

# **GAPS IN MEDICAL SERVICES-**

## **LEADERSHIP & PROFESSIONALISM IN PROMOTING THE HEALTH OF ALL CHILDREN**

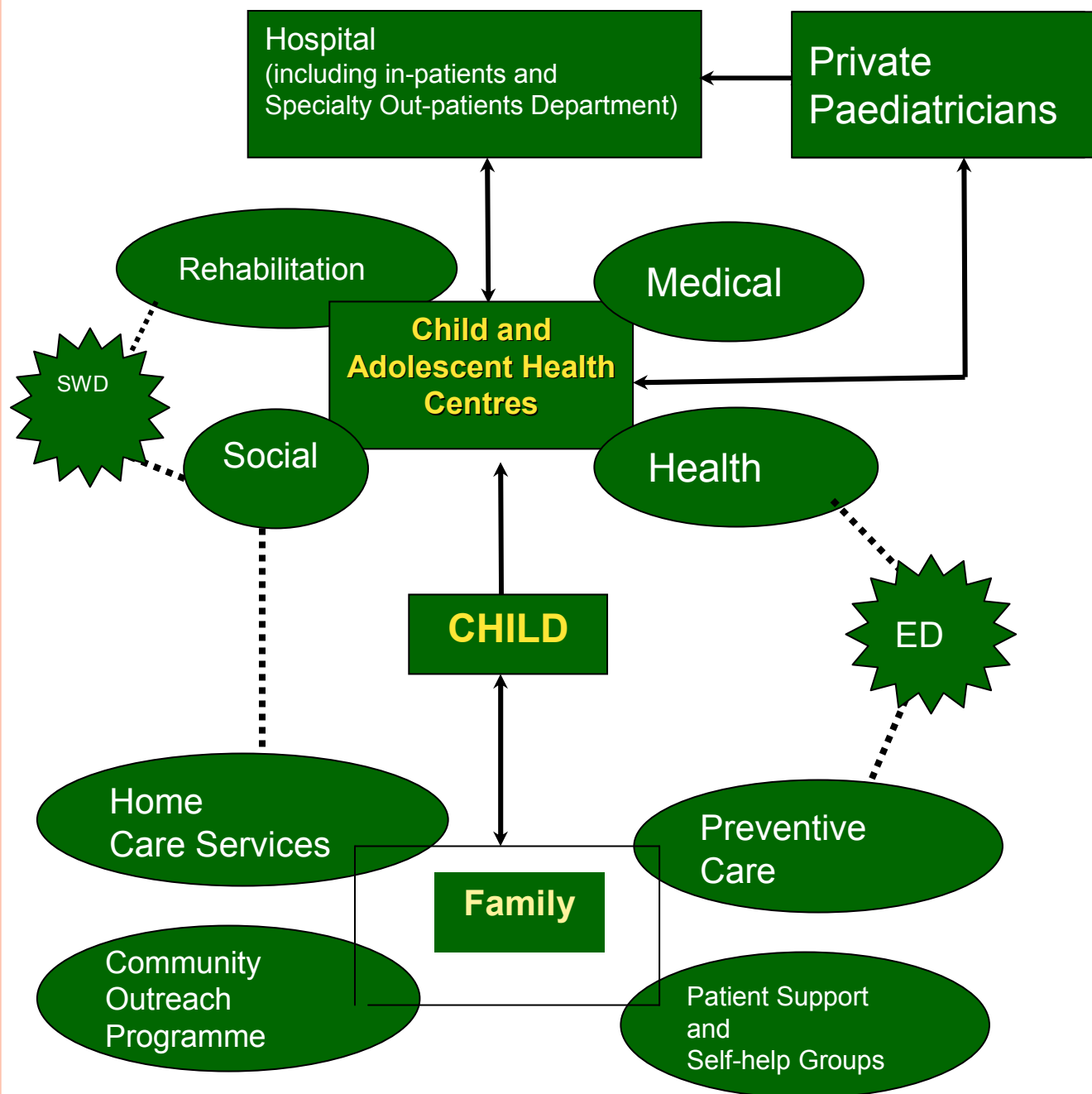
**a new mandate for Centre of Excellence on  
Paediatrics**

**CB Chow**

Retired general paediatrician  
Hong Kong Committee on Rights of Children

**Acknowledgement :**

Prof. Cal Sia, Hawaii  
Prof. Jack Shonkoff, Harvard  
Prof. Frank Oberklaid, MCH, AU



# COMMUNITY-BASED INTEGRATED CHILD HEALTH CARE MODEL

2001

Response of the Hong Kong College of Paediatricians to the Consultation Document on Health Care Reform: 'Lifelong Investment in Health' by the Health and Welfare Bureau, Government of the Hong Kong SAR, China





# GAPS IN PAEDIATRIC & CHILD HEALTH SERVICES

- Definition of health - approaches
- Understanding on factors affecting health and implications - “Life-course epidemiology” on *genetics, social determinants, developmental origins, nutrition.....*
- Rapidly changing ecological environments
- New advances in technology – from genomic to mobile technology
- Rapidly changing health literacy of public and expectations – need for transparency and accountability
- Health care systems - integrated

**Attitude & knowledge**

**Information**

*Technology*

*Training – expertise*

*Policy*

*Planning – R&D*

*Service provision*

**Service delivery model**

**Health care systems**

*Research*

# WHAT IS PAEDIATRICS?

- The word *pediatrics* and its cognates mean **healer of children**; they derive from two Greek words:

- παις (*pais* = child) and
- ιατρός (*iatros* = doctor or healer)

- NOT just healer of childhood diseases

- 上醫醫未病之病

- 聖人不治已病，治未病



WEBSHOT



# WHAT IS HEALTH?

Health is the level of functional and/or metabolic efficiency of a living being.

1. **Absence of diseases**

2. **WHO 1946** - A *state of complete* physical, mental, and social *well-being*, not merely the absence of disease or infirmity.







# HEALTH - NOT JUST ABSENCE OF DISEASE

- Health is multidimensional

- physical health and functional ability
- psychological status and well-being
- social interactions
- education
- economic and vocational status

- *Singer, Institute of Medicine -1998*

- **Institute of Medicine 2004-** Children's health should be defined as the extent to which individual children or groups of children are

- (a) able or enabled to develop and **realize their potential**,
- (b) satisfy their needs, and
- (c) develop the capacities that allow them to **interact successfully** with their **biological, physical, and social environments.**

# Domains of health

Health conditions	Health functioning	Health potentials	<i>Ageing</i>
Alterations in health status (well-being) due to disease, disabilities or injury	Physical, cognitive, emotional and social functioning and deficits	Competency and capacity in physical, cognitive, emotional, social well-being, quality of life and developmental potential	<i>Bone health CVS health Brain health</i>
Symptoms	Functional deficits, disability and restriction in activity	Resilience	<i>Dementia Join pain,,,</i>



# “LIFE-COURSE EPIDEMIOLOGY”

- Genomics & epigenetics – interactions of genes with living environment
- Social determinants of health - association between early-life socioeconomic conditions and adult health related behaviors, morbidity, and mortality
- Sensitive and critical periods of development - *such as the prenatal period and early childhood, present significant opportunities to influence lifelong health.*
- Life-course & community-level approaches to affect key determinants of health are critical – *proportionate universalism to tackle health disparities*

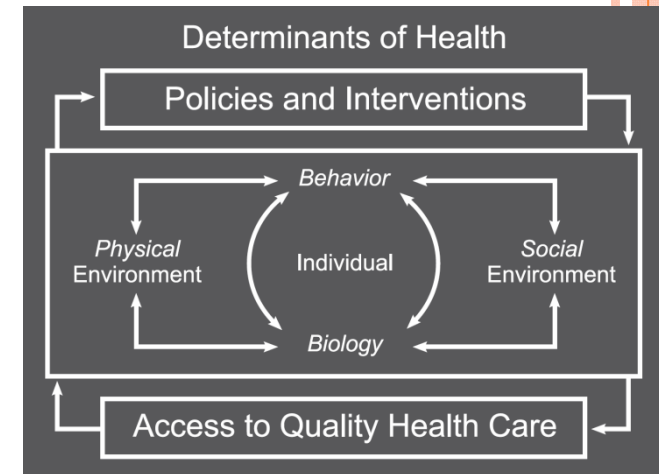


TABLE 3-1 Examples of Reviewed Interventions

Child Health Areas	Intervention Levels			
	Individual	Family	Community/neighborhood	Society/policy
Tobacco exposure	Smoking cessation intervention for pregnant women	Smoking cessation for pregnant women with partner support; smoking cessation for adults living with children	Bans/restrictions in workplaces and public	Increasing the price of tobacco products and enforcing age bans
Obesity	Exercise program; dietary and physical activity; reducing TV watching	Obesity prevention education home visits	Healthier food served in preschools	
Unintentional injury		Prenatal home visitation; home visits that assess risks and provide education	Community education combined with giving incentives for road safety; primary-care-based education; smoke detector distribution	Changes in baby walker safety standards; child passenger safety laws
Mental health	Child-focused skills training; parenting skills training programs	Parent- and child-interaction training programs; collaborative parent problem solving; supportive consultation programs	Preschool-based programs including academic tutoring and teacher training	Employer-based work support through extensive child care assistance and health care subsidies

# THREE ERAS OF MODERN HEALTH CARE

- 1st era - infections (1900 -1960's and beyond): guided hospital structures and function - mismatch with child health issues of the 21st century
- 2nd era - chronic disease (1960's - ongoing): informs present thinking - significant organisational and service delivery reforms, but major issues remain - a work in progress – *community, integrative, palliative & transitional care*
- 3rd era - health for all (2000 - future): focus on the health of *all* children - major policy and service challenges – *from preventive services to social determinants & ecological modifications*
- 4<sup>th</sup> era – *preservation of functions or promotion of healthy ageing (the future) - from genomics to developmental origins & programming....to .....personalized care.....to healthy aging... intergeneration health & development*

(modified from Breslow 2000)

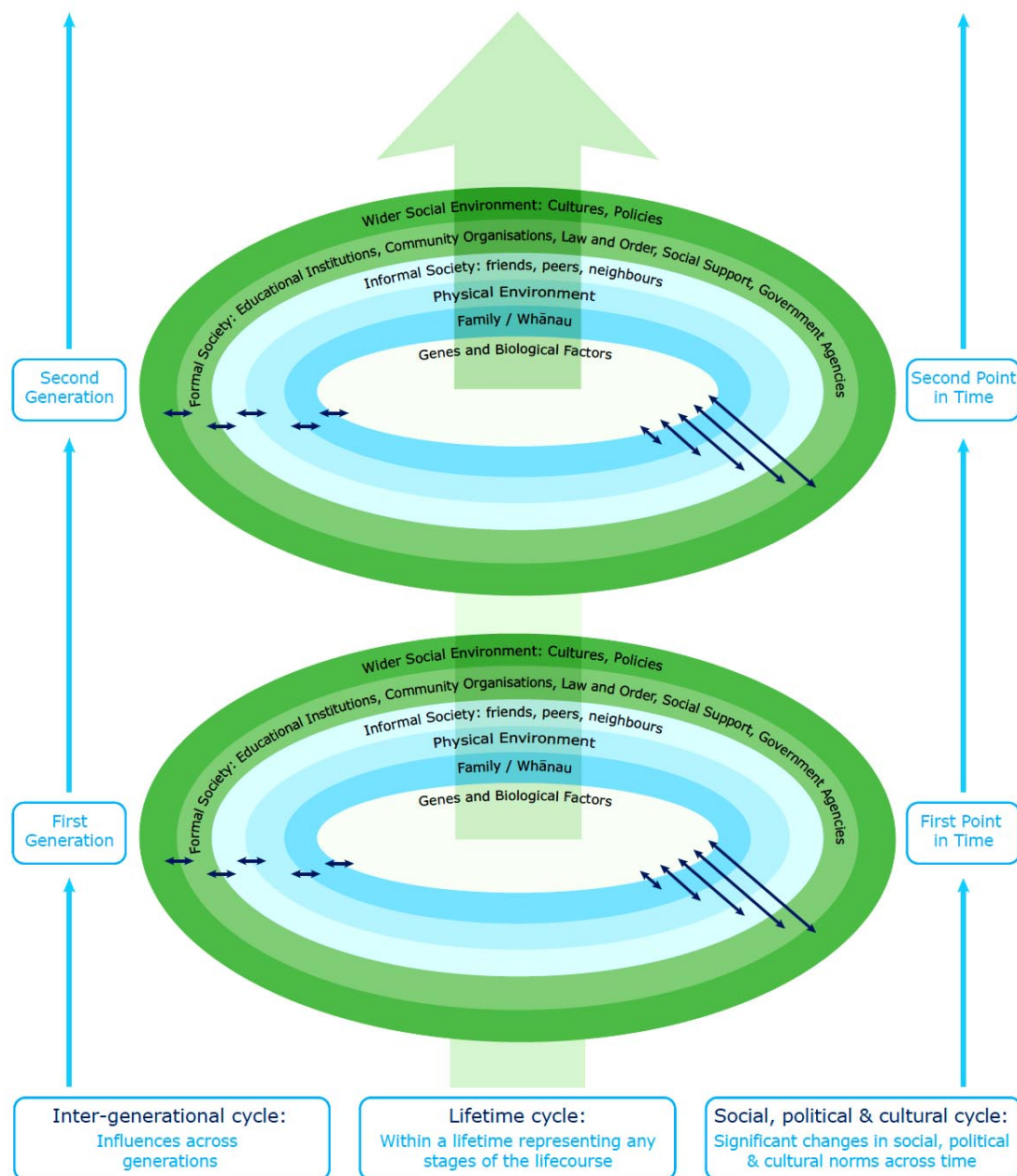


Figure 01. Conceptual framework for understanding child development in *Growing Up in New Zealand*

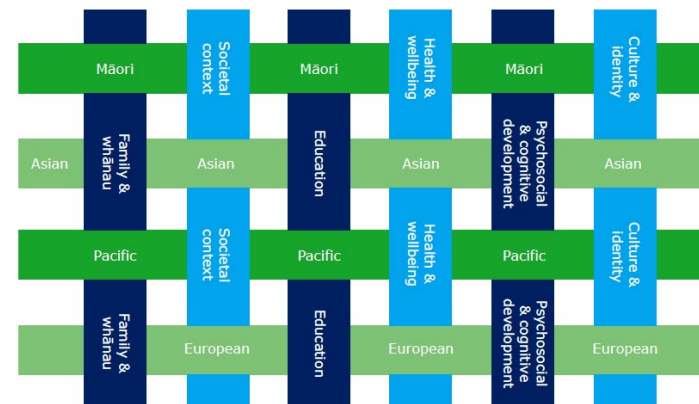


Figure 02. Domains and Themes informing *Growing Up in New Zealand*

## Growing Up in New Zealand

Before we are born  
2010





# EVOLVING HEALTHCARE SYSTEM

## The First Era (Yesterday)

- Focus on acute and infectious disease
- Centred around hospitals and doctors
- Single cause and effect and specific treatment

## The Second Era (Today)

- Focus on chronic disease and disability
- Sub-specialisation, increased technology leading to increased costs
- Multidisciplinary

## The Third Era (Tomorrow)

- Focus on achieving optimal health status for all
- Investment in population-based prevention/early intervention
- Extends well beyond health care system
- *Inevitability of rapid change*

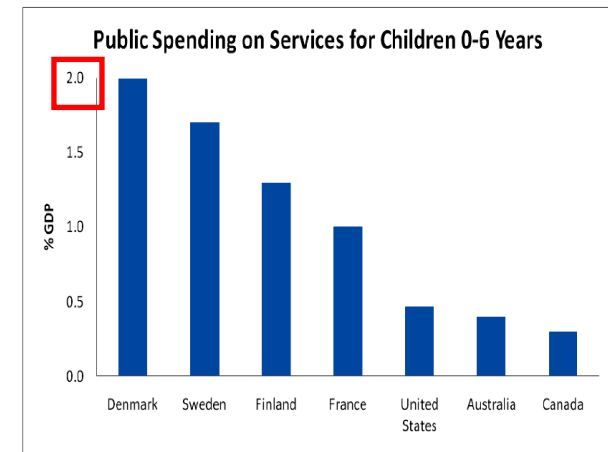


# INFORMATION - GAPS

**To reduce disparities, it is important to identify which populations are most at risk.**

## Geo-spatial analysis

- Disease burdens
- Health problems
- Potential health problems
- Potentially avoidable health problems
- Health expenditures
- Social determinants of health
- Expenditures on community child health services
- Expenditures on training, research and development
- Policy decision process and service models – integratedness & effectiveness



Categories	Indicator Maps
Resources	1. Expenditure on community child health
Health promotion & Disease prevention	2-4: Immunisation rates 5: Breastfeeding
Neonatal care	6. Perinatal mortality 7. Retinopathy of prematurity testing 8. Admission rates of full term infant 9. Readmissions of newborns
Disorders of blood	10. Sickle Cell disease admissions
Endocrine, metabolic and nutritional	11-12. Diabetes: HbA1c<10% & DKA rates
Mental health	13. Inpatient admissions for mental health
Learning Disability	14. Rates of children with SEN
Neurological problems	15-16. Epilepsy: emergency admission & LOS
Hearing	17. Newborn screening 18. Grommet insertion rates
Respiratory	19. Asthma: emergency admissions 20-21. Bronchiolitis: admissions & LOS 22. Tonsillectomy rates
Gastrointestinal	23. Endoscopy rates 24. Inflammatory bowel disease: admissions
Genitourinary system	25. Orchidopexy performed by age 2yrs
Emergency care	26. A&E attendance rates under 4yrs
End-of-Life care	27. Deaths in hospital for children with life-limiting conditions



**Table S.1: Summary of indicators in the Child Health Atlas showing the range and magnitude of variation before and after exclusions;¹ each indicator has been assigned to one of the following categories – activity, cost, equity, outcome, quality (performance as compared against a standard), and safety**

Map no.	Title	Range	Fold difference	Range after exclusions	Fold difference after exclusions	Category of indicator
1	Rate of expenditure (£) on child community health services per head of population aged 0–17 years by PCT 2008/09	1.0–343.4	354	28.6–223.8	8	Cost
2	Percentage of immunisation completion for routine vaccinations against diphtheria, tetanus, pertussis, polio and <i>Haemophilus influenzae</i> type b (DTaP/IPV/Hib) at 2 years by PCT 2009/10	85.3–99.2	1.2	87.6–98.5	1.1	Activity (prevention)
3	Percentage of immunisation completion for routine vaccinations against pneumococcal disease (PCV) at 2 years by PCT 2009/10	63.9–97.4	1.5	71.5–95.0	1.3	Activity (prevention)
4	Percentage of immunisation coverage for routine vaccinations against measles, mumps and rubella (MMR) at 2 years by PCT 2009/10	73.0–96.7	1.3	78.5–94.3	1.2	Activity (prevention)
5	Percentage of infants who are totally or partially breastfeeding at 6–8 weeks by PCT 2010/11	19.2–83.1	4.3	23.1–74.6	3.2	Outcome
6	Rate of perinatal mortality per 1000 births by PCT 2007–2009	3.5–12.6	3.6	5.0–11.0	2.2	Outcome Equity (of access)
7	Proportion (%) of eligible premature babies tested for retinopathy of prematurity (ROP) within the recommended timeframe by PCT 2009/10	14.3–80.0	6	19.2–64.7	3.4	Quality
8	Full-term (≥37 weeks' gestational age at birth) admissions as a proportion (%) of all babies admitted to specialist neonatal care by PCT 2010	24.7–100.0	4	34.7–69.2	2	Outcome
9	Emergency admissions of home births and re-admissions to hospital of babies within 14 days of being born per 1000 live births by PCT 2009/10	15.8–98.3	6	21.5–77.5	3.6	Quality
10	Number of emergency hospital admissions for sickle cell disease (SCD) per individual patient aged 0–17 years by PCT 2007/08–2009/10	1.2–5.8	5	1.7–4.5	2.6	Quality
11	Percentage of children aged 0–15 years in the National Diabetes Audit (NDA) with diabetes whose most recent HbA1c measurement was 10% (86 mmol/mol) or less by PCT 1 January 2009 to 31 March 2010	41.7–100.0	2.4	61.3–92.2	1.5	Outcome
12	Percentage of children aged 0–15 years with previously diagnosed diabetes in the National Diabetes Audit (NDA) admitted to hospital for diabetic ketoacidosis five years prior to the end of the audit period by PCT 1 January 2009 to 31 March 2010	6.4–46.7	7	14.5–37.3	2.6	Outcome

INFORMATION

March 2012

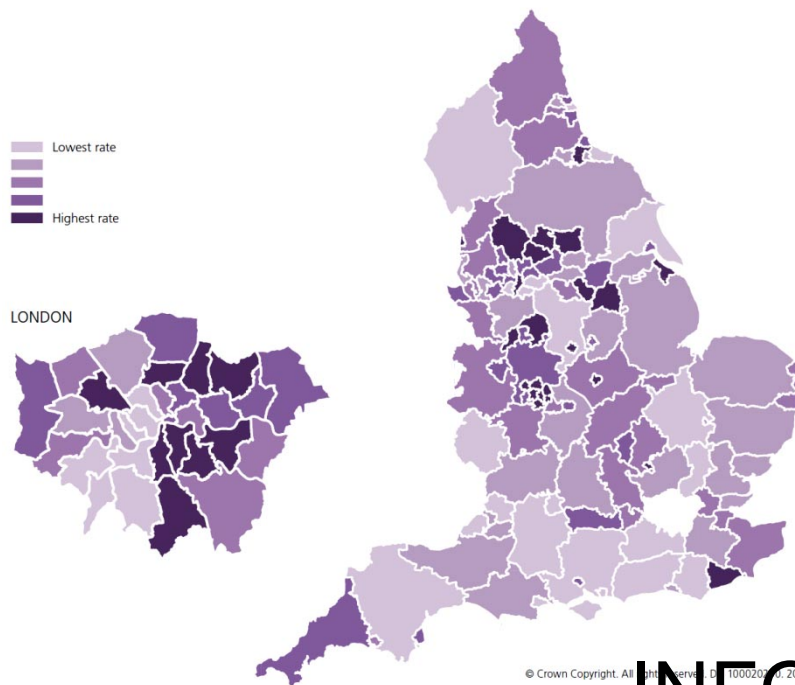
## NHS Atlas of Variation in Healthcare for Children and Young People

Map no.	Title	Range	Fold difference	Range after exclusions	Fold difference after exclusions	Category of indicator
13	Rate of inpatient admissions >3 days' duration in children per 100,000 population aged 0–17 years for mental health disorders by PCT 2007/08–2009/10	3.4–166.1	49	4.4–30.3	7	Activity
14	Percentage of primary school children in state-funded schools with a statement of special educational needs (SEN) by local authority at January 2011	0.3–2.9	11	0.4–2.3	6	Activity
15	Emergency admission rate for children with epilepsy per 100,000 population aged 0–17 years by PCT 2007/08–2009/10	19.1–181.2	9	30.8–133.7	4.3	Quality
16	Mean length of emergency inpatient stay (days) for children with epilepsy aged 0–17 years by PCT 2007/08–2009/10	0.4–4.1	9	0.8–2.8	3.5	Cost
17	Mean time (days) from referral to assessment for hearing tests in newborns by PCT 2010	10.5–57.2	5	13.3–43.6	3.3	Quality
18	Rate of aural ventilation tube (grommet) insertion in children per 100,000 population aged 0–17 years by PCT 2007/08–2009/10	62.1–495.1	8	91.6–424.0	4.6	Activity
19	Emergency admission rate for children with asthma per 100,000 population aged 0–17 years by PCT 2009/10	25.9–641.9	25	97.6–468.5	4.8	Quality
20	Rate of admissions for bronchiolitis in children per 100,000 population aged under 2 years by PCT 2007/08–2009/10	351–5140	15	689–3826	6	Activity
21	Mean length of stay (days) for bronchiolitis in children aged under 2 years by PCT 2007/08–2009/10	0.7–4.1	6	1.3–3.3	2.6	Cost
22	Rate of elective tonsillectomy in children per 100,000 population aged 0–17 years by PCT 2007/08–2009/10	83.1–500.4	6	145.1–423.7	2.9	Activity
23	Admission rate for children for upper and/or lower gastro-intestinal endoscopy per 100,000 population aged 0–17 years by PCT 2007/08–2009/10	39.9–226.3	6	62.5–168.4	2.7	Activity
24	Emergency admission rate for inflammatory bowel disease (IBD) in children per 100,000 population aged 0–17 years by PCT 2007/08–2009/10	53.9–535.7	10	75.8–401.3	5	Quality
25	Proportion (%) of elective orchidopexy procedures performed before the age of 2 years by PCT 2007/08–2009/10	9.7–51.2	5	13.0–46.8	3.6	Quality
26	Rate of accident and emergency (A&E) attendances per 1000 population aged under 5 years by PCT 2009/10	34.3–1232.6	36	231.1–805.4	3.5	Activity
27	Percentage of all deaths in children aged 0–17 years with life-limiting conditions that occur in hospital by PCT 2005–2009	47.4–100.0	2.1	56.3–93.3	1.7	Outcome

## Map 6: Rate of perinatal mortality per all births by PCT

2007–2009

Domain 1: Preventing people from dying prematurely



March 2012

NHS Atlas of Variation in Healthcare  
for Children and Young People

Reducing unwarranted variation to  
increase value and improve quality

○ Two-fold in  
variation

FIGURE 1.2: Promoting commissioning for high-quality care: key sources of data required

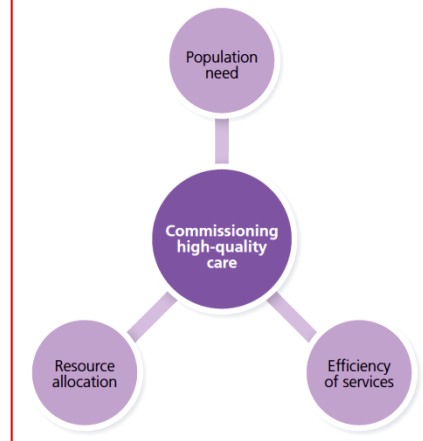
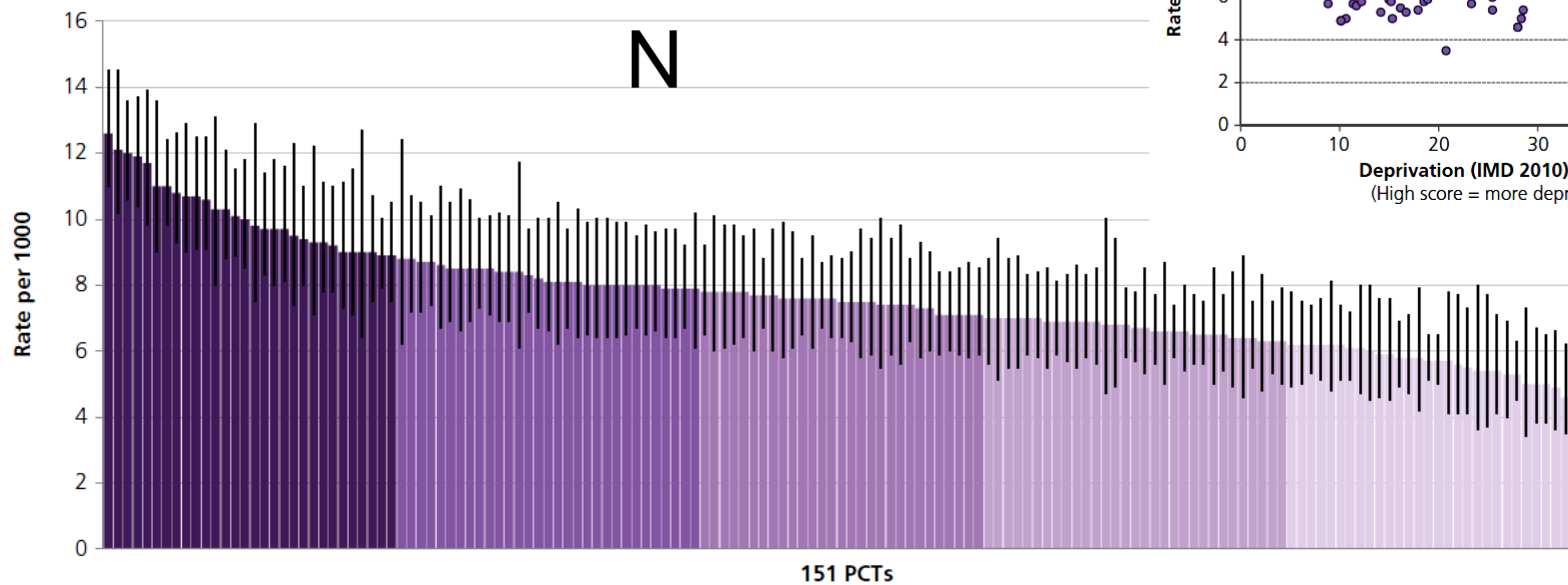
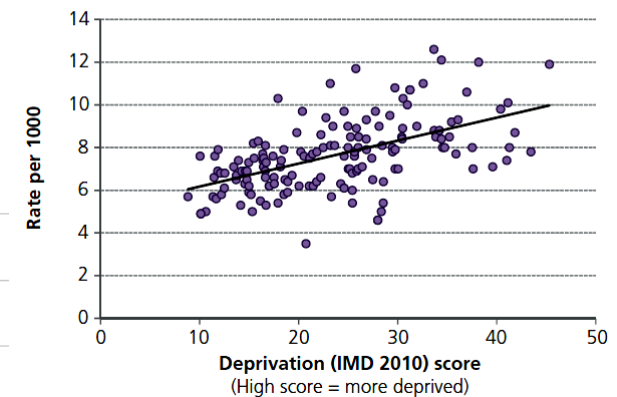


Figure 6.1: Correlation between rate of perinatal mortality per 1000 births by PCT 2007–2009 and deprivation



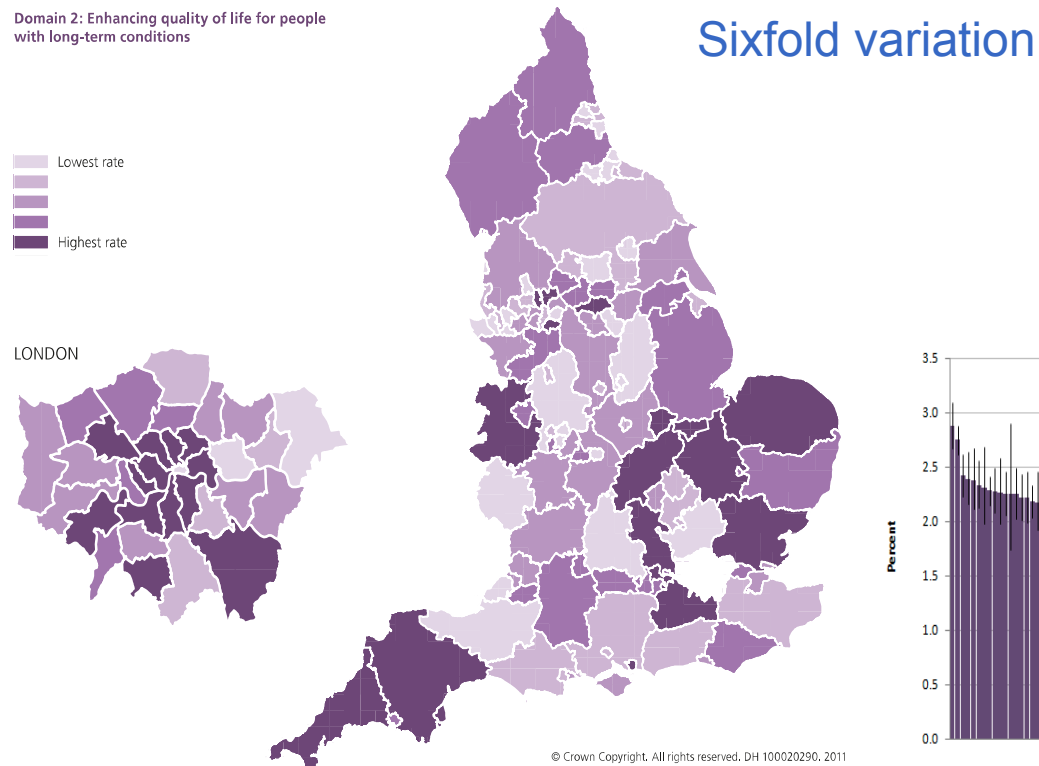
INFORMATION

# PERCENTAGE OF CHILDREN WITH STATEMENT OF SPECIAL EDUCATIONAL NEEDS

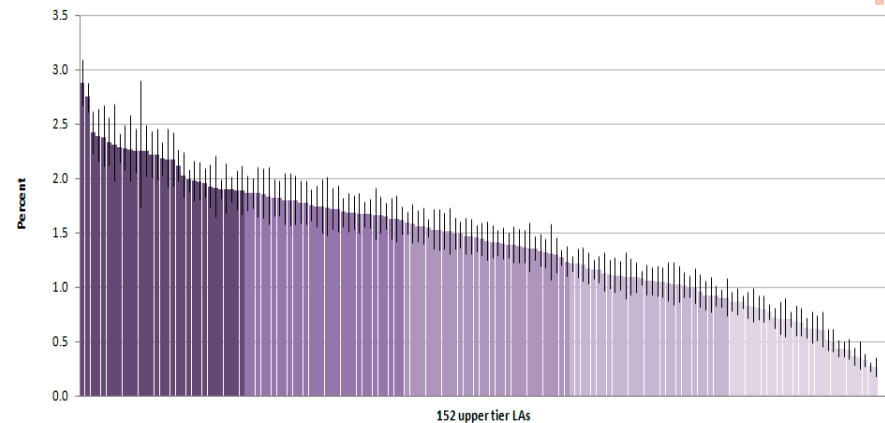
IN PRIMARY SCHOOL CHILDREN IN STATE-FUNDED SCHOOLS, BY LA AT JAN 2011

- Key questions
  - Is the variation warranted or unwarranted?
  - If unwarranted, what are the causes?
  - What can we do to address the causes?

Domain 2: Enhancing quality of life for people with long-term conditions



- Key steps
  - Tackle high priority areas
  - Commissioning for value
  - System-based approach
  - Clinical leadership
  - Clinical networks

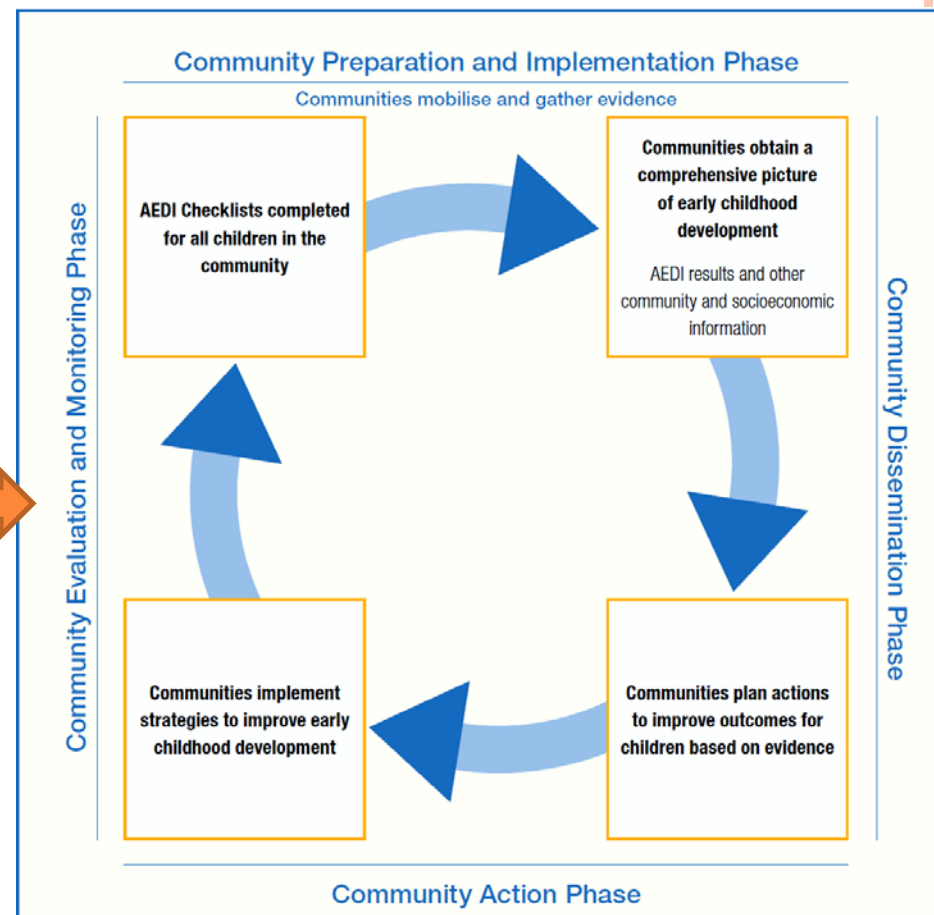
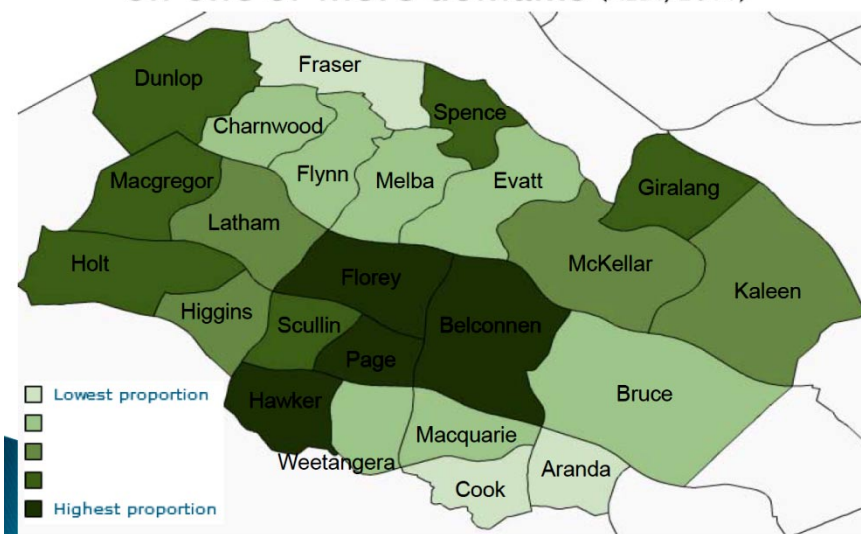




## Using the AEDI to promote service integration within Child and Family Centres

- Physical health and wellbeing
- Social competence
- Emotional maturity
- Language and cognitive skills
- Communication skills and general knowledge.

### Belconnen – developmental vulnerability on one or more domains (AEDI, 2011)

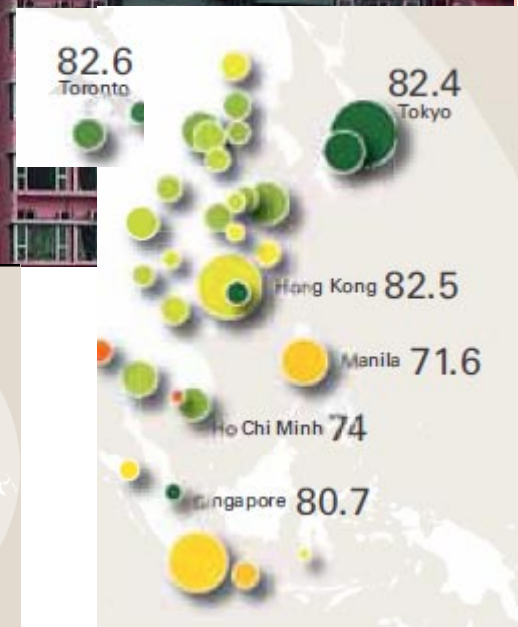
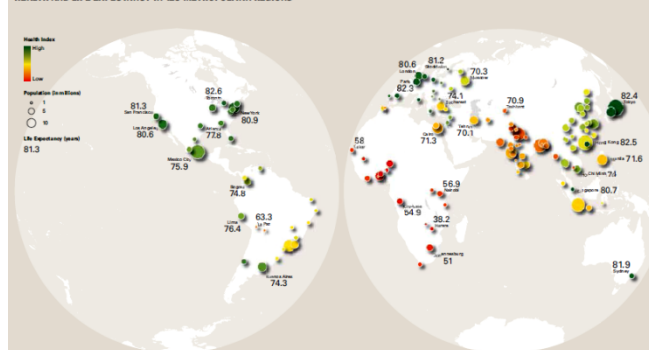


# CITIES HEALTH AND WELL-BEING





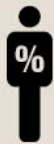





**CITIES, HEALTH AND WELL-BEING  
HONG KONG URBAN AGE CONFERENCE  
16-17 NOVEMBER 2011**

**ORGANISED BY LSE CITIES AT THE  
LONDON SCHOOL OF ECONOMICS AND  
THE ALFRED HERRHAUSEN SOCIETY,  
IN PARTNERSHIP WITH THE UNIVERSITY  
OF HONG KONG**

HEALTH AND LIFE EXPECTANCY IN 129 METROPOLITAN REGIONS

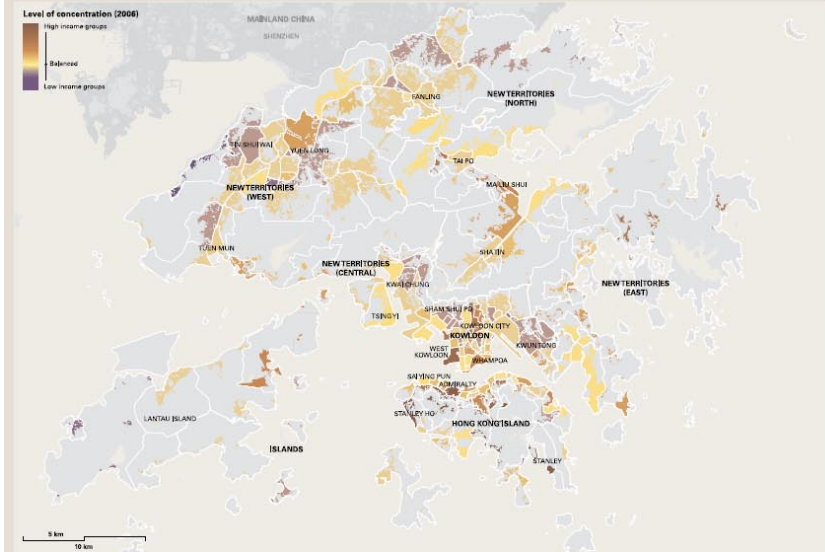




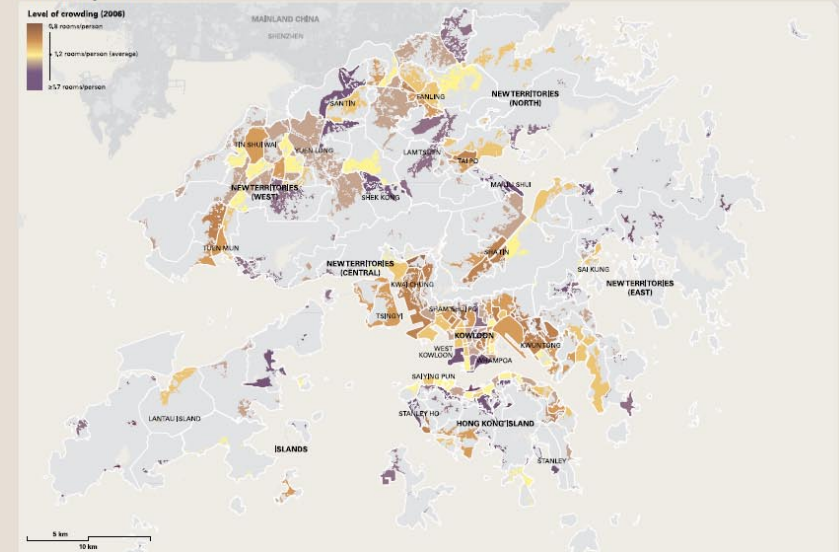
	 Current population in the city (millions) <small>GIS-BASED</small>	 Current population in metropolitan region (millions)	 Central area density (people per km²) <small>GIS-BASED</small>	 Projected growth 2010-2025 (people per hour) <small>2009</small>	 Percentage of the country's population residing in each city	 GDP per capita (US\$) <small>2010</small>	 Percentage of national GDP produced by each city	 Average annual growth of GVA 1993-2010 <small>2010</small>	 Life expectancy (years) <small>2010</small>	 Metropolitan Health Index <small>2010 - EMR</small>
HONG KONG	7.0	7.0 <small>2009</small>	22,193	7	-	45,090 <small>2010</small>	-	3.6	82.5 <small>2010</small>	0.88
NEW YORK	8.1	18.8 <small>2007</small>	15,353	9	2.8 <small>2008</small>	55,693 <small>2008</small>	3.3 <small>2008</small>	2.8	77.6 <small>2001</small>	0.78
SHANGHAI	15.5	15.5 <small>2006</small>	23,227	26	1.0 <small>2005</small>	8,237 <small>2005</small>	5.0 <small>2005</small>	11.8	81 <small>2006</small>	0.62
LONDON	7.6	7.6 <small>2007 - GREATER LONDON</small>	8,326	1	12.4 <small>2007</small>	60,831 <small>2007</small>	3.4 <small>2007</small>	2.9	79.2 <small>2004</small>	0.79
MEXICO CITY	8.6	19.2 <small>2005</small>	12,880	10	8.4 <small>2006</small>	18,321 <small>2006</small>	21.5 <small>2006</small>	2.9	75.9 <small>2007</small>	0.64
JOHANNESBURG	3.2	3.9 <small>2007 - COJ METRO MUNICIPALITY</small>	2,203	3	8.1 <small>2005</small>	9,229 <small>2005</small>	14.8 <small>2005</small>	3.7	51 <small>2003 - GAUTENG PROVINCE</small>	0.30
MUMBAI	11.7	19.3 <small>2005</small>	45,021	44	0.9 <small>2006</small>	1,871 <small>2006</small>	2.9 <small>2006</small>	6.7	68.1 <small>2001</small>	0.54
SÃO PAULO	10.4	19.2 <small>2007</small>	10,376	11	5.8 <small>2006</small>	12,021 <small>2006</small>	11.9 <small>2006</small>	3.2	70.8 <small>2000</small>	0.58
ISTANBUL	12.7	12.7 <small>2008</small>	20,128	12	17.8 <small>2008</small>	9,368 <small>2007</small>	22.0 <small>2007</small>	3.1	72.4 <small>2000</small>	0.57

# MAPPING SOCIAL DETERMINANTS

## INCOME DISTRIBUTION

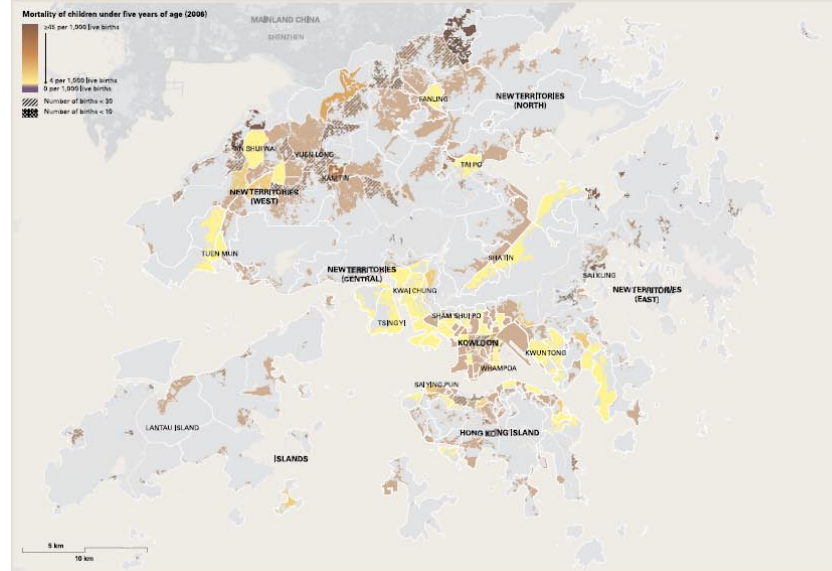


## HOUSING INEQUALITY

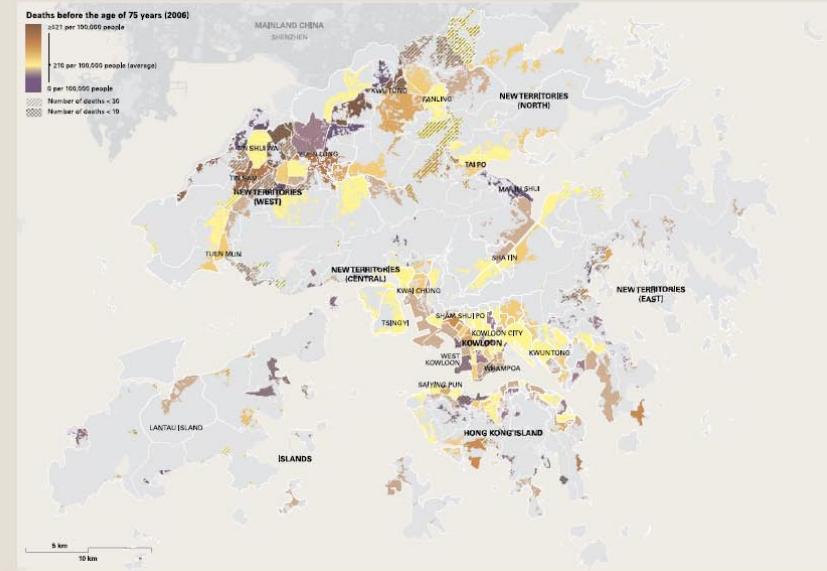


# MAPPING HEALTH OUTCOMES

## CHILD MORTALITY



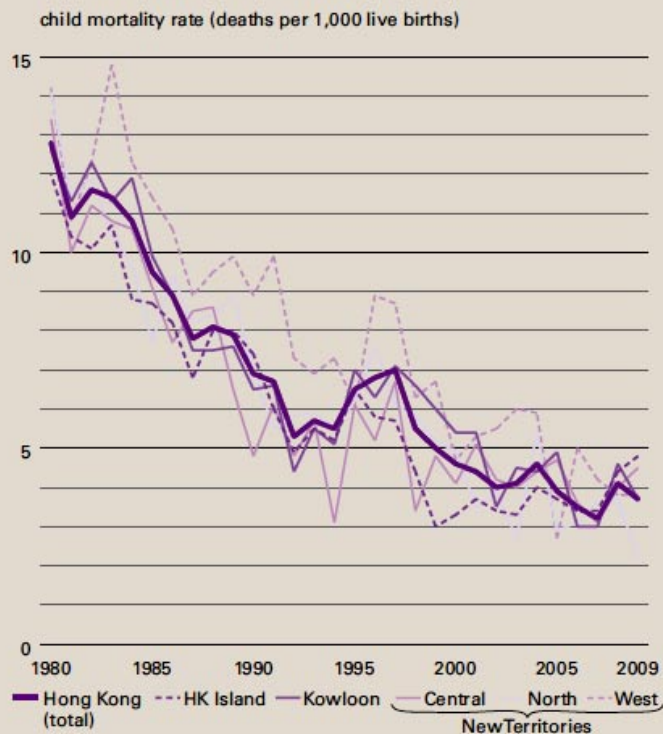
## PREMATURE MORTALITY





# UNDER-5 MORTALITY DISPARITY IN HONG KONG = TWO-FOLD VARIATION

## IMPROVING LIFE CHANCES



Mortality figures are migration-adjusted, that is, records of residents living outside Hong Kong have been excluded. The figures may therefore be different from official statistics.

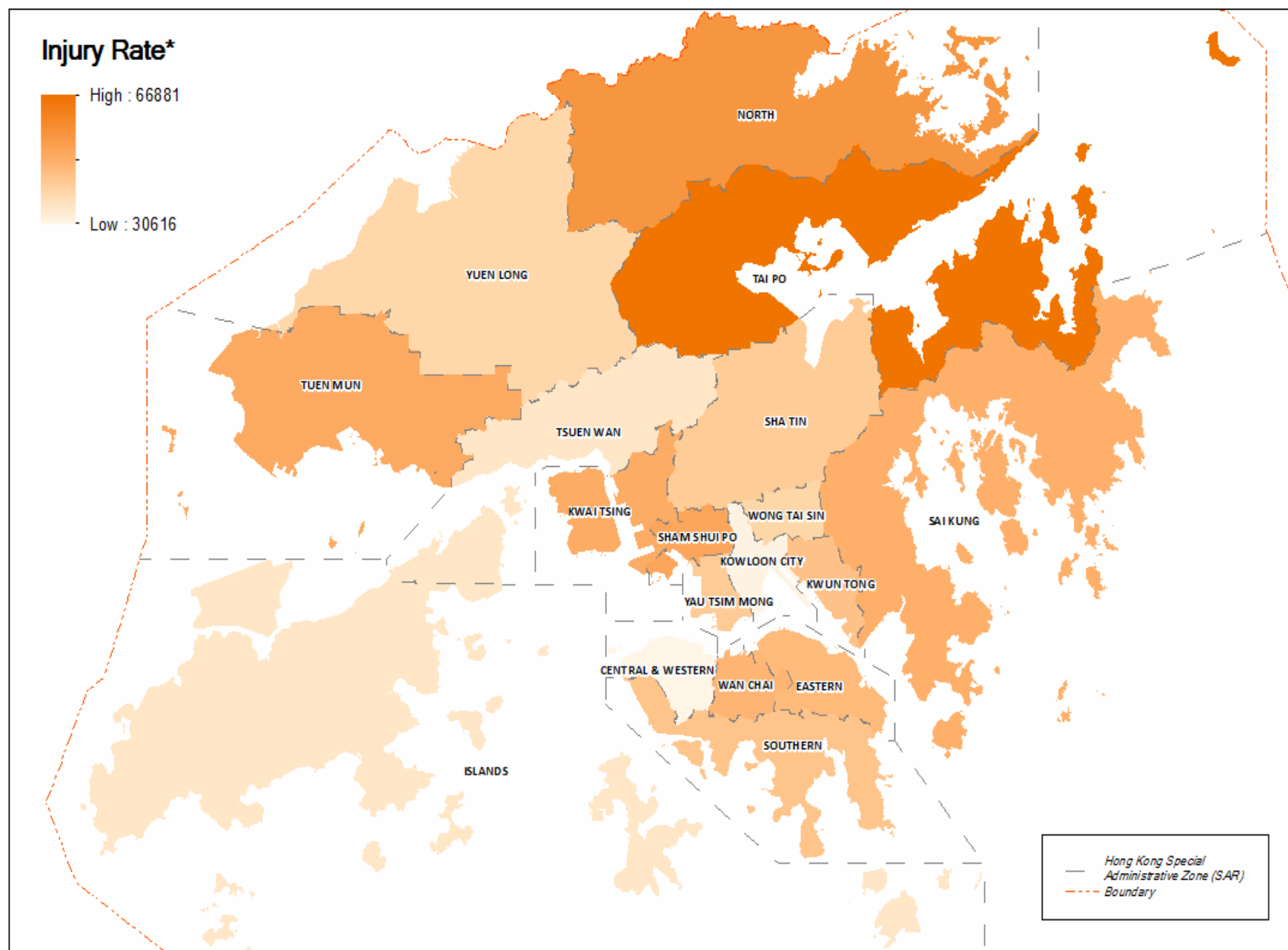
## LINKING HEALTH AND DEPRIVATION



## Total external causes death rate for 2001-2009

Death Rate (per 100000 0-19 yr population)	Residential District																		All Shown Residential District
	中西區 Central & Western	東區 Eastern (HK)	南區 Southern (HK)	灣仔 Wan Chai	九龍城 Kowloon City	觀塘 Kwun Tong	沙田 Sham Shui Po	黃大仙 Wong Tai Sin	油尖旺 Yau Tsim Mong	離島 Islands	葵青 Kwai Tsing	北區 North	西貢 Sai Kung	沙田 Sha Tin	大埔 Tai Po	荃灣 Tsuen Wan	屯門 Tuen Mun	元朗 Yuen Long	
2001	1.67	7.09	1.52	13.17	6.89	3.85	4.96	4.88	4.64	0.00	6.35	5.83	6.51	9.03	1.41	1.60	7.94	3.79	6.09
2002	3.64	2.20	0.00	5.67	6.14	7.07	5.02	4.00	6.41	0.00	2.72	10.88	10.00	2.84	8.81	1.66	6.23	13.40	5.56
2003	0.00	1.54	1.65	3.02	1.26	6.42	6.60	7.26	1.69	4.18	4.60	3.16	8.69	2.96	10.75	1.69	12.70	9.75	5.44
2004	1.96	2.39	1.71	9.24	2.61	3.30	4.01	3.25	3.31	3.88	1.89	6.56	3.48	5.39	6.35	0.00	7.56	7.18	4.16
2005	7.83	3.31	16.06	0.00	2.67	4.15	5.41	3.42	3.39	7.34	2.87	12.16	2.40	1.62	11.66	1.75	7.81	5.45	5.27
2006	7.99	2.55	0.00	6.44	2.76	1.70	2.72	2.35	7.12	14.56	1.91	5.33	2.46	3.28	8.50	3.46	2.98	10.28	4.29
2007	3.98	2.57	5.41	3.23	1.39	2.61	2.73	2.39	0.00	7.12	3.93	15.69	4.95	2.50	1.72	1.72	2.04	2.83	3.52
2008	3.92	2.60	1.84	0.00	1.43	7.13	2.81	3.68	0.00	0.00	5.00	5.19	4.96	5.08	3.55	3.48	5.15	4.76	3.94
2009	2.06	3.61	0.00	0.00	1.45	4.47	1.43	5.09	0.00	7.06	8.28	5.26	1.27	6.12	5.49	3.61	5.38	8.74	4.43
Average per Year of Death Registration	3.63	3.14	3.07	4.76	3.08	4.54	4.01	4.08	3.01	5.12	4.14	7.73	4.94	4.36	6.48	2.09	6.54	7.40	4.78
OR	1.7	1.5	1.5	2.3	1.5	2.2	1.9	2.0	1.4	2.4	2.0	3.7	2.4	2.1	3.1	1.0	3.1	3.5	2.3

75% of deaths can be avoided if all districts have the lowest death rate



Map 1: All Injury Rates among Children 0-19 Years Old, by District, Hong Kong, 2001-2009

\* A&E Attendance Rate per 100,000 Population

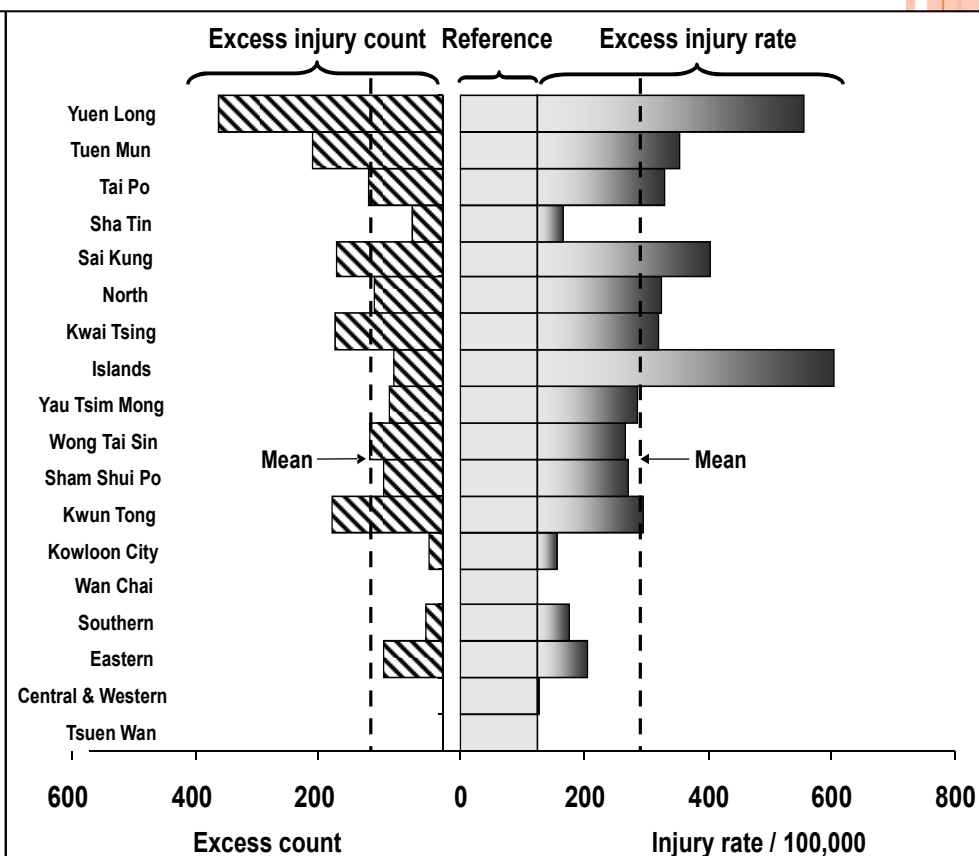
Data Source: CDARS, Hospital Authority



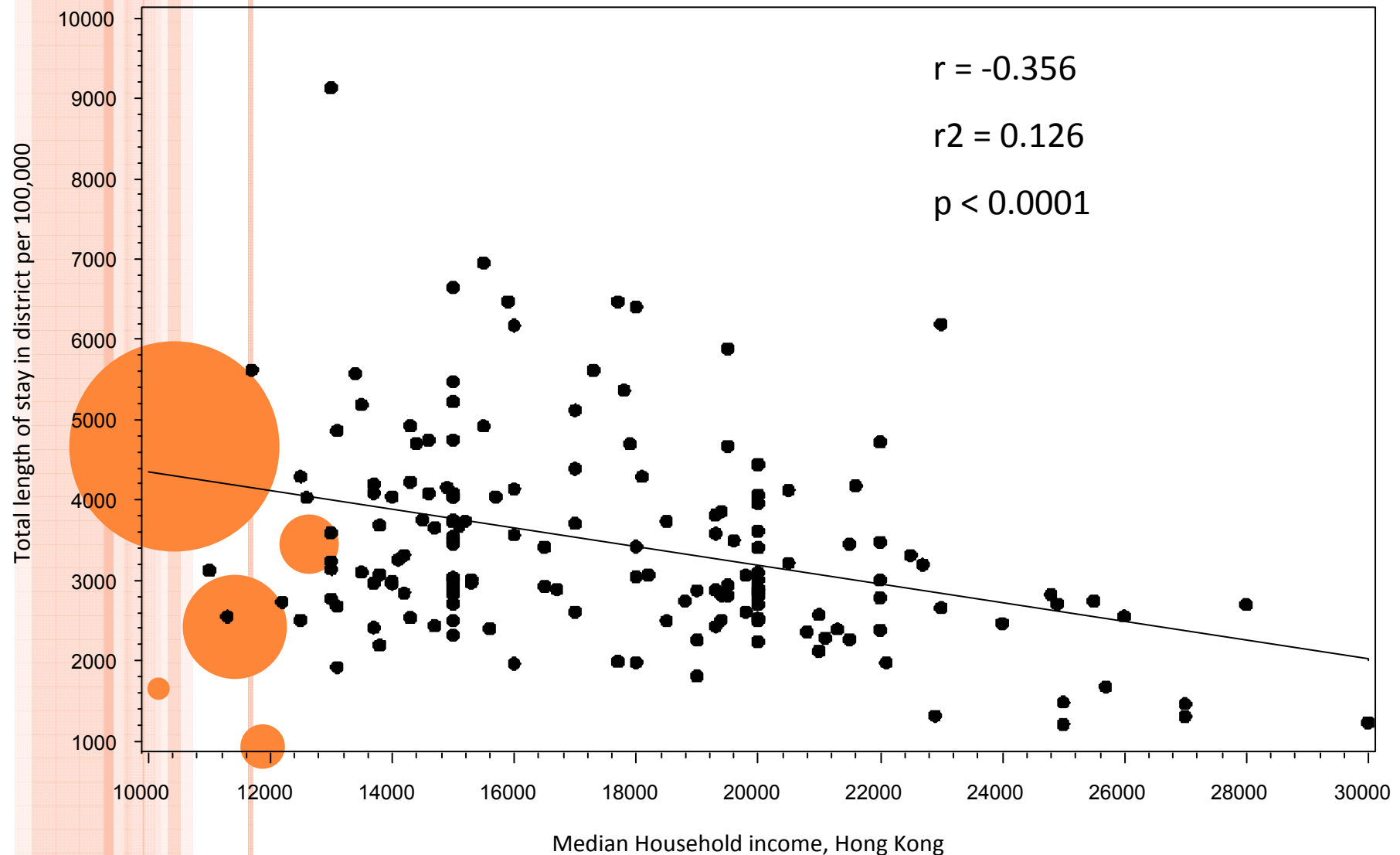
## Unintentional Injury related AED attendance comparison among districts in 2009



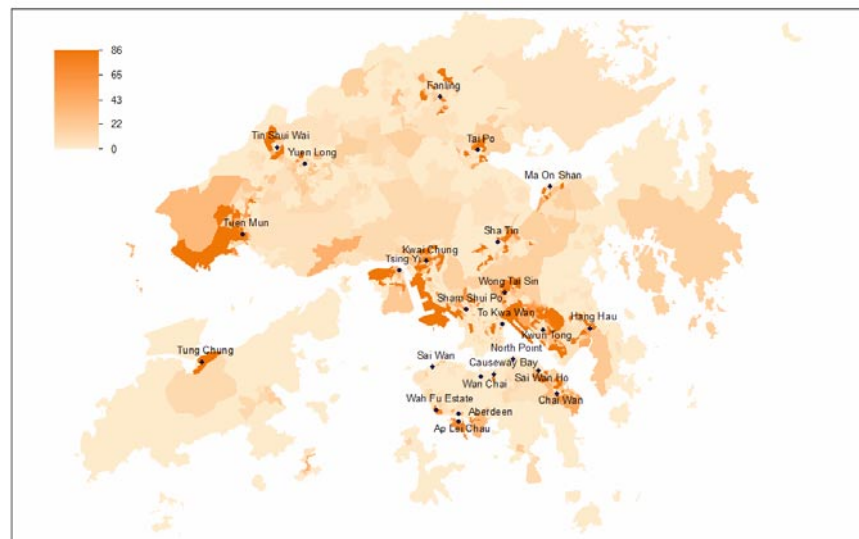
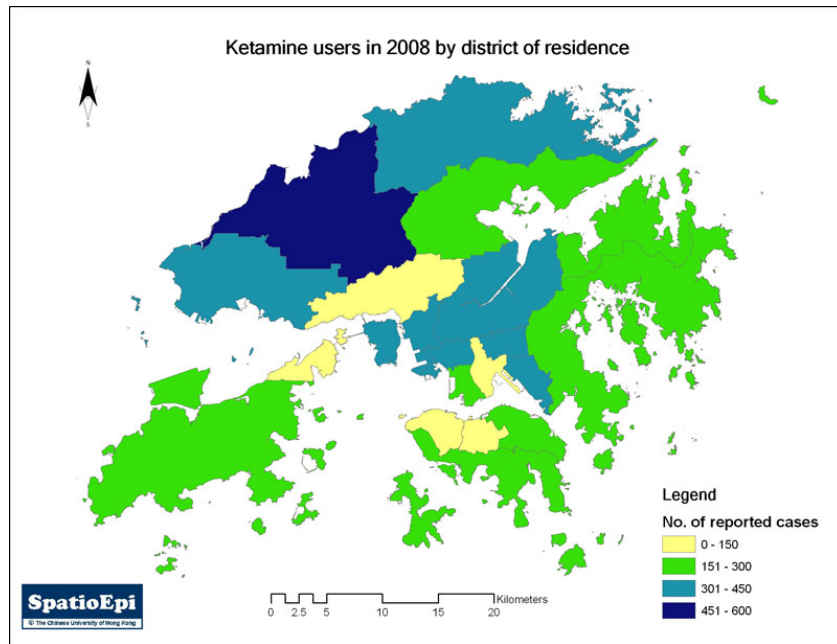
## Intentional Injury related AED attendance comparison among districts in 2009



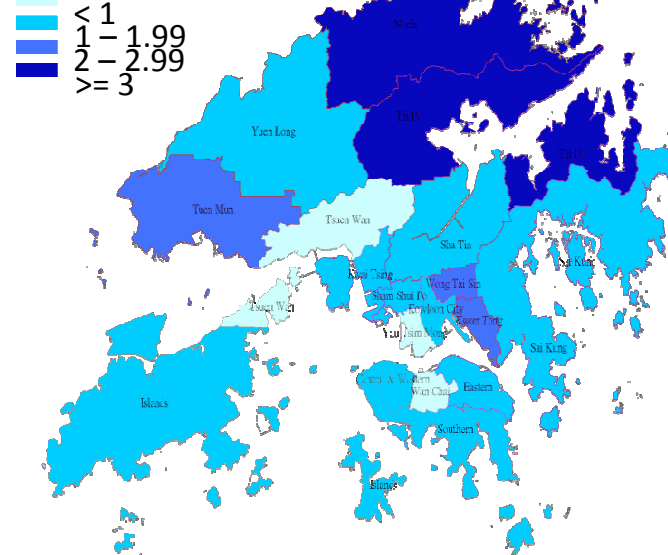
# Total length of stay in different district for children age 0 – 19 years against district household income (2001 to 2009)



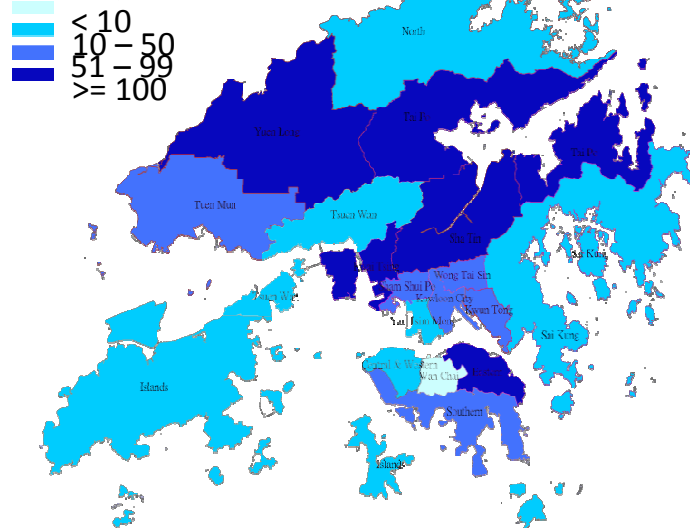
# GEO-SPATIAL DISTRIBUTION OF INJURY



Average Youth Suicide Rates (per 100,000), 2002 – 2010



Average Youth DSH Rates (per 100,000), 2002 – 2010

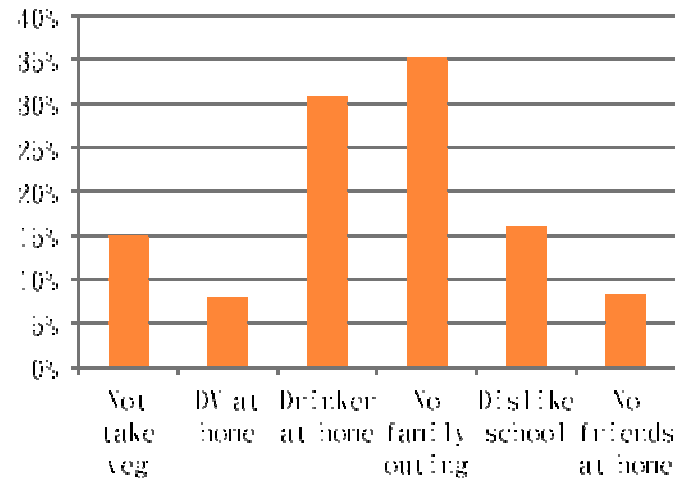




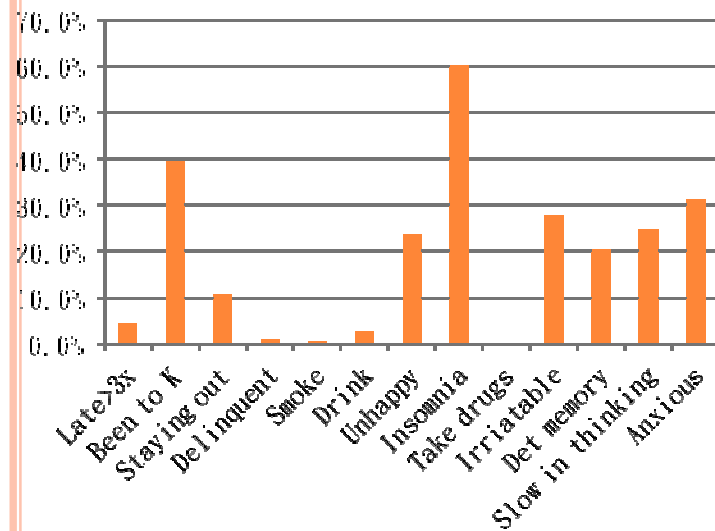
# School profiles

School A

## Nutrition and Social

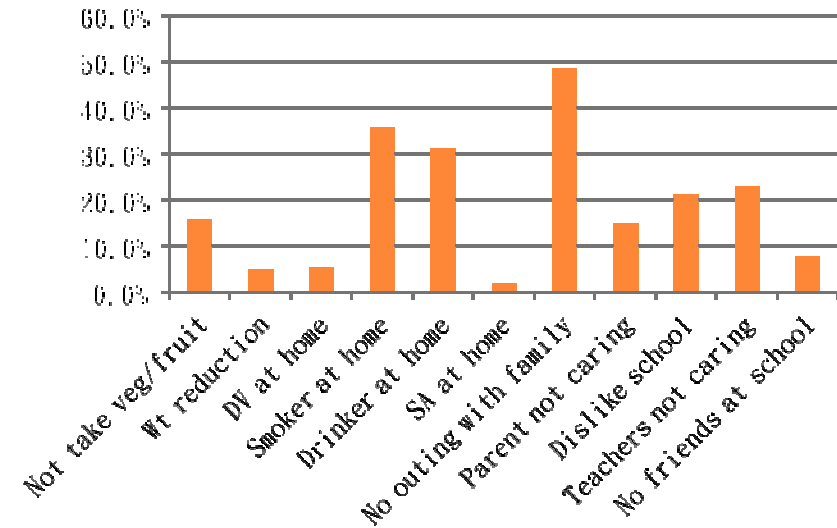


## Risk taking behaviours

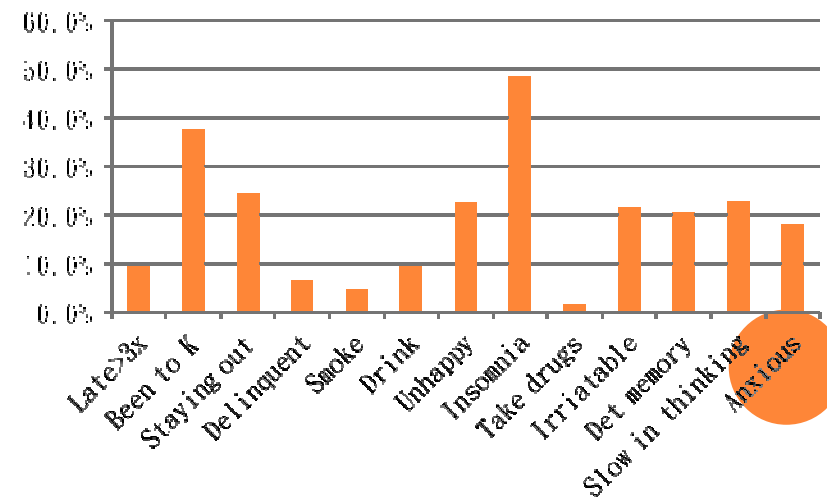


School B

## Nutrition and Social

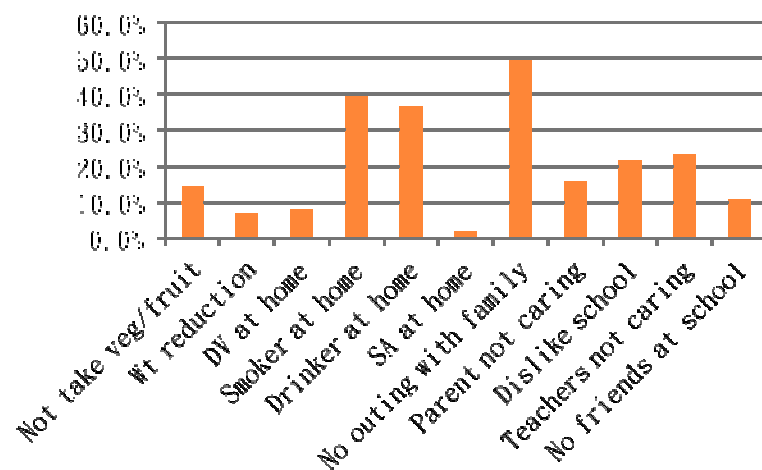


## Risk taking behaviour

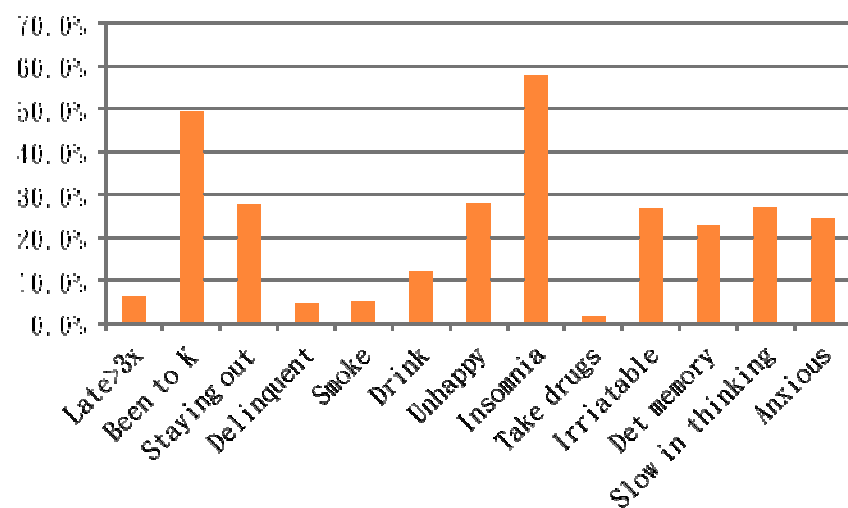


## School C

### Nutrition and Social Status

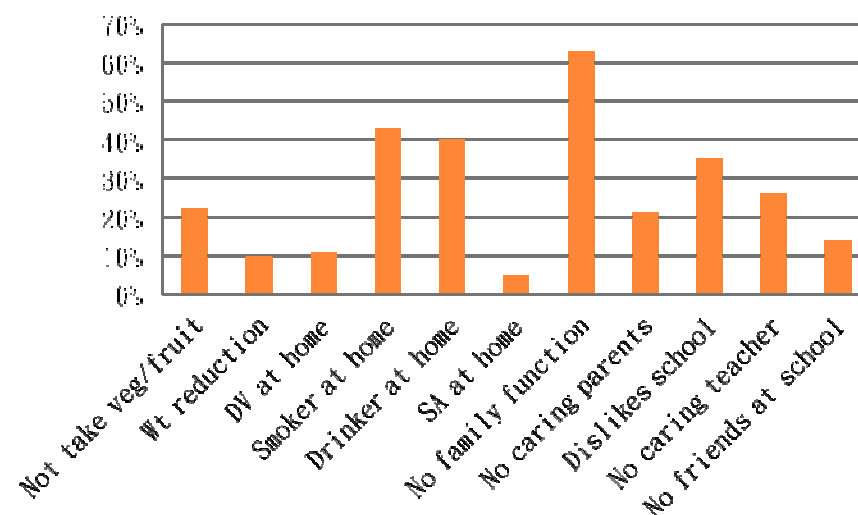


### Risk taking behaviour

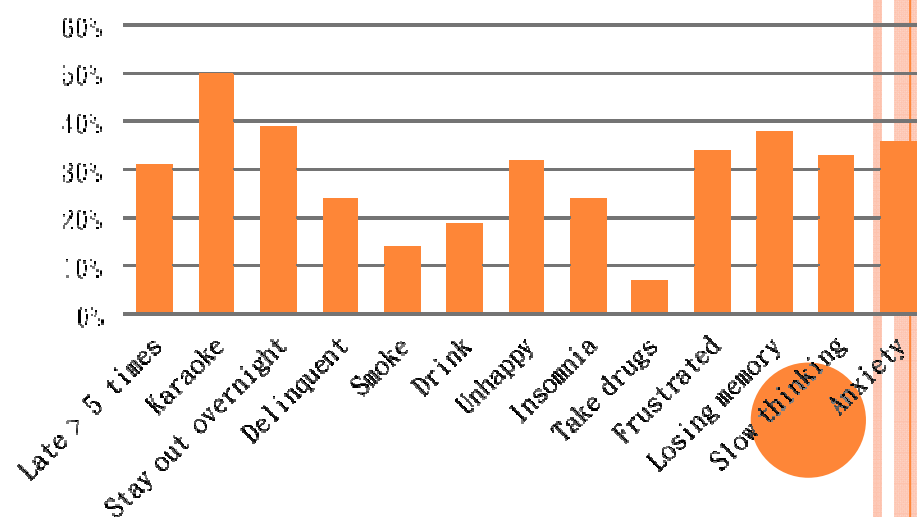


## School D – new immigrants & ethnic minorities

### Nutrition & Social



### Risk behaviours





NOTE: OR = odds ratio; RR = relative risk.

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SOURCE: Walker (2011).



# CHANGING MORBIDITY PATTERN

‘A group of childhood difficulties that we have termed “the **new morbidity**” is now gaining attention. Many of these difficulties lie beyond the boundaries of traditional medical care... Handling such problems will be important to the future of pediatric practice, and a major shift in the orientation of training programs is required to prepare pediatricians for these tasks.’

- RJ Haggerty, 1975



**TABLE 1.** Trends in Pediatric Morbidity

Classical pediatric morbidity (1900s–1950s)

- Infectious diseases
- High infant mortality rates
- Poor nutrition
- Few cures for chronic disease
- Epidemics (eg, influenza, polio)
- Diseases of overcrowding

The new morbidity (1960s–1980s)

- Family dysfunction
- Learning disabilities
- Emotional disorder
- Functional distress
- Educational needs

Beyond the new morbidity (1980s–2000s)

- Social disarray
- Political ennui
- New epidemics (eg, violence, acquired immunodeficiency syndrome, crack cocaine, homelessness)
- Increased survivorship
- High-technology care

Millennial morbidity (2000–present): disorders of the bioenvironmental interface

- Socioeconomic influences on health, including poverty
- Health disparities
- Technological influences on health
- Overweight and obesity
- Increasing mental health concerns

**TABLE 1.** Threats to the Health and Well-being of Children in the United States

- Poverty
- Marginalization
- Food availability
- Disabilities
- Abuse and exploitation
- Access to medical care
- Violence
- Lack of education
- Emerging diseases
- Displacement
- Environmental ecosystems
- Public policies
- Lack of children’s rights
- Mental health parity
- Globalization

‘Behavioural difficulty, chronic disability, and learning problems represent a significant part of the workload of community-based general paediatricians. Appropriate exposure during paediatric training should be given to these issues, along with more sophisticated training in the medical, social and psychological complications of chronic illness and its effect on clients and families.’

- Hewson et al, 1998



## DISEASE BURDEN

CHILDREN POPULATION (<18 YEARS): ~1.1M

Physical disability	0.3%
Cerebral palsy	0.2%
Visual handicap	0.03%
Severe hearing loss	0.1%
Moderate/severe mental retardation	0.3%
Mild mental retardation	3%
Mental disorder	10%





# MAGNITUDE OF PROBLEM IN HK 2005

<u>Category</u>	<u>No. of Institutions</u>	<u>No. of Patients</u>
Children in residential institutions for severe mental and physical handicap (SCCC, Special schools)	13	134
Adolescents & young adults under care of paediatricians in Residential Care Homes for the Disabled	189	2,000
Children in non-residential institutions for mental and physical handicap (EETC, SCCC, ICCC, Special schools)	319	13,366
Children with mental disorders in the community (Behaviour, conduct and learning disorders, depression, substance use)		140,000

# SCOPE OF THE PROBLEM IN HONG KONG

5-10 yrs 11-15 yrs	Mental disorders	10% (boys); 6% (girls) 13% (boys); 10% (girls)	Meltzer et al, 1999	UK
3-4 yrs	Preschool behavioral disorders	17.9% (mild); 4.6% (moderate); 0.75% (severe)	Luk et al, 1991	HK
6-12 yrs	ADHD	5%	So, Leung & Hung, 2002	HK
Form 1-7	Felt depressed & hopeless Suicidal idea Suicidal attempt	29% 11% 4%	Centre for Health Education and Health Promotion CUHK, 2003	HK
Grade 7-9	Any psychiatric disorders Any anxiety disorders Any depressive disorders ADHD ODD Conduct disorder	38.4% (16.4% + impairment criteria) 30.2% (6.9%) 1.7% (1.3%) 4.4% (3.9%) 8.7% (6.8) 2.6% (1.7%)	Leung et al, 2006	HK

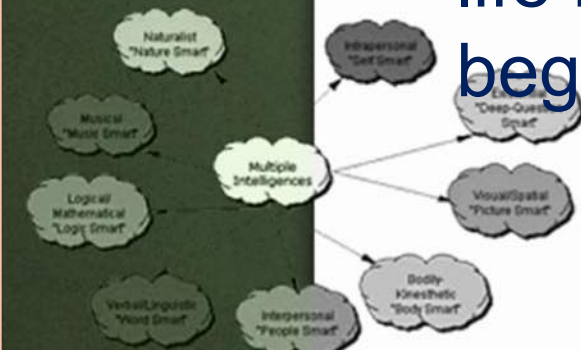
A conservative estimation of the local rate of mental disorders among children and adolescents aged 3 to 18 years is 10%

# SERVICE GAP IN 2005 → 2012 EVEN WORST!!!

	Local demand	Current scene (HA)
1.4 million (under age 18) × 10% (% suffers from mental disorder)	140,000 require mental health services	Child Psy SOPD attendance: 1st: 2610 FU: 29,683
UK bench mark: 3 child psychiatrists per 200,000 population	104 child psychiatrists (6,935,900 HK population in mid 2005)	9 child psychiatrists
Raphael G Kevin's model (Child & Adolescent Mental Health 2005) for ADHD: ADHD prevalence = 5% (6-12yr) Attendance fraction/yr = 5% 1-2 assessment session @ 2 hr 95% need psychiatric FU (6-12 sessions/yr) @ 0.3 hr 40% need behavioral Rx (12-24 DH session/yr) @ 1 hr 5% need family Rx (3-5 sessions/yr @ 1 hr	Population (6-12 yr) = 520,000 $520,000 \times 5\% \times 5\%$ $\times (1.5 \times 2 \text{ hr}) = 3900 \text{ hrs}$ (2.8 psychiatrist) $\times 95\% \times (9 \times 0.3 \text{ hr}) = 3334 \text{ hrs}$ (2.4 psychiatrist) $\times 40\% \times (18 \times 1 \text{ hr}) = 9360 \text{ hrs}$ (6.8 multi-disciplinary staffs) $\times 5\% \times (4 \times 1 \text{ hr}) = 260 \text{ hrs}$ (0.2 clinical psychologist)	9 child psychiatrists 5.4 clinical psychologists 6.5 occupational therapists 44 nurses (to manage all kinds of psychiatric disorders for in- out- & day- patients) *No. of working hours/yr = $39(\text{hr/wk}) \times 47(\text{wk/yr}) \times 75\%$ (25% of time for supervision) = 1375 hrs

## POOR ENVIRONMENTS AND DYSFUNCTIONAL RELATIONSHIPS IN EARLY YEARS...

- Problems in childhood - child abuse and neglect, developmental delay, school problems, ADHD, mental health problems...
- Beginning of pathways to problems later in life
- Evidence that many problems in adult life have their origins in pathways that begin in childhood





# ADULT PROBLEMS WITH ROOTS EARLY IN THE LIFE COURSE

- Mental health problems
- Family violence and aggressive/anti-social behaviour
- Crime
- Poor literacy
- Welfare dependency
- Substance abuse
- Obesity → DM, hypertension, stroke
- Cardiovascular problems



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Mental health parity  
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