

Developmental Surveillance in a Preschool Setting and Developmental Trend Observation in Hong Kong: Six years experience sharing

Dr. Cecilia lam

Senior Educational Psychologist

Hong Kong Society for the Protection of Children

Developmental Surveillance

Developmental surveillance system or structure which provides a continue process of monitoring child development to promote healthy development and to identify possible developmental problems.

- Sheldrick RC, Merchant S & Perrin EC. (2011)

Developmental Surveillance and Early Identification

- Currently, developmental and behavioral problems are commonly screened by pediatrician and other primary care practitioner at well-child visits.
- Research suggested that structural developmental screeners have greater sensitivity than milestone-based history taking interviews from parents.
- Identifying and addressing these concerns is of great importance so that appropriate intervention can be instituted. It is also economically beneficial in the long run.

Hong Kong Developmental Surveillance Scheme

- In the 2005 Policy Address, the HK SAR Government announced launching the Head Start Programme on Child Development
- Under the Health and Developmental Surveillance program Maternal and Child Healthcare (MCH) conducts routine monitoring of children's growth and development to timely identify children with health and developmental problems.
 - They provides information on child development, enhances the knowledge and awareness of parents on their children's development, and encourages close monitoring of child performance.

How Regular are the Well-child Visits?

- As the child completed their immunization at 18 months, regular visits to MCH for Developmental Surveillance is by indicated need only.



Do We Need to Enhance our Child Development Surveillance procedures?

- To date, developmental screening procedures in Hong Kong relies on observation and review of health practitioners during well-child visits as a framework for surveillance.
 - Surveillance is accomplished through inquiring about parental concerns, developmental milestones screenings and behavior, and by observing the child during a brief physical examination and history taking.
- There is a lack of comprehensive screening and observation monitoring child development.
- There is also a noticeable gap for routine screening between the age of 18 months to 6 years of age.

How to Better Fill in the Gaps within our Developmental Surveillance Scheme?

YES!

Let schools take on a more active role!

- In Heckman's series early childhood and development researches, it coherently suggested that children are most benefited if education setting and health professional work together.
- Primary care settings, including Preschools, provided a nurturing environment and allowing more opportunity for ongoing observation of child development.
- Preschool teachers spent approximately 4-8 hours daily, 5 to 6 days a week with the child.
- Preschool teachers are valuable assets as they are trained professional with education and child development expertise
- Schools can provide fruitful information on child development on top of parental reports.

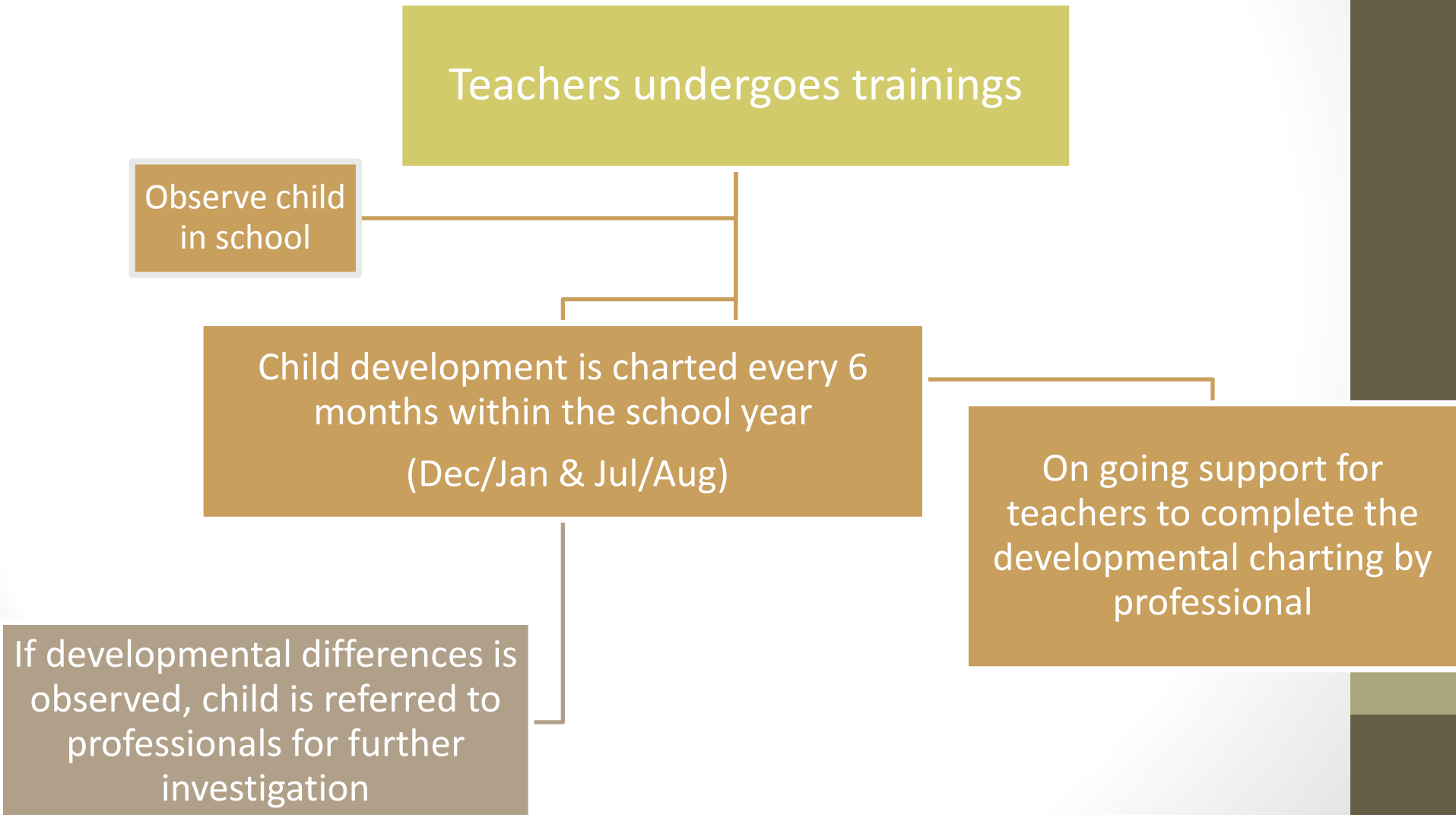
HKSPC Provides Child Development Surveillance in School

- In 2010, the Hong Kong Society for the Protection of Children (HKSPC) began to explore developmental surveillance nested in school setting, monitor by preschool teachers.
- The HKSPC Developmental Surveillance contains 3 major components :
 - Screening using HKSPC Child Developmental Checklist
 - Referrals
 - Follow up

The HKSPC Developmental Checklist

- The HKSPC Developmental Checklist taken on the on going monitoring approach, charting twice a year.
- Checklist is composed by four-domain (Cognitive, Language, Motor and Social & Self Care) milestone, with early warning signs of developmental disabilities developmental checklist, which referenced to the best available level of evidence (with local norming reference), is presented.
- The developmental checklist adopted a 4-point scale; rating from 1- unable to complete tasks, 2 – require hands-on support, 3- requires verbal prompt and 4- completed by self.
- Prior to the charting, training for teachers was provided as the method of increasing knowledge, observation skills, focusing on intent to change practice and implementation of routine developmental screening
- On going support from professional team (including Educational Psychologist) is provided to ensure the checklist's fidelity.

HKSPC School Based Child Development Surveillance



HKSPC School Based Child Development Surveillance

School Year	Stage	Progress
2010-2011		<ul style="list-style-type: none">• Formulation of Developmental Checklist
2011-2012	Pilot phrase	<ul style="list-style-type: none">• Trial application on 136 children• Revise of Developmental Checklist
2012-2013	Pilot phrase	5 schools
2013-2014	Pilot phrase	14 schools
2014-2015	Data Collection	17 schools
2015-2016	Data Collection	17 schools

Observing Developmental Trend in HK : Participating Schools

- Schools were divided into groups based on school population's income level.
- There are 3 groups, selected depending on the percentage of school population ability to pay full tuition fee (i.e. suggesting their family income status)

Group	Income Criteria **	Number of Schools
Group 1	schools with 60% of above students paying full tuition fee.	6
Group 2	schools with 46% - 59% students paying full tuition fee.	6
Group 3	school with 45% or below of students paying full tuition fees	5

** Data provided by schools

Observing Developmental Trend in HK : Participants

2014 – 2015			2015 - 2016		
Total Participants : N = 1,878			Total Participants : N = 1,956		
2-3yr	Group 1	n = 122	2-3yr	Group 1	n = 149
	Group 2	n = 155		Group 2	n = 139
	Group 3	n = 128		Group 3	n = 148
3-4yr	Group 1	n = 179	3-4yr	Group 1	n = 168
	Group 2	n = 168		Group 2	n = 169
	Group 3	n = 182		Group 3	n = 168
4-5yr	Group 1	n = 166	4-5yr	Group 1	n = 176
	Group 2	n = 163		Group 2	n = 178
	Group 3	n = 166		Group 3	n = 187
5-6yr	Group 1	n = 165	5-6yr	Group 1	n = 167
	Group 2	n = 111		Group 2	n = 163
	Group 3	n = 173		Group 3	n = 144

Observing Developmental Trend in HK : Cognitive

- Students from Group 1 is significantly performing better in the cognitive domain when compared with other two Groups.
- Results is coherent with previous research findings where early divergence in cognitive and non-cognitive skills is found before schooling begins.
 - Many measures show near-parallelism during the school years across children of parents from different socioeconomic backgrounds, even though schooling quality is very unequal. (Carneiro & Heckman, 2003; Cunha et al., 2006, & Cunha & Heckman, 2007)

Class	2014 – 2015	2015 – 2016
2-3yr	/	Group 1 > Group 3
3-4yr	Group 1 > Group 2	/
4-5yr	Group 1 > Group 2	Group 1 > Group 2
5-6yr	Group 1 > Group 3	Group 1 > Group 2

* Significance level $p < 0.05$, the corresponding confidence level is 95%

Developmental Trend : Receptive Language

- Students from Group 1 significantly performing better in reception language development when compared with other Groups.
- Inconsistent results is found between Group 2 and Group 3 results, where in some year, Group 3 performs better than Group 2 children.
- Research previous suggested that average child heard 2153 words in a professional family. Where only 616 words was heard in a welfare group and 1251 in a working class group (Hart & Risley, 2003).

Class	2014 – 2015	2015 – 2016
2-3yr	/	Group 1 > Group 2
3-4yr	Group 1 & Group 3 > Group 2	/
4-5yr	Group 1 & Group 3 > Group 2	Group 1 > Group 3 > Group 2
5-6yr	Group 1 > Group 2	Group 1 > Group 2 & Group 3

* Significance level $p < 0.05$, the corresponding confidence level is 95%

Observing Developmental Trend in HK : Expressive Language

- Students from Group 1 is significant developing better in language development.
- Results is coherent with previous research, suggesting child from professional family cumulates 1100 vocabulary at the age of 3, whereas welfare and working class only has 500 vocabulary (Hart & Risley, 1995).

Class	2014 – 2015	2015 – 2016
2-3yr	/	/
3-4yr	Group 1 > Group 3 > Group 2	/
4-5yr	Group 1 > Group 2	Group 1 > Group 3 > Group 2
5-6yr	Group 1 > Group 2	Group 1 > Group 2

* Significance level $p < 0.05$, the corresponding confidence level is 95%

Developmental Trend : Gross Motor

- Students from Group 1 significantly developing better in gross motor development.
- Amongst the significant results, Group 3 is also consistently performing better than Group 2 children.

Class	2014 – 2015	2015 – 2016
2-3yr	/	Group 1 & Group 3 > Group 2
3-4yr	Group 3 > Group 1 & Group 2	/
4-5yr	Group 1 & Group 3 > Group 2	Group 1 > Group 3 > Group 2
5-6yr	/	Group 1 & Group 3 > Group 2

* Significance level $p < 0.05$, the corresponding confidence level is 95%

Developmental Trend : Fine Motor

- Inconsistence result is found in this developmental domain.
- Group 1 and Group 3 are significantly performing better than children from Group 2

Class	2014 – 2015	2015 – 2016
N1	/	Group 3 > Group 1 > Group 2
N2	Group 1 & Group 3 > Group 2	Group 1 > Group 2 & Group 3
N3	Group 1 & Group 3 > Group 2	Group 3 > Group 1 > Group 2
N4	Group 3 > Group 1 & Group 2	Group 3 > Group 1 & Group 2

* Significance level $p < 0.05$, the corresponding confidence level is 95%

Developmental Trend : Social

- No significant difference between groups were found in 2-3 years old age group.
- Group 1 children appeared to have better social and emotion regulation skills compared to children from Group 3 and 2.
- Group 2 children has weakest social skills and emotion regulation development

Class	2014 – 2015	2015 – 2016
N1	/	/
N2	Group 1 & Group 3 > Group 2	Group 1 & Group 3 > Group 2
N3	Group 1 & Group 3 > Group 2	Group 1 & Group 3 > Group 2
N4	Group 3 > Group 2	Group 1 & Group 3 > Group 2

* Significance level $p < 0.05$, the corresponding confidence level is 95%

Developmental Trend : Self Care

- Group 1 and Group 3 children appeared to have better developed self care skills, suggesting Group 2 children has relatively weakest self care ability
- Overprotective child care may be one of the contributing factors toward poorly developed self-care abilities amongst children.

	2014 – 2015	2015 – 2016
2-3yr	Group 2 > Group 1	/
3-4yr	Group 1 & Group 3 > Group 2	Group 3 > Group 1 & Group 2
4-5yr	Group 3 > Group 1 > Group 2	Group 1 & Group 3 > Group 2
5-6yr	Group 1 & Group 3 > Group 2	Group 1 & Group 3 > Group 2

* Significance level $p < 0.05$, the corresponding confidence level is 95%

Summary

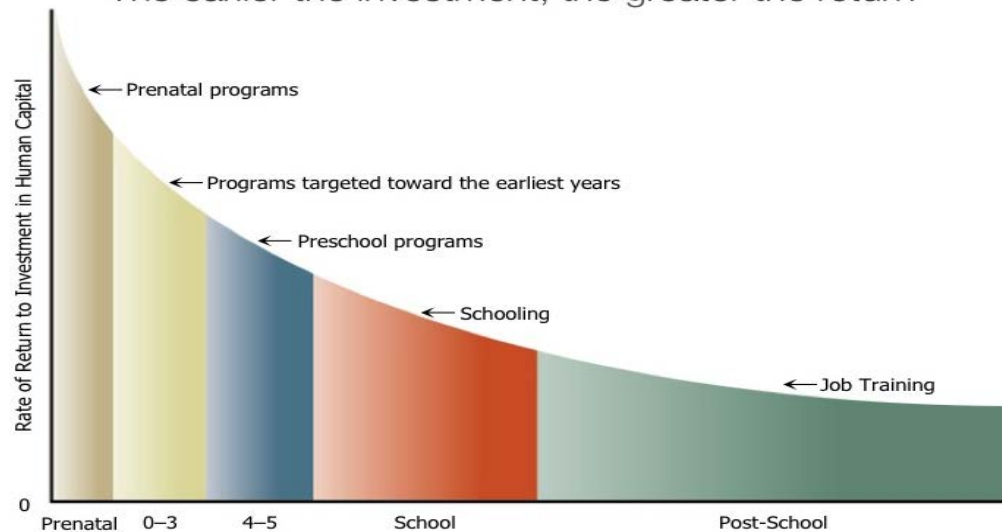
- Coherent with previous studies, students from higher social economic family background developed significantly better across developmental domain.
- Interestingly, different from previous studies, significance in development differences were found between children from welfare class and working class/ “sandwiched” class children
- Children from working class / “sandwiched” class (Group 2) appeared to have the weakest development when compared between the 3 groups.
 - Factors may lead to this results including, the lack of resources and ineligible for some of the governmental/non governmental support due to financial status.
 - The required of long working hours of parents may further contribute towards the weak development due to lack of stimulation

Way forward

- Refine, standardize developmental screening tools applicable in preschools
- Invest in early childhood development
- Invest in early childhood education programs
- Invest in evidence based prevention and early intervention programs!

EARLY CHILDHOOD DEVELOPMENT IS A SMART INVESTMENT

The earlier the investment, the greater the return



Source: James Heckman, Nobel Laureate in Economics