‘4-4-54’ and Thrive Plymouth
Plymouth’s radical upgrade in prevention

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Healthcare, social care and the missing piece
Population health

“.....the health outcomes of a group of individuals, including the distribution of such outcomes within the group”

- Kindig and Stoddart 2003.
Source: The King’s Fund 2013
The IHI healthcare Triple Aim

Population Health

Experience of Care

Per Capita Cost
So why are we focused on population health in our integration journey?
1. Inequalities in health are real and are driven by deprivation

Source: Bernstein et al 2010
2. Deprivation is in turn associated with multi-morbidity

Charlton et al, 2013
3. Developing multi-morbidity depends on lifestyle

<table>
<thead>
<tr>
<th>No. of healthy behaviours</th>
<th>Good lung function†</th>
<th>Good cognitive function†</th>
<th>Good physical function†</th>
<th>No disability‡</th>
<th>Good mental health§</th>
<th>Good systolic BP|</th>
<th>Good systolic BP or no use of antihypertensive drugs</th>
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</thead>
<tbody>
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<td>1.69 (1.12–2.55)</td>
<td>0.85 (0.58–1.26)</td>
<td>1.34 (0.93–1.91)</td>
<td>1.19 (0.81–1.74)</td>
<td>1.18 (0.75–1.83)</td>
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<td>2.08 (1.41–3.07)</td>
<td>1.12 (0.77–1.63)</td>
<td>1.62 (1.29–2.56)</td>
<td>1.60 (1.11–2.31)</td>
<td>1.81 (1.17–2.79)</td>
<td>0.79 (0.55–1.15)</td>
<td>1.30 (0.96–1.79)</td>
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<td>3</td>
<td>2.84 (1.91–4.22)</td>
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<td>2.17 (1.54–3.08)</td>
<td>1.82 (1.25–2.63)</td>
<td>2.33 (1.50–3.62)</td>
<td>0.98 (0.71–1.39)</td>
<td>1.40 (1.02–1.91)</td>
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<td>3.63 (2.31–5.71)</td>
<td>2.15 (1.39–3.33)</td>
<td>2.97 (1.99–4.45)</td>
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<td>p for trend</td>
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<td>&lt; 0.001</td>
<td>0.4</td>
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Note: BP = blood pressure, CI = confidence interval, OR = odds ratio.

*Adjusted for age, sex, level of education and marital status. Numbers of participants vary from 3487 to 4455, depending on the measure of functioning (see Appendix 3 for further details).
†Defined as not being in the lowest age- and sex-standardized quintile.
‡Defined as no self-reported difficulties in basic and instrumental activities of daily living.
§Defined as score > 42 on mental component of the 2007–2009 questionnaire.
¶Defined as not being in the highest age- and sex-standardized quintile of systolic blood pressure.

Sabia et al, 2012
4. Unhealthy lifestyles are clustering and polarising in our population

<table>
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<tr>
<th>Category</th>
<th>One risk factor</th>
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<th>Four risk factors</th>
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<td>0.78† 0.66</td>
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<td>Partly/unskilled manual</td>
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<td>Economic status (active)</td>
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<td>1.28 0.99</td>
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<td>1.33 0.83</td>
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</table>

Buck and Frosini, 2012
Our challenge

Inequalities

Deprivation

Multiple Morbidities

Poor lifestyle choices
Plymouth life expectancy bus route 2011-13

Wards just a few miles apart can have life expectancy values varying by years. Travelling the seven miles south from the Southway ward or west from the Plympton Chaddlewood ward or the Plymstock Dunstone ward each mile closer to the Devonport ward represents almost one year of life expectancy lost.
INTEGRATION

......working together as a *population health system*
4 Lifestyle Behaviours
- Smoking
- Drinking
- Inactivity
- Diet

4 Chronic Diseases
- Respiratory Disease
- Heart Disease
- Cancer
- Stroke

Lead to Which cause

54% of Deaths

Positive choices for better health in a growing city
Map of mortality rate for the 4 diseases combined in Plymouth

Mortality rate for four chronic diseases combined (2011-2013). All ages per 10,000 population.

- Red: 65.4 and over
- Pink: 60.7 to 65.4
- Orange: 52.4 to 60.7
- Green: 48.4 to 52.4
- Light Green: Under 48.4
Smoking prevalence in Plymouth neighbourhoods 2012/13
Map of % of Plymouth adults that eat healthily (2006-2008)

Percentage of the adult population that eat healthily (2006-2008)

- Under 22.5
- 22.5 to 24
- 24 to 26.5
- 26.5 to 28
- 28 and over
Map of hospital admission rates for alcohol-related harm in Plymouth (2013/14)

Hospital admission rates for alcohol-related harm for wards in Plymouth (2013/14). Rate per 10,000 population.

- 69.7 and over
- 63.5 to 69.7
- 53.4 to 63.5
- 47.6 to 53.6
- Under 47.6
Public health is "the science and art of preventing disease, prolonging life and promoting health through organized efforts .... of society, organizations, public and private, communities and individuals."
Thrive Plymouth principles

1. Population prevention

2. Common risk factor approach

3. Changing the context of choice making
1. Population prevention: small individual changes yield significant gains for population

The Bell-Curve Shift in Populations

Shifting the whole population into a lower risk category benefits more individuals than shifting high risk individuals into a lower risk category.

Population approach: encourage everyone to change, shifting the entire distribution.

Risk reduction approach: Move high risk individuals into normal range.

2. Common risk factor approach: re-orientating prevention to address clustering of risk factors
3. Changing the context of choice: the example of suicide deaths in UK from 1955-1971

Fig. 16.2 Rates of suicide per 100,000 in males and females in England and Wales between 1955 and 1971, overall, involving carbon monoxide and not involving carbon monoxide (adapted with permission from Kreitman 1976).

Hawton, 2007; Kreitman, 1976
The logic model of Thrive Plymouth

**WHAT**
- The Problem we want to solve
  - Inequalities in health outcomes
  - Life expectancy not rising equally for different groups
  - Healthy life expectancy not improving

**WHY**
- The analysis of the cause(s) of the problem
  - The behavioural choices that people make
  - Addressing ‘agency’ and ‘structure’ for behaviour change
  - Society’s effort benefits from organisation and strategic focus

**HOW**
- The activities or intervention
  - Set out strategic framework and build collaboration
  - Collect baseline data
  - Social movement for behaviour change – lever on ‘agency’
  - Influence behaviour change enablers where we live, grow, learn, play and work – lever on ‘structure’

**EFFECT**
- The outcomes and impact
  - Narrow inequalities in health
  - Create a system of population surveys and outcome dashboard
  - Improve healthy life expectancy and compress morbidity
  - Consistently narrow the gap in life expectancy