

Use of an IIS to Improve the Efficiency of Immunization Certificate Check

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Suzhou Prefecture CDC, China

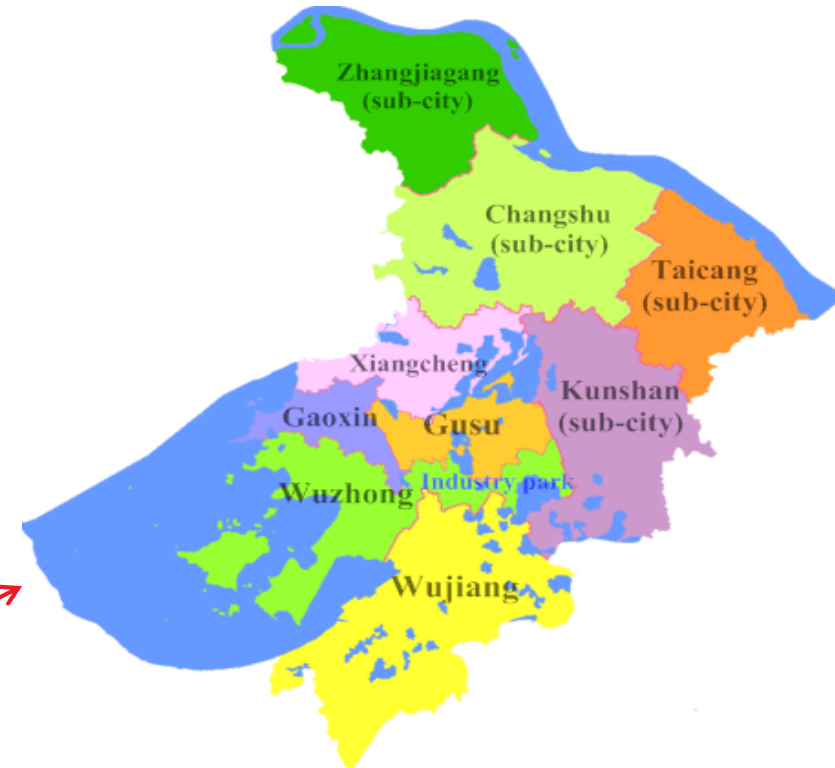
August 14, 2018





- **Overview of Suzhou**
- **Development of IIS in Suzhou**
- **New practice of IIS in Suzhou**

The location of Suzhou Prefecture



8848km²

4 sub-cities and 6 districts

Long Culture History of 2500 Years

“ Oriental water city” has become the city name for Suzhou. In Suzhou, 42% of the area is covered by water.

With a history of 2,500 years, Suzhou has still preserved its ancient hydro-system, which is also vividly depicted as one with a circular ring, three horizontal lines and four vertical lines.



Representative of Oriental Garden

From Song Dynasty the famous sayings that “Suzhou on earth matches paradise in Heaven” and “bumper harvests in Suzhou alone are enough for the whole nation”

The Classical Gardens of Suzhou were added to the list of the UNESCO World Heritage Sites in 1997 and 2000.



Ancient and Glamorous City

两千五百年的文化

With a long culture history of 2500 years

世界水城的典范

The apotheosis of the World Water City

东方园林的代表

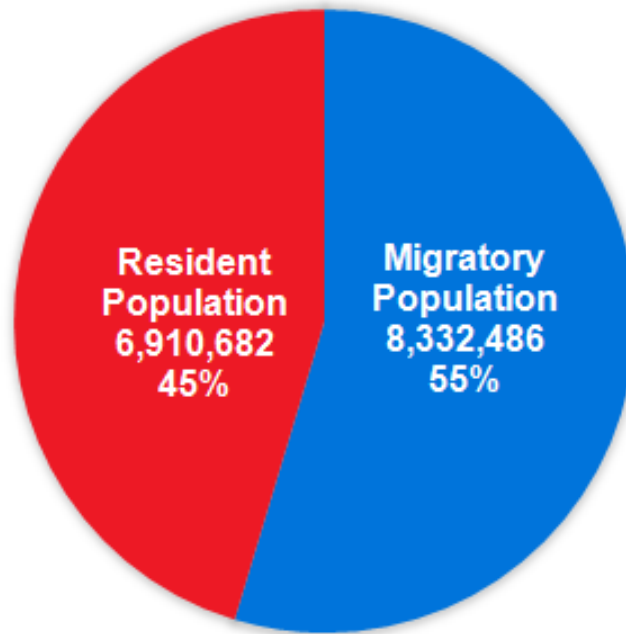
Representative of Oriental Garden

具有传世之美的苏绣、评弹、昆曲

The handed-down beauty: the Suzhou Embroidery,
the local Pingtan and Kunqu Opera

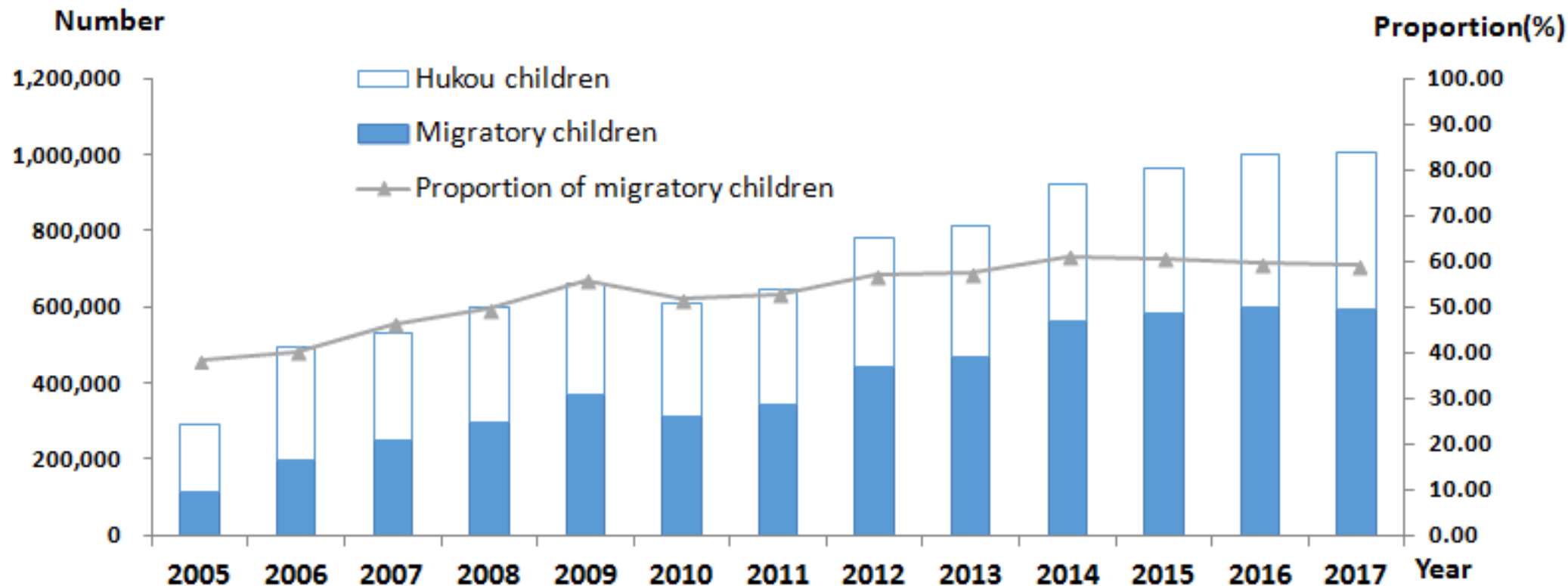


Population



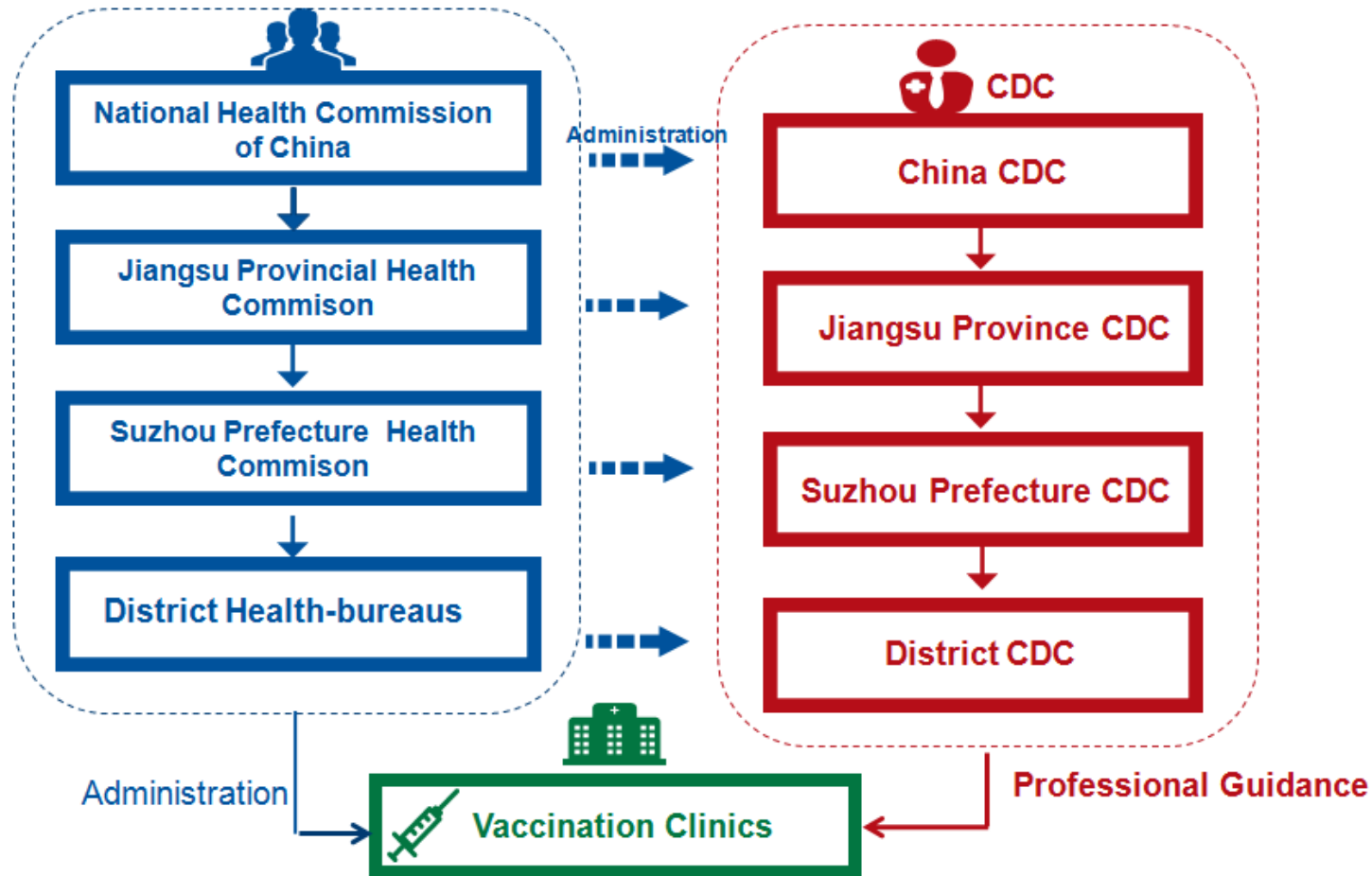
Suzhou is a relatively developed prefecture in the eastern part of mainland China. About 55% of the total population in Suzhou are migrants.

Children



The number and proportion of migratory children, 0-6 years old, 2005-2017

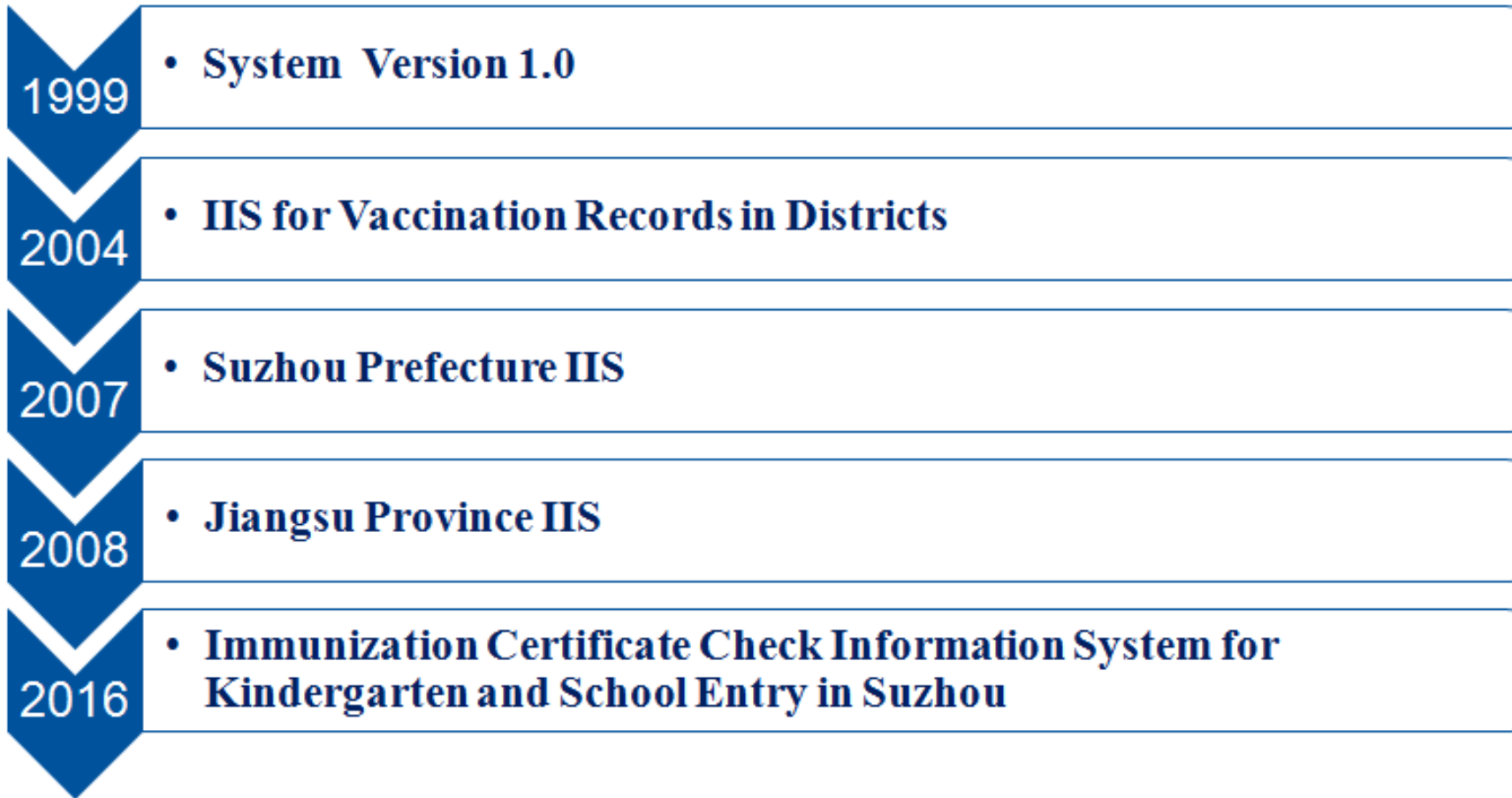
211 Vaccination Clinics in Suzhou





- Overview of Suzhou
- **Development of IIS in Suzhou**
- New practice of IIS in Suzhou

Development of IIS in Suzhou



Suzhou Prefecture IIS



Jiangsu Province IIS



WeChat Public Service Account of “Suzhou Vaccination”

- Chinese messaging app WeChat has become a truly ubiquitous app experience, with over one billion monthly active users.
- There are more than 700,000 users followed our WeChat public service account of “Suzhou vaccination” since 2016.



Suzhou vaccination

What can parents do by using this account?

- Make an appointment with the vaccination clinics
- Receive vaccination notices
- Query vaccination records
- Evaluate vaccination record (for migrants' scoring or school entry)
- Get knowledge of vaccine-preventable diseases
- Consult questions

苏州市入托入学预防接种证查验与疫苗补种平台

Immunization Certificate Check Information System for Kindergarten and School Entry in Suzhou



用户登录

请输入用户名

请输入密码

请输入验证码

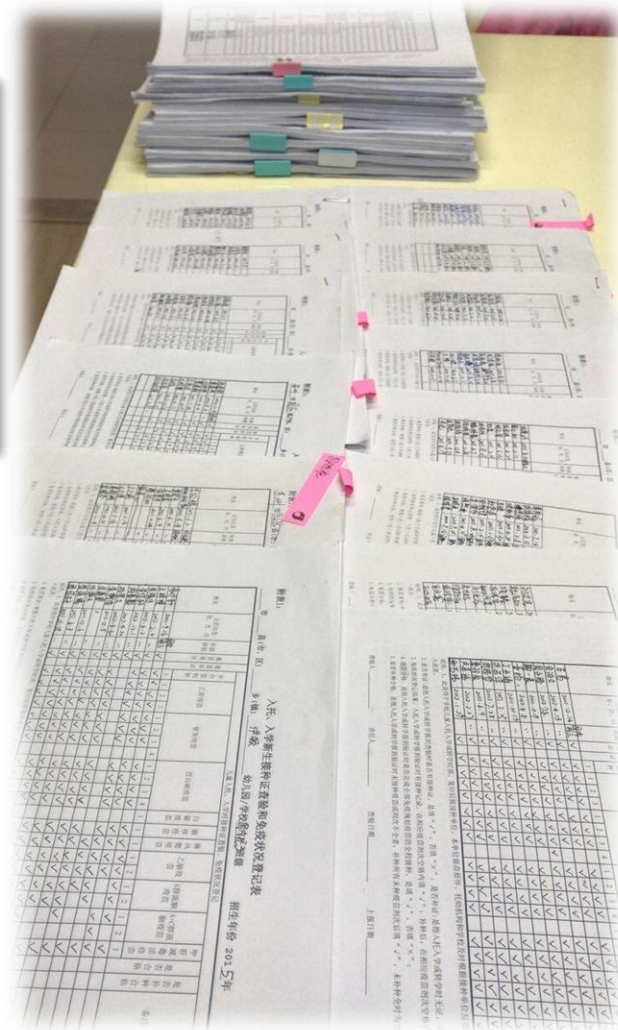
FBhm

Login



- **Overview of Suzhou**
- **Development of IIS in Suzhou**
- **New practice of IIS in Suzhou**

Before using IIS

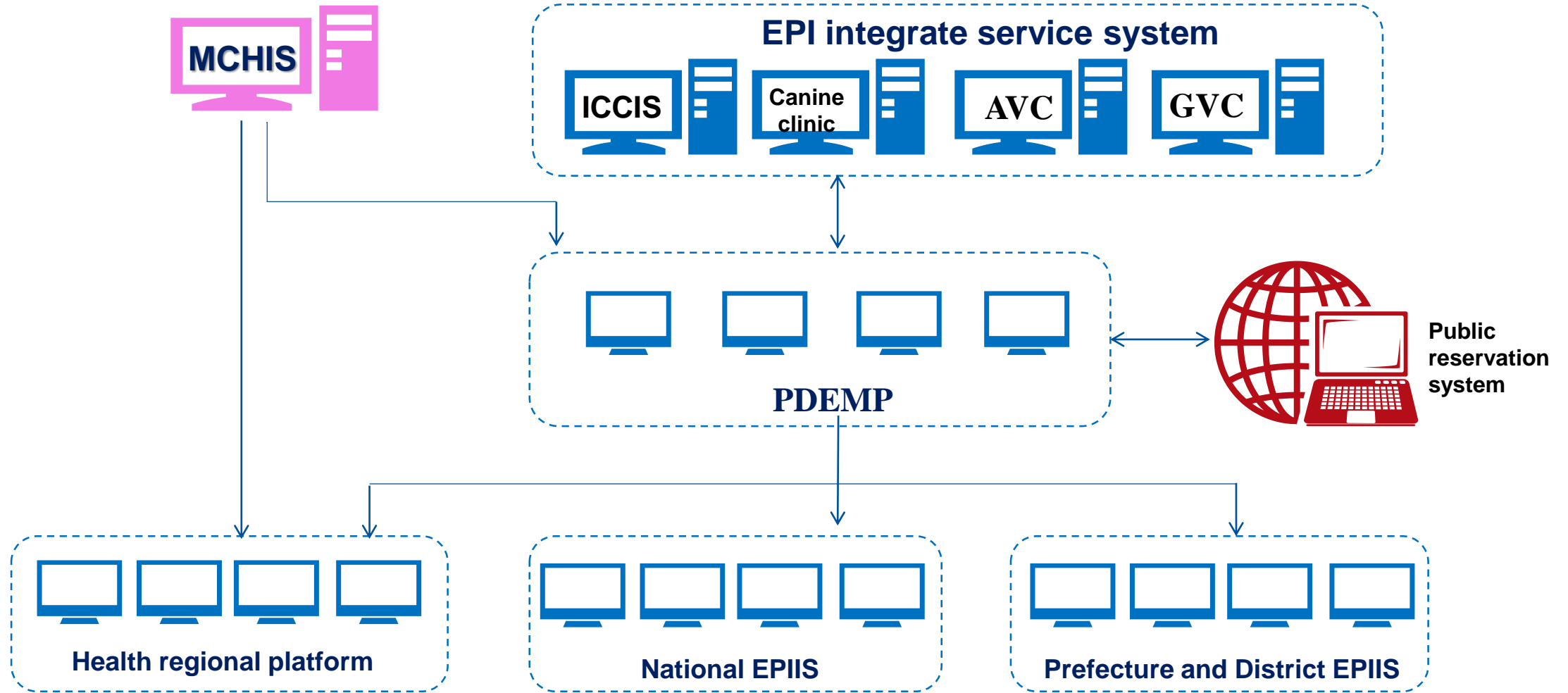


Checking vaccine type, inoculation date and so on manually, it was a large amount of workload!

接种记录 (一)						
疫苗与剂次	接种日期	接种部位	疫苗批号	生产企业	接种单位	医生
乙肝疫苗	1 2012-03-18				社区卫生服	
	2 2012-04-17		YHBVC30AA	葛兰素史克	社区卫生服	
	3					
卡介苗	2012-04-17		20111a060	成都生物	社区卫生服	
无细胞百日咳疫苗	2012-05-15		106105-1	巴斯德	社区卫生服	
无细胞百日咳疫苗	2012-06-26		H2187	巴斯德	社区卫生服	
无细胞百日咳疫苗	2012-06-18		20110623	武汉生物	社区卫生服	
无细胞百日咳疫苗	2012-06-26		H2187	巴斯德	社区卫生服	



After using IIS



MCHIS: Maternal and Child Health Information System
ICCIS: Immunization Certificate Check Information System
AVC: Adult vaccination clinic
GVC: General vaccination clinic
PDEMP: Provincial data exchange management platform

Immunization Certificate Check Information System

In 2016, Suzhou CDC developed an **Immunization Information System (IIS)** application called '**Immunization Certificate Check Information System for Kindergarten and School Entry in Suzhou**'.

This application has further ensured the migratory children's vaccination coverage objectively. Users of the system include Suzhou prefecture CDC, district-level CDC, vaccination clinics, schools, and parents. The application data are linked with Suzhou 's IIS. Users can inquire and print personal vaccination records and can automatically evaluate a child's vaccination status according to the national immunization program schedule.



**Computer software
copyright registration
certificate in China**

Immunization Certificate Check Information System for Kindergarten and School Entry in Suzhou

Parents



Following WeChat,
Binding and Checking



Complementing
information, Catching
up vaccines



Self-operated printing
evaluation form



Schools



Confirming vaccines
record



Scanning bar code,
Constructing the
class account book



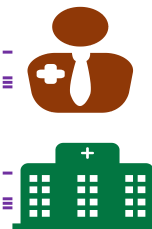
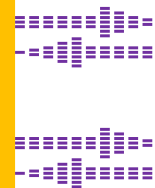
Collecting and Verifying
evaluation form



System



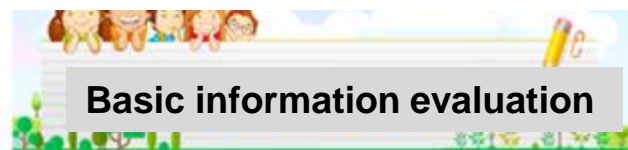
Assessing work
progress dynamicly



CDC

Clinics

WeChat Self-operated Queries



Basic information evaluation

Item	Cotents	Evaluation
Name	[redacted]	pass
Sex	[redacted]	pass
ID	:0501 [redacted]	pass
Birth day	-12-26	pass
Father	[redacted]	pass
Mother	[redacted]	pass
Tel	[redacted]	pass
联系电话	[redacted]	pass
Address	省.苏州市.姑苏区.友新街 [redacted]	pass

说明：若评价信息中出现“不通过”，请您至居住地所在的社区卫生服务中心更正，信息更新周期为24小时内。

点击查询评价结论



接种情况结论

name [redacted] birth day 2012-12-26

- 1、该儿童持有儿童预防接种证，并纳入苏州市区所在社区卫生服务机构儿童预防接种管理。（加10分）
- 2、该儿童基本信息完整，并已按照要求完成相应年龄国家扩大免疫规划程序规定的疫苗接种（未到期及预防接种禁忌症除外）。（加10分）
- 3、请登录苏州市疾病预防控制中心官网 www.szcdc.cn，于“在线查询”栏目按照操作流程经安全验证后，查询随迁子女预防接种评价信息，之后导出并打印《苏州市流动人口学龄前随迁子女预防接种情况评价表》，评价表有效期1个月。

Children Vaccination Self-check and Evaluation Platform

Children Vaccination Self-check and Evaluation Platform 苏州市儿童预防接种查询与评价平台

儿童基本信息			
项 目		内 容	评 价
儿童基本信息 Child's Basic Information	儿童姓名		通过
	儿童性别	男	通过
	身份证号	320501	通过
	出生日期	2012-12-26	通过
	现在住址	江苏省, 苏州市, 姑苏区	通过
家长信息 Parents' Information	父亲姓名		通过
	母亲姓名		通过
	联系电话		通过
	联系电话		通过

P
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说明：
若评价信息中出现“不通过”，请您至居住地所在的社区卫生服务中心更正，信息更新周期为24小时内。

流动人口积分表打印

Print Vaccination Self-check
and Evaluation

入学入托接种情况评价表打印

Make evaluation


Uncompleted

Bar Code

320507040220100111

QR Code

Evaluation Form

Children Essential Information	name	苏子涵	sex	女	
	ID NO.	3205061001210750071	date of birth	2018-02-01	
Family Information	Father's name	苏子强	phone number	18014005100	
	Mother's name	苏子娟	phone number		
The EPI Vaccine	Vaccine name	Unexpired	Finished	Contraindications	Uncompleted
	1 卡介苗		✓		
	2 乙肝①		✓		
	3 乙肝②		✓		
	4 乙肝③		✓		
	5 脊灰①		✓		
	6 脊灰②		✓		
	7 脊灰③		✓		
	8 脊灰④		✓		
	9 百白破①		✓		
	10 百白破②		✓		
	11 百白破③		✓		
	12 百白破④		✓		
	13 A群流脑①		✓		
	14 A群流脑②		✓		
	15 麻疹/麻风		✓		
	16 麻腮风		✓		
	17 乙脑减毒①		✓		
	18 乙脑减毒② JEV-L				✓
	19 甲肝①		✓		
	20 甲肝②		✓		
	21 A+C群流脑① MCV-A+C 1				✓
	22 A+C群流脑② MCV-A+C 2				✓
23 白破 DT				✓	
Evaluation	<div>Be reminded to catch up drop-out vaccines.</div> <div>截止（2018-08-08），您的小孩未完成相应年龄国家扩大免疫规划程序规定的疫苗接种（未到期及预防接种禁忌症除外），应补种疫苗种类为：乙脑、A+C群流脑多糖、白破，请家长或监护人及时带孩子至居住地预防接种单位预约补种，谢谢配合！</div> <div>评价时间：2018-8-8</div>				

说明：上表接种情况栏中“★”表示已过补种月龄，不需补种。

回执

截止（2018-08-08），您的小孩未完成相应年龄国家扩大免疫规划程序规定的疫苗接种（未到期及预防接种禁忌症除外），应补种疫苗种类为：乙脑、A+C群流脑多糖、白破，请家长或监护人及时带孩子至居住地预防接种单位预约补种，谢谢配合！

评价表自行打印网址为：<http://jkzx.szcdc.cn:9002/>，如有疑问，请咨询：0512-68262040。


Completed

Bar Code

320509010920120216

QR Code

Evaluation Form

Children Essential Information	Name	苏子涵	Sex	男	
	ID NO.	3205061001210750071	Date of birth	2018-02-01	
Family Information	Father's name	苏子强	Phone NO.	18014005100	
	Mother's name	苏子娟	Phone NO.		
The EPI Vaccine	Vaccine name	Unexpired	Finished	Contraindications	Uncompleted
	1 卡介苗		✓		
	2 乙肝①		✓		
	3 乙肝②		✓		
	4 乙肝③		✓		
	5 脊灰①		✓		
	6 脊灰②		✓		
	7 脊灰③		✓		
	8 脊灰④		✓		
	9 百白破①		✓		
	10 百白破②		✓		
	11 百白破③		✓		
	12 百白破④		✓		
	13 A群流脑①		✓		
	14 A群流脑②		✓		
	15 麻疹/麻风		✓		
	16 麻腮风		✓		
	17 乙脑减毒①		✓		
	18 乙脑减毒②		✓		
	19 甲肝①		✓		
	20 甲肝②		✓		
	21 A+C群流脑①		✓		
	22 A+C群流脑②		✓		
23 白破		✓			
Evaluation	<div>Your child had been finished the EPI vaccination in his age.</div> <div>截止（2018-08-08），您的小孩已完成相应年龄国家扩大免疫规划程序规定的疫苗接种（未到期及预防接种禁忌症除外），应补种疫苗种类为：乙脑、A+C群流脑多糖、白破，请家长或监护人及时带孩子至居住地预防接种单位预约补种，谢谢配合！</div> <div>评价时间：2018-8-8</div>				

说明：上表接种情况栏中“★”表示已过补种月龄，不需补种。

回执

您的小孩已完成相应年龄国家扩大免疫规划程序规定的疫苗接种（未到期及预防接种禁忌症除外）。

评价表自行打印网址为：<http://jkzx.szcdc.cn:9002/>，如有疑问，请咨询：0512-68262040。

Immunization Certificate Check Information System for Kindergarten and School Entry in Suzhou

苏州市入托入学预防接种证查验与疫苗补种平台

Immunization Certificate Check Information System for Kindergarten and School Entry in Suzhou

用户登录

请输入用户名

请输入密码

请输入验证码

F B h m

Login



Immunization Certificate Check Information System for Kindergarten and School Entry in Suzhou

New Enrollment
Management

Query statistics

Information
maintenance

新生入学

New Enrollment

新生分班

New Division

补种通知

Catching Up Notice

Student Admission Management

招生年份	2018秋季	招生学校	苏州市相城区东桥中心小学	班级	--请选择--
建档日期		学生姓名		性别	--请选择--
出生日期		父亲姓名		母亲姓名	
查验评价	<input type="checkbox"/> 合格 <input type="checkbox"/> 不合格	补种评价	<input type="checkbox"/> 不需补种 <input type="checkbox"/> 补种合格 <input type="checkbox"/> 补种不合格	分班情况	<input type="checkbox"/> 已分班 <input type="checkbox"/> 未分班

入学操作

关闭

招生年份 2018秋季 学校 --请选择-- 班级 --请选择-- 扫描方式 自助评价 扫描码 ^ 确定

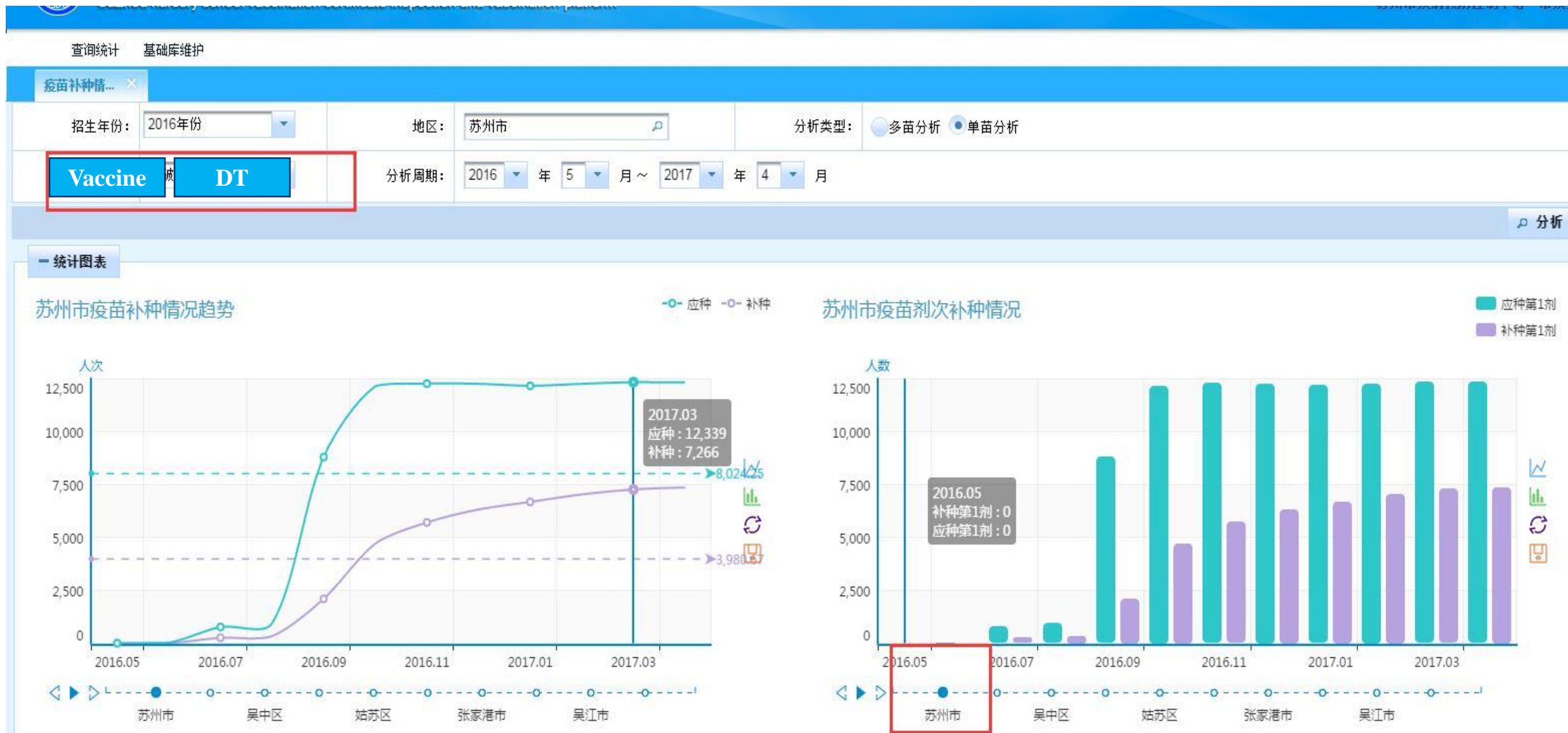
查询 自动录入

入托、入学新生接种证查验、免疫状况及补证补种登记表 Class Account Book

地区: 苏州市 学校: 班级: 招生年份: 2018秋季 年

儿童编码 ID	姓名 Name	公历出生 (年月日) Birthday	性别 Sex	学校 School	年级班 级 Grade Class	是否 有证	是否 补证	接种证查验、免疫状况及补证补种登记 Vaccine							
								卡介苗初种 BCG	乙肝疫苗Hep-B			脊灰疫苗PV			
								1	1	2	3	1	2	3	4
320501141685	刘	2014-09-22	男	小天使幼儿园	小4	✓		2014-09-23	2014-09-23	2014-11-18	2015-03-25	2015-02-05	2015-03-05	2015-04-08	
320501141931		2014-12-11	男	小天使幼儿园	小5	✓		2014-12-11	2014-12-11	2015-01-20	2015-07-12	2015-02-14	2015-03-18	2015-04-18	
320501150992	杨	2015-01-05	女	小天使幼儿园	小5	✓		2015-02-03	2015-01-05	2015-02-03	2015-07-29	2015-06-11	2015-07-29	2015-09-03	
3205011525645	周	2015-05-25	男	小天使幼儿园	小5	✓		2015-05-26	2015-05-25	2015-07-01	2015-11-27	2015-07-30	2015-09-04	2015-10-15	
320501150272	葛	2015-04-05	男	小天使幼儿园	小5	✓		2015-04-06	2015-04-05	2015-05-06	2015-10-07	2015-07-02	2015-08-13	2015-10-21	
320501150778	杨	2015-03-14	女	小天使幼儿园	小5	✓		2015-03-15	2015-03-14	2015-05-20	2015-11-30	2015-05-20	2015-06-25	2015-08-26	
320501132171	岳	2013-11-10	女	小天使幼儿园	中2	✓		2013-12-12	2013-11-10	2013-12-12	2014-05-22	2014-01-10	2014-02-12	2014-03-13	2017-11-16
320501130551	华	2013-05-18	男	小天使幼儿园	中2	✓		2013-05-20	2013-05-18	2013-06-26	2014-05-21	2013-07-18	2013-08-21	2013-09-25	
320501131151	张	2013-08-23	男	小天使幼儿园	中2	✓		2013-08-25	2013-08-23	2013-10-10	2014-05-22	2013-10-30	2013-12-05	2014-05-07	2017-08-24
320501131824	唐	2013-09-13	男	小天使幼儿园	中3	✓		2013-09-15	2013-09-13	2013-10-16	2014-03-14	2013-11-21	2013-12-26	2014-01-26	2017-09-13
3205011438343	赵	2012-04-16	女	小天使幼儿园	大1	✓		2012-04-16	2012-04-16	2012-05-25	2012-07-09	2012-09-17	2012-11-07	2013-09-02	
320501141814	俞	2014-06-14	男	小天使幼儿园	小6	✓		2014-07-21	2014-06-14	2014-07-21	2015-01-05	2014-08-25	2014-09-24	2014-10-29	2016-04-05
320501131202	汪	2013-10-04	女	小天使幼儿园	小6	✓		2013-10-05	2013-10-04	2013-11-07	2014-08-07	2014-01-09	2014-03-05	2014-07-24	
3205011207578	王	2014-06-08	男	小天使幼儿园	小6	✓		2014-06-09	2014-06-08	2014-07-17	2015-01-23	2014-08-08	2014-09-19	2014-11-06	
320501140367	黄	2014-03-06	男	小天使幼儿园	小6	✓		2014-03-06	2014-03-06	2014-04-10	2014-09-11	2014-05-29	2014-07-03	2014-09-11	2018-03-21

Catching up information of DT in the 2016-2017 school year, system-dynamical collecting



Catching up status of partial vaccines for children enrolled in the fall of 2017

Vaccines	Needle dose	September 2017			February 2018			March 2018			April 2018		
		Target population	Population of vaccination catching up	Rate(%)	Target population	Population of vaccination catching up	Rate(%)	Target population	Population of vaccination catching up	Rate(%)	Target population	Population of vaccination catching up	Rate(%)
BCG	subtotal	434	60	13.82	464	257	55.39	477	274	57.44	481	292	60.71
	1	434	60	13.82	464	257	55.39	477	274	57.44	481	292	60.71
Hep-B	subtotal	1587	259	16.32	1699	723	42.55	1768	782	44.23	1775	812	45.75
	1	241	35	14.52	237	93	39.24	250	103	41.2	250	107	42.8
	2	361	53	14.68	368	146	39.67	384	159	41.41	382	165	43.19
	3	985	171	17.36	1094	484	44.24	1134	520	45.86	1143	540	47.24
PV	subtotal	9872	2717	27.52	12306	6962	56.57	12819	7432	57.98	12952	7702	59.47
	1	370	53	14.32	351	141	40.17	367	153	41.69	366	162	44.26
	2	578	89	15.4	617	255	41.33	637	270	42.39	636	282	44.34
	3	843	134	15.9	921	405	43.97	950	427	44.95	954	445	46.65
	4	8081	2441	30.21	10417	6161	59.14	10865	6582	60.58	10996	6813	61.96
DPT	subtotal	3718	658	17.7	4174	2056	49.26	4373	2243	51.29	4433	2334	52.65
	1	262	42	16.03	280	128	45.71	293	138	47.1	294	144	48.98
	2	417	75	17.99	452	210	46.46	473	226	47.78	478	232	48.54
	3	625	94	15.04	677	308	45.49	705	332	47.09	713	342	47.97
	4	2414	447	18.52	2765	1410	50.99	2902	1547	53.31	2948	1616	54.82



Effectiveness

中国疫苗和免疫 2017 年 12 月第 23 卷第 6 期

• 685 •

江苏省苏州市儿童入托入学预防接种证自助查验评价系统的实施效果

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摘要: 目的 评价苏州市儿童入托入学预防接种证自助查验评价系统的实施效果。方法 开发和实施苏州市儿童入托入学预防接种证自助查验评价系统, 采用描述性方法分析 2016 年 5 月 - 2017 年 4 月系统实施期间托幼机构/小学的使用率、入学儿童录入率和免疫规划疫苗漏种比例等指标。结果 2016 - 2017 学年全市 91.42% (1 129/1 235) 的托幼机构/小学使用系统进行预防接种证查验工作; 入托入学儿童系统录入率为 85.36% (225 103/263 701); 2016 年入托入学儿童 11 种免疫规划疫苗的漏种比例 (0.53% - 14.55%) 均低于 2014 年 (0.79% - 17.38%) 和 2015 年 (0.66% - 15.70%) (χ^2 检验, P 均 < 0.05)。结论 苏州市儿童入托入学预防接种证自助查验评价系统的实施使接种证查验及疫苗补种工作关口前移, 减少了疫苗漏种。

关键词: 入托入学; 预防接种证查验; 自助查验评价系统

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Effectiveness of an information system for inspecting immunization certificates of children entering kindergartens and schools in Suzhou city of Jiangsu province Luan Lin, Liu Na, Zhu Jie, *et al.* (Suzhou Municipal Center for Disease Control and Prevention, Suzhou 215004, Jiangsu, China)

Abstract: Objective To evaluate the implementation of an information system to inspect immunization certificates of children entering kindergartens and schools in Suzhou city. **Methods** We developed and implemented a self-operated information system to facilitate certificate inspection. We used descriptive methods to analyze its utilization in kindergartens and primary schools, the entry of data on enrolling chil-



Results

In the 2016-2017 school years, 91.42% (1129/1235) of the kindergartens and primary schools used the system for their Immunization Certificate Check. Among enrolled children, 85.36% (225,103 of 263,701 children) had their records checked in the application.

In 2016, the rates of missing vaccines ranged from 0.53 to 14.55 per thousand students for the 11 recommended EPI vaccines, and were lower than the rates in 2014 (0.79 to 17.38 per thousand) and 2015 (0.66 to 15.70 per thousand) (Chi-square, $P < 0.05$).

Advantages

It motivates the parents to establish the immunization cards and records initiatively, offering the required information actively.

It becomes more and more efficient in terms of updating the information, reducing the workload and acquiring accurate data.

It promises the realization of the whole nation's complete overall health record for every citizen.

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It benefits us to set checking and applying supplementary immunization activities as the predecessor tasks and the reseeding vaccines as the routine in the whole year

It saves the budget on school medical professionals to check the vaccination history.

It functions as an important supervising source to monitor the accuracy of children's vaccination and well-being.

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THANK YOU

