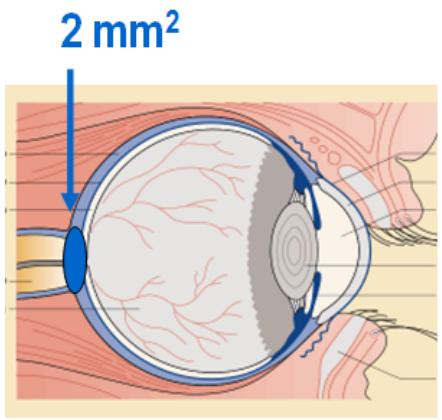
ACES fostering sustainable health care

Tays

Health Tuesday, Business Finland, January 7, 2020

Professor Anja Tuulonen
Tays Eye Centre, ACES Project Leader
Tampere University Hospital, Finland

Leading two univertsity eye clinics for 25 years



Clinical work & Research
1980 – 1983 –

Leadership
1991 –

Vision

Outcome

Individuals with any disease have

- **minimal disability / harm**
- **best possible well-being**

Costs

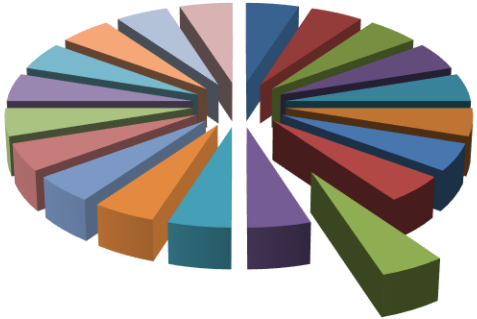
- **within an *affordable** healthcare system.**

*** Affordable to patients, citizens (tax-payers) and society**

Tays

In the world of finite (tax) resources

How to share the cake equally and cost-effectively?

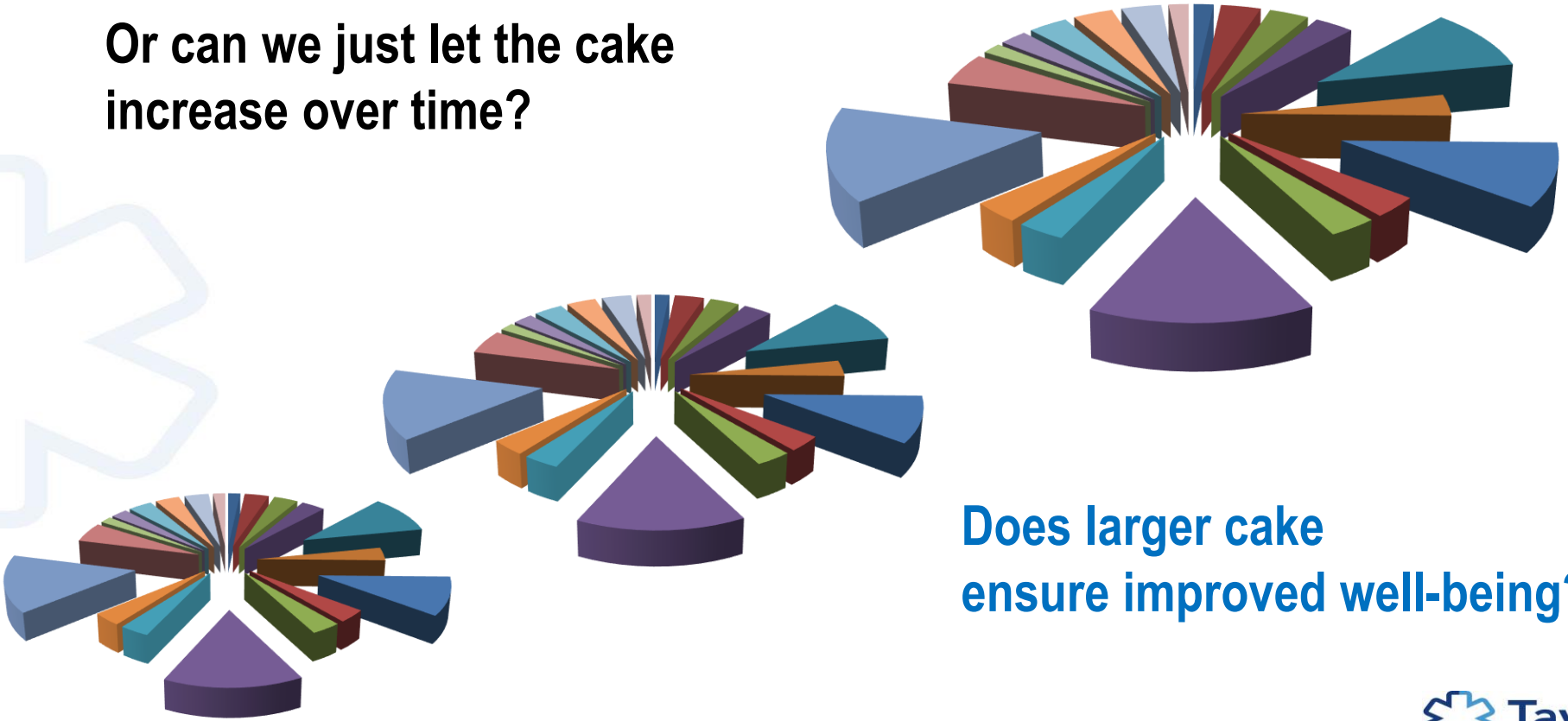


Whom should we allow to eat more?
Why?

The same resource cannot be spent twice

Total costs will increase *if nothing will be abandoned*.

Or can we just let the cake increase over time?



Does larger cake ensure improved well-being?

Western countries

- spend more in health care
- produce more services than ever before

Citizens

- are healthier
- live longer than ever before

Demand and costs increase exponentially

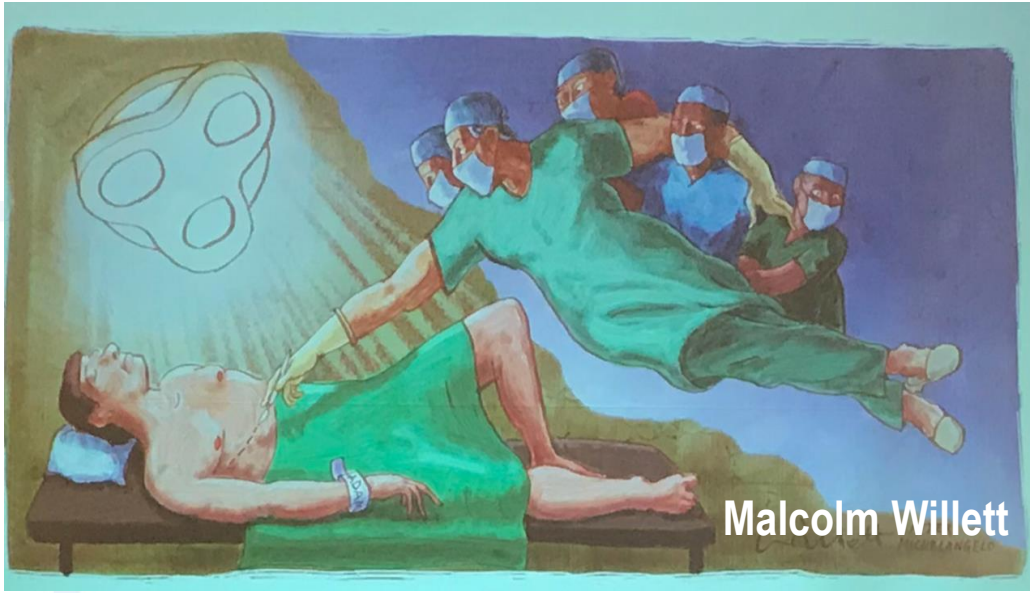
Risto Pelkonen

Tays

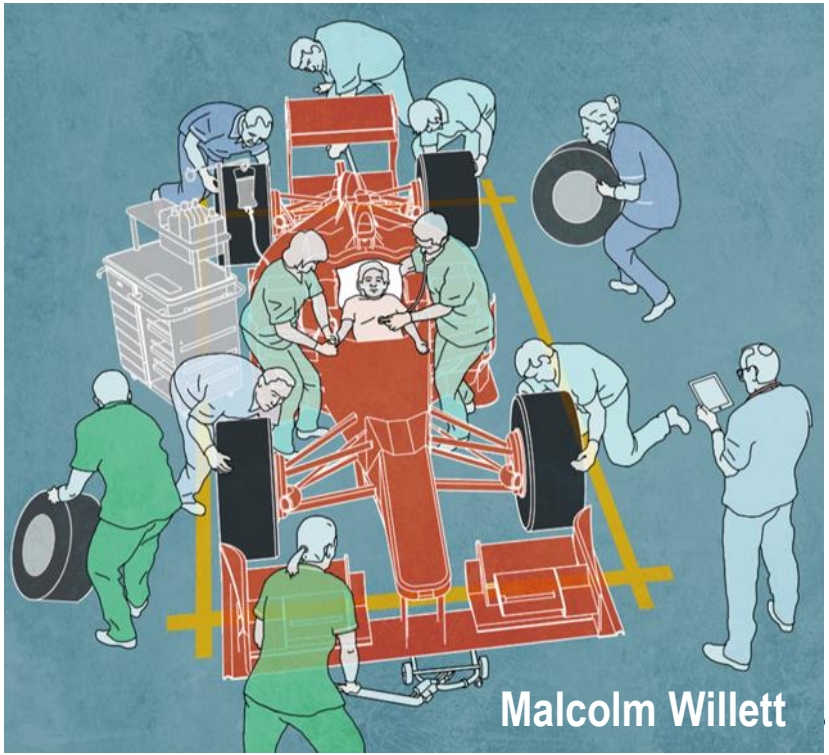
How to Choose the Right Things to Do and Do Them Right

Who has the power to define what is ’right’?

Physicians?



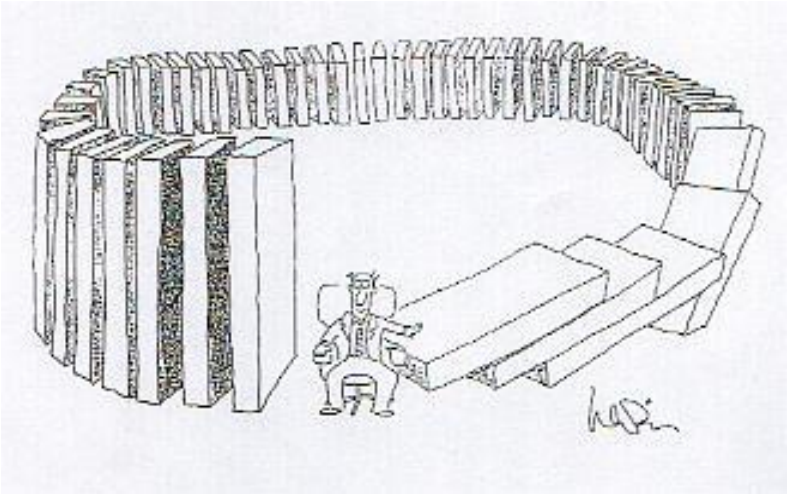
Patients?



Citizens have different values as

- **Patients**
- **Tax-payors**
- **Voters in politics**

In the long run everything is both cause and effect



We are both cause of the problem and *the solution*.

Automation in Care and Evaluation of System

- **In collaboration of all five university eye clinics**
- **Supported by Business Finland**

Elämän tähden

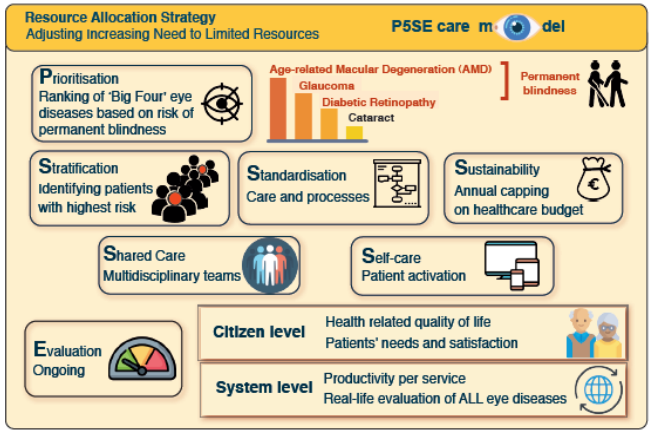
P5SE

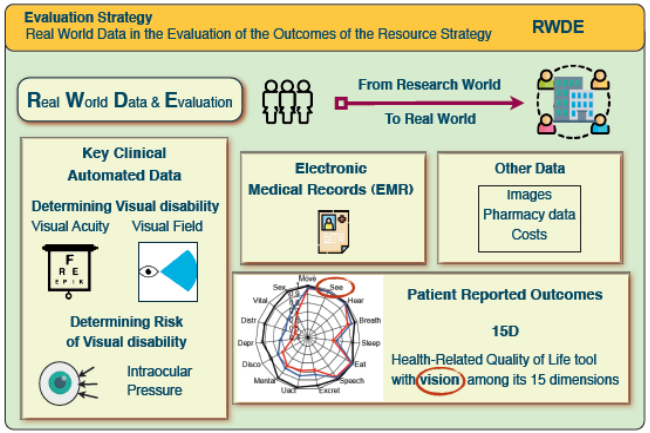
RWDE

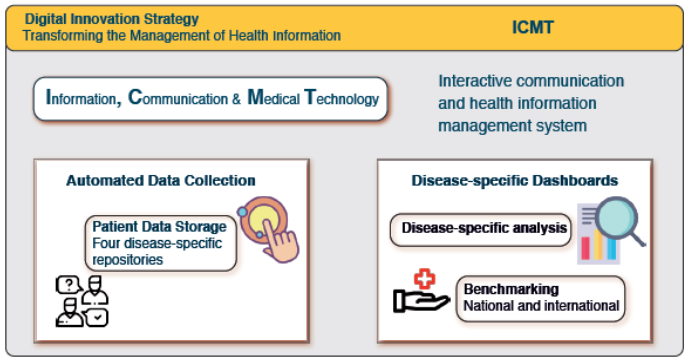
ACES

Automation in Care and Evaluation of System

A Collaboration of All Five Finnish University Eye Clinics







Tays Eye Centre
Tampere University Hospital

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REFERENCE SITE

BUSINESS FINLAND

ACES: Coordination by the Tays Eye Centre, Tampere and in collaboration with the Finnish University Eye Clinics of Helsinki, Turku, Oulu and Kuopio | Research World = Randomized Controlled Trials (RCT) | Real World = Benchmarking Controlled Trials (BCT)

Image accreditation: https://www.flaticon.com/

ICMT

’Big Four’ account 70% of eye diseases

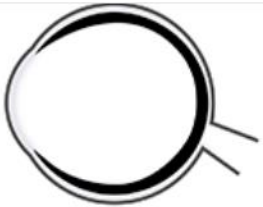
1 Age-related degeneration

100 000 treatments

2 Glaucoma

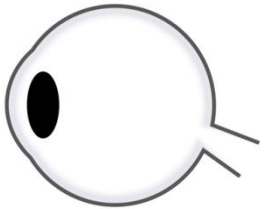
100 000 patients

3 Diabetes



100 000 images

4 Cataract



55 000 operations

Three giants cause permanent blindness, cataract does not

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EIP AHA Commitment
B3 Action Group Integrated Care

Tays Eye Centre
Tampere University Hospital

Number 1 in 2015
National Benchmarking
of Eye Services

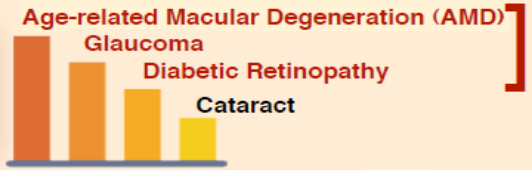
P5SE model

- **P** rioritize
- **1 S** egment
- **2 S** tandardize
- **3 S** ustainability
- **4 S** hared care
- **5 S** elf-care
- **E** valuate in real-life

Adjusting Increasing Need to Limited Resources

P5SE care m del

Prioritisation
Ranking of 'Big Four' eye diseases based on risk of permanent blindness (progression)



Stratification
Identifying patients with highest risk

Standardisation
Care and processes

Sustainability
Annual capping on healthcare budget

Shared Care
Multidisciplinary teams

Self-care
Patient activation

Evaluation
Ongoing and multi-level

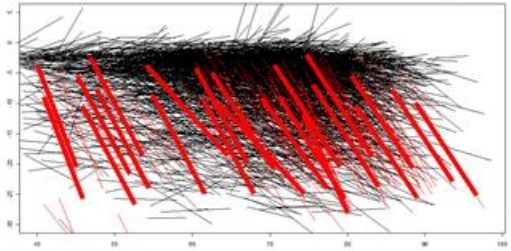
Citizen level
Health related quality of life
Patients' needs and satisfaction

System level
Productivity per service
Real-life evaluation of ALL eye diseases

Example of segmentation and standardization in glaucoma

0.5 mill. visual fields

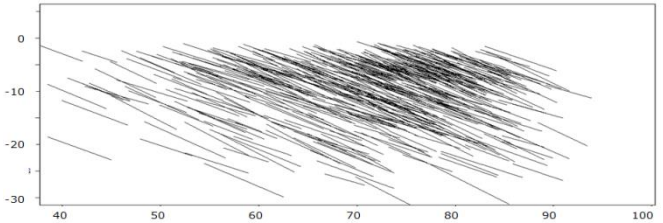
76 % stable



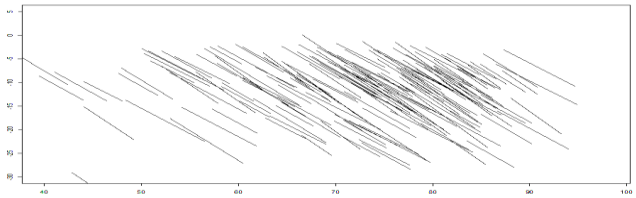
24 %

Rapidly progressing cases

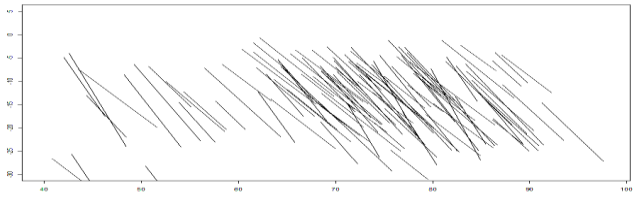
16 %



5 %



3 %



Courtesy of Dave Crabb, 2015 EVER

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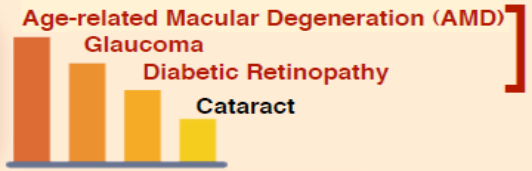

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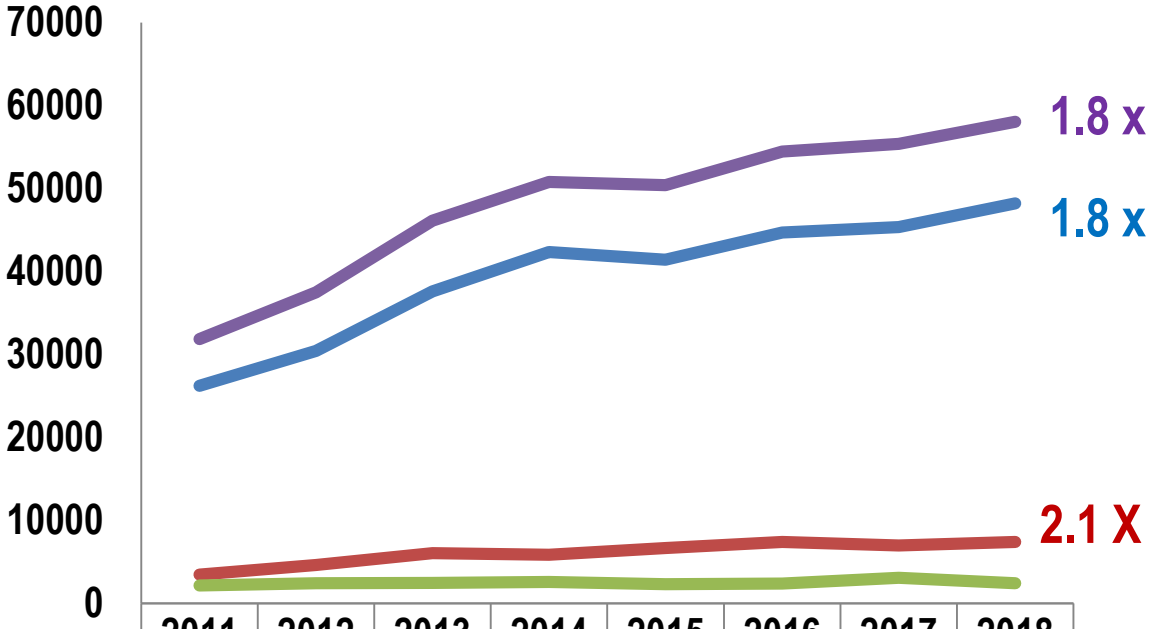
Productivity per service
Real-life evaluation of ALL eye diseases

Tays production ~doubled in 2011-18

Resource Increase

Costs 13 %

Personnel 11 %



	2011	2012	2013	2014	2015	2016	2017	2018
Outpatient visits	26232	30431	37613	42345	41414	44694	45338	48201
Surgical Procedures	3460	4626	6067	5855	6682	7388	6983	7405
Bed days	2173	2441	2453	2598	2323	2374	3072	2426
Total	31865	37498	46133	50798	50419	54456	55393	58032

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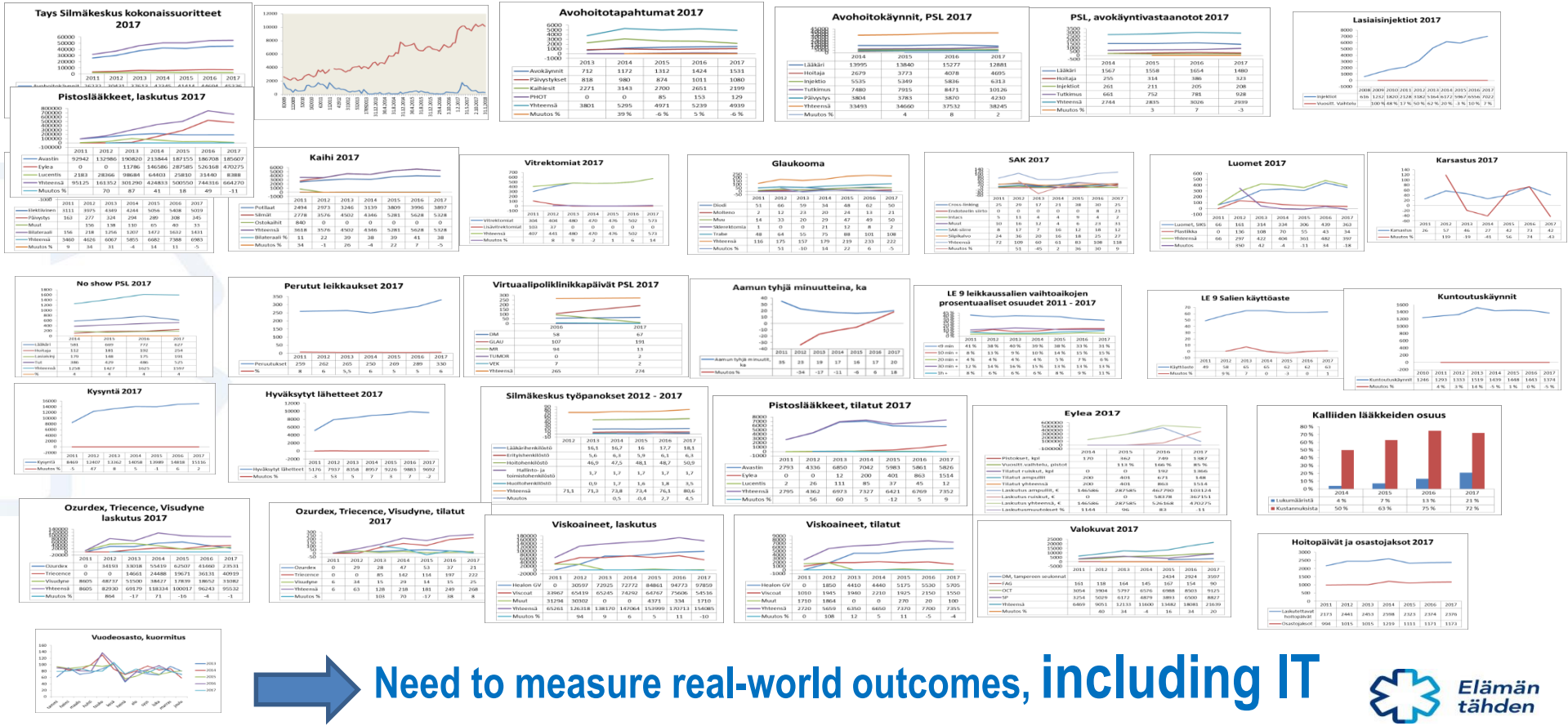
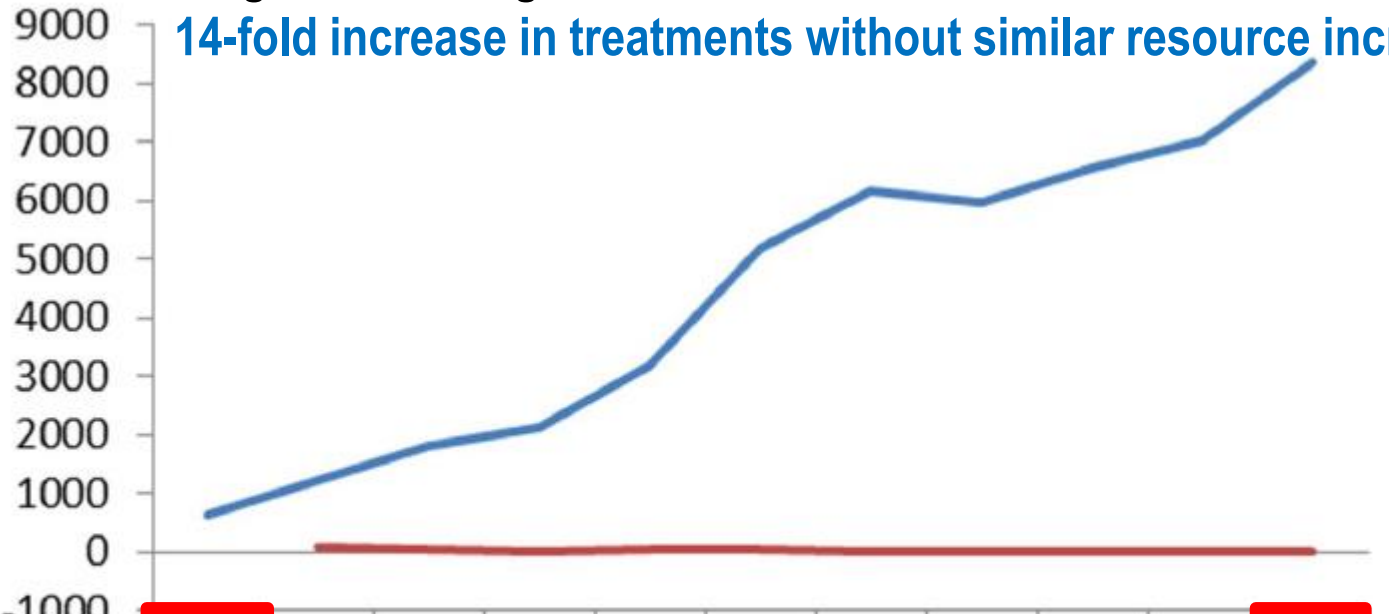
However, increase in production is *not* enough



Need to measure real-world outcomes, including IT

#1 Age-related degeneration - 60 % of blindness in the elderly

14-fold increase in treatments without similar resource increase



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Injektiot	616	1232	1820	2128	3182	5164	6172	5967	6556	7022	8369
Muutos %		100	48	17	50	62	20	-3	10	7	19

Tays

Who is ’right’?

6-fold differences in AMD drug costs in Finland

About the same number of injections in 2017 (85 000)

- **In Finland for 5.5 million – population**
- **In Sweden for 10 million – population**

Lumberjack measures output

By the size of stack of wood - *Not* by comsumption of petrol in his chain saw.

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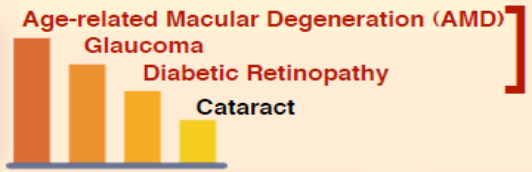

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Real World Data and Evaluation (RWDE)

Evaluation Strategy
Real World Data in the Evaluation of the Outcomes of the Resource Strategy

RWDE

Real World Data & Evaluation

From Research World

To Real World

Key Clinical Automated Data

Determining Visual disability

Visual Acuity

Visual Field

Determining Risk of Visual disability

Intraocular Pressure

Electronic Medical Records (EMR)

Other Data

Images
Pharmacy data
Costs

Patient Reported Outcomes

15D

Health-Related Quality of Life tool with **vision** among its 15 dimensions

Elämän tähden

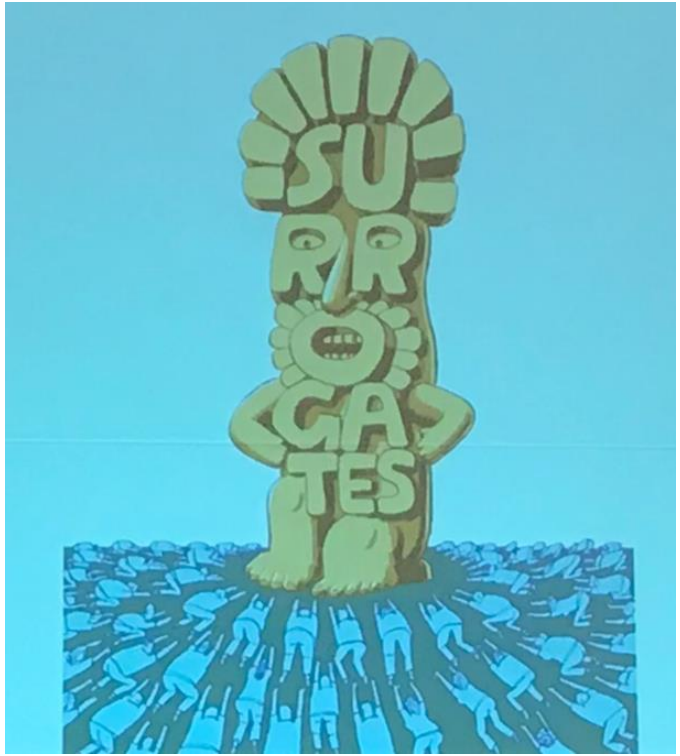
Measure of every-day cost-effecteviness in all eye patients in the same way

1. Minimization of permanent visual disability
2. Facilitating well-being
3. Sustainability (affordable health care system)

1. Central and peripheral vision
2. Health related quality of life
3. Costs

Disability defined by
- **central &**
- **peripheral**

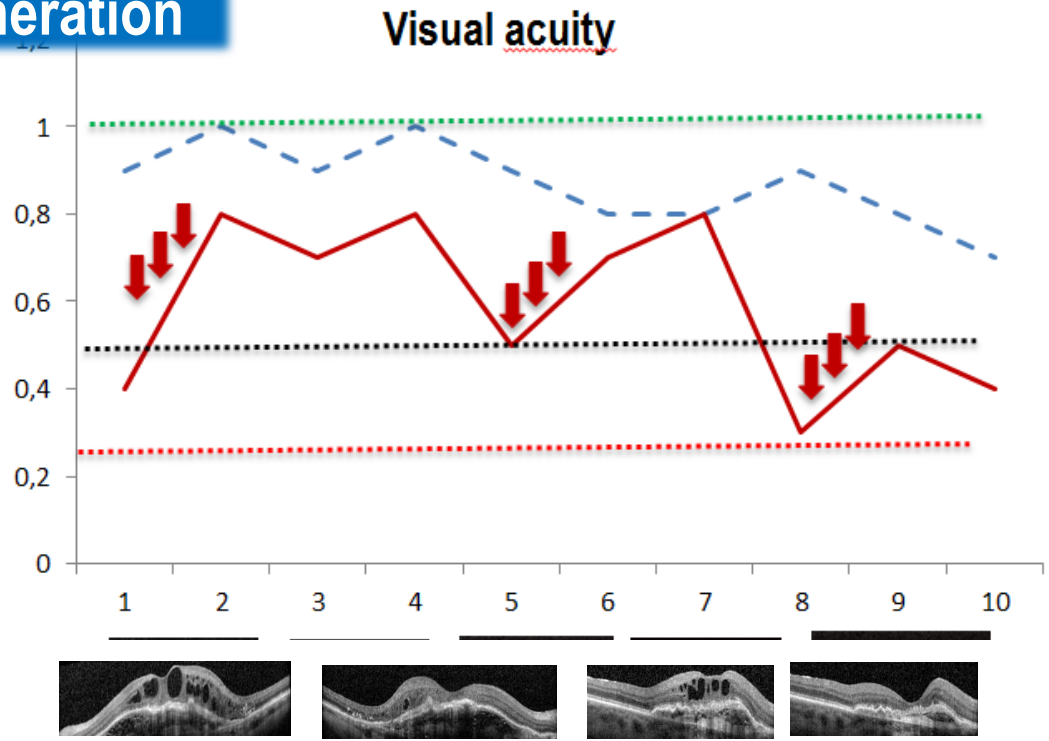
vision



Malcolm Willett

Automatically
to data base

Invidual patient: Wet degeneration

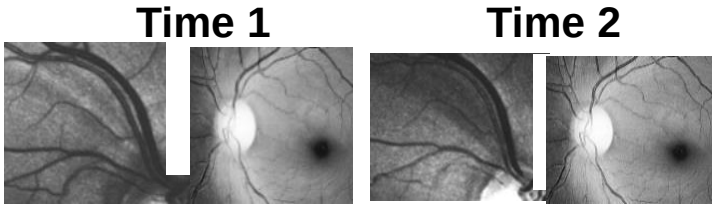


Right
Left
Normal
Driving threshold*
Visual disability*

Open by clicking the icons

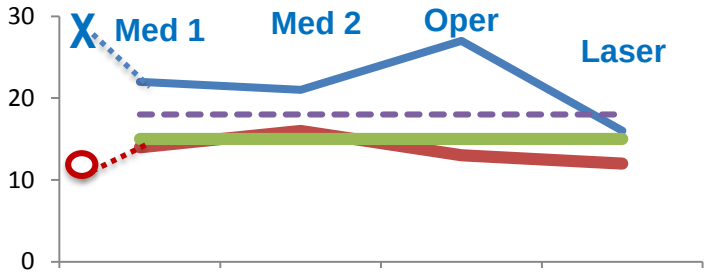
Tays

Glaucoma



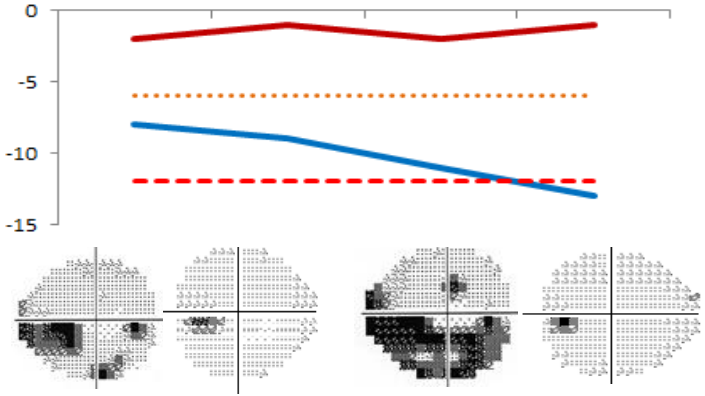
mmHg

Untreated eye pressure



Right
Left
Ideal
Increase in therapy required

Periheral vision

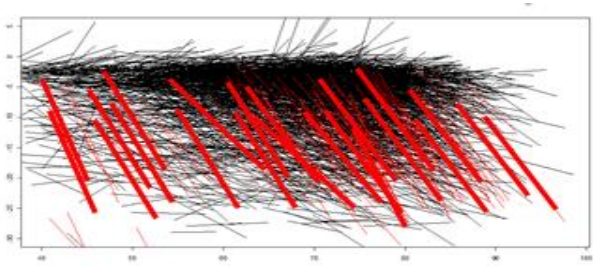


Right
Left
Moderate damage
Severe damage

Open by clicking the icons

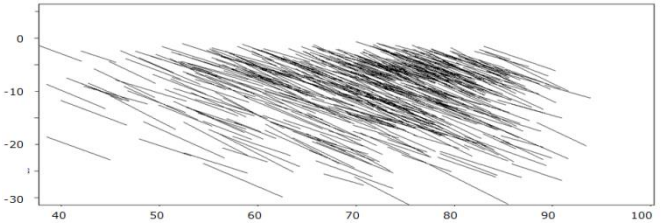
Elämän tähden

Consolidation of invidual patients' data

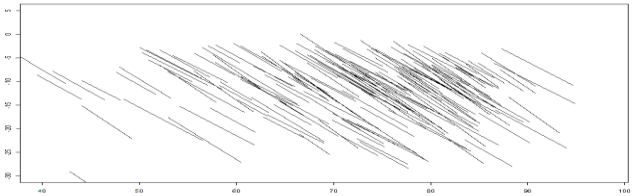


24 %

16 %



5 %



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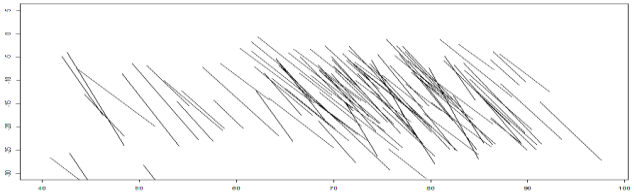

Courtesy of Dave Crabb, 2015 EVER

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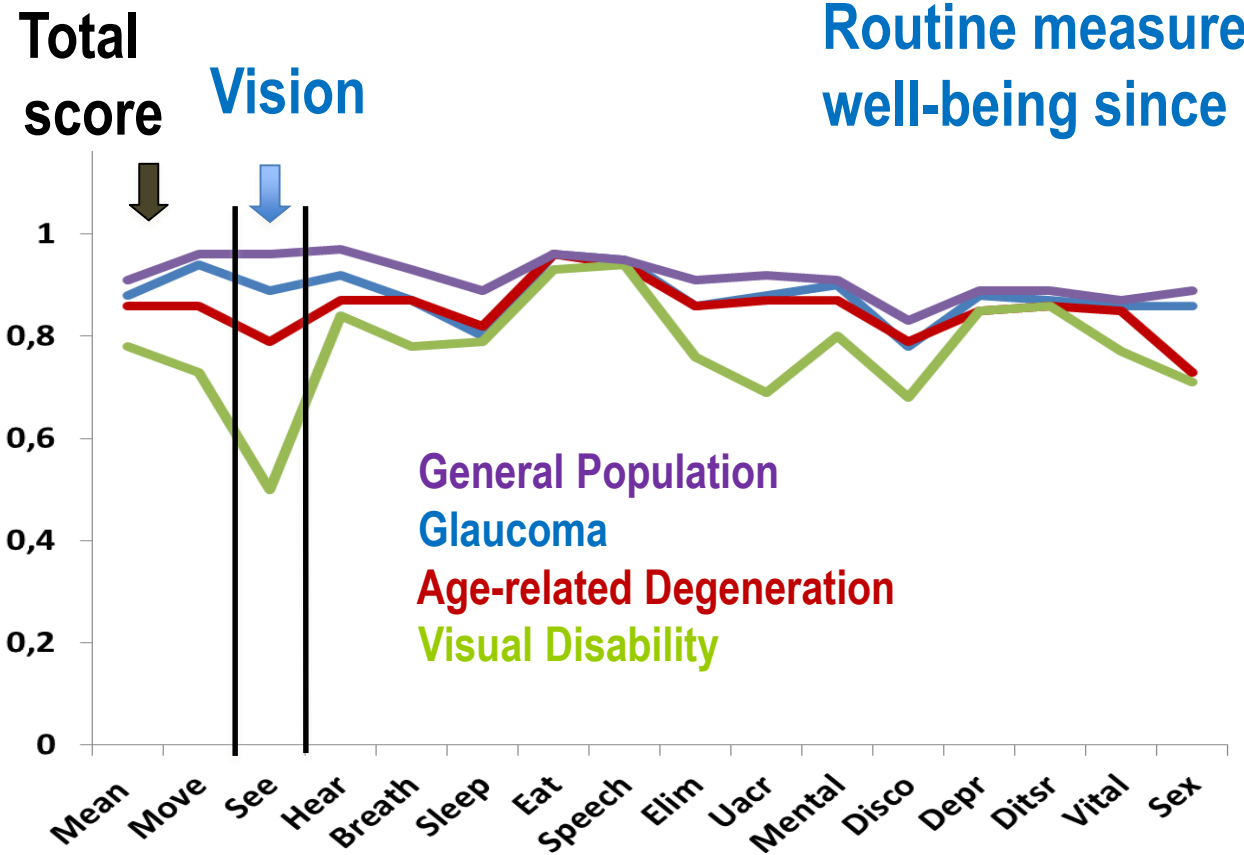
Quality of Life (15D)

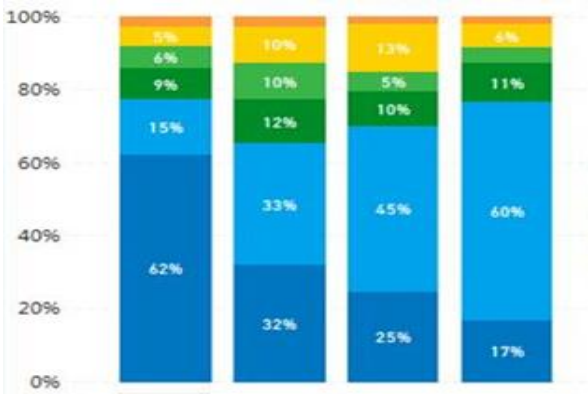


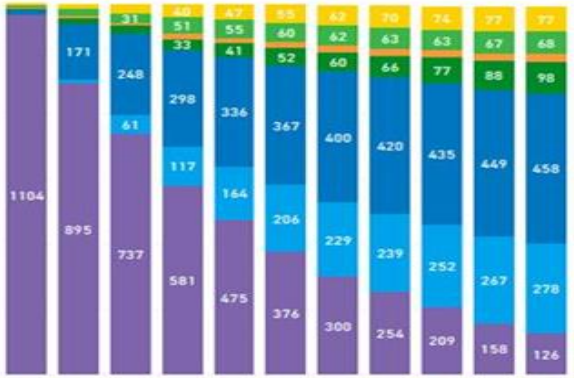
Routine measure of well-being since 2019

Tays

Dashboards for the Big 4 eye diseases per unit + (inter)national level

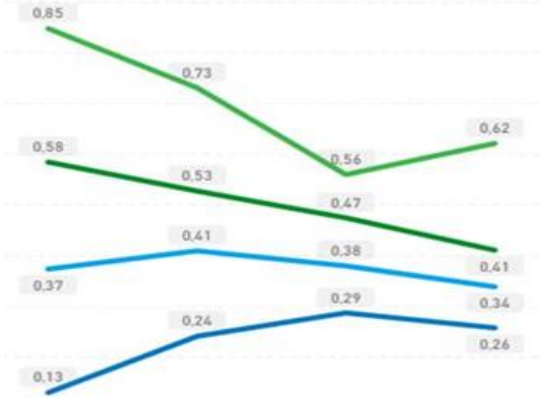
Age-related degeneration

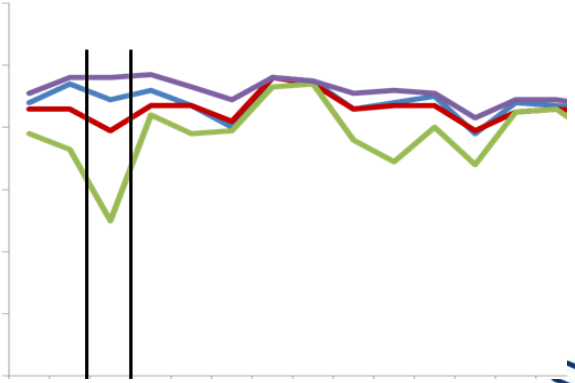




Glaucoma

Diabetes





Cataract

Tays Silmäkeskus

Business Finland's funding Innovativive Public Procurement

Digital Innovation Strategy
Transforming the Management of Health Information

ICMT

Information, Communication & Medical Technology

Interactive communication and health information management system

Automated Data Collection

Patient Data Storage
Four disease-specific repositories

Disease-specific Dashboards

Disease-specific analysis

Benchmarking
National and international

Tays Silmäkeskus

Both details

Big picture

Seeing the forest and the trees

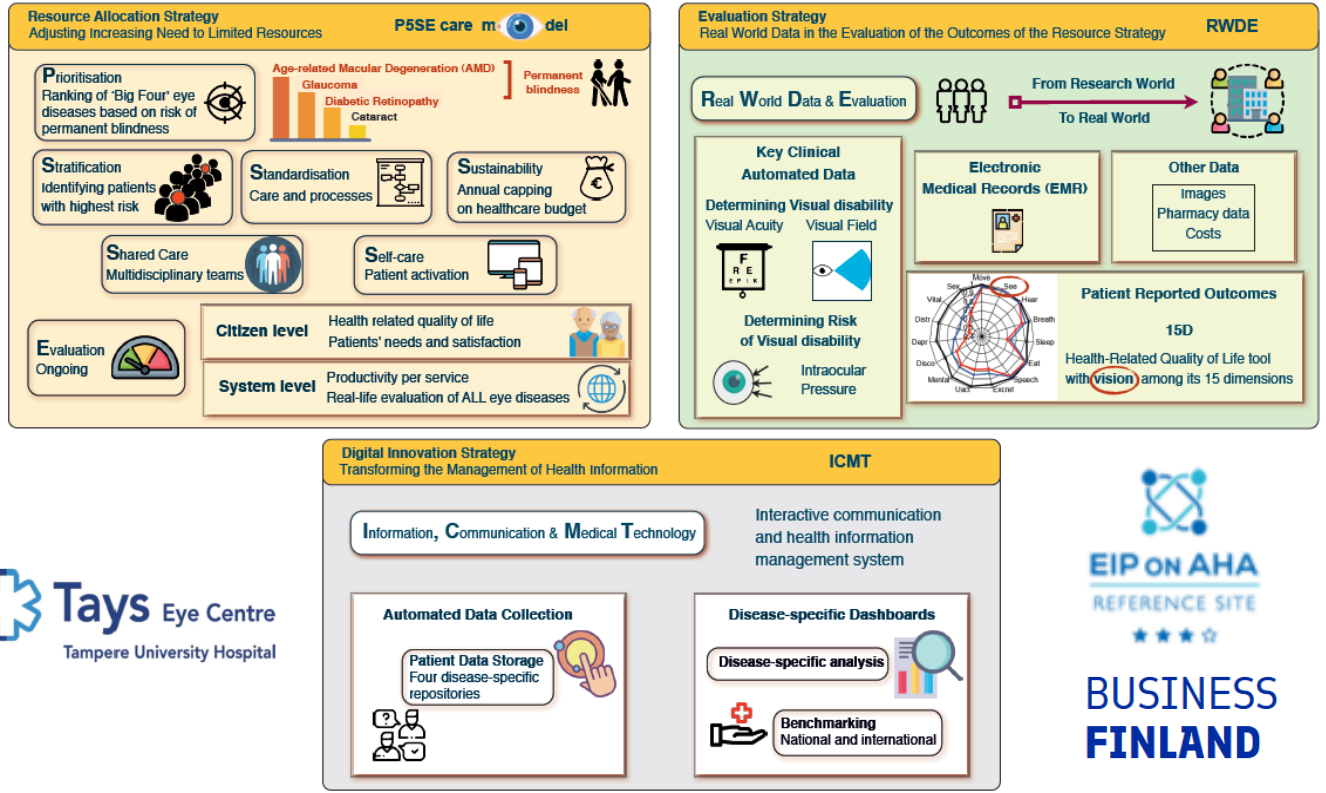
P5SE

RWDE

ACES

Automation in Care and Evaluation of System

A Collaboration of All Five Finnish University Eye Clinics



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Reference Site –status 2016-18 * P5SE
2019-21 *** ACES

EI PAHA Commitement

European Innovation Partnership on Active and Healthy Aging

Tays

Summary

Adequate and equal
health services

Invitation: Together We Will See Further

Citizens

Patients

Professionals

Disruptive innovators

Politicians

Authorities

Decision makers

Media

Choose the Right Things to Do – Do Them Right

Tays