



# Improve health team collaboration with apps in Microsoft Teams

Tailored solutions built for the  
healthcare industry



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# Streamline common healthcare workflows using apps in Teams

Connect everyone in the flow of work with collaborative apps tailored for healthcare. Apps in Teams help everyone better meet the demands associated with daily hospital operations and virtual patient care by connecting them to the information, expertise, and tools they need to collaborate and get work done all in one place.

## Core healthcare scenarios:

- Healthcare operations
  - Intra-facility management and role based messaging
- Virtual consult (telehealth)
  - Provider-patient consults via Teams

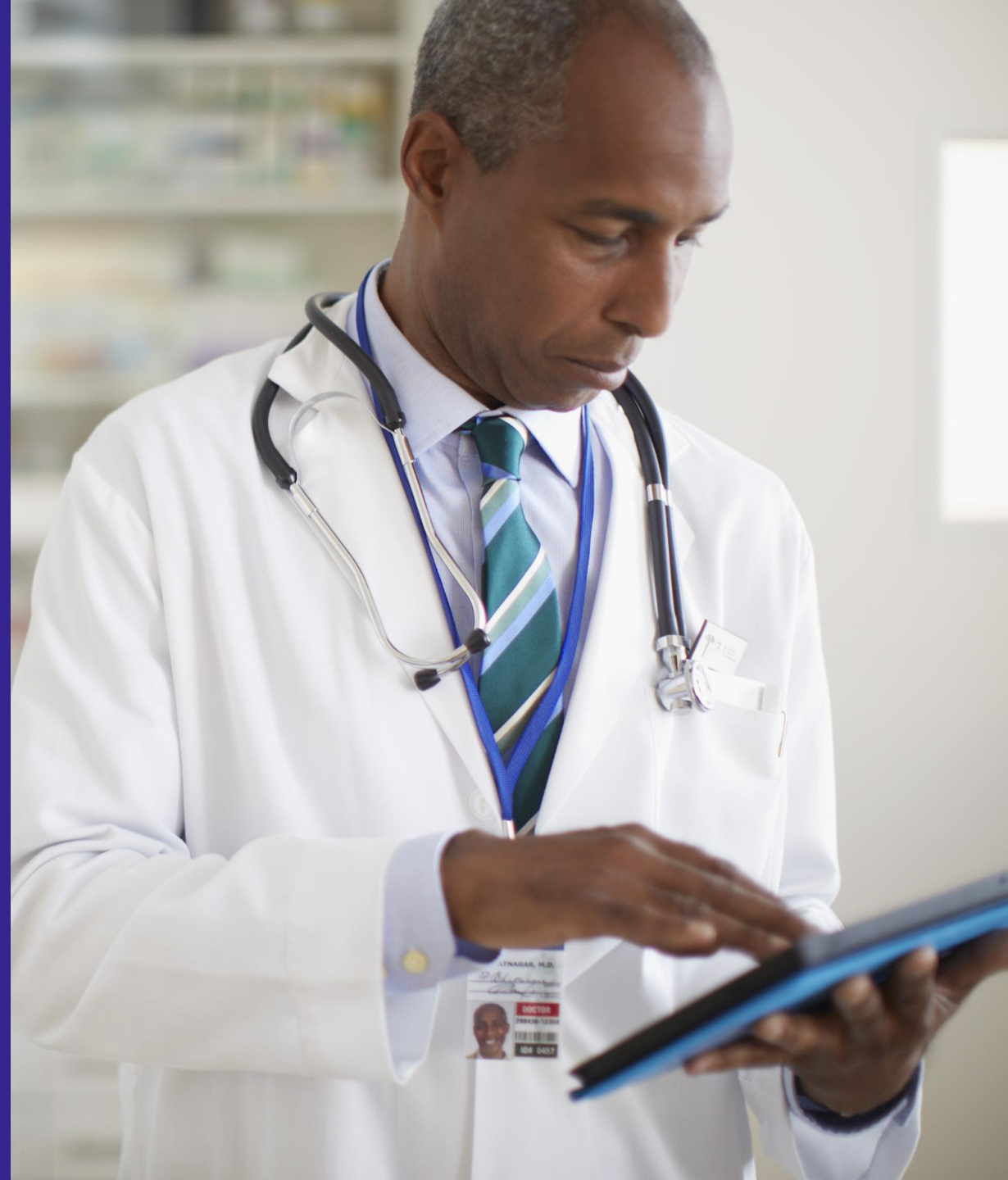
## For each scenario:

- Vision
- Personas
- Storyboard
- Solution design best practices
- Solution architecture



Healthcare teamwork solutions

Healthcare operations



# Scenario vision

## Context



**Doctor Karin Blair** manages multiple patients, writes prescriptions, works with porters and nurses, and dictates reports. She spends a lot of time managing resources and coordinating tasks.



**Nurse Daniela Mander** is always ready to respond to a doctor's instructions. She spends a lot of time creating paper-based records and maintaining documents.



**Porter Allan Munger** transports lab samples and helps ensure patients have clean supplies. He spends a lot of time checking in with providers.

## Current state

⚠️ **The hospital admin** registers a patient or case, then relays that information in person or via phone to the doctor or nurse on staff. The admin also manages the porter team and manually assigns their shifts and tasks.

⚠️ **Nurse Mander** tracks down Doctor Blair for instructions. She orders a patient's medication with a call to the pharmacy, or heads there to order in person. Back with the patients, Nurse Mander manually records vitals on paper, creating records she'll need to maintain.

⚠️ **Dr. Blair** tracks down her paper prescription and notepads. She waits for staff to hand deliver needed reports, then finds nurses and porters to order her patients diagnostic tests. When she wants a second opinion from another doctor, she must find time to meet in person.

⚠️ **Porter Munger** tries to balance maintaining the hospital facility and attending to patients. All his tasks are communicated ad-hoc, so he has no visibility to his work schedule.

⚠️ **Everyone** experiences unnecessary back-and-forth emails and calls trying to keep up with patient status.

## Future state

✓ **The admin** admits a patient or creates a case, triggering an automatic notification in a Teams channel just for medical staff.

✓ **Nurse Mander** receives a Teams notification that it's time to take a patient's vitals. While securely recording vitals right in Teams, she receives another notification—this time from a doctor assigning her a new task to order patient medication. Nurse Mander quickly orders the medication through an e-pharmacy and gets back to patient care. She no longer needs to spend her time maintaining paper-based records.

✓ **Dr. Blair** ditches her handwritten notepads and uses Teams to write prescriptions and patient follow-ups. With everything digitized, Doctor Blair can instantly look up a patient's information, medical history, and care plan, even on-the-go via the Teams mobile app. When Doctor Blair would like a second medical opinion, she simply opens a group chat to discuss a case with other doctors.

✓ **Porter Munger** receives a notification any time a task is assigned to him. When complete, he uses Teams to update the task status, and can even take ownership of his schedule and assignments using the Microsoft Planner app in Teams.

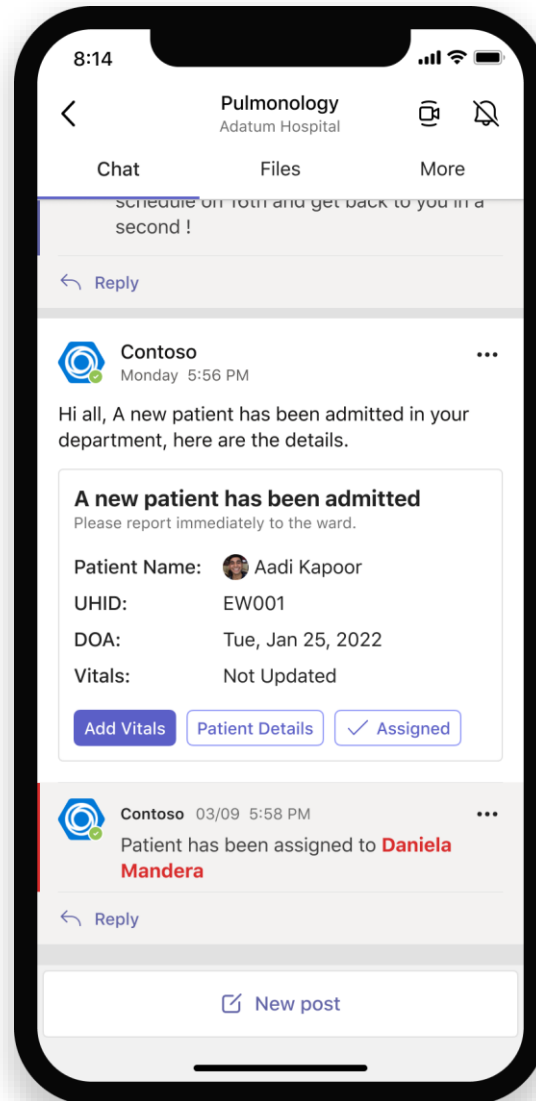
✓ **Everyone** has more time for patient care. With healthcare workflows in Teams, the admin, doctor, nurse, and porter all spend less time tracking down information, searching through handwritten notes, and waiting for in-person meetings.



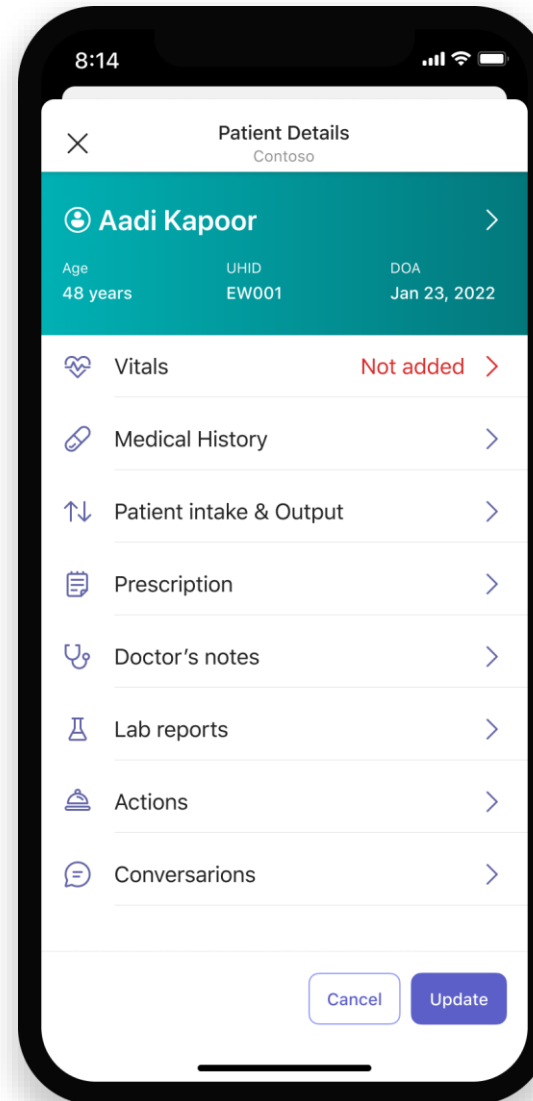
Healthcare - Hospital operations

# Intake new patients and record essential information in the app

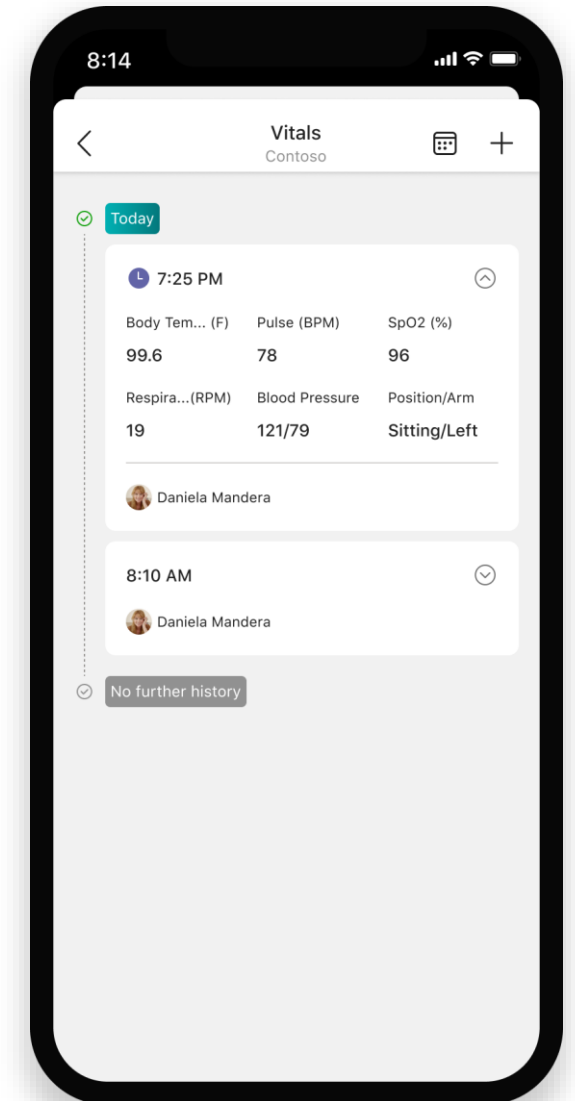
Simplify patient intake



Record patient vitals and order lab tests



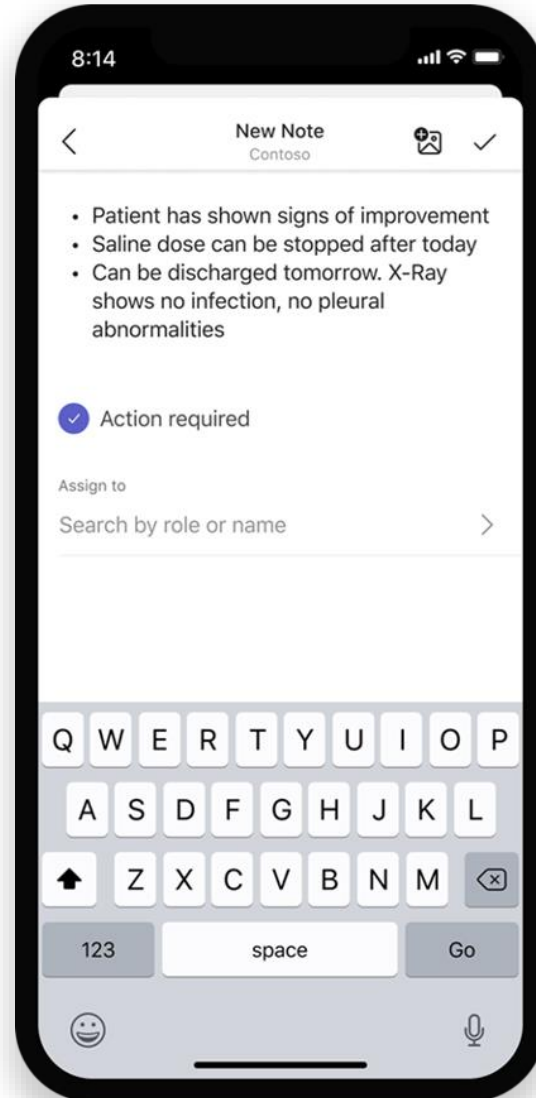
Automate staff notifications



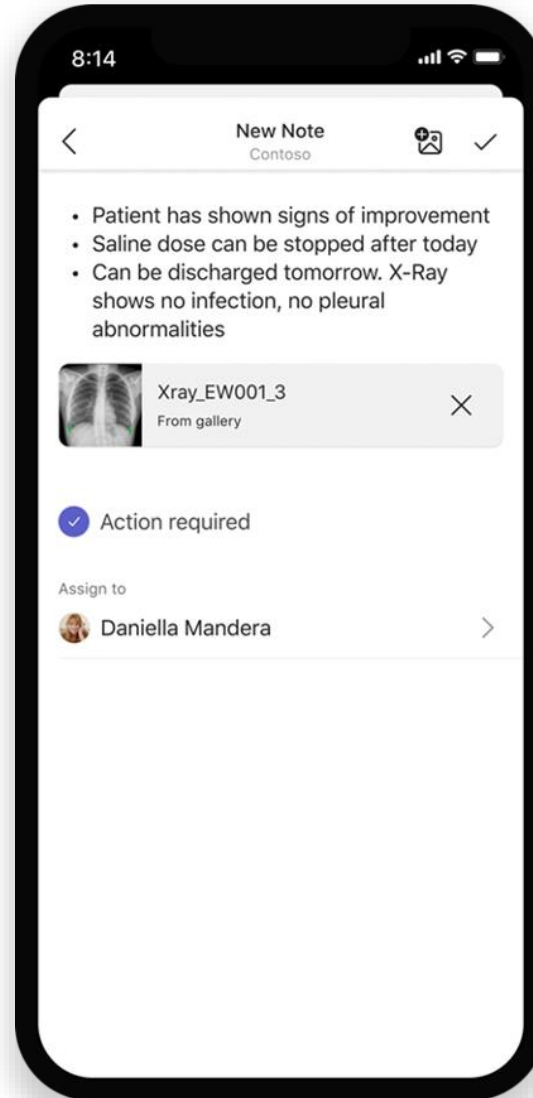
Healthcare - Hospital operations

# Stay secure with role-based access controls

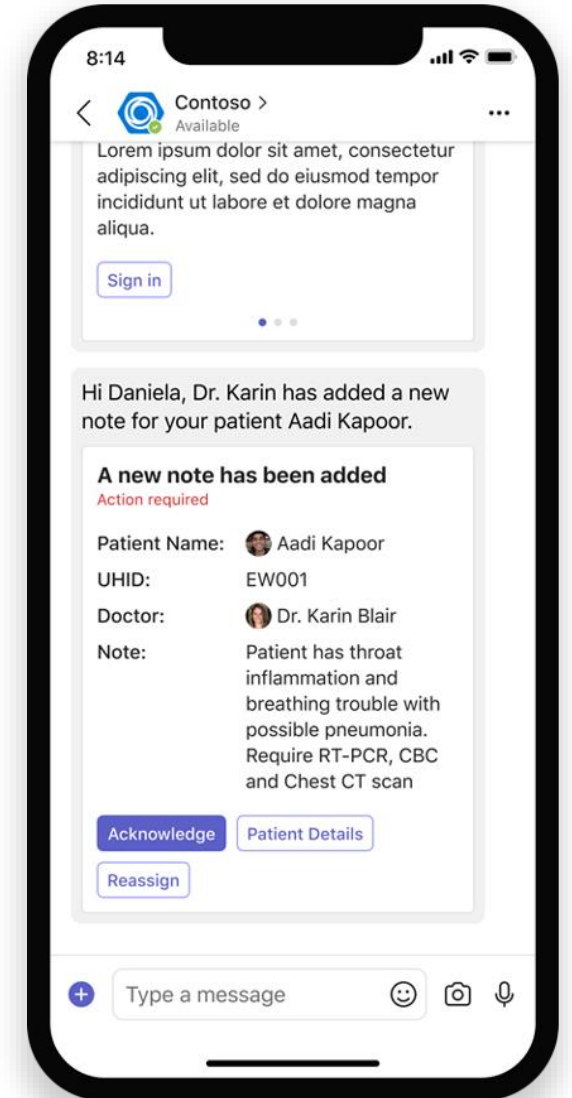
Take notes and assign  
role-based tasks



Notify doctors currently on staff  
to help ensure fast action



Leverage bot notifications to keep  
the whole care team up to date

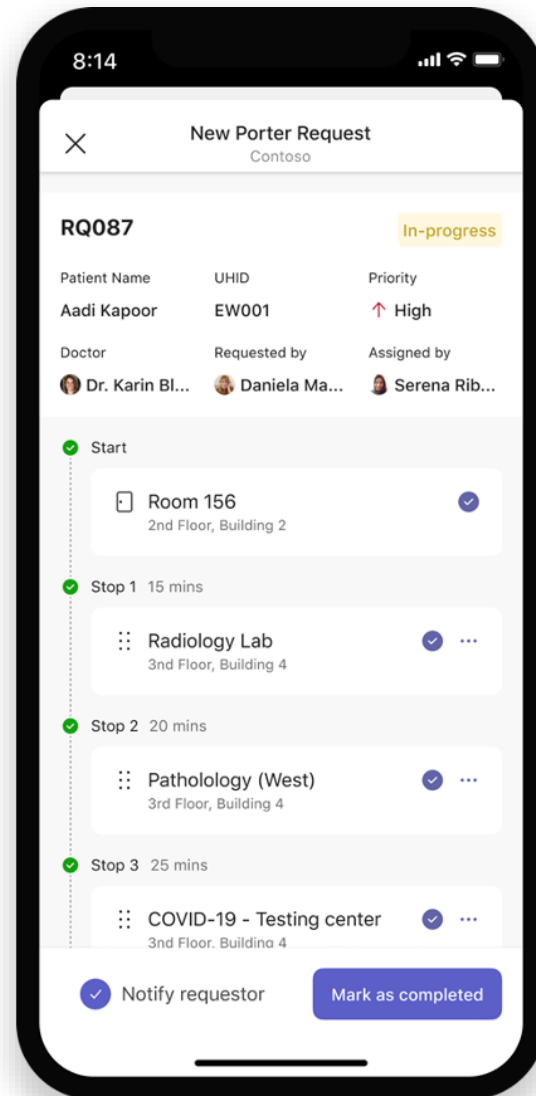




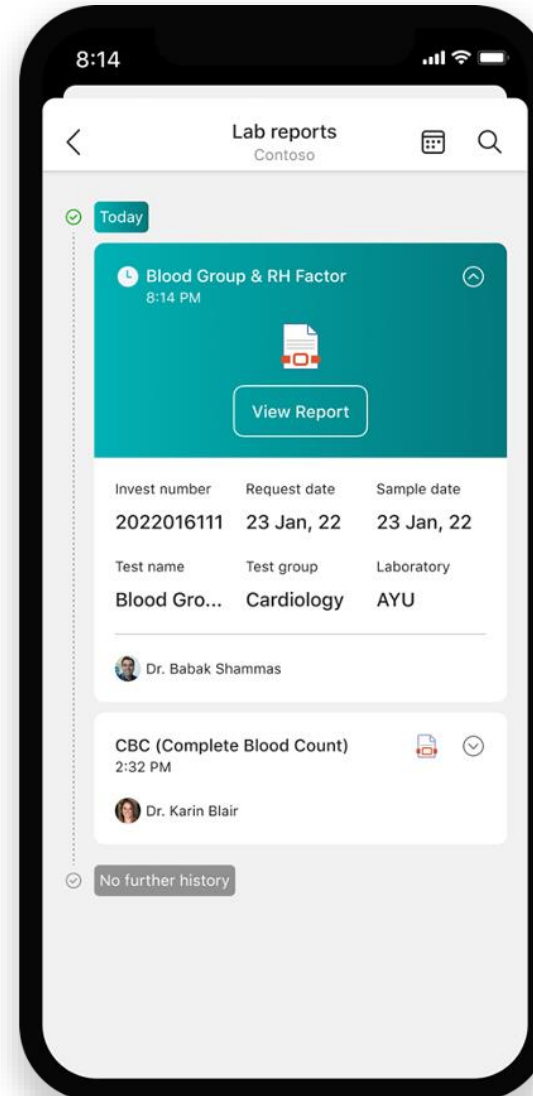
Healthcare - Hospital operations

# Automate task notifications and reminders with a bot

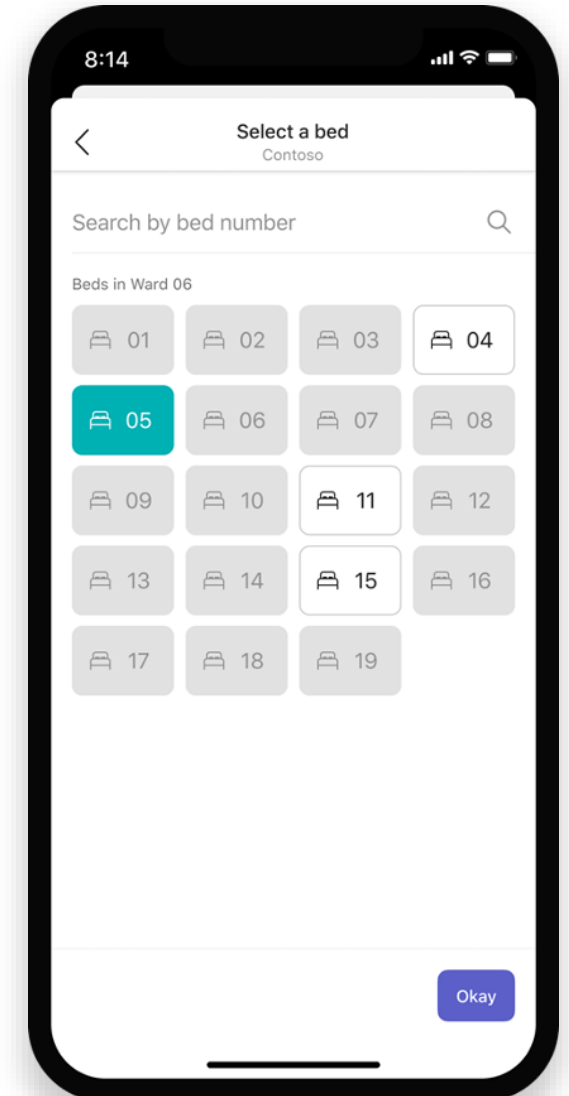
Enable porters to transfer patients between rooms



Notify medical staff when lab results are ready



Block facilities as required



# Solution highlights – best practices

## Key solution design considerations



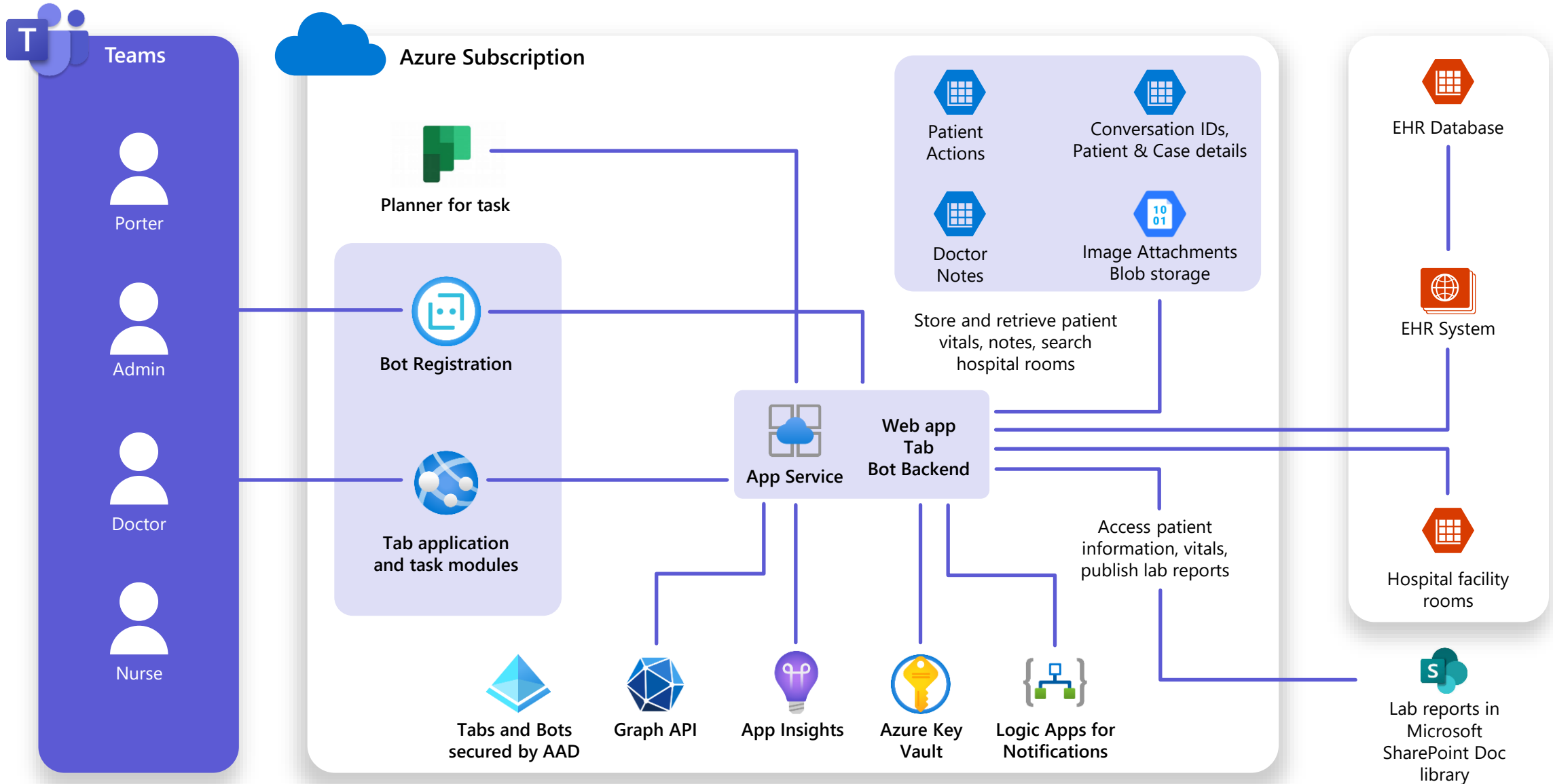
### Platform extension points

- **Personal and channel scoped apps** operate via both a personal scoped bot and a channel scope bot. A personal tab is added to the app for all users.
  - **Personal scoped bot** posts card notifications that include user task details, status updates, and other changes.
  - **Channel scoped bot** posts notifications in a hospital channel when a patient is admitted, a new task needs to be assigned, etc.
  - **Task modules** handle the flow of each patient, tracking details like patient status, vitals, visit notes, discharge requirements, and more.
  - **Personal tabs** are spaces for users to access all the cases, patients, and tasks assigned to them. Users can use tabs to start working on anything assigned to them at any time, without needing to go through a notification.

### User experience

- **Proactive messages** are sent to staff, bringing status changes, missed tasks, or assignments to their attention.
- **Notifications** are used to enable immediate user collaboration and provide status updates throughout the patient journey.
- **Group chat** enables providers to securely collaborate and discuss details about a specific case.
- **Planner** is integrated through [Microsoft Graph APIs](#) to help all users better manage their tasks.

# Solution architecture



Healthcare – Teamwork Solutions

# Virtual consult (Telehealth)



# Scenario vision

## Context



**Doctor Karin Blair** cares for multiple patients every day. It's flu season and Dr. Blair is experiencing a major uptick in her patient workload.



**Patient Danielle Booker** is seeking an appointment to discuss a recent health concern.



**Contoso Healthcare** aims to help protect staff and patients from spreading diseases, cut down on physician paperwork, and reduce admin workloads to open more time for patient care.

## Current state

- ⚠️ **Dr. Blair** holds multiple in-person appointments each day and rarely knows the reason for the appointment before she meets a patient. Patient intake information is typically collected and passed ad-hoc from an attending nurse.
- ⚠️ **Patient Booker** calls Contoso Healthcare to book an appointment with Dr. Blair. She receives a phone confirmation but can't track her appointment status to see if Dr. Blair is going to be on time.
- ⚠️ **Dr. Blair** scans Patient Booker's paper-based records during the appointment, then follows up with nurses in person to ask about any other lab reports or medical history for the patient.
- ⚠️ **Dr. Blair** takes appointment notes on paper. After the appointment, she'll have to transfer notes, diagnosis, and prescription information into Contoso Healthcare's Electronic Health Records (EHR).
- ⚠️ **Dr. Blair** manually cross-checks the EHR and a separate database to verify that the medication Patient Booker needs is safe considering her known allergies and current medications. Dr. Blair uses a paper prescription pad to order the Rx.
- ⚠️ **Patient Booker** receives her paper prescription slip and follow-up instructions. If she misplaces her paper, she could miss a step in her care plan.

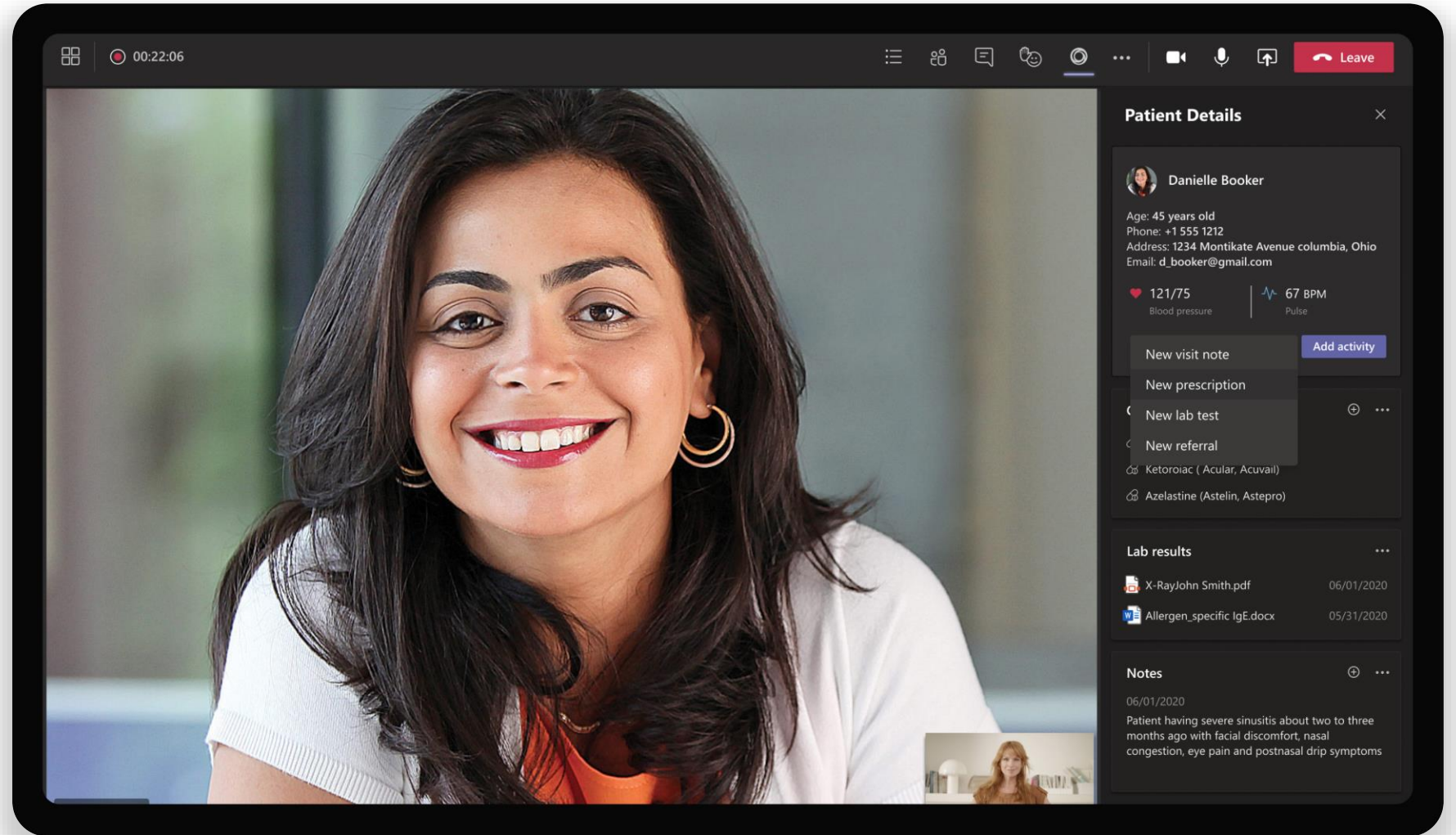
## Future state

- ✓ **Dr. Blair** meets with patients remotely, minimizing exposure to communicable diseases and lowering personal protective equipment waste.
- ✓ **Patient Booker** wants to talk to Dr. Blair about a fever she's had for the last two days. The Contoso Healthcare system sets up a virtual appointment, scheduling time with Dr. Blair on the same day.
- ✓ **Dr. Blair** joins the patient appointment via a Teams meeting, where she can check all of Patient Booker's medical history, recent vitals, and current medication list.
- ✓ **Patient Booker** describes her recent symptoms to Dr. Blair, who can pull up lab reports during the meeting to check for information that will aid her diagnosis or treatment plan.
- ✓ **Dr. Blair** arrives at a diagnosis, asks Patient Booker about her allergies and prescribes medication in real-time. Dr. Blair taps into a medication knowledge base app integrated with Teams and shares information about the medications' use and potential side effects.
- ✓ **Patient Booker** receives her prescription via email, and Dr. Blair adds follow-up notes and orders additional tests right in the Contoso Healthcare EHR.



## Healthcare – Virtual consult

During a virtual consult, providers can pull up patient information, recent vitals, and medical history—everything they need to aid in diagnosis and treatment.



The screenshot displays a virtual consult interface. The main area shows a video feed of a smiling woman with long dark hair. The top bar includes a grid icon, a timer at 00:22:06, and various control icons like a list, people, chat, and a red 'Leave' button. On the right, a 'Patient Details' sidebar is open, showing the patient's name, age, phone, address, and email. It also displays vital signs: blood pressure 121/75 and pulse 67 BPM. Below this, there are buttons for 'New visit note', 'New prescription', 'New lab test', and 'New referral'. A list of medications is shown: Ketorolac (Acular, Acuvail) and Azelastine (Astellin, Astepro). The 'Lab results' section lists 'X-RayJohn Smith.pdf' (06/01/2020) and 'Allergen\_specific IgE.docx' (05/31/2020). The 'Notes' section shows a note from 06/01/2020: 'Patient having severe sinusitis about two to three months ago with facial discomfort, nasal congestion, eye pain and postnasal drip symptoms'. A small video thumbnail of another person is visible in the bottom right corner of the main video area.



## Healthcare – Virtual consult

Provider appointment notes and new prescriptions are automatically saved in app memory. The app syncs with an EHR at regular intervals to help ensure all consult details are captured.

The screenshot displays a virtual consult interface. At the top, a video call window shows a woman with long dark hair. A 'New Prescription' overlay is centered, listing search results for drugs: Advil, Aleve, Tylenol, and Benadryl allergy. To the right, a 'Patient Details' sidebar shows information for Danielle Booker, including age, phone, address, email, and vital signs (blood pressure 121/75, pulse 67 BPM). Below this, 'Current medications' and 'Lab results' are listed, along with a 'Notes' section for 06/01/2020.

**Contoso New Prescription**

Search drugs

Latest search Clear all

- Advil  
Drops oral dropper bottle Prescribe
- Aleve  
Effervescent tablets 600mg tube, No 10 Prescribe
- Tylenol  
Coated tablets 0.125g blister, No 3, 6, 9, 10 Prescribe
- Benadryl allergy  
Allergy relief tablets, Diphenhydramine, 100 ct Prescribe

[Share as PDF](#)

**Patient Details**

**Danielle Booker**

Age: 45 years old  
Phone: +1 555 1212  
Address: 1234 Montikate Avenue columbia, Ohio  
Email: d\_booker@gmail.com

121/75 Blood pressure | 67 BPM Pulse

[Add activity](#)

**Current medications**

- Destorotadine (Clarinet)
- Ketoroiac ( Acular, Acuvail)
- Azelastine (Astelin, Astepro)

**Lab results**

- X-RayJohn Smith.pdf 06/01/2020
- Allergen\_specific IgE.docx 05/31/2020

**Notes**

06/01/2020  
Patient having severe sinusitis about two to three months ago with facial discomfort, nasal congestion, eye pain and postnasal drip symptoms

## Healthcare – Virtual consult

Provider appointment notes and new prescriptions are automatically saved in app memory. The app syncs with an EHR at regular intervals to help ensure all consult details are captured.

The screenshot shows a virtual consult interface for a patient named Danielle Booker. The interface is organized into several sections:

- Header:** "Consult with Danielle" with tabs for Chat, Files, Details, and Doc Visit. A search bar and user profile are also visible.
- Activity:** A sidebar on the left with icons for Activity, Chat, Teams, Calendar, Files, and Contoso.
- Patient Profile:** Danielle Booker, 45 years | Female. Includes buttons for Vital logs, Assign, and Add activity.
- Vitals:** Blood pressure (121/75, assigned 7 days ago), Heart beat (76, assigned 7 days ago), Weight (Waiting, assigned 7 days ago), and Blood glucose (Waiting, assigned 7 days ago).
- Past Visits:** A timeline showing two visits:
  - 26 Nov, 2020, 14:00: Treatment "Open Access" by Dr. Adam K. (Dentist) and Jessica Bowen (Nurse).
  - 12 Oct, 2020, 11:00: Treatment "Root Canal prep" by Dr. Adam K. (Dentist) and Jessica Bowen (Nurse).
- Notes:** A note dated 06/01/2020: "Patient having severe sinusitis about two to three months ago with facial discomfort, nasal congestion, eye pain and postnasal drip symptoms".
- Right Panel:** A "Prepare discharge paper work" button and a list of conditions:
  - Allergic rhinitis (March 2, 2020)
  - Depressive disorder (Feb 22, 2020)
- Current Medications:** A table listing medications, doses, frequencies, and indications.

Medication	Dose	Frequency	Indication
Destoratadine (Clarinet)	5mg	Daily	Hypothyroid
Ketoroic ( Acular, Acuvail)	150mg	Daily	Hypothyroid
Azelastine (Astelin, Astepro)	10mg	Daily	Health
Destoratadine (Clarinet)	1 tab	Daily	Health

# Solution highlights – best practices

## Key solution design considerations



### Platform extension points

- **Personal scoped app**—patient tracking and consults are done one on one between a doctor and patient.
  - **Personal tab** is used for presenting the list of patient consults scheduled, status, and double clicking on patient details. Tab is required to show all information in one hub with flexibility of UI elements.
  - **Personal bot** is mainly used for notifications, reminders, and alerting users about new patients.
- **Apps in meetings** are used to surface relevant information the provider needs while talking to a patient. As meetings and calls are often part of a provider's workflow, meeting extensibility is a core component.
- **Task modules** are used primarily for prescribing medication and sending automated emails. These actions are means to an end (like performing an action on patient case) and should be done within the flow of work..

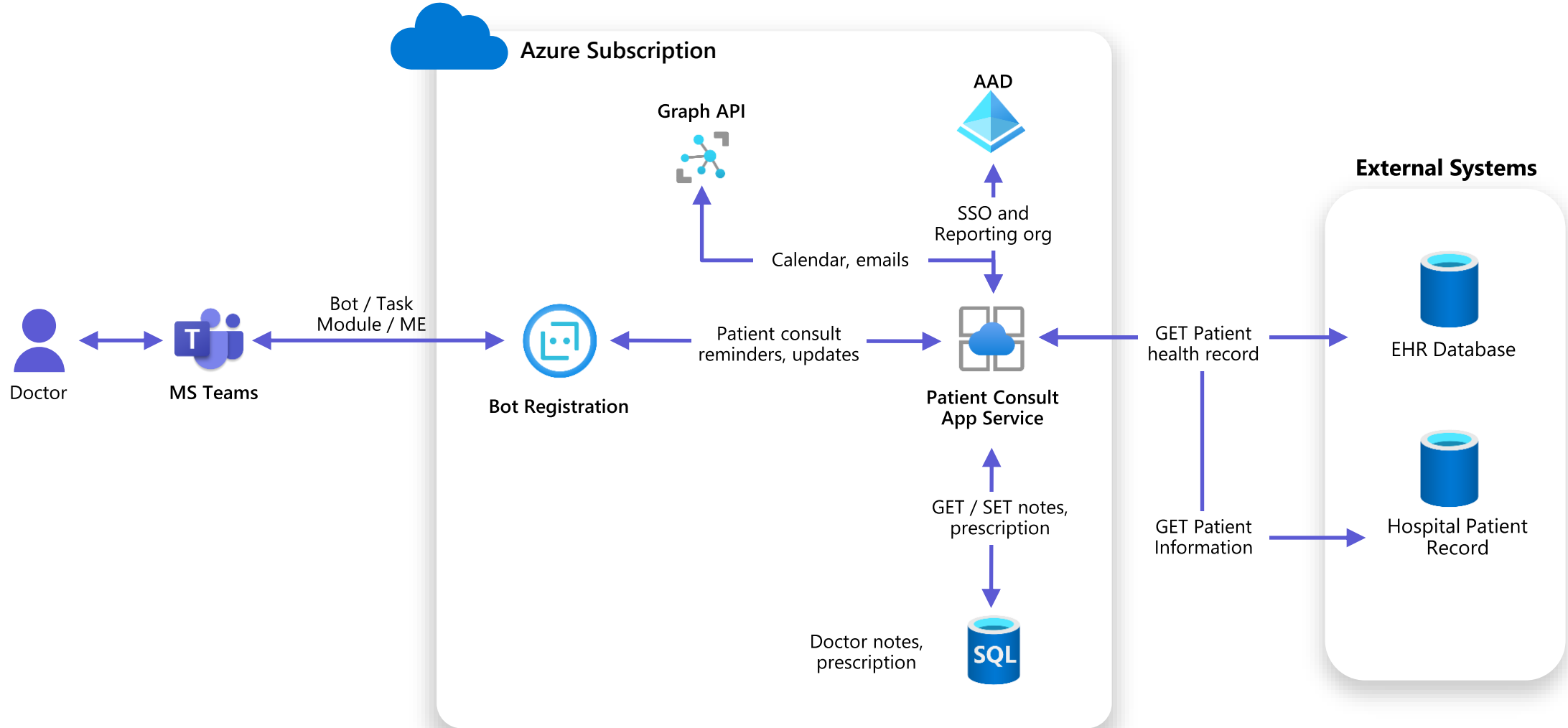
### User experience

- **Proactive messages** are sent at a scheduled time to remind providers about their upcoming calls with patients.

### Graph API

- The app utilizes [Send Mail](#) Graph API to create and send emails via signed-in doctor's account to patients on their case file and prescription.
- The app also uses [Create Event](#) Graph API to create Teams calls between doctors and patients and Calendar Graph APIs to read and show calendar events.

# Solution architecture



**Thank you**

