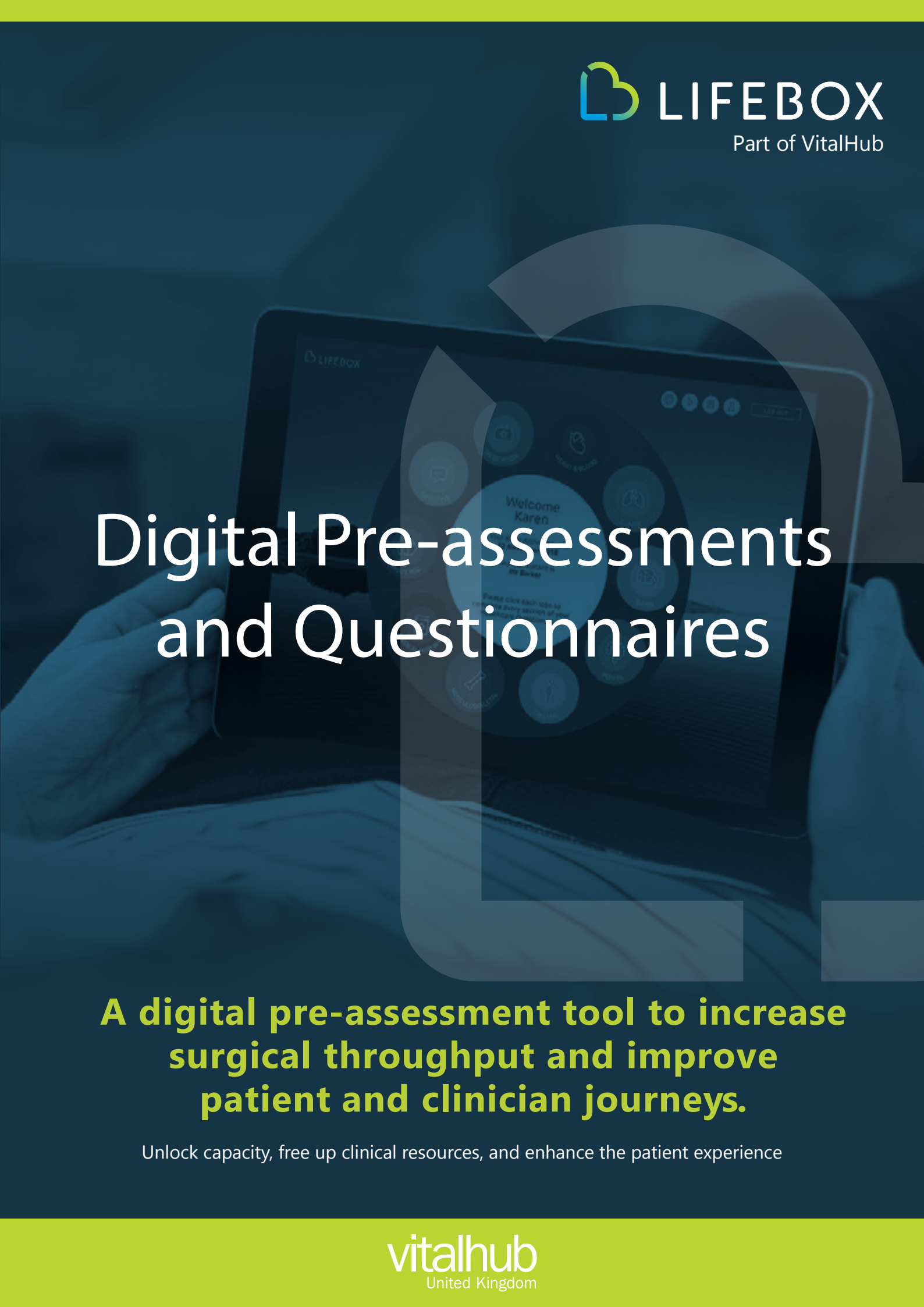




Digital Pre-assessments and Questionnaires

A digital pre-assessment tool to increase surgical throughput and improve patient and clinician journeys.

Unlock capacity, free up clinical resources, and enhance the patient experience

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Introduction

LifeBox is a digital pre-assessment, education and scoring system that provides a comprehensive solution to hospital needs.

The LifeBox digital pre-assessment tool is delivered as a web based application hosted on LifeBox's cloud servers providing patient and hospitals 24/7 access to real time data.

Solution components

The core solution components of LifeBox are:

- Patient app
- Hospital app
- Admin app

Patient app

Following initial account setup patients are directed to the patient app to complete registration and to remotely log in to complete pre-assessment steps electronically. A patient will be notified via email that an account has been setup and will select to activate this account by confirming their identity.

Once a patient has verified identity and logged in to LifeBox they will review privacy statements and give explicit consent to capture the data needed in support of the patient journey. Patients will be guided through the pre-assessment journey completing a **Healthcare Questionnaire**, viewing procedure relevant **videos** and appropriate Assessments and Surveys. Patients are able to view and attend remote **Video Consultations** to support the pre-operative assessment.

Once the patient has completed the digital journey, their information is automatically uploaded to the hospital facing service for clinical staff to review.

Healthcare questionnaire

The health questionnaire contains close to 600 possible questions covering every body system requiring assessment prior to a procedure. The questionnaire provides granular open and closed questions to facilitate accurate extraction of information from patients.

Questions are based on National Society guidance or current NICE guidance and are standard throughout the product.

Patients are guided step by step through the completion of the questionnaire with progress clearly signposted giving patients the ability to save and return to the questionnaire to complete as needed.

Completion of the Healthcare Questionnaire is compulsory ahead of the Pre Operative assessment and patients are automatically reminded via email to complete this at pre-defined stages. This can be configured to be at any frequency an organisation requires.

Videos

LifeBox is unique in providing tailored pre operative education to the patient via specific AV media produced per procedure. Each patient is required to watch video on coming into hospital, anaesthetic, procedure and procedure specific consent.

After viewing the media the patient acknowledges understanding of the content or registers questions if unsure. These responses are surfaced on the hospital system against the patients notes for further action.

The benefits of using LifeBox AV media over traditional PIL's has been presented nationally.

Surveys and assessments

Patients are guided to complete any assessment scores that are required. These are incorporated at the hospital request and can range from hospital or patient satisfaction scores through to National PROMS data.

The completion of the scores is monitored in real time through the hospital system and automatic reminders sent to the patient.

The integration of scores into the digital journey produces high completion returns and is more cost effective for organisations.

Video consultations

Patients can attend remote consultations using LifeBox's video conferencing tool. Upcoming and previous appointments scheduled with the hospital can be viewed within LifeBox allowing patients to safely attend video consultations with their clinician.

Patient files

In the 'My files' section patients can view files that the hospital have made available for viewing and can upload files for hospital attention enabling a safe and secure 2-way mechanism for sharing sensitive files.

Internationalisation

Questionnaires are in English. Other languages are available upon request.

Accessibility

We are currently undergoing testing to ensure we meet level AA of the Web Content Accessibility Guidelines (WCAG 2.1) as a minimum.

Assisted Digital Support

Patients may need assisted digital support to complete pre assessment questionnaires or progress through the LifeBox journey. Where this is required, and the patient gives consent, LifeBox offers the ability for a nurse to complete the questionnaire on their behalf. This can be offered either as a face to face or telephone interview and helps minimise the need to offer a paper alternative.

Hospital App

The hospital app is accessed by clinical staff when they log in to LifeBox. Staff have a unique LifeBox account which applies specific permissions based on their role. Hospitals can specify which users will undertake which activity and are able to delegate LifeBox roles accordingly.

The main features available to the clinician are:

- Create and amend patient profiles
- Create, amend and archive episodes
- Check what pre assessment tasks a patient has completed remotely and what are remaining
- Triage patients healthcare questionnaires
- Add clinical observations and test results
- View automatically generated triage notes and actions
- Add manual notes and actions
- Complete anaesthetic review
- Print anaesthetic chart
- Upload files
- View patient uploaded files
- Complete clinical assessments
- View ICD-10 co-morbidity codes
- Print notes and healthcare questionnaires
- Schedule and attend patient video consultations

Patient and episode admin

Hospital staff are given the ability to initiate the setup of patient profiles, associated episodes and to amend details as required. Appropriate staff will need to be identified and given relevant permissions to complete this task.

Triage dashboard

The triage dashboard displays the live state of all the organisations patients that are currently registered on the LifeBox system. The status of the patient changes as the patient continues their journey through the assessment process. This allows live assessment of the hospitals preassessment load in real time. It also allows senior health care professionals the ability to remotely triage patients and decide what type of assessment they need, by which staff member and in which environment (telephone call or face to face consultation).

Nurse validation questionnaire

The nurse validation questionnaire allows validation to any positive responses the patient provides when completing their health questionnaire. This may lead to automatic actions or tasks to be generated.

The nurse will open the file of the patient undergoing assessment which will reveal the ten chapters of their health questionnaire that have been completed.

If the patient completes a health chapter and does not indicate any problems with that health system, by not providing any positive answers, then a tick is displayed next to the chapter.

If the patient completes a health chapter and indicates a health problem through a positive response to any question then the chapter icon automatically displays a red exclamation mark against the chapter on the nurse validation questionnaire.

The LifeBox system allows the nurse to enter any chapter but it is mandatory to enter and validate any chapter indicated with a red exclamation mark. Here the nurse will be able to examine any responses to questions by the patient. These positive patient responses generate the need for further enquiry. This can be through fixed questions that nurses must ask and record responses to and/or generation of tasks.

Tasks may include mandatory blood tests, cardiac or pulmonary investigations, radiological investigations or referrals to specialists.

Nurse Notes and Actions

As the assessment nurse completes the review of the patient health questionnaire, they automatically create notes in the relevant chapters where the function also exists to add comments. These are summarised per body system and condition along with any actions required.

All entries are automatically date and name stamped ensuring CQC compliance.

Any member of staff who is granted authority can view and interact with the notes section. Here they may also add further comments against any condition or section. They can also record results of any investigation.

The LifeBox system can be integrated with hospital pathology systems to allow for pathology tests that have been requested to be automatically uploaded to the notes section aiding complete record review.

File Upload

Hospital users are able to upload files to the patients episode at any point in the pre-operative process. Common file types such as images, pdf's and documents can be uploaded, viewed and downloaded to easily share important information that supports understanding a patient's fitness for procedure.

Anaesthetic notes and view

The function of the Anaesthetists view is to provide a more succinct overview of the patients positive responses. Populated within this section are the results of relevant results and Anaesthetic calculations such as DASI, METS and Stop Bang.

The Anaesthetist, having reviewed the summary, enters a predicted ASA score and progresses the patient to the state 'Ready for admission'. Should the patient require further investigations or an Anaesthetic consultation then this can be recorded in the notes. The ability to remotely view the anaesthetic notes via authorized access ensures adherence to the latest GPAS guidelines.

Patient Observations

Observations can be manually added and updated at any point. These observations are currently standard stage one observations but can be added to based on organisational needs.

Test results

Integration of LifeBox with host pathology systems via appropriate API's allow tests results to be automatically surfaced against any requests generated by the nurse validation questionnaire.

More information regarding integration options is available from the LifeBox team.

Assessments

Commonly used Nurse lead assessments are able to be completed to support the Pre Assessment Process of an individual organisation. Frequent assessments completed includes VTE, Frailty scoring, Dementia scores, DASl and Falls scores, as well as any specific assessments required by an individual organisation which can be included.

Coding

Pre-assessment co-morbidity codes are output based on the healthcare questionnaire to support accurate medical coding. This directly ensures the consistency and data quality of medical coding inputs from LifeBox to optimise income. The lead codes are based on OPCS 4 and ICD 10 scores.

Print notes

Hospital staff can print the notes and associated healthcare questionnaires at predefined states to support ongoing hospital processes. These can be integrated into standard hospital notes as required. Specific examples are given in appendix 1.

Video consultations

Hospital staff can schedule consultations using video conferencing technology inside LifeBox. Consultations can be scheduled and patients sent appointments and joining instructions. Clinicians can choose to record a consultation to aid future assessment and auditing.

Admin app

Admin functions

Hospital 'super users' can be setup to allow for administration of hospital activities supported by LifeBox. Super Users can currently:

- Setup/edit/delete staff LifeBox accounts in line with hospital joiner/leaver processes
- Manage staff LifeBox roles and permissions
- Manage hospital profiles with a hospital group

Further admin functions will be added as required to support hospital management of LifeBox and associated processes.

Integration

LifeBox can be integrated with hospital systems to provide 2-way messaging of demographic, procedure and pathology data. This can be configured against common industry standard message types including HL7 and FHIR.

Reporting

Within the software lies the ability to generate bespoke reports on user data and metrics. This allows organisations to monitor real time data of service usage, user interaction and any relevant information that the software gathers.

Technical

The LifeBox web application is built using modern technologies and frameworks including reactjs, aws cognito for user authentication, dynamodb with KMS managed encryption for user data storage and amazon certificate manager for all TLS certificates.

LifeBox supports the most commonly used browsers and operating systems across desktop and mobile devices. The [Government Service manual](#) is used to guide which browsers and devices are compatible. LifeBox is a responsive application that will work on smaller devices such as smartphones and tablets.

LifeBox is a scalable application with no capacity limitations. Capacity can easily be scaled using our cloud providers to support the growth of the product and to cope with any arising capacity issues.