Digital Health Strategy
Update 2018

September 2018
INTRODUCTION
The Ministry of Health (MoH) has developed this Digital Health Strategy Update to support delivery of the Vision 2030 for the MoH Healthcare sector. It has been created as an update to the 2017 eHealth Strategy to reflect:

- Implementation of Vision 2030
- MoH 2.0 and Cluster autonomy
- The need for digital reinvention
- Rapid digital change
Digital Health Journey

What is Digital Health?

Digital Health is the cost effective and secure use of information and communication technologies and the associated cultural change it induces, to help people manage their health and wellbeing and transform the nature of healthcare delivery.

Digitization improves efficiency by applying technology to individual resources or processes.

Digital transformation digitizes whole aspects of healthcare business.

Digital reinvention in healthcare involves fundamental reimagining of the way healthcare organization engages with patients and other stakeholders to realize patients ambitions and aspirations.
05 Intelligent Health Enterprises - Seamless financing – Data driven – Value based – Accountable care - e2e

04 Empowered Care - Models of Care - Patient experience – Personal health data

03 Care anywhere – Virtual Care – Connected Care Teams – Connected Homes

02 Smart Care – Precision medicine – Artificial intelligence – Robotics – medical printing

01 Digitally enabled care – Electronic medical records – Decision support

00 Digital Health Foundations
# KSA Evolution Of Digital Health

<table>
<thead>
<tr>
<th>Year</th>
<th>MOH eHealth Strategy</th>
<th>Focus: 2010 -2020 Roadmap</th>
<th>Systems Focus: Administrative and Patient master Index</th>
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<td>2010</td>
<td>Some Stand Alone systems</td>
<td>Limited Functionality</td>
<td>Administrative and Patient master Index</td>
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<td>Extended Functionality</td>
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<td>2015</td>
<td>Commenced Rollout of Cloud /Opex model systems</td>
<td>Focus: SCMO</td>
<td>Systems Focus: HIS rollout</td>
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<td>Full Functionality being developed</td>
<td>Systems Focus: RIS PACs</td>
<td>PHC Rollout</td>
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<td>Planning interoperability for Cloud based solutions</td>
<td>Systems Focus: Imaging</td>
<td>ERP for MOH</td>
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<td>MOH Cloud based solutions interoperable</td>
<td>Systems Focus: Infrastructure</td>
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<td>MOH Cloud based solutions interoperable</td>
<td>Systems Focus: Mawed</td>
<td>SeHE</td>
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<td>2017</td>
<td>Rollout of Cloud /Opex systems</td>
<td>Focus: SCMO</td>
<td>Governance / Gating</td>
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<td>• SeHE commenced</td>
<td>Systems Focus: Cluster enablement</td>
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<td>Full Functionality being rolled out</td>
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<td>2020</td>
<td>All Facilities have access to eMR and SeHE</td>
<td>Focus: SCMO</td>
<td>Governance / Gating</td>
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<td>Expanded interoperability via SeHE</td>
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- **Limited Functionality**
- **No interoperability**
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- **Focus: SCMO**
- **Full Functionality being developed**
- **Planning interoperability for Cloud based solutions**
- **Full Functionality being rolled out**
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- **Full Functionality available**
- **Expanded interoperability via SeHE**
- **ITSS & Clusters Roadmaps**
- **Systems Focus: Administrative and Patient master Index**
- **Systems Focus: HIS rollout**
- **PHC Rollout**
- **Imaging**
- **ERP for MOH**
- **Infrastructure**
- **HESN**
- **Mawed**
- **Telemedicine**
- **Cybersecurity**
- **System Certification**
- **Advanced functionality**
  - **Artificial Intelligence**
  - **Analytics**
  - **Models of Care**
## Saudi Digital Trends

<table>
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<tr>
<th>75%</th>
<th>#1 in the World</th>
<th>2016</th>
<th>Smartphone penetration in Saudi Arabia</th>
<th>KSA Ranked 2nd Worldwide</th>
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<tr>
<td>90 Million</td>
<td>#1 in the World!</td>
<td>Youtube views from Saudi Arabia every day.</td>
<td>Compared to a global average of 20%</td>
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<td>33 %</td>
<td>Of population in Saudi Arabia is active on Twitter</td>
<td>Global avg: 26 apps / phone</td>
<td>35% of all IT Investments in Saudi Arabia in 2016 will be in the Cloud</td>
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<td>8 Million</td>
<td>TOP 20 in the World</td>
<td>Facebook users in KSA</td>
<td>KSA contributes to a significant portion of protection &amp; consumption of this data</td>
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<td>33%</td>
<td>Of Saudi companies planning Big Data &amp; Analytics roll-outs</td>
<td>80% of data generated is unstructured (social, video..etc)</td>
<td>44 ZB</td>
<td>Unstructured data by 2020 (that’s 18 zeros to MB)</td>
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First GCC Country to have National Unified Medical Records by 2020
## Current State

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<tr>
<th>Category</th>
<th>Percentage</th>
<th>Number</th>
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<tr>
<td>Unified Digital Medical Records</td>
<td>0/40%</td>
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<tr>
<td>Number of Primary Healthcare Centers in MoH with EMR Solutions Today</td>
<td>0/2400</td>
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<tr>
<td>39% of MoH Hospitals in the KSA have an EMR Solution Implemented</td>
<td>108/274</td>
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<tr>
<td>Other Gov. Healthcare Facilities in the KSA that have EMR Solutions Implemented</td>
<td>43/43</td>
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<tr>
<td>Tele-Health at Home</td>
<td>69/134</td>
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<tr>
<td>Telemedicine</td>
<td>4</td>
<td>Hospitals (MoH)</td>
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1. Unified Digital Medical Records: Today the realized percentage is equivalent to 0% but standards are pending to be approved and tested so the maturity is realized immediately on systems that are ready to plug into the Health Exchange.
2. Number of Primary Healthcare Centers in MoH with EMR Solutions Today: Many people in rural areas rely on Primary Health Care Centers as the only health facility within driving distance.
3. 39% of MoH Hospitals in the KSA have an EMR Solution Implemented: Today many healthcare facilities have the capability of connecting with the Health Exchange once HIE interoperability standards are tested and implemented.
4. Telemedicine: Adoption of Telemedicine technology is picking up. This offers a great relief in follow up visit traffic to healthcare facilities in major cities (Facility to Facility) (KFMC, KKESH, Grayat, Arar).
5. Tele-Health at Home: The solution was recently launched to target 69 Jurisdictions in total, including Tabuk, Asir, Jazan, Northern Border, Najran, AlJouf, and Al Baha regions, as well as Al Qunfudhah, Hafer Albatan and Bisha jurisdictions.
Already Implemented Strategy Elements

**Solution Deployment:**
HIS Waves & PHC-Pilots

**Roadmap:**
Defined in Digital Health Programs

**Standards:**
Defined for HIS processes & data
Aligning with National standards

**Organisational Development:**
Merged IT Departments and re-org into a new DIGITAL HEALTH UNIT

**Governance:**
Setup various Boards & Project Committees
Setup a gating team supported by a digitized a gating process

**Policies:**
Supported the delivery of the Telemedicine Policy

**VRO:**
Digitisation of Models of Care (in progress)
Cluster Support Strategy & Digital Health Ambassadors
Good progress in alignment with other themes

**IT Shared Services:**
Setup a Service Catalogue
Working on org. transition and delivery models
Current Strategic Risks

**Ensuring Digital Health solutions are implemented, and implemented correctly**
- Provide Investment framework & measure success
- Remove barriers to adoption (e.g. training, technology)
- Support implementation with coaches, educators

**Cross program coordination across all business lines**
- Establish a Transparency & accountability processes
- Project gating to aid communication and compliance
- Expertise to support the Digital Health Ecosystem

**Shortage of skilled workforce**
- Support implementation with coaches, educators
- Establish communication channels to share knowledge, skills and resources
- Establish an IT shared services to support the Digital Health Ecosystem

**Participation of healthcare providers to establish Unified Health**
- Onboarding office to support healthcare providers to connect
- Incentivizing and mandating all stakeholder to participate

**Technology changes rapidly**
- Focus on data and information management
- Support and embrace innovation
- Coordination of various technologies
- Changing technologies
- Infrastructure readiness

**The transformation agenda will see a major rise in costs**
- Focusing on priority programs that deliver high value benefits (priority MoH solutions)
- Capitalize on improved healthcare outcomes
- Implement the Investment Framework

**Threat of security, data and privacy breaches**
- Establish a healthcare cyber security people, processes and tools

**VRO Alignment**
- Ensuring necessary coordination and alignment between the VRO programs
### Digital Health Strategy

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<tr>
<th>Why do we need the Digital Health Strategy</th>
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<td>• <strong>Digital technologies and the cultural change</strong> they drive will play a significant role in supporting the delivery of Digital Health Vision and in achieving Vision 2030.</td>
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<tr>
<td>• <strong>The complexity of the sector and the rapidly changing digital landscape</strong> requires the digital health strategy to guide the use of and investment in digital technologies.</td>
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<td>• Fragmented and unconstrained use of digital technologies across the sector will increase inequities, introduce inefficiencies and waste scarce resources.</td>
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<tr>
<th>What is the Digital Health Strategy?</th>
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<tr>
<td>The Digital Health Strategy is <strong>overarching strategy</strong> that creates the right conditions for the MoH digital health ecosystem to enable the vision but allows organizations freedom to act.</td>
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<th>What does the Strategy include?</th>
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<td>• Describes the digital health vision, including <strong>the culture and values</strong> that will underpin this future.</td>
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<td>• Recognizes the <strong>opportunities</strong> that technology provides in realizing the strategic objectives.</td>
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<td>• Defines <strong>guiding principles, capabilities and enablers</strong> required to achieve those objectives.</td>
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<td>• Defines a shared understanding of <strong>success and monitors progress</strong></td>
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Digital Health Strategy Context

MOH Digital Health Strategy

Enterprise & Shared Services

MOH Digital Health Strategy

Enterprise Services (Regional Labs etc..)

MOH Digital Health Strategy

Shared Services for Clusters (Mawared, HIS, etc..)

MOH Digital Health Strategy

Cluster Services

NHIC Digital Health Strategy

Unified Health Records

Health IT Standards

MOH Digital Health Strategy

Health IT Standards

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MOH Digital Health Strategy
Digital health ecosystem describes the complex network of interactions between the individuals, organisations, technologies, information and resources within the health sector. It includes all people, carers, healthcare professionals, policy makers and the environment in which they interact. While the scope of this strategy is the MoH Digital Health Ecosystem it must be able to interact with all of the KSA Digital Health Ecosystem.
Contents

STRATEGIC FRAMEWORK
1) Digital Health Vision to support 2030

3) Capabilities (people, processes and tools) to maximise the impact and success of any digital health service:
   - Being implemented at MoH, Enterprise & Shared Services
   - Recommended for all Clusters Services

4) Enablers (frameworks, guidelines & resources) that support the creation of strategically aligned digital capabilities within MoH Digital Health eco-system:
   - MoH will create/obtain/mandate the enablers
   - MoH Digital Health eco-system (including Clusters) must comply/leverage the enablers
   - MoH will monitor their use and effectiveness in the delivery of the capabilities.

5) Digital Health Strategic Objectives the goals that help to convert the vision to reality:
   - Are set with the broad strategy in mind but will not necessarily align directly with individual components of it.
   - Used to measure progress and success.

MoH Ecosystem Delivery (Roadmaps and plans)
- MoH will have a roadmap/plan for delivery of the enablers & digital capabilities required by the Ministry.
- MoH have a roadmap/plan for enterprise and shared digital capabilities currently being delivered by MoH (although this may move to an IT Shared Services Organization see Appendix B)
- All other parts of MoH ecosystem (eg Clusters) will develop and implement roadmap/plans in response to their own organizational context which aligns to the Strategy, describes capabilities being delivered and includes use of enablers.
1) Digital Health Vision
“A consumer-centric, world-class and sustainable health system enabled by eHealth”

Values - “Enabling - Harmony - Positivity – Innovation - Teamwork”

2) Principles
- Person centred
- Transparency, collaboration and communication
- Build with the future in mind
- Resource efficiency
- Security and privacy by design in the systems, access and how the information is used

3) Capabilities

4) Enablers
- Transparency, Accountability
- Architecture & Standards
- Foundation Services
- Trust
- Investment Framework
- Innovation Framework

5) Digital Health Strategic Objectives
- Improve The Personal Experience
- Increase The Efficiency And Performance
- Improve Health Outcomes And Equity
- Enable Health Providers To Deliver Better Services
- Provide Evidence For Policy, Research And Planning

MoH Ecosystem Delivery (Roadmaps and plans)
1) Digital Health’s Values, Vision & Mission

**Vision**
“A consumer-centric, world-class and sustainable health system enabled by Digital Health”

**Values**
“Enabling - Harmony - Positivity – Innovation - Teamwork”

**Mission**
“To transform healthcare delivery through technology to deliver safer, more efficient healthcare services for the population of Saudi Arabia”
What does the vision mean?

- **Healthcare providers** have multi-functional devices, e.g. a handheld imaging machine, to detect abnormalities. This information is relayed in real-time to specialists to review if required.
  - **Artificial Intelligence monitor** patients virtually from their home devices. Alerts sent for abnormal readings & possible actions recommended.
  - **Virtual clinics** deliver care via digital technology in a patient’s home, aged care facility, etc.

- **People** feel empowered in how I manage my health and wellness and feel healthier.
  - Their **care is available anywhere** and co-ordinated by a virtual team.
  - They have **personal devices** to alert me early to potential health problems and help me measure my progress to my health goals.

- **Care co-ordinators** use mobile devices to update & automatically upload to the individual’s care plan for everyone within their care team to see.
  - Their day is spent guiding patients through various significant health events as their routine healthcare needs are self-managed and provided virtually at a time and place that suits them.
  - Automated systems mean my patients receive the right care, where and when they need it.

- **Researchers** have access to a wide range of anonymized datasets, with approval for research purposes.
  - Their research is targeted towards solving real world problems and feeds into clinical decision support and risk stratification systems.
  - With real-time data available from many sources, research is forward-looking, capturing trends and assessing their implications.

- **Innovator/developer** work in an open source environment where companies co-operate rather than compete.
  - Organizations pay for the delivery, customization, management and hosting of technologies, rather than software licenses. All systems use standards & are fully interoperable.
  - The app market is consumer-driven. With apps certified that they meet agreed requirements.
2) Principles

- **Person centred** - the need for a person centred approach and the experience of people with the MoH health sector will guide innovation, improvement, and targeting increased equity.

- **Transparency, collaboration and communication** - We will focus on valuing strong consumer, executive, clinical and technology involvement and leadership. We will actively encourage decisions, success stories and lessons learned to be available across the digital health ecosystem.

- **Build with the future in mind** - achieving the Vision 2030 will require digital reinvention across the KSA digital ecosystem, new models of care enabled by connectivity, new technologies and innovation. (eg consider cloud computing wherever possible, the use of artificial intelligence etc)

- **Resource efficiency** including:
  - implementing systems that improve efficiency,
  - looking for new commercial models to fund digital capabilities (eg Opex model)
  - Leverage national & MoH Infrastructure
  - Look for economies of scale

- **Security and privacy by design in the systems, access and how the information is used** - Trust will be the most important consideration when creating, obtaining and deploying digital capabilities
# 3) Capabilities

<table>
<thead>
<tr>
<th>Personal Experience</th>
<th>Digital Transformation</th>
<th>Digital Reinvention</th>
<th>Trust</th>
<th>Governance</th>
<th>Agility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving the patient’s experience with MoH.</td>
<td>Real-time access to accurate high quality information enables better assessment and treatment of people.</td>
<td>All healthcare stakeholders have access to data which allows for evidence based policy reforms and decision making.</td>
<td>Preserve trust in the healthcare system and protect all stakeholders rights.</td>
<td>Governance is critical in ensuring that an organisation’s Digital Health Roadmap is successfully implemented and is aligned with the business strategy, achieve their strategies and goals, and manage risk.</td>
<td>An agile, connected &amp; high performing workforce with modern tools.</td>
</tr>
<tr>
<td>Improving access via virtual healthcare services.</td>
<td>Linking every aspect of healthcare, ensuring professionals and individuals have access to all the information they need when and where required.</td>
<td>Design thinking to reframe problems, on-going experimentation and testing to gain understanding, examine assumptions and test solutions.</td>
<td>Cybersecurity awareness &amp; understanding.</td>
<td>Enable accountability across all stakeholders.</td>
<td>Capabilities in service management, program &amp; project management, cybersecurity, data and information governance, person-centred design, service design and informatics are priorities.</td>
</tr>
<tr>
<td>Enabling informed decision making which drives behavioral change and increases accountability of personal health.</td>
<td>Leveraging services that are focused on the consumer needs and cross organisational boundaries.</td>
<td>Incorporate new digital models with new technologies, Mobile, Cloud, Social, Analytics, IoT.</td>
<td>Consumer data is disclosed solely to relevant stakeholders at appropriate times.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4) Enablers

<table>
<thead>
<tr>
<th>Transparency, Accountability</th>
<th>Architecture &amp; Standards</th>
<th>Foundation Services</th>
<th>Trust</th>
<th>Investment Framework</th>
<th>Innovation Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Creating structures, policies and processes to ensure successful delivery of the Digital Health Strategy.</td>
<td>▶ Creating a MoH information architecture to drive effective use of health information in KSA.</td>
<td>▶ Provide capabilities that bind the MoH digital health ecosystem together (Interoperability, information access, services).</td>
<td>▶ Ensure ongoing integrity and confidentiality of health information, Effective privacy measures.</td>
<td>▶ Investment &amp; commercial management including: procurement, approval, commercial relationship management &amp; operational service management.</td>
<td>▶ Coordination and supporting frameworks to drive maximum value from innovation.</td>
</tr>
<tr>
<td>▶ Strategic Committees and / or Boards set direction, monitor progress, and are ultimate issue resolution bodies.</td>
<td>▶ Review National Interoperability and Data Standards &amp; create new standards where gaps exist.</td>
<td>▶ Provide capabilities that are used across MoH enterprise.</td>
<td>▶ A mature security culture.</td>
<td></td>
<td>▶ Metrics on healthcare processes and outcomes are recorded and made available to relevant institutions (i.e. administration, academic research, etc.), establishing accountability and a means for evaluation.</td>
</tr>
<tr>
<td>▶ Functional or Operational Committees (if required)</td>
<td>▶ Solution architecture.</td>
<td>▶ Infrastructure</td>
<td></td>
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</tr>
</tbody>
</table>
5) Digital Health Strategic Objectives

The goals that help to convert the vision to reality.
- Are set with the broad strategy in mind but will not necessarily align directly with individual components of it.
- Used to measure progress and success.

| Improve the Personal Experience | • Technology is improving people’s experience of care  
| | • Care is provided closer to where people live and work.  
| | • Technology empowers people to flourish by fully participating in their health care.  
| | • People make informed choices about the health and social services that work best for them and have access to information to help them make those choices. |
| Increase the Efficiency and Performance | • Technology is improving best-value use of resources.  
| | • The money spent on digital capabilities is optimized |
| Improve Health Outcomes and Equity | Use new and emerging technologies to improving the health services available and healthy outcome, While addressing difference in the use of digital health services due to location, cost, digital literacy or other factors. |
| Enable Health Providers to Deliver Better Services | Healthcare providers have access to the digital technologies and trusted information they need to collaborate in the delivery of health and wellness services, and use their digital capabilities to transform and improve the services they deliver |
| Provide Evidence for Policy, Research and Planning | Insights into digital health information support policy development, research and service planning. |
Vision 2030 objectives alignment

**Level 1 objectives**
1. Strengthen Islamic Values & national identity
2. Offer a fulfilling & healthy life
3. Grow & diversify the Economy
4. Increase employment
5. Enhance government effectiveness
6. Enable social responsibility

**Level 2 objectives**
2.1. Improve healthcare service
2.2. Promote a healthy lifestyle
2.3. Improve livability in Saudi cities
2.4. Ensure environmental sustainability
2.5. Promote Culture and Entertainment
2.6. Create an empowering environment for Saudis

**Level 3 objectives**
2.1.1. Ease the access to healthcare services
2.1.2. Improve value of healthcare services
2.1.3. Strengthen prevention against health threats

- Improve Health Outcomes and Equity (2.1.1 & 2.2)
- Increase the Efficiency and Performance (2.1.2)
- Enable Health Providers to Deliver Better Services (2.1.2)
- Provide Evidence for Policy, Research & Planning (2.1.3)
- Improve the Personal Experience (2.6)
Contents

IMPLEMENTING THE STRATEGY
<table>
<thead>
<tr>
<th>Role in Implementing the Strategy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Define and maintain a clear strategy</strong></td>
<td>MoH will govern the implementation of the Strategy and update and refine the Strategy over time to reflect changes in the MoH digital health ecosystem and as new requirements or guidance become available or is needed.</td>
</tr>
<tr>
<td><strong>Measure progress and maturity</strong></td>
<td>MoH will measure progress towards the objectives. (Note: All MoH digital health ecosystem will be required to contribute to the measurements).</td>
</tr>
<tr>
<td><strong>Deliver enablers</strong></td>
<td>MoH will ensure that the enablers defined in this Strategy are implemented and will require all of the MoH digital health ecosystem to adopt and leverage them appropriately.</td>
</tr>
<tr>
<td><strong>Continue with business as usual</strong></td>
<td>Until such time as MoH Digital Health ecosystem transformation is complete, MoH will continue to provide Digital Health services as defined in the Digital Health Roadmap (see Appendix A).</td>
</tr>
</tbody>
</table>
| **Support the development and transition to the new MoH digital health ecosystem** | MoH will continue to support:  
  - Clusters develop Digital Health Roadmaps which aligns with this strategy (including the implementation of enablers)  
  - the transition to an IT Shared service to provide enterprise service and shared services across clusters |
MEASURING SUCCESS
Measuring Success

- Progress in implementing the Strategy will be measured by MoH.
- MoH will use the indicators to measure progress over time (these indicators are in development, some examples have been provided in the table below).
- MoH will also measure outputs and digital health activity (these are currently being developed, for example number of Hospitals with eMR capabilities).

| Improve the Personal Experience | • Increase in patient experience with MoH healthcare services.  
                                  • Increase in the number of people accessing health data online. |
|--------------------------------|------------------------------------------------------------------|
| Increase the Efficiency and Performance | • Increase in Health outcomes achieved by MoH facilities (as measured by the KSA Health Index) per dollar spent on digital health services.  
                                            • Increase in % of digital health services that use real time data insights to support health service delivery.  
                                            • Increase in % Organizations that are within digital health budget. |
| Improve Health Outcomes and Equity | • Increase in % of the population that has access to digital health services.  
                                         • Reduction in the gap between the population with most access to digital health services, and the population without.  
                                         • Increase in patient safety (to be developed) |
| Enable Health Providers to Deliver Better Services | • Progress towards the MoH [to be developed] planned digital health maturity. Increase in % compliance with mandated digital health enablers. |
| Provide Evidence for Policy, Research and Planning | • Increase in number of published policies or research papers that reference or embed reliable data and information insights increases.  
                                                      • Increase in % of digital health services that provide access to data for health policy, research and planning increases |
## MoH Priorities over next 2 years

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Status</th>
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<tbody>
<tr>
<td>• Hosting</td>
<td>• All available for implementation (contact eHealth to commence planning)</td>
</tr>
<tr>
<td>• Storage</td>
<td></td>
</tr>
<tr>
<td>• Lan connectivity</td>
<td></td>
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<tr>
<td>• Wan connectivity</td>
<td></td>
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<tr>
<td>• Internet access</td>
<td></td>
</tr>
<tr>
<td>• Peripherals</td>
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<table>
<thead>
<tr>
<th>Core Applications</th>
<th>Status</th>
</tr>
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<tbody>
<tr>
<td>• HIS</td>
<td>HIS- available for implementation after October 1</td>
</tr>
<tr>
<td>• PHC information system</td>
<td>PHC- in development</td>
</tr>
<tr>
<td>• ERP</td>
<td>ERP- available for implementation</td>
</tr>
<tr>
<td>• PACS</td>
<td>PACS- (Radiology, Cardiology &amp; Dental – RFP award in final stages</td>
</tr>
<tr>
<td>• Data Analytics (Data warehouse)</td>
<td>Analytics- commencing end 2018</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non Core applications</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Document management system (e-Correspondence)</td>
<td>• All available for implementation (contact eHealth to commence planning)</td>
</tr>
<tr>
<td>• MS Office suite (Exchange, Office)</td>
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<tr>
<th>Services</th>
<th>Status</th>
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<tbody>
<tr>
<td>• Security</td>
<td>• Shared services being developed</td>
</tr>
<tr>
<td>• Planning support</td>
<td></td>
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</table>

<table>
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<tr>
<th>Enablers</th>
<th>Status</th>
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<tr>
<td>• Investment Framework (see next)</td>
<td>• Enablers being developed</td>
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<tr>
<td>• Governance (see next)</td>
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<tr>
<td>• SeHE</td>
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<tr>
<td>• Architecture and Standards</td>
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</table>
Appendix A: Digital Health Roadmap

### Delivery Levels
- 24 National
- 21 Enterprise
- 21 Cluster

### Clinical Programs
- Saudi eHealth Exchange $eHE
- Interoperability & Data Standards
- National Referrals & Bed Mgmt
- National Medication Management
- Center of Excellence
- National Health Observatory
- Public Health System (PHS) 2025
- Public Health System (PHS) ac 2025
- National Health Portal for Pros
- Disease Registries
- Terminology Services
- Telemedicine

### Infrastructure & Operations
- Data Governance
- National Data Centre
- National Program Management
- National Program Ops & Support
- National Change Management
- Saudi Telehealth Network
- Information Security
- Hospital IT Infrastructure
- PHC IT Infrastructure
- ICT Peripherals
- Other MoH Facilities Infra
- eHealth Program Management
- Cluster Change Management
- MoH Program Ops & Support
- Integration with Seat-IT

### Personal Health Services
- Personal Health Apps
- National Health Portal for Clients
- Centralized Appointment Booking
- Patient Experience

### Administrative
- National Health Costing Performance
- Treatment Eligibility
- Health Service Directory
- Health System Financing Program
- MoH Admin. Program
- Asset Management
- ERP
- Intelligence Services (new)
- Required for 40% Target (2020)
- Self-IT-enabled
Appendix B: IT Shared Services - Scope

**Status Update:** Defining Service Catalogue and Operational Models
Current Governance

NHIC

Architecture & Standards Board

Minister

eHealth Executive Council

eHealth Program Management Board

Gating Committee

Portfolio

Construct

Design

Implement

Operate & review

Support

NHIC Aligns

Exports

Clinical Initiatives Board

Administrative Initiatives Board

Consumer Initiatives Board

Infrastructure Board

HIS Committee

PHC Committee

Imaging Committee

Laboratory Committee

Tele Health, Home Care Committee

Medication Committee

Public Health Committee

Other Applications Committee

ERP / Asset Mgt Committee

Portal Committee

Policy / Content Management Committee

Other Applications Committee

Applications Committee

Satisfaction/Experience Committee

Infrastructure Committee

Report s to

Report s to

Report s to

Report s to

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<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Responsibilities</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Ahmed Balkhair</td>
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<td>Assistant General Supervisor for Digital Transformation</td>
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<tr>
<td>Dr Mona AlMehaid</td>
<td>Head of Clinical Programs (eg HIS, PHC, Lab &amp; Blood Bank)</td>
<td><a href="mailto:malmehaid@moh.gov.sa">malmehaid@moh.gov.sa</a></td>
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<tr>
<td>Eng Monief Eid</td>
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<td><a href="mailto:mmonief@moh.gov.sa">mmonief@moh.gov.sa</a></td>
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<tr>
<td>Eng. Mona AlSubaie</td>
<td>Head of Applications Engineering (eg Centralized appointment booking)</td>
<td><a href="mailto:mssubaie@moh.gov.sa">mssubaie@moh.gov.sa</a></td>
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<td>Assistant General Supervisor for Infrastructure</td>
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</tr>
<tr>
<td>Dr Mahdi Khaled</td>
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<tr>
<td>Eng Sulaiman Alturki</td>
<td>PMO / New Digital Health Service Requests</td>
<td><a href="mailto:ICT-Gating@moh.gov.sa">ICT-Gating@moh.gov.sa</a></td>
</tr>
<tr>
<td>Eng. Furqan Ahmed</td>
<td>VRO / General Enquires</td>
<td><a href="mailto:fahmed@moh.gov.sa">fahmed@moh.gov.sa</a></td>
</tr>
</tbody>
</table>
THANK YOU