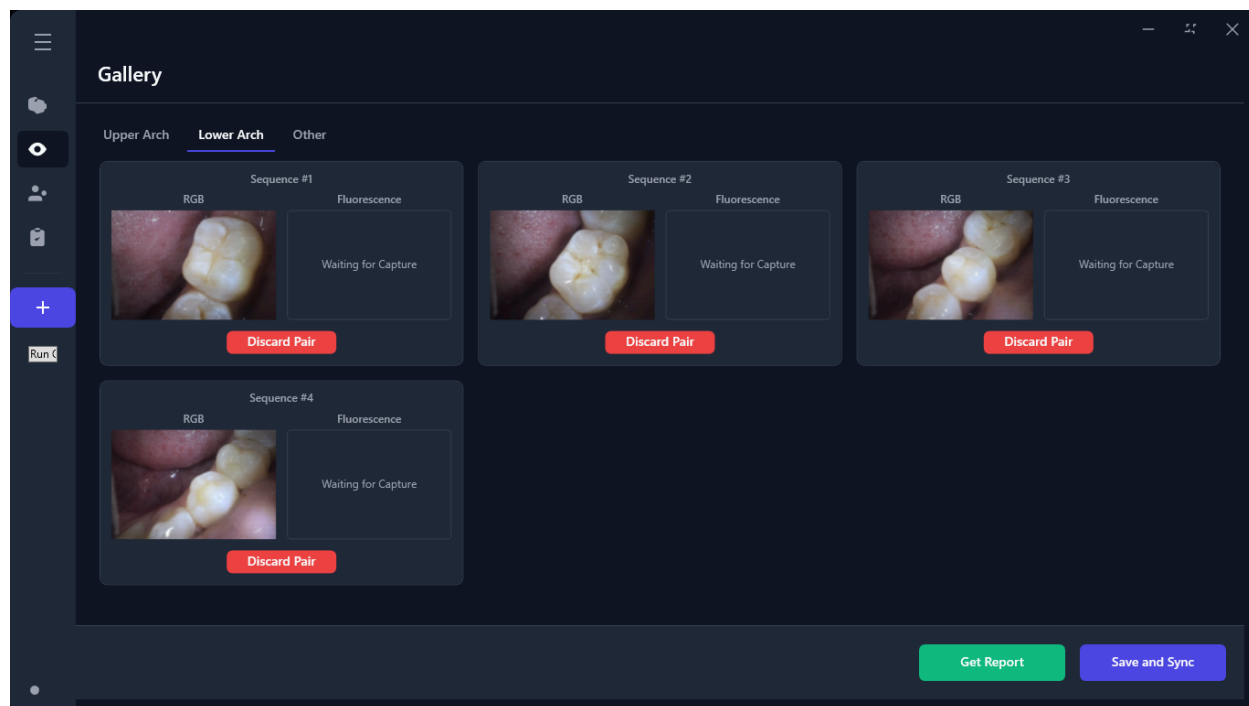# The Gallery Menu ("View" Tab)

1. Overview & Purpose

The **Gallery Menu** (accessed via the "View" tab) acts as the central review hub for the clinical session. It is the bridge between **Data Capture** (Camera) and **Data Utilization** (Reporting & Cloud Sync). Its primary purpose is to allow the practitioner to verify the quality and completeness of the exam data before the patient leaves.

Unlike a standard file viewer, the Gallery organizes media **anatomically** and **contextually**, grouping images into pairs that mirror the clinical workflow. It also serves as the secure gateway for generating reports and syncing data to the cloud.

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2. User Interface Structure

The UI follows a strict hierarchy designed for clinical efficiency:

- **Top Navigation (Tabs):**
  - **Upper Arch / Lower Arch:** These tabs display the guided scan sequence. Images are strictly ordered by sequence number (e.g., Sequence #1, #2, #3).
  - **Other:** Holds non-sequence media like full-face photos or video recordings.

- **The "Paired Sequence" Cards:**
  - Images are not shown as a loose list. They are grouped into **Cards**.
  - Each Card represents a specific anatomical site and contains two slots:
    1. **RGB (Left):** The standard visual light image.
    2. **Fluorescence (Right):** The corresponding QLF diagnostic image.
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  - **Logic:** The system automatically pairs images based on their SequenceNumber. If an image is missing (e.g. RGB mode capture hasn't been done yet and only fluorescence mode is captured), a "Waiting for Capture" placeholder is shown, acting as a visual checklist for the doctor.

- **Action Bar (Footer):**
  - **Discard Pair (Red):** Allows immediate deletion of blurry or incorrect images (deletes from both disk and database).
  - **Get Report (Green):** Triggers the analysis engine to generate a diagnostic PDF.
  - **Save and Sync (Purple):** Encrypts and uploads all pending data to the cloud.

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3. Data & Security Architecture

The Gallery is the visual interface for the application's **Zero-Trust Storage System**.

- **Secure Storage:** All images displayed in the Gallery are stored on the local disk as **AES-256 Encrypted** files. They cannot be opened by standard Windows tools.
- **Decrypt-on-Demand:** When the Gallery loads, it reads metadata from the secure SQLite database (AppDbContext). It then decrypts the image file **directly into memory (RAM)** to display the thumbnail. The decrypted version is never written back to the hard drive, ensuring maximum security.
- **Persistence:** The Gallery's state is persistent. If the app is closed and reopened, the Gallery reloads the patient's exact state from the secure database, ensuring no data loss.

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4. Workflows & Features

A. Real-Time Updates:
The Gallery listens for global application events. When a new image is captured in the Camera tab, it instantly appears in the Gallery without needing to refresh, providing immediate feedback.

B. Report Generation:
Clicking "Get Report" initiates the analysis pipeline:

1. It aggregates all Fluorescence images from the session.
2. It runs computer vision analysis to score caries and plaque.
3. It generates a PDF report, **encrypts it**, and saves it securely as a new "Report" item in the patient's media record.

C. Cloud Synchronization:
Clicking "Save and Sync" triggers the SyncManager:

1. **Patient Data:** Syncs the patient's demographic record to the cloud.
2. **Media Upload:** Checks the local database for any items (Images, Videos, Reports) where S3Url is null.
3. **Secure Transfer:** It decrypts these files in memory and uploads them to AWS S3 using a secure, patient-centric folder structure: {GlobalPatientId}/{ClinicID}/{FileName}.
4. **Completion:** Updates the local database with the new Cloud URLs to mark the sync as complete.