SME Development Fund/
Dedicated Fund on Branding, Upgrading and Domestic Sales
(Organisation Support Programme)

Final Report of Approved Project

Project ref. no.   : D10 004 009

Project title   : Pilot Scheme on Computerized Medication Management
System in Private Homes for the Elderly

Period covered   : From 01/08/2011   to 31/05/2014
                                       (dd/mm/yy)   (dd/mm/yy)

1. Project Details

(Please mark with "*" if any of the following project details is different from that in the project proposal appended to the project agreement.)

Project Reference and Title

Pilot Scheme on Computerized Medication Management System in Private Homes for the Elderly

Project Summary (in not more than 150 words)

現時本港大約有700多間安老院舍，當中包括500多間私營安老院舍，縱使私營安老院舍的數量眾多，但政府對其提供的協助卻是非常有限。因此，即使私營安老院舍欲提升服務質素，在面對資源匱乏的情況下，亦未能作出適當的配合。此外，私營安老院舍還要面對長期人手不足的問題，即使部份有資源可以聘請多些專業護理人員的院舍，也往往受制於政府條例所限、行業本身的厭惡性質及津助院舍吸納了大部份具質素的員工等問題。

在長期缺乏人手的情況下所引伸出來的問題，其中一項包括在私營院舍的藥物管理未能妥善獲得處理。現時居住在安老院的大部份長者，都需要長時期服用處方藥物。然而，藥物管理這一個環節除了虛耗大量時間和人力外，更容易引起事故，如有不慎，更會對院友造成健康上的嚴重影響。有見及此，本計劃的目的在於為各安老院舍提供一套有效而安全的備藥系統。當藥物從安老院舍收集回來後，藥房的藥劑師覆核配藥及把藥物重新包裝，將資料輸入電腦，然後把包裝好的藥物送回院舍。院舍的員工利用電腦、智能咭和二維條碼等先進科技，通過互聯網聯結到藥房的電腦系統，從而準確無誤地在院舍內將藥物派發給長者。中小企國際聯盟希望藉著舉辦「私營安老院舍電腦化藥物管理系統」先導計劃，能夠為私營安老院舍引入現代化的藥物管理系統，使私營安老院舍的服務質素得到更大的改善，從而提高市場競爭力。另一方面，本港中小型藥房也可以藉此擴展其服務範圍從而受惠。

Project Objective(s) (in not more than 80 words)

1. 於私營安老院舍引入現代化藥物管理系統
2. 提高院舍藥物管理的安全性
3. 透過專業培訓提高院舍員工對長者常用藥物的認識
4. 簡化藥物管理的工序從而提高工作效率
5. 提升私營安老院舍的服務質素及加強競爭力
6. 擴闊本港中小型藥房的服務範圍

Grantee /Collaborating/Implementation Organisation Agent

Grantee	:	SME Global Alliance Limited
Collaborating Organisation(s)	:	Hong Kong Private Nursing Home Owners Association
Implementation Agent(s)	:	Active Care Pharmacy

Key Personnel

		Name	Company/Organisation	Tel No. & Fax No.
Project Co-ordinator	:	Thomas KWONG	SME Global Alliance Limited	92671832 / 27646917
Deputy Project Co-ordinator	:	Peter SUEN	Active Care Pharmacy	90813798 / 30208797

Project Period

	Commencement Date (day/month/year)	Completion Date (day/month/year)	Project Duration (No. of months)
As stated in project agreement	01/08/2011	30/04/2013	21
Revised (if applicable)		31/05/2014	34

Methodology Employed

整個計劃將分成三個階段推行，各階段詳情如下：

階段一：先導計劃的籌備期

1. 籌組「項目推行小組」及訂定計劃範疇，並成立一個「篩選委員會」，負責訂定篩選參加先導計劃的私營安老院舍準則及進行篩選，相關準則如：必須為本地中小企業、院舍備有與系統相符的電腦和器材、參與的院舍須分享從先導計劃所得的經驗等。

2. 舉行兩場簡介會，邀請指定區域約500間私營安老院舍的管理層出席。在簡介會上將介紹電腦化藥物管理系統的運作及應用系統對院舍帶來的好處，包括提高藥物管理的安全性、簡化工作程序、提高員工的工作效率、提升院舍的服務質素，從而增加院舍的競爭力。

3. 按院舍規模劃分為三個類別，包括：大型院舍(服務200名長者以上)、中型院舍(服務100-200名長者)及小型院舍(服務100名以下長者)，從中篩選出50間私營安老院舍參與為期12個月的「先導計劃」。

4. 在先導計劃正式推行之前，舉行約50場的工作坊，讓各院舍員工選擇適合的時段參加。員工參與工作坊時，「明心大藥房」會詳細解釋電腦化藥物管理系統「衛方備藥系統」的運作及相關的注意事項，並由專業藥劑師為員工簡介長者常用藥物的特性，增加院舍員工對該等藥物的認識。工作坊設有評核，以測試員工能否正確地運用系統。

階段二：先導計劃的運作期

1. 按計劃進行為期12個月的「先導計劃」。預算每名參與「電腦化藥物管理系統先導計劃」的院友，每人每月須要用款約為$150，其中$52將由中小企業發展基金資助，其餘的$98將由「明心大藥房」贊助。此外，各間參與先導計劃的私營院舍，須要配備手提電腦及指模掃瞄器以配合電腦化藥物管理系統的推行。

2. 電腦化藥物管理系統的服務提供者須按照規格，為各參與先導計劃的院舍提供精確的藥物管理系統，包括由藥劑師負責配藥及備藥、為院友編製藥物清單、整理各項服藥記錄等。院舍員工會按照電腦化藥物管理系統每一個程序進行藥物管理。

3. 在「先導計劃」開始之前，「項目推行小組」會先為各參與計劃的院舍進行第一階段的問卷調查，以了解院舍對藥物管理系統的期望。另外，在計劃推行期間，電腦化藥物管理系統的服務提供者須確保系統運作期間暢順。如院舍有任何運作上的疑問，服務提供者必須盡快解決。「項目推行小組」將監督計劃的推行。

4. 在先導計劃運作的最後一個月，「項目推行小組」及研究顧問團隊將進行第二階段的問卷調查，再次訪問各參與「先導計劃」的私營安老院舍，深入了解院舍對系統的期望是否已經達到，以及對計劃的整體意見。

階段三：先導計劃的成效發佈期

1. 在完成第一及第二階段的問卷調查後，「項目推行小組」及研究顧問團隊會運用4個月的時間，從前述兩個階段的問卷調查蒐集得來的數據和資料進行分析，及撰寫成效報告。目的在於了解參與計劃的各間院舍對電腦化藥物管理系統的運作效能，能否符合最初訂立的目標。同時，通過調查，可以檢討系統是否有不足之處，以備日後進行調整。

2. 在成效調查完成後，將舉行一場發佈會，邀請各安老院舍管理層及其他與安老照顧業有關的單位及組織，包括政府部門如社會福利署、衛生署的代表出席。發佈會上將介紹「私營安老院舍電腦化藥物管理系統先導計劃」整項計劃的推行及總結計劃的成效，當中會簡述成效報告中之結論。

3. 項目推行小組同時會印製小冊子概述計劃內容及其成效，小冊子將派發予全港各安老院舍及相關單位，讓業界對電腦化藥物管理系統有更深入的認識。

4. 藉著對計劃進行成效研究、舉行發佈會及印製小冊子，能讓業界了解電腦化藥物管理系統對院舍運作的好處，繼而吸引更多私營安老院舍引用現代化藥物管理系統，增加院舍員工的工作效率，提升藥物管理的安全性，並能夠提高院舍的服務質素，以及於業界的市場競爭力。

2. Summary of Project Results

Project Deliverables
(Please list out the targeted project deliverables as stated in the project proposal appended to the project agreement and provide details of actual result achieved, including beneficiaries, for each of them.)

1. A Selection Committee will be set up to formulate the selection criteria for the residential homes and conduct the selection process. Preliminary, it is planned to invite the private homes which are located at the districts of 'Kowloon City', "Sham Shui Po", and 'Yau Tsim Mong' to join the scheme. The implementation team will organize two briefing sessions to around 500 managements/ supervisors of the private homes introduce the importance of the computerized medication management system. The procedure and advantages of the medication management will also be stated at the briefing session.

   #### Result Achieved
   Owners and management of all private old age homes had been invited to two seminars held in Sept 2011 and Sept 2012; officiating the seminars were Chairman of the Elderly Commission Professor CM Chan, alongside with legco councilors. The selection committee consists of Mr. Allan Leung (Chairman SMEGA), Dr. Elsa Li.

   2 seminars were run. The first one on 7th Sept., 2011 with 200 people attending. The second seminar was on 6th Sept., 2012 with 100 attending. Both seminars had invited Professor Alfred Chan of the Elderly Commission Chairman to deliver a speech about the importance of giving correct medication to elders.

2. According to the prescribed criteria, the Selection Committee will select 50 private homes to join the Pilot Scheme. It is expected that around 2000 elders will be benefited. The selected homes will be required to send their staff to attend a workshop to understand the 'RightMeds' which is a computerized medication management system established by the Active Care Pharmacy. The registered pharmacists will teach the staff more knowledge on the elderly medication. Around fifty sessions of the workshops will be arranged so that the staff will be able to attend according to their working schedule.

   #### Result Achieved
   After the first seminar, 3 homes joined the pilot project with 327 elders.
   1) Chevron Professional Nursing Home (47 elders), started from Dec 2011 to Dec 2012
   2) Guardian Home (200 elders), started from Jan 2012 to Jan 2013
   3) Health Care (Lung Cheung) Old Age Home (80 elders), started from Jan 2012 to Jan 2013

   The second seminar, 3 homes joined the pilot project with 433 elders.
   1) Fu Tai Nursing Home (239 elders), started from Oct 2012 to Sep 2013
   2) Yi Wo Yuen Aged Sanatorium Centre (124 elders), started from Nov 2012 to Nov 2013
   3) Culture Homes Two (70 elders), started from Jan 2013 to Jan 2014

   After the first seminar, 3 homes joined the pilot project with 327 elders. The second seminar with 433 elders.

   At the start of the project, an inspector from the Social Welfare Department (SWD) unduly pointed out to the old age home running our pilot study that the procedure did not observe their guideline so the old age home quitted the pilot. It then became very hard to find another old age home to come on board. Petition to the SWD was made, meetings were then held, and SWD finally issued a complementary guideline recognizing the use of monitored dosage system and also allowed electronic recording of drug administration details. Recruitment of old age homes then resumed in November 2012. The shortage of manpower and illiteracy in English and computer knowledge also are the main stumbling block for the project. It takes time to explain to the once-frightened OAH owners that our medication management system is now fully recognized by the SWD.

   The shortage of manpower of the private homes has been worse than we expected, so there is no chance of conducting group training on the use of the system; adding the fact that most personal care workers (PCW) in old age homes are practically illiterate in English, we conducted many sessions of on-site training at drug administration rounds instead of group training. At least 2 on-site training sections were provided for each private home. Ad-hoc supports will also be provided to the private homes when they have any enquiry.

3. The private homes will join the 12-month-pilot scheme. The staff of the private homes will make use of the system to handle various steps of the medication management. The Active Care Pharmacy will be responsible for providing all kind of supports to the private homes, and ensuring the smoothness of procedures of the medication management and eliminating the incident of medication. By adopting the system, the traditional procedures in medication management will be simplified and streamlined. As a result, it will alleviate the problem of the shortage of manpower, especially for professional staff, such as the Registered Nurses. On the other hand, the professionals can put more effort in caring the elders and uplifting their efficiency for the private homes.

Result Achieved

「私營安老院舍電腦化藥物管理系統」先導計劃的詳情可參閱**Annex 1**。

6間私營安老院共760個院友使用本計劃資助的電腦化藥物管理系統，系統所需的成本會相應比人手甚低，所有參加「中小企業發展支援基金」贊助的安老院舍在整體藥物操作上能節省72%工時，大大減少出錯機會之外，更增強競爭力，並在計劃完畢後都自付全費繼續使用明心大藥房提供的同樣服務。

以下是節錄自問卷調查的結果(**Annex 2**):

	YWY	CH	C	GH	HC	FT		
請問你的團隊每天需要照顧多少老人家?	124	70	47	200	80	239	760	
你的團隊每天需要花多少工時來準備藥物呢? 使用明心系統之前	360	240	120	480	240	540	1980	94%
你的團隊每天需要花多少工時來準備藥物呢? 使用明心系統之後	20	10	10	30	15	30	115	6%
你的團隊每天需要花多少工時來派發藥物和簽名, 並確保記錄正確呢? 使用明心系統之前	600	300	300	1200	300	1500	4200	61%
你的團隊每天需要花多少工時來派發藥物和簽名, 並確保記錄正確呢? 使用明心系統之後	240	150	120	480	150	480	1620	39%

Legend:

YWY   Yi Wu Yuen

CH   Culture Home

C   Chevron

GH   Guardian Home

HC   Health Care

FT   Fu Tai

4. After the completion of the Pilot Scheme, an evaluation survey will be conducted for studying the effectiveness of the Scheme. The findings of the survey will be publicized to the Industry through the press conference. Around 1,000 pamphlets will be published to introduce the advantages of the system. The service standard, image and competitiveness of the industry are expected to be upgraded. The press conference will be served as a platform for the government departments, e.g. Social Welfare Department, Health Department and the general public to learn the latest development of the private homes. And more importantly, they will be notified of the effectiveness of the public resources utilization.

Result Achieved

Findings for the System include:

1. Problems on medication and solutions to the problems

a) Wrong dosage

Wrong dosage, defined as dosage outside the recommended dosage for registered indications, has been found to be an average of 16.5% for medications received from private practice medical doctors. (August 2011 to Dec 2013).

b) Crash of medications

Crash of medications, defined as drug-drug interactions according to Stockley's Drug Interaction, was found to be an average of 15.2% across the spectrum.

c) Other abnormal situations or you think is relevant

At every transit of care, from one doctor to another, there often are new drugs added or existing drugs omitted, which are not accounted for by the new prescriber. Many times, the omission was later found out to be mistakes either in prescription or in dispensing. Our pharmacists have devoted considerable amount of time to ensure the prescription is completed and rational.

2. Difficulties arising from the whole process and solutions to the problems

a)   from supplier

There are two major sources of supply.

The pharmacies maintained by the Hospital Authority, where supplies are often given for the next 6 months at a time as if there would be no change in medication during that period; in real life, there are on average 2 changes in treatment regime making a lot of unused medication wasted.

The in-house dispensing service of private medical practitioners, where dispensing is carried out by unqualified personnel. A lot of problem has arisen from there, such as improper labeling, lack of essential instruction, wrong drug name, wrong dosage and even incomplete patient name.
A lot of effort has to be put in to confirm the correctness of the dispensed medications.

b)   from clients

Often elderly patients do not bring all the medications they have received from the prescriber, forgotten 90% of things the doctor had told them. As a result, the nurses at the old age homes and our pharmacists had to put out many times the effort trying to bring the complete prescription in order.

c)   any other sources

Family and relatives of elderly patients would bring medicine or nutritional supplement for them to take, while our pharmacists have to ensure the extra non-prescription products are compatible to the patient's regime and suitable for the patient's condition.

<u>Conclusion</u>

In general, the elderly home has saved 94% of time spent on preparing the medicines for elderly, and saved 61% of time for accurately administering and recording the administration.

Valuable time have been saved to allow nurses and healthcare workers to do what they are trained best to do, while medication are properly prepared and given to the residents at the right time and in the right dose.

All the elderly homes served are totally satisfied with the system and would recommend others to use the ActiveCare system on medication management.

Chinese version can be found at **Annex 3**.

Actual Benefits to SMEs/Enterprises
(Please indicate *in clear, specific, tangible and quantifiable terms* the benefits of the project and its contribution to enhancing the competitiveness of Hong Kong's SMEs / enterprises in general or SMEs / enterprises in specific sectors / assist Hong Kong enterprises in general or in specific sectors in developing brands, upgrading and restructuring business operations, and promoting domestic sales in the Mainland, in not more than 400 words.)

6間私營安老院共760個院友使用本計劃資助的電腦化藥物管理系統，系統所需的成本會相應比人手甚低，所有參加的安老院舍在整體藥物操作上能節省72%工時，大大減少出錯機會之外，更增強競爭力，並在計劃完畢後都自付全費繼續使用明心大藥房提供的同樣服務。

On macro economy, outsourcing of medication management to community pharmacy will definitely be highly effective, allowing nursing staff to carry out valuable nursing duties they are especially trained to do best.

At the same time, it is also extremely cost-effective for the following reasons:

1. Economy of scale is achieved in a pharmacy which serves thousands of patients than in individual old age homes.
2. Reduced medication related incidents saves economy by saving
   A. valuable time of the healthcare staff in old age homes
   B. time off of relatives of the elderly
   C. precious time of medics and nurses in hospitals
   D. stressful time of management in old age homes
   E. numerous others along the chain of medication incidence, ranging from ambulance men, executives at SWD and hospitals, toxicology, pathology, radiology, clerical and supporting staff, just to name a few.

For old age homes of a smaller scale, the work of pre-packing medicine falls into the hand of several staff sharing the burden together. i.e. contracting out the work is not enough to save one headcount. There are no extra financial resources for these smaller homes to take advantage of the extra benefits of medication management service, so they could only stuck with the inadequacy and run a rat race.

Milestones (in chronological order)

(# Please indicate if the milestone is completed (C), deferred (D) or not achieved (N). If it is deferred, please indicate the revised completion date. For those milestones which are deferred or not achieved, please also provide the reasons under item 2.4.)

Milestone (as set out in the approved project proposal appended to the project agreement)	Original target completion date	Revised target completion date (if applicable)	Status (C/D/N) #
(a) Set up Organizing Committee	2011/08/15		C
(b) Set up Selection Committee	2011/08/15		C

(c)	Holding two Briefing Seminars	2011/9/15	2012/08/31	C
(d)	Selecting OAHs for pilot scheme	2011/9/30	2012/08/31	C
(e)	Holding on-site training sessions	2012/10/31	2014/03/31	C
(f)	Carrying out Pilot Scheme	2012/10/31	2014/03/31	C
(g)	Carrying out customer satisfaction surveys, analyze the result and compose a report	2013/2/28	2014/03/31	C
(h)	Holding the Dissemination Seminar	2013/3/31	2014/03/31	C
(i)	Production of Leaflet	2013/4/30	2014/03/31	C

Reasons for Deferring or Not Achieving certain Milestones, if any.

Please refer to point 2.1 for details. The original plan was to have 2000 elders from 50 Homes. After the first seminar, Elderly Homes questioned that this Pilot was to assist them to save time and re-engineer medication process. If the Elderly home is running 2 systems simultaneously, that only increased staff work-load and creation confusion. So after consulted with TID Project Officer Sam Lee, the Pilot provided service for the entire Home instead of at a percentage. After that, only a few Homes were willing to participate the pilot. It also took a long time to persuade other Homes to join the Pilot.

Marketing/Dissemination Activities (in chronological order)
(Please provide details of all completed and on-going promotional and/or dissemination activities for each of the project deliverables.   Such activities may include advertisements, seminars, workshops, etc.)

Date/ Period	Description	No. of beneficiaries (SMEs/Enterprises*) *please delete as appropriate
8/2011 – 5/2014	Catalogue and booklets have been prepared, printed and sent out to all private OAHs, with link to an updated website for more detailed information	500 private OAHs
9/2011 - 1/2013	2 large scale seminars have been held. At least 2 on-site training sections have been held at each of the private home that joined the pilot scheme. Ad-hoc supports have also been provided to the private homes when they have any enquiry.	Over 100 people from private OAHs
8/2011 – 9/2012	Video clips (10 man days of IT personnel and 20 man days of dispensing assistant, totally amounted to $18,000, not from project funding, contributed by ACP) on the use of RightMeds software and on drug administration have been made and distributed on the cloud.	Over 100 people from private OAHs
28/5/2014	A presentation has been held for dissemination.	
	Guidebooks have been published to introduce the advantages of the system and sent out by mail and distributed in the presentation for around 200pcs, other guidebooks will be sent out by other means to OAHs.	500 private OAHs

Total no. of beneficiaries : Over 5,000 people

Future Plan for Promoting the Project Deliverables
We are making petitions to the government policy makers and legco councilors to make them understand that the money spent on buying medication management system can significantly save unnecessary hospitalization and suffering, which naturally would help already diminished healthcare manpower.   We would enhance the promotional effort to recruit more participants for this scheme.