# Hospital Appointment Management System - Phase 9: Testing & Validation

## Overview

Phase 9 ensures that all automations, Apex code, flows, reports, and dashboards in the Hospital Appointment Management System work correctly and meet business requirements.

Key objectives: - Validate appointment creation, updates, and cancellations. - Test flows and Apex triggers. - Ensure reports and dashboards display accurate data. - Verify end-to-end business process functionality.

## 1️⃣ Unit Testing Apex Code

**Purpose:** Validate that all Apex triggers and classes run correctly.

**Steps:** 1. Open **Developer Console → Test → New Run**. 2. Select all relevant classes (e.g., AppointmentHandler, AppointmentSMSHandler). 3. Click **Run**. 4. Review **Test Results**: - **Pass:** Green check mark - **Fail:** Red cross → Click to see errors 5. Fix errors in code if any → Rerun tests. 6. Ensure **code coverage ≥ 75%**.

## 2️⃣ Flow Testing

**Purpose:** Ensure all flows execute correctly (Auto Confirm Appointment, Appointment Completion, Daily Schedule).

**Steps:** 1. Setup → Flows → All Flows. 2. Open a flow (e.g., Auto\_Confirm\_Appointment) → Click **Debug**. 3. Input test data: - Appointment Date: Future date - Doctor: Select doctor - Patient: Select patient 4. Click **Run** → Observe flow steps and variable updates. 5. Verify outcomes: - Appointment status updates correctly (Scheduled / Rescheduled) - Emails/SMS notifications triggered (if implemented)

## 3️⃣ Report Testing

**Purpose:** Ensure reports display correct data.

**Steps:** 1. Open **Reports → Appointment Status Report**. 2. Verify appointments show correct statuses. 3. Test filters: Scheduled, Completed, Cancelled. 4. Open **Doctor Performance Report** → Verify doctor workload data.

## 4️⃣ Dashboard Validation

**Purpose:** Confirm dashboards reflect accurate, real-time data.

**Steps:** 1. Open **Hospital Dashboard**. 2. Verify: - Pie chart shows correct appointment status counts. - Bar chart displays correct number of appointments per doctor. - Table lists upcoming appointments accurately. 3. Create or update appointments → Refresh dashboard → Metrics update correctly.

## 5️⃣ End-to-End Scenario Testing

**Purpose:** Validate complete business workflow.

**Steps:** 1. Create a **new appointment** for a doctor and patient. 2. Check **auto-confirmation flow** updates status. 3. Verify **email/SMS notifications** are sent. 4. Complete appointment → Verify **completion flow** creates Visit record and tasks. 5. Update doctor/patient details → Check reports & dashboard reflect changes.

### ✅ Phase 9 Completed

* Apex code tested and verified.
* Flows debugged and validated.
* Reports and dashboards confirmed accurate.
* End-to-end process testing successful.

*Screenshot placeholders:* 1. Developer Console Test Results 2. Flow Debug Screens 3. Report outputs 4. Dashboard view 5. End-to-end test log