

QA & Automation Strategy Document - Uphill

Version: 1.0
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1. Purpose & Scope

This document defines the **Draft a high-level** QA and Automation strategy to strengthen Uphill’s capability to **catch, report and prevent issues early** while enabling engineers to ship safe, high quality code at speed for two high impact areas: Patients Journeys View and Localization.

2. Core Testing Principles & Methodologies

Principle	Why It Matters	Applied Practices
Shift-Left & Continuous Testing	Bugs are cheaper to fix when found early.	Unit + API tests run on every commit; E2E smoke suite on every PR.
Agile / DevOps Alignment	Testing must match sprint cadence and CI/CD flow.	Definition of Done includes automated tests & 100% review of test results.
Test Pyramid	Balance fast feedback with realistic coverage.	Unit > API > Contract > E2E/UX.
Risk-Based & Value-Driven	Focus effort where patient safety & clinician productivity are most affected.	Features labelled P0-P2; P0 automated first.
Context-Driven & Exploratory	Healthcare workflows are complex and dynamic.	Weekly exploratory charters per feature flag.
Accessibility & Localization First	Legal compliance (WCAG 2.2) & multilingual support are core product promises.	aXe automated checks; i18n string linting.
Security & Privacy by Design	Patient data requires GDPR & HIPAA safeguards.	Static analysis in pipeline; OWASP ZAP nightly.
Observability &	Data-driven	Metrics pipeline (Grafana +

- Modular structure allows isolated test logic.
- Test data management centralized under /test-data.
- Gherkin BDD tests used for future non-technical stakeholder visibility.

5. Integration with CI/CD Pipelines

Use GitHub Actions to:

- Run Cypress tests on push/PR to main or develop.
- Generate and publish Allure reports.
- Notify team via Slack/Teams on test failures.

Pipeline steps:

1. Checkout code
2. Install dependencies
3. Start app or use staging URL
4. Run Cypress headless
5. Upload report artifacts

Stage	Action
Pre-merge (PR)	Lint → Unit & Contract tests, Quick E2E Smoke, Publish coverage + a11y reports.
Nightly	Full regression (@regression & @l10n) → Visual diff check + OWASP ZAP security scan;
Release	Triggered on main => tag repeat smoke in staging → deploy via GitHub Actions to AWS Amplify.
Rollback / Hotfix	Automated canary + feature-flag toggles → Smoke verifies fix before full traffic shift.

6. Test Automation Prioritization Strategy

1. **P0 – Patient Safety & Core Workflows**
 - Search by patient name
 - Filter by communication status
 - Language toggle PT/EN with content refresh
 - Offline search error message
2. **P1 – Regression of Shared Components**
 - Table sorting, pagination, tooltips
3. **P2 – Edge & Negative Cases**
 - Special-character names, large datasets, accessibility focus order

Scoring model combines **Business Impact (0-5) × Failure Likelihood (0-5)**. Anything ≥ 15 automated in sprint, else queued (“impact × probability” used in risk analysis (Risk-Based Testing / Risk Matrix)).

7. Key Performance Indicators (KPIs)

KPI	Target	Insight
Automated Coverage (E2E+API)	≥ 70 % critical paths	Confidence in releases
Defect Escape Rate	≤ 2 % post-production	Test effectiveness
Mean Time to Detect (MTTD)	< 30 min (prod)	Monitoring & alerting quality
Mean Time to Resolve (MTTR)	< 1 day P0	Release agility
Pipeline Duration	≤ 10 min PR checks	Developer feedback loop
Flaky Test Rate	≤ 2 %	Suite reliability
Accessibility Score (Lighthouse)	≥ 95 across languages	Inclusivity compliance
Core Web Vitals (LCP, TTI)	Green (< 2.5 s)	Performance health

8. Governance & Continuous Improvement

- **Definition of Done** augmented with test & coverage criteria.
- **Quarterly Test Strategy Review** to adapt tooling, architecture, and metrics.
- **Flaky Test Triage Board** with ownership rotation.
- **Root-Cause Analysis** for escaped defects; preventive actions logged.

9. Next Steps

1. Socialise strategy in team kick-off and capture feedback.
2. Bootstrap repository structure & CI pipeline skeleton.
3. Author P0 Cypress scenarios and integrate with Cypress Dashboard.
4. Set up KPI dashboards and alert channels.

10. Considerations

Considering that during the challenge I was unable to access the test environment at URL:

https://uphillhealth.com/uphillchallenge/desk?routePackageId=ROUTE_PACKAGE_AS_CHALLENGE&page=0&tab=2&phasesIds=*

I created the tests and the QA bug report based solely on the images contained in the document.

After logging into the site, using the credentials below:

- Username: candidate5@uphillhealth.com
- Password: Uphill385njbq

I am getting the following error at the URL:

<https://www.uphillhealth.com/uphillchallenge/desk>

