

# Why Do I need all these tests?

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*Senior lecturer in medicine*

# A bit about me

- Practising gastroenterologist (special interest in mucosa and liver)
  - Barrett, gastric dysplasia
  - Bowel cancer, mucosal surveillance
  - Liver disease: viral hepatitis, NAFLD, liver cancer screening
- University as an educator
- Research interests
  - Liver disease, especially liver cancer, hepatitis C modelling
  - Quality and safety in healthcare
  - Technology and healthcare innovation: Artificial intelligence

# Today's topic

- Reaching a diagnosis
- Monitoring of disease
- Surveillance (prevent complications)

# IN 2018: IBD

- Targeted therapy
- Personalised care
- Precision medicine

# Take home message



# A long journey



# Surely there is a solution!





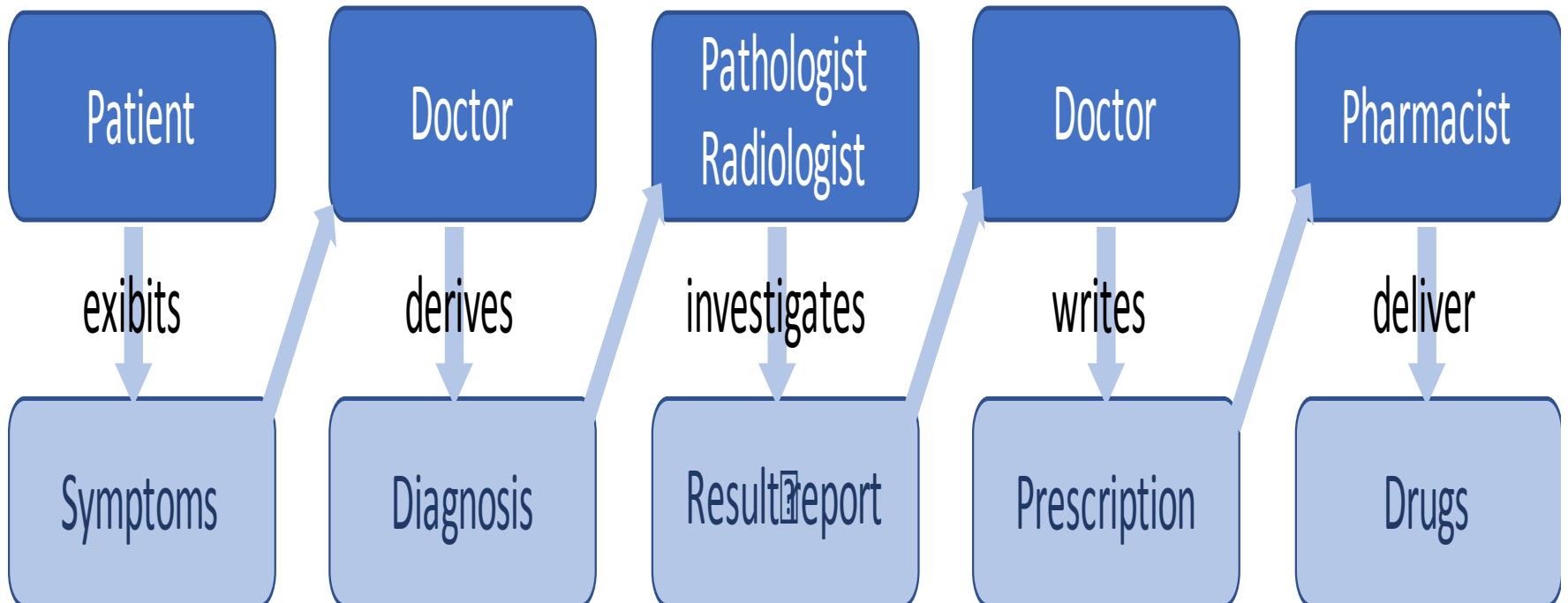
# Artificial intelligence?







# AI: Disruptive innovation?



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the one reading this

# Diagnosis of colitis

- Clinical-pathological-radiological diagnosis
- Investigations
  - Blood tests
  - Stool sample (PCR, calprotectin)
  - Colonoscopy
  - Capsule endoscopy
  - MRI small bowel

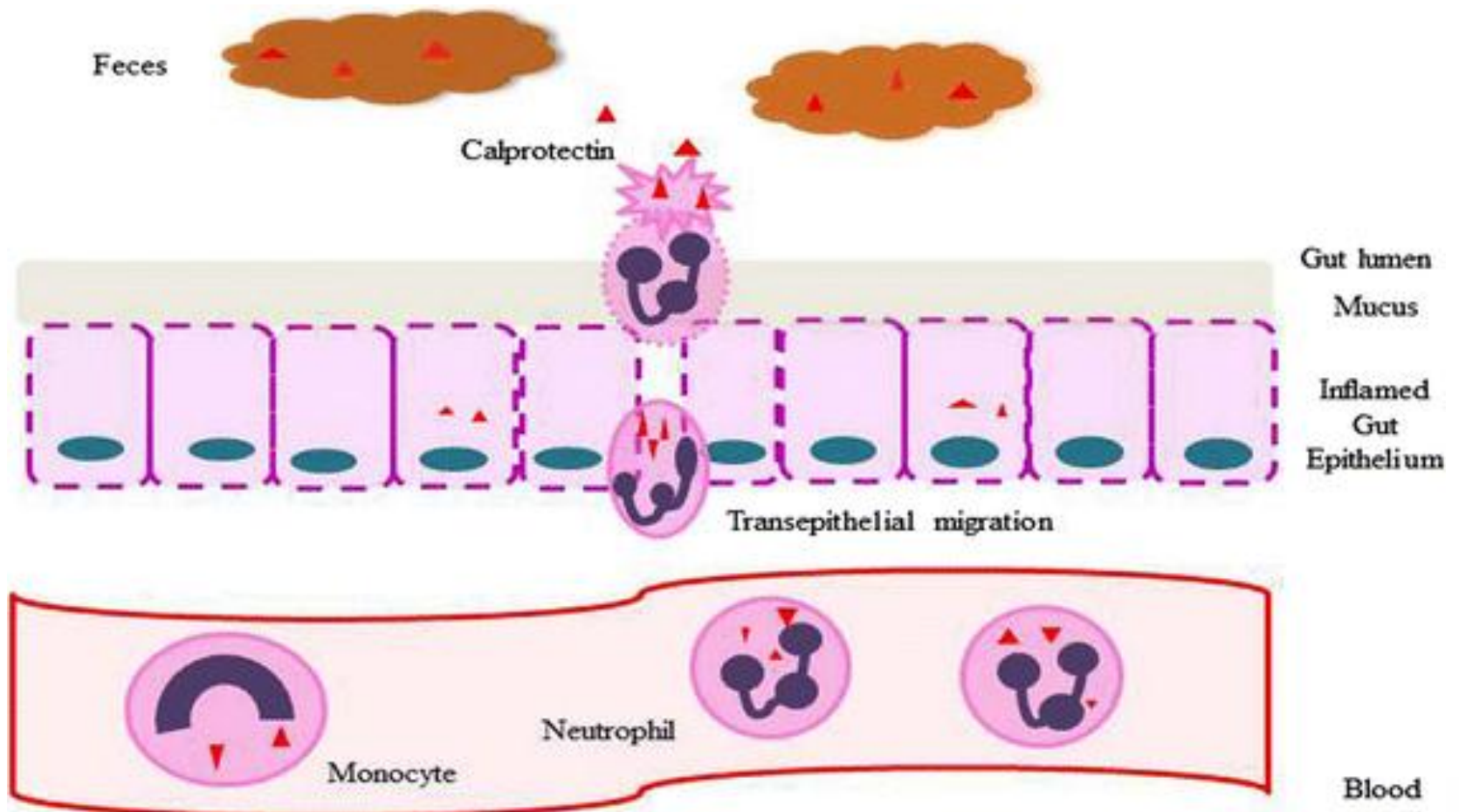
# Diagnosis

- Colonoscopy
  - Terminal ileum intubation
  - Biopsy
- Bowel prep
  - Picoprep
  - Picosalex
  - Diacol

# Small bowel



# Monitoring of activities: calprotectin





# Surveillance

- Heart
  - BP
  - Diabetes
  - Smoking (especially important in Crohn's disease)
- Bloods and nutrition
  - Iron and vitamin D
- Immunisation

# Surveillance

- Bone health
- Cancer
  - Papsmear
  - Mammography
  - Skin cancer
- Bowel cancer surveillance

# Bowel cancer surveillance

- UC and Crohns (if large bowel is involved)
- 2 yearly is probably ok
- Quality colonoscopy very important

# WHAT I NEED TO ASK



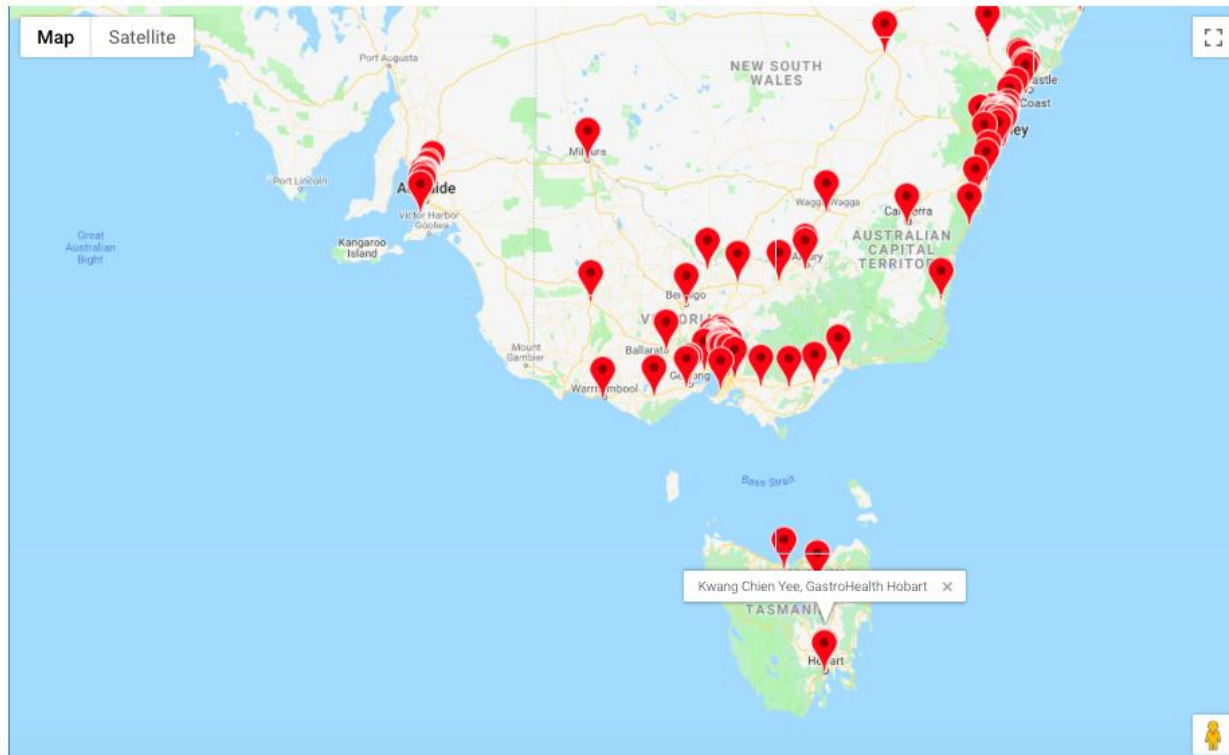
<http://recert.gesa.org.au/recertified.php>



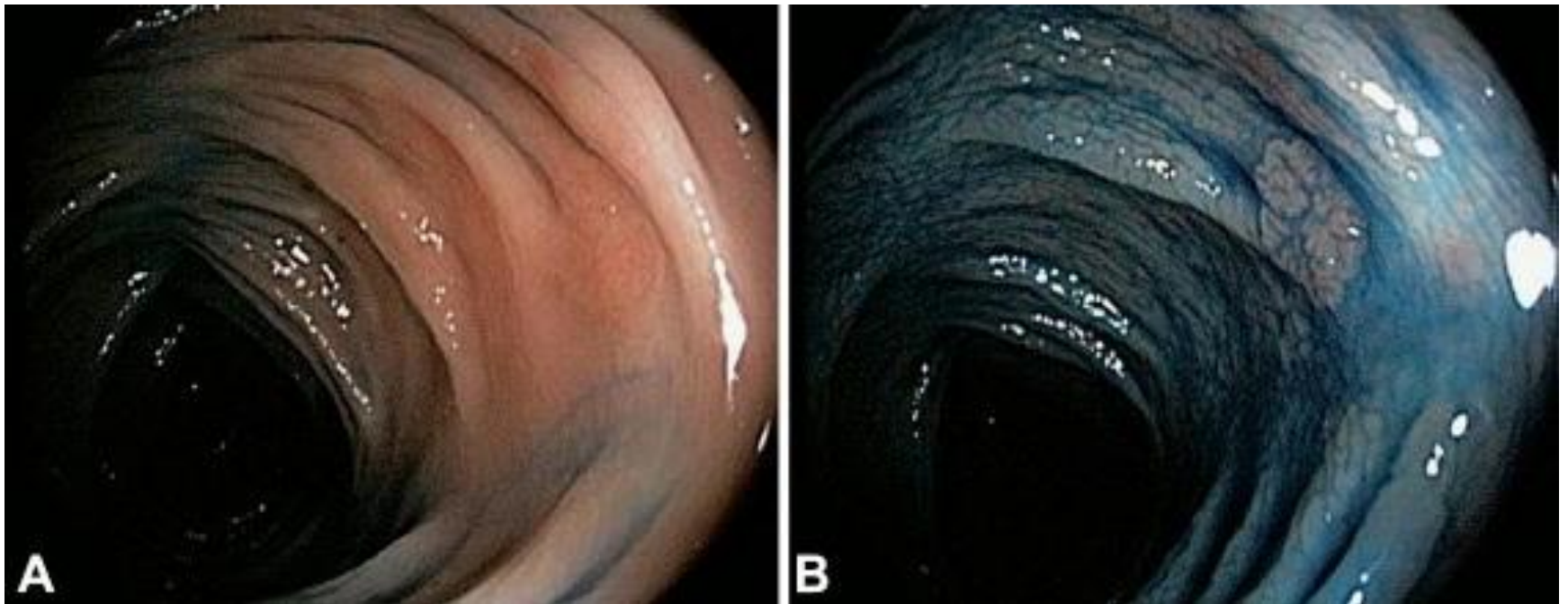
## Colonoscopy Recertification Program

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### Recertified Colonoscopists



# Biopsy versus Colour



# How about new things?

- Genomics
- Proteomics
- Bacteria microbiota
- Bacteria microbiome
- Stool DNA microarray profile



# Tests and clinical outcomes

*Arch Pathol Lab Med.* 2009 Jun;133(6):938-41. doi: 10.1043/1543-2165-133.6.938.

## **Challenges of the "omics" future and pathology informatics systems: are we--pathologists, clinicians, and consumers--ready?**

Yee KC<sup>1</sup>.

### **⊕ Author information**

#### **Abstract**

The health care system is extremely complex and it is currently undergoing a massive transformation with rapid advances in technology. Pathology services have been leading the technology adaptation process and will continue to evolve rapidly with the introduction of "omics" technology. Future pathology informatics systems (PIS) will need to meet the needs of pathologists, clinicians, organizations, community services as well as the expectations of patients, especially given the complexity of "omics" technology. Technology advances, however, often progress at a pace faster than socio-cultural adaptation. A major question therefore arises, "Are we ready?" This article explores the socio-cultural-technical issues and provides a conceptual framework for future discussion about socio-cultural integration in the use of technology to provide a seamless delivery of patient-centered care. It discusses system requirements of future PIS in the context of rapid evolution of medical care. Finally, this article proposes some strategies for the design and implementation of future PIS to achieve socio-cultural-technical harmony in the "omics" era.

PMID: 19492887 DOI: [10.1043/1543-2165-133.6.938](https://doi.org/10.1043/1543-2165-133.6.938)

[Indexed for MEDLINE]



# It is coming

Stud Health Technol Inform. 2018;247:636-640.

## **Socio-Technical Considerations for the Use of Blockchain Technology in Healthcare.**

Wong MC<sup>1</sup>, Yee KC<sup>2</sup>, Nøhr C<sup>3</sup>.

### **⊕ Author information**

#### **Abstract**

Blockchain technology is often considered as the fourth industrial revolution that will change the world. The enthusiasm of the transformative nature of blockchain technology has infiltrated healthcare. Blockchain is often seen as the much needed and perfect technology for healthcare, addressing the difficult and complex issues of security and inter-operability. More importantly, the "value" and trust-based system can deliver automated action and response via its smart contract mechanism. Healthcare, however, is a complex system. Health information technology (HIT) so far, has not delivered its promise of transforming healthcare due to its complex socio-technical and context sensitive interaction. The introduction of blockchain technology will need to consider a whole range of socio-technical issues in order to improve the quality and safety of patient care. This paper presents a discussion on these socio-technical issues. More importantly, this paper argues that in order to achieve the best outcome from blockchain technology, there is a need to consider a clinical transformation from "information" to "value " and trust. This paper argues that urgent research is needed to address these socio-technical issues in order to facilitate best outcomes for blockchain in healthcare. These socio-technical issues must then be further evaluated by means of working prototypes in the medical domain in coming years.

**KEYWORDS:** Blockchain technology; disruptive innovation; information communication technology; quality and safety in healthcare; socio-technical

PMID: 29678038

[Indexed for MEDLINE]



# You are special

- Targeted therapy
- Personalised care
- Precision medicine

# Take home message

- Diagnosis: clinical and biopsy
- Monitoring: clinical and faecal calprotectin:
- Surveillance: personalised
- Colonoscopy surveillance: quality and colour
- Investigations: keep a record for the future

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