



Digital Strategy

Royal Papworth Hospital 2021-2025

Our *vision* "To bring tomorrow's treatments to today's patients"

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Executive Summary

Early in 2020 we were preparing to launch our new five-year strategy for the years 2020-25, then we were faced with a global pandemic. For several months, tackling COVID-19 and saving as many lives as possible became our absolute priority.

In recent months, we have re-examined the strategy that we had previously written with involvement from you – our staff, patients and partners. What is striking is that, although COVID-19 will change the way we do some things and bring some of our plans forward, our key priorities for the future remain the same. This strategy will guide our work through the next five years, as we recover from the pandemic and focus again on our core purpose: to bring tomorrow's treatments to today's patients. The strategy will help us build on our strengths, address our challenges and realise the potential of our new hospital and our exceptional staff. Clinical excellence and innovation have helped us get where we are today and remain at the heart of everything we do.

But how we do things is just as important, and our strategy is clear about improving our staff experience and building meaningful partnerships with organisations who share common goals. Despite the challenges of the last few months, we feel full of energy and enthusiasm for the journey ahead.

The global COVID-19 crisis has reinforced the importance of our work and made us more determined to tackle the heart and lung conditions that affect so many lives. We know that the expertise, commitment and compassion displayed by our staff during the pandemic will continue to make a huge difference to patients here and across the world over the next five years.

Stephen Posey, CEO
Professor John Wallwork CBE, Chairman

Overview

Royal Papworth Hospital NHS Foundation Trust is committed to providing an excellent patient experience, achieving some of the best outcomes in the world for its patients.

Royal Papworth Hospital is the UK's largest specialist cardiothoracic hospital and the country's main heart and lung transplant centre. Since carrying out the UK's first successful heart transplant in 1979, the hospital has established an international reputation for excellence in research and innovation. The Trust is also a founder member of Cambridge University Health Partners; a partnership between one of the world's leading Universities and three local NHS Foundation Trusts, which aims to improve patient care, patient outcomes and population health through innovation and by integrating service delivery, research and education across Cambridgeshire and beyond

After years of planning, 2019 saw the Trust achieve its long-term vision of moving to a new hospital on the Cambridge Biomedical Campus. The time has therefore come to look to the future. To that end, the Trust developed a new strategy, which will guide the work of the five years spanning 2020 to 2025.

The new strategy will help the Trust build on its strengths, address its challenges and realise the potential of the new hospital and its staff, all in line with its core vision of bringing tomorrow's treatments to today's patients.

The Digital Strategy supports the Trusts Strategy and sets out the roadmap for 2021-2025. This has been developed in support of the vision, values and mission set out in the Trust's Strategy. The Digital Strategy will be implemented by:

Maximising the utilisation of resources internal and external to Digital to drive transformational change, expanding on the excellent stakeholder engagement the Trust demonstrated during the implementation of the EPR and moving to the new hospital.

Targeting investment from innovation grants and enablement opportunities for digitally advanced/aspirant Trusts – Digital Exemplar and Digital Aspirants

Implementing new technologies, integration and ways of working to drive benefits by enhancing business processes and efficiencies through digital.

Consolidation of our partnership with Dedalus Software Ltd (EPR Partner) through the Royal Papworth brand as a world-renowned healthcare provider, located in our state-of-the-art new hospital on the Cambridge biomedical campus

Capacity management of systems and hardware to ensure efficient utilisation of Digital resources

Strategic Direction of Travel

A strategic direction of travel has been agreed for the Trust, which articulates the way in which the organisation is to develop and grow as a valuable and valued contributor to the systems in which it works...

Collaboration a commitment to a “collaborative” rather than a “competitive” mindset: the Trust will seek to play a role in all systems that is both valuable and valued by its partners, and in particular will seek to be a respected collaborator and partner on the Cambridge Biomedical Campus.

Innovation and excellence a commitment to innovation and excellence, seeking to be at the forefront and leading development in the Trust’s areas of expertise and ensuring that all service areas live up to the reputation set by the best.

Adding value through expertise a focus on those areas where the Trust has particular strengths and expertise and recognising that value will be added not just by what the Trust directly provides within Royal Papworth Hospital but also by outreaching with advice, support and leadership to the wider network and patient pathway.

Holistic pathways a recognition that the Trust will think differently about how it provides services; around diagnoses and specialisms rather than around procedures, and viewing patients from a holistic pathway perspective rather than mode of treatment upon referral. Strategic research and education A shift towards a more strategic and disciplined approach to prioritising research and education activities, based on clear criteria and governance including the establishment of an innovation fund and recognising the importance of the Trust’s educational role for the system.

Income: international and industry a more structured approach to attracting income through international and private income partnerships with industry.

Trust Vision, Values and Mission

Our Vision

“To bring tomorrow’s treatments to today’s patients...”



Compassion

Recognises and responds to the needs of patients and colleagues



Excellence

Makes a difference with each small improvement and by being open to new ways of working



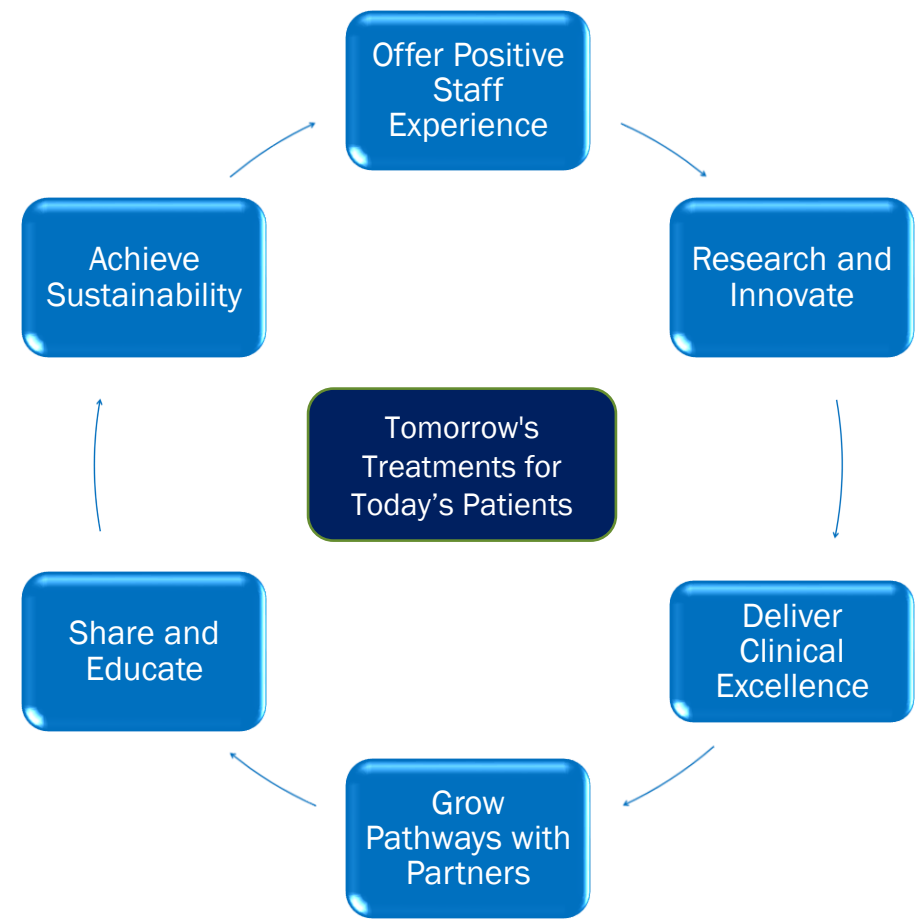
Collaboration

We achieve more together

Our Mission

“To provide excellent, specialist care to patients suffering from heart and lung disease...”

Trust Strategic Goals



Digital Strategy

A Digital strategy is essential in healthcare to support the objectives and needs of the overarching trust strategy. The Trust strategy is aligned to support current and future healthcare needs of our patients, staff and partners and together provides a clearly documented roadmap for digital change that enables progress towards strategic goals.

Our strategy helps steer and develop services and innovation to *"Support clinical excellence through information and technology"*

The Digital strategy is a plan for the current and future development of the Trust's digital capability over the next five years. The objective of the Digital strategy is to support the Vision and Mission of the Trust and is aligned to the Trust's main strategic objectives.

- 1) Deliver clinical excellence
- 2) Grow pathways with partners
- 3) Offer positive staff experience
- 4) Research and innovation
- 5) Share and educate
- 6) Achieve sustainability

Our vision *"To bring tomorrow's treatments to today's patients"*



Where are we now?

Royal Papworth Hospital 2021-2025

Our *vision* "To bring tomorrow's treatments to today's patients"

Benefits Driving Transformation



Travel and transport spending reduced by £250k on pre-Covid (MS Teams)



Virtual clinics using Attend Anywhere



Length of stay projects supported by 20% EPR effect



iPads support end-of-life care providing a vital lifeline for patients to speak to next of kin



3,000,000 notes
20,000 sets of notes



ePMA drug error reduction and transcription savings



Real time results delivered to teams (24 hours pre-EPR)



Enabled remote working to accommodate hospital capacity limits and Covid 19 isolation requirements



Digital Maturity 2015 - 2025

Electronic Medical Record Adoption Model™

The HIMSS Analytics EMRAM incorporates methodology and algorithms to automatically score hospitals around the world relative to their EMR capabilities.

STAGE	HIMSS Analytics EMRAM EMR Adoption Model Cumulative Capabilities
7	Complete EMR, Data Analytics to Improve care
6	Physician Documentation (templates), Full CDSS, Closed Loop Medication Administration
5	Full R-PACS
4	CPOE; Clinical Decision Support (clinical protocols)
3	Clinical Documentation, CDSS (error checking)
2	CDR, Controlled Medical Vocabulary, CDS, HIE Capable
1	All Three Ancillaries Installed — Lab, Rad, Pharmacy
0	All Three Ancillaries Not Installed

Over the last five years our investment in digital has reflected a progressive increase in digital maturity as measured through the HIMSS EMRAM model.

As part of our 2021-25 Digital strategy:

We will continue to develop our integrated electronic patient record (EPR) system and seek to integrate with a regional EPR by 2025 so that the patient record can be accessed at different centres across the region and exploit the benefits of being a Digital Exemplar for our EPR System.

Digital Achievements

January 2018 - December 2019



50 New Clinical Data Capture (CDC) forms created.



Health Records scanned 1,002,907 medical documents.

SARS – 460 request were actioned with 18 breaches – This was the first years subject access requests were recorded.

FOI Requests – 371 which was an increase on the previous year at 278. We only had 3 breaches.

Full GDPR compliance so that the organisation complies with the law, helping keep all staff and patients personal information secure.



Digital Strategy

Pooled resource

“Digital” Brand launched

50 CIO reports, highlighting the work done weekly by the department.



Average 98% uptime

Switchboard took 36,504 calls



22 Projects delivered by the Projects and Programmes team, including Fysicon, PACS system migration and Intellispace Storage commit

108 development led projects delivered.

Went live at new RPH.



Successfully negotiated over £1.6m worth of discounts with current and deal suppliers.

CIP savings met and in budget.



Winner HTN Awards - Best Tech Project



13 Laudix's received for Digital colleagues showcasing the excellent work delivered.



Incidents logged by source;

Helpdesk Logged: 801
Self-Service: 1560
Email: 524



1584 virus detected, with no distributions to services for the trust.

No firewall or security breaches.



Requests and Results Interoperability with EPIC



Developing overseas opportunities



Calls logged to the service desk by priority order;

Long Term (LT): 19
Priority 1 (P1): 5
Priority 2 (P2): 8
Priority 3 (P3): 34
Priority 4 (P4): 2777
Priority 5 (P5): 42

Total Logged: 2,885



A total of 409 staff trained in Lorenzo, 50 of those within administration roles, 307 clinical staff and 52 trained for the R&R go-live training.

650 sessions were held for IT new users.

Various QRGs were created for new projects and current ones updated.



604 NHS email password resets



Since the implementation of Lorenzo, the following benefits have been realised;

- 130 bed days
- Over 1 million clinical documents digitised
- Patient safety increased
- Reduced carbon footprint

Digital Achievements January 2020 - April 2021



65 New Clinical Data Capture (CDC) forms created, Covid passport introduced to help ensure we have the right patients on the right pathways.

208 Amendments to existing CDC forms. IPC admission form amended to help staff identify patients requiring a point of use water filter to reduce risk from M. Abscessus.



No data related incidents over the past 12 months, resulting in no fines or reputational damage to the organisation.

SARS – 325 which is a decrease on the year previous at 449, only 4 breaches in the last 12 months.

FOI Requests – 348, compared to 351 the year previous, only 4 breaches in the last 12 months.

Full GDPR compliance so that the organisation complies with the law, helping keep all staff and patients personal information secure.



28 Laudix awarded to members of the Digital team throughout the year for their hard work, exceptional service and efforts towards the Covid response.

Recognition of women in leadership, one of our Digital colleagues appeared in an article highlighting the importance of women within senior leadership.



1261 NHS mail password resets

Number of calls logged by source;

Analyst: 6,538

Email: 4,304

Self Service: 7,304

Total number of calls logged 18,146



30 Projects delivered, including Clinician Aide which has aided Clinicians with iPads for ward rounds, Attend Anywhere as part of the Covid Response to allow remote consultations and Fysicon, which enables capture of Patient implantable devices data, from implant through follow up to devices changes, this information can be extracted for national submission.



£1,116,322.00 of Cash Releasing benefits have been identified, £3,118,200.94 of Non-Cash Releasing benefits identified. These have been worked up from current and future digital projects and logged into the new Benefits portal.



Cambridgeshire and Peterborough have commissioned a Shared Health Care Record, with the first phase set to be delivered by September 2021.



Introduction of the new Self Help portal. 73 people have successfully used it to resolve their issues, avoiding unnecessary calls through the service desk.



Royal Papworth's Digital team and Dedalus were winners of HTN Now Awards 2021 - Rapid response to Covid19.



Calls logged to the service desk by priority order;

P1 5

P2 7

P3 164

P4 11,834

Total calls resolved 11,324. 561 calls pulled over from previous year.



Benefits realisation of original Lorenzo Benefits has been ongoing, however, Covid has put pressures on any further benefit exploration over and above the current live benefits.



Covid response;

295 Laptops issued, aiding flexible working during the pandemic.

60 iPads have been distributed for Clinical and Patient Support.

We created 824 new VPN token to make remote working possible.



Health Records scanned 538,219 medical documents, a decrease on the previous year 749,508, evidencing us becoming more paper-lite.

CAFs created – 23,415, a decrease on the previous year at 30,114 due to the Covid response.



Digital Strategy.

Successful funding of £3.6 million for the Digital Aspirant Programme.

Lorenzo Digital Exemplar has implemented many new projects/products to enhance our EPR.

50 CIO reports, highlighting the work done weekly by the department.



0 Security Breaches.
3,837 threats blocked by Sophos.
Over 1000 threats noticed and blocked by darktrace.

Installed new SIEM Monitoring system (links all logs together for end to end monitoring).

Expanded VPN and HSCN line capacity to aid with flexible working in response to the pandemic.

Upgraded all systems to new Sophos Central Antivirus system.



9 Training videos have been produced on using WebEx and Lorenzo developments. 708 people Lorenzo trained, 95 admin, 563 clinical and 50 digital colleagues with a total of 1,770 hours. 730 IT new users have been set up and trained. 127 QRGs created or edited with 31 of these on Covid related deployments such as WebEx and Attend Anywhere.



Strategic Drivers

Royal Papworth Hospital 2021-2025

Our *vision* "To bring tomorrow's treatments to today's patients"

NHS Long Term Plan

“Technology will play a central role in realising the [Long-Term Plan](#), helping clinicians use the full range of their skills, reducing bureaucracy, stimulating research and enabling service transformation. People will have more control over the care they receive and more support to manage their health, to keep themselves well and better manage their conditions, while assisting carers in their vital work...”

The NHS Long Term Plan, DHSC 2019

“We are at a unique juncture in the history of medicine, with the convergence of genomics, biosensors, the electronic patient record and smartphone apps, all superimposed on a digital infrastructure, with artificial intelligence to make sense of the overwhelming amount of data created. This remarkably powerful set of information technologies provides the capacity to understand, from a medical standpoint, the uniqueness of each individual – and the promise to deliver healthcare on a far more rational, efficient and tailored basis...”

Topol Report, 2019

What Excellent Looks Like



Our Patients and Staff tell us...

Access to appointment letters and results via a patient portal

Why do we have so many meetings reporting on the same work?

The systems need to be more reliable; I spend ages rebooting

Single point of login across all systems

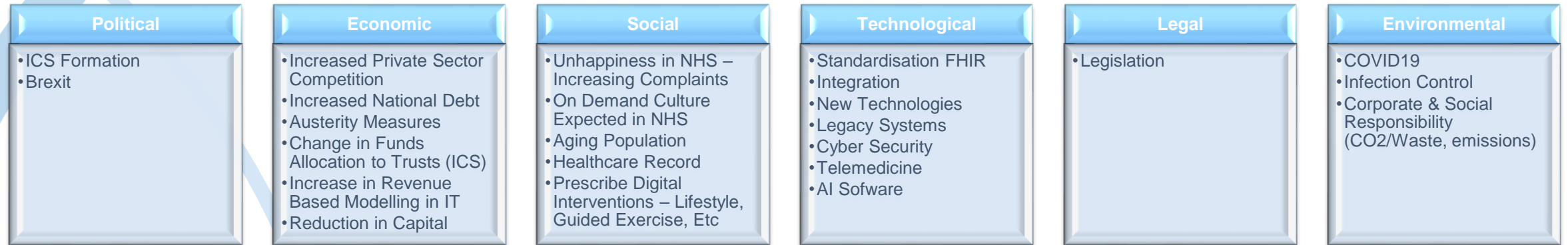
We need reliable WiFi and network across the site

A fully integrated EPR

Using technology to avoid the need for unnecessary appointments



PESTLE Analysis



Digital SWOT Matrix

Strengths - Maximise		Weaknesses - Resolve	
<ul style="list-style-type: none"> Collaborative Digital team Flexible/Agile multi-skilled team Response to CV19 New Papworth Hospital Strong Royal Papworth brand Implemented an EPR Collaboration with other Trusts Project & Benefits Tracking 	<ul style="list-style-type: none"> HIMSS Level 5 Dedalus Relationship RPH Network Infrastructure Positive relationships with NHSD Chair of Oversight Board LDE Aspirant Funding 	<ul style="list-style-type: none"> Integration Digital budget Limited digital resources Staff dissatisfaction and stress SPOF Control of desktop/AV estate Benefits identify/realise High cost for PFI RFC's Staff 	<ul style="list-style-type: none"> FHIR standards knowledge Budget vs organisational demand Technology refresh Multiple Legacy systems Lack of clinical resources in Config Calls not logged via Service Desk NPH building capacity for Training Rest & Recuperation for Digital Staff
Opportunities - Exploit using Strengths		Threats - Risk Mitigate	
<ul style="list-style-type: none"> Revenue generation Innovation Fund EPR Cloud migration Digital Aspirants STP/LHCR/ICS RFID - Track and trace Align with national strategies Funding/grant initiatives Collaboration with other Trusts Critical Care Services New Service Lines in Trust HIMSS Level 6 & 7 	<ul style="list-style-type: none"> Dedalus partnership Video conferencing Digital Exemplar Supplier management Utilising technology to drive benefits Digital "Corporate CIP Scheme" HLRI - Heart & Lung Research Inst Cambridge Biomedical Campus EPR Re-procurement Staff development opportunities Surplus RPA Funding in Innovation Fund 	<ul style="list-style-type: none"> CV19 Poor supplier project mgmt RPA EPR agreement ending Corporate financial recovery LDE Funding Poor supplier engagement CV19 Impact in India New Service Lines in Trust 	<ul style="list-style-type: none"> Government funding Structural deficit in digital budget Limited stakeholder capacity National response to CV19 Cyber attack Dedalus Specialist Knowledge ICS Requirements/Expectation PESTLE Analysis

Digital SWOT Analysis

Utilising the **"Strength"** of our NPH and RPH brand to develop **"Opportunities"** for grant and funding initiatives.

Utilising the **"Strength"** of our collaborative and flexible/agile, multi-skilled team to optimise **"Opportunities"** to the delivery of the Digital Aspirants programme.

Utilising the **"Strength"** of our NPH Infrastructure to exploit **"Opportunities"** of RFID Track & Trace initiatives.

Utilising the **"Strength"** of our HIMMS maturity level, NPH and RPH Brand to develop **"Opportunities"** for collaboration with other Trusts for clinical and operational efficiencies.

Utilising the **"Strength"** of the Digital Projects and Benefits tracking tool to support **"Opportunities"** in utilising technology to drive benefits.

Utilising the **"Strength"** of our partnership with Dedalus to deliver **"Opportunities"** for Innovation Fund projects and to exploit further HIMSS level digital maturity level 6 & 7.

Digital SWOT Analysis

Utilising the "**Strength**" of our NPH Infrastructure to exploit "**Opportunities**" for video conferencing and remote ways of working in support of CV19.

Utilising the "**Strength**" of our partnership with Dedalus and RPH Brand to exploit "**Opportunities**" for the HLRI Institute.

Utilising the "**Strength**" of our representation at the Oversight Board and RPH Brand to further "**Opportunities**" for funding from the Innovation Fund and RPA agreement.

Utilising the "**Strength**" of collaboration with other Trusts and developing our Dedalus relationship, to further support "**Opportunities**" for the delivery of the ICS.

Utilising the "**Strength**" of our Aspirants Funding to deliver "**Opportunities**" against new service lines in the Trust, such as the Insignia PACS System.

Digital SWOT Analysis

Utilising the "**Strength**" of our Dedalus partnership, RPH Brand and NPH to mitigate the "**Threats**" of negotiating a new EPR contract once the current RPA agreement contract ends.

Utilising the "**Strength**" of Digital Aspirant Funding to address the "**Weaknesses**" of staff dissatisfaction and stress to enable rest and recuperation.

Utilising the "**Strength**" of our flexible/agile, multi-skilled team to exploit our "**Weaknesses**" and perform more roles. Off-setting high cost for PFI RFC's.

Utilising the "**Strength**" of the work delivered for LDE to offset "**Weaknesses**" of lack of knowledge on FHIR standards.

Utilising the "**Strength**" of the Digital Projects and Benefits tracking tool to reduce "**Weaknesses**" and balance budget vs organisational demand.

Digital SWOT Analysis

Utilising the "**Strength**" of our Dedalus Partnership to exploit "**Weaknesses**" and push for off-site training reducing reliance on NPH building capacity.

Utilising the "**Strength**" of our collaborative Digital team to mitigate "**Weaknesses**" and maximise the limited digital resources.

Utilising the "**Opportunities**" of funding and grant initiatives to support "**Weaknesses**" of the limited Digital budget.

Utilising the "**Strength**" of our collaboration with other Trusts to off-set "**Weaknesses**" of limited Digital resources.



Strategic Goals

Royal Papworth Hospital 2021-2025

Our *vision* "To bring tomorrow's treatments to today's patients"

Strategic Goals

Trust Strategic Goal	Digital Enabler	Impact of strategic objective	
<p>1 Deliver clinical excellence</p> <p>We will build on our world-leading outcomes, investing effort and resources in developing and implementing innovative services and models of care, growing expertise and extending the frontiers of clinical practise.</p>	<p>AV & Video Conferencing BI and Real-time Analytics Bloodtrack CDC Optimisation Clinical Decision Support Software Closed Loop Medication CUH Integration (Longitudinal record) Dedalus Partnership EPR Contract Renewal HLRI Equipping Integrated Care System (ICS) Integration – JAC, ECHO & Vyaire (Res Phys) In-tray Lorenzo Hotfloor Medical Device Integration New PACS System New UI's (Personas & Clinical Aide). PAHTool Patient Aide PRIS ReferaPatient SAN Capacity Management Self Service Analytics (SSA) Somerset Oncology Reporting Unified Comms VMware Capacity Management</p>	Patients:	<p>Allowing the patient to be more of an active partner in their care through the use of the patient portal. Improved safety and assurance through closed loop medication administration, better results acknowledgement.</p>
		Staff:	<p>More time released to deliver care through improved UI's which are easier to use and deliver the information needed at the right times in the patient journey; underpinned by localised clinical decision support, allowing clinicians to have confidence that there are always working with local best practice. Fully equipped Clinical Research Facility to allow first in man studies.</p>
		Partners:	<p>Through the longitudinal record we can work much more closely with our partners to deliver a holistic approach to patient centred care, whilst delivering system wide benefits. With a modern PACs we can deliver an improved image sharing capacity, improving time taken to offer second opinions on complex cases for other centres.</p>

Strategic Goals

Trust Strategic Goal	Digital Enabler	Impact of strategic objective	
<p>2 Grow pathways with partners</p> <p>We will seek to develop services with partners and patients in local, regional, national and international networks so that our specialist expertise can be accessed easily and where we can best add value to the patient's treatment.</p>	<p>Bronchoscopy Reporting CUH Integration Dedalus Partnership GP Connect HLRI Equipping Integrated Care System (ICS) PAHTool Privileged Access Mgmt System PRIS R&R Phase 4 Realtime Dashboard & API Integration ReferaPatient Referring Trust Integration Self Service Analytics (SSA) Transfer of Care Around Medicines Transfer of Care</p>	<p>Patients:</p>	<p>Through greater electronic data sharing patients will receive an improved quality of care, with health and social care supporting best practice through a fully integrated interoperable electronic patient record solution as part of our Cambridge and Peterborough STP by 2023.</p>
		<p>Staff:</p>	<p>Having both health and social care information at the point of care will improve experience for staff and avoid clinicians needing to look in several places for relevant information, to deliver quality care.</p>
		<p>Partners:</p>	<p>Through improved data sharing we can work much more closely with our partners to deliver a holistic approach to patient centred care, whilst delivering system wide benefits.</p>

Strategic Goals

Trust Strategic Goal	Digital Enabler	Impact of strategic objective	
<p>3 Offer a positive staff experience</p> <p>We will seek to offer the best staff experience in the NHS, enabling staff to fulfil their potential by providing a working environment where they can feel valued for what they bring to the Trust, achieve a work life balance, and feel engaged in their work.</p>	<ul style="list-style-type: none"> 0365 Deployment AV & Video Conferencing BYOD CDC Optimisation Cloud Based Active Directory End User Device Refresh EPR Cloud Migration EPR Contract Renewal HLRI Equipping Integrated Care System (ICS) Integration - JAC, ECHO & Vyaire In-Tray LDE - SSA Medical Device Integration New PACs System New Trust Intranet PAHTool PatientAide/ClinicalAide Personas Referapatient RFID Somerset Oncology Reporting Soprano Unified Comms VDI Phase 1 & 2 Video Consultation Virtual Learning for EPR WiFi Refresh (WiFi 6) 	<p>Patients:</p>	<p>Improved interaction when remotely treating patients through video clinics assisted by a patient portal with device integration allowing a more holistic view of the patient.</p>
		<p>Staff:</p>	<p>Working with our partners to deliver improved usability within our digital systems, that meet the clinical need. Enable flexible working through the use of VDI and cloud technologies. Working with Communications to improve staff Communication channels.</p>
		<p>Partners:</p>	<p>Improved sharing and collaboration through cloud and office 365 software.</p>

Strategic Goals

Trust Strategic Goal	Digital Enabler	Impact of strategic objective	
<p>4 Share and educate</p> <p>We will establish a Royal Papworth School, enabling us to grow and develop not only our own staff but also share our expertise and learning for the benefit of national and international networks as well as our local stakeholders.</p>	<p>0365 Deployment AV & Video Conferencing Clinical Decision Support, Clinical Informatics Training EPR Cloud Migration HLRI Equipping Integrated Care System (ICS) ISO9001 standards LDE - SSA Optimisation of polices Patient Aide Referring Trust Integration SAN capacity Staff Digital Education Virtual Learning Environment Virtual Learning for EPR VMWare capacity</p>	<p>Patients:</p>	<p>Clinical decision support enabled by highly skilled clinicians utilising the latest practices ensure that you will receive evidence based outstanding care. This care extends beyond the boundaries of the hospital through our portal into patient homes.</p>
		<p>Staff:</p>	<p>Through decision support staff can access the latest guidance enabling them to learn safely whilst within the clinical environment. Sharing that knowledge with others through the creation of the knowledge resources that underpin the decision support.</p>
		<p>Partners:</p>	<p>We will share our expertise and knowledge to spread the benefits to local, national and international healthcare organisations and patients.</p>

Strategic Goals

Trust Strategic Goal	Digital Enabler	Impact of strategic objective	
<div data-bbox="157 586 563 1015" style="border: 1px solid white; border-radius: 15px; padding: 10px; background-color: #e0f2f1;"> <p>5 Research and innovate</p> <p>We will continue to develop the Trust as a centre for research and development, fully nurturing our expertise and creativity in a structured way for the benefit of patients.</p> </div>	<p>AV & Video Conferencing Pathology Legacy System Referring Trust Integration SAN capacity Self Service Analytics (SSA) Unified Comms VMware</p>	<p>Patients:</p>	<p>Through improved recruitment to trials, patients have access to the latest treatments. Improving clinical health outcomes through improved care coordination and engagement supported by population health management.</p>
		<p>Staff:</p>	<p>Self Service Analytics will put the power of our stored data into clinicians' care allowing them to identify patients for trials and trends within cohorts.</p>
		<p>Partners:</p>	<p>Through the improved analytics we can more easily identify subjects for regional/national/global studies. Improving clinical health outcomes of a defined group of individuals through improved care coordination and patient engagement supported by appropriate care models, improving utilisation of resources across partner organisations.</p>

Strategic Goals

Trust Strategic Goal	Digital Enabler	Impact of strategic objective	
<p>6 Achieve sustainability</p> <p>We will establish a sustainable operational and financial position to ensure that we are making the most of Royal Papworth and applying all our resources in the most effective and efficient manner.</p>	<ul style="list-style-type: none"> 0365 Deployment Bloodtrack Bronchoscopy Reporting Clinical Decision Support Cloud Backup Implementation Cloud based Active Directory CUH Integration Disposal/eStorage of Staff & Patient Records EPR Renewal GS1 Barcode Compliance/Reading Hybrid Mail Infrastructure Refresh (Switches, UPS, etc) Integration – JAC, ECHO & Vyaire (Res Phys) In-Tray LIMS Medical Device Integration New PACS System Pathology Legacy System Patient Aide Personas Replace Server 2008 Somerset Oncology Reporting Soprano SQL Licensing Transition to FHIR Video Consultations Virtual Desktop Infrastructure (VDI) 	<p>Patients:</p>	<p>Patients will have the right type of appointment, virtual where possible reducing travel time and disruption. Through our patient portal important pre-screening can be done at the patient's leisure in the comfort of their own home without the need to travel to a physical appointment.</p>
		<p>Staff:</p>	<p>Managing our contracts and applications to ensure that we get the best value for money and work in partnership with our suppliers to leverage maximum benefits from the solutions we have in place. Leveraging technologies such as VDI to reduce the reliance on large scale IT refresh of desktops and laptops.</p>
		<p>Partners:</p>	<p>Continue to develop our integrated electronic patient record system and seek to integrate with a regional electronic patient record so that it can be accessed at different centres across the region.</p> <p>Continue to work in a system wide manner to enable economies of scale, taking advantage of both national and local initiatives to create a more sustainable future for the Trust.</p>

Sustainability Initiatives

Initiatives	Output
Rollout of Ecosia search engine	The search engine that plants trees when you use it
Dedalus cloud move	Reducing Co2 by up to 30%
Implementation of VDI	Reducing Co2
Hybrid mail solution	Reducing Co2 with a reduction in printing
Bronchoscopy reporting	Reducing Co2 with a reduction in printing
Bloodtrack	Reducing Co2 with use of smart fridges
Patient Aide	Reducing Co2 with reductions in printing appointment letters and face to face appointments.
Disposal/eStorage of staff & patient records	Reduction of Co2 from courier transport of legacy patient records
Video consultations	Reduction to Co2 due to less face to face appointments



Conclusion



Digital transformation has never been so important for safety, security and efficiency. Through our adoption of standards, the right infrastructure, skills and innovation we will continue to enable and mobilise our staff, and by harnessing high quality information continually improve services for our patients through a strategy enabling our vision to bring tomorrow's treatments to today's patients.

Chief Information Officer (CIO)



Our previous strategy has taken Royal Papworth a long way towards a fully digital hospital. The developments outlined in this proposal for 2021 - 2025 build on what we have done to provide better usability and more efficiency in care delivery, engage patients digitally and consequently help us to realise the benefits of capturing data for sharing, research, audit and quality improvement. The strategy is ambitious but realisable and will further enhance our position as one of the most digitally enabled hospitals in the UK.

Chief Medical Information Officer (CMIO)



Appendices

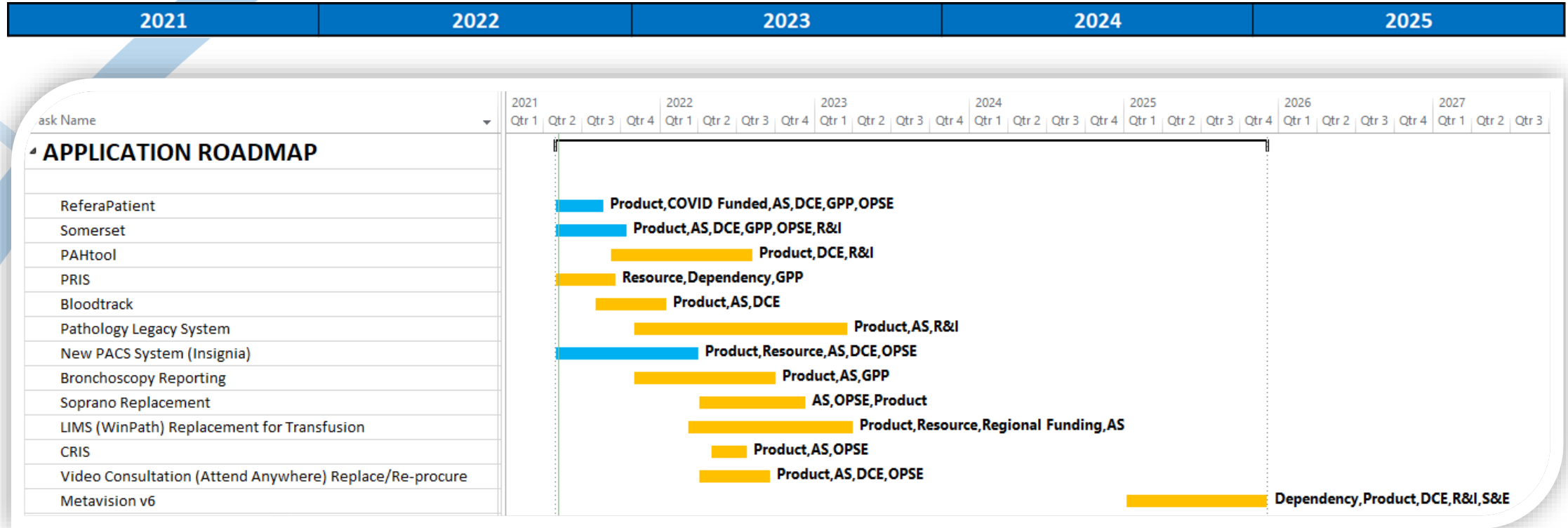
Royal Papworth Hospital 2021-2025

Our *vision* "To bring tomorrow's treatments to today's patients"

Roadmap Key

KEY	DESCRIPTION
AS	Achieving sustainability
DCE	Deliver clinical excellence
GPP	Grow pathways with partners
OPSE	Offer positive staff experience
R&I	Research and innovate
S&E	Share and educate
Product	Requires investment in product
Resource	Requires investment in additional resource
Dependency	Dependency on/from another project or initiative
Regional Funding	Potential for regional funding
FOT Dependency	Project has “First of Type” dependency at another trust
COVID Funded	Project funded via trust Covid19 budget
Product	Project has required investment and in progress
RPA Agreement	EPR commercial agreement with NHSD (ends June 2022)
Innovation Fund	Surplus RPA agreement funding allocated to Lorenzo development (projects)

Application Roadmap



AS - Achieving Sustainability

DCE - Deliver Clinical Excellence

GPP - Grow Pathways with Partners

OPSE - Offer Positive Staff Experience

R&I - Research & Innovate

S&E - Share & Educate

Business Intelligence Roadmap

2021	2022	2023	2024	2025
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Task Name	2022				2023				2024				2025				2026				2027		
	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
BUSINESS INTELLIGENCE ROADMAP BI and Realtime Analytics													Dependency, Resource, AS, R&I, S&E, DCE										

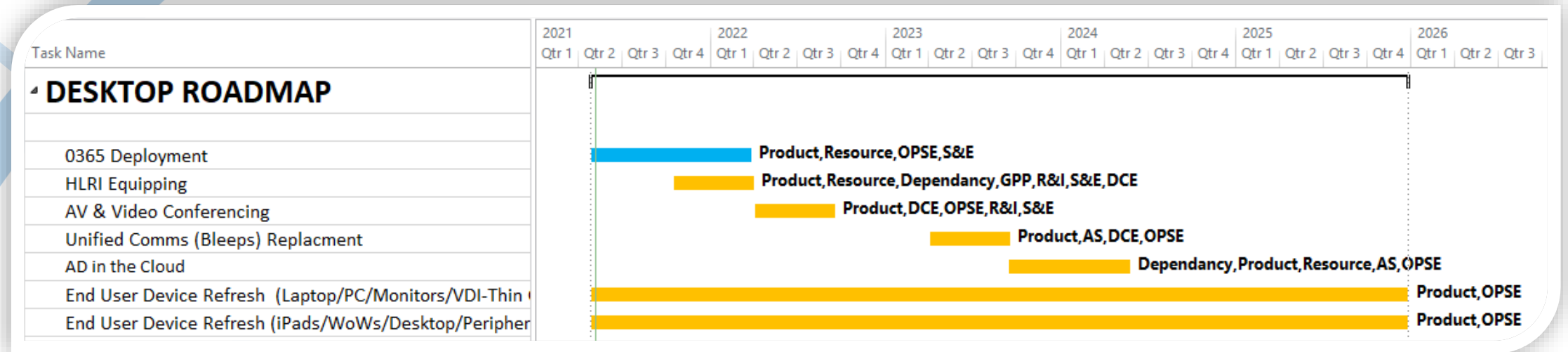
AS – Achieving Sustainability
OPSE – Offer Positive Staff Experience

DCE – Deliver Clinical Excellence
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Desktop Roadmap

2021	2022	2023	2024	2025
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AS - Achieving Sustainability

OPSE - Offer Positive Staff Experience

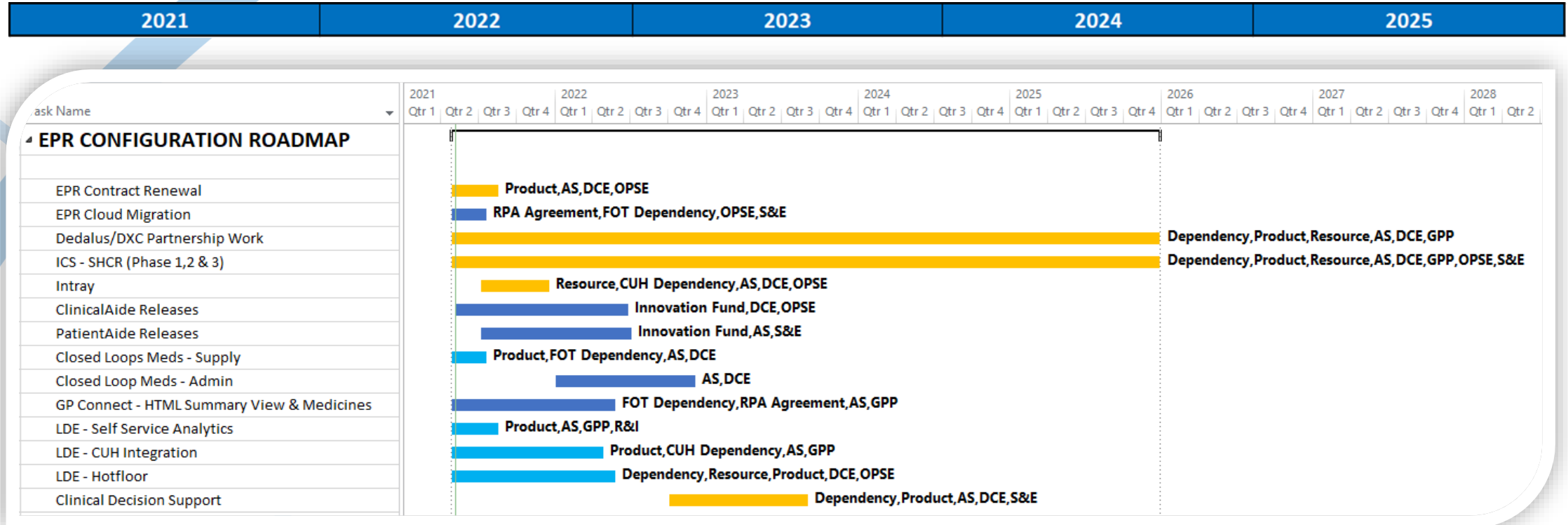
DCE - Deliver Clinical Excellence

R&I - Research & Innovate

GPP - Grow Pathways with Partners

S&E - Share & Educate

EPR Configuration Roadmap



AS – Achieving Sustainability

OPSE – Offer Positive Staff Experience

DCE – Deliver Clinical Excellence

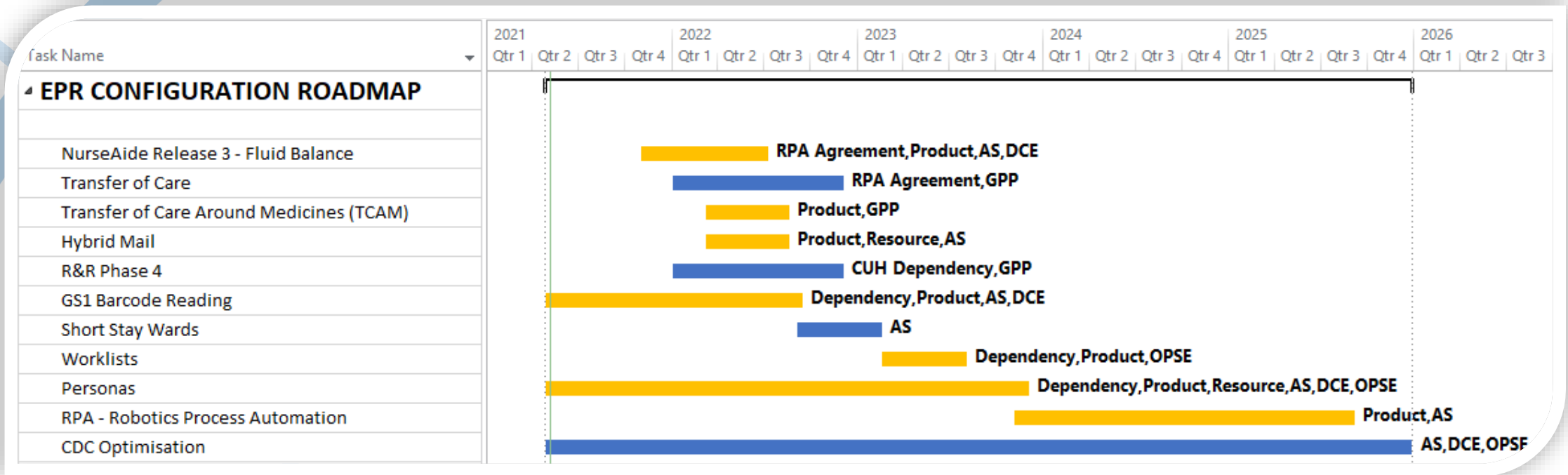
R&I – Research & Innovate

GPP – Grow Pathways with Partners

S&E – Share & Educate

EPR Configuration Roadmap

2021	2022	2023	2024	2025
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R&I - Research & Innovate

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Governance & Process Roadmap

2021	2022	2023	2024	2025
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Task Name	2021				2022				2023				2024				2025				2026		
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
GOVERNANCE & PROCESS ROADMAP																							
ISO9001/27001 Quality Standard Certification	Product,AS,OPSE																						
Cyber Essential Plus Assurance Certificaton	Product,AS,OPSE																						
Disposal/eStorage of Staff & Patient Records in off Site Storage	Dependency,AS,OPSE																						
GS1 Compliance	Product,AS																						
Data Security & Protection Toolkit	AS,DCE																						
Optimisation of IG Policies & Structures	OPSE,S&E																						
Consolidated Digital Contracts Management	AS																						

AS - Achieving Sustainability

OPSE - Offer Positive Staff Experience

DCE - Deliver Clinical Excellence

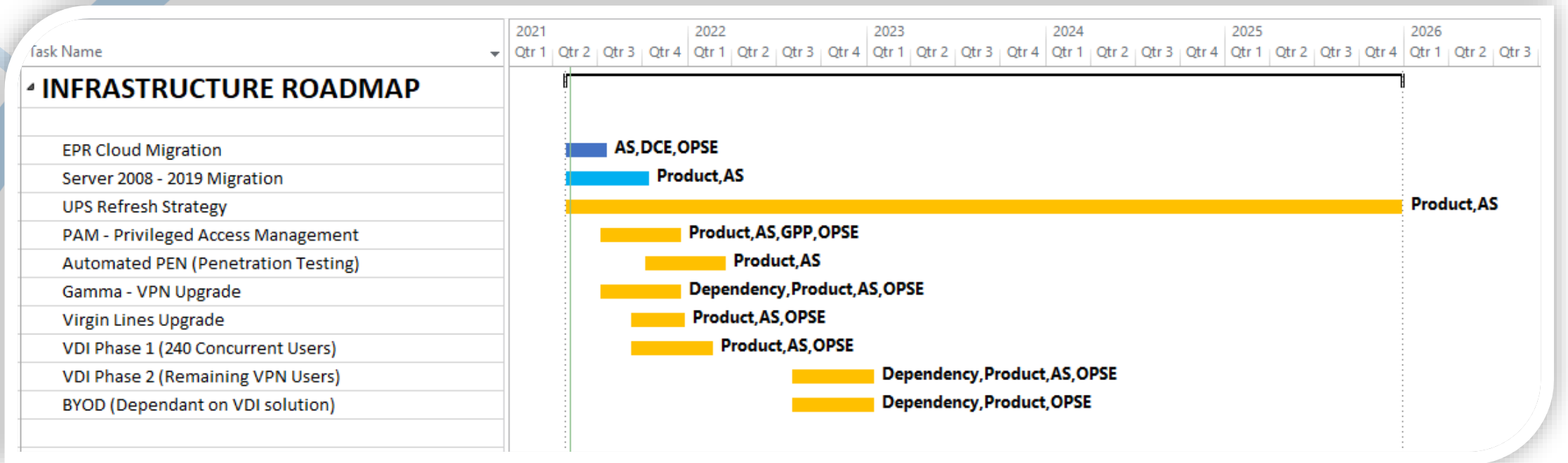
R&I - Research & Innovate

GPP - Grow Pathways with Partners

S&E - Share & Educate

Infrastructure Roadmap

2021	2022	2023	2024	2025
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AS – Achieving Sustainability

OPSE – Offer Positive Staff Experience

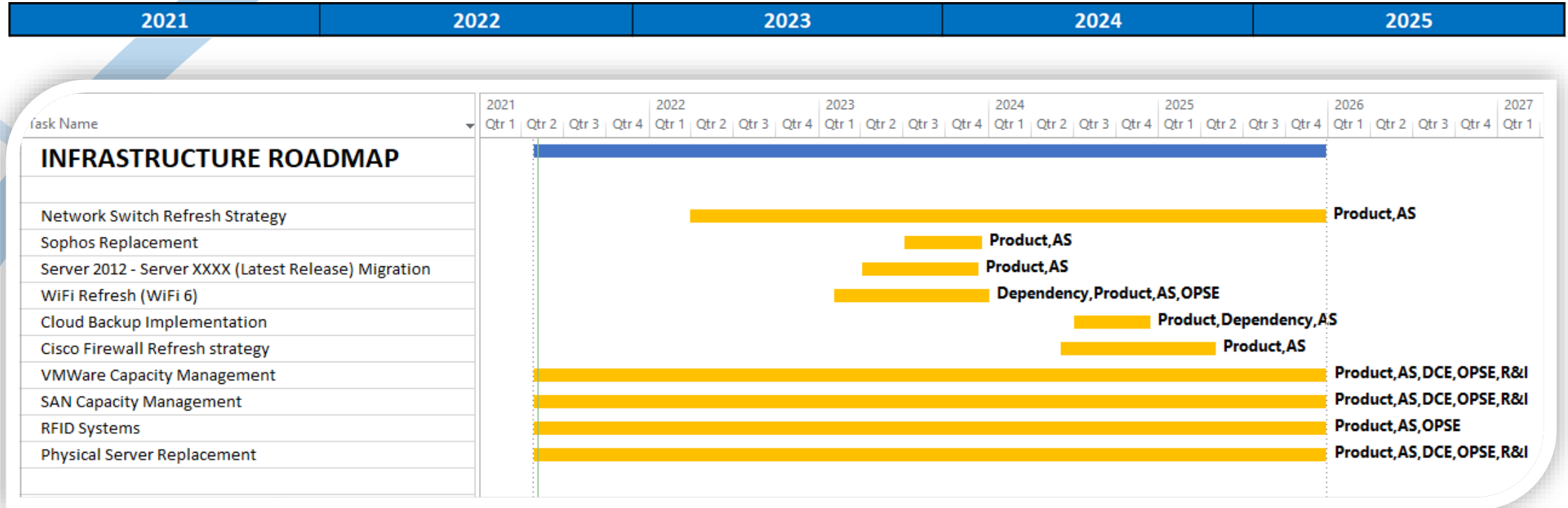
DCE – Deliver Clinical Excellence

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GPP - Grow Pathways with Partners

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Infrastructure Roadmap



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R&I - Research & Innovate

GPP - Grow Pathways with Partners

S&E - Share & Educate

Training Roadmap

2021	2022	2023	2024	2025
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Task Name	2021				2022				2023				2024				2025				2026			
	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
TRAINING ROADMAP																								
Virtual Learning for EPR																								
Incorporate Digital Training into VLE for Royal Papworth School																								
Staff Digital Education																								
Additional Training for Sys-adms & Staff With Data Responsibilities (Caldicott, SIRO, Cyber, Risk, IG)																								
Training for Technical and Non-Technical Digital staff																								

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Integration Strategy

The NHS Standard Contract requires that its major clinical information technology systems enable clinical data to be accessible to other providers of services to Service Users as structured information through open standard interfaces in accordance with Open API (Application Programming Interface) Policy and Guidance and, with effect from 1 April 2020.

FHIR (Fast Healthcare Interoperability Resources) is a next generation standards framework created by HL7. FHIR is a new more agile way of exchanging standardised healthcare information, advancing on HL7. FHIR combines the best features of HL7 and CDA (Clinical Document Architecture) product lines while leveraging the latest web standards and applying a tight focus on ease of implementation. FHIR is designed to enable the exchange of healthcare-related information

Clinical Resources	Allergies, medications, Care Plans
Identification Resources	Patient, Location and Device Information
Financial Resources	Billing, Insurance, and eligibility

The FHIR specification is targeted to individuals and organisations developing software and architecting interoperable solutions that will be using FHIR.

For FHIR based integration Dedalus provide access to an API Gateway. This is a group of available to use API's. The API Gateway is a specific repository for access to the available API's from Dedalus. 3rd party suppliers and systems are then able to access and consume information from the API Gateway to enable direct integration between system rather than utilising an Integration Engine. *(If specific information required is not in the API gateway and it's not part of the future API development product roadmap, then providing access to that specific information may be chargeable as Dedalus would need to create a bespoke API).*

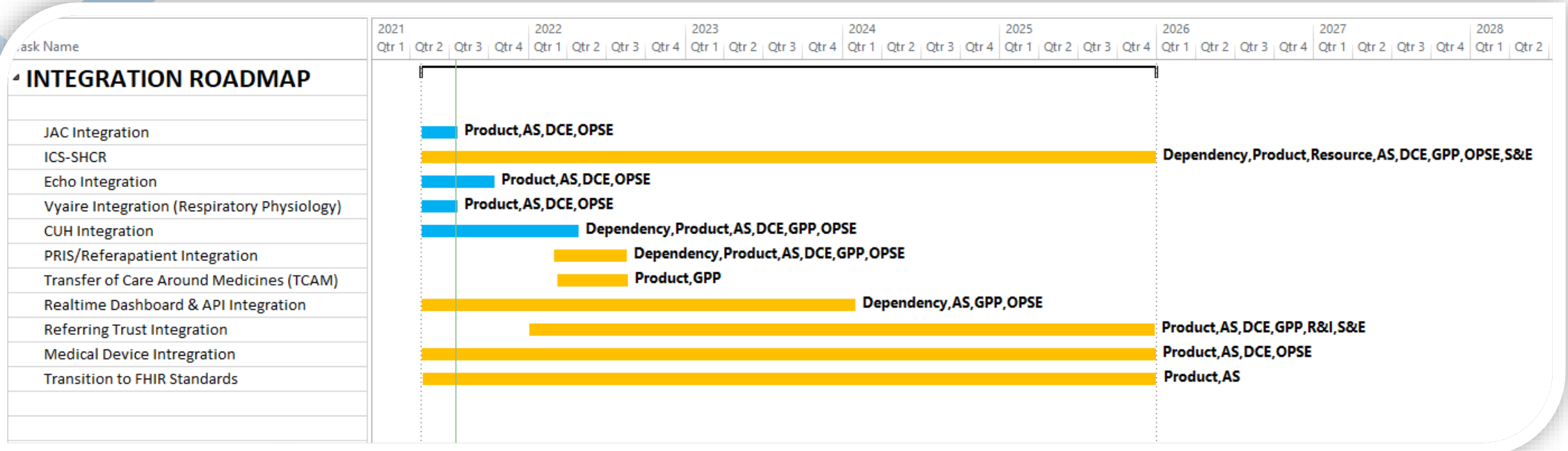
API is a software intermediary that allows two applications to talk to each other. An API can retrieve and update data depending on its purpose. An API gives trusted access to the main data repository and what is available is set by the developer of the API or owner of the repository.

CareConnect Open APIs have been developed by NHS Digital to support the delivery of care by opening up information and data held across different clinical care settings. The CareConnect Open APIs use nationally defined FHIR resources and are a method of transferring records from a source to a recipient. CareConnect Open API will enable clinicians in one care setting to view records from across other care settings.

Royal Papworth Integration in accordance with the NHS Standard Contract and NHSX directive Royal Papworth Hospital will adopt FHIR standards as its roadmap for all future integration projects allowing 3rd party systems/suppliers to connect directly to our EPR (DXC/Dedalus) utilising the API Gateway and the available API's. Future third party software suppliers will need to be able to integrate using FHIR standards and as a Trust we need to ensure we are looking at extending the API portfolio.

Integration Roadmap

2021	2022	2023	2024	2025
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Associated Initiative Benefits

Category	Number of Benefits	Benefit
Cash Releasing	28	Sunsetting of old/legacy systems, reduction in printing, increased commercial trial opportunities, reduction in delays for patient processing
Non-Cash Releasing	44	Improved response time to patient changes, improved efficiency, reduction in staff time, improved audits
Quality	53	Improved patient safety, reduction in transcription errors, improved booking processes and standardised processes across multiple services
Societal/Public	9	Reduction in CO2 footprint, reduction in DNAs, improving clinical outcomes



Digital Strategy

Royal Papworth Hospital 2021-2025

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