



What now for clinical informatics

- Is it a thing?
 - Kalamazoo
 - HINZ developed FHINZ ... but what next
 - Should we be regulated?
-
- What is our purpose
 - MEDCINES!!



Health Informatics, What's That?

October 31, 2016

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What is Health Informatics?

KIN students want to work in healthcare, but it's unlikely they will become physicians, nurses, or therapists. Health Informatics is a professional field that harnesses the power of technology to enhance health and transform individual healthcare industry. **This job involves the acquiring, storing, and analyzing of healthcare information to foster better collaboration among a patient's healthcare providers.**

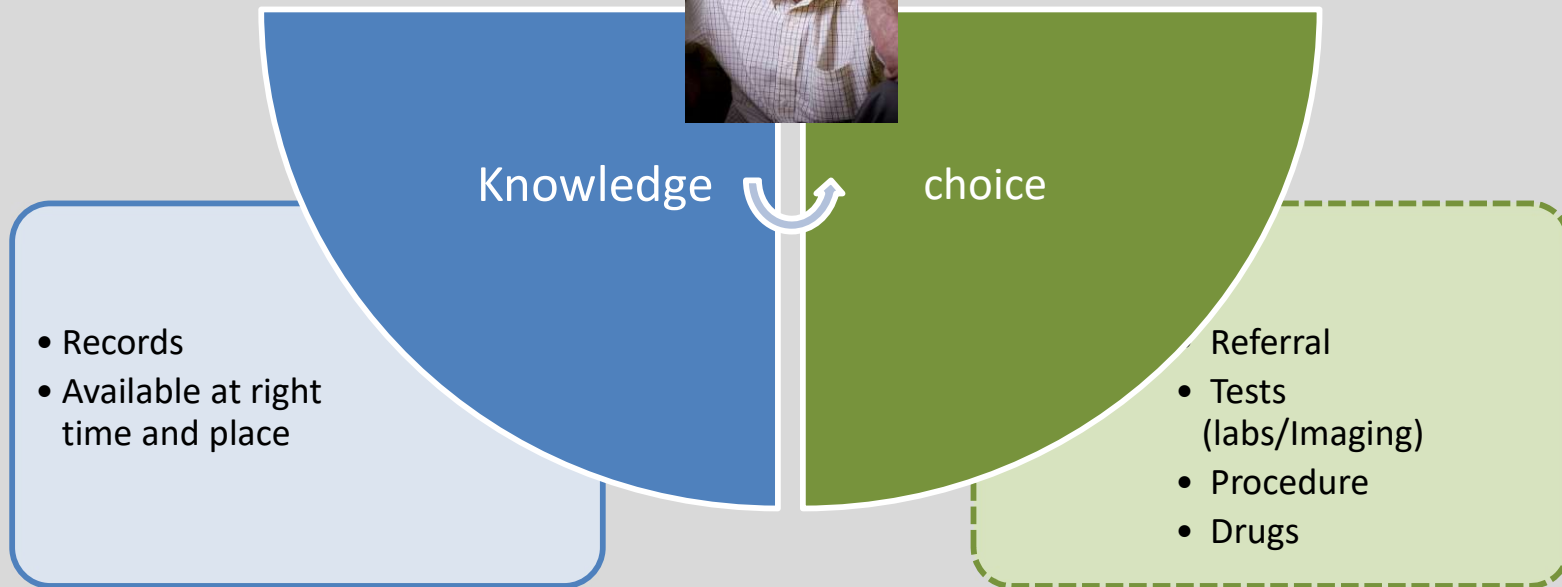
Kalamazoo...

Medicine driven model, tending toward partialist, silos, and reductionism



Knowledge data records

Activity/interaction



Reductionism can be defined as "(a) an approach to understanding the nature of complex things by reducing them to the interactions of their parts, or to simpler or more fundamental things or (b) a philosophical position that a complex system is nothing but the sum of its parts, and that an account of it can be reduced to accounts of individual constituents." (Source: Wikipedia)

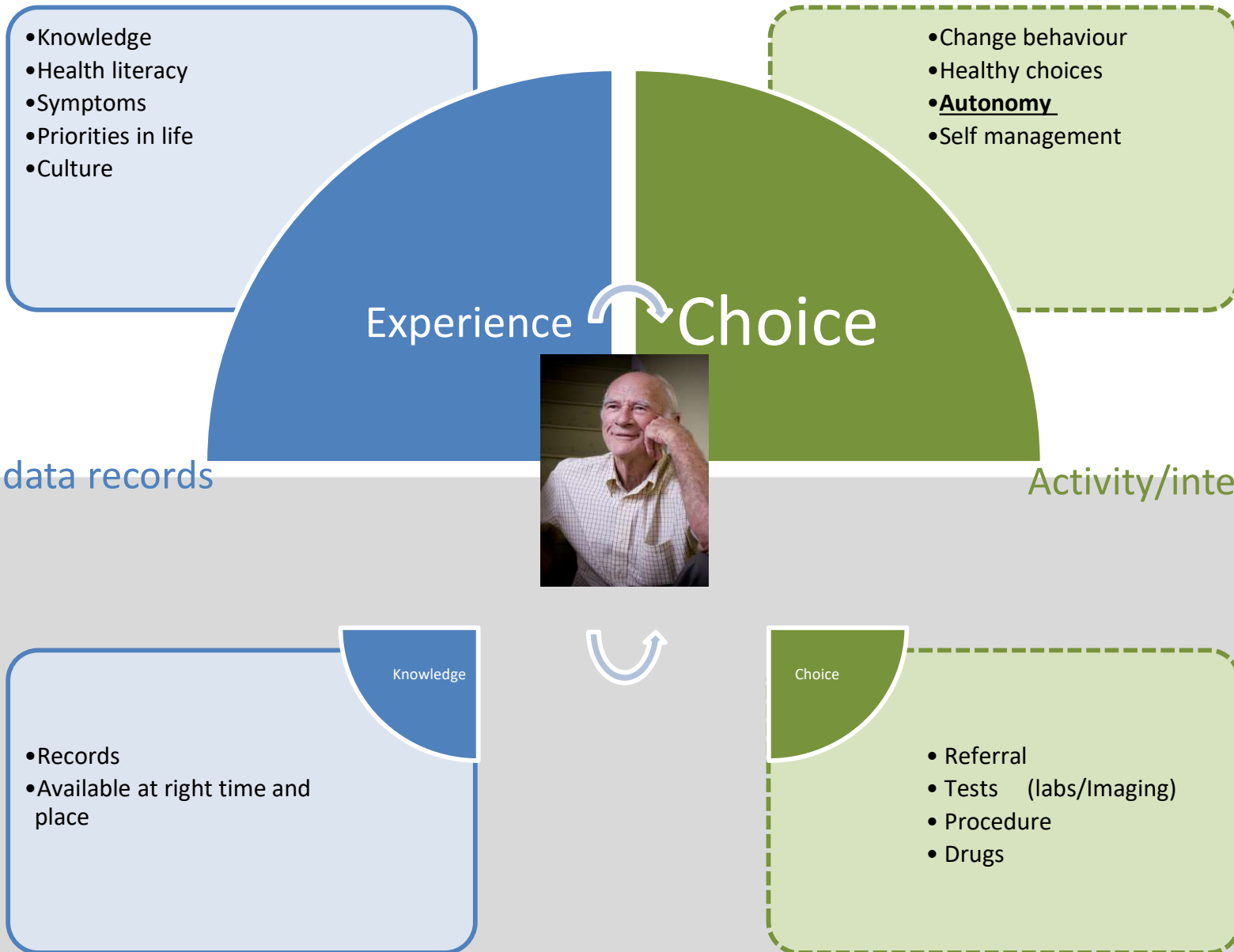
High resilience

Low resilience

Patient driven model

Knowledge data records

Activity/interaction



Knowledge/data/records

Activity/interaction/choice

VHU

- Knowledge
- Symptoms
- Priorities in life
- Culture

Health promotion

- Change behaviour
- **Self management**

High resilience



Follow up within 24 hours

1 care EHR

Cloud
standard
desktop

- Knowledge
- Health Records/medical/org
- **Access** and completeness Available at right time and place

Pathways

Adv care planning
CCM template
Shared care plan
A2D

- Referral
- Tests (labs/Imaging)
- Procedure
- Drugs
- ... all steps and coord can be poor

Low resilience

Testsafe

Concerto

Summary record shared

Int gp Audits

Healthlink MOPS CPD

Patient first

Localities

Cornerstone

Pro Extra

Dr Info

Healthlink ACC

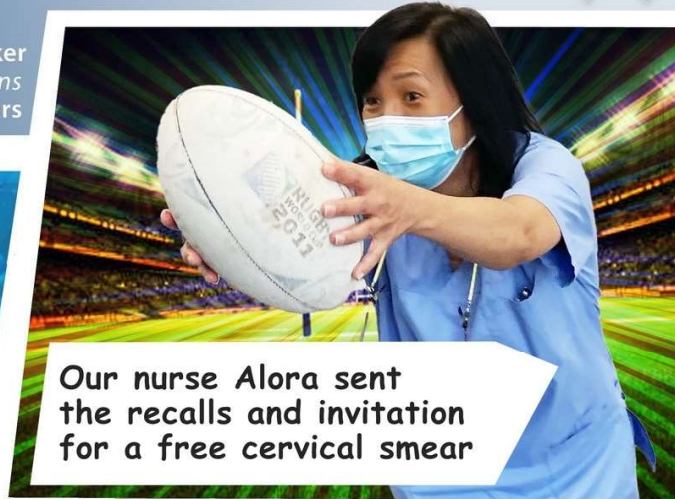
BPAC

Lets be positive!

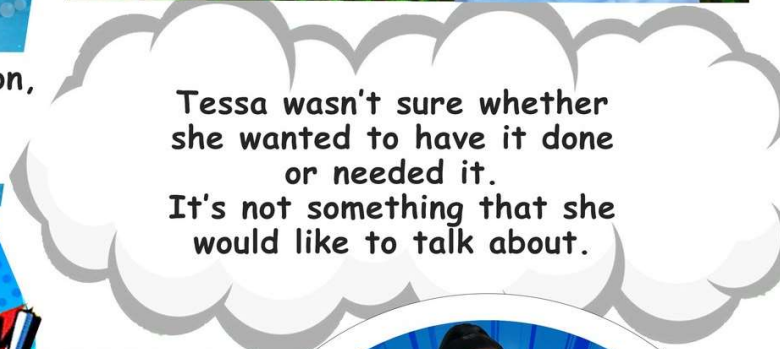




Tessa got the invitation, ready to make the appointment



Our nurse Alora sent the recalls and invitation for a free cervical smear



Here comes Dr Leach to the rescue!
<https://www.timetoscreen.nz/-cervical-screening/why-go/>



Dr Leach tackled the doubts and questions Tessa had, and she decided to look after



BEATING DIABETES TOGETHER

KICK-OFF SESSION




health care
with community at the heart

ProCare

PREKURE*

Papatoetoe
Family Doctors





*Congratulations to
Fiona who is now
diabetes free!*

A young child with curly hair is shown from the chest up, wearing a grey hoodie. They are holding a clear nebulizer mask over their nose and mouth. In the foreground, their hands are playing with colorful plastic blocks. The background is a blurred indoor setting with shelves.

TAMARIKI TALK

MANAGING RESPIRATORY SYMPTOMS

Come and join our group session
for parents/caregivers looking after
their under 5 years old.

**Saturday,
19th November 2022 at 1pm.**

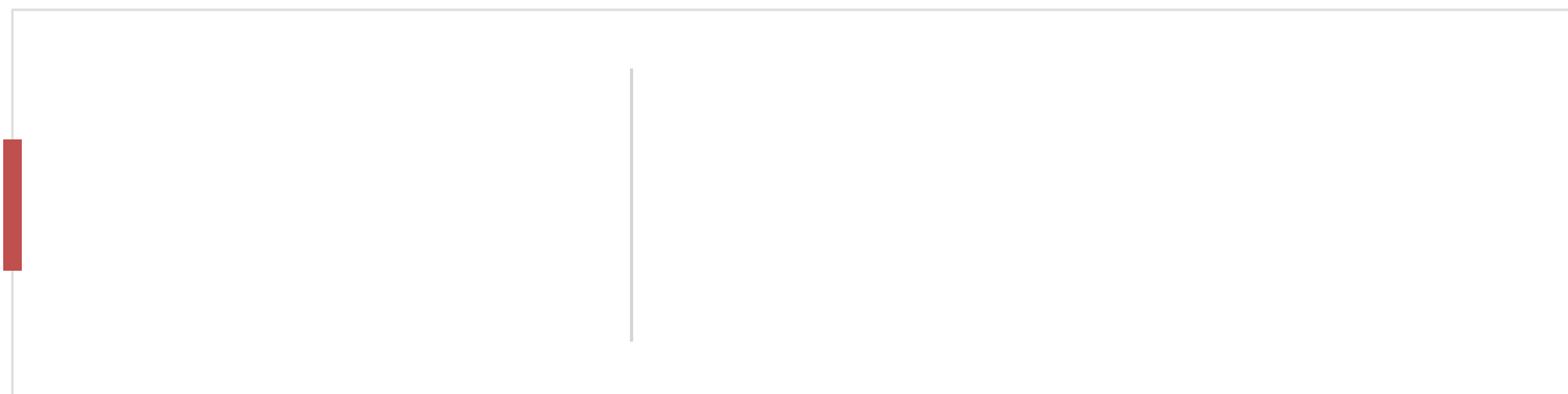
**Location:
The Health Hub Papatoetoe**

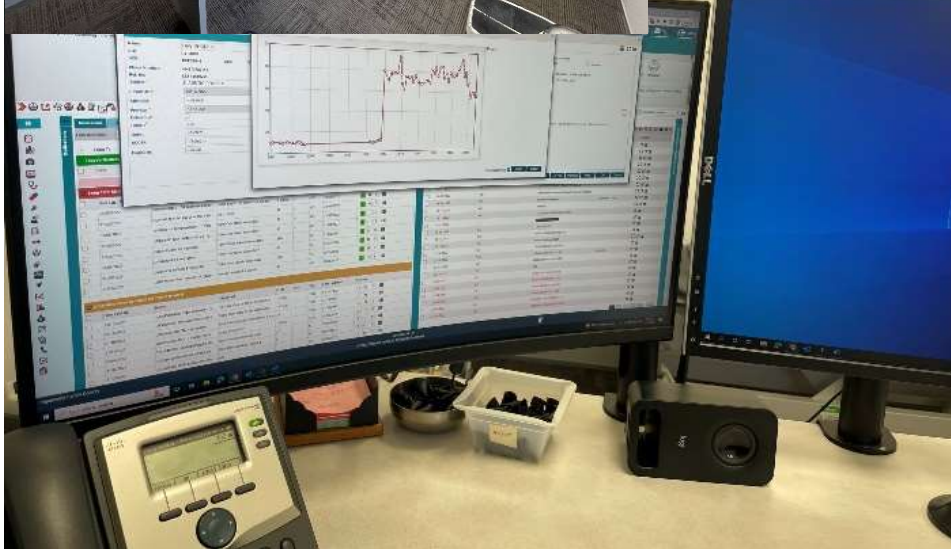
**REGISTER:
www.bit.ly/Tamariki-Talk**

Spaces are limited



See a
virtual GP
from 7am – 7pm
with CareHQ





Reporting and Population Health Mgmt

This feature supports the reporting of patient safety and quality data, public health data, and disease registries. It makes the reporting process less labour-intensive and time-consuming

Decision Support

A computerised decision support system that enhances clinical performance by providing drug alerts, other rule-based alerts, reminders, clinical guidelines and pathways. It also helps in improving drug dosing and drug selection. It can be used for chronic disease management, clinician work lists, diagnostic decision support, and automated real-time surveillance

Results Management

A feature that manages lab test results and radiology procedures results, does results reporting and results notification, and handles multimedia support—images, waveforms, pictures, sounds

Order Management

Computerised clinical order management (COM) for such areas as electronic prescribing, laboratory, microbiology, pathology, ancillary, nursing, supplies. Even with little or no decision support they can still improve workflow processes by eliminating lost orders and ambiguities caused by illegible handwriting, generating related orders automatically

Health Information and Data

A defined data set that includes medical and nursing diagnoses, a medication list, allergies, demographics, clinical narratives, and laboratory test results for access by care providers when needed

Administration

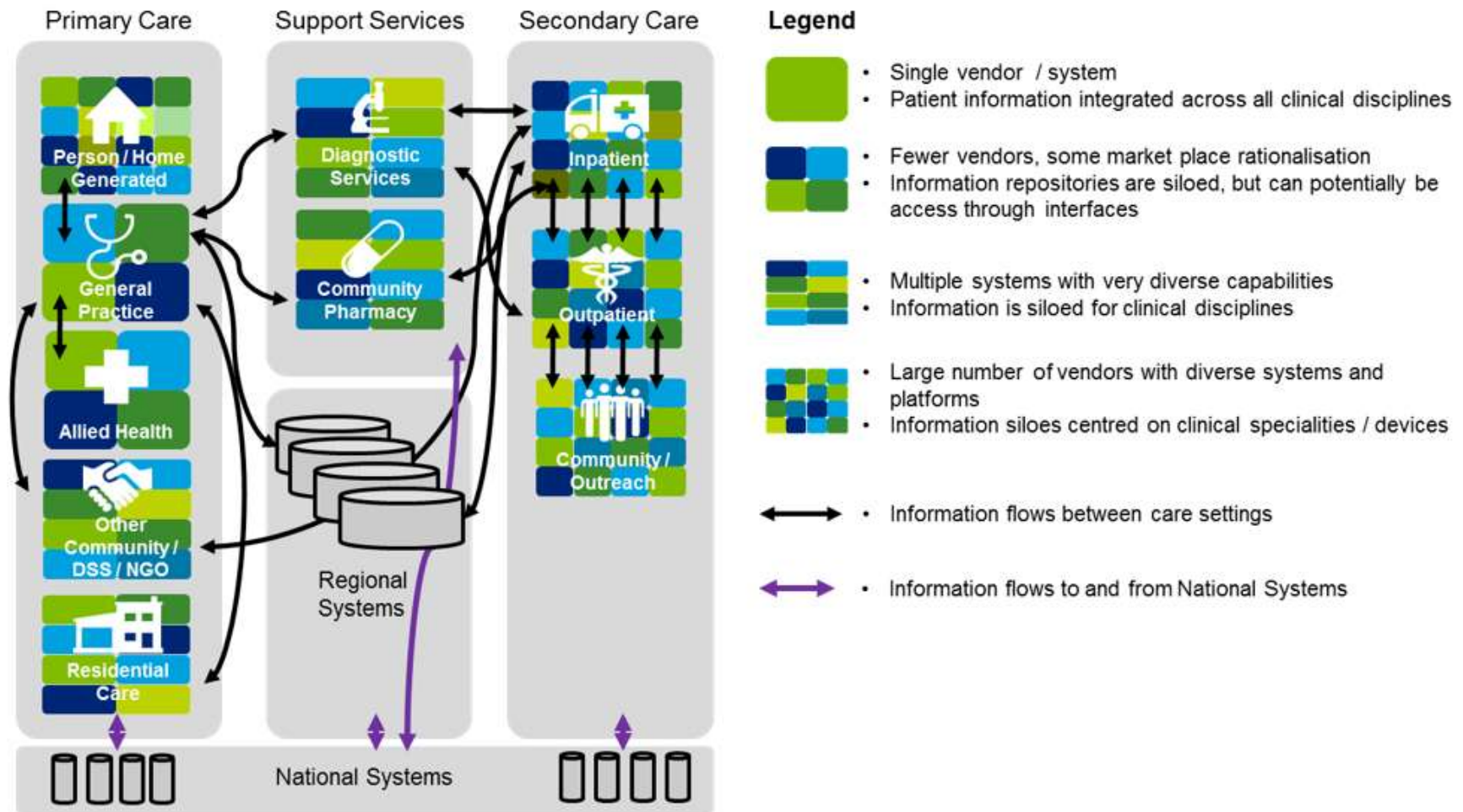
Administrative processes include electronic scheduling systems for hospital admissions, inpatient and outpatient procedures, and identifying eligible or potential eligible patients for clinical trials

Connectivity

Electronic communication can be between provider-provider, patient-provider, trading partners such as pharmacies, insurers, laboratory, radiology, and among team members for coordination. Electronic connectivity includes integrated medical record within a facility, within different facilities of the same healthcare system, and among different healthcare systems

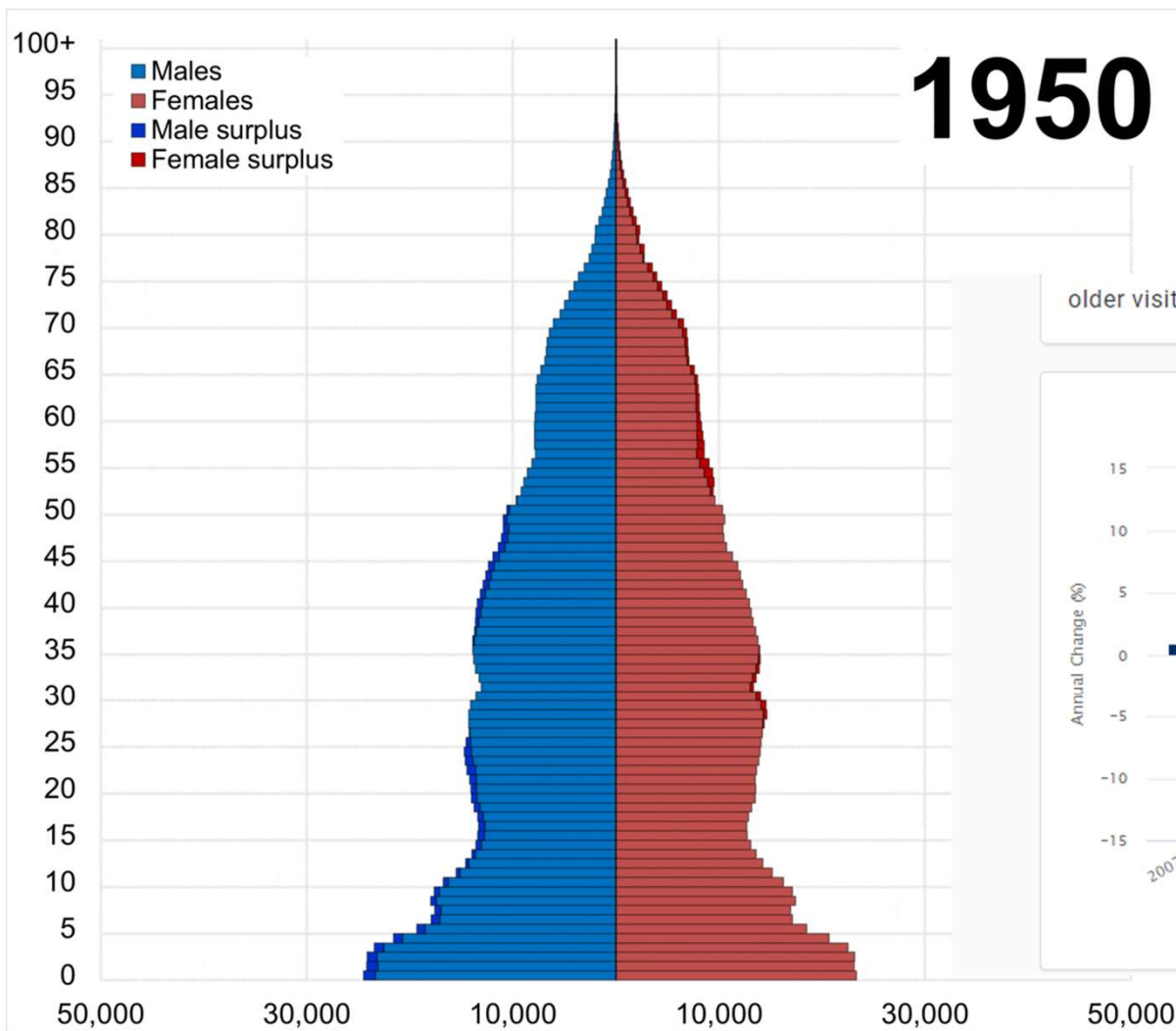
Patient Support

Patient support includes patient education, family and informal caregiver education, data entered by patient, family, and/or information for patient caregivers such as home monitoring



As this diagram illustrates, there is active point-2-point information flow between different practitioners across the healthcare system. With the development of regional solutions, there is more use of hub & spoke arrangements that allow information to be shared across multiple





older visited a GP at least once during 2020-21. 🔒



GRAPH

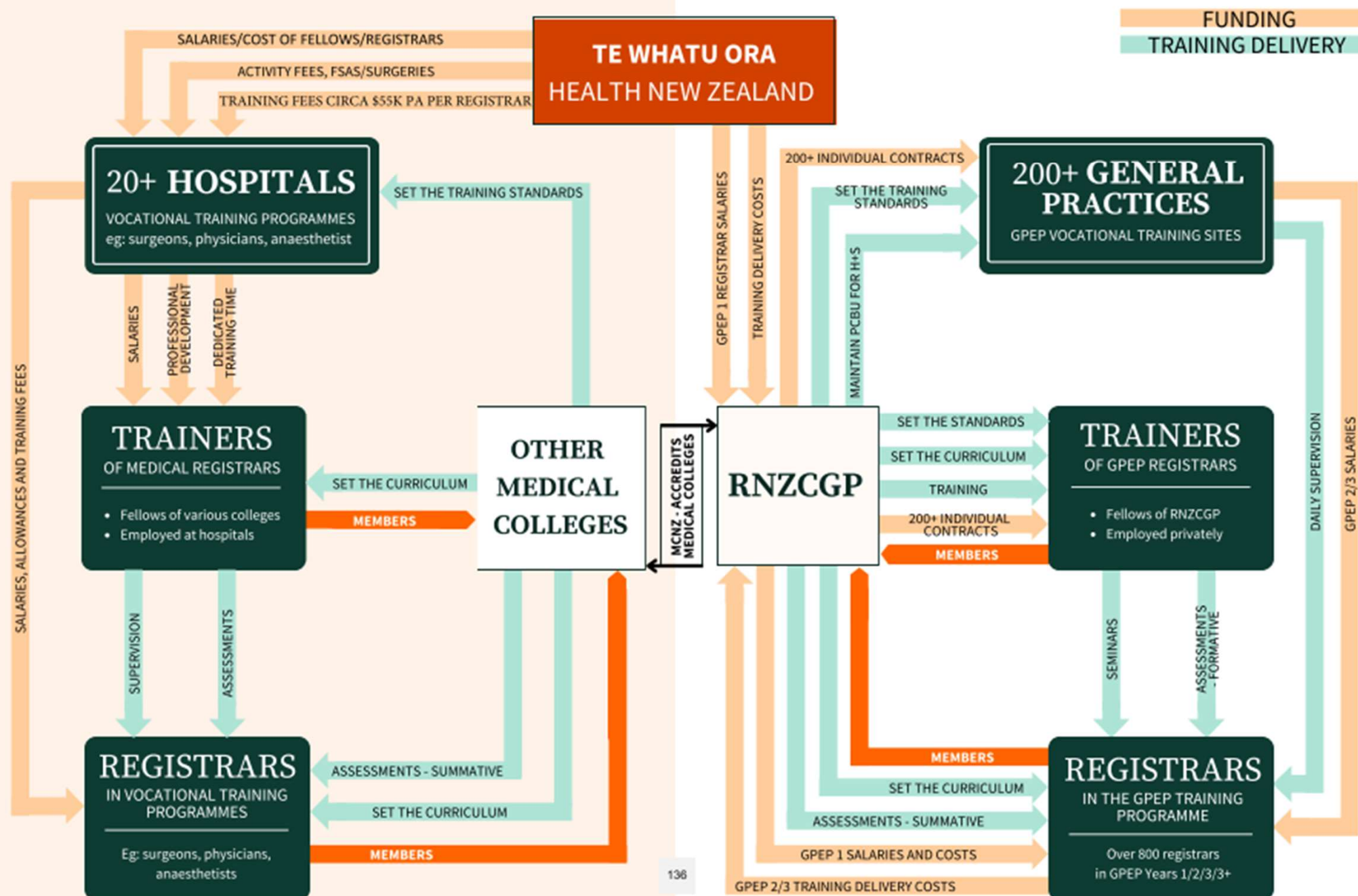
TABLE

New Zealand population by broad age group, at 30 June 1991–2021

At 30 June	0–14 years	15–39 years	40–64 years	65 years and over
1991	807,200	1,399,100	897,500	391,300
1992	814,300	1,402,500	915,300	399,600
1993	824,700	1,405,700	934,100	407,800
1994	835,300	1,412,200	956,600	415,900
1995	847,500	1,421,100	981,400	423,400
2021	968,600	1,745,400	1,589,500	819,100

	Clinical & Health Services Domain	Canadian Health System Domain	Project Management Domain	Organization and Behavioural Management Domain	Analysis and Evaluation Domain	Information Management Domain	Information Technology Domain
Master Level	Chief Clinical Information Officer	Chief Information Officer	Project Services Vice President	Chief Transformation Officer	Chief Knowledge Officer	Chief Privacy Officer	Chief Technology Officer
Expert Level	Clinical Informatics Director	eHealth Program Director eHealth Strategist	PMO Director Project Director	Change + Evaluation Services Director Process Improvement Director	Senior Methodologist	Standards Director Information Management Director	IT Director Enterprise Architecture Director
Proficient Level	Clinical Informatics Manager Clinical Informatics Specialist	eSafety Manager Sr Business Analyst Business Development Specialist	PMO Manager Program Manager Project Manager	Change Manager Process Improvement Specialist Engagement Mgr	Senior Information Analyst Outcomes Specialist	Privacy Specialist Data Architect Standards Specialist Standards Manager	Security Specialist Service Manager Solutions Architect
Competent Level	Clinical Informatics Analyst	Business Analyst eHealth Analyst eSafety Analyst	Project Analyst	Trainer Product Specialist Process Improvement Analyst	Information Analyst Benefits Evaluation Analyst	Data Integrity Analyst Privacy Analyst Standards Analyst	Senior Testing Analyst Technical Lead
Emerging Professional Level	Clinical Informatics Coordinator	Junior Business Analyst	Program Coordinator Project Coordinator	Training Coordinator Product Analyst	Research Coordinator	Privacy Coordinator Data Coordinator	Service Desk Analyst Testing Analyst

CURRENT VOCATIONAL TRAINING/FUNDING FLOWS



Long Term Medications

<input type="checkbox"/>	Date Last Rx	Name	Directions	Q / D	Rep	Pro.	Last Updated	Actions
<input type="checkbox"/>	02/12/2022	CareSens N Blood Glucos...	use tds	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Habitrol mint - nicotine 2 m...	use as directed	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	NovoRapid Penfill (insulin ...	Inject Twenty Unit three time...	3 Mon...	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	spironolactone 25 mg tablet	Take One tablet once daily	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Lantus SoloStar (insulin gl...	24 units in the morning and 2...	3 Mon...	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Jardiance (empagliflozin 2...	Take One tablet once daily	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Betalo CR (metoprolol su...	Take One tablet at night (up t...	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	metformin hydrochloride 5...	Take Two tablets twice daily	360	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Lipitor (atorvastatin (as cal...	Take One tablet once daily	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	omeprazole 20 mg capsule...	Take One capsule once daily	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	clopidogrel 75 mg tablet	take 1 tab daily po	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	nicorandil 10 mg tablet	Take One tablet once daily	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	rivaroxaban 15 mg tablet	Take One tablet once daily	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	metoprolol succinate 95 m...	once daily in the morning	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Betalo CR (metoprolol su...	Take One tablet at night	90	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Duride (isosorbide mononit...	Take 0.5 tablet once daily	45	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	furosemide 40 mg tablet	Take Three tablets at midday	270	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	furosemide 40 mg tablet	Take Six tablets in the morning	540	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Entresto 24/26 (sacubitril 2...	Take One tablet twice daily	180	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	Fatty Cream (healthE) - cet...	use as a mosituriser	500	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	cetomacrogol aqueous cre...	use as a soap	500	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	miconazole nitrate 2% (20 ...	use as needed tds	2	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	02/12/2022	BD Micro-Fine - insulin 29 ...	twice daily	100	--	KC	02/12/2022	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Interactions: CareSens N Blood Glucose (blood glucose indicator) diagnostic test: strip; Habitrol mint (nicotine (as bitartrate dihydrate) 2 mg) lozenge; NovoRapid Penfill (insulin aspart 100 international units/mL) injection: solution, 3 mL cartridge; spironolactone 25 mg tablet; Lantus SoloStar (insulin glargine 100 international units/mL) injection: solution, 3 mL prefilled injection device; Jardiance (empagliflozin 25 mg) tablet: film-coated, 1 tablet; Betaloc CR (metoprolol succinate 47.5 mg) tablet: controlled release, 1 tablet; metformin hydrochloride 500 mg tablet; Lipitor (atorvastatin (as calcium) 80 mg) tablet: film-coated, 1 tablet; omeprazole 20 mg capsule: modified release; clopidogrel 75 mg tablet; nicorandil 10 mg tablet; rivaroxaban 15 mg tablet; metoprolol succinate 95 mg tablet: modified release; Betaloc CR (metoprolol succinate 47.5 mg) tablet: controlled release, 1 tablet; Duride (isosorbide mononitrate 60 mg) tablet: extended release, 1 tablet; furosemide 40 mg tablet; furosemide 40 mg tablet; Entresto 24/26 (sacubitril 24.3 mg + valsartan 25.7 mg) tablet: film-coated, 1 tablet; Fatty Cream (healthE) (cetostearyl alcohol + liquid paraffin + white soft paraffin); cetomacrogol aqueous cream 90% (900 mg/g) + glycerol 10% (100 mg/g) cream; miconazole nitrate 2% (20 mg/g) cream; BD Micro-Fine insulin 29 gauge x 12.7 mm pen needle

Medicines	Explanation	Action	Severity	Evidence
atorvastatin (systemic) and miconazole (systemic/topical)	Miconazole (including the oral gel) might increase atorvastatin exposure which might lead to rhabdomyolysis.	Give the lowest possible statin dose. Advise patients to report any unexplained muscle pains or weakness.	Severe	Case reports
clopidogrel (systemic) and omeprazole (systemic)	Omeprazole might reduce the antiplatelet effects of clopidogrel. High-dose omeprazole slightly decreases the exposure to the active metabolite of clopidogrel, but low-dose omeprazole only has a negligible effect. Clopidogrel slightly increases omeprazole exposure in CYP2C19 extensive metabolisers.	Use only where the risk of gastrointestinal bleeding outweighs the risk of clopidogrel treatment failure. Consider giving an H2-receptor antagonist (not cimetidine) or giving dexlansoprazole, rabeprazole, or lower doses of pantoprazole or lansoprazole.	Moderate	Formal study
empagliflozin (systemic) and furosemide (systemic)	Empagliflozin might increase the risk of hypotension and dehydration in patients taking loop diuretics. Empagliflozin is not expected to affect the pharmacokinetics of diuretics.	Monitor concurrent use for excessive fluid and electrolyte loss, and hypotension.	Moderate	Theoretical
empagliflozin (systemic) and spironolactone (systemic)	Empagliflozin might increase the risk of hypotension and dehydration in patients taking potassium-sparing diuretics.	Monitor concurrent use for excessive fluid and electrolyte loss, and hypotension.	Moderate	Theoretical
insulin (systemic) and metoprolol (systemic)	Some beta blockers may delay or prolong the recovery response to hypoglycaemia in diabetics using insulin, but severe hypoglycaemia, hypertension and bradycardia is rare. Beta blockers may also mask some of the warning signs of hypoglycaemia.	Monitor concurrent use and adjust the insulin dose as necessary. Cardiospecific beta blockers (such as metoprolol) are less likely to interact. Warn patients about the possible absence of hypoglycaemic warning symptoms (such as tremor, tachycardia).	Severe	Formal study
valsartan (systemic) and spironolactone (systemic)	The concurrent use of angiotensin II receptor antagonists and spironolactone could increase the risk of hyperkalaemia, which if severe may be life-threatening, particularly in those with diabetes and/or renal impairment.	Use lowest possible doses of both drugs (UK); the spironolactone dose should not exceed 25 mg daily. Monitor potassium and renal function closely; concurrent use should be stopped, or interrupted, if hyperkalaemia occurs. Angiotensin II receptor antagonists should not be used with spironolactone in patients with marked renal impairment.	Severe	Case reports
atorvastatin (systemic) and omeprazole (systemic)	Omeprazole has been reported to cause polymyositis when given with atorvastatin. The general relevance is unknown.	Bear an interaction in mind in the case of an unexpected response to treatment.	Severe	Case reports

Pharmacogenomics (PGx) supported Prescribing

Pharmacogenomics (PGx) testing enables GPs to test for specific genetic changes to predict whether a patient may have a normal response, a poor response or a higher risk of side effects for many medications.



Psychiatry



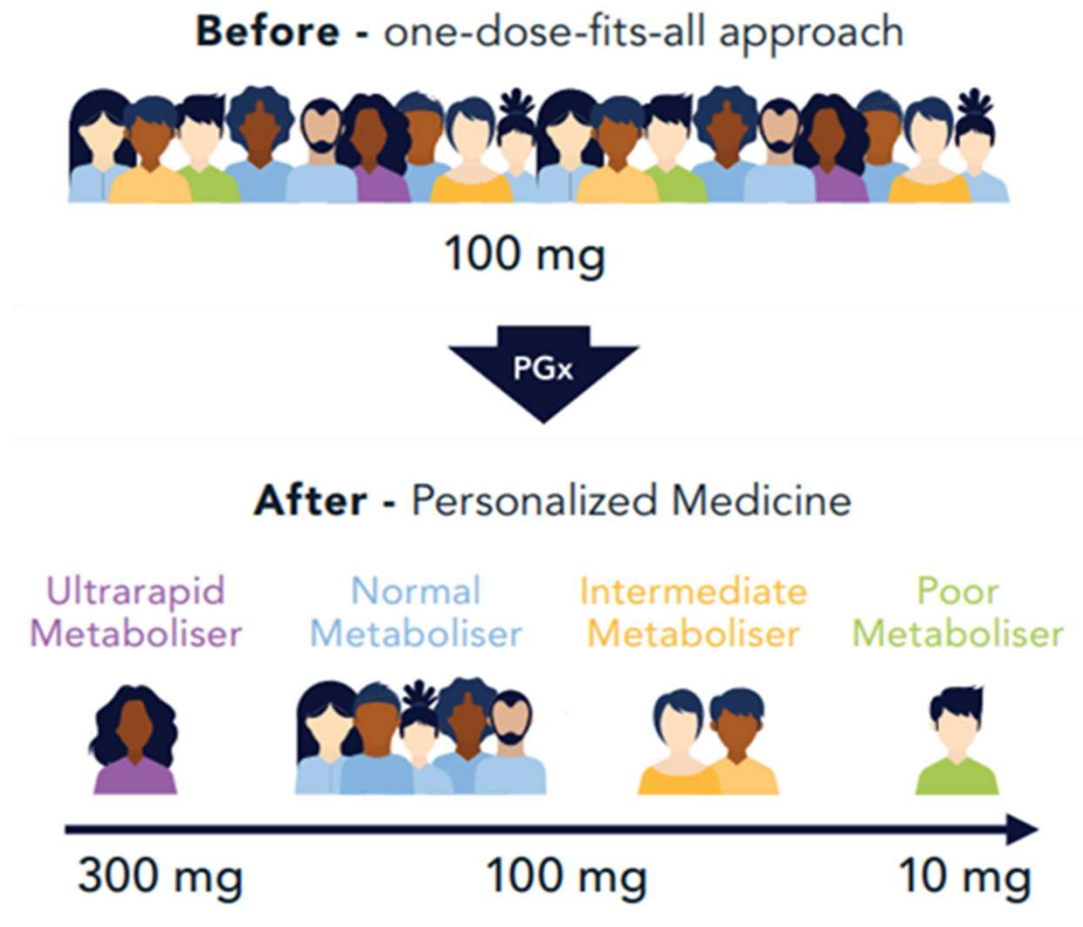
Cardiology



Pain management



Gastroenterology



Opportunity

But not if we just drift ...

