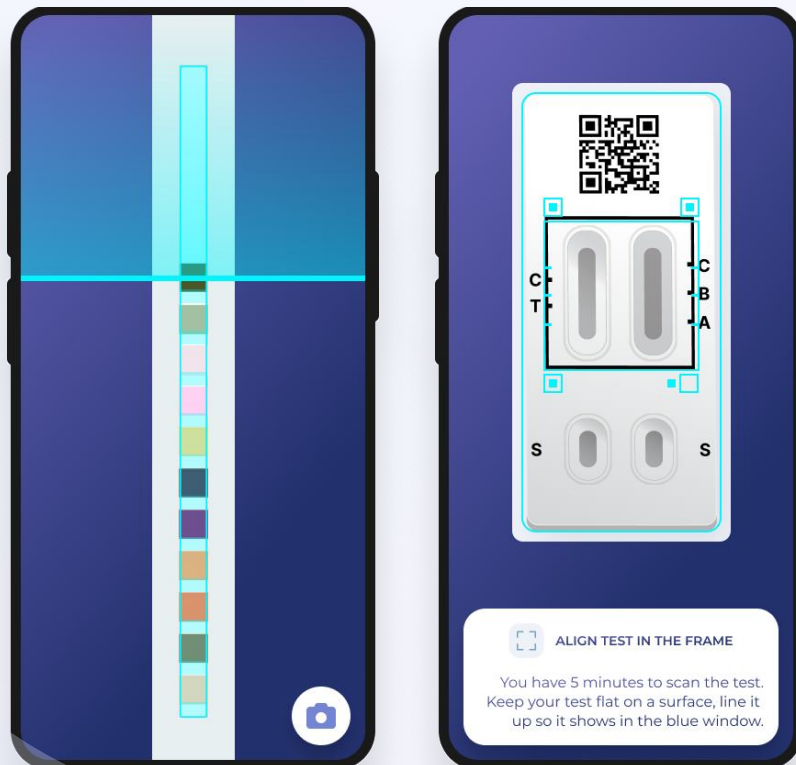# About ClearScreen

The ClearScreen solution, powered by TestCard, digitalises point of care rapid diagnostic testing including colorimetric and lateral flow tests. It can be deployed on any camera-enabled smart device with a flash.

The solution provides full paperless traceability at the point of need with integration into the electronic health record, and replaces error-prone manual performance of tests with no digital record.

Computer vision accuracy in a handheld portable device

This digital solution optimises the processes of recording and reporting of lateral flow and colorimetric tests to support better test performance and patient flow.

ClearScreen's powerful analysis software provides an accurate result in seconds. Senior resources can review data including images of tests in the included web portal.

Developed in collaboration with healthcare professionals

A partnership developed between TestCard and Guy's and St Thomas' NHS Foundation Trust (GSTT) created a digital lateral flow reading & reporting solution utilising SureScreen Diagnostics CDTA-approved tests.

In 2022 TestCard signed a collaboration agreement with Roche diagnostics, making the ClearScreen software available on the Roche Navify Marketplace and **cobas®pulse** devices globally.

The ClearScreen technology was pitted against Roche's fixed terminal scanners (used in hospitals and clinics worldwide) in a pilot study completed in 2019, in which TestCard was proven to have equivalent or better accuracy and precision than Roche's gold standard reader.

Creating value within the NHS with ClearScreen

ClearScreen uses the imaging processing capability of a phone to scan a test. The app automatically records user and patient IDs, the unique cassette QR identifier, and an image of the test. It provides consistency in interpretation through computer vision-analysed results. ClearScreen helps to build a consistent, high-quality process for internal and external auditing by extensive record-keeping and real-time data that is able to be appraised.

Reduce error-prone manual recording through result capture and automation into the Electronic Patient Record.

Provide cost savings in admin burden and reduced retesting.

Supports test standardisation, limiting user error in performing tests.

Features of ClearScreen

Support for the clinician to perform the test correctly

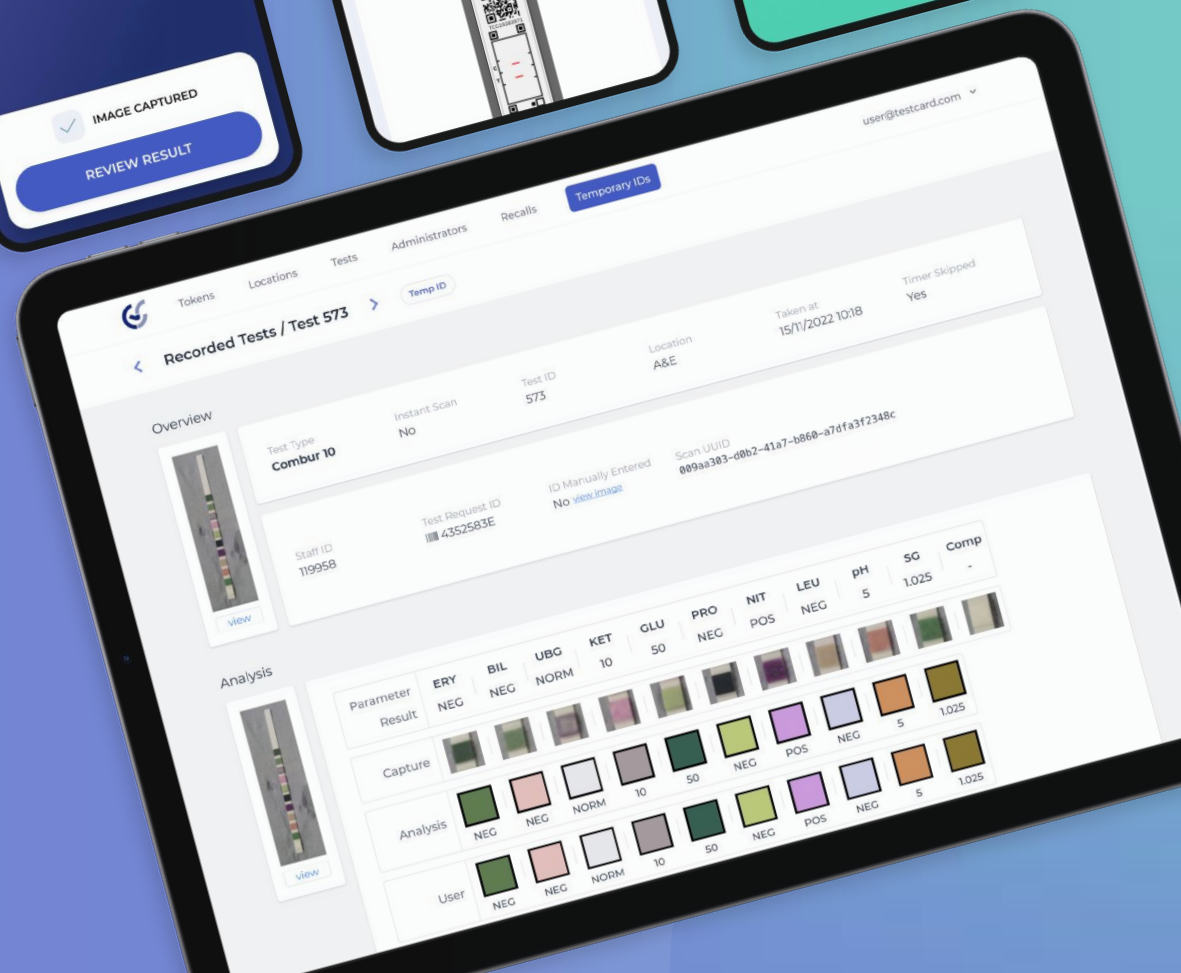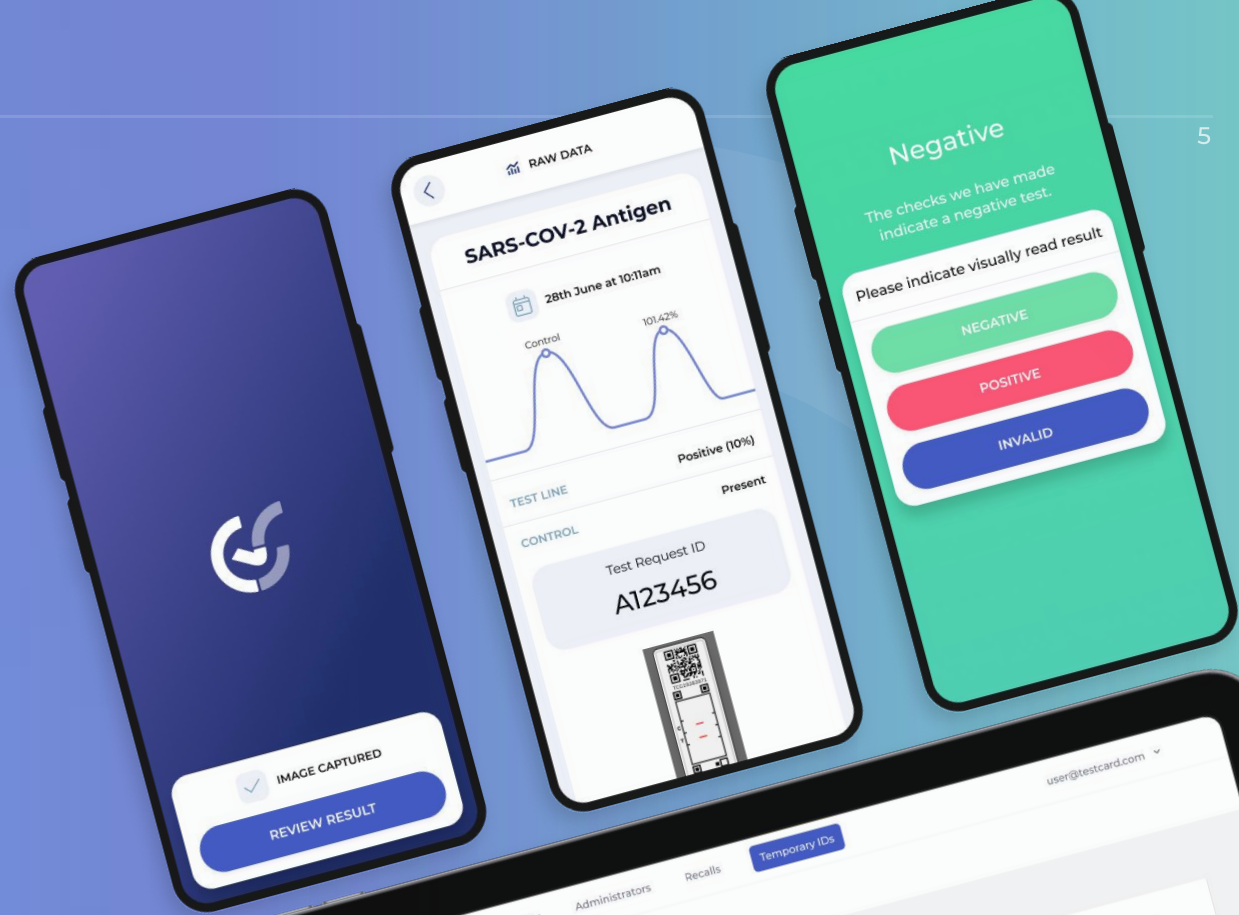Computer vision analysis with the suggested result

Instant recording of test results and image of tests into a web portal

Comprehensive record-keeping and reporting

Integration of results into the Electronic Patient Record

MHRA Registered Tests Available

ClearScreen increases the accessibility and usability of rapid diagnostic testing

Rapid diagnostic testing enables improved patient flow and data assurance, helping to build resilience to support future long-term needs. ClearScreen turns a mobile device into a clinical scanner, making testing faster, easier, and more affordable for healthcare systems.
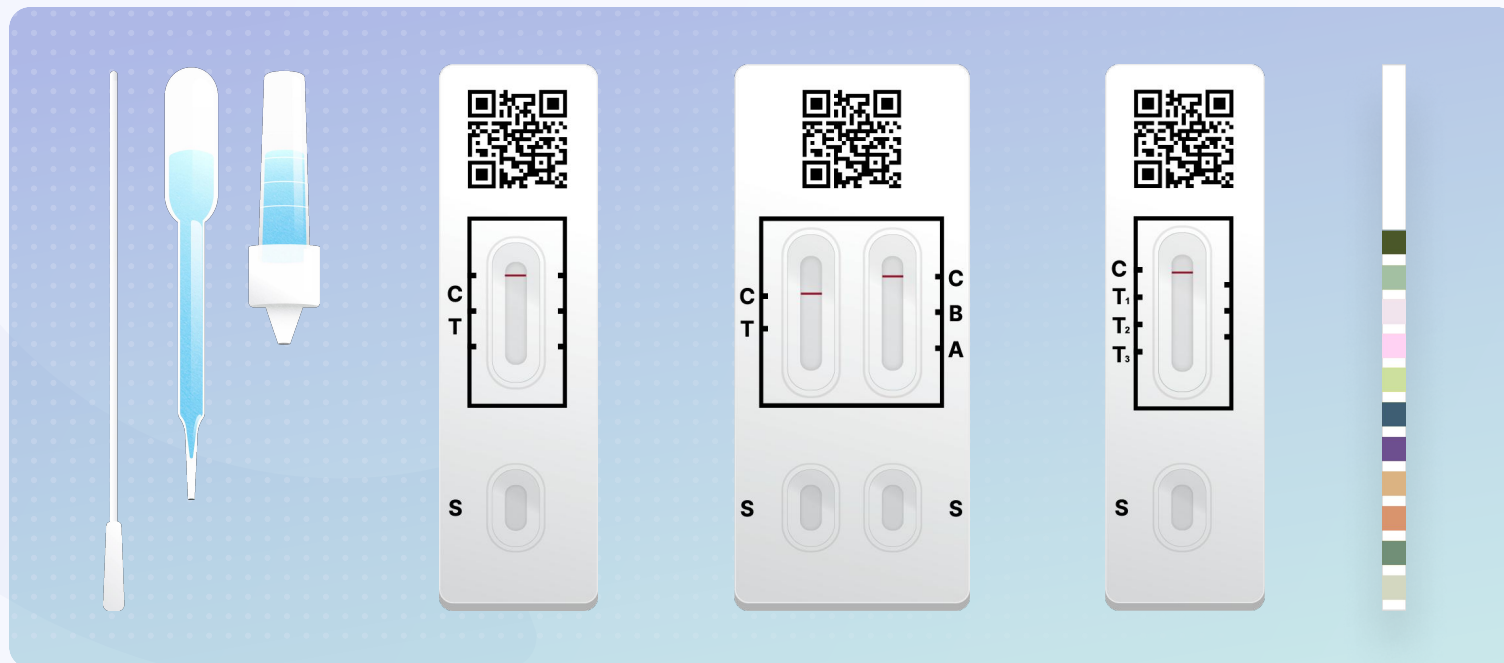
FULL LIST

MHRA Registered Tests Available

Infectious Diseases

Infectious Diseases
Adenovirus Antigen Test
Adenovirus Test
Brucella Antibody Test
Candida alblca ns Test
Chagas Antibody Test
Clostridium difficile GDH Test
Clostridium difficile Toxin NB Test
Clostridium difficile GDH & Toxin NB Combo Test
Chikungunya IgM Test
Chikungunya IgG/IgM Test
Chlamydia Test
CMV IgG Test
CMV IgM Test
CMV IgG/IgM Test
COVID-19 IgM/IgG Test
COVID-19 Neutralizing Antibody Test
COVID-19 Antigen Test
COVID-19 Antigen Self-Test
Digital COVID-19 Antigen Test

COVID-19 Antigen & B, 1, 1,7 Mutant Strain Combo Test
SARS-CoV-2 Delta-series Mutant Strain Antigen Test
Dengue IgG/IgM Antibody Test
Dengue NS 1 Antigen Test
Dengue NS1 & IgG/IgM Combo Test
EV71 IgM Test
Giardaa lamblla Test
Gonorrhoeae Test
HAV IgM Test
HAV IgG/IgM Test
HAV AntIgenTast
HBcAb Hepalitis B Core Antibody Test
HBeAb Hepatitis B Envelope Antibody Test
HBeAg Hepatitis B Envelope Antigen Test
HBsAb Hepatitis B Surface Antibody Test
HBsAg Hepatitis B Surface Antigen Rapid Test
HBsAg/HCV Combo Test
HBsAg/HCV/HIV/Syphilis combo Test
HBV HBcAb/HBeAb/HBeAg/HBsAb/HBsAg Combo Test
HCV Hepatitis C Virus Test
HCV/H IV Combo Test

HCV/H IV Combo Test
HEV Hepatitis E Virus IgM Test
HIV 1/2 Antibody Test
HIV 1/2 Antibody Tri-line Test
HIV 1/2/0 Antibody Test
HIV Antigen/Antibody Combo Test
HSV IgG Test
HSV IgM Test
HSV IgG/IgM Test
H.Pylori Antibody Test
H.Pylori Antigen Test
Influenza A Antigen Test
Influenza A/B Antigen Test
Influenza & Covid 19 Antigen Combo Test
Flu, Covid 19, RSV, & Adeno Antigen Combo Test
Leishmania Antibody Test
Malaria Pan Antigen Test
Malaria P.f. Antibody Test
Malaria P.f / Pan. Antibody Test
Malaria P.f / P.v Antigen Test
MonkeyPox IgG / IgM Antibody Test

MHRA Registered Tests Available

MonkeyPox Antigen Test
Mononucleosis Test
M.pneumonia IgM Test
Respiratory Syncytial Virus Antigen Test
Rubella IgG Test
Rubella IgM Test
Rubella IgG / IgM Test
Strep A Test
Syphilis Test
TOXO IgG Test
TOXO IgM Test
TOXO IgG / IgM Test
ToRCH TOXO/Rubella/CMV/HSV IgG Combo Test
ToRCH TOXO/Rubella/CMV/HSV IgM Combo Test
Trichomonas Vaginalis Test
Tuberculosis IgG / IgM Test
Typhoid IgG / IgM Test
Zika IgM Test
Zika IgG Test
Zika NS1 Test

Cardiac Marker

CK-MB Test
CRP C-Reactive Protein Semi -Quantitative Test
D-dimer Test
Myoglobin Test Procelcitonin Test
Troponin I Test
Cardiac Myoglobln/CK - MB/cTnl Combo Test

Tumor Marker

AFP Alpha Fetal Protein Test
CEA Carclnoembryonlc Antigen Test
PSA Prostate Specific Antigen Test
PSA Prostate Specific Antigen Semi-Quantitative Test
Nuclear Matrix Protein 22

Urinalysis

2 - 11 Parameter Urine dip tests

Fertility

hCG Pregnancy Test
LH Ovulation Test
FSH Menopause Test
Male Fertility Test
IGFBP-1 PROM Test
Vaginal pH Test

5 Simple Steps

How to use ClearScreen

Clinician scans barcodes to identify themselves and the patients.
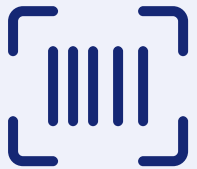
1

Patient sample is taken and the test is prepared.
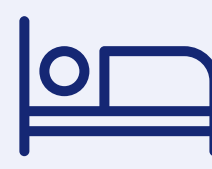
2

The ClearScreen app scans and analyses the test results.

3

Suggested result is provided by the App and clinician confirms result.

4

Result data is sent to the web portal and Electronic Health Record.
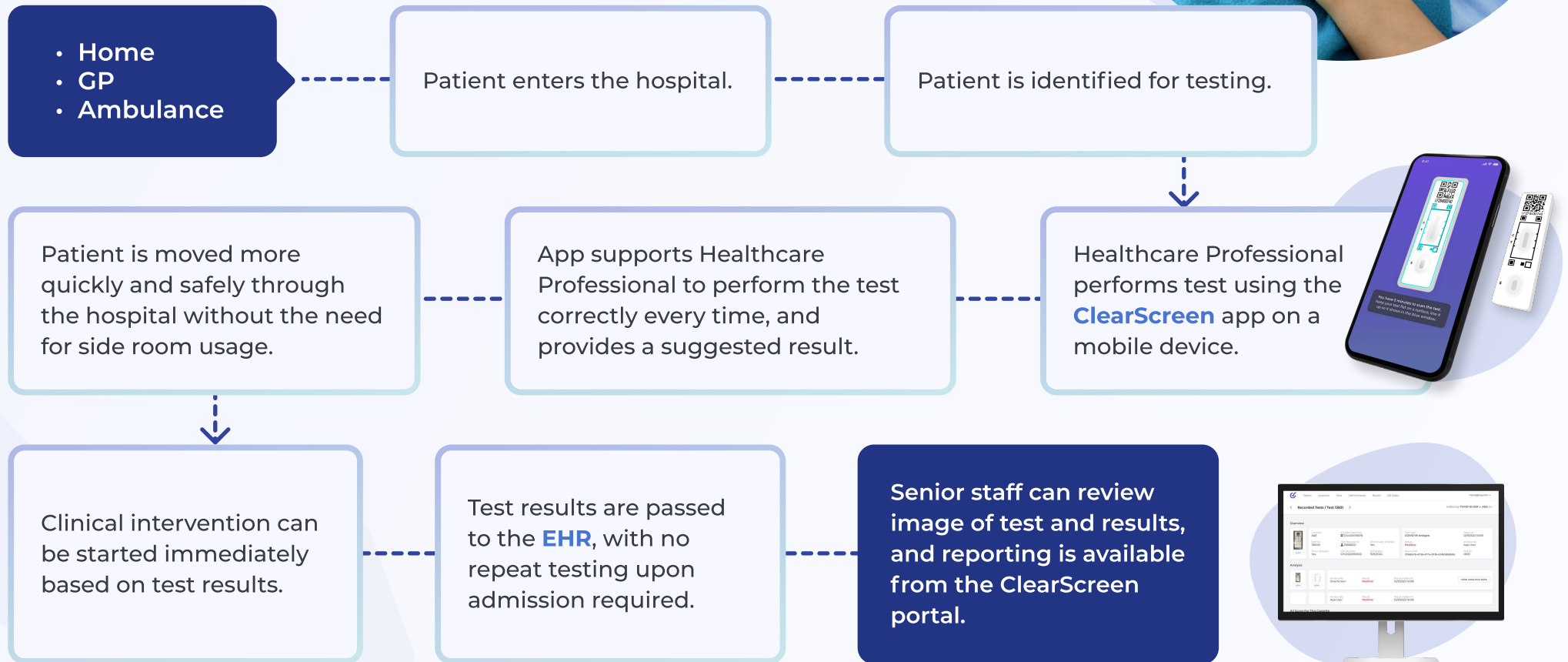
5

Supporting Patient Pathways

At the Hospital

- **Home**
- **GP**
- **Ambulance**

Patient enters the hospital.

Patient is identified for testing.

Patient is moved more quickly and safely through the hospital without the need for side room usage.

App supports Healthcare Professional to perform the test correctly every time, and provides a suggested result.

Healthcare Professional performs test using the **ClearScreen** app on a mobile device.

Clinical intervention can be started immediately based on test results.

Test results are passed to the **EHR**, with no repeat testing upon admission required.

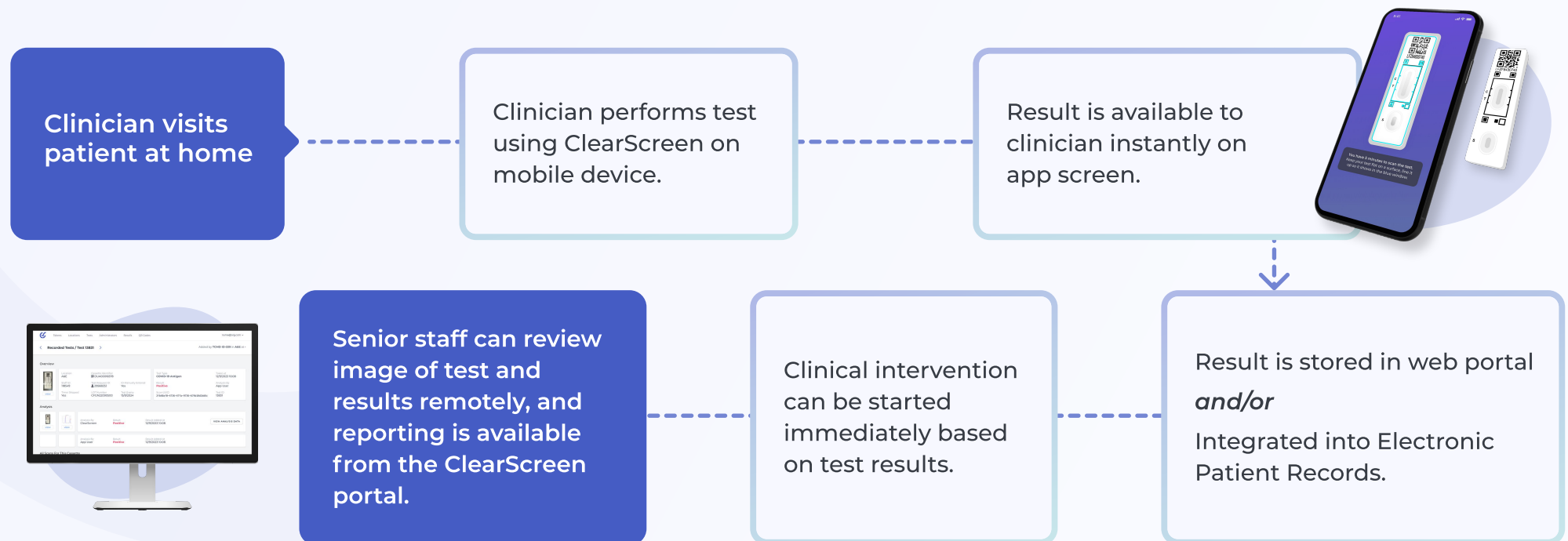Senior staff can review image of test and results, and reporting is available from the ClearScreen portal.

Supporting Patient Pathways

In the Community: ClearScreen supports Virtual Wards and Urgent Community Response Services

Equitable and timely access to diagnostics is critical to delivering effective urgent community response (UCR) and virtual ward services. The availability of rapid results from PoCT devices used in the community supports better clinical decision-making, including avoiding unnecessary hospital admissions.

Clinician visits patient at home

Clinician performs test using ClearScreen on mobile device.

Result is available to clinician instantly on app screen.

Result is stored in web portal

and/or

Integrated into Electronic Patient Records.

Clinical intervention can be started immediately based on test results.

Senior staff can review image of test and results remotely, and reporting is available from the ClearScreen portal.

Case Study

The Problem

SureScreen's Lateral Flow Devices (LFD) were already being used in many areas of Guy's and St Thomas', however the absence of a mechanism to reliably govern the procedure and report results led to a "work-around" to manage the burden. This process used glucometers to manually update results to the Electronic Patient Record (EPR).

The manual process provided very limited quality assurance.

Once entered, the original LFD could not be viewed or results verified when discrepant results occurred.

Extra admin support was necessary to support this manual process.

In order for LFDs to replace PCR testing equivalently robust data capture would be required, and that could only be realistically achieved through the use of a digital reading solution.

The Solution

The ClearScreen digital reader uses the image processing capability of the phone to scan the LFD cassette and automatically report the patient ID, cassette ID and provide consistency in result interpretation. In partnership with SureScreen and TestCard, Guy's and St Thomas' were able to deploy a solution that:
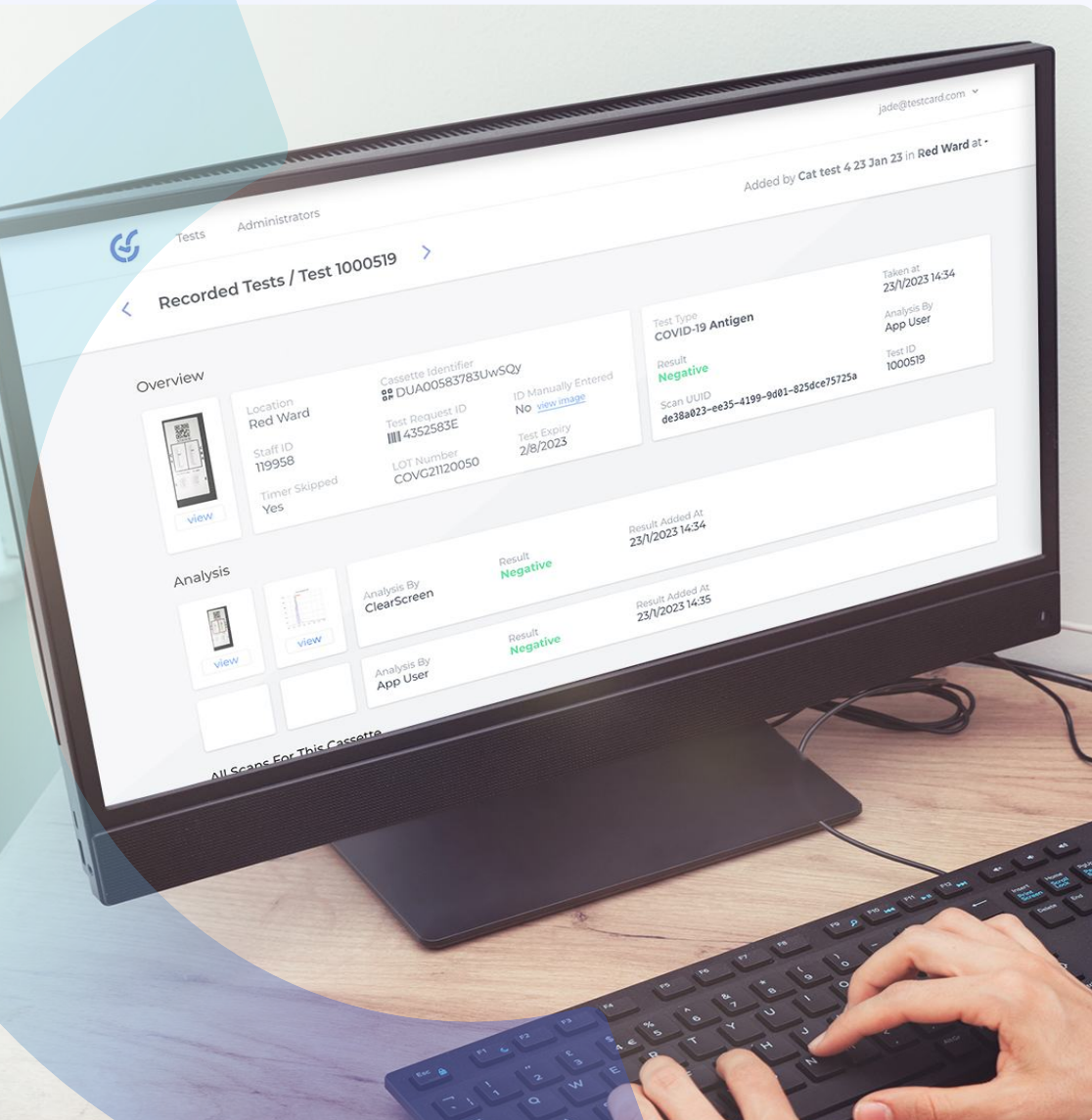
Performs to a consistent and high standard.

Can easily be deployed to meet any reporting requirements.

Is able to provide real-time data to be appraised as part of any internal or external audit reviews.

Enables a consistent, high-quality process, supporting improved patient flow and realising operational cost effciencies.

The Outcome

Guy's and St Thomas' deployed the ClearScreen solution and realised benefits including:

A significant reduction in overcrowding in A&E and the need for side rooms pending PCR results.

Testing in A&E increased from 30% to over 95% of all patients attending.

Input errors, including inputting the wrong result, decreased from 7% to 2%.

Reduction of 2% in Covid PCR test usage.

Repeat testing upon admission decreased 75% due to the immediate availability of results in the electronic patient record.

Testimonials

"The digital reader has enabled improved patient flow and data assurance to help build resilience to support future long-term need."

"This solution in the Emergency Department allowed for timely diagnosis, decreased isolation room use, and improved result reporting, thus leading to safer patient flow throughout the hospital. It also meant we have now moved the whole testing process from the central lab right into triage, thus providing a test and result at first point of patient care."

Dr Rahul Batra

Deputy Director, Centre for Clinical Infection & Diagnostics Research at Guy's and St Thomas'

"Traditionally, lab testing can take up to 24 hours but with the ClearScreen app we can carry out a test and get results in 10 minutes, that's a real game-changer."

Dr Sam Douthwaite

Consultant in the Virology Dept & Service Lead for Infectious Diseases at Guy's and St Thomas'

ClearScreen

Powered by TestCard

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