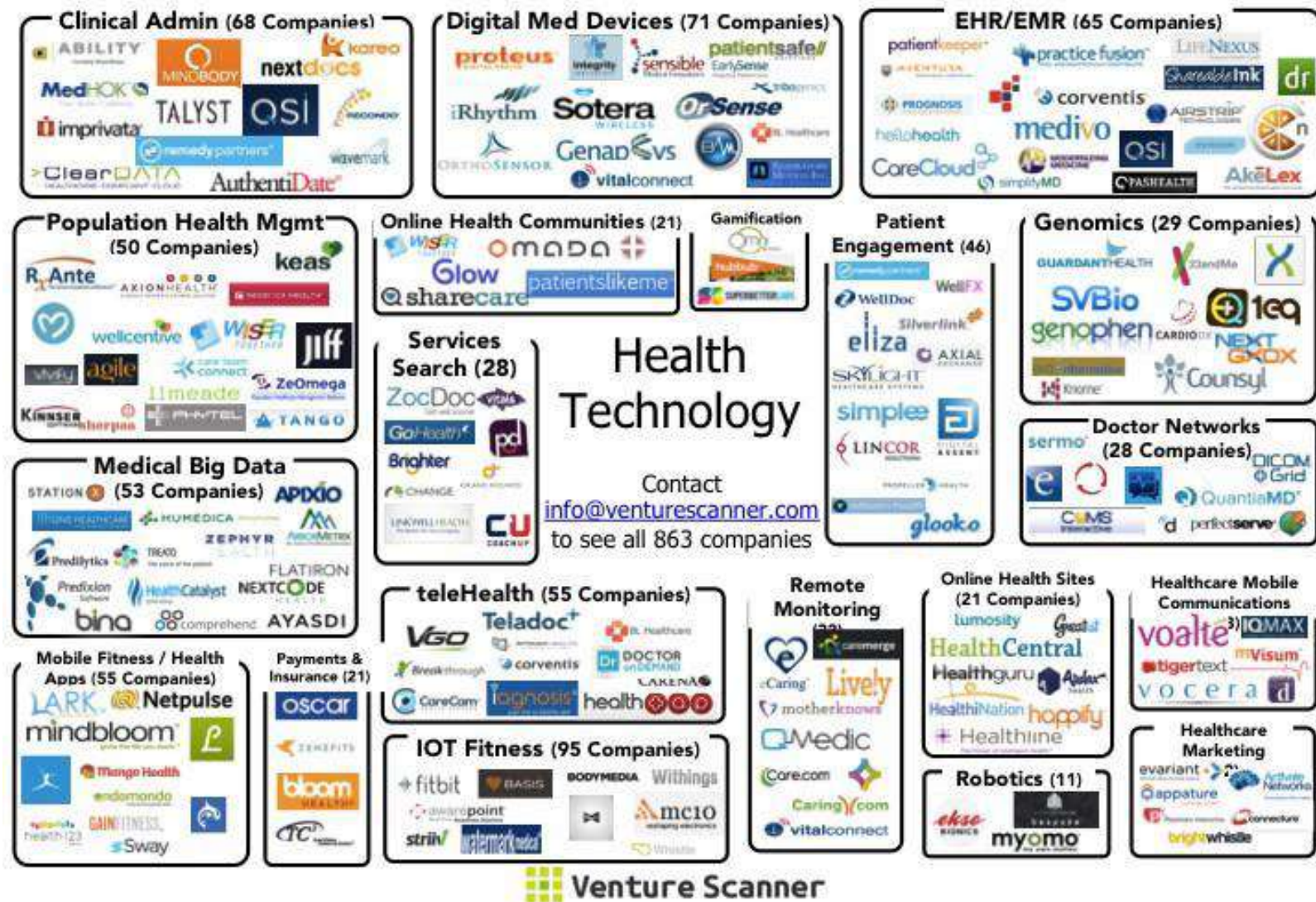

Impact of Technology on Quality and Patient Safety

Norman Deery
Vice President
Clinical Effectiveness, APAC

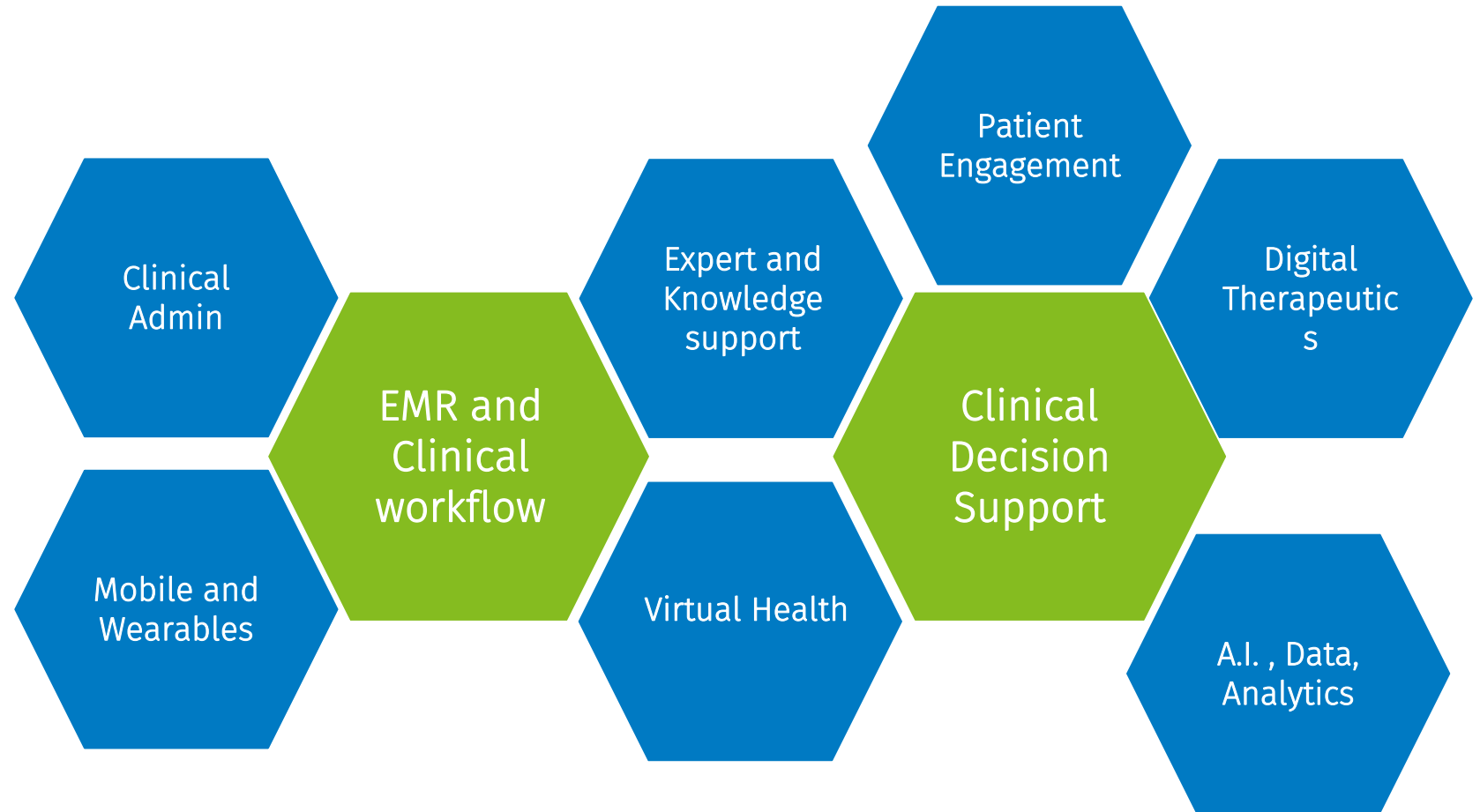
Digital Health Technology Landscape is broad...



Digital Health Technology Landscape is broad...

Technology impact on Patient Safety & Quality by

- improving compliance to practice guidelines
- reducing medication errors
- reducing adverse drug reactions



Quality and Patient Safety



“ Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes. It is based on evidence-based professional knowledge and is critical for achieving universal health coverage.”

Health Quality should be:

- **Effective** – providing evidence-based healthcare services
- **Safe** – avoiding harm to people for whom the care is intended; and
- **People-centered** – providing care that responds to individual preferences, needs and values

Health Services must be:

Timely – reducing waiting times and sometimes harmful delays;

Equitable – providing care that does not vary in quality on account of gender, ethnicity, geographic location, and socio-economic status;

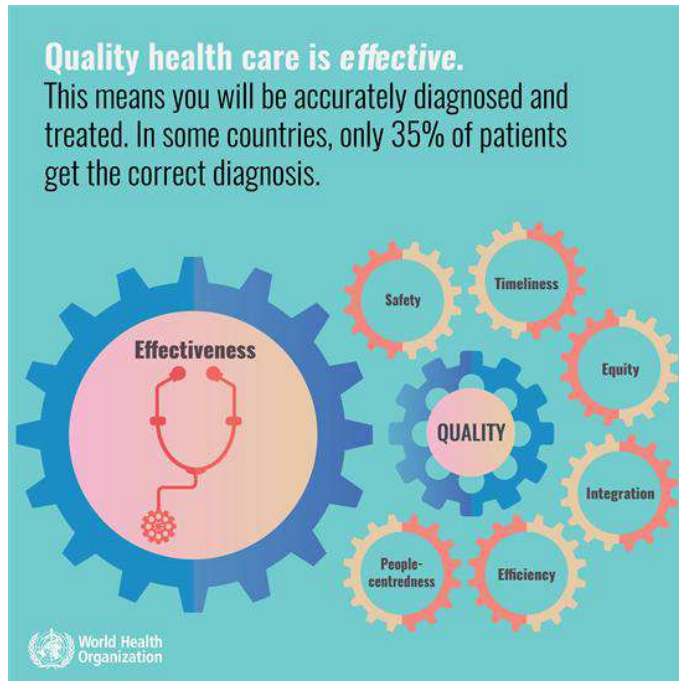
Integrated – providing care that makes available the full range of health services throughout the life course;

Efficient – maximizing the benefit of available resources and avoiding waste.

Effectiveness

Goal: Accurate Diagnosis and Treatment Plan

Technology's Role: Curate the latest, most authoritative clinical recommendations. Provide means to standardize care



Unanswered clinical questions impact patient management decisions

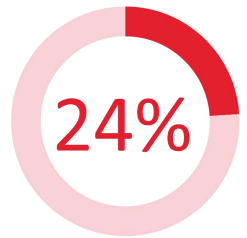
- Approximately 2 out of 3 clinical encounters generate a question
- Physicians have approximately 11 clinical questions a day
- Only 40% of questions get answered



Answering all clinical questions could change

5 to 8 patient management decisions each day

Effectiveness & Timeliness

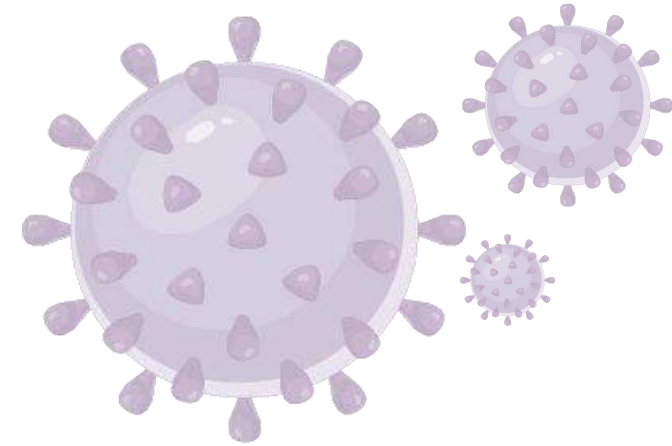


Diagnostic error rate in control group not using UpToDate



Diagnostic error rate in group using UpToDate

More than 100 research studies demonstrate that **widespread** use of *UpToDate* is associated with improved outcomes and hospital performance



COVID-19 Response

50 clinical topics



36 Society guideline links topics

60 Graphics

5 Patient education topics

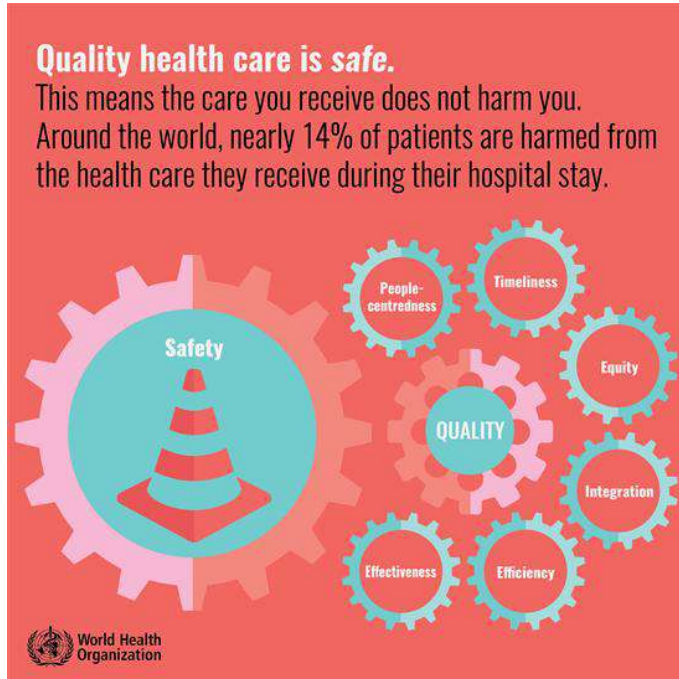
A global impact

31M topic views through 2021

By

1.3M Healthcare professionals

Safety



Goal: Avoid Adverse Drug Effects

Technology's Role: Provide **precise dosing** customized to patient data, comorbidities, genomics. Alert clinicians when potential risks arise

More than 13% of the world's population suffers from chronic kidney disease¹

Acute kidney injuries occur in nearly 25% of hospitalized patients²

U.S. poison-control centers handle more than 200,000 cases of out-of-hospital medication errors annually, and children under 6 years old constitute approximately 30% of these cases.³

“There is no *standard* patient. Same with the medicine dose.”

Bruce Mueller, PharmD, FCCP, FASN, FNKF
Dean , University of Michigan College of Pharmacy Author, Clinical Researcher on Nephrology

1. NR, et al. Global prevalence of chronic kidney disease - A systematic review and meta-Analysis. PLoS One. 2016 Jul 6;11(7):e0158765. doi: 10.1371/journal.pone.0158765. <https://pubmed.ncbi.nlm.nih.gov/27383068/>.

2. Wang HE, et al. Acute kidney injury and mortality in hospitalized patients. Am J Nephrol. 2012 May; 35(4): 349–355. <https://pubmed.ncbi.nlm.nih.gov/22473149/>

3 www.aap.org/en-us/about-the-aap/aap-press-room/Pages/Every-8-Minutes-a-Child-Experiences-an-.aspx. Accessed January 5, 2019.

Integrated



Goal: Coordinated Care team

Technology's Role: Harmonize clinical decisions across care team, avoid confusion, support clinician's workflow

Dermatologists vs Pharmacists



"A substantial proportion of pharmacists [46.4%] advised patients to limit TC (Topical corticosteroids) use to 2 weeks or less, which was ***an uncommon strategy among dermatologists***"

JAMA Dermatology Brief
surveying 52 dermatologists and 111 pharmacists ¹

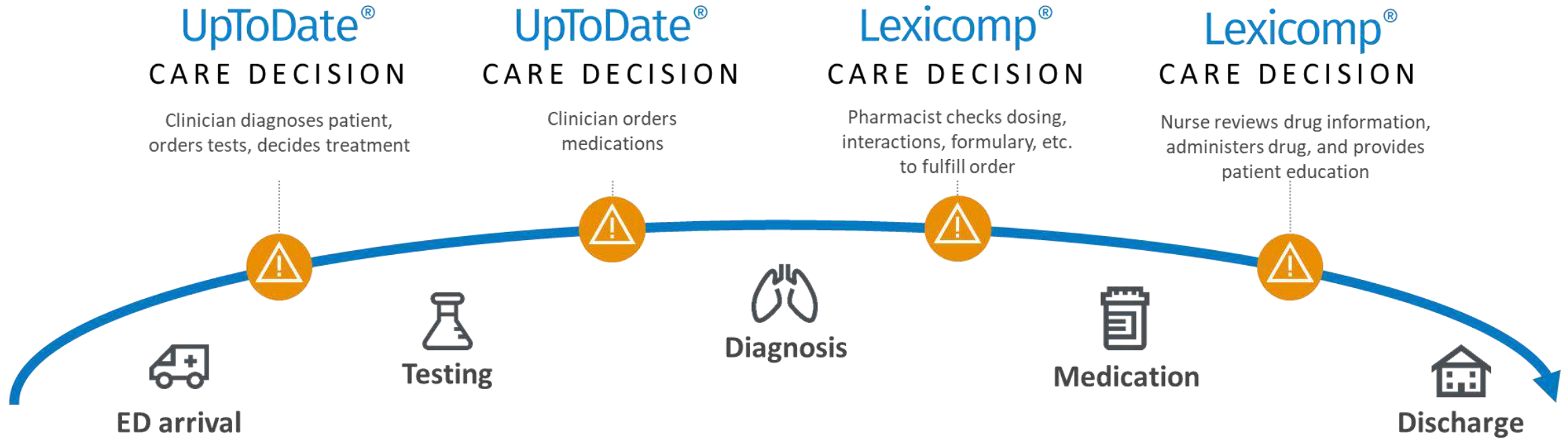
"When all the clinicians in the hospital provide care based on *a common, trusted information source*, unwanted care variability is reduced. Unnecessary costs due to escalations, unnecessary tests, and medical errors can be avoided. Doctors spend more time with patients. Productivity increases."

Dr. Dini Handayani, MARS, FISQua,
Chief Executive Officer of Medistra Hospital, Indonesia
JCI International Surveyor

¹Assessment of Topical Corticosteroid Prescribing, Counseling, and Communication Among Dermatologists and Pharmacists
AMA Dermatol. 2019;155(7):838-843. doi:10.1001/jamadermatol.2018.5353

Integrated

Harmonized decision making across care teams in a patient's journey



A PATIENT'S JOURNEY

Conclusion

“To Err is Human...”

- Technology can assist to Improve patient safety by designing and implementing better systems to support clinicians

Embrace what other industries like aerospace have learnt

- Technology is an important enabler
- Adopt, Adapt and Improve

Healthcare leaders need to be selective in technology adoption

- It's a (healthTech) jungle out there
- Clear goals help drive direction

“When you have to be Right”.....

Thank You