نحن نهتم
We Care

Case Study 09: URGENT CARE

A joined-up approach to same-day care needs

JHAH's five-year Clinical Services Plan
Transformation Project 6

Project Champions
Dr. Muhammad Zia and Dr. David Cowan

Clinical Services Plan

مركز جونز هوبكنز أرامكو الطبي
Johns Hopkins Aramco Healthcare

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Project Details

The Objective

- To build an Urgent Care Unit at Dhahran, enabling JHAH to meet its emergency department waiting-time targets and primary care walk-in to be closed.

The Priorities

- To identify the location and floorplan for the UCU.
- To agree the workforce model and recruit.
- To oversee construction of the unit, including fitout and equipment procurement.
- To communicate to patients and others in preparation for launch.

The Timeline

- **Project kick-off:** July 2023.
- **Project closure:** September 2024.

The Project Team

Champions:

- Dr. David Cowan (June – December 2023)
- Dr. Muhammad Zia (January 2024 to end)

Sponsor:

- Dr. J.J. de Gorter

Team members:

- Hatem Abdali
- Rima Ahmadieh
- Suha Amoudi
- Abdula Buajan
- Hanady Dafer
- Thamer Dossary
- Fahad Ghamdi
- Fuad Ghamdi
- Ayman Hammoud
- Somaya Hajri
- Haitham Hashem
- Malak Hilal
- Dalal Homaidi
- Shoukry Husseini
- Hadi Irjan
- Rabih Issa
- Dr. Hussain Khadra
- Hadeer Khonaini
- Rabie Kilan
- Yousef Mubarak
- Alber Paules
- Mohammed Qahtani
- Halima Rashed
- Marijke Richards
- Mustafa Al Sadiq
- Jamal Shaalan
- Sherin Shahana

For more information

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About the Clinical Services Plan

Johns Hopkins Aramco Healthcare (JHAH) serves more than 140,000 Aramco employees, their relatives and retirees with a comprehensive range of inpatient and outpatient services. JHAH has carried forward the legacy set by Saudi Aramco of healthcare for all, putting caring for its community at the heart of everything it does.

In 2023, JHAH launched its five-year Clinical Services Plan (CSP). The CSP was developed in response to changing patient expectations and the realization that JHAH must evolve if it is to survive and thrive. The Plan's vision is that JHAH will become the Kingdom's first choice for outstanding integrated healthcare.

The CSP contains 16 strategic objectives to deliver against five goals (service excellence, access, people, sustainability and reliability), and is supported by four delivery principles (accountability, pace, pragmatism and outcomes).

The Urgent Care Unit project was included as part of the Emergency Medical Services review, which is Objective #6 in the CSP.

Project Background

Emergency medicine has been a recognized specialty in Saudi Arabia for less than 40 years. Prior to 1990, it was "non-existent" – in the words of the *International Journal of Emergency Medicine*[1]. And yet, more recently the same journal has been able to strike a more positive tone. In a wide-ranging review of the beneficial impact of emergency medicine throughout the Kingdom, it describes the substantial progress in emergency medicine resourcing, management and delivery – and describes a "bright vision for the future".

In mid-2023, JHAH's Emergency Department was one of the most critical services at the hospital, treating more than 1,800 in a typical week. It was highly valued by Aramco staff and their families, giving them peace of

mind that a high quality, 24/7 service was easily accessible in the event they suffered an unexpected incident.

An essential practice in any emergency setting is for incoming patients to be triaged according to the severity of their condition. The goal, as set out by the World Health organization, is to "classify ED patients consistently and to achieve acceptable health outcomes (by using) algorithms or protocols or sentinel diagnoses as the anchor points for making decisions, supported by triage guidelines and procedures".[2] At JHAH, this results in all patients being assigned to one of five categories in accordance with the Emergency Severity Index (ESI), initially developed in 1998 by emergency physicians Richard Wurez and David Eitel.

The categories are[3]:

1. Immediate, life-saving intervention required without delay.
2. High risk of deterioration, or signs of a time-critical problem.
3. Stable, with multiple types of resources needed to investigate or treat (such as lab tests plus diagnostic imaging).
4. Stable, with only one type of resource anticipated (such as only an x-ray, or only sutures).
5. Stable, with no resources anticipated except oral or topical medications, or prescriptions.

Within JHAH's Emergency Department in 2023, patients were being seen by the same team in the same rooms regardless of the outcome of the triage. As a result, Category 4 and 5 patients were regularly – and for understandable reasons – deprioritized. On the JHAH website, this issue was acknowledged and explained: "As you wait to be treated, you may notice that some people who came in after you are being seen before you". However, despite the clinical rationale, the side-by-side processing of all categories of patients was causing satisfaction rates to slip and targets to be missed. During peak season, fewer than 80 percent of Category 3, and 85 percent of Category 4 and 5 patients, were being seen within the 60-minute benchmark.

After a review of emerging practices in world-class hospitals across the world, the CSP Transformation Board approved a proposal to build an Urgent Care Unit (UCU) alongside the Emergency Department. Category 4 and 5 patients would be directed from the triage service to the UCU, where the service was designed specifically around the efficient processing of patients whose symptoms fell within this threshold. The envisaged benefits included improved access to treatment for low acuity patients, reduced readmission, and relieving of the pressure on the primary care walk-in service in a different part of the hospital.

Project Delivery

A project was established, championed by EMS leaders Dr. David Cowan and Dr. Muhammad Zia.

The first phase involved absorbing as much information as possible from a diverse range of sources.

Both Dr. David and Dr. Zia were determined to learn as many lessons as possible from UCU experiences elsewhere in the Kingdom. A number of hospitals were identified where the service delivery model for same-day patients included a UCU-type facility, and JHAH management would like to thank its peers at all those hospitals that were kind enough to host our visits and engage in shared learning. One of the most insightful days was spent at the King Faisal Specialist Hospital and Research Center in Riyadh, where the project team explored the technical, clinical and operational aspects of managing an ED and UCU in parallel to the benefit of a more streamlined experience for the vast majority of presenting patients.

At the same time, the team undertook a literature search – once again, to gain insight into potential success factors and risks to mitigate. Among the most helpful papers were:

- Naif Meshal Albalahi et al, *'Awareness and utilization of urgent care services among patients attending Al Wazarat PHCC in Riyadh'*, 2020, which contained statistical analysis of the user demographics, nature of the cases, and awareness rates.
- Australian Government Department for Health and Aged Care, *'Operational Guidance for urgent care clinics'*, 2022 – which analyzed referral pathways, follow-up tests, patient communication, staffing, safety issues, infrastructural and infection control measures.

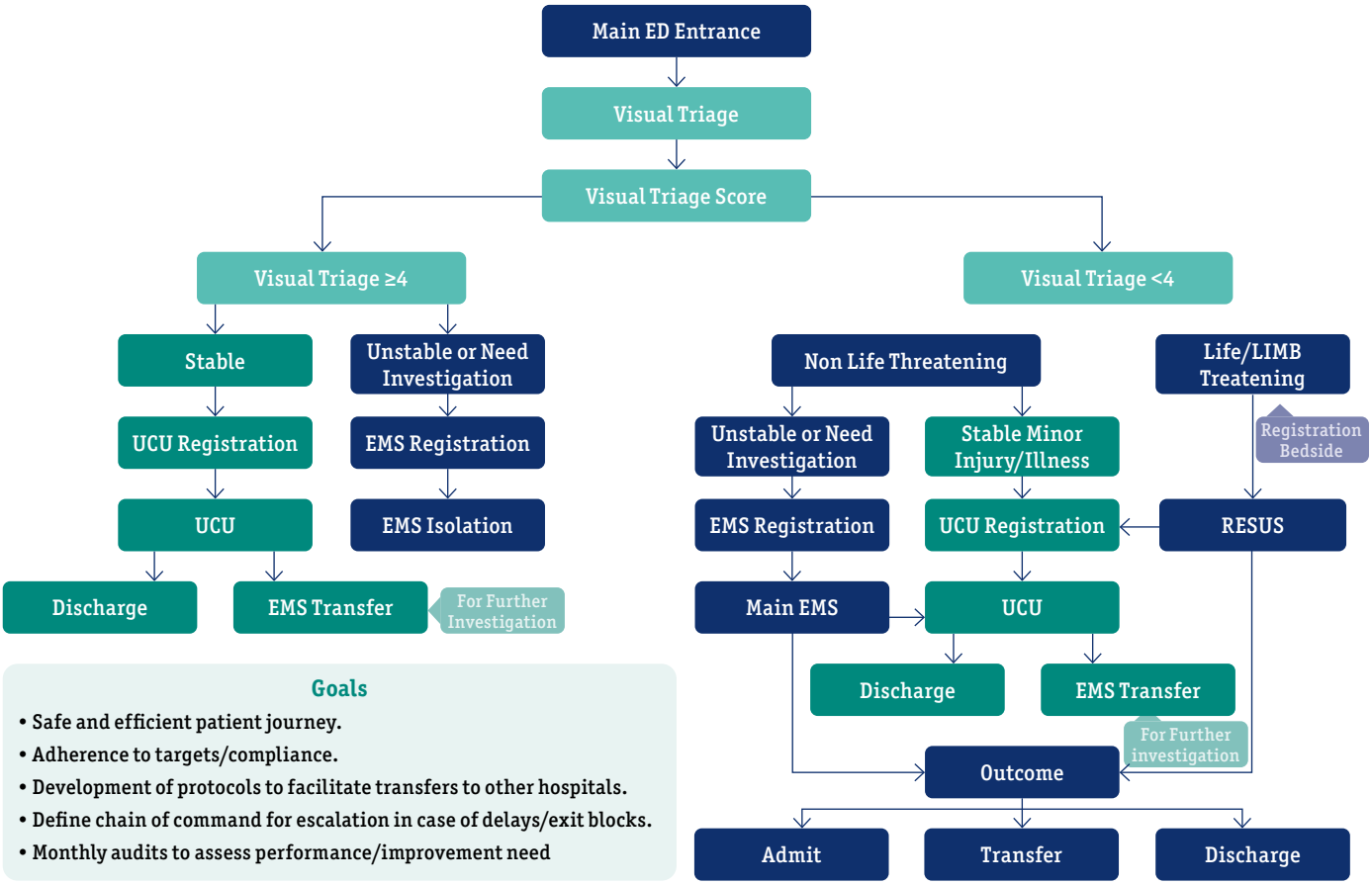
As a result of the benchmarking and literature search, the project team was organized around nine workstreams:

- Patient process flow.
- Facility design.
- Facility construction.
- Fitout.
- Workforce.
- Compliance.
- Aligned services.
- Communication.
- Risk management.

A substream leader was appointed for each of these nine topics, and – at a full-team kickoff meeting – the priority issues to address under each heading were agreed. These included:

- **Patient process flow** – The key steps and decision points during: visual triaging, registration, triage by a UCU registered nurse, assessment and treatment in the UCU, discharge; this included protocols for transfers between the UCU and ED when the situation arose (see Figure One).
- **Facility design** – Including the capacity, the layout (waiting areas, rooms, pharmacy), the mix of examination rooms and minor procedure rooms, the location of utilities such as water supply, electricals.
- **Facility construction** – Including the section of a qualified vendor, the project management of the construction.
- **Fitout** – Including all IT such as workstations, screens, desktop computers, printers and scanners, e-signature pads and paging equipment; as well as medical equipment such as IV pumps, portable vital design devices, ophthalmoscopes, suction canisters, stretchers, visual acuity devices, defibrillators and glucometer measuring devices; plus Automated Dispensing Cabinets and a medication fridge.
- **Workforce** – The number of physicians, nurses, security personal, porters, and the shift arrangements to match the expected patterns of demand.
- **Compliance** – Compliance with relevant Ministry of Health licensing and regulatory requirements; compliance with internal JHAH policies for example around infection control.

Figure One: JHAH EMS and UCU patient flow, June 2024



- **Aligned services** – Mapping resources and processes between the UCU and aligned service such as the pharmacy, radiology, laboratory.
- **Communication** – Raising awareness of the service; signage.
- **Risk management** – Eighteen risks were identified and tracked on a weekly basis. These included: inability to recruit the required number of qualified staff; lack of no designated parking spaces for the UCU patients and families; overload on pharmacy causing delay in dispensing of discharge medications.

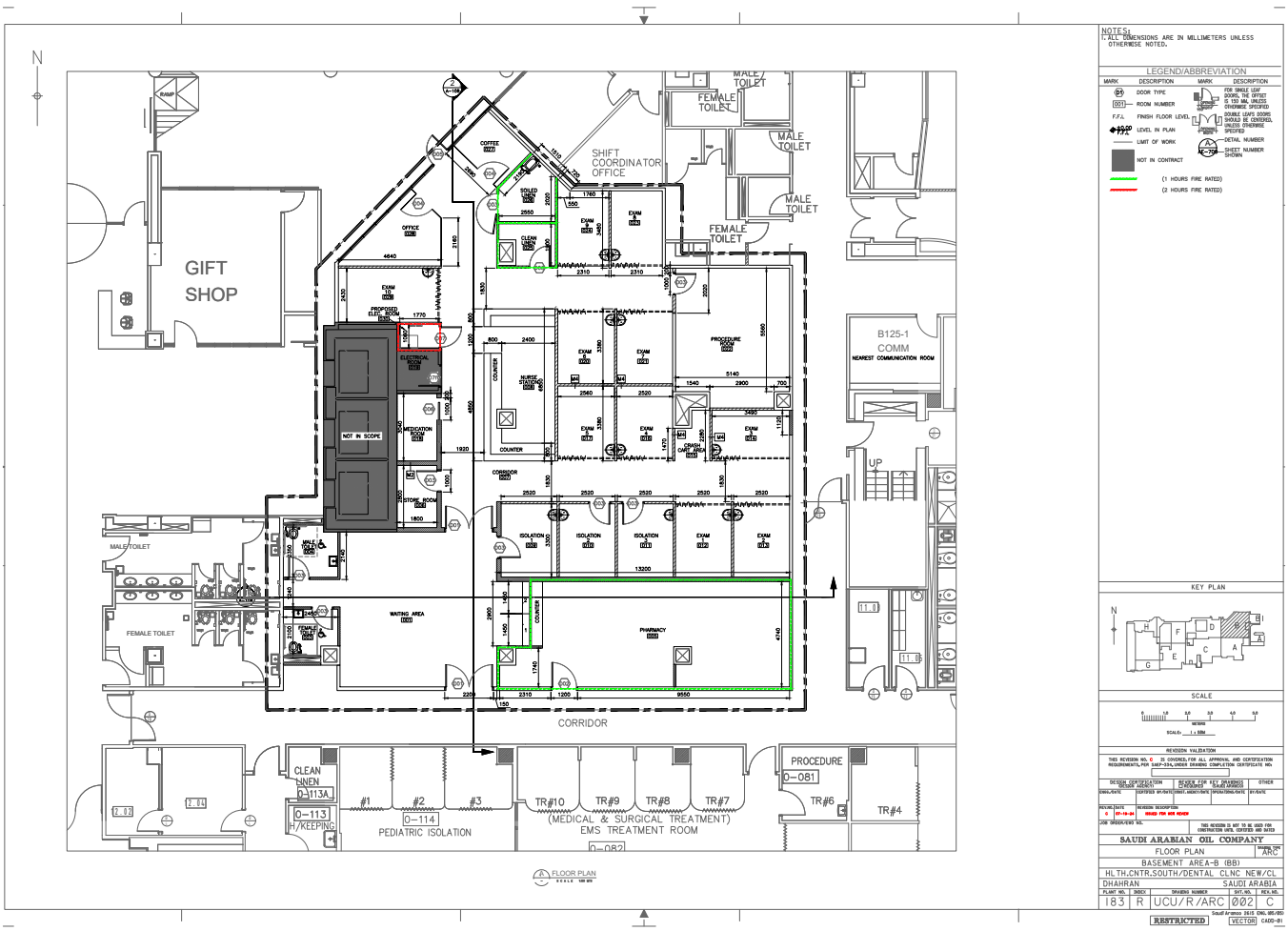
After extensive modeling, the design was agreed (see Figure Two). The entire UCU floorspace was 280 square meters, including:

- Waiting area for up to 24 patients.
- Two isolation cubicles (one isolation waiting area).
- Seven cubicles / examination rooms (GP consultation model).
- Three trolley spaces (for treatment).
- One procedure room.
- Pharmacy (24hrs).
- Easy access to diagnostic facilities (including X-ray and laboratory).
- Storage area and an administrative office.
- Nursing station/central hub.
- Alerts (call bells, emergency response bells).
- Fire safety equipment.

Throughout the following six months, the project team met on a weekly basis to track progress and resolve issues. At almost every meeting, there were decisions to be made on matters such as equipment quantities and specifications, often resulting in slight modifications to the program plan.

In the final six weeks, the level of the activity intensified, as every aspect of operations was scrutinized to ensure it met the high standards expected by JHAH patients.

Figure Two: UCU floorplan



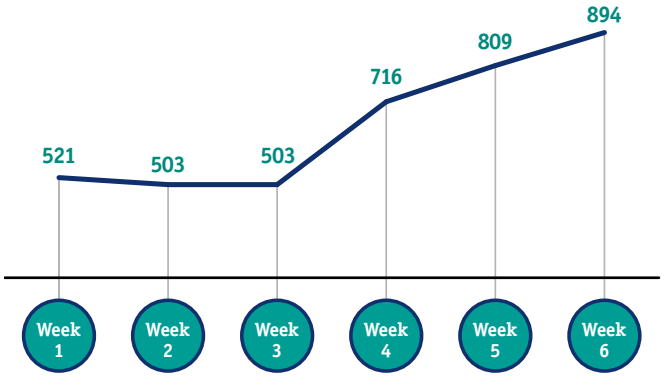
Seven days before the first patient was admitted, a meeting was held – chaired by the Acting Chief Of Staff – to review a list of 'Conditions Precedent' (the conditions that must be satisfied in order for a 'Go' decision to be confirmed). These Conditions ranged from the broad (signoff of the Risk Mitigation Plan by the Risk Department) to the narrow (water testing documentation). After 90 minutes of scrutiny, the recommendation was approved that the UCU could open for business on 22 July 2024.

The Outcome

Once the UCU was opened and accepting patients, awareness of the service steadily increased, leading to more Category 4 and 5 patients presenting at the UCU, rather than at Primary Care.

By the end of the first month, more than 3,000 patients had been treated, with the daily total often reaching 100-120, as shown in Figure Three.

Figure Three: Urgent Care Unit attendance (first six weeks)



Capacity planning has also been managed to account for variances in attendance levels throughout the week (Figure Four). The mean time from arrival to sitting with a physician was just 15 minutes – in line with plan.

One of the most closely monitored metrics in the entire hospital related to the experience of patients presenting with emergency or urgent care needs. Waiting times are among the most tangible factors that patients use to judge the effectiveness of a hospital – delighting them when expectations are surpassed, but a cause of frustration if the experience in reversed. For this reason, the Key Performance Indicators (KPIs) encompass both the empirical data and the patient perception.

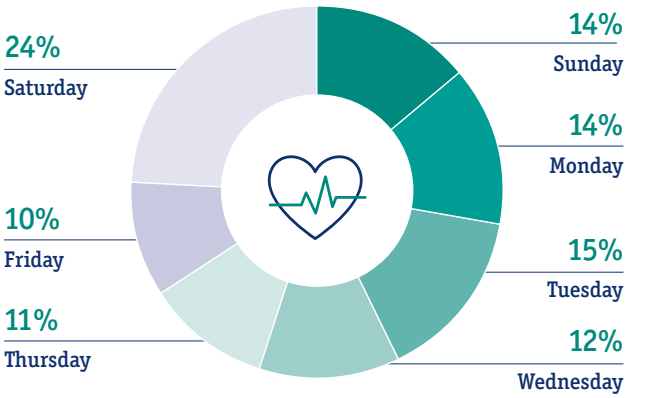
Since the launch of the UCU, there has been a material impact on both:

98% of Category 4 and 5 patients seen within the target threshold of 60 minutes (80 to 90 percent prior to the UCU opening).

84% patient satisfaction, compared with 75 percent to 77 percent for Category 4 and 5 patients attending the Emergency Department in the six months prior to the UCU opening.

The improvement in access has also been experienced in the Emergency Department itself, which is now better placed to focus on its core Category 1 to 3 patients. There has been an uplift in compliance with the target waiting times of below five minutes (Cat 1), below ten minutes (Cat 2), and below 30 minutes (Cat 3) , as shown in Figure Five.

Figure Four: Urgent Care Unit attendance (distribution throughout the week)



Lessons Learned

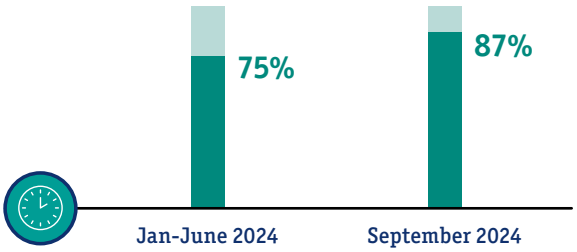
As he reflects on the experience of an intense 12-month of activity from approval to opening, Dr. Zia highlights a number of significant lessons:

Key decisions should be made having consulted with all disciplines

There were a number of important milestones in the project – agreement of the service specification, approval of the floorplan, confirmation of the workforce plan. Each of these decisions was made at a weekly 'huddle' meeting that involves stakeholders from all relevant departments, including pharmacy, nursing, supply chain, IT, infection control, quality, risk management and many more. For

example, the exact size and location of the pharmacy was changed two or three times, as practical observations were made by different members of the project team.

Figure Five: Compliance with Category 3 patient target waiting time



It starts with data

Once space in the hospital had been set aside for the UCU, and the facility built, it would not be straightforward to transform into something completely different. This meant that assumptions on matters such as the UCU capacity needed to be as accurate as possible. The first two months of the project primarily involved data analysis – for example, modeling based on the demographic mix of the catchment population, past experience of fluctuating demand during the days of the weekj and weeks of the year, and data on changes in patient behaviour as awareness has grown and word-of-mouth has spread about previous service launches. The final projections included 'core' forecasts, as well as upper and lower ranges.

Focusing on the patient experience

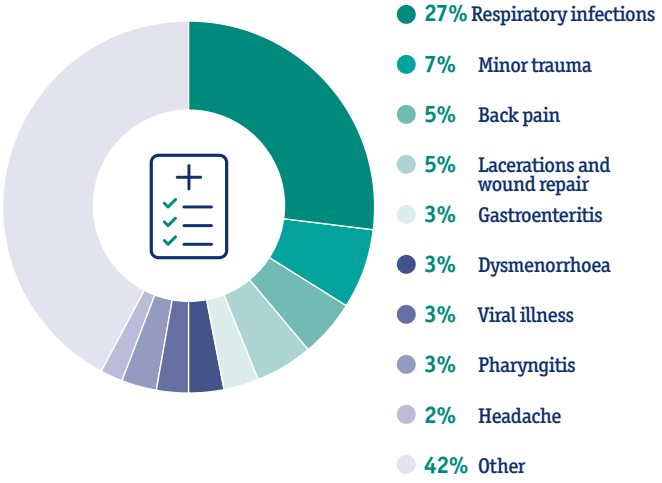
As doctors, the tendency can sometimes be to create facilities and processes that are operationally convenient. This is, of course, important – but the most powerful influences on the final design decisions often came when the team considered the experience of patients as they arrive at the UCU and navigate from the car park, to reception, to examination rooms. The signage, the welcome, the triage experience, the explanations of what comes next – all these were configured to minimize stress for patients and maximize their positive engagement throughout their time onsite.

Monitoring the Primary Diagnoses

The primary diagnoses are being closely monitored to ensure all aspects of the service - from the equipment to the range of medications in the pharmacy - are suitably aligned. The diagnoses since launch are shown in Figure Six. This will be monitored closely as the seasons change; the UCU leadership is very conscious of the fact that the presenting symptoms can have a seasonal component, and that the service was launched during the month when the heat conditions in Saudi Arabia are typically most intense.

After a successful 'soft launch', Dr. Zia is turning his attention to the next stages. He comments: "Today marks a new chapter in our commitment-to-excellence journey. The successful launch of urgent care unit is a testament to our team's innovation and resilience. Our hard work and dedication have truly paid off and we have turned our vision into reality. Thank you to everyone who has made this launch successful. Let's keep the momentum going and achieve even a bigger impact."

Figure Six: Primary diagnosis since launch



Notes

1. Eyad Khattab et al, 'Emergency medicine in Saudi Arabia: a century of progress and a bright vision for the future', in the International Journal of Emergency Medicine, July 2019
2. N.A. Qureshi, World Health Organization, 'Triage systems: a review of the literature with reference to Saudi Arabia', Volume 16, 2010, https://www.emro.who.int/emhj-volume-16-2010/volume-16-issue-6/article-18.html
3. Wolf, Lisa; Ceci, Katrina; McCallum, Danielle; Brecher, Deena (2023). Zahn, Chris (ed.). Emergency Severity Index Handbook (5th ed.). Emergency Nurses Association

About the Project Champions

Dr. Muhammad Zia

Dr. Zia is an Emergency Medicine Consultant at Johns Hopkins Aramco Healthcare.

He was educated at King Edward Medical College, Pakistan (Bachelor of Medicine and Bachelor of Surgery), and undertook his residency at Royal Liverpool University Hospital, United Kingdom (Higher Specialist Training in Emergency Medicine).

Before joining JHAH in 2016, he was a Consultant in Adult & Pediatric Emergency Medicine at Warrington & Halton NHS Foundation Trust, and a Consultant in Pediatric Emergency Medicine at Alder Hey Children's NHS Foundation Trust in the United Kingdom.

Dr. David Cowan

Dr. Cowan is an Emergency Medicine Consultant at Johns Hopkins Aramco Healthcare.

He was educated at the Kansas City School of Medicine at the University of Missouri in the United States.

Before joining JHAH, he worked in Emergency Medicine in Kansas City.

Also Available

Case Study #01: HORIZON SCAN

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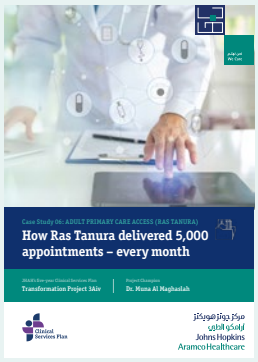
Case Study #04: OPERATING ROOMS

Faster access to surgery

Case Study #05: ADULT PRIMARY CARE ACCESS (DHAHRAN)

The doctor will see you now



Case Study #06: ADULT PRIMARY CARE ACCESS (RAS TANURA)

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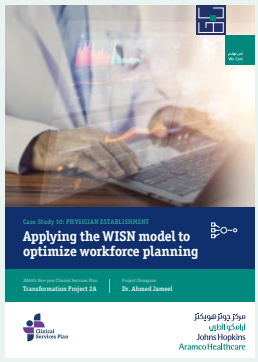

Case Study #10: PHYSICIAN ESTABLISHMENT

Applying the WISN model to optimize workforce planning

Note: Additional CSP case studies are constantly under development. Please email or call your JHAH contact for information on future editions.

This case study is one in a series that showcases stories from implementation of the JHAH Clinical Services Plan (CSP). The JHAH Board approved the CSP in June 2022. It is an ambitious multiyear program to enhance and modernize a wide range of clinical activities. For more information about the CSP or any projects included in the program, contact the CSP Program Management Office: pmo@jhah.com.

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