

IMPERIAL

School of Public Health

Authentic learning for final year medical students in prevention, place-based and population health at Imperial Achieving the 10 Year Health Plan for England

Richard J Pinder; Anna Ogier; Ray Wang; Jamie Smyth & Amir H Sam
Public Health Educators in Medical Schools (PHEMS), 28 October 2025

ABSTRACT

The 10 Year Health Plan for England's focuses on prevention and population health. Yet delivering relevant and engaging public health teaching in medical education has proven historically difficult. At Imperial, we have taken an innovative approach to re-designing the learning around students and grounded in authenticity.

The case study describes a 90-minute 'live exercise' for final-year medical students at Imperial, designed to bridge the gap between theoretical knowledge and real-world application. Tasked as a public health consulting team, students are commissioned by the local Integrated Care Board (ICB) to develop a summary business case for a pilot "Lung Checks" programme using low-dose CT (LDCT) scanning for early-stage lung cancer detection in North West London.

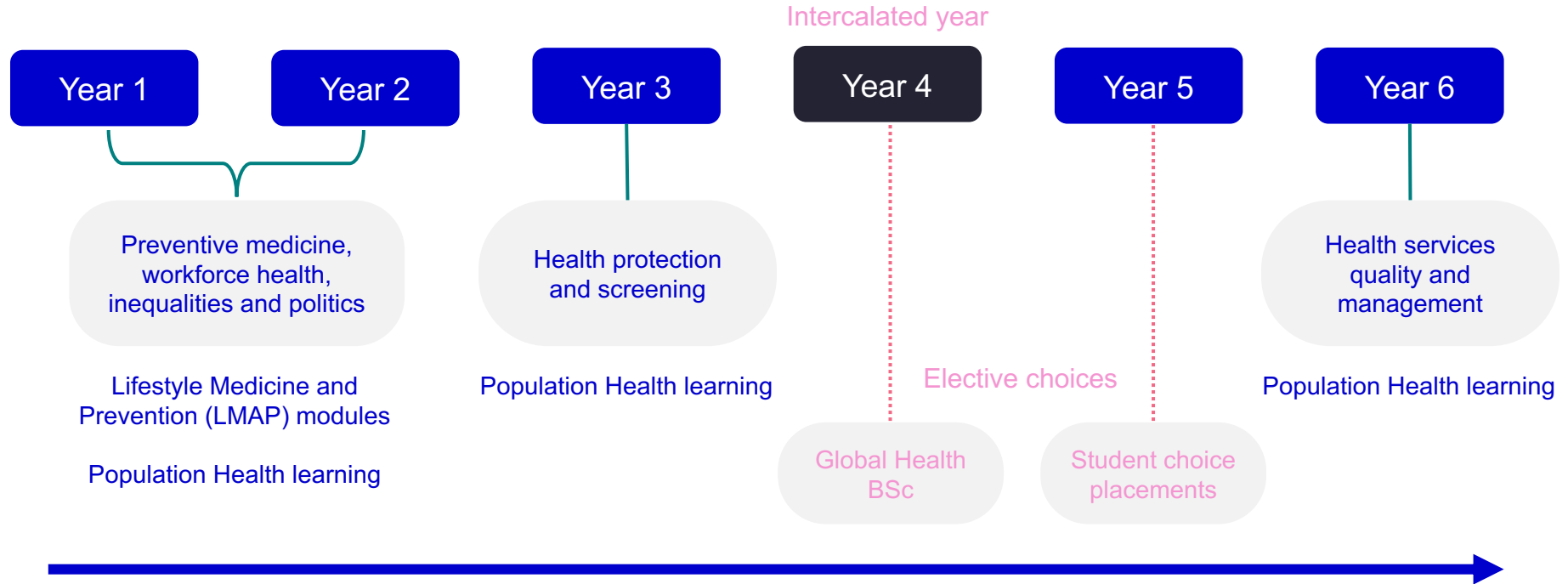
The exercise compels students to apply their understanding of place-based demography, epidemiology and modelling, health intelligence, and management skills in a time-pressured environment. Working in groups of three or four

students, they must complete three core tasks: 1) a rapid health needs analysis to define the target population, considering risk profiles and potential health inequalities; 2) the design of a viable model of care, addressing infrastructure, staffing, and referral pathways ; and 3) a high-level resource appraisal, including indicative costs and operational risks. A series of injects through the live exercise provide scaffolding. Students are encouraged to use generative AI models however they see fit.

The place-based scenario explicitly challenges students to think about system integration, stakeholder engagement, and the practicalities of implementing new technologies within existing health infrastructure. An explicit narrative throughout is how complex (sometimes wicked) problems must be analysed and deconstructed across differing levels of abstraction. This innovative pedagogical approach moves beyond traditional didactic teaching, providing a tangible experience in public health service design and evaluation. In student feedback it is regularly cited as a highlight of the final year population health course.

In 2019, Imperial College School of Medicine (ICSM) launched a new curriculum to deliver population health teaching as core domain across all six-years

POPULATION HEALTH AT IMPERIAL



We run the consultant-delivered final year population health short course five times for about 75 students each time

FINAL YEAR POPULATION HEALTH SHORT COURSE

Thursday (all day)

Code	Title	Duration
3BPH-01	Need-based paradigms in Public Health	40 minutes
3BPH-02	Community activation, inclusion health and asset-based approaches	40 minutes
3BPH-03	Evaluating health services and quality assurance in commissioning exercise (activity)	90 minutes
	<i>Lunch</i>	
3BPH-04	Contemporary challenges in England's NHS	60 minutes
3BPH-05	Prioritisation and rationing in a resource-constrained system	40 minutes
3BPH-06	Resource allocation: budget setting exercise (activity)	80 minutes

Friday (afternoon)

Code	Title	Duration
3BPH-07	Travel health and review of health protection	20 minutes
3BPH-08	An introduction to occupational medicine	45 minutes
3BPH-09	Planning and designing health services live exercise (activity)	110 minutes

We run the consultant-delivered final year population health short course five times for about 75 students each time

FINAL YEAR POPULATION HEALTH SHORT COURSE

Thursday (all day)

Code	Title	Duration
3BPH-01	Need-based paradigms in Public Health	40 minutes
3BPH-02	Community activation, inclusion health and asset-based approaches	40 minutes
3BPH-03	Evaluating health services and quality assurance in commissioning exercise (activity)	90 minutes
	<i>Lunch</i>	
3BPH-04	Contemporary challenges in England's NHS	60 minutes
3BPH-05	Prioritisation and rationing in a resource-constrained system	40 minutes
3BPH-06	Resource allocation: budget setting exercise (activity)	80 minutes

Friday (afternoon)

Code	Title	Duration
3BPH-07	Travel health and review of health protection	20 minutes
3BPH-08	An introduction to occupational medicine	45 minutes
3BPH-09	Planning and designing health services live exercise (activity)	110 minutes

This exercise tasks the students with designing a Donabedian framework approach to evaluating the impact of an assertive outreach programme for mental health and street homelessness across four London boroughs.

This exercise gives a three-year budget saving target of £5m pa on a £25m annual local authority budget, with the student groups required to profile investment and cuts, while preserving local services and keeping politicians and the media happy.

We run the consultant-delivered final year population health short course five times for about 75 students each time

FINAL YEAR POPULATION HEALTH SHORT COURSE

Thursday (all day)

Code	Title	Duration
3BPH-01	Need-based paradigms in Public Health	40 minutes
3BPH-02	Community activation, inclusion health and asset-based approaches	40 minutes
3BPH-03	Evaluating health services and quality assurance in commissioning exercise (activity)	90 minutes
	<i>Lunch</i>	
3BPH-04	Contemporary challenges in England's NHS	60 minutes
3BPH-05	Prioritisation and rationing in a resource-constrained system	40 minutes
3BPH-06	Resource allocation: budget setting exercise (activity)	80 minutes

Friday (afternoon)

Code	Title	Duration
3BPH-07	Travel health and review of health protection	20 minutes
3BPH-08	An introduction to occupational medicine	45 minutes
3BPH-09	Planning and designing health services live exercise (activity)	110 minutes

The exercise is designed to incorporate all their six-years of population health learning in a capstone consulting-style task, where they are asked to do a better job than a group of chemistry graduates from Deloitte*!

The exercise runs over 90 minutes with staged injects that provide greater scaffolding for each step, with the students completing a slide-based template

CAPSTONE ACTIVITY

BACKGROUND

Officials from the local Integrated Care Board (ICB) have been charged with exploring a pilot for “Lung Checks” – using low dose CT (LDCT) to detect / screen for early-stage lung cancer.

You have been commissioned by the ICB to undertake a rapid and early-stage business case that will set out the population health benefit, costings and model of care that could be taken forward in North West London.

Over the stage of the next 90-minutes we will provide “injects” that will provide hints as to how to develop your summary business case.

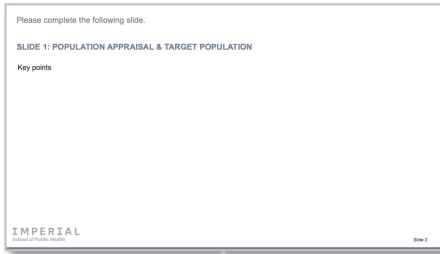
YOUR TASK

You have 90-minutes to piece together a summary business case for LDCT in North West London. Your summary business case should be no longer than the four templated slides, and should include:

- i. A rapid **health needs analysis** of lung cancer risk and target population for screening approach.
- ii. A high-level statement of **how such a system could operate** either separately or connected to existing health infrastructure.
- iii. An assessment of potential **resource allocation and utilization** – highlighting indicative volumes and types of cost that need to be considered.

We encourage generative AI use throughout the process as the learning towards the start of the exercise is about breaking complicated problems down

OVERVIEW OF THE 90 MINUTES



10 minutes in...

Learning objective: Apply your understanding epidemiology, health intelligence and medical management skills to develop a summary business case / options appraisal for change.

HINTS FOR SLIDE 1

1. What is LDCT, and how can it be applied?
2. How many people live in NWL?
3. What is the risk profile of the population: sex, age and smoking history?
4. How many people could potentially benefit from LDCT screening?
5. Which groups might you prioritise for screening?
6. What incidence of disease would you expect to detect if screening your target population?
7. What bias might arise among those coming forward for screening?
8. What inequalities might arise otherwise?
9. How would you systematize this into a three- or five-year pattern of continuous screening?

IMPERIAL
School of Public Health

Slide 3

Content Content

SUMMARY STATISTICS & RISK MANAGEMENT APPROACH

Number of scans per year	
Cost per scan	
Cost per diagnosis	
Mobilisation cost	
Operating cost	
Total programme cost over 3 years	

- Key risk and mitigation 1
- Key risk and mitigation 2
- Key risk and mitigation 3

From the learners

- Fun and interesting practical exercise
- Recognition of system complexity
- Greater empathy for health service planners and decision-makers
- Expansive and more nuanced understanding of cost and value in health services
- Understanding an “**axis of ambiguity**”
- Precipitates lots of **careers** discussions

From the educator

- Applied population health skills (cf. knowledge)
- Leadership and management skills
- System-level thinking and managing risk
- **Authentic experience** of what it means to work in population health – whether as a public health or other clinical lead

As a result of the short course, I will...	Less likely	No change	More likely
...look to incorporate Population Health in my role as a doctor...	11 (17%)	27 (42%)	27 (42%)
...look to incorporate medical leadership and management...	12 (18%)	42 (64%)	12 (18%)
...leave clinical medicine.	17 (26%)	40 (62%)	8 (12%)

Optional 3B-PH short course end of course questionnaire; Academic year 2024/25, N = 79

KEY LEARNING & IMPLICATIONS

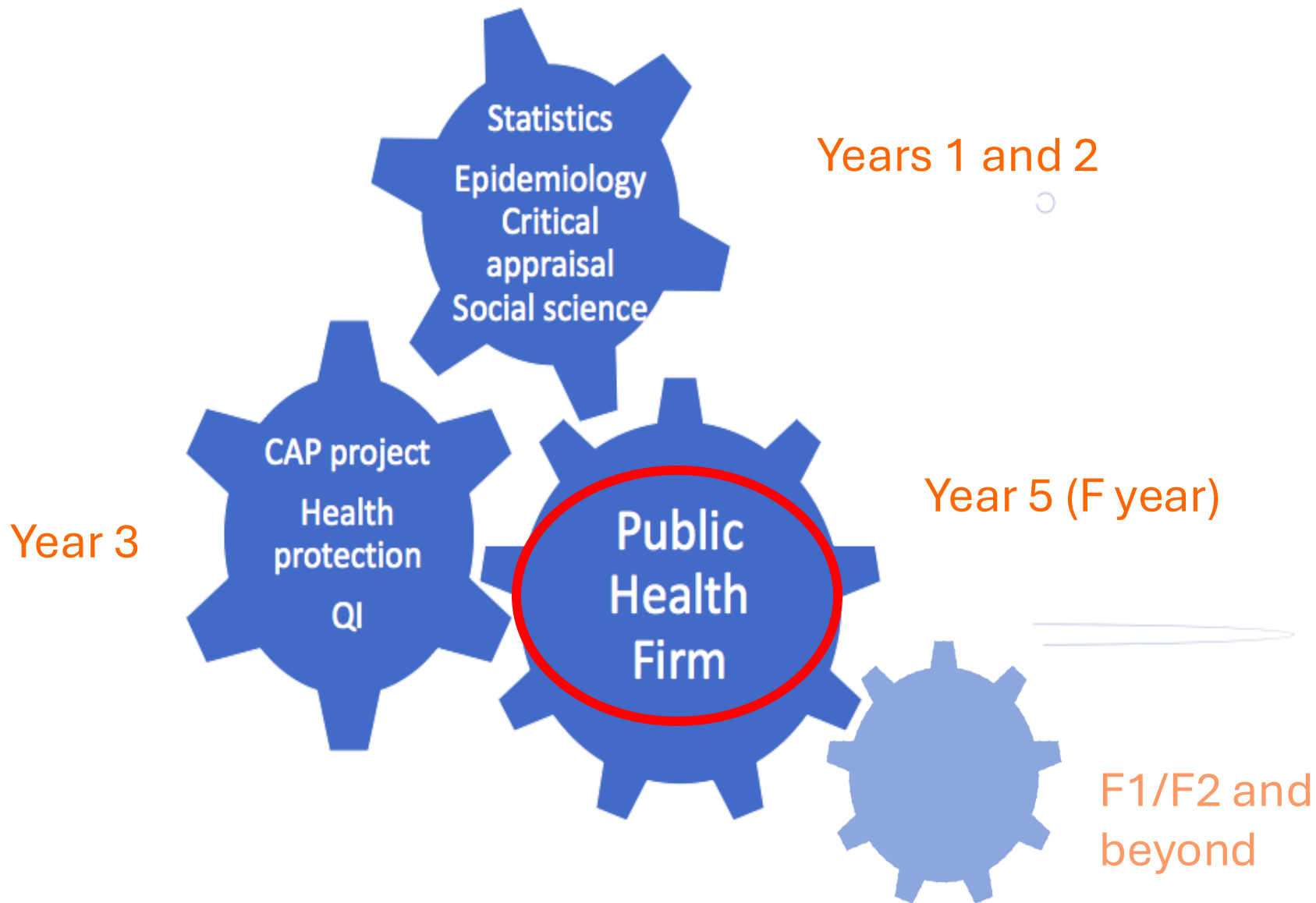
- The model translates oftentimes-abstract concepts into tangible skills in an authentic context. This sits atop the stack of learning acquired throughout population health over the preceding five years.
- Participants begin to recognise the complexities of NHS systems, including resource constraints, stakeholder management, and the downstream impact of new interventions on diagnostic services gaining notable empathy for health service planners and NHS management.
- The place-based scenario grounds their learning in the current structure of the NHS, preparing them for future leadership roles - building on learning delivered the preceding day's NHS masterclass.
- The model is adaptable to other preventive health and public policy challenges and other learning environments.
- It demands appropriately experienced (usually senior) public health and health service management facilitation - and the ability to build on student experience and reflection in a relevant and meaningful discourse.

**The Dragons' Den peer led
assessment: Implementing
population health
improvement in an
equitable way**



Plan

- Description of the Dragons' Den
- How do students address inequalities
- The 10 Year Health Plan for England
- Why we think the Dragons' Den works well
- Challenges, future considerations and questions



- 2 week rolling attachment
- Approx 50 students
- 24 teaching sessions
- Passing contingent on attendance and Dragons' Den assessment
- Inequalities embedded throughout teaching

Intended learning objectives

Five minute “pitch”

- Describe the health characteristics of a chosen country or region
- Identify an important public health problem affecting a population within that area and describe its impact
- Identify and describe a public health intervention to address this problem and summarise its evidence base
- Estimate the population benefit from implementing this public health intervention
- Identify structure, process and outcome measures to evaluate this public health intervention using the Donabedian Triad

Format

- In-person in groups of 8 and one course tutor
- Extensive timetabled and ad hoc student support
- Timetabled presentation preparation time
- 3 tutors each conduct one morning + one afternoon presentation session = 6 groups of 8 assessed over a full day
- Students have free choice on setting, public health problem and intervention
- Each pitch followed by audience Q+As
- Flexible tailored approach based on individual student circumstances
- Written feedback released to students within 2 weeks

• "I also think doing this in the small groups and with tutors that you've been in for the past few weeks is very beneficial as it makes students feel more comfortable."

• "There was a good amount of teaching and SDL time to work on the dragons den presentation." / "Dragons Den presentations - excellent support. I found the mandatory and drop in sessions really useful and timetabled well. "

• "a bit more guidance about the dragons den presentation before the public health attachment"

• "Maybe some more guidance on the dragons den presentation and how to approach it"

• "I enjoyed participating in Q and As during and after Dragon Den presentations."

Aims

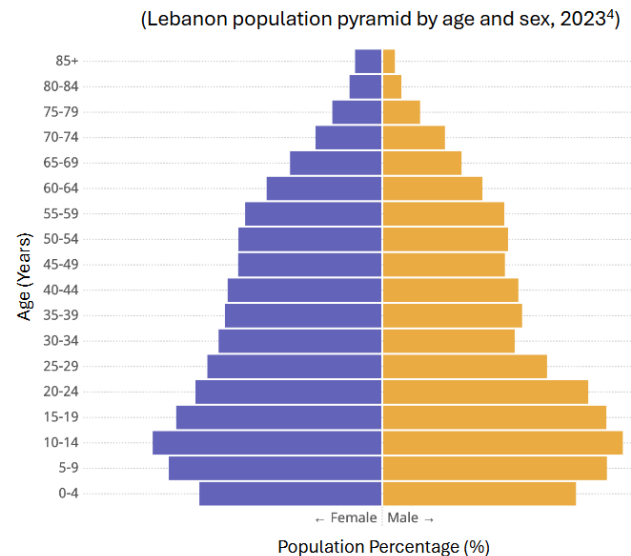
- To expand understanding of how to improve the health and wellbeing of a population as opposed to an individual
- To recognise the importance of tailoring health improvement interventions to the population in question in an equitable manner
- Developing skills in presenting complex information accurately, succinctly and persuasively to colleagues
- Recognising the validity of the full range of evidence types
- Respond appropriately to challenges from others

Improving Adolescent Mental Health in Lebanon: The Case for School-Based Programmes



Lebanon: Country Profile

- **Population:** 5.6M (+1.5M Syrian refugees, 250k Palestinians) (2021)³
- **Urbanisation:** ~89% (Beirut, Tripoli, Sidon –est.)³
- **Life Expectancy:** 75.0 yrs (2021)³
- **Adult Survival (15–60 yrs):** 93% (≈70 per 1,000 adult deaths) (2020)³
- **Health Expenditure (GDP %):** ~10.1 (2021)³
- **Top Causes of Death:** IHD (69.2%), kidney disease, stroke, diabetes, injuries⁴



Key Health Problem: Adolescent Mental Health

- **33% adolescents** with at least 1 mental health disorder⁵
- **30–40% refugee adolescents** with PTSD⁶
- **<10% receive treatment**⁷
- **1 in 5 schoolchildren** report distress⁸
- **50% of disorders begin before 15**⁸

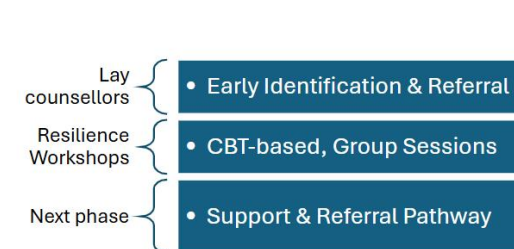
Importance?

- Leading cause of youth disability (DALYs)
- Untreated → ↑ dropout, ↑ suicide, ↓ productivity
- No national school-based programme



(Mural in Beirut representing Lebanon's mental health crisis)⁹

The Intervention: School-Based Programme



The Evidence

RCT: India¹⁰

SEHER trial, Bihar, India (Lancet 2016)

Cluster RCT in 75 Schools, using lay councillors & teachers

Results (lay-counsellor arm)

- ↓ Depression & anxiety symptoms
- ↓ Bullying & violence
- ↑ Peer Relationships and Wellbeing

Why Relevant to Lebanon

Rare example of high quality RCT evidence in a **low-resource, LMIC Context**

Shows feasibility where psychiatrists are scarce

Demonstrates that **school-based programmes can work outside high-income countries**

Estimating the Benefit

The Intervention: Barriers

Challenges

- Political / Cultural**
Stigma around mental health
- Environmental**
Instability, school closures
- Practical**
Overburdened teachers
Lack of counselling
- Resource**
Limited funding
Economic crisis

Solutions

- Community Engagement**
Normalise mental health in schools
- Task Shifting**
Train teachers to deliver workshops
- Partnerships**
NGOS & UNICEF support Implementation
- Low-Cost Integration**
Embedded into school's curriculum

Monitoring

The infographic is divided into three main vertical sections: Current Prevalence, Assumptions, and Absolute Benefits.

- Current Prevalence:** 33% adolescents with at least 1 mental health disorder (~ 528,000 of 1.6M adolescents)⁹
- If Intervention implemented (SEHER RCT Evidence):** Conservative impact: prevalence to 24%, **absolute reduction of 9%**
- Estimated Benefits (Lay counsellor model):** 144,000 adolescents with clinically meaningful improvement
- Assumptions:**
 - Uptake: 70% of schools in first 5 years
 - Coverage = lay counsellors recruited, trained and integrated into schools
- Absolute Benefits:**
 - Fewer untreated cases
 - Reduced dropout/suicide risks
 - Lower system burden

Process

Tracking Delivery

% schools involved, %of lay counsellors trained and active

Outputs

Reach: Students Screened

No. of referrals made

Outcome

Impacts: Decreasing depression/anxiety

References

1. BBC News. *Israel and Hezbollah exchange fire across Lebanon border* [Internet]. London: BBC; 2024 Sep 28 [cited 2025 Sep 28]. Available from: <https://www.bbc.com/news/articles/cbqv7dq3m1t6>
2. Encyclopædia Britannica, Inc. *Lebanon: population density by governorate* [map]. Chicago: Encyclopædia Britannica; ©2019. Available from: <https://www.britannica.com/place/lebanon>
3. World Bank. *Human Capital Project: Lebanon Country Brief (2021 data)*. Washington, DC: World Bank; 2021. Available from: <https://humancapital.worldbank.org/en/economy/LBN>
4. World Health Organization. *Lebanon: Country data* [Internet]. Geneva: WHO; 2023. Available from: <https://data.who.int/countries/422>
5. Maslouf FT, Alnojah L, Akouy-Diari L, Shehab AA, Tavitian L, Ghandour LA, et al. Psychopathology in child/adolescents in Lebanon (PALS): a national household survey. *Soc Psychiatry Psychiatr Epidemiol*. 2022;57(4):74. doi:10.1007/s00127-021-02208-4.
6. World Health Organization. *Mental Health Atlas 2020: Lebanon country profile* [Internet]. Geneva: WHO; 2022. Available from: <https://www.who.int/publications/m/item/mental-health-atlas-lbn-2020-country-profile/WHO-COIN>
7. WHO Regional Office for the Eastern Mediterranean (EMRO). *Mental health programmes in Lebanon* [Internet]. Cairo: WHO; EMRO; 2025. Available from: https://www.emro.who.int/lbn/programmes/mental_health.html EMRO
8. UNICEF Lebanon. *Shattered Childhoods: The catastrophic toll of war on children in Lebanon - UNICEF Child-focused Rapid Assessment* [Internet]. Beirut: UNICEF; March 2025. Available from: <https://www.unicef.org/lebanon/reports/shattered-childhoods>
9. BBC News. *Lebanon's silent mental health crisis captured in Beirut murals* [Internet]. London: BBC; 2021 Oct 9. Available from: <https://www.bbc.com/news/articles/cbqv7dq3m1t6>
10. Shinde S, Weiss HA, Varghese B, Khadsekar P, Penins B, Sharma A, et al. Promoting school climate and health outcome the SEPER multi-component secondary school intervention in Bihar, India: a cluster-randomised controlled trial. *Lancet*. 2018;392(10163):2465-77. Available from: <https://2024.sci-hub.se/7226/0aac6fcb1e10cb7d4efb9b0df5f598/shinde2018>

Harm Reduction in Injecting Drug Users in the East Midlands

Population of East Midlands [1]

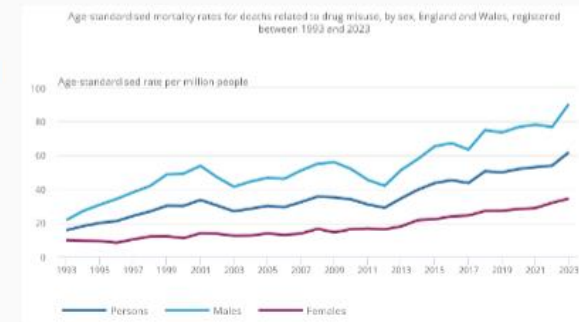
- **Population:** 5,063,164
- **Median age:** 41 years
- **Life expectancy**
 - Males : 78.9 years (79.3 years England)
 - Females: 82.7 years (83.2 years England)
- **Ethnicity**
 - White 86.7%
 - Asian 7.7%
 - Black 2.5%
 - Mixed 2.3%
 - Other 1.2%
- **Poverty:** 18%
- Leicester, Nottingham and Derby have higher levels of deprivation



- **Leading causes of death:** [3]
 - Alzheimer's and dementia
 - Ischaemic heart disease
 - Cancer
 - Cerebrovascular diseases
 - Respiratory diseases

Recreational Drug Use [2]

- 8.8% (2.9 million) people aged 16-59 years reporting any drug use (England and Wales)
 - 3% (1 million) report using class A substance
 - 1.8% regular drug users
- England and Wales: **61.8 drug misuse deaths per million people** (3,618 deaths)
 - Highest in ages 40-49 years
 - Males - 2,586 deaths
- Heroin and morphine: half of drug poisoning deaths
- Cocaine: 1,118 deaths
 - 30.5% increase on previous year



Burden of Drug Use

- **East Midlands:** 433 drug poisoning deaths (297 deaths male) [2]
 - Heroin and morphine: 103 deaths
 - Cocaine: 93
 - Accidental poisoning leading cause of death in males aged 35-49 years
- **Morbidity**
 - Infections from IV drug use
 - Overdose and hospital admissions
 - Comorbidity with mental health issues
- **Impact on local communities**
 - Drug poisoning 5 times higher in most deprived areas
 - Public drug use
 - Used drug paraphernalia in public spaces



Intervention: Drug Consumption Rooms [4]

- **Harm reduction** strategy, particularly for people injecting illicit substances
- Over 100 sites globally
 - 1 site in the UK (Glasgow)
- Provide safer site for people to inject drugs
- Set up in areas of high drug use
- **Aims:**
 - Reduce overdoses and staff present to provide medical care and support
 - Receive clean and sterile equipment
 - Connect people with drug addiction, health and social care services

East Midlands:
Funding and building of drug consumption rooms in areas of higher deprivation, drug use and social impact (public drug use/paraphernalia)



Benefit of Drug Consumption Rooms

- An observational study conducted in Vancouver, Canada, saw a **35% reduction** in fatal overdoses in the immediate area around a newly built DCR [9]
 - Modelling studies produced results between **10-60% reduction in overdoses**
- East Midlands: drug misuse deaths **4.0 per 100,000**
- Hypothesised drug misuse deaths on introduction of DCRs: **2.6 per 100,000**
- 196 deaths (heroin/morphine/cocaine)
 - Reduction of **69 deaths** per year after introduction of DCRs
- Other benefits as shown in studies include reduction in infectious diseases (HIV, HepC), reduced public injecting and littered drug syringes/needles

Evidence

Potier et al. (2014) [5]

- DCRs effective in reducing overdose frequency
- Promoted safer injection conditions
- Reduced level of public injections and dropped syringes

Levengood et al. (2021) [7]

- Reductions in opioid overdose morbidity and mortality
- Improvements in injection behaviours and harm reduction

Tran et al. (2021) [6]

- DCRs reduce injecting related harms
- Local residents reported less public drug use and syringe dropping

Lalanne et al. (2024) [8]

- Reduced needle sharing in people who regularly attended DCRs

Evaluation

Structure

- Physical facility
- Trained staff (healthcare workers, peer workers, harm reduction staff)
- Sterile injection equipment, overdose equipment and medicines
- Legal and regulatory approval

Process

- Supervised
- Providence
- Referral to
- Data collection

Outcome

- Health outcomes
- Reduced public drug use
- Reduced public injecting

References

1. Office for National Statistics. Local indicators for the East Midlands (E12000004) [Internet]. ONS; <https://www.ons.gov.uk/explore/local-statistics/onses/e12000004-east-midlands/indicators>
2. Office for National Statistics. Deaths related to drug poisoning in England and Wales: 2023 registrations [Internet]. Newport (UK); ONS; 2024 Oct 23. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthdeathsandmarriages/deaths/bulletins/deathsrelatedtodrugpoisoningenglandandwales/2023registrations>
3. Office for Health Improvement & Disparities. Health profile for England: Regional profile - East Midlands [Internet]. London: OHID; <https://insights.ohid.org.uk/static/reports/health-profile-for-england/regional-profile-east-midlands.html>
4. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). Correlation - European Harm Reduction Network (C-EHRN). Joint report 2023 on drug consumption rooms [Internet]. Luxembourg: Publications Office of the European Union; 2023 Dec 18. https://www.euro.observatory.org/publications/technical-reports/2023/drug-consumption-rooms_en
5. Potier C, Laprévate V, Dubois-Arber F, Cottencin O, Rolland B. Supervised injection services: what has been demonstrated? A systematic literature review. Drug and alcohol dependence. 2014 Dec 1;145:48-68.
6. Tran V, Reid SE, Roxburgh A, Day CA. Assessing drug consumption rooms and longer term (5 year) impacts on community and clients. Risk management and healthcare policy. 2021 Nov 15:4639-47.
7. Levengood TW, Yoon GH, Davoust MJ, Ogden SN, Marshall BD, Cahill SR, Bazzi AR. Supervised injection facilities as harm reduction: a systematic review. American journal of preventive medicine. 2021 Nov 1;61(5):738-49.
8. Lalanne L, Roux P, Donadille C, Brizand Madrid L, Cellerier I, Chausvin C, Hamelin N, Kervran C, Maradan G, Auriaud M, Jauffret-Roustide M. Drug consumption rooms are effective to reduce at-risk practices associated with HIV/HCV infections among people who inject drugs: Results from the COSINUS cohort study. Addiction. 2024 Jan;119(1):180-99.
9. Marshall BD, Milloy MJ, Wood E, Montaner JS, Kerr T. Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study. The Lancet. 2011 Apr 23;377(9775):1429-37.

2021 cohort Vs 2024 cohort

2021-22

- 298 students
- More online teaching
- 123 (41%) UK settings
- 62 different countries
- Regular reference to inequalities

2024-25

- 289 students
- Less online teaching
- 94 (33%) UK settings
- 67 different countries
- Possibly more frequent reference to inequalities



How do inequalities manifest in pitches

- Setting



- Population



- Intervention



- Q+A

Aspects of inequalities considered

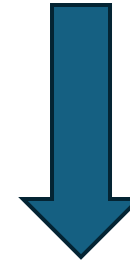
- Intersectionality



- Broad range solutions



Upstream approach



Examples of staff to student feedback

You gave a well-researched and thoughtful presentation on a preventative approach to eating disorders in adolescents in the UK. While focussed on the female population you showed awareness of ED being common in the LGBTQ+ population and the importance of ensuring inclusivity with any intervention. Population statistics were well chosen to emphasise the difference in healthy life expectancy between men and women being just 0.8 years – suggesting women live more years in poor health than men and the burden of mental ill-health in younger women. You presented clear epidemiology of ED, making the limitations of the statistics clear...

You gave a clear justification for why this is an important problem, with powerful statistics to back up your argument. Your intervention was comprehensive and well-tailored for the local context and climate and showed awareness of ensuring women are engaged.

You made a good attempt at a benefit calculation using the evidence available and made explicit use of the Donabedian Triad for your evaluation, choosing sensible structure, process and outcome measures. It was good to see you consider quality assurance, participatory evaluation methods and the higher education sector in your monitoring.

You chose an important public health problem and made a strong case for action in the light of the suicide risk. The relationship with socio-economic status, and economic inactivity was also appropriately highlighted. Reference 7 shows that the numbers in many of the research studies are modest and there were risks of bias. It would have been helpful to have more detail on the proposed intervention, and the likely duration of effect and any concerns. Your evaluation slide was comprehensive and you used the Donabedian triad effectively. You presented fluently and interestingly. An original pitch, well done!

Linking with The 10 Year Health Plan for England (2025)

- Sickness to prevention
 - Hospital to community
 - Analogue to digital
-
- Increases awareness of such plans e.g. *"Green social prescribing is embedded within the NHS Long Term Plan"*
 - Strong global health focus in Dragons' Den – transferable lessons to be learnt for the NHS?

- deliver on our world-leading [Tobacco and Vapes Bill](#), which will mean that children turning 16 this year (or younger) can never legally be sold tobacco. The number of 11 to 15-year-olds who regularly vape has doubled^[footnote 9] in the last 5 years, and to crack down on this unacceptable trend, we will also halt the advertising and sponsorship of vapes and other nicotine products
- launch a moonshot to end the obesity epidemic. We will restrict junk food advertising targeted at children, ban the sale of high-caffeine energy drinks to under 16-year-olds, consider reforms to the soft drinks industry levy to drive reformulation, and - in a world first - introduce mandatory healthy food sales reporting for all large companies in the food sector. We will use that reporting to set new mandatory targets on the average healthiness of sales
 - restore the value of Healthy Start from the 2026 to 2027 financial year, expand free school meals so that all children with a parent in receipt of Universal Credit are eligible, and update school food standards to ensure all schools provide healthy, nutritious food
 - harness recent breakthroughs in weight loss medication and expand access through the NHS. We will negotiate new partnerships with industry to provide access to new treatments on a 'pay for impact on health outcomes' basis
 - encourage citizens to play their part, including through a new health reward scheme to incentivise healthier choices. We will also work with the Great Run Company to set up a campaign to motivate millions to move more on a regular basis
 - tackle harmful alcohol consumption by introducing new standards for alcohol labelling. We will support further growth in the no- and low-alcohol market.
 - join up support from across work, health and skills systems to help people find and stay in work. We will work with all integrated care boards (ICBs) to establish Health and Growth Accelerators models
 - expand mental health support teams in schools and colleges and provide additional support for children and young people's mental health through Young Futures Hubs
 - increase uptake of human papillomavirus (HPV) vaccinations among young people who have left school, to support our [ultimate aim](#) to eliminate cervical cancer by 2040. We will fully roll out lung cancer screening for those with a history of smoking
 - create a new genomics population health service, accessible to all, by the end of the decade. We will implement universal newborn genomic testing and population-based polygenic risk scoring alongside other emerging diagnostic tools, enabling early identification and intervention for individuals at high risk of developing common diseases

- deliver on our world-leading [Tobacco and Vapes Bill](#), which will mean that children turning 16 this year (or younger) can never legally be sold tobacco. The number of 11 to 15-year-olds who regularly vape has doubled^[footnote 9] in the last 5 years, and to crack down on this unacceptable trend, we will also halt the advertising and sponsorship of vapes and other nicotine products
- launch a moonshot to end the obesity epidemic. We will restrict junk food advertising targeted at children, ban the sale of high-caffeine energy drinks to under 16-year-olds, consider reforms to the soft drinks industry levy to drive reformulation, and - in a world first - introduce mandatory healthy food sales reporting for all large companies in the food sector. We will use that reporting to set new mandatory targets on the average healthiness of sales
 - restore the value of Healthy Start from the 2026 to 2027 financial year, expand free school meals so that all children with a parent in receipt of Universal Credit are eligible, and update school food standards to ensure all schools provide healthy, nutritious food
 - through the NHS. We will negotiate new partnerships with industry to provide access to new treatments on a 'pay for impact on health outcomes' basis
 - encourage citizens to play their part, including through a new health reward scheme to incentivise healthier choices. We will also work with the Great Run Company to set up a campaign to motivate millions to move more on a regular basis
 - tackle harmful alcohol consumption by introducing new standards for alcohol labelling. We will support further growth in the no- and low-alcohol market.
 - join up support from across work, health and skills systems to help people find and stay in work. We will work with all integrated care boards (ICBs) to establish Health and Growth Accelerators models
 - expand mental health support teams in schools and colleges and provide additional support for children and young people's mental health through Young Futures Hubs
 - increase uptake of human papillomavirus (HPV) vaccinations among young people who have left school, to support our [ultimate aim](#) to eliminate cervical cancer by 2040. We will fully roll out lung cancer screening for those with a history of smoking
 - create a new genomics population health service, accessible to all, by the end of the decade. We will implement universal newborn genomic testing and population-based polygenic risk scoring alongside other emerging diagnostic tools, enabling early identification and intervention for individuals at high risk of developing common diseases

Why use the Dragons' Den assessment format?

- Enables students to understand the **relevance** of public health to clinical medicine⁴
- Supports students to understand their chosen communities and **populations**⁴
- ‘Dragons’ Den style Public Health pitch’ – “an example of transformative learning and of **engaging** medical students in the art and science of public health”⁵
- Nudges students to consider **equitable** health improvement
- Widens participation and contributes to **decolonising** the curriculum
- Received positive **feedback** from students and staff
- Peer to peer teaching element bolsters student **ownership** and impact

Student ownership and peer-peer learning

"The Dragons' Den session, it was interactive and practical, and hearing peer's pitches exposed me to public health issues in other regions, which really broadened my perspective."

"Dragons Den presentation allowed me to think about all the aspects of public health and apply them to a project of my own"

"... The task is quite enjoyable, being able to research something you specifically are interested in"

"Really enjoyed the Dragons Den presentations as it allowed us to be creative and get involved in the block."

Challenges and future considerations

- Sustainability: Maintaining engagement with public health and equity principles long term
- Level of student support required
- Use of AI by students
- Students maintaining a public health focus in the face of topics subject to significant non-healthcare influence.
- ? Increasing awareness of the 5 technologies outlined in the NHS Plan
- Great variety in levels of public health knowledge amongst students

"The dragons den presentations were very fun and well organised. I think this was a highlight of the public health placement."

References

1. Crespo R. Amartya SEN (2009), The Idea of Justice, The Belknap Press of Harvard University Press, Cambridge, MA. Revista Empresa y Humanismo. 2011:128-30.
2. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, Fineberg H, Garcia P, Ke Y, Kelley P, Kistnasamy B. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. The lancet. 2010 Dec 4;376(9756):1923-58.
3. Lokugamage A, Gishen F, Wong S. 'Decolonising the Medical Curriculum ': Humanising medicine through epistemic pluralism, cultural safety and critical consciousness. London review of education. 2021 May 19;19(1):1-22.
4. Vyas A, Rodrigues VC, Ayres R, Myles PR, Hothersall EJ, Thomas H. Public health matters: Innovative approaches for engaging medical students. Medical Teacher. 2017 Apr 3;39(4):402-8.
5. Pearson, Georgina; Thomas, Hugh (2018). Transformative learning in public health – Using a 'Dragon's Den' approach. St George's, University of London. Poster.<https://doi.org/10.24376/rd.sgul.6120734.v1>
6. General Medical Council 'GMC Outcomes for Graduates'. Published 2020. Accessed online 26/10/2025 [Outcomes for graduates guidance - GMC](#)
7. City St George's Inequalities Working Group Periodic Review Report. 2025.



Thanks for listening! Happy to answer Qs.

The background features a soft, pastel-colored sky with stylized, layered clouds in shades of light blue, pink, and white. A dark, semi-transparent rectangular box is positioned on the right side of the image, serving as a backdrop for the text.

THE FUTURE OF MEDICAL EDUCATION IN POPULATION HEALTH

MEDICAL SCHOOLS COUNCIL (MSC)

DR KATIE PETTY-SAPHON & DR IMOGEN SHAW

PREVENTION STARTS EARLY



HOW MSC IS AIMING TO DELIVER
PROPOSALS IN 10 YEAR PLAN



CURRENT BARRIERS TO
PROGRESS

INEQUALITIES (MENTIONED 20X IN 10-YEAR HEALTH PLAN)

- If someone is: homeless; from working class job; ethnic minority background; rural/coastal area; deindustrialized inner cities; or have experienced domestic violence = **worse NHS access, worse outcomes and die earlier**
- Widening health gap between rich and poor, children sicker than a decade ago and adults falling into ill health earlier. Highest need have fewest GPs, worst performing services and longest waits.
- Encouraging people to take charge of own health but recognize inequalities in access to systems. Also doesn't address inequality in education quality.
- Private healthcare boom, a two-tier health system, will widen inequalities. **“NHS becomes poor service for poor people”**.



FIT FOR THE FUTURE

With focus on the shift from treatment to prevention in the 10 Year Health plan, the following words are mentioned:

- Public Health
- 14 times
- Prevention
- 78
- Prevent
- 130

In Outcomes for Graduates, this emphasis is mirrored, with health promotion and illness prevention mentioned:

Health promotion and illness prevention

25 Newly qualified doctors must be able to apply the principles, methods and knowledge of population health and the improvement of health and sustainable healthcare to medical practice.

They must be able to:

- a explain the concept of wellness or wellbeing as well as illness, and be able to help and empower people to achieve the best health possible, including promoting lifestyle changes such as smoking cessation, avoiding substance misuse and maintaining a healthy weight through physical activity and diet
- b describe the health of a population using basic epidemiological techniques and measurements
- c evaluate the environmental, social, behavioural and cultural factors which influence health and disease in different populations
- d assess, by taking a history, the environmental, social, psychological, behavioural and cultural factors influencing a patient's presentation, and identify options to address these, including advocacy for those who are disempowered
- e apply epidemiological data to manage healthcare for the individual and the community and evaluate the clinical and cost effectiveness of interventions
- f outline the principles underlying the development of health, health service policy, and clinical guidelines, including principles of health economics, equity, and sustainable healthcare
- g apply the principles of primary, secondary and tertiary prevention of disease, including immunisation and screening
- h evaluate the role of ecological, environmental and occupational hazards in ill-health and discuss ways to mitigate their effects
- i apply the basic principles of communicable disease control in hospital and community settings, including disease surveillance
- j discuss the role and impact of nutrition to the health of individual patients and societies
- k evaluate the determinants of health and disease and variations in healthcare delivery and medical practice from a global perspective and explain the impact that global changes may have on local health and wellbeing.

- d select appropriate forms of management for common diseases, and ways of preventing common diseases, and explain their modes of action and their risks from first principles

- l propose a plan of management including prevention, treatment, management and discharge or continuing community care, according to established principles and best evidence, in collaboration with other health professionals if necessary
- m support and motivate the patient's self-care by helping them to recognise the benefits of a healthy lifestyle and motivating behaviour change to improve health and include prevention in the patient's management plan

- d apply measures to prevent the spread of infection, and apply the principles of infection prevention and control

HOW DOES THE EMPHASIS ON PREVENTION TRANSLATE TO TEACHING?

- Over the summer, MSC informally collected medical school responses regarding their public health teaching via an email chain for medical school Education Leads

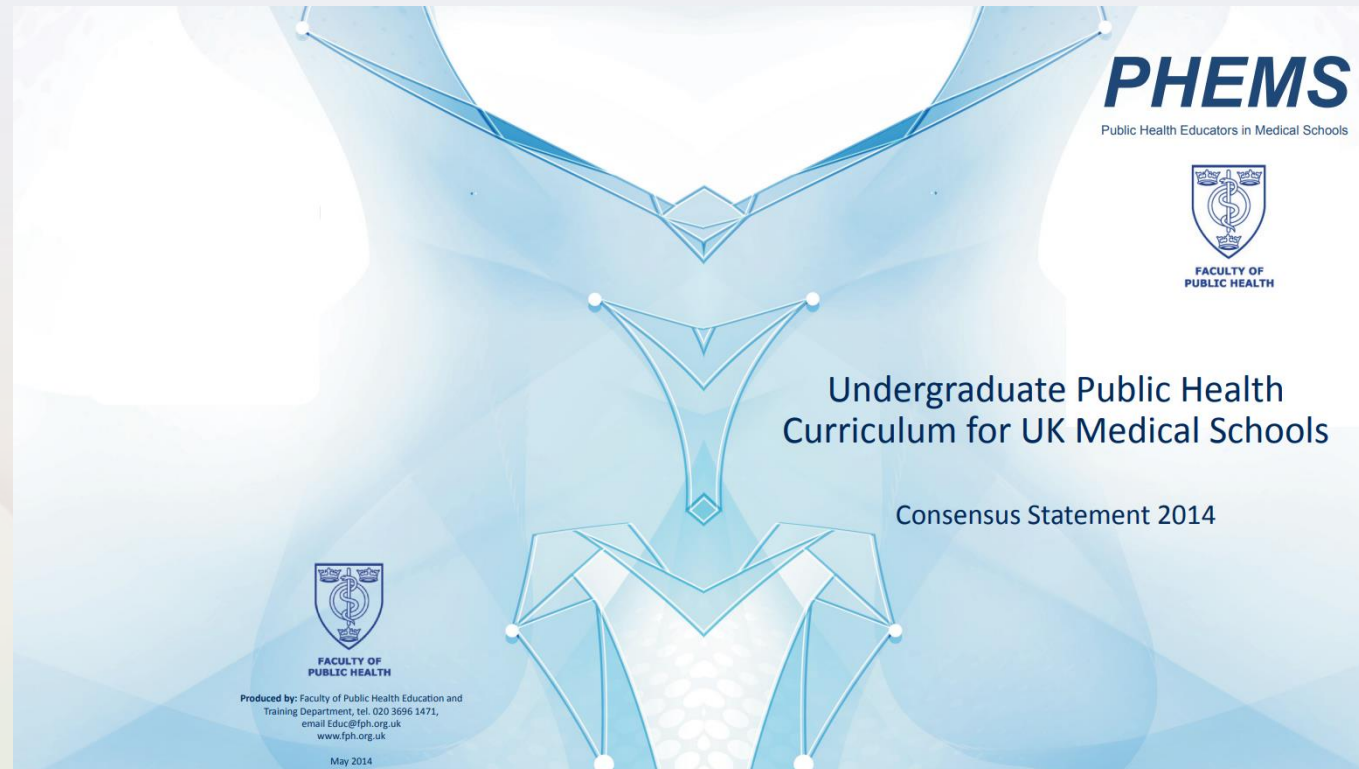
HOW IS PUBLIC HEALTH TAUGHT?

- **7/15 medical schools = longitudinal/recurring theme.**
- **6/15 medical schools = dedicated themes**
- **2/15 = no dedicated PH teaching but covered related topics.**
- **5/8 medical school respondents = occurred throughout course, but mostly front-loaded**
- **2/8 in later years, 1/8 almost completely delivered in first year**
- **No “correct” way**

EXAMPLES OF GOOD PRACTICE FROM ANALYSIS

- *Students self-record videos advocating on a topic of their choice as part of PPH module assessment; in the Health Improvement module, students collaboratively research a local public health issue, designing a health improvement intervention and producing a poster presentation.*
- *Small group sessions with sim patients to teach students how to communicate risk-related information; students do presentations of their critical appraisal of research articles to peers and assessors **as if to a lay audience***
- **University of Southampton**
- *Our public health team has designed a curriculum that is intended to explicitly link clinical practice with population health to maximise engagement of students and demonstrate the utility of public health knowledge in practice (regardless of specialty of interest). We also undertake a considerable amount of student co-production of teaching, and base our explanation of public health on a model that demonstrates the key elements of a public health approach*
- **University of Cambridge**

GUIDELINES ON TEACHING



- https://www.fph.org.uk/media/2685/phems-updated-consensus-statement-2019-with-foreword_final.pdf

FPH domain (extended) 2015 specialty key area (KA)	PHEMS core curriculum goal	GMC Outcomes for Graduates 2018 learning outcomes Key: Professional values & behaviours Professional skills Professional knowledge	Indicative content
6. Using health information Specialty Training KA1: • Use of public health intelligence to survey and assess a population's health and wellbeing	• To use, analyse, and interpret health information to improve clinical practice	(2s) Access and analyse reliable sources of current clinical evidence and guidance and have established methods for making sure their practice is consistent with these (19c) Explain their professional and legal responsibilities when accessing information sources in relation to patient care, health promotion, giving advice and information to patients, and research and education. (19d) Discuss the role of doctors in contributing to the collection and analysis of patient data at a population level to identify trends in wellbeing, disease and treatment, and to improve healthcare and healthcare system (19e) Apply the principles of health informatics to medical practice (25e) Apply epidemiological data to manage healthcare for the individual and the community and evaluate the clinical and cost effectiveness of interventions (26j) Use evidence from large scale public health reviews and other sources of public health data to inform decisions about the care of individual patients.	1. What are the various sources of epidemiological data, and how would you use these data to inform decisions relating to population and individual health? (2s, 19c, 19d, 19e, 25e, 26j) 2. What is the role of public health organizations (public health teams in local government; Public Health England) in the surveillance and assessment of the population's health and wellbeing? (19c, 19d) 3. Which data sources can be used to assess population health status and needs and how? What data governance issues are raised? (2s, 19c, 19d, 19e, 25e, 26j) 4. How would you use quantitative data handling (including statistical) skills in relation to population and individual health? (19e, 25e, 26j)
ATTITUDES & VALUES			
7. Adopting public health attitudes and values that embrace multiple and diverse perspectives Specialty Training KA4 & KA9: • Strategic leadership and collaborative working for health & • Professional personal and ethical development	• To adopt a 'population perspective' to critical analysis in everyday clinical practice and in considering health inequalities	(1) Make the care of patients their first concern, applying their knowledge and skills in a competent, ethical and professional manner and taking responsibility for their own actions in complex and uncertain situations (2j) Recognise the potential impact of their attitudes, values, beliefs, perceptions and personal biases (which may be unconscious) on individuals and groups and identify personal strategies to address this (2m) Act appropriately, with an inclusive approach, towards patients and colleagues (2s) Access and analyse reliable sources of current clinical evidence and guidance and have established methods for making sure their practice is consistent with these (4) Demonstrate knowledge of the principles of the legal framework in which medicine is practised in the jurisdiction in which they are practising, and have awareness of where further information on relevant legislation can be found (6f) Manage the uncertainty of diagnosis and treatment success or failure and communicate this openly and sensitively with patients, their relatives, carers or other advocates	1. What are the legal, moral, and ethical responsibilities involved in protecting and promoting the health of individual patients, their dependants, and the public, including vulnerable groups? (1, 2j, 2m, 2s, 4, 6f, 7, 7a, 7g, 7h, 19b) 2. What is the role of clinicians in advocacy for public health at a global, national, and local level? (2j, 2m, 4, 6f, 7, 7a, 7g, 10b, 25k) 3. What are the ways in which you can advocate for your patients? (1, 2j, 4, 6f, 7, 7a, 7h, 9b, 10b) 4. What is the public health impact of drug prescribing? (2j, 2s, 6f) 5. What is a doctor's role in policy-making? (6f, 7, 7a, 9a, 10b) 6. What makes an effective public health advocate? (2j, 2m, 4, 6f, 7, 7a, 7h, 10b) 7. What are the ethical issues in public health and its research and their implications for practice? (1, 2j, 2m, 2s, 4, 6f, 7, 7a, 7g, 19b)

4. Learning and assessment

Curriculum designs, management structures, and educational approaches will differ between medical schools, but each school should show coherence in how public health is learned and assessed (formatively and summatively). Assessments should reflect the importance of public health to holistic evidence-based clinical practice, mapped or blue-printed to public health domains, goals, or learning outcomes, as appropriate. Assessments that sample public health learning might be via written examinations, written or creative assignments, clinical placement portfolios, or clinical examinations such as objective structured clinical examinations (OSCEs).

The PHEMS learning goals and the suggested indicative curriculum content (Table 1) illustrate the relevance of public health to clinical practice and emphasize the role of doctors in protecting and improving the health of the population and reducing health inequalities. Embedding public health throughout the entire medical programme as a 'vertical strand', and integrating public health concepts into core learning in clinical practice, should help to promote a 'population perspective' essential to the doctor's repertoire.

Where feasible, opportunities for experiential learning (such as placements with community groups, charities, and social care networks) can enable students to see how various social situations affect people's health. Simulating practical scenarios in the classroom can foster a sense of participation in public health activities. Opportunities should also be sought for students to interact with "strong and active role models"^{15(p8)} from various sectors.

5. Who is a public health educator?

Some public health departments will lack capacity for educational delivery by public health specialists at all levels of the curriculum. Public health education could involve a range of departments and disciplines focused on populations and community health (for example, primary healthcare, occupational and environmental health, child health, clinical epidemiology, biostatistics, health services research, health promotion, health economics, behavioural sciences, demography, ethics, education, social policy, and sociology). Working closely with colleagues from other clinical specialties and disciplinary backgrounds increases public health educator capacity within medical schools and should strengthen the clinical relevance of public health education, enhancing critical analysis and an integrated approach.

Non-public health facilitators of problem-based learning (PBL) groups (and other such student-centred learning approaches) may need support (educator development workshops or written guidance) in understanding how to prompt students towards considering public health aspects in scenarios. Irrespective of who is responsible for public health education, there should be clearly named public health specialist leadership within each medical school for curriculum and assessment, to ensure coherence and constructive alignment (between intended outcomes, what students learn, what is assessed, and how students perceive these).

FPH support through the PHEMS network is important for a constructive community of public health educators for medical students. The GMC's *Good Medical Practice*¹⁶ states that all doctors "should be prepared to contribute to teaching and training doctors and students" (para 39). Sharing public health expertise is an important role for public health consultants, which should promote a population perspective in the future medical workforce and inspire a new generation of medical doctors to enter specialty training.

AGING AND MULTIMORBIDITY

Medicine of older adult

Presentations
Abnormal involuntary movements
Auditory hallucinations
Blackouts and faints
Chest pain
Confusion
Constipation
Dizziness
Driving advice
Elder abuse
Electrolyte abnormalities
Faecal incontinence
Falls
Frailty
Hearing loss
Hypertension
Immobility
Memory loss
Mental capacity concerns
Peripheral oedema and ankle swelling
Skin ulcers
Struggling to cope at home
Trauma
Urinary incontinence
Urinary symptoms
Vertigo
Visual hallucinations

Conditions
Benign paroxysmal positional vertigo
Cardiac failure
Delirium
Dementias
Hyperthermia and hypothermia
Lower limb fractures
Malnutrition
Non-accidental injury
Osteoporosis
Parkinson's disease
Pressure sores
Stroke
Urinary incontinence

- Emphasis on preventative teaching, relate to good QoL
- Promote screening
- How to recognize important abnormal symptoms in yourself and others

THE WAY FORWARD?

How do we align these competencies with delivery, without inflating the curriculum?

REFERENCES

- Department of Health and Social Care. 10 Year Health Plan for England: Fit for the Future [Internet]. GOV.UK. 2025. Available from: <https://www.gov.uk/government/publications/10-year-health-plan-for-england-fit-for-the-future>
- General Medical Council. Outcomes for Graduates 2018 [Internet]. 2018 Jun. Available from: https://www.gmc-uk.org/-/media/documents/outcomes-for-graduates-2020_pdf-84622587.pdf
- Undergraduate Public Health Curriculum for UK Medical Schools: A Consensus Statement [Internet]. 2019. Public Health Educators in Medical Schools. Faculty of Public Health; Available from: https://www.fph.org.uk/media/2685/phems-updated-consensus-statement-2019-with-foreword_final.pdf
- MLA Content Map [Internet]. 2021. General Medical Council. Available from: https://www.gmc-uk.org/-/media/documents/mla-content-map_pdf-85707770.pdf
-