GEOF BEESLEY
Partner

0796 704 9618

Geof.beesley@fusion.partners
www.fusion.partners

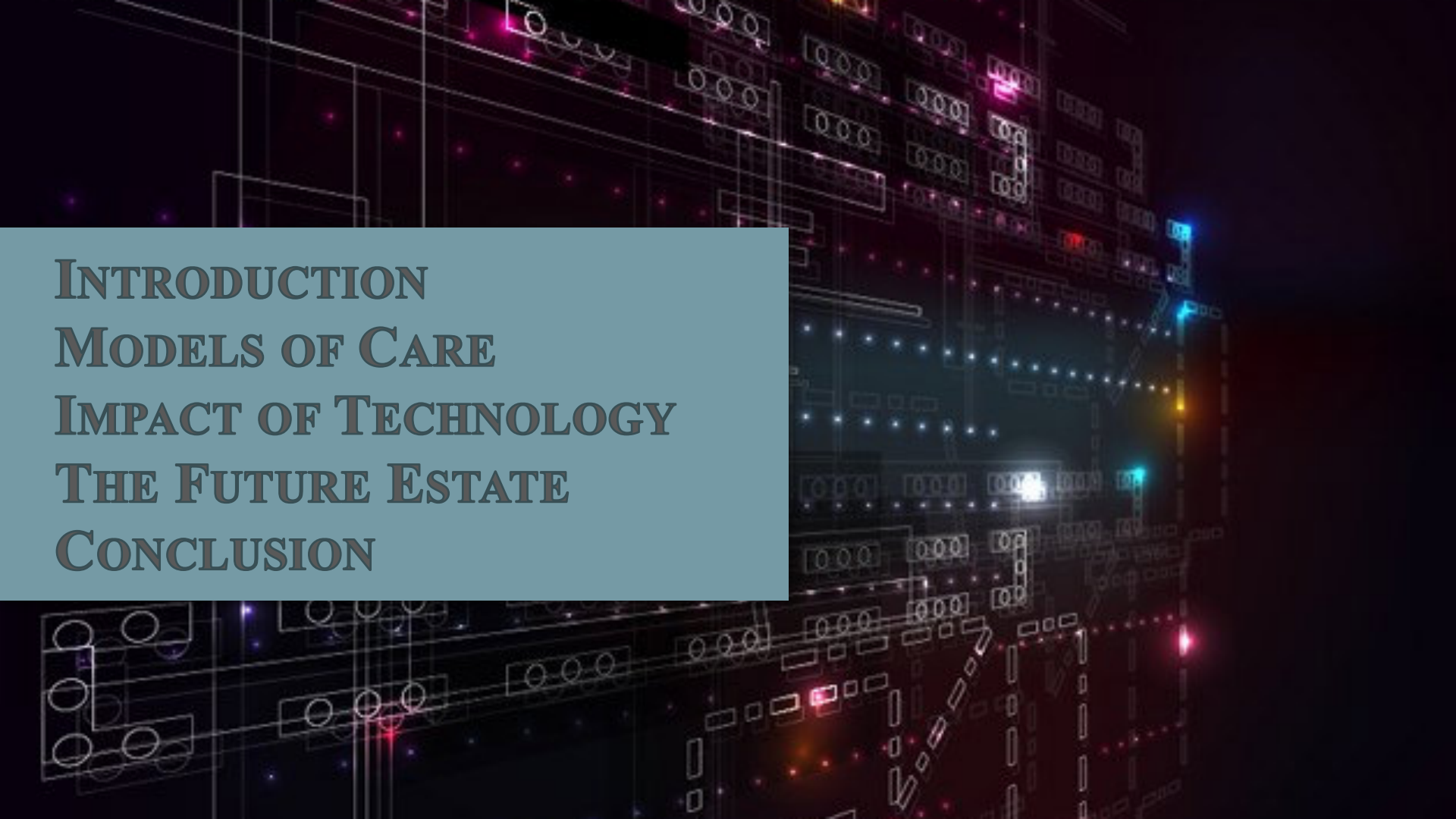
Fusion Health LLP

PATRICK VAN DEN BERGH
Head of Healthcare

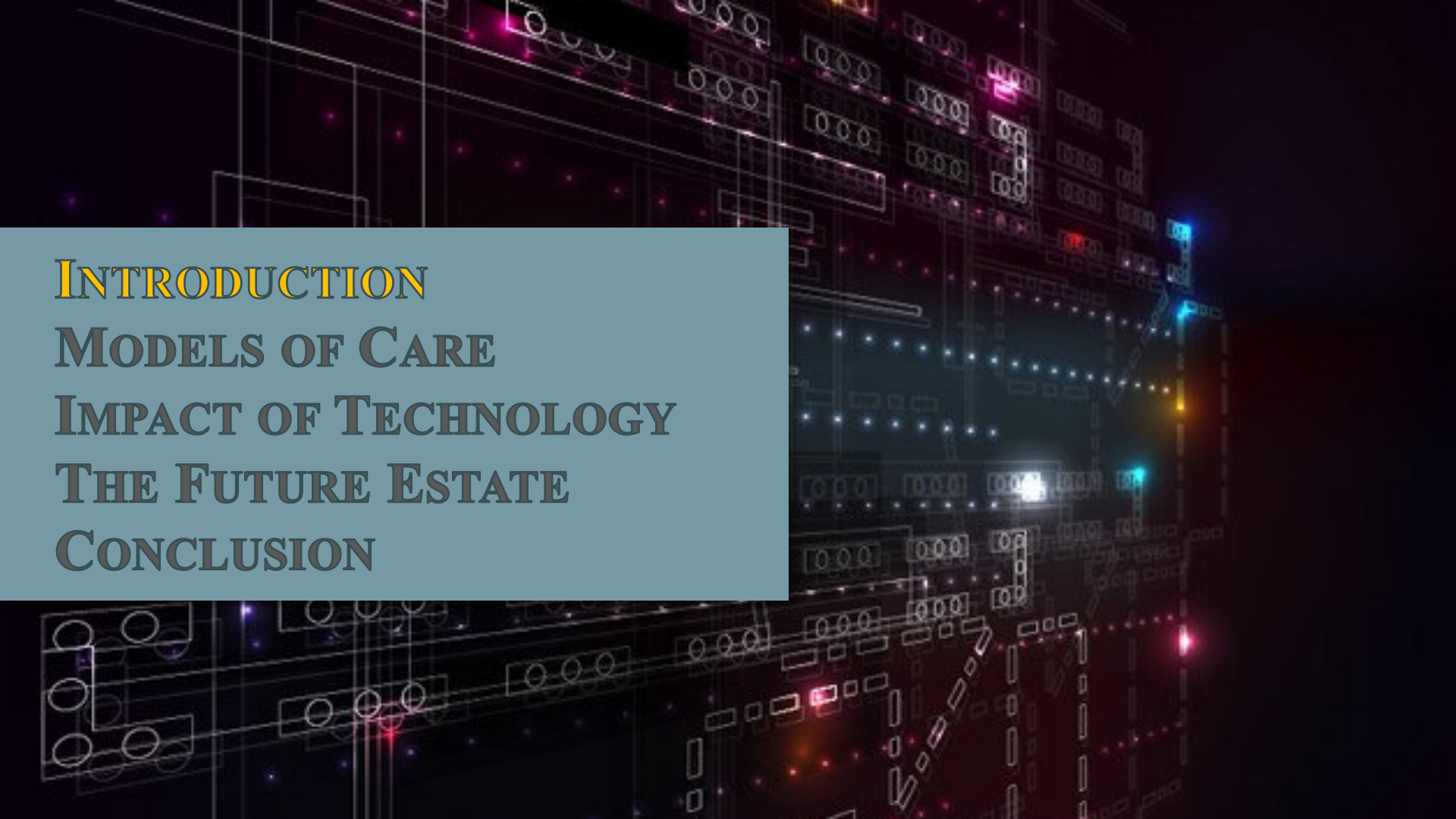
0780 724 9267

patrick.vandenbergh@wgi.co.uk
www.wgi.co.uk

Watkins Grey International



Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion

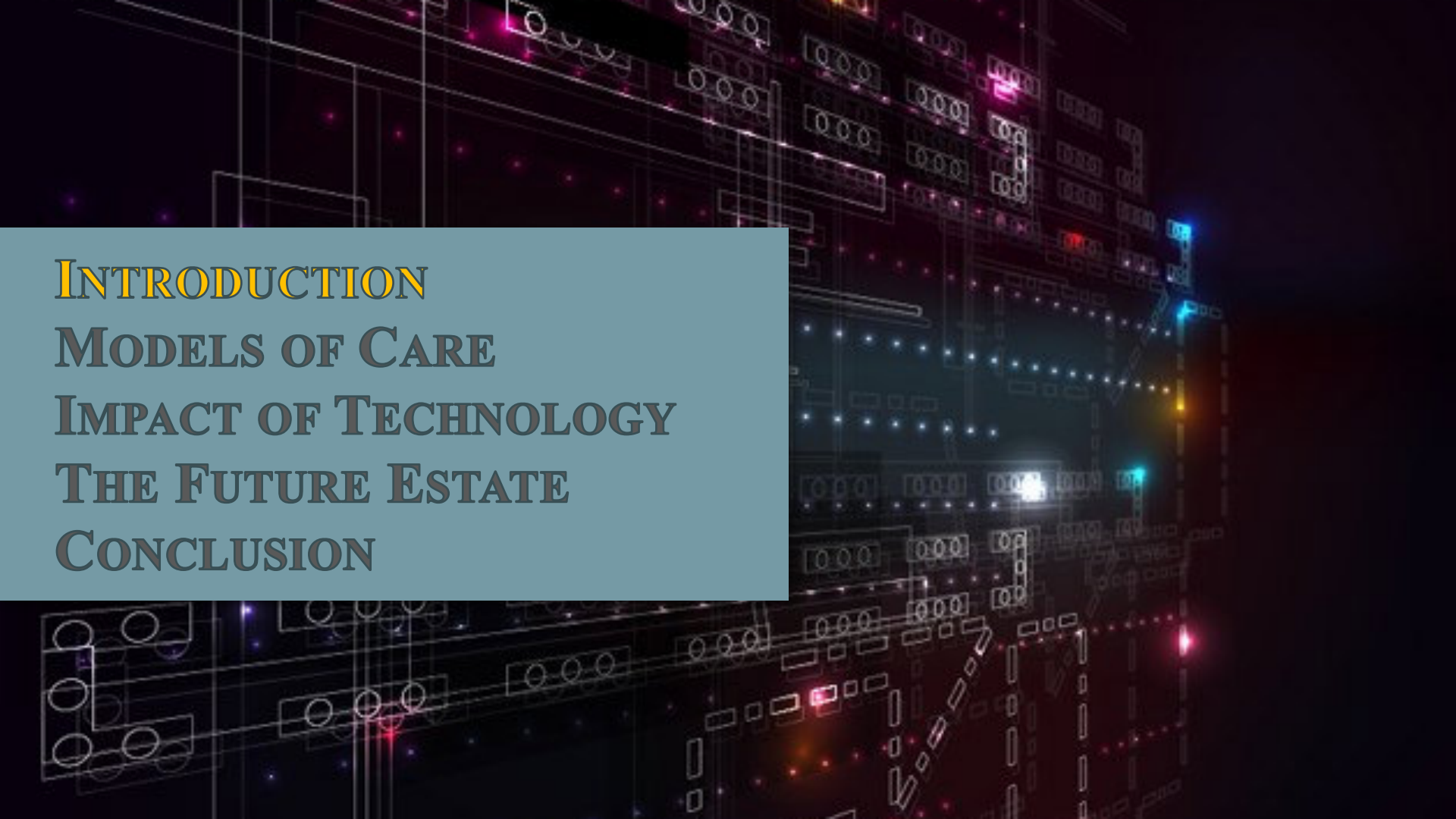

Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion

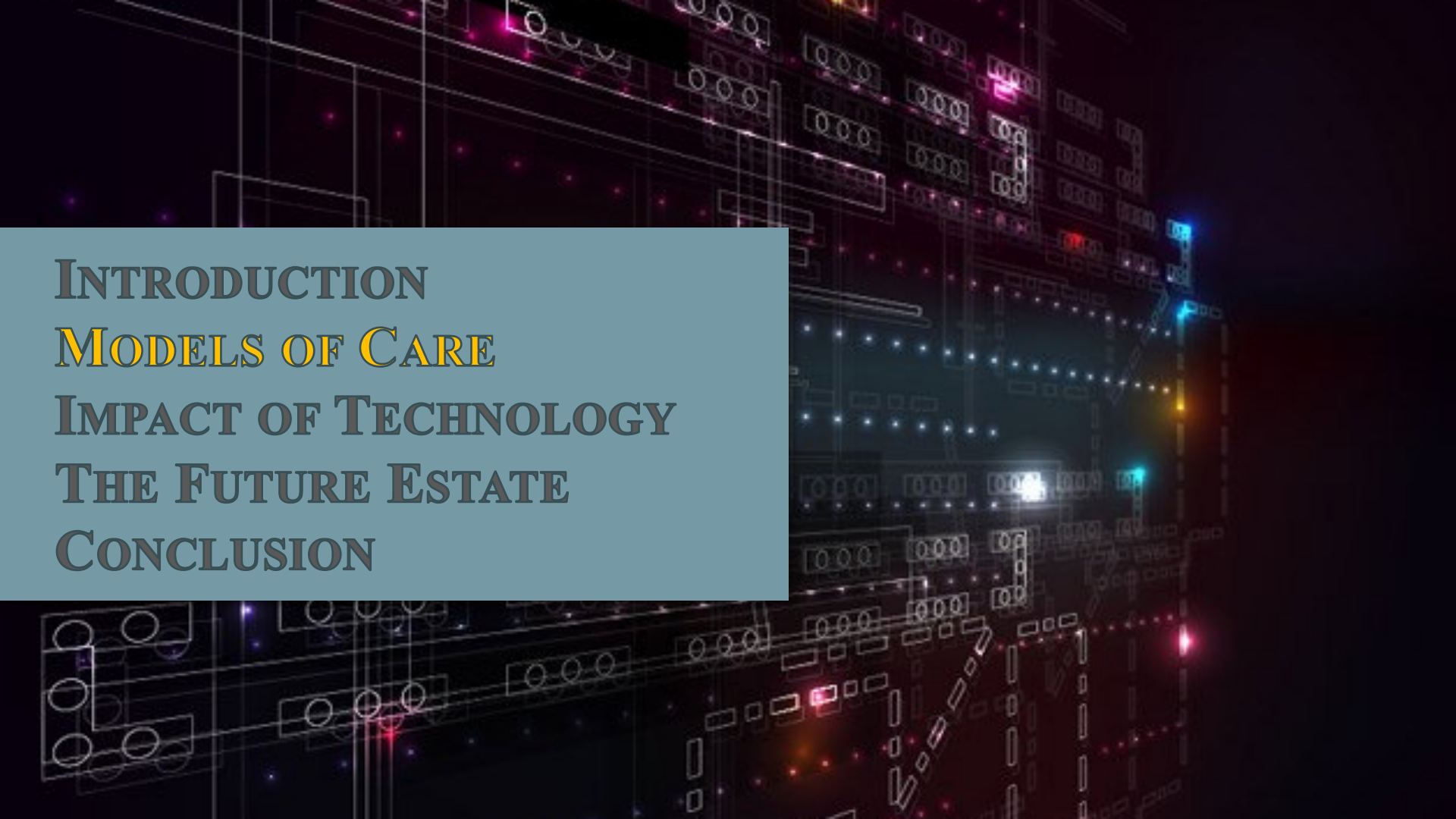
Introduction

- WGI and Fusion teamed up to develop ideas about the changing face of the healthcare and other public estate given the obvious pressures and advances in technology ~ from wearable tech to innovations in remote surgery techniques, digital imaging, and other diagnostic and treatment processes
- Our ‘partnership’ has been born of project research to determine how hospital navigation and ‘front of house’ services could be made more ‘intuitive’ and the estate could become more relevant to care needs

Introduction

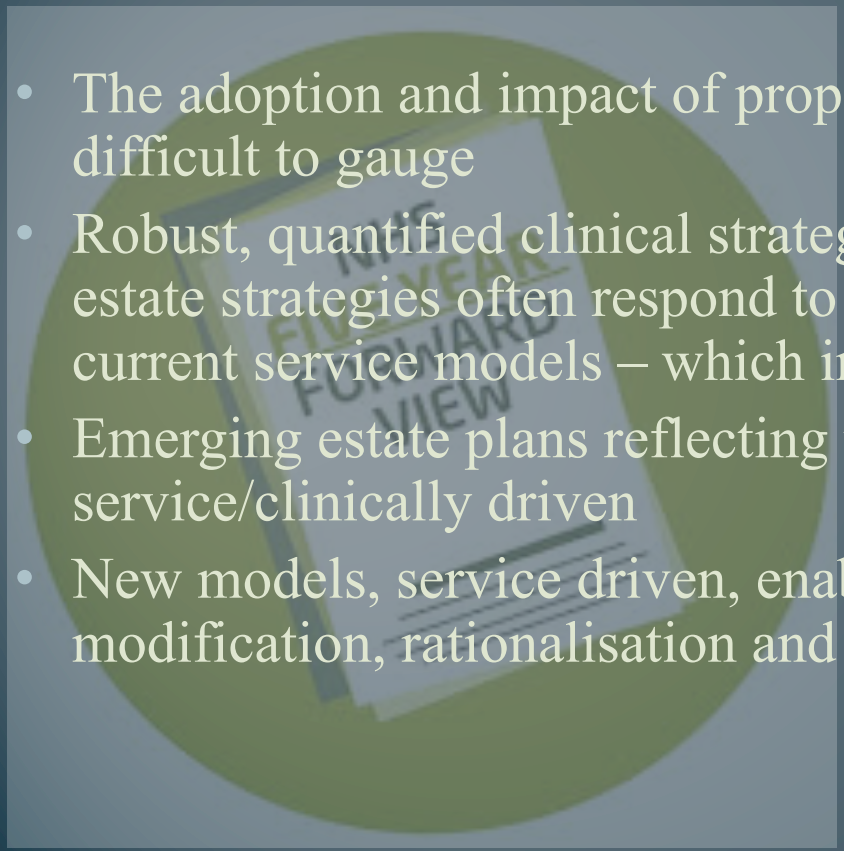
- Our views are presented to stimulate further debate/discussion… we don't have a set solution – local circumstances, needs and priorities will always need to inform meaningful solutions
- Overall, the need for 'care' must remain the focal point, be that a GP surgery or an acute hospital… in our view technology should not replace the human face of care but the evolution of new service models must be the driving force to harness new technology

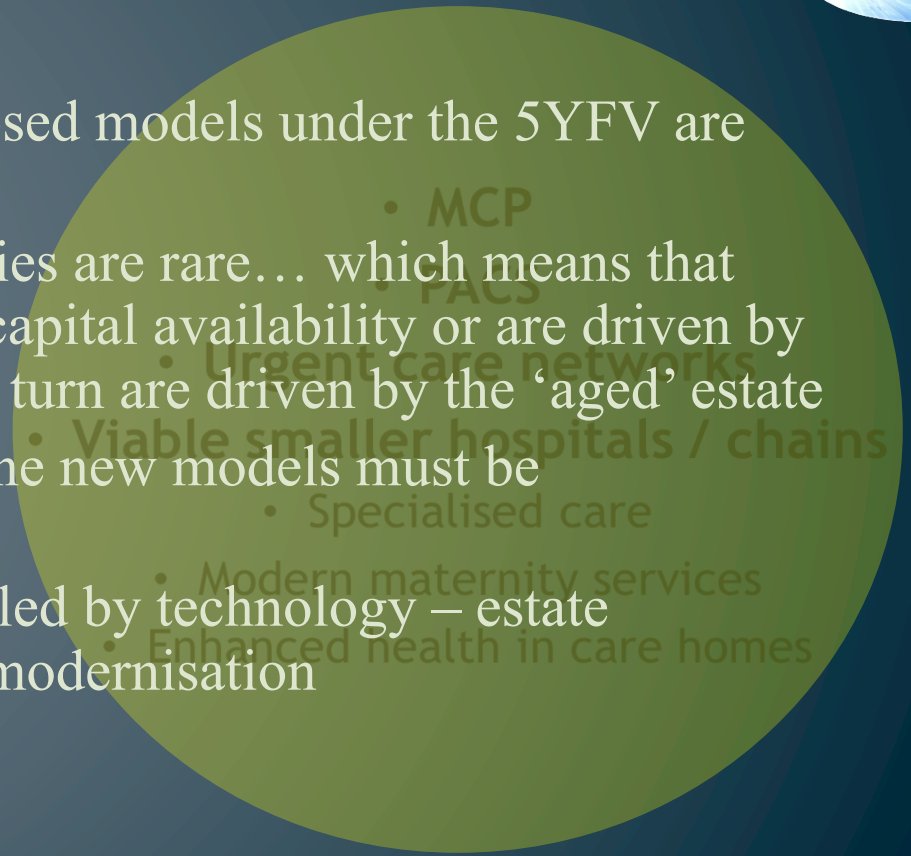

Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion

The Model of Care – 5YFV

- The adoption and impact of proposed models under the 5YFV are difficult to gauge
- Robust, quantified clinical strategies are rare… which means that estate strategies often respond to capital availability or are driven by current service models – which in turn are driven by the ‘aged’ estate
- Emerging estate plans reflecting the new models must be service/clinically driven
- New models, service driven, enabled by technology – estate modification, rationalisation and modernisation



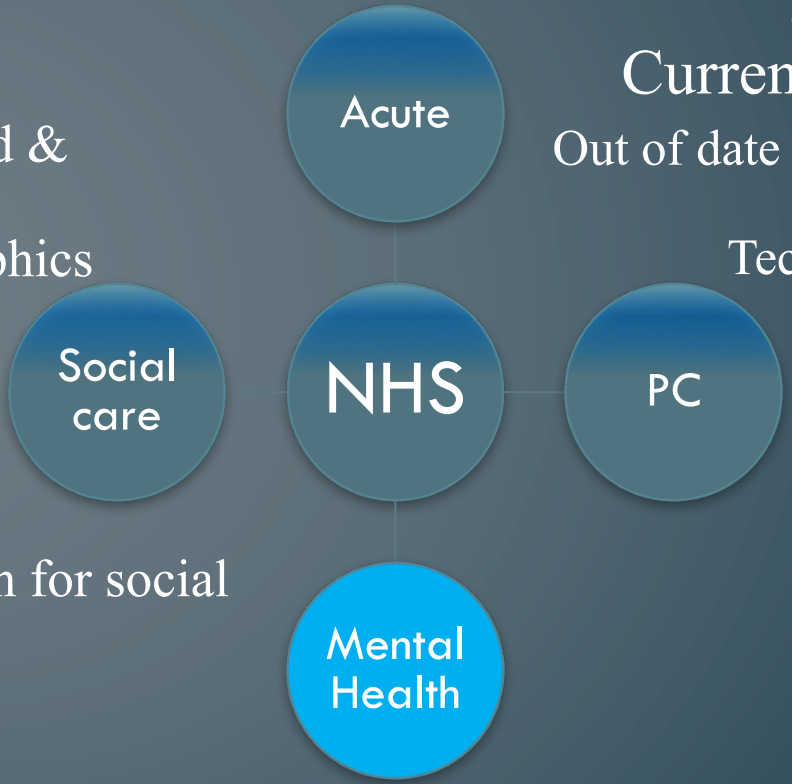


Service Drivers, Key Issues

Simplified

Key challenges

- Increasing demand & expectations
- Shifting demographics
- Affordability
- Inflexible estate
- Politics & priorities
- Rising competition for social budgets
- Pan Europe



Current 'Model of Care'

Out of date – circa 1948 with little change

Technology 'unexploited'

Inflexible

Segregated

Fragmented

Terms redefined

Acute = specialist care

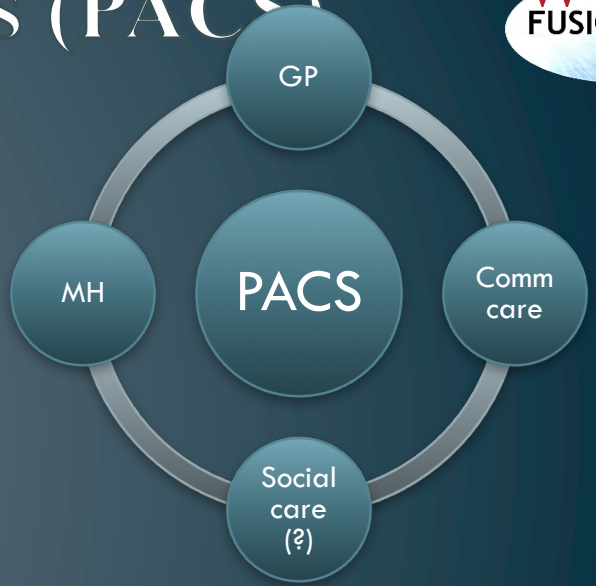
Primary care = local care

Multispecialty Community Provider (MCP)

- Expert generalists
- The vulnerable gain ‘focused’ care
- LTCM management delivered more effectively
- Care emphasis on ‘local’ care settings… why travel unless specialist care is required?
- Essential to base some traditional ‘acute’ services in local care settings - technology can be a key enabler
- Analogous with ‘accountable care’….e.g. the Alzira model; not just a new model of care, but treats funding very differently
- Blurs the current primary/acute split, promoting ‘seamless care’
- The creation of a robust and single EPR…patients can also feed in!

Primary acute care systems (PACS)

- Positively supports MCP model, leading to full ‘accountable care’
- Single organisations providing NHS list-based GP and hospital services, integrated care pathways with mental health and community care services… potentially social care and other services
- Exploits the ability of some FTs to set up care systems in deprived areas, especially where GP recruitment is difficult
- Places care in a single geographical location… as *polyclinic*?

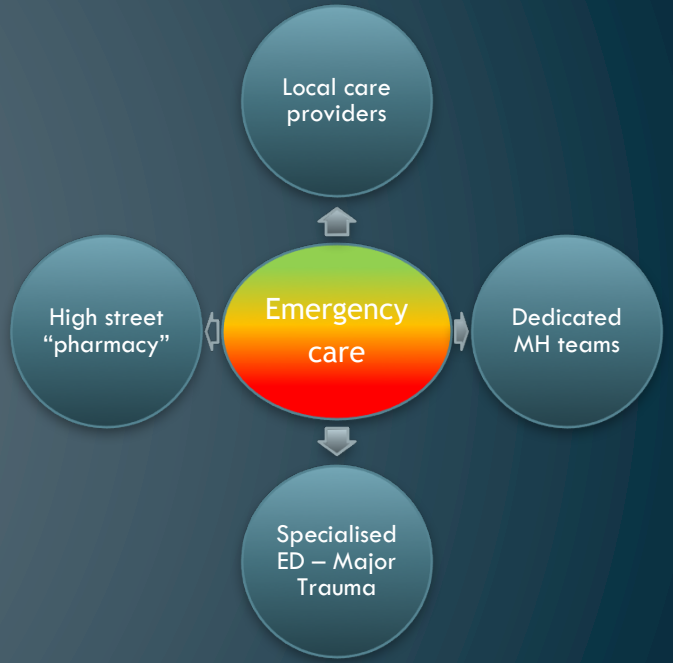


But…

- Time consuming and complex to establish
- As much about the ‘legal’ structure and developing a suitable estate base

Urgent and Emergency Care Networks

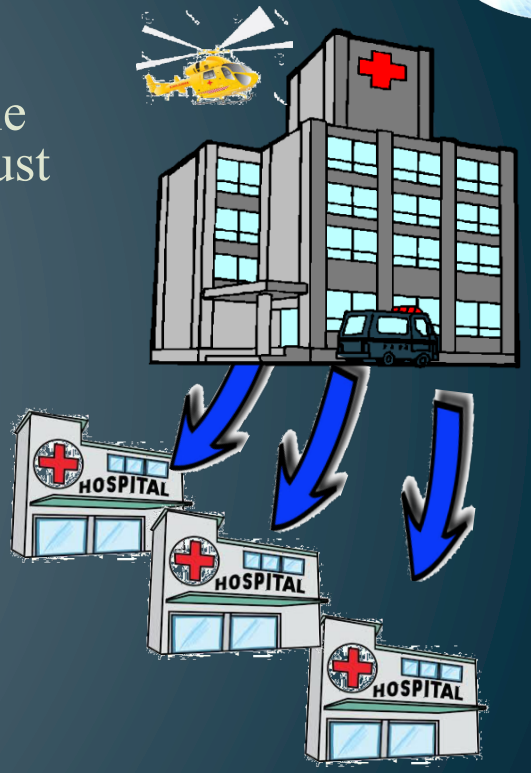
- Impact on the health estate is potentially harder to gauge
- Public education to ‘go to the right place’
- Establishing additional MTCs, which have worked so well in recent weeks!
- Positive streaming at triage… perhaps a ‘pre-triage system’ further freeing major trauma centres for the most appropriate patients… *as seen in Manchester and London Bridge*
- Seamless between minors (green) and majors (red) to provide flexibility to meet demand



Viable Smaller Hospitals?

Smaller DGHs cannot provide *all* the services that people may want and need locally - they play a vital role but must be viable clinically and financially. For example:

- Management and back office costs could be shared
- Specialist services can be run/coordinated by a central provider as a ‘hub and spoke’ e.g. Moorfields
- Clinical expertise could be centralised and remotely linked to the smaller ‘local’ hospitals… telemedicine is already well established in certain areas - tech can enhance existing and enable new systems and models of care



Specialised Care

- Delivering the right care in the right place, first time
- Concentrating specialist expertise and complex treatments in fewer centres - clinical teams gain more experience as patient volumes increase
- Some people will travel further but evidence shows that outcomes can improve – for example, trauma centres and hyper acute stroke units
- Conversely, can enable a wider range of care to be delivered more locally
- Link with ‘patient hotels’ so lower acuity needs are met without costly inpatient admissions…. day surgery is on the rise and specialist centres will facilitate growth
- Again…a hub and spoke approach

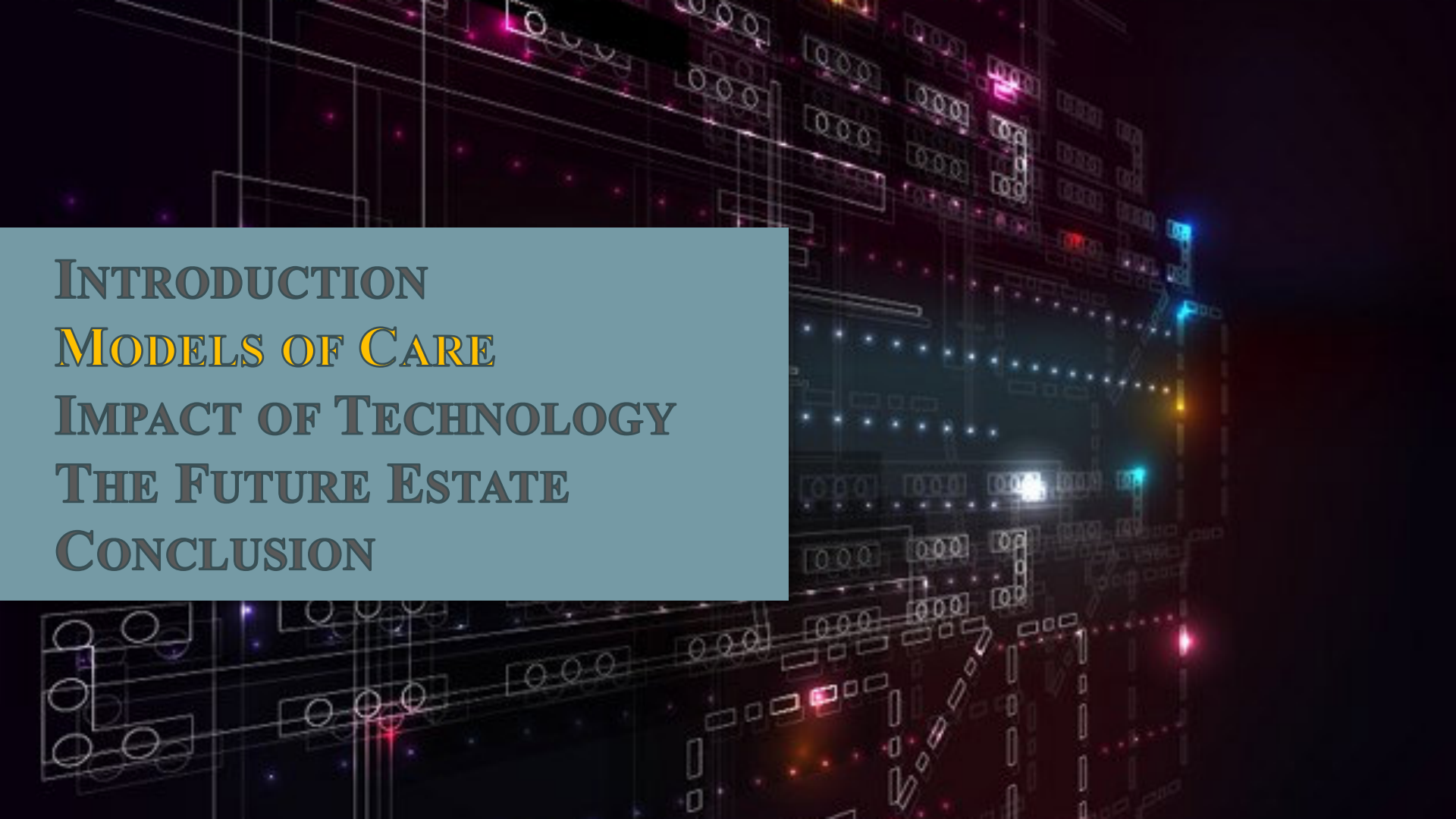
Maternity & Enhanced Health in Care Homes

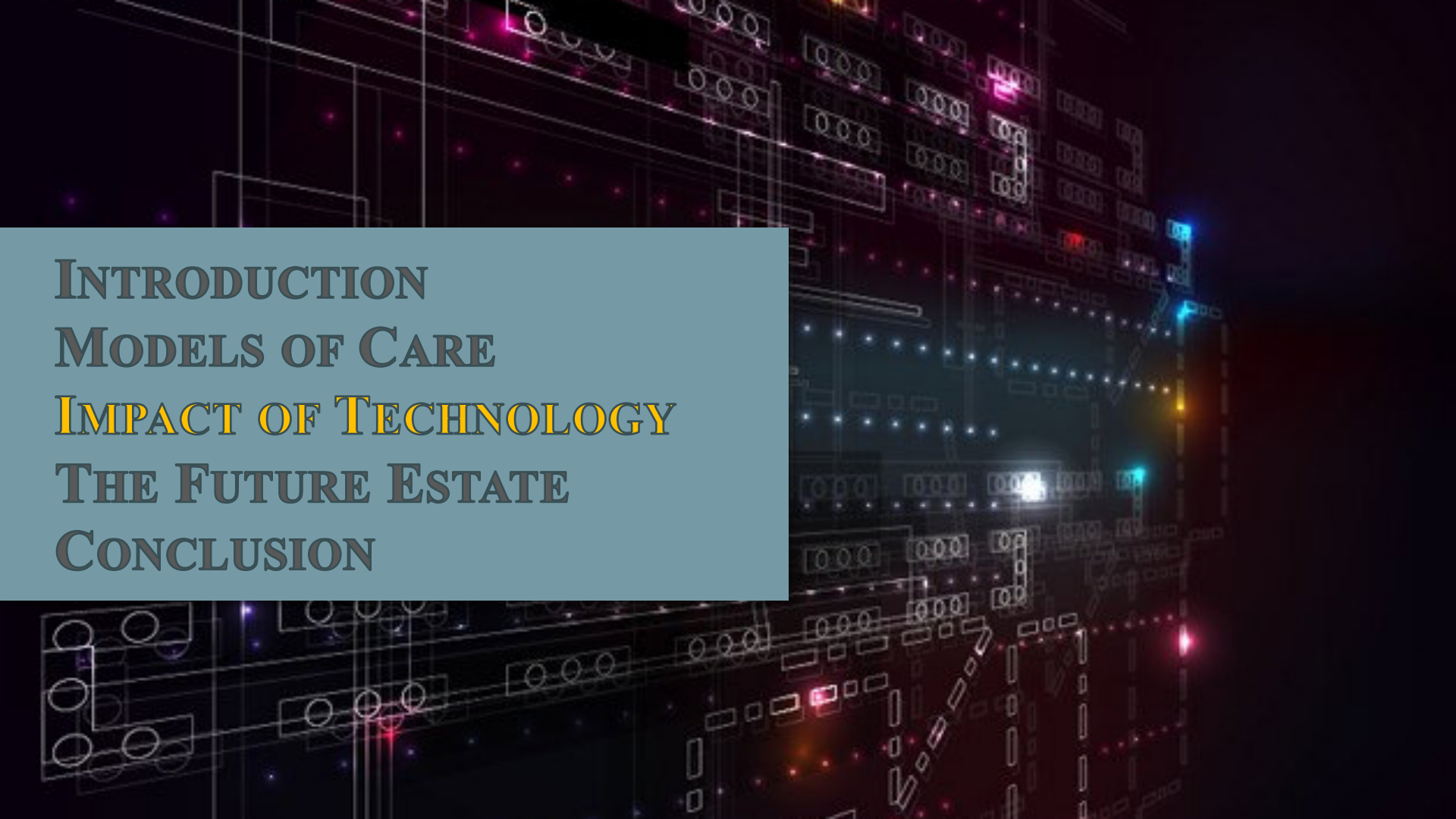
Modern maternity services

- 85% of births take place in obstetric units, 80% of women live within 30 minutes of a formal facility (obstetric or MLU)
- Research and development is seeking to define MLU requirements and ensure their sustainability
- Support for true midwife-led and managed unit development
- Increases in the number of MLU, decreases in obstetric ‘congestion’

Enhanced health care in care homes

- More effective integration of health and social care and stronger emphasis on prevention and management of long term conditions… aim to reduce dependence on residential long term care
- Training and clinical support to care homes to reduce hospital care admissions and lengths of stay


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion

Impact of technology

- New care models… essential need to review, redesign and implement new care and service strategies geographically and demographically driven
- The impact will be felt in capital *and* revenue budgets but not all of the new models will necessarily impact upon the estate.
- There is a circular reference - new care models can be enabled by enhanced technology and new models of care can be 'discovered' due to enhanced technology
- Large data sets of anonymised health data can greatly enhance understanding, diagnosis and targeted treatment - collection and analysis of such data is facilitated by new technology… quantum computing
- Robust EPR systems can be greatly enhanced by 'wearable' tech, providing continuous data at a micro and macro level to baseline future need… feeding the 'quantum mechanism'
- IT infrastructure investment essential – ***possibly more so than the estate***

The Digital Revolution

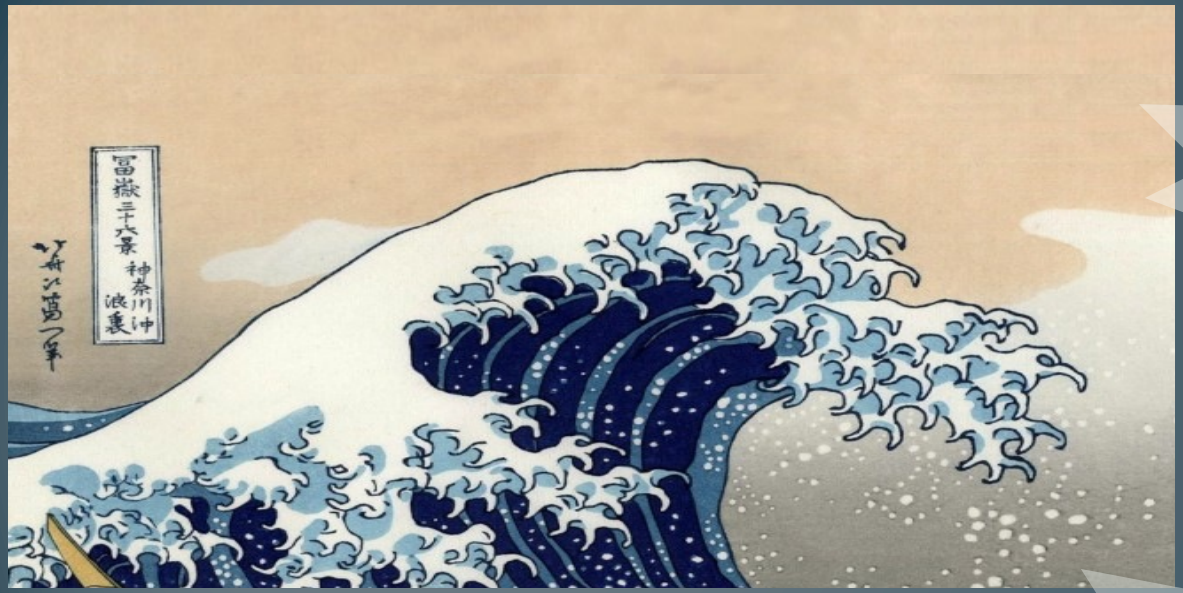
Internet of Things

Big Data & Predictive Analytics

Machine Learning

Knowledge Automation

Disruptive Innovation – External Drivers



Growing & aging populations & high incidences of chronic diseases

Rising consumer expectations for improved & enhanced services

Economic stagnation & austerity place financial pressures on health systems

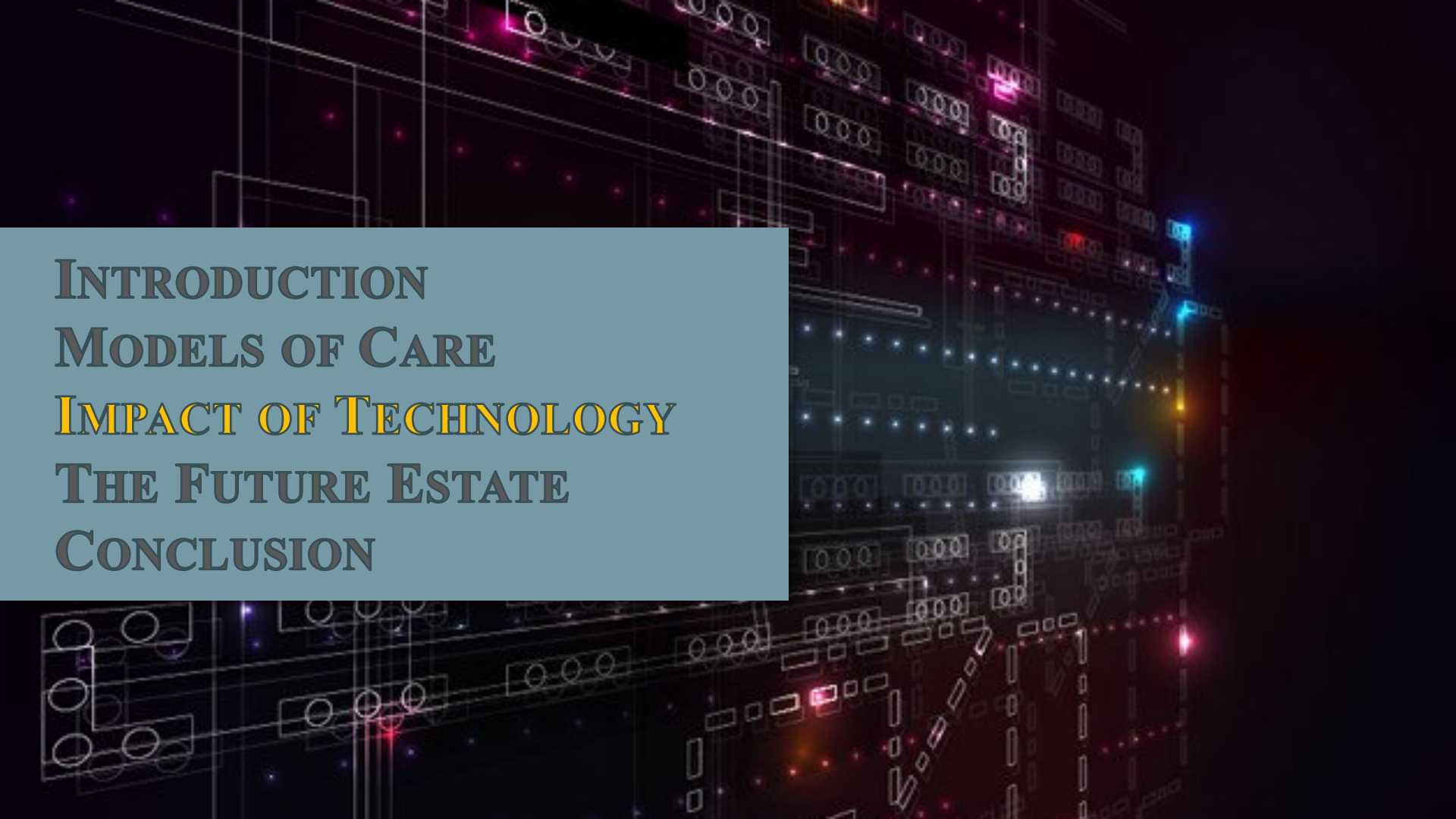
Increasing demand for equitable "Care Anywhere" services

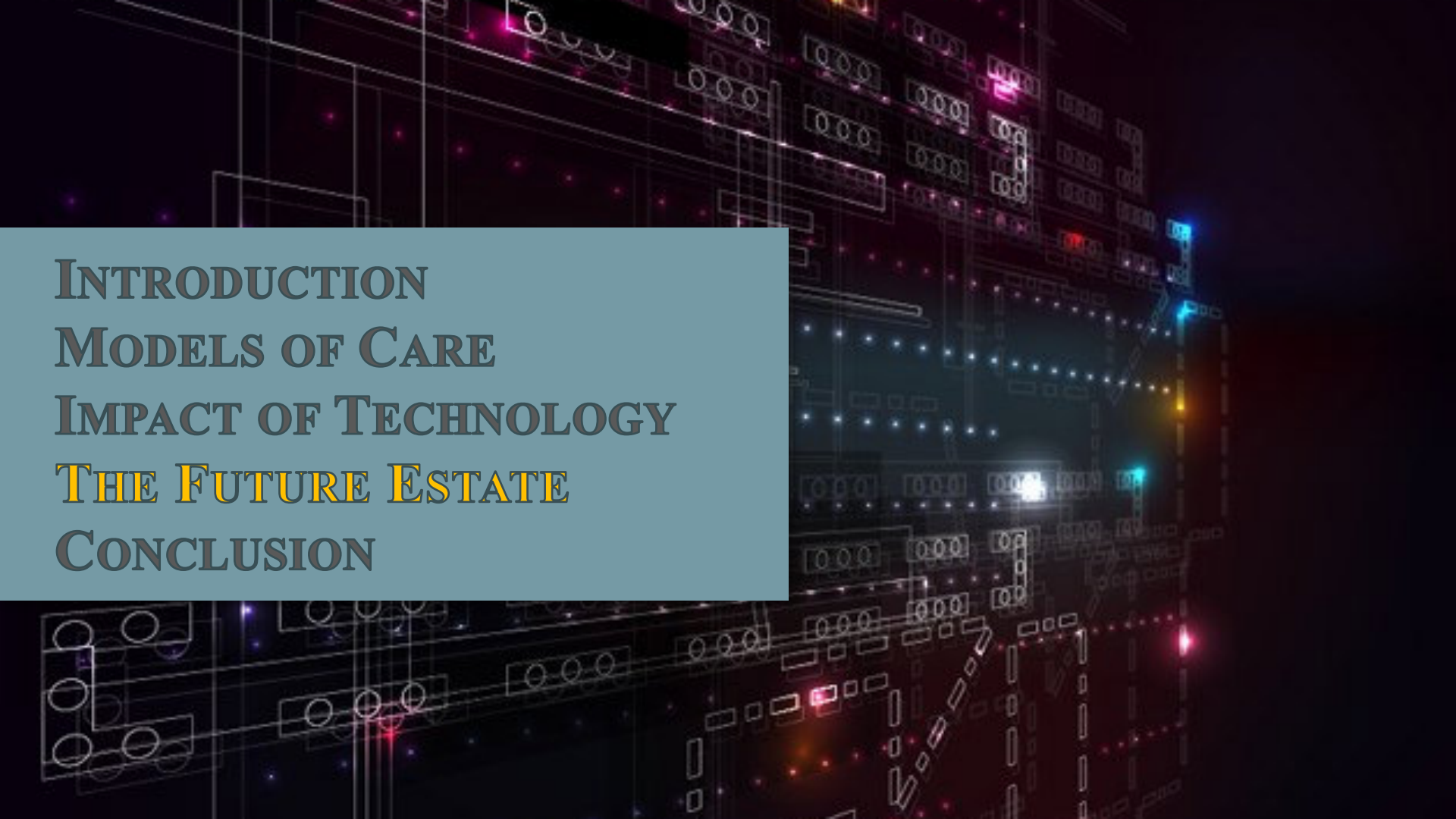
Disruptive Innovation – Internal Drivers

Value based care and new models of care delivery

Exponential data growth and Patient Generated Health Data

Expanding health, wellness ecosystems intensify the need for better integration and care coordination


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion

Three Disruptive Trends

1. **Shift from episodic to continuous care and monitoring**

Easy & frequent exchanges between patient & clinician
Continuous & increasing data produced through technological devices (IoT)

Three Disruptive Trends

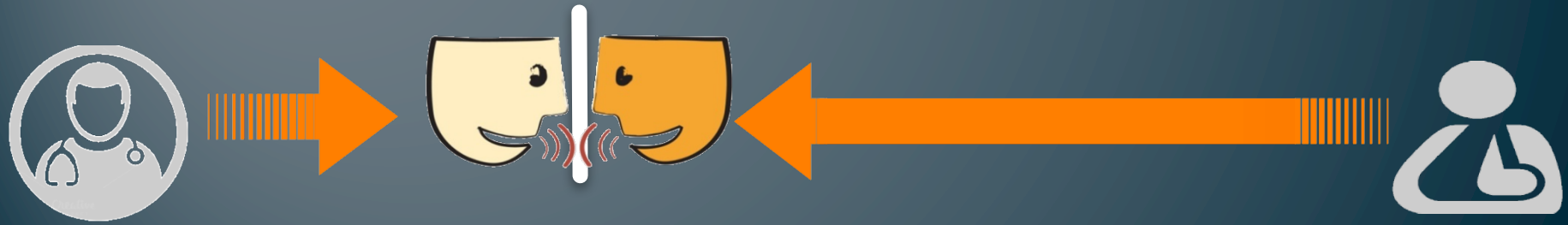
1. **Shift from episodic to continuous care and monitoring**

Easy & frequent exchanges between patient & clinician
Continuous & increasing data produced through technological devices (IoT)

Three Disruptive Trends

1. Shift from episodic to continuous care and monitoring
2. **Multi-directional flow of information**

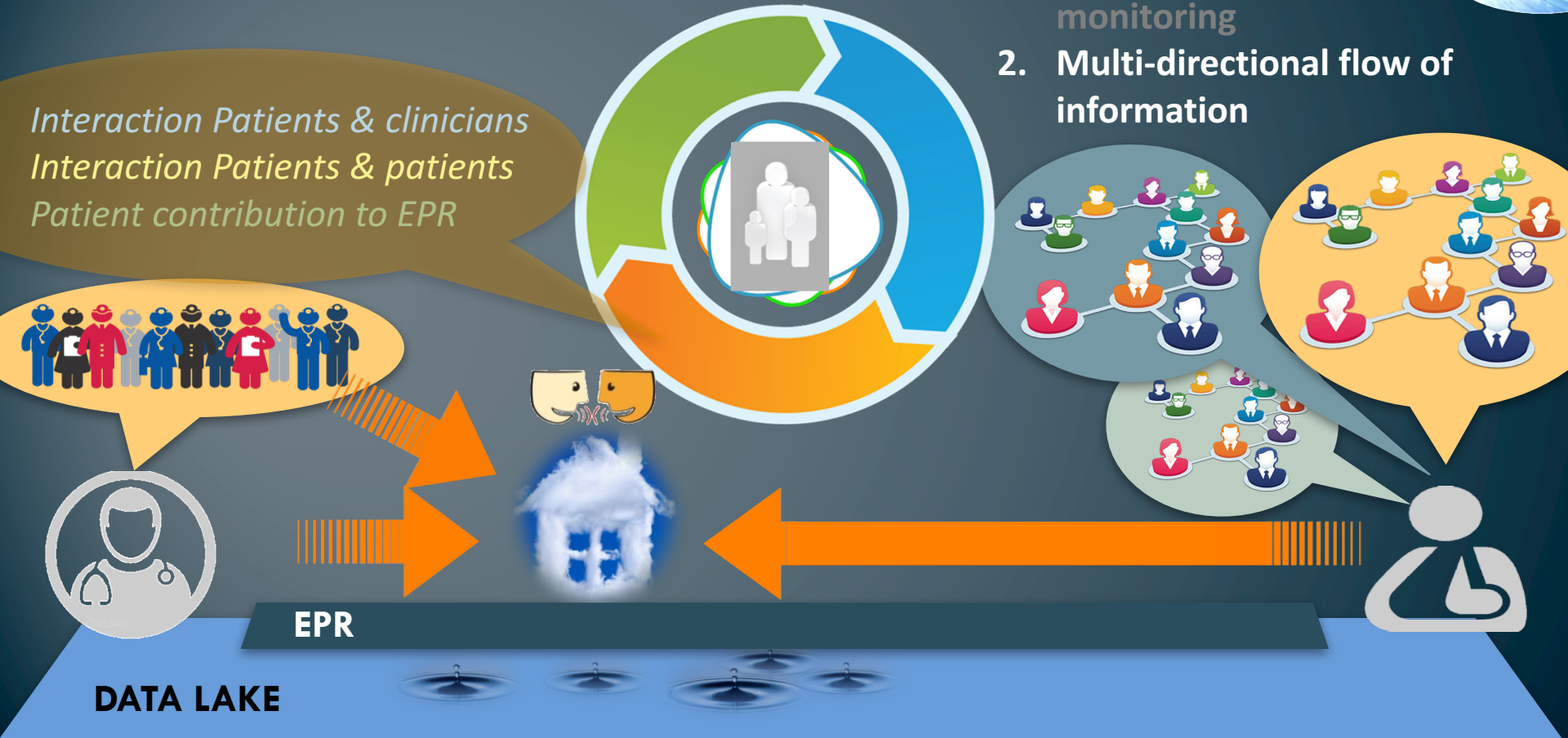
Interaction Patients & clinicians
Interaction Patients & patients
Patient contribution to EPR



Three Disruptive Trends

1. Shift from episodic to continuous care and monitoring
2. **Multi-directional flow of information**

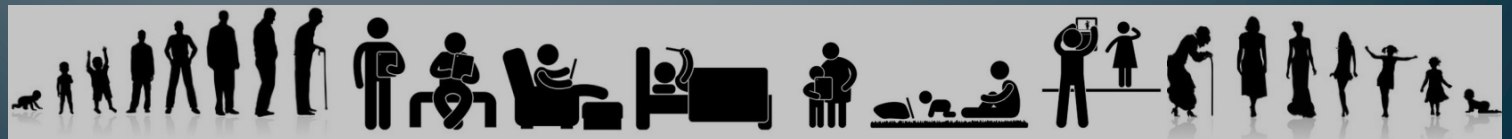
Interaction Patients & clinicians
Interaction Patients & patients
Patient contribution to EPR



Three Disruptive Trends

1. Shift from episodic to continuous care and monitoring
2. Multi-directional flow of information
3. **Specific knowledge used in decision-making**

Precision medicine
Exact diagnosis of patient's true condition
Personalised medicine through combination with individual's circumstances



Consequences for the Estate

Acute Hospitals
Centres of Excellence
Research
Teaching

Hospital Care

GP Surgeries, clinics
Local Care Centres
Community Hospitals
Therapies

Local Care

Consequences for the Estate

Non-Place Based Care

Acute Hospitals
Centres of Excellence
Research
Teaching

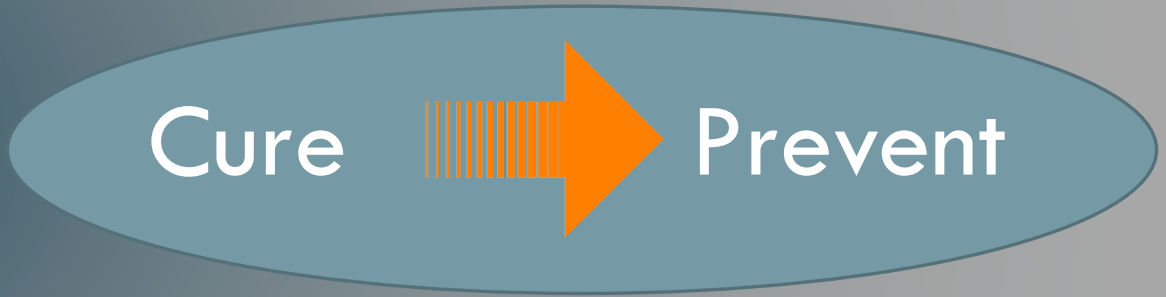
Hospital Care

GP Surgeries, clinics
Local Care Centres
Community Hospitals
Therapies

Local Care

Consequences for the Estate

4G networks permanently active; large online libraries such as Wikipedia; ease of access to internet information; take charge of your own healthcare; quicker and easier results than waiting in a doctor's surgery or hospital; cheaper for all concerned; faster

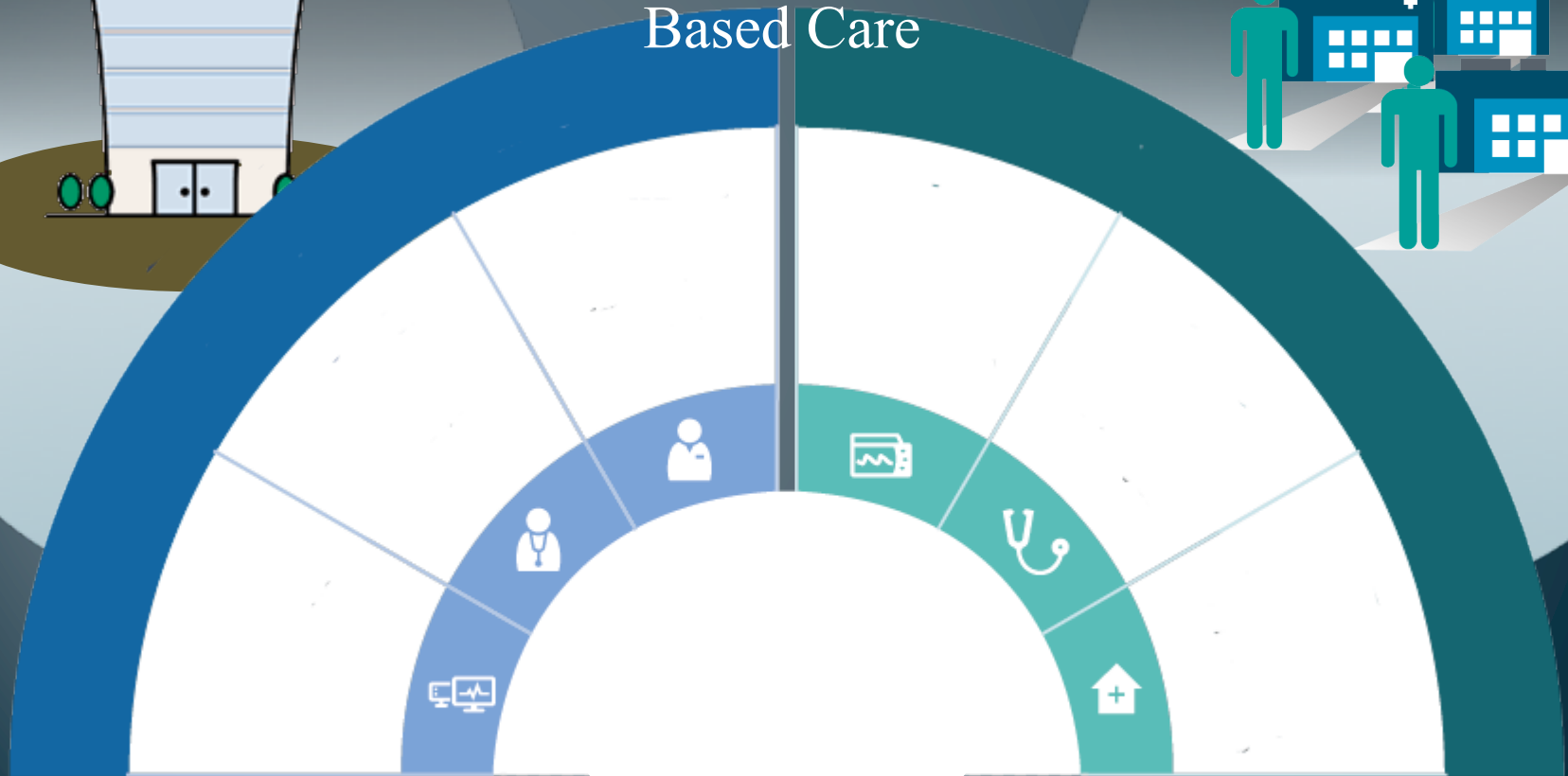


cheaper for all concerned; faster results; search for likeminded people with similar conditions; interest in well-being rather than concentrate on illness; access to right expertise; diagnostics via wearables; tracking of medication..

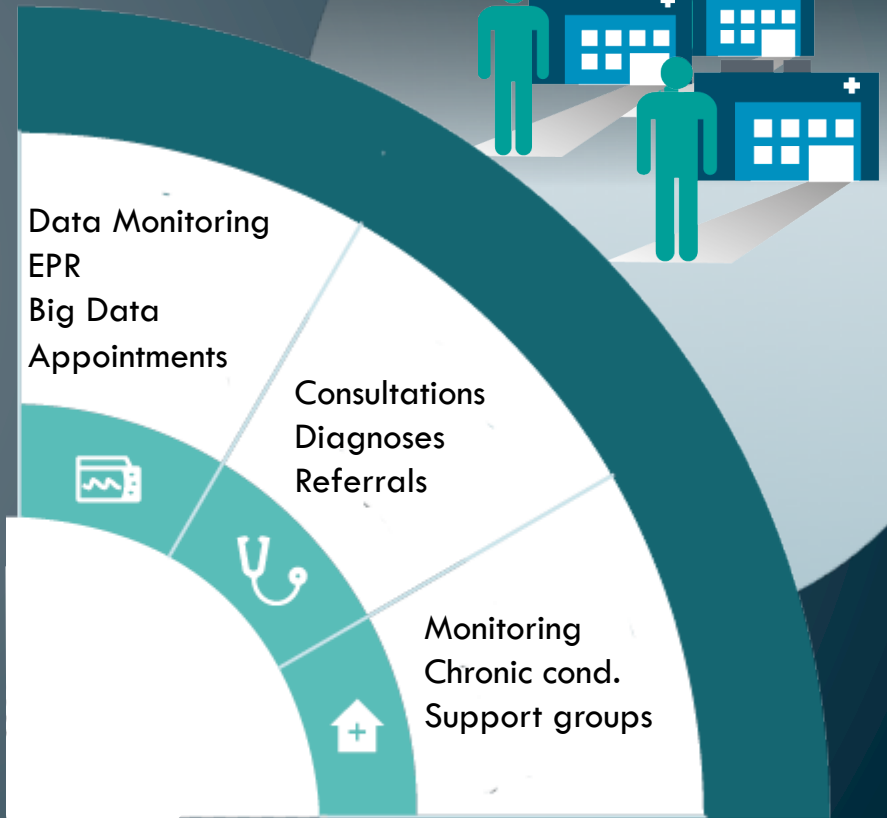
Consequences for the Estate

Non-Place

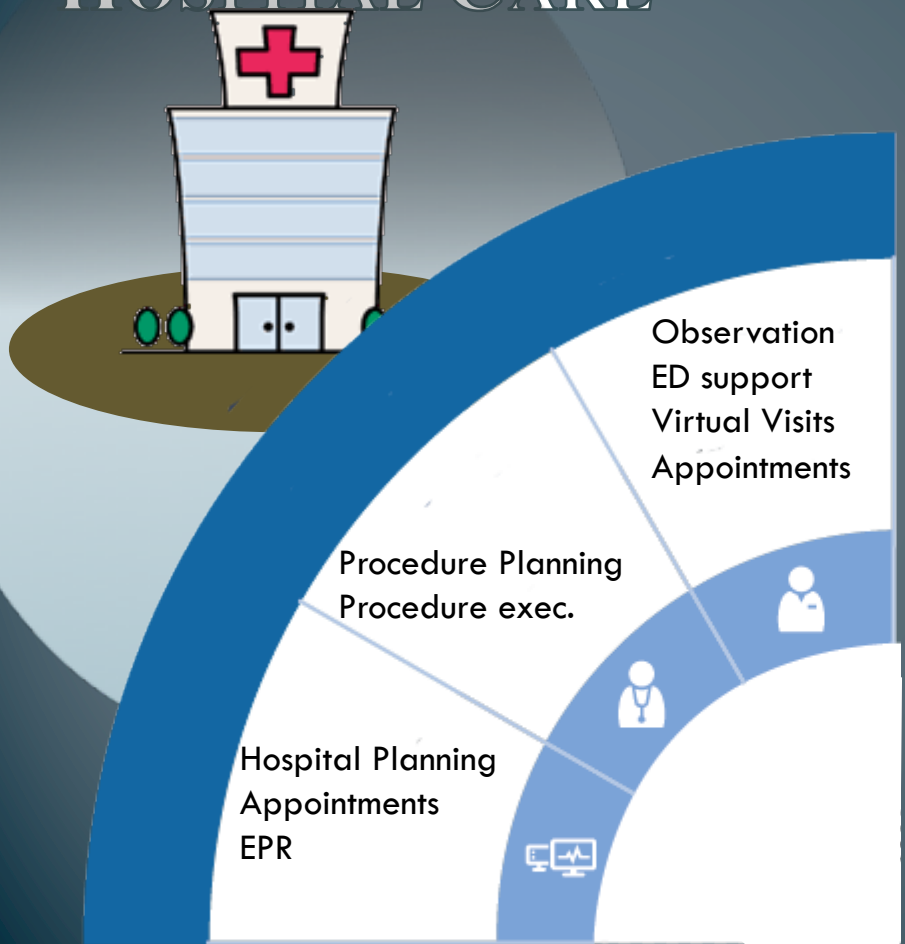
Based Care



Local Care


Data Monitoring
EPR
Big Data
Appointments
Consultations
Diagnoses
Referrals
Monitoring
Chronic cond.
Support groups

Hospital Care



Overview

Observation
ED support
Virtual Visits
Appointments

Procedure Planning
Procedure exec.

Hospital Planning
Appointments
EPR

Data Monitoring
EPR
Big Data
Appointments

Consultations
Diagnoses
Referrals

Monitoring
Chronic cond.
Support groups

Multidisciplinary team

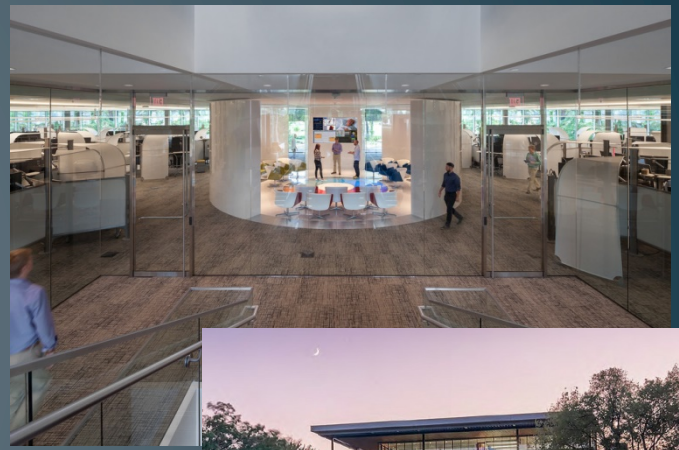
New Building Type

Telehealth facilities

- Across all types of healthcare
- In UK – currently part of community hospital
- In US – centralised, supporting large rural areas
- Expanding capability – central ‘control room’
- Centralised expertise, reaching out
- New approach to serve an growing population

Mercy Virtual (2015) - Missouri

- First Virtual Care Centre
- 330 clinical professionals
- 24/7 operations
- Monitors 2,431 patient beds
- Works across 5 states
- Remote After care support
- Telehealth consultations
- Rural stroke support (neurologist)



Telehealth Facilities – The Future

Additional services as technology progresses such as:

- Robotic Surgery
- Diagnostics + reporting
- Detailed planning or complex surgery
- Quick recovery surgery, able to move to
- Local care, but couldn't because of
- required expertise

This does NOT mean local staff is not needed

The Existing Estate - Hospital

Most expensive healthcare building

- Capital cost
- Running cost

Minimise use to '**appropriate**' level

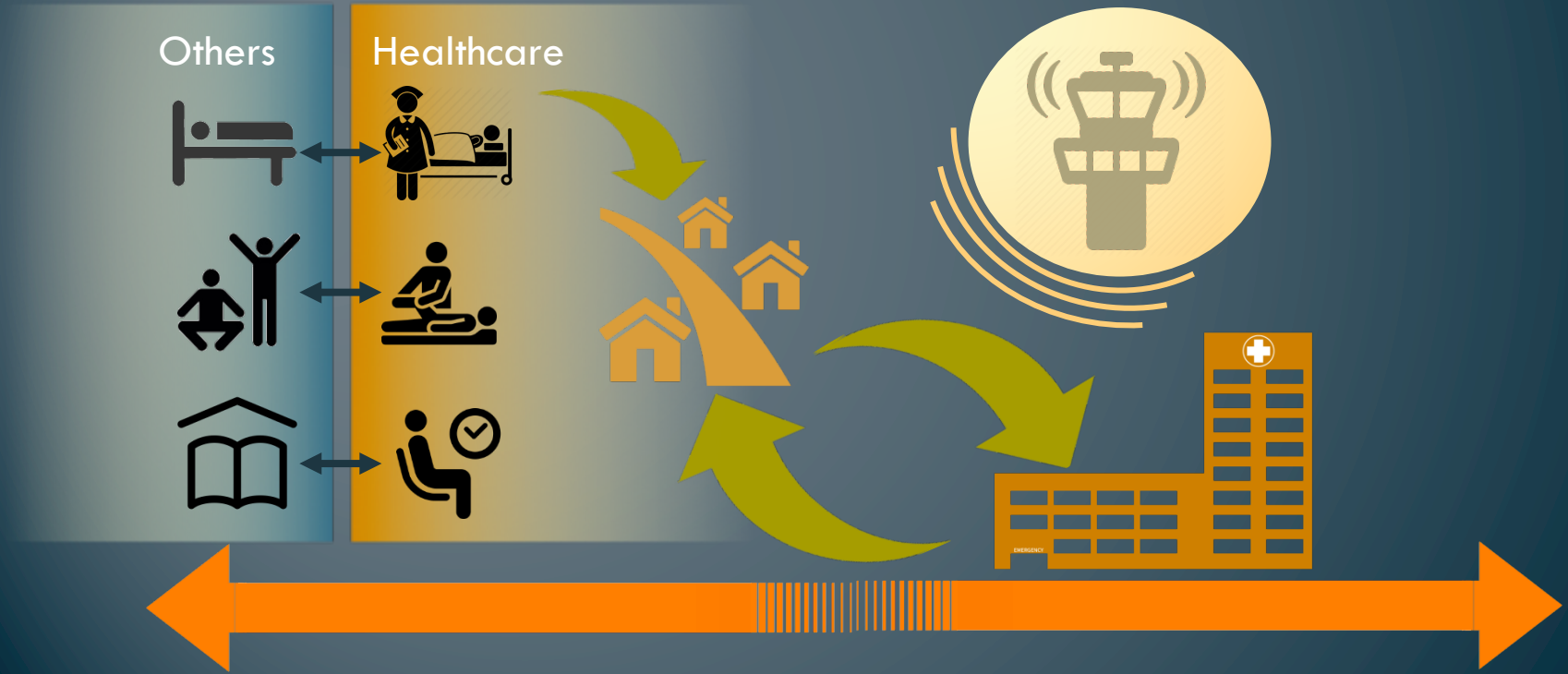
- Move activities to local care where possible (when technology allows)
- Expand remote control actvities
- Increase efficiency
- Minimise hospital stay to essential recovery
- Streamline ED

The Estate

View Estate as one – different locations – linked

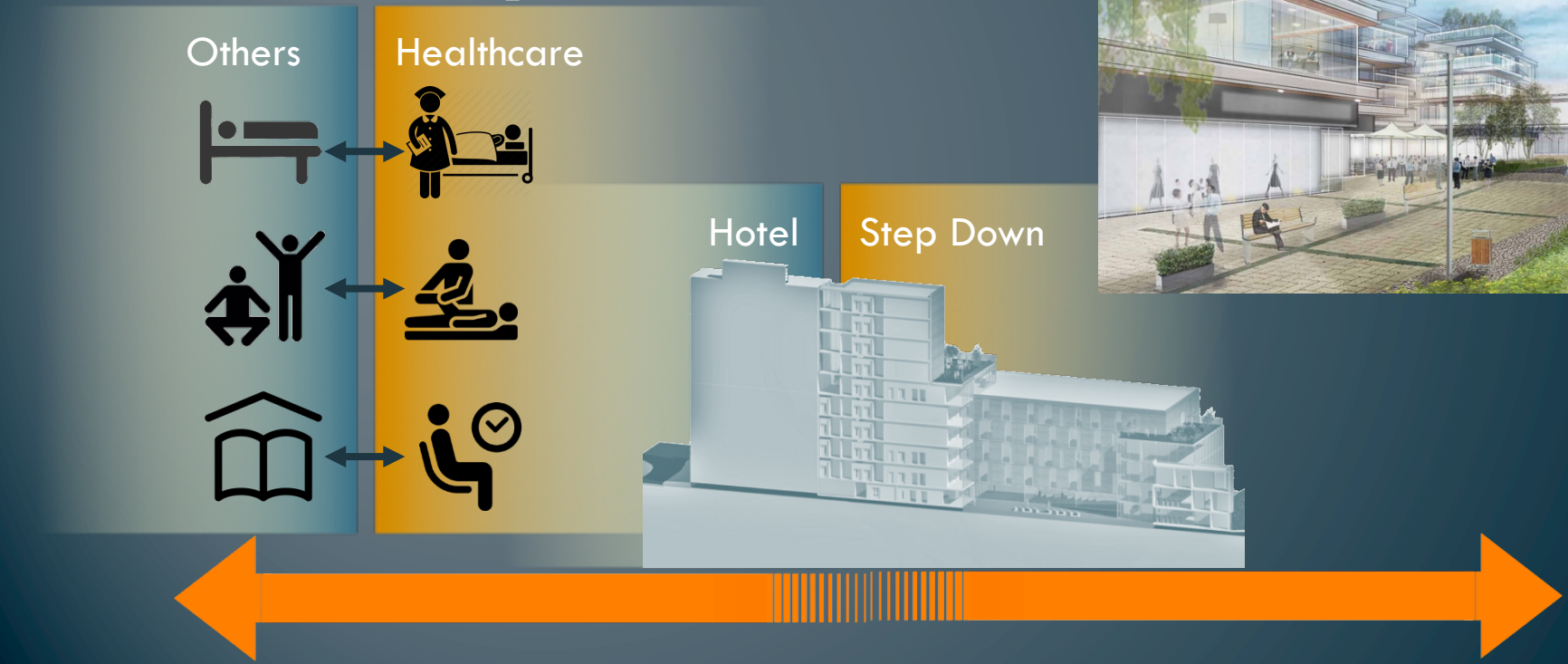
The Estate

Link to the other providers for services



The Estate

Link to the other providers for services



Flexibility and Adaptability

New Materials:

- 3D Printing – whole rooms – jointless
- ‘Metabolic’ materials – self repairing

Building technology:

- Off-site construction
- Standardisation – P21+ & P22

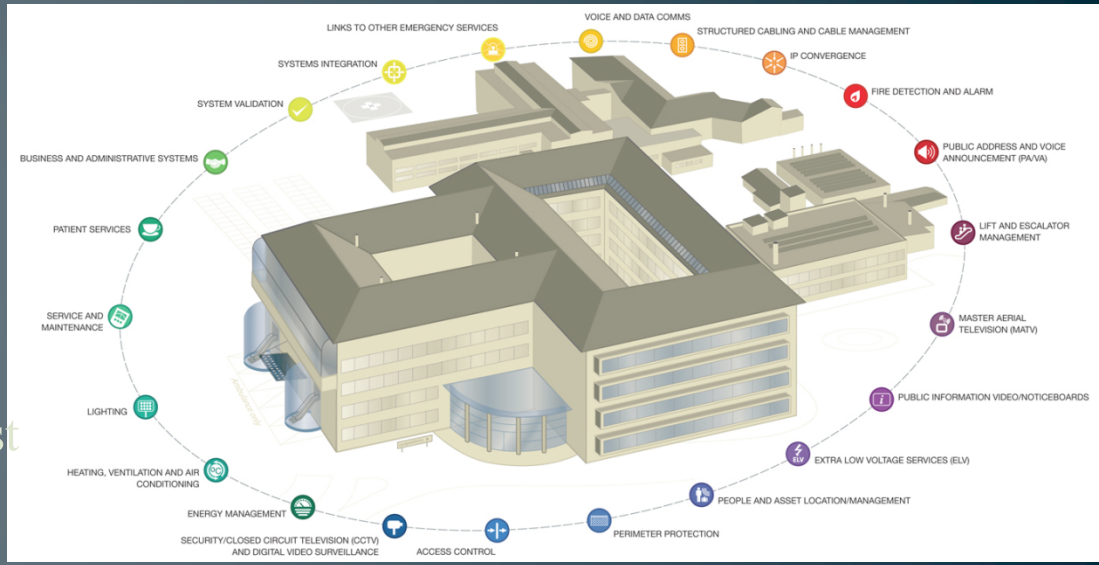
New Perspective:

- Future proofing – ‘Plug and Play’

Flexibility and Adaptability

New Ways of Working:

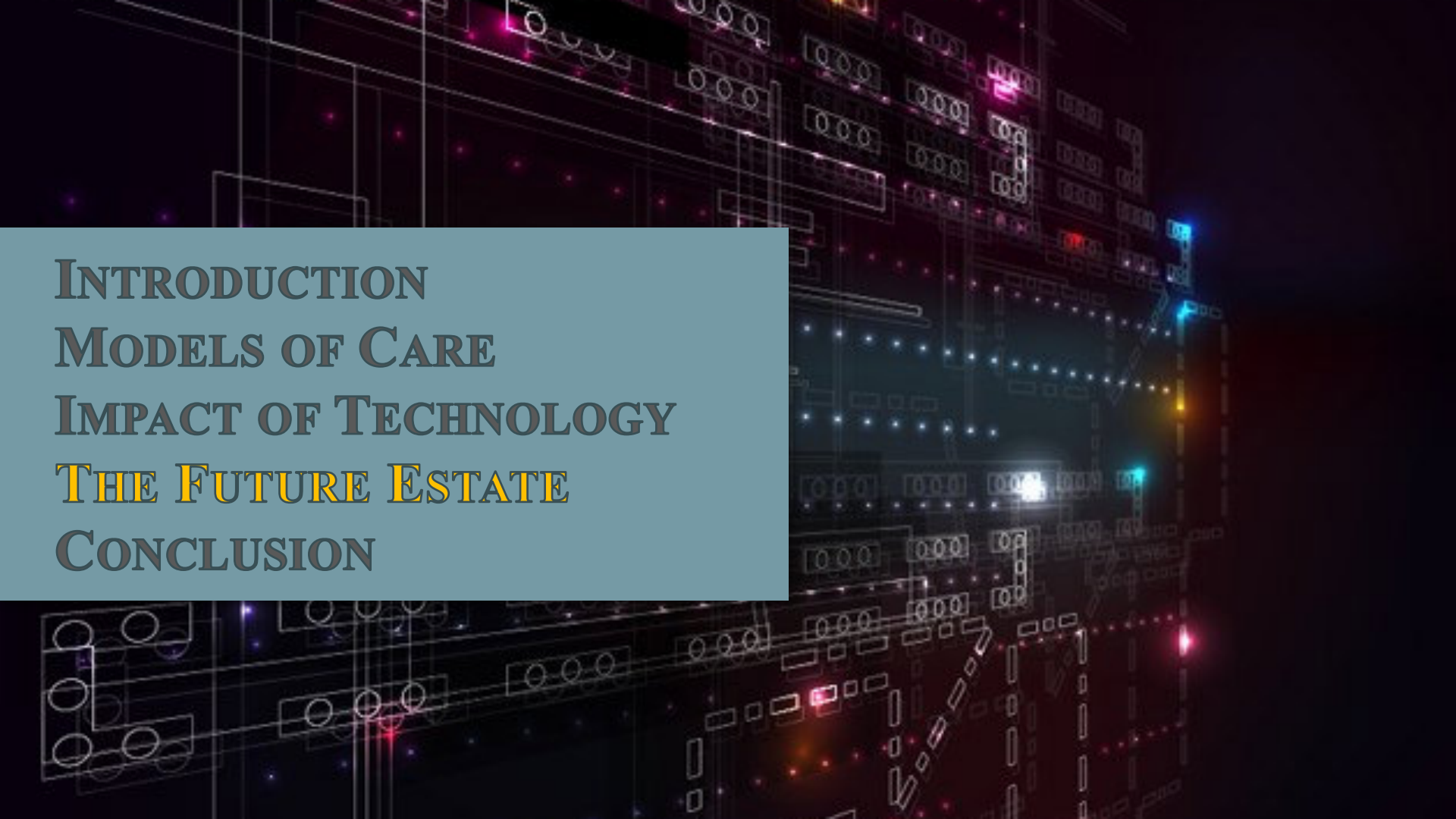
- FM – automation
- BMS Systems – use of IoT
  - 10-15% energy saving/yr
  - 30% Reduction in Unplanned service calls
  - Reduction in work order cost
  - Significant energy saving

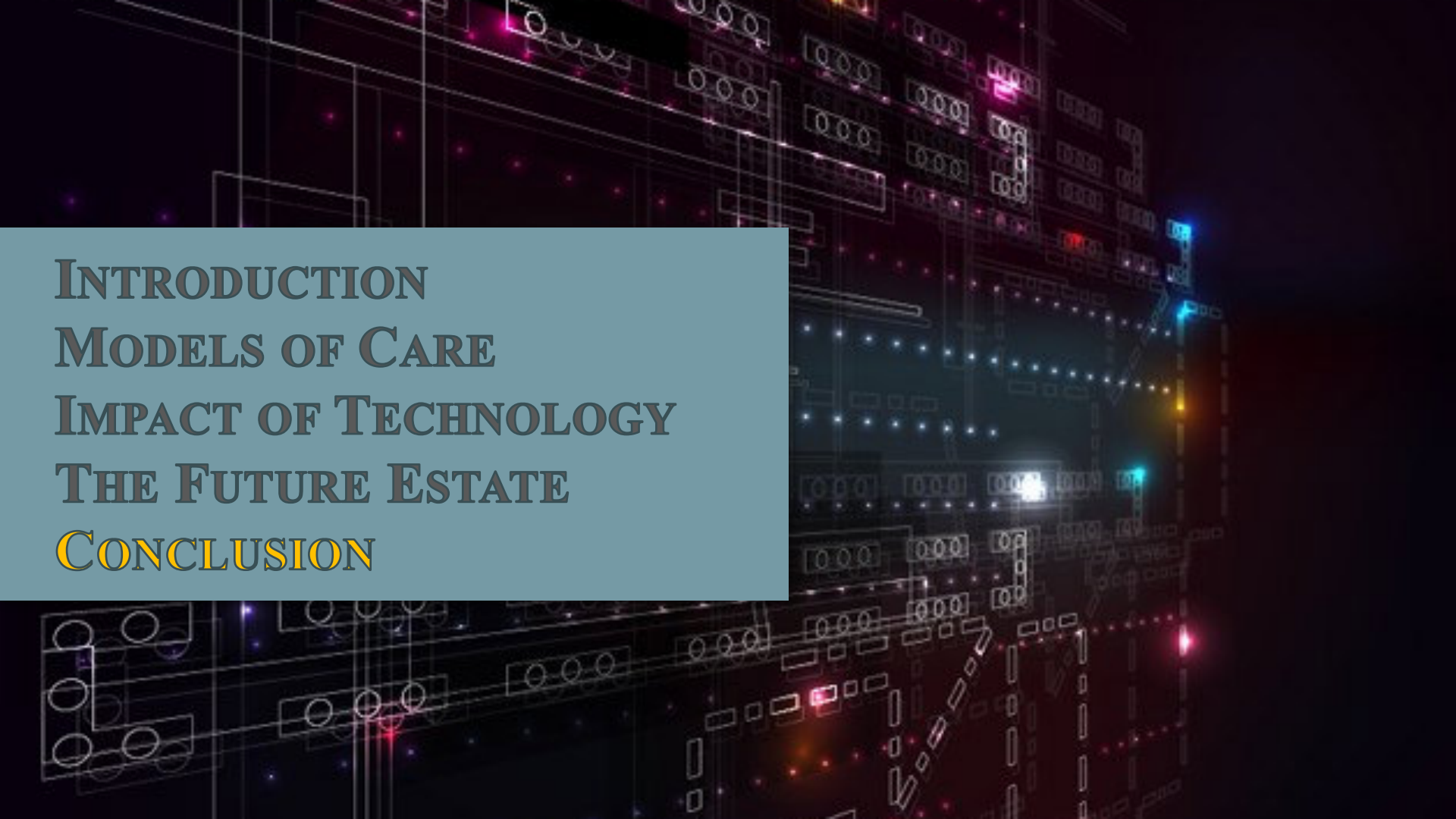


2025
Buildings are the #1 energy consumer

50%
Energy and water wasted in buildings

72%
Of operating costs are maintenance & utilities


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion

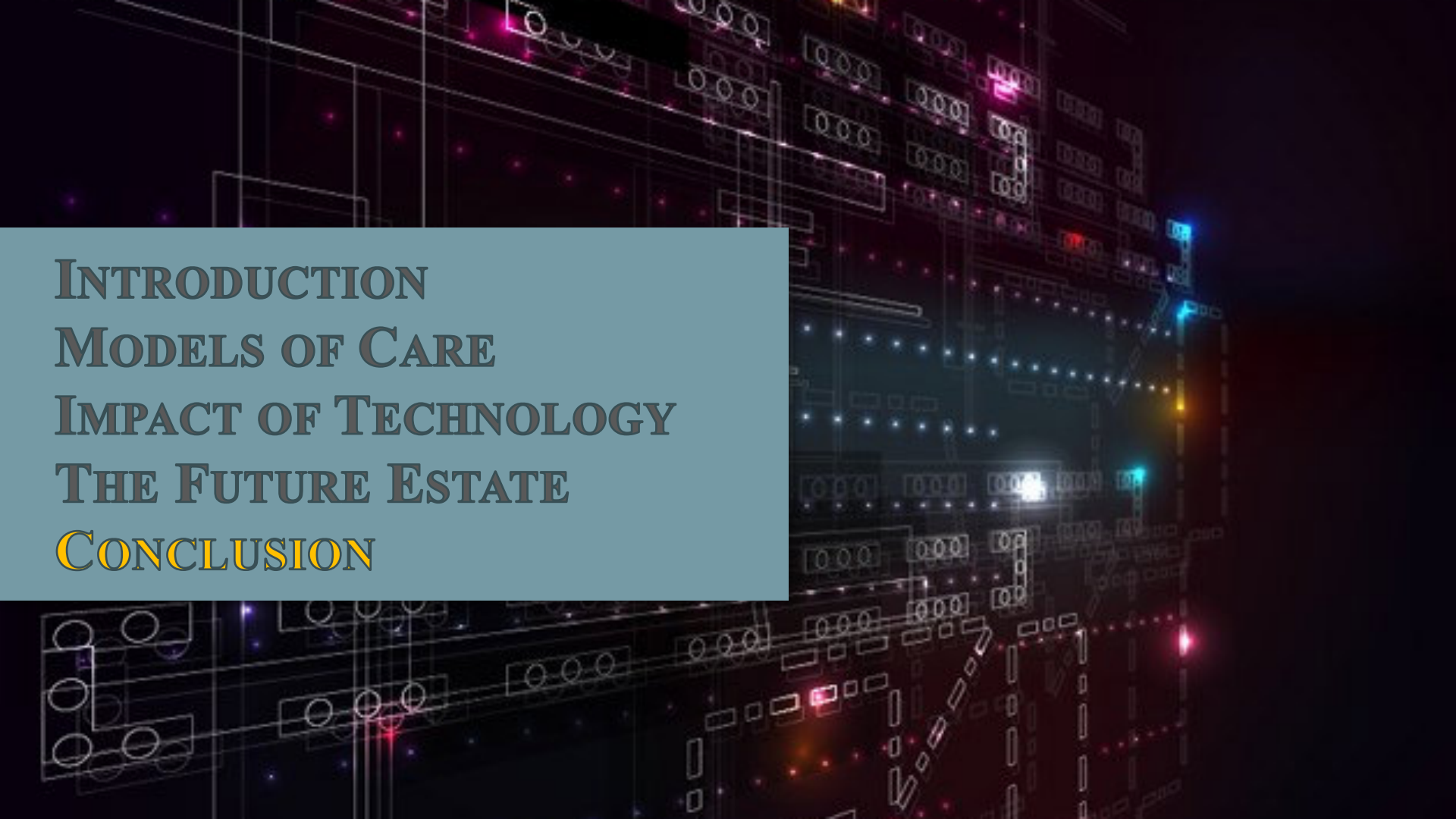
Computer Vs Human?

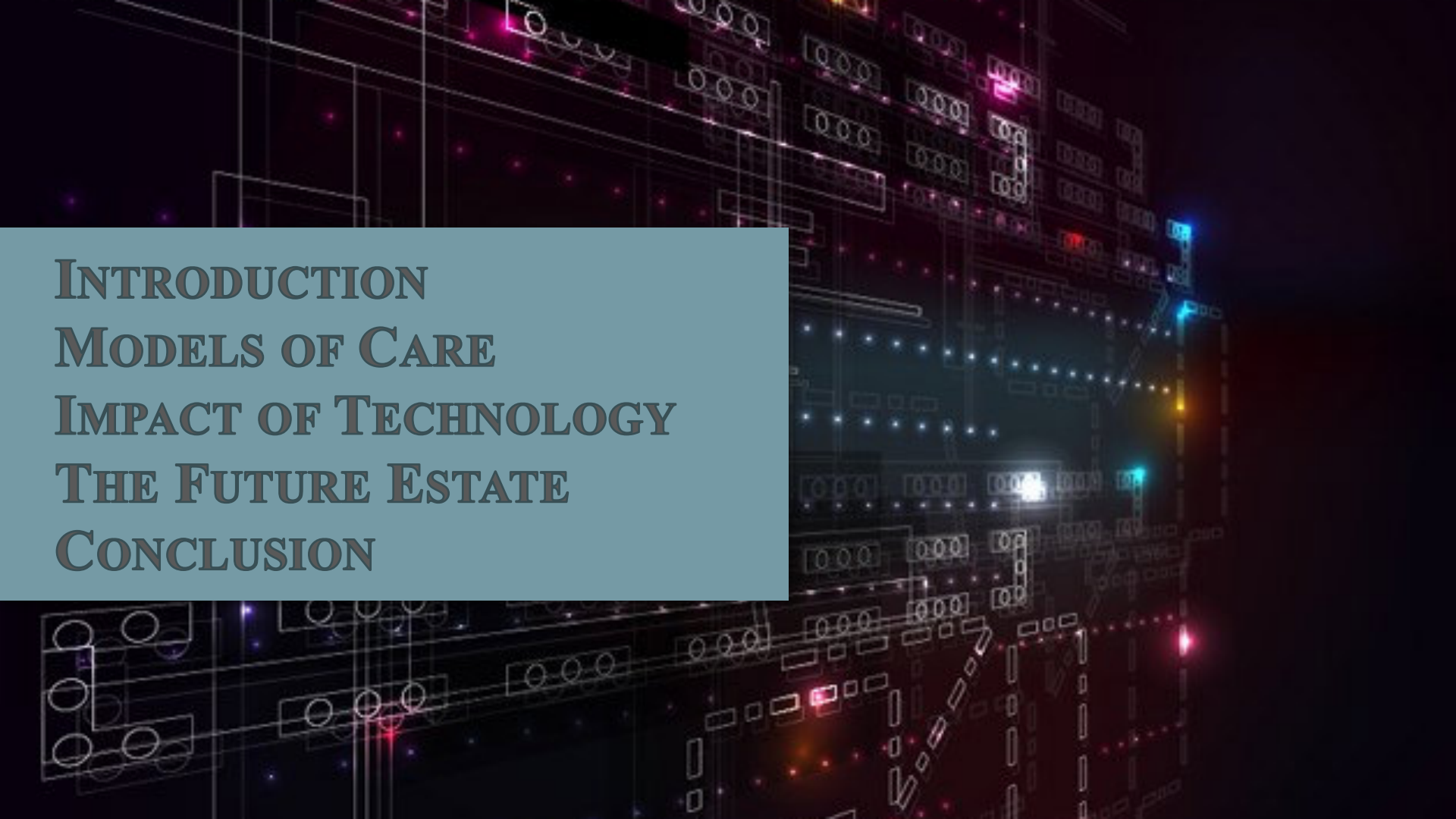
I've often wondered, where does our success come from? The answer is synthesis, the ability to combine creativity and calculation, art and science, into a whole that is much greater than the sum of its parts.

Computer Vs Human?

“There has been an amazing development in computer intelligence over the last 50 years and exactly zero development in computer conscienceness.”

Intelligence Complemented by Caring


Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion



Introduction
Models of Care
Impact of Technology
The Future Estate
Conclusion

GEOF BEESLEY
Partner

PATRICK VAN DEN BERGH
Head of Healthcare

Thank You

0796 704 9618
Geof.beesley@fusion.partners
www.fusion.partners
Fusion Health LLP

0780 724 9267
patrick.vandenbergh@wgi.co.uk
www.wgi.co.uk
Watkins Grey International

FUSION

WGI