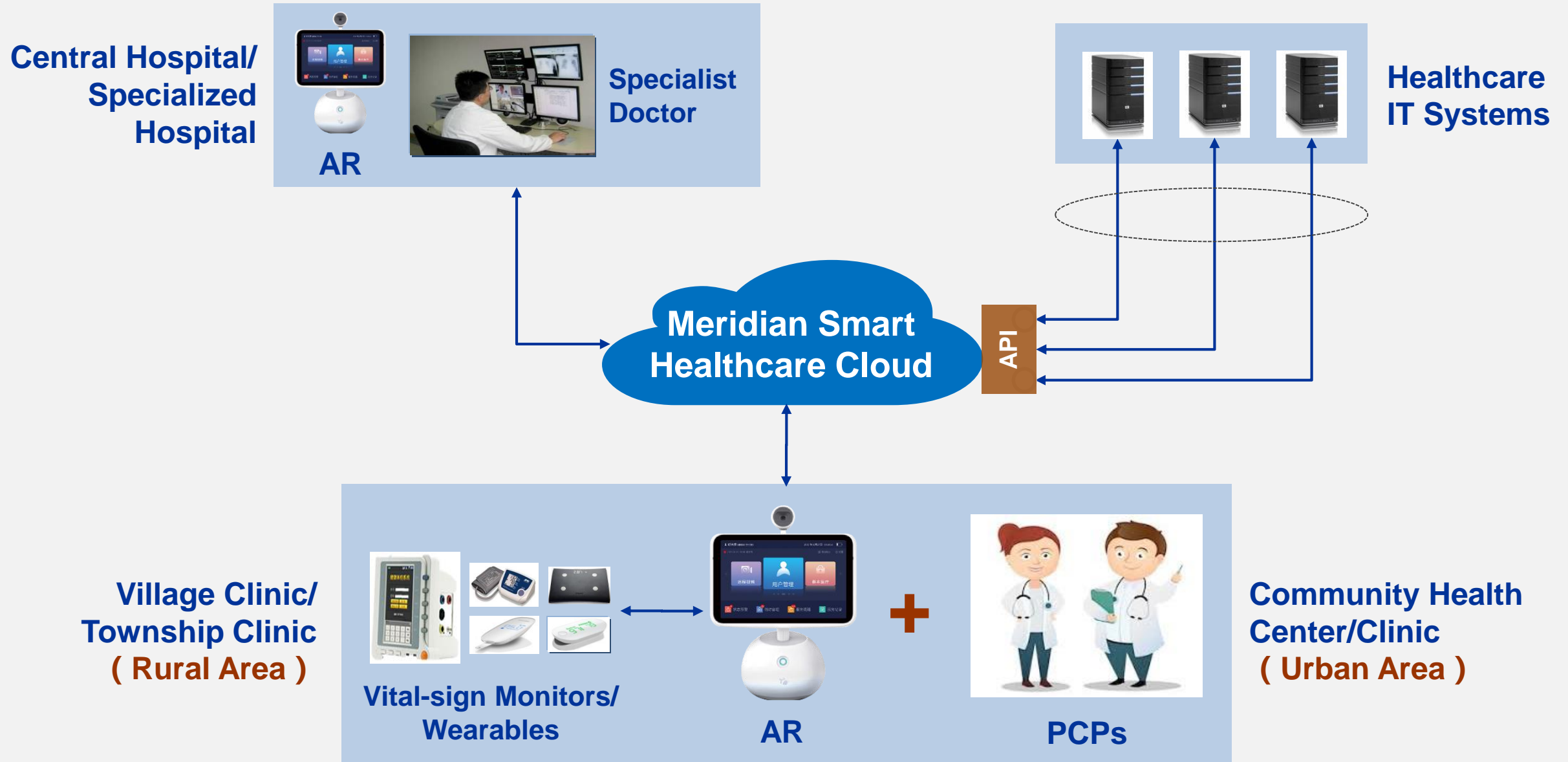
Basic Medicine: CDSS, Triage & Referral

Public Health: Chronic Care, Health Assessment

Tele-Medicine: Video/Voice, Conference
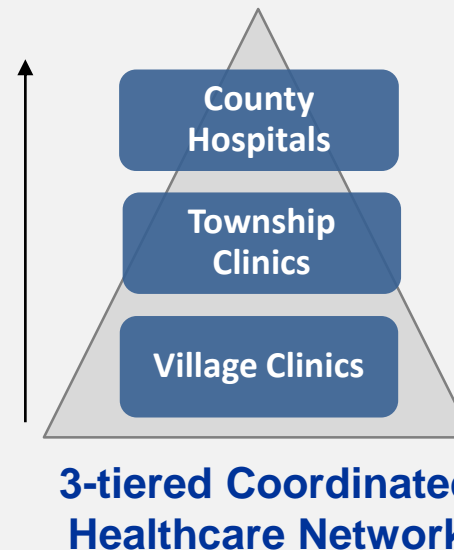
AI Features: Facial/Voice Recog., Touch Screen

AR

AI Assisted
<u>Patient</u> Diagnosis & Treatment

AI Assisted
<u>PCP</u> On-job Training (learning-by-doing)

Patient

PCP

Diagnosis CDS → **Treatment Regimen** → **Disease Treatment**

Guidelines Knowledge Graph/ Decision Engine

Outcome

AI Assisted
<u>AR</u> Self-learning (feedback-&-test)

AR for Primary Care: Deployment

Central Hospital/ Specialized Hospital

AR

Specialist Doctor

Healthcare IT Systems

Meridian Smart Healthcare Cloud

API

Village Clinic/ Township Clinic
(Rural Area)

Vital-sign Monitors/ Wearables

AR

PCPs

Community Health Center/Clinic
(Urban Area)

AR Field Trial: "Jingde Experiment"

The 1st Field Trial of PCP-Assisted Robot in China

- **Deployed in the County of Jingde, Anhui Province, China**
  - ✓ 10 towns, 68 villages, 150,000 population
  - ✓ 1/3 village doctors > 60 yr. old; 7 village doctors > 70 yr. old
  - ✓ 80 Angel Robots deployed
- **Launched on Sep 14, 2017**

County Hospitals

Township Clinics

Village Clinics

3-tiered Coordinated Healthcare Network

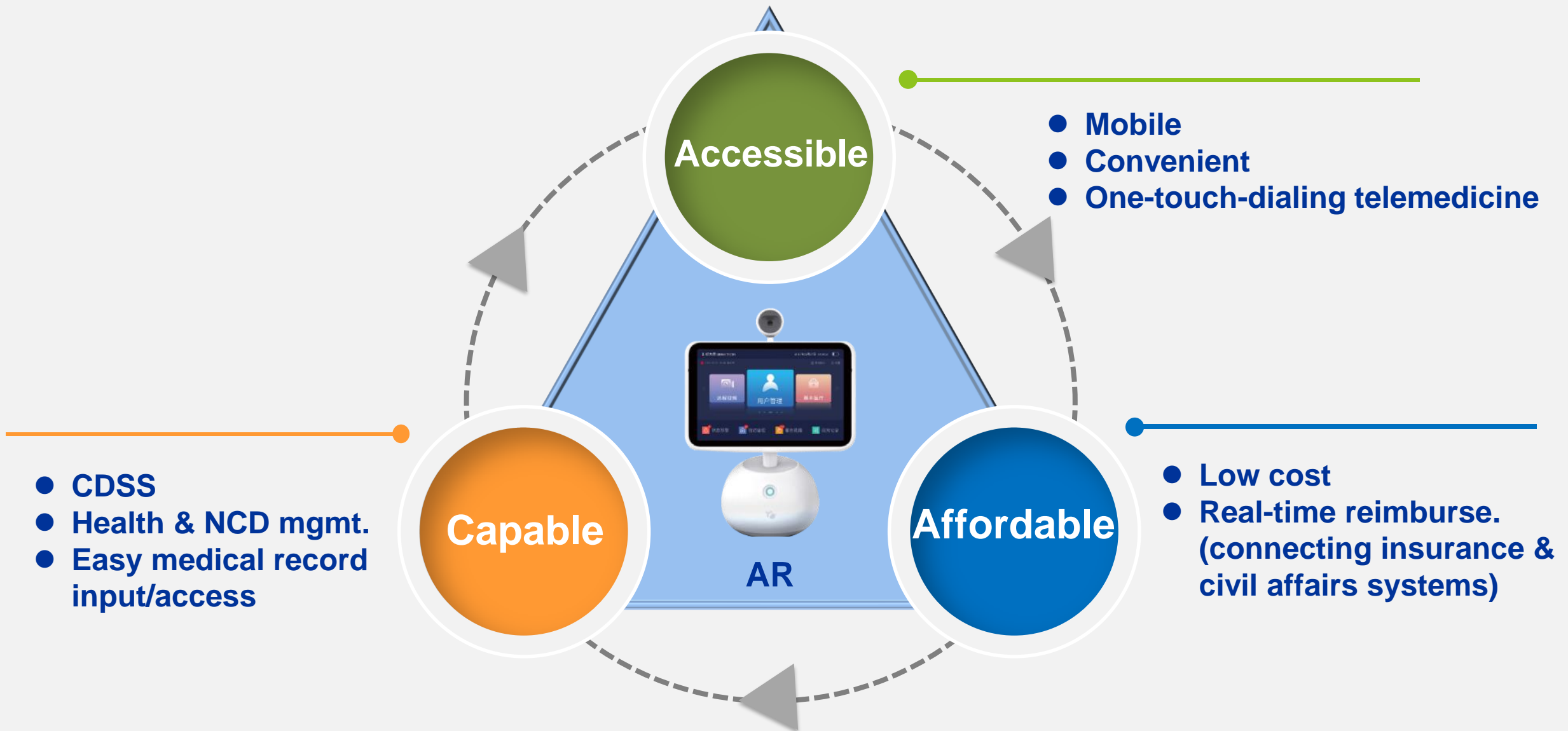**County of Jingde**

Anhui Province, China

World Bank Delegation Appraisal

- **Delegation from *the World Bank Health Reform Program-for-Results (PfR) Project for China* visited Jingde on May 21-22, 2018**
- **Concluded Angel Robot as:**
- ✓ **Enabling *"People-Centered Integrated Care" (PCIC)***
- ✓ **Could be Adapted Globally**
- ✓ **Recommended for Panel Case in *Lancet "Commission Report on Primary Care in China" (Oct. 2018)***

Key Values: Accessible, Capable, Affordable

Accessible

Capable

Affordable

AR

- **Mobile**
- **Convenient**
- **One-touch-dialing telemedicine**

- **CDSS**
- **Health & NCD mgmt.**
- **Easy medical record input/access**

- **Low cost**
- **Real-time reimburse. (connecting insurance & civil affairs systems)**

Jingde Experiment: Highlights & Lessons Learnt

Government Issued Policy

Highlights	Lessons Learnt
A Policy-supporting Program – Payment & Incentive Mechanism	**Sufficient Training is Very Important**
AI-assisted Medical Services – CDSS, Chronic Care, Telemedicine	**Clearly Define Clinical Liability – PCP's Assistant**
IT System Interoperability – Connecting All the "Silos"	**Cybersecurity – Authorized Data Center & Policy for Access**

**Angel Robot Empowering Primary Care: *Better "Quality" and "Efficiency"*
Savings in the Social Medical Insurance Pool**

Angel Robot Demo…

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Medical Network Corp.
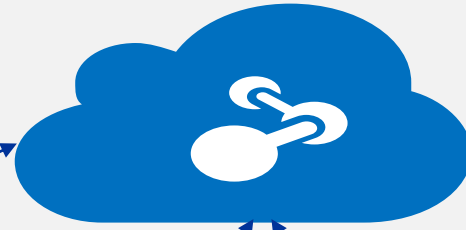
让健康服务惠及人人
关怀一生

Making Health & Wellness
Services Universal ✚ Sustainable

Thank You!

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