



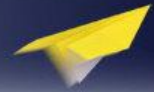
A pilot model to build up a continuity of care for secondary preventive service linked multiple disease screening in community to case management in hospital.

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Introduction

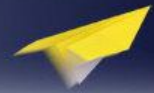
■ Secondary preventive service in Taiwan

- National health insurance has reimbursed screening for variety chronic disease and cancer by opportunistic approach since 1995.
- Opportunistic approach lead to inequitable health care access and underuse of screening service.

□ Question:

- *What kind of strategy could increase the coverage rate of screening in the south Taoyuan?*
- *For abnormal examinees from screening, how should we do to offer a continuity of care achieving an objective for 'early detected and early treatment'?*





Purpose

- The purpose of this study is to introduce our continuity of care for secondary preventive service system and to explore the preliminary result.



A continuity of care model for secondary preventive service in Landseed hospital

**Outreach screening
in community**

linkage

**Case management
in hospital**

Mass screening for multi-disease including the risk factors for diabetes, hypertension, hyperlipidaemia, cervical cancer, liver cancer, and colorectal cancer

Case managers apply information system to follow up screening result and abnormal examinees seeking medical service condition



- **Target population:** above 30-year-old
- **Activity design:** the screening team arrange manpowers, equipments, and materials to offer service in different district in our neighborhood
- **Frequency:** pick two setting per week
- **Promotion:** inviting participation by DM, telephone, and community volunteer.

Setting abnormal criteria

Screening abnormal cases by information system

Health education

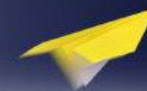
Transfer to treatment

surveillance indicators

Case managers
Call out

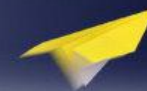
Follow-up care or service result

To close a case



Multi-disease screening based on EBM

disease	Screening tool	Abnormal criteria
diabetes	fasting glucose (AC)	AC \geq 126mg/dl
hypertension	blood pressure test	SBP \geq 140mmHg or DBP \geq 90mmHg
Hyper-lipidaemia	total cholesterol Triglyceride high-density lipoprotein (HDL) low-density lipoprotein (LDL)	total cholesterol \geq 240mg/dl or triglyceride \geq 200mg/dl
cervical neoplasia	pap smear	Pap smear abnormal (LSIL, HSIL, SCC, AGUS, AIS, ADENO CA.)
liver cancer	glutamate oxaloacetate transaminase (GOT) glutamate pyruvate transaminase (GPT) HBsAg, Anti-HCV	GOT \geq 40mg/dl or GPT \geq 45mg/dl or HBsAg(+) or Anti-HCV(+)
colorectal cancer	faecal occult blood test (FOBT)	FOBT positive

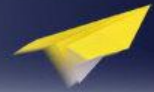


Methods

■ Study subjects:

- residents located at Ping-jhen and Jung-li city, Taoyuan in northern Taiwan
- above 30-year-old
- to have participated in Landseed Hospital community-base integrated screening program between 2007 and 2010.





Methods

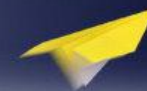
■ Data collection:

- Step I--the risk factors data from community screening :
CPC, bio-chemical blood test, urine analysis, FOBT,
pap smear, demography data, and disease history.
- Step II– the data of following up abnormal examinees:
the character of demography, transfer to healthcare
institution, and the outcome of health intervention.

■ Statistics:

- To use SPSS 14.0 software to descriptive analysis





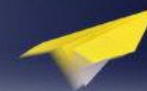
Result

- A total of 163 on-site out-reaching activities were provided between 2007 and 2010, serving 12877 screenees.

Table 1. Descriptive analysis for the character of participators for the first participating screening number by year

Age (year)	Male (%)	Female (%)	Total	%
2007	2237	2832	5069	39.4
2008	1294	1887	3181	24.7
2009	1040	1431	2471	19.2
2010	844	1312	2156	16.7
Total	5415 (42.0)	7462 (57.9)	12877	100.0



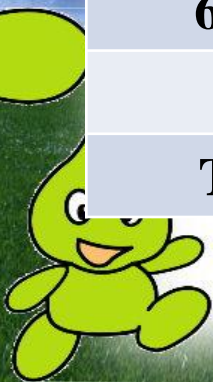


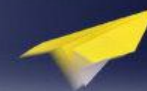
Result

- Of attendants, the average age was 56.3 years (SD=12.8), with being 59.2 years for 5415 (42.0%) males and 54.2 years for 7462 (57.9%) females.

Table 2. Descriptive analysis for the character of participators for age and gender

Age (year)	Male (%)	Female (%)	Total	%
30-39	446	640	1086	8.4
40-49	1090	1965	3055	23.7
50-59	1448	2681	4129	32.1
60-69	914	1426	2340	18.2
70+	1517	750	2267	17.6
Total	5415 (42.0)	7462 (57.9)	12877	100.0





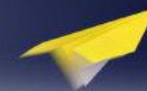
Result

- The prevalence rate of diabetes, hypertension, and hyperlipidemia of screening population were 9.1%, 34.2% and 17.3%.

Table 3. Prevalence rate Analysis by gender (Total Participants=12877)

Variable	Male (%)	Female (%)	Total (%)	Missing
Obesity (BMI>/m ²)*	976 (18.1)	1216 (16.4)	2192 (17.1)	60 (0.5)
Hypertension(≥140/90mmHg)*	2208 (40.8)	2182 (29.4)	4390 (34.2)	49 (0.4)
NIDDM(≥126mg/dL)*	502 (10.3)	525 (8.2)	1027 (9.1)	1636 (12.7)
Hyperuricemia (>8.5 mg/dL)*	655 (12.6)	149 (2.2)	804 (6.8)	986 (7.7)
Hypercholesterolemia (≥200mg/dL)*	746 (14.4)	1313 (19.6)	2059 (17.3)	986 (7.7)
Hypertriglyceridemia (≥150mg/dL)*	2078 (40.2)	1910 (28.7)	3988 (33.7)	1048 (8.1)
Metabolic syndrome*	794 (30.8)	780 (24.8)	1574 (27.5)	7154 (55.6)

*: gender different by chi-square test(p<0.05)



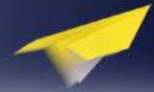
Result

- **The prevalence of high risk of liver, colorectal, and cervical cancer were 20.6% abnormal liver function, 9.6% FOBT positive, and 7.1% pap smear positive.**

Table 3(continued). Prevalence rate Analysis by gender (Total Participants=12877)

Variable	Male (%)	Female (%)	Total (%)	Missing
HBV carrier*	346 (13.2)	348 (11.0)	694 (12.0)	7088 (55.0)
HCV carrier	86 (3.3)	91 (2.9)	177 (3.1)	7088 (55.0)
Abnormal liver function (GPT \geq 45mg/dl)*	921 (17.8)	681 (10.2)	1602 (13.5)	986 (7.7)
Abnormal liver function (GOT \geq 40mg/dl) *	603 (11.7)	559 (8.4)	1162 (9.8)	1048 (8.1)
FOBT positive *	356 (12.4)	299 (7.6)	655 (9.6)	6074 (47.2)
Pap smear positive (screening rate = 2248/3827 = 58.7%)	--	159 (7.1)	159 (7.1)	--

*: gender different by chi-square test(p<0.05)

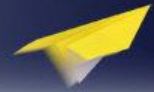


Result

- All kinds of abnormal groups were followed up and educated by our case managers to take medical treatment early. The accepted rates of different disease were from 40.1% (hyperlipidemia) to 88.2% (diabetes).

Table 4. The frequency of accepted any kinds of medical service rate with abnormal examinees

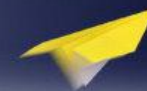
Variable	Case number	Accepted medical service number (%)
DM	1041	918 (88.2)
Hyperlipidemia	2784	1116 (40.1)
hypertension	6121	3148 (51.4)
FOBT positive	624	380 (60.9)
Abnormal Pap Smear	157	135 (86.0)
Liver diseases	1151	936 (81.3)



Conclusion

- According to our preliminary result, this continuity of care for secondary preventive service was not only increasingly gained attention for disease screening rate, but also enhancing high risk group to take appropriately medical treatment or regular surveillance in hospital.
- It has high value to demonstrate our experience for applying to other healthcare institution which devoted to secondary preventive service.
- In the future of our study, we will follow the results of health assessment and estimate the cost-effectiveness for our model.





Thanks for your attention

