BACCH-BACAPH
Improving Services Series

Understanding health and disease
Pathogenesis and salutogenesis

NHS Long Term Plan
Improving Services Series

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Why is this important?

• Underpins life course approaches – positive and negative determinants.

• Also important for service pathways.

• Creates a shared approach within integrated health systems.
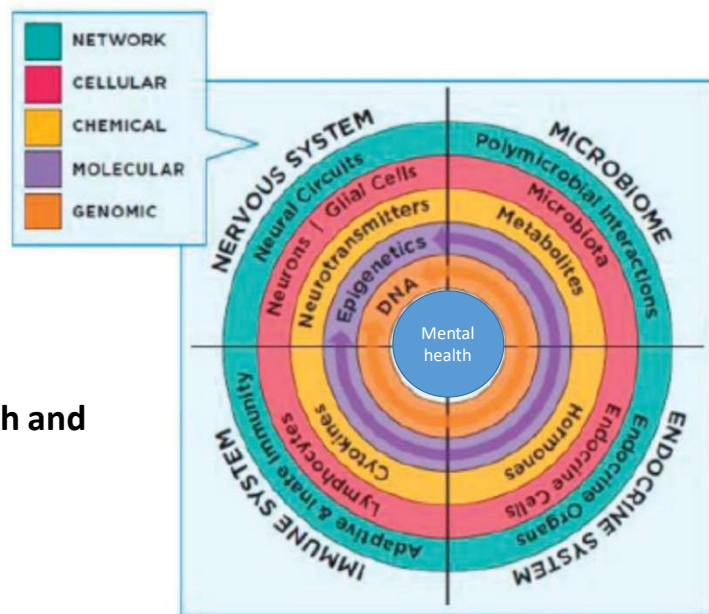
• Brings synergy to the whole system.

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Content - learning

- Epidemiological concepts
- Introduces pathogenesis and salutogenesis
- Application for children and families
- Structuring interventions – populations and individual levels
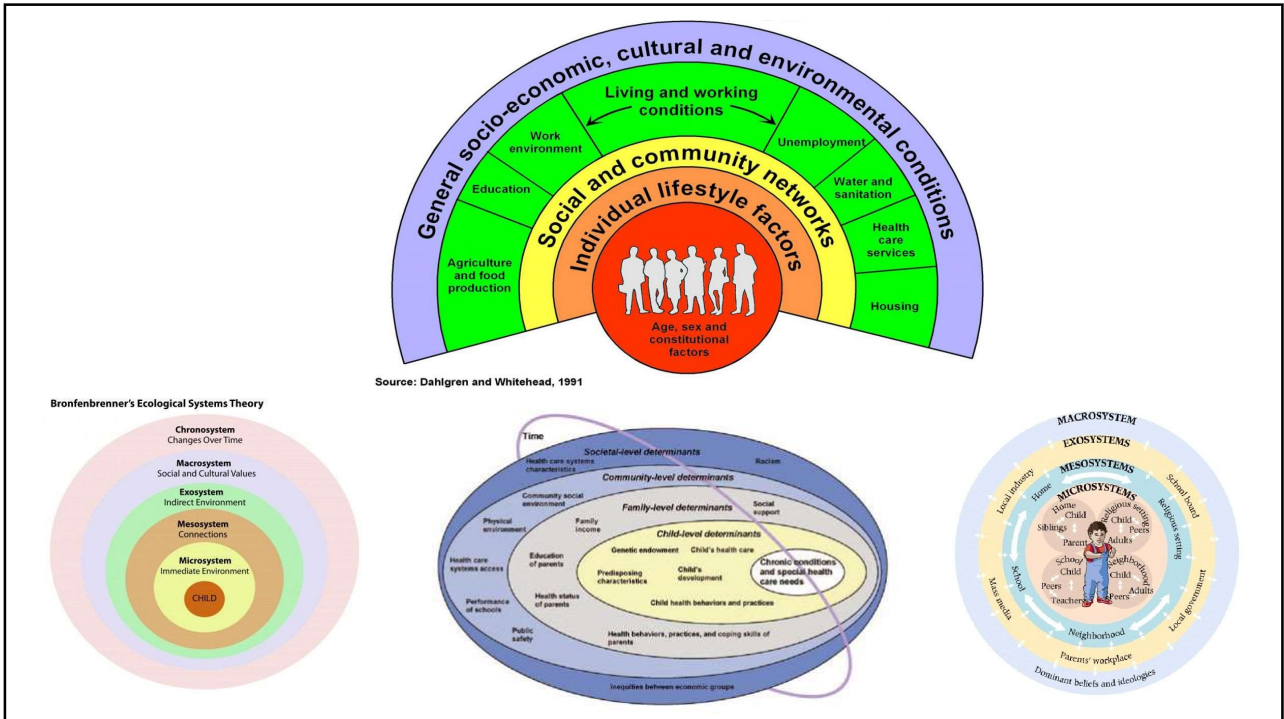- The Haddon matrix –
  - injury example
  - obesity example

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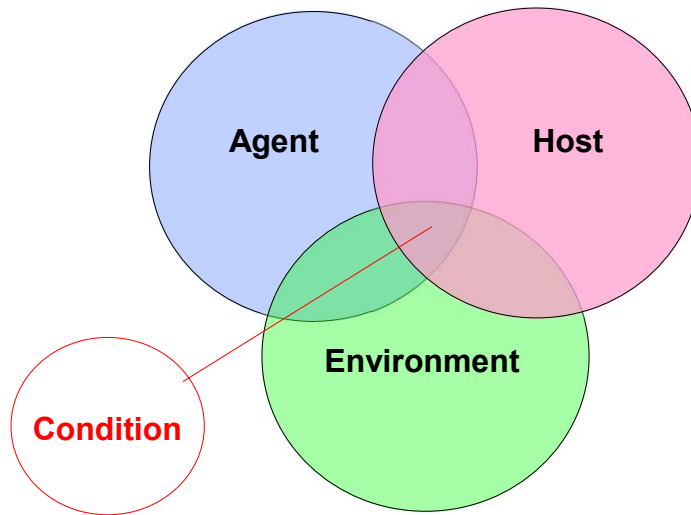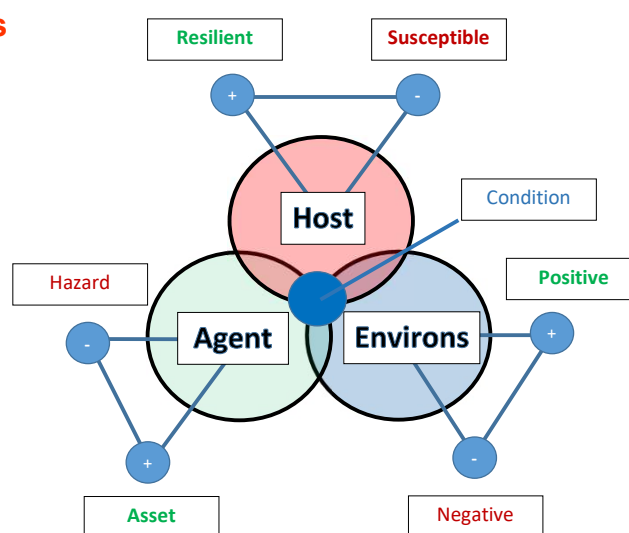**Children's Mental Health and the Life Course Model**.

NAS

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Source: Dahlgren and Whitehead, 1991

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Condition epidemiology - traditional representation

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Child and family complexity

Child nested within family

Family nested within community

Family

Strength | Weakness

Child

Vulnerable | Resilient

Harm benefit

Vehicle / vector

Environment

Positive | Negative

Agent

Hazard | Asset

Vector
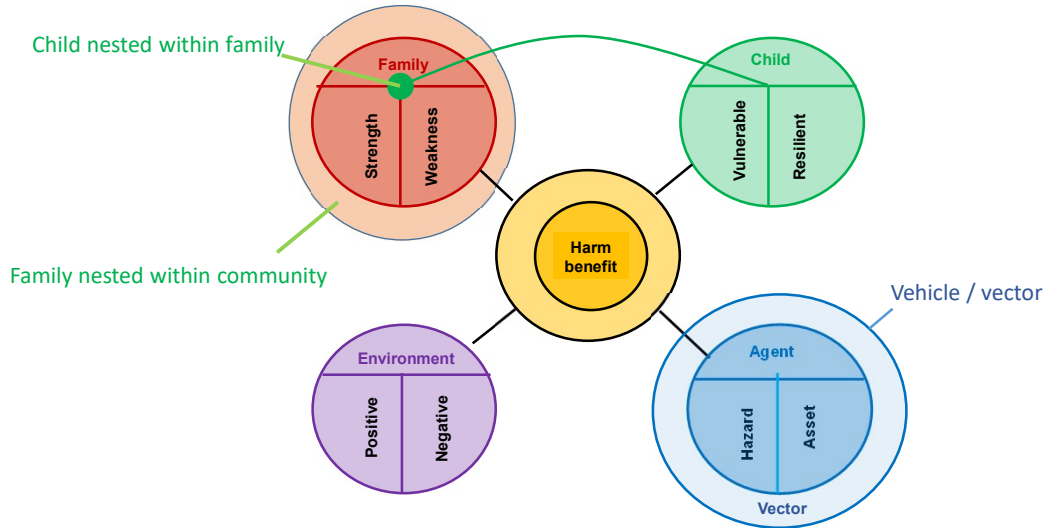
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Understanding "risk" of harm or benefit

Family

Strength | Weakness

Child

Vulnerable | Resilient

Likelihood of exposure

Probability of effect

Harm or benefit

Exposure

Risk = likelihood x probability

Environment

Positive | Negative

Agent

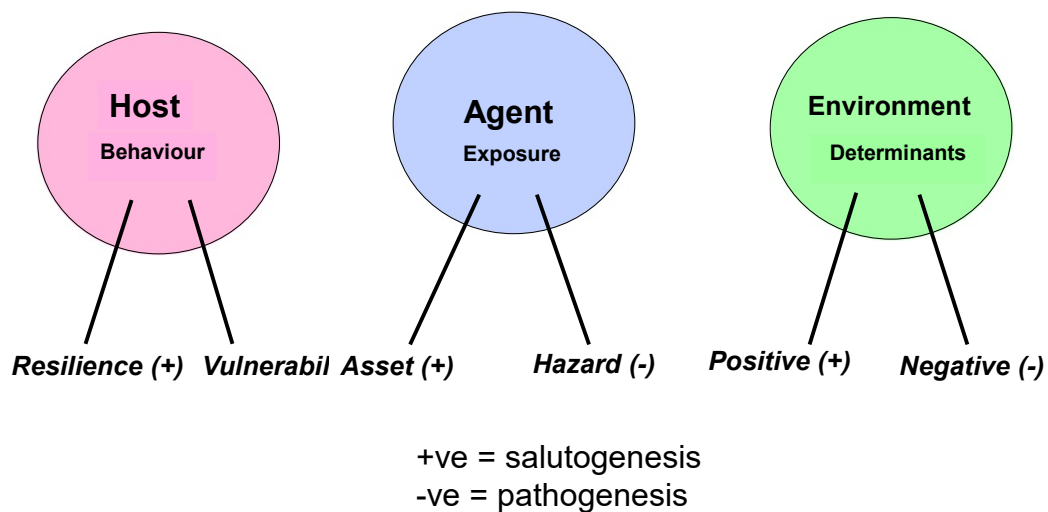Hazard | Asset

Vector
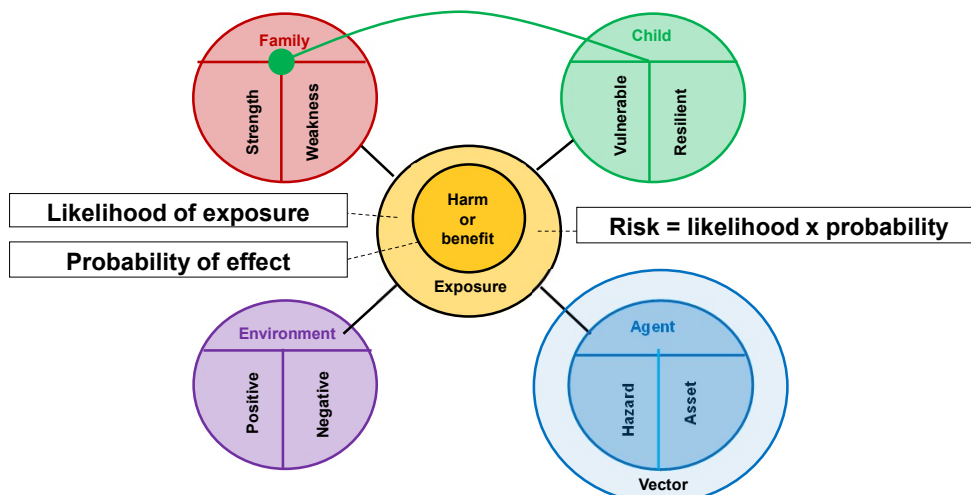
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Sun exposure

- Lack
  - Vit D deficiency
  - SAD
- Correct
  - Best bones
  - Elevates mood
- Excess
  - Sunburn – short term
  - Melanoma – long term

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Condition epidemiology

Host
Behaviour

Agent
Exposure

Environment
Determinants

Resilience (+)   *Vulnerabil*   *Asset (+)*   *Hazard (-)*   *Positive (+)*   *Negative (-)*

+ve = salutogenesis
-ve = pathogenesis

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Haddon matrix for a road traffic accident
Pathogenic

| Time line	Haddon matrix		
	Human (host)	Vehicle (agent)	Environment (physical/social)
pre-injury	Child behavior e.g. parental control	Vehicle condition e.g. braking capacity	Visibility e.g. parked cars
injury	Resistance to injury e.g. helmets	Vehicle design e.g. sharp edges	Street design e.g. road surface
post injury	Threat to life e.g. hemorrhage airway	Vehicle inspection (RTA investigation)	emergency response e.g. first aid abilities of passers by ambulance

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Haddon interventions

- Prevent the hazard
- Reduce the hazard
- Prevent the release of a hazard that exists
- Separate the hazard and the victim in time
- Separate the hazard and the victim in place
- Modify the hazard
- Protect the victim
- Counter the damage
- Repair the victim

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Haddon matrix for a road traffic accident
Salutogenic

Haddon matrix			
	Human (host)	**Agent**	**Environment (physical/social)**
pre-injury	Parenting programmes (road safety)	Reduce speed (speed zones)	Better visibility (road design)
injury	Protective measures (bicycle helmets)	Crumple zones (car design)	Road surface (braking capacity)
post injury	First aid (CPR training)	rapidity of energy reduction e.g. bumpers	Emergency services (ambulance and hospital)

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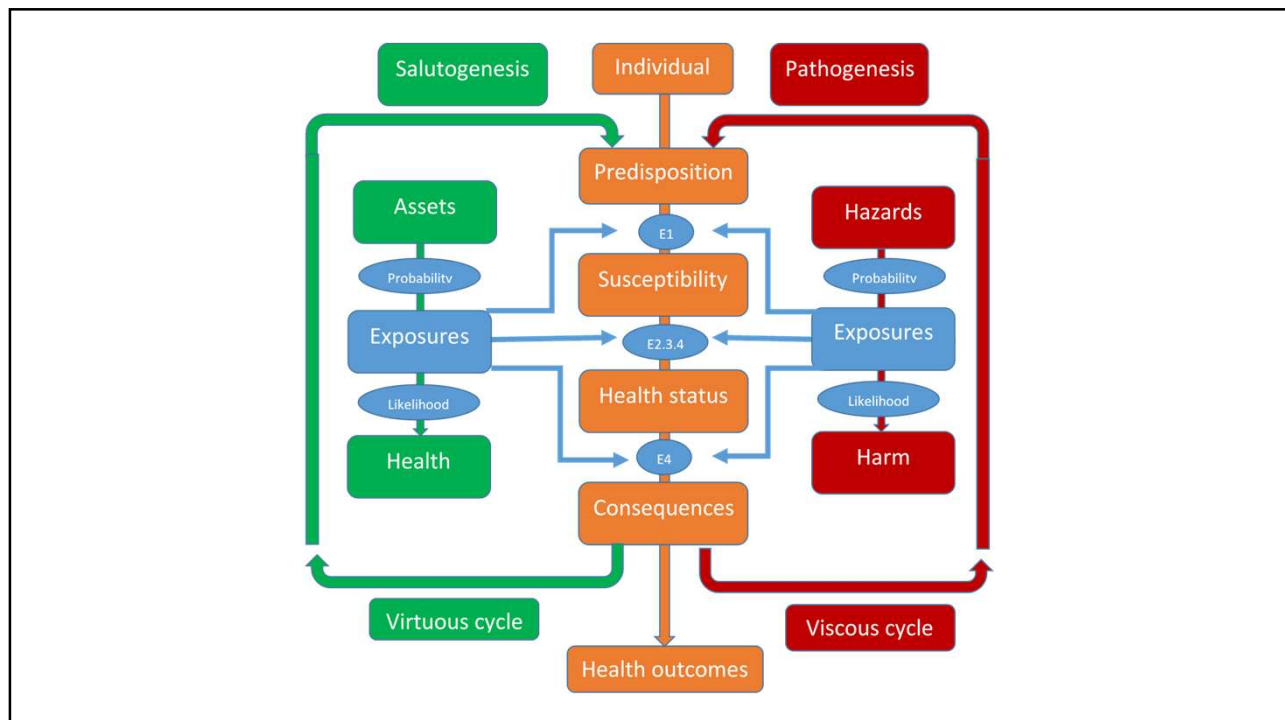
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Obesity

"People think being overweight is an abnormal response to a normal environment. That's not true at all.

It's a normal response to an abnormal environment".

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Proposed interventions	Brave and Bold	Obesity Plan
Controls on price promotions	/	x
Controls on marketing and advertising	/	x
Restrict advertising on all forms of media	/	x
Limit celebrity endorsement	/	x
Tightening nutrients that can be advertised	/	x
Limit brand advertising	/	x
Limit sporting sponsorship deals	/	x
Reformulation programme to reduce sugar content	/	/
Sugar drinks tax	/	/
Labeling sugar in single portions	/	x

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Proposed interventions	Brave and Bold	Obesity plan
Improved education about diet	/	/
Universal school food standards	/	/
Greater powers for LAs to tackle environmental issues	/	x
Early intervention for obese families	/	/
Further research into effective interventions	/	x
Innovation support for businesses	/	/
Healthy options in the public sector	x	/
Food vouchers for low income families	x	/
30 minutes of physical exercise in school	x	/
Sport and physical activity programs for schools	x	/
Healthy schools rating program by OFSTED	x	/
School food plan/Children's Food Trust	x	/
Harnessing new technology	x	/
Training for health professionals	x	/

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Simplified matrix for obesity-food

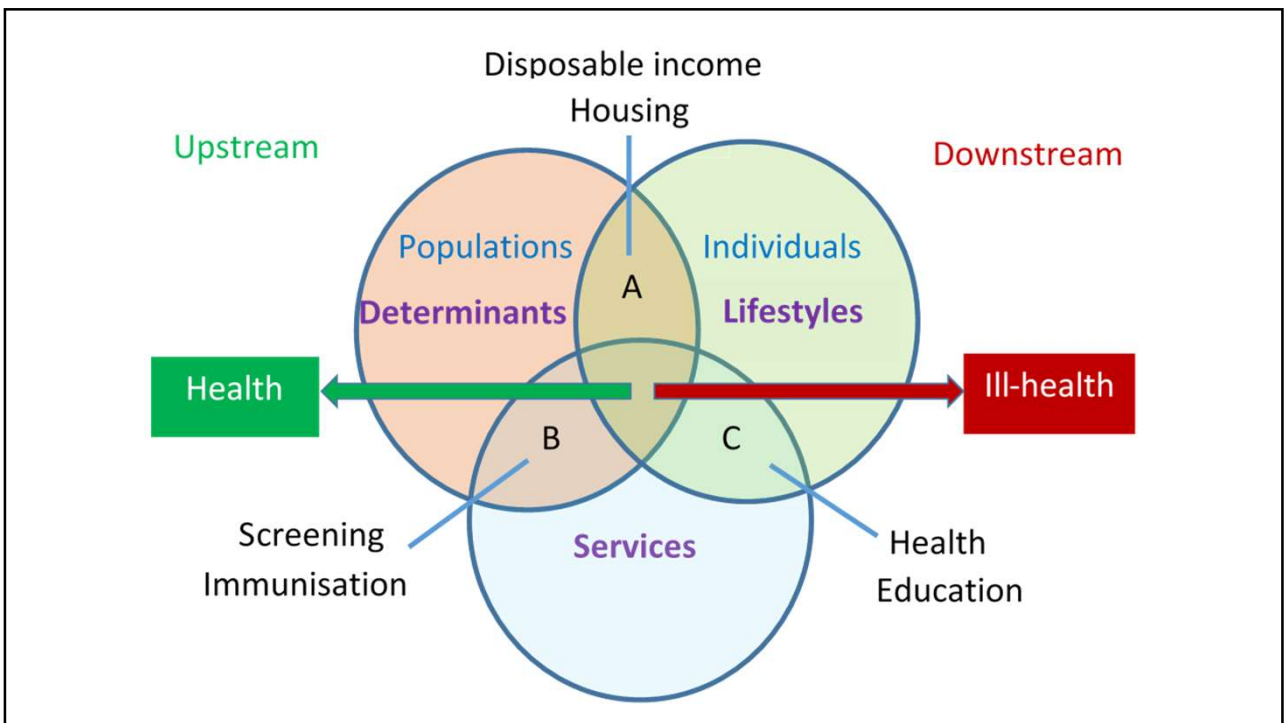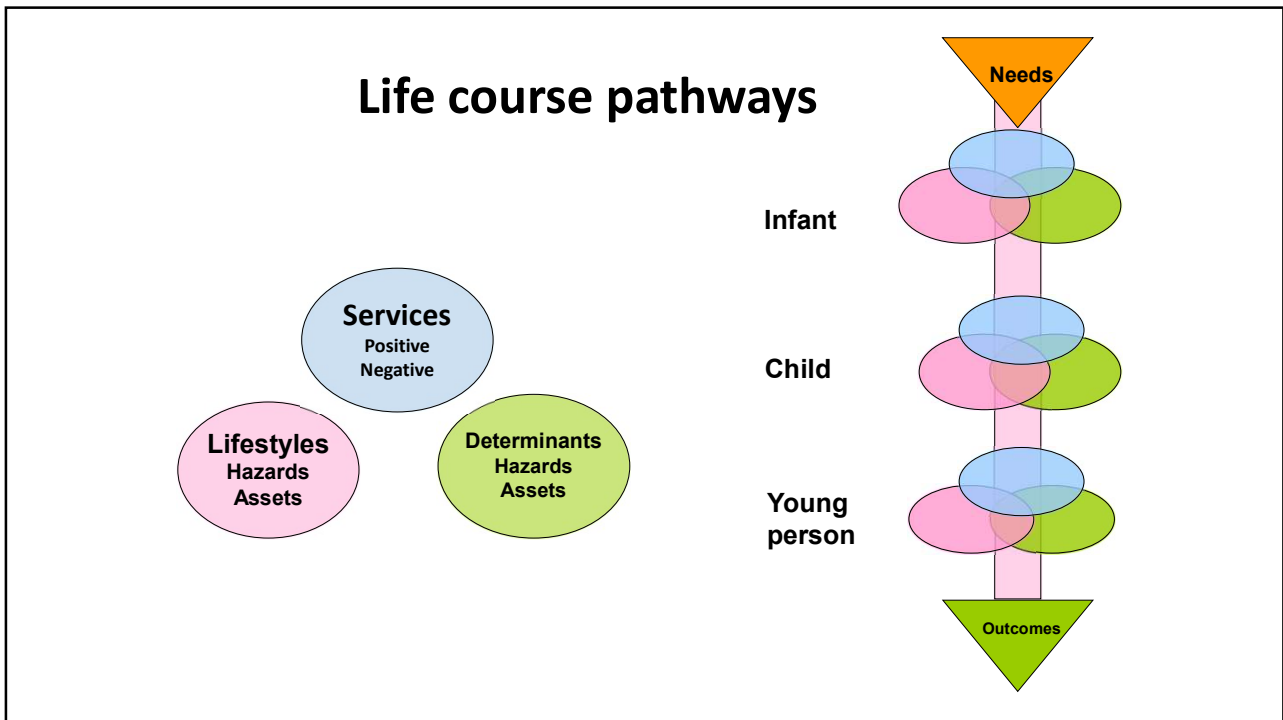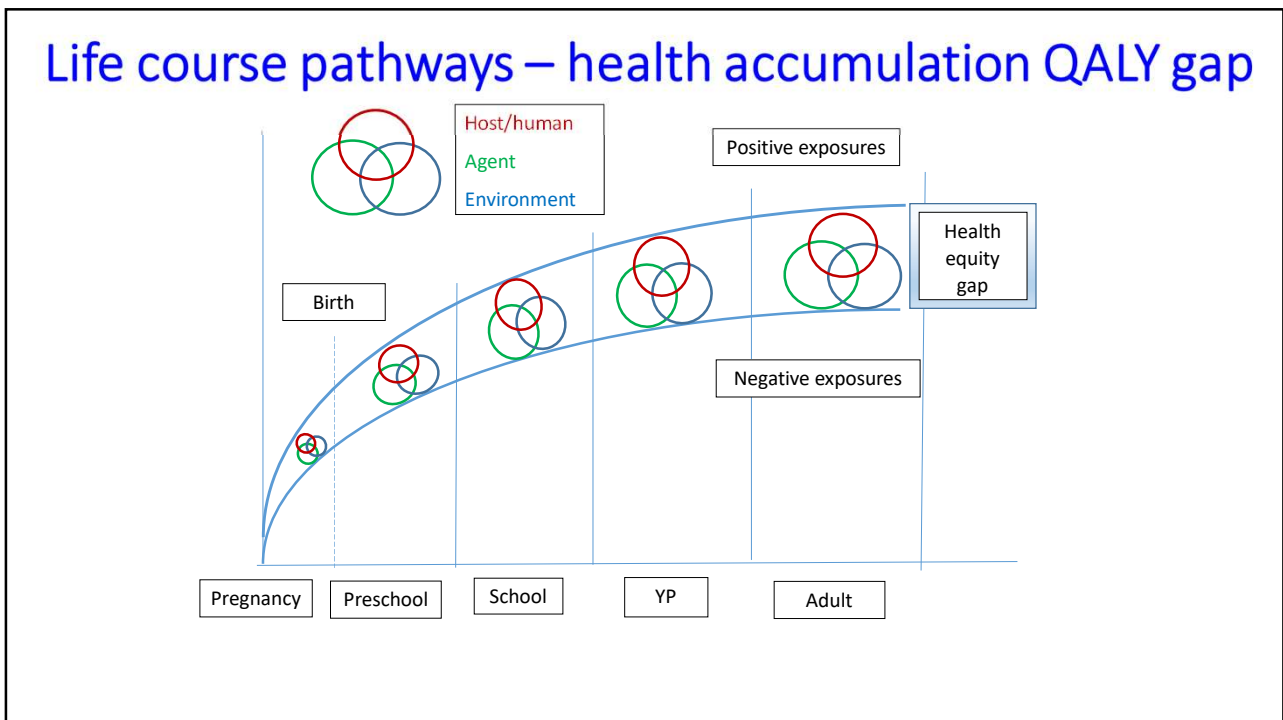| Haddon matrix			
Age	Human (host)	Agent (food)	Environment (physical/social)
Pre-school	P Breastfeeding N early weening	P healthy options N sugar drinks	P breast feeding options N attitudes to breast feeding
School	P Healthy lunches N tuck shops	P 5 a day N no PHSE	P affordable fruits N advertising SFS
Post school	P healthy choices N fast food	P food labelling N TV snacks	P regulation N food subsidies poverty

P=positive N=negative

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Life course pathways

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Life course pathways – health accumulation QALY gap
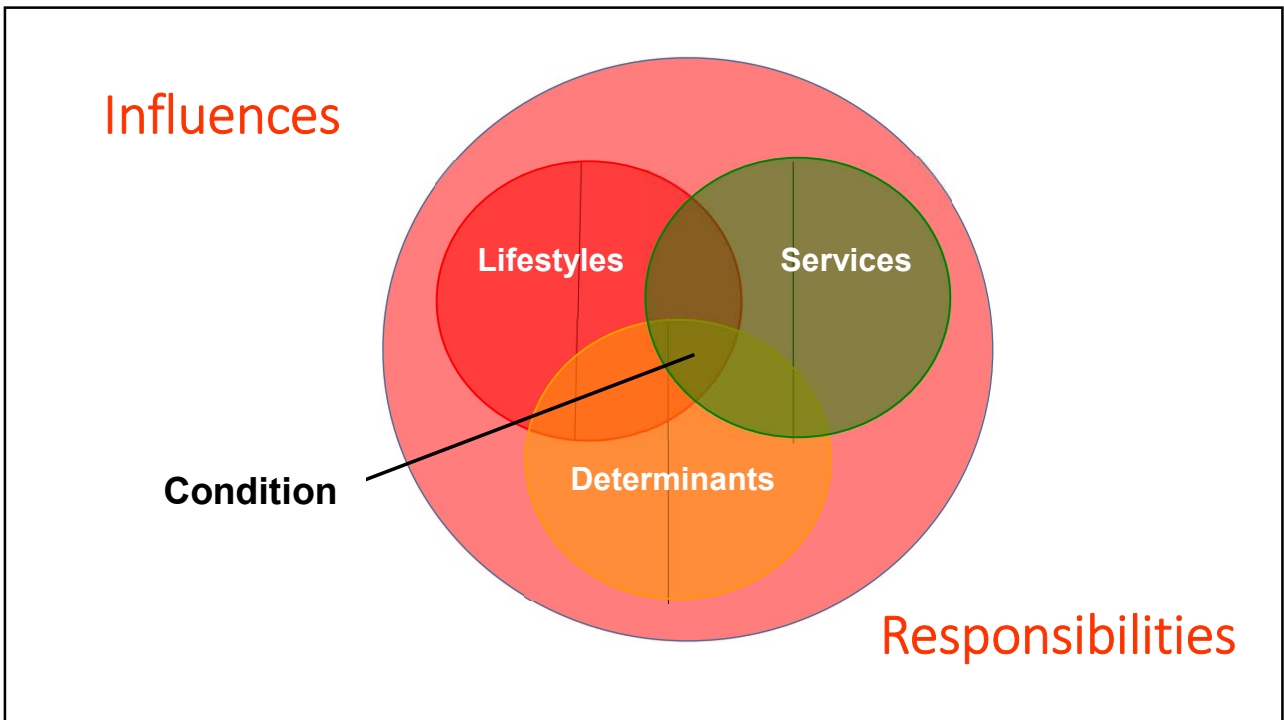
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		Lifestyles		Determinants		Health Services
		Promotion	Protection	Promotion	Protection	Promotion
Child	Antenatal	five a day balanced diet	unhealthy diets	financial support for healthy eating		healthy eating
	Preschool	breastfeeding eat with children late weening (>6/12) encourage good sleep	high sugar drinks high calorie foods excessive screen time	breastfeeding places Green play space Access to activities	poverty advertising unhealthy foods	breastfeeding promotion
	School aged	healthy lunch walking to school PHSE in school 60 mins exercise per day	excessive screen time snacking between meals	School meals standards physical activity at school safe routes to School access to active leisure facilities	poverty advertising unhealthy foods	Healthy schools
	Young person	healthy foods at school walking/cycling to school	lack of sleep		poverty fast food outlets near schools	HSE programme content

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In summary – understanding health and disease

- Interaction between host, agent and the environment.
- Each element can be either positive or negative.
- Life course pathway accumulating health or disease.
- Complex interactions with short and long term effects.
- Health factors can be individual (lifestyles) or population (determinants)
- Interventions must be reinforcing "alignment and synergy"

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The end!

Now read the understanding health and disease paper
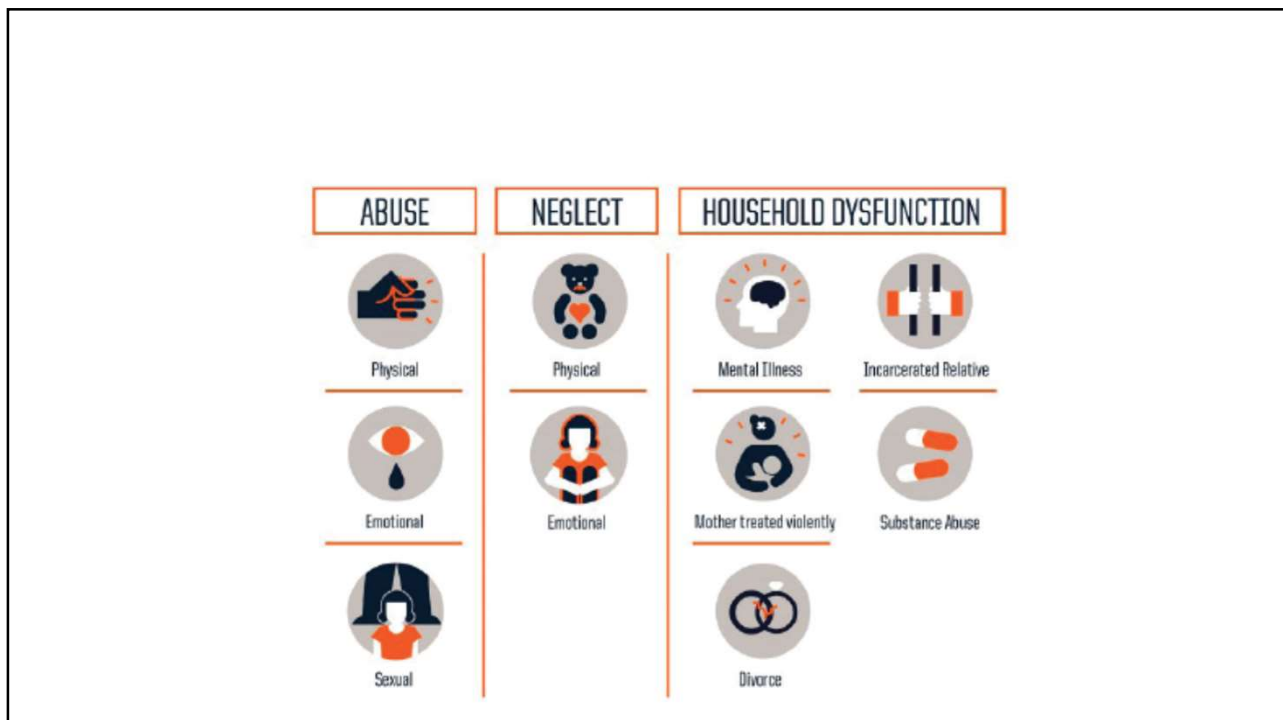
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The five ways to well-being

- Connect with the people around you
- Be active keep moving
- Take notice environmental and emotional awareness
- Keep learning try something new at any age
- Give help others and build reciprocity and trust.

New Economics Foundation

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Moving from a deficit approach to an asset approach	
Where we are now - the deficit approach	**Where an asset way of thinking takes us**
Start with deficiencies and needs in the community	Start with the assets in the community
Respond to problems	Identify opportunities and strengths
Provide services to users	Invest in people as citizens
Emphasise the role of agencies	Emphasise the role of civil society
Focus on individuals	Focus on communities/ neighbourhoods and the common good
See people as clients and consumers receiving services	See people as citizens and co-producers with something to offer
Treat people as passive and done-to	Help people to take control of their lives
'Fix people'	Support people to develop their potential
Implement programmes as the answer	See people as the answer

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