

Financial and Medical Aspects of Home Care and Pharmaceuticals for the Elderly in Belize

NHI Mercy Clinic

Holistic Elderly Care Pilot Program

Since June 2009

George Gough MD
Belize

Adding health to years

- **Today, for the first time in history most people can expect to live into their 60s and beyond**

World Report on Ageing and Health
© World Health Organization 2015

- **Population Ageing**
 - worldwide challenge (Belize)...
 - a. living longer... yes
 - b. good quality of life ... no

- **Global and Caribbean Demographics of Ageing**

Ageing Caribbean Populations and Implications for Health Management and Financing

Anton Cumberbatch; Charmaine Metivier; Chantal Malcolm; Joslyn Koma and Stanley Lalta HEU,
Centre for Health Economics, UWI Presentation at 8TH Caribbean Conference on
Health Financing Initiatives Jamaica...November 12th-14th , 2013

Demographics: Aging in Belize

Belize Postcensal National Population Estimates 2010 – 2015

Source: Statistical Institute of Belize

Age	Estimated Mid -Year Population 2010	Estimated Mid -Year Population 2011	Estimated Mid -Year Population 2012	Estimated Mid -Year Population 2013	Estimated Mid -Year Population 2014	Estimated Mid-Year Population 2015
60-64	6,245	6,409	6,577	6,750	6,926	<u>7,107</u>
65-69	4,412	4,527	4,646	4,768	4,894	<u>5,022</u>
70-74	3,508	3,600	3,694	3,790	3,889	<u>3,992</u>
75-79	2,573	2,640	2,709	2,780	2,853	2,927
80-84	3,143	3,226	3,311	3,398	3,487	3,579
TOTAL	19,881	20,402	20,937	21,486	22,049	22,627

Belize Postcensal National *MALE* Population Estimates 2010-2015

Source: Statistical Institute of Belize

Age	Estimated Mid -Year Population 2010	Estimated Mid -Year Population 2011	Estimated Mid -Year Population 2012	Estimated Mid -Year Population 2013	Estimated Mid -Year Population 2014	Estimated Mid -Year Population 2015
60-64	3,302	3,389	3,478	3,569	3,662	3,758
65-69	2,348	2,409	2,472	2,537	2,604	2,672
70-74	1,859	1,908	1,958	2,009	2,062	2,117
75-79	1,306	1,340	1,375	1,411	1,448	1,485
80-84	1,480	1,519	1,559	1,600	1,642	1,686
TOTAL	10,295	10,565	10,842	11,126	11,418	11,718

Belize Postcensal National *FEMALE* Population, 2010 – 2015

Source: Statistical Institute of Belize

Age	Estimated Mid -Year Population 2010	Estimated Mid - Year Population 2011	Estimated Mid - Year Population 2012	Estimated Mid - Year Population 2013	Estimated Mid - Year Population 2014	Estimated Mid- Year Population 2015
60-64	2,943	3,020	3,099	3,181	3,264	3,349
65-69	2,064	2,118	2,174	2,231	2,290	2,350
70-74	1,649	1,692	1,736	1,781	1,827	1,875
75-79	1,267	1,300	1,334	1,369	1,405	1,442
80-84	1,663	1,707	1,752	1,798	1,845	1,893
TOTAL	9,586	9,837	10,095	10,360	10,631	10,909

- ***“We’re Living Longer”*** ... a 100 years ?
but with NCDs...

RISK

- Non-modifiable -- Age ...
- Modifiable -- Poor diet
 - Physical Inactivity ...

Living Longer ?

- Quality
 - Economically
 - Socially
 - Culturally
 - Healthy



Belize City Elderly - Non Mercy Clinic

- **Demographics (Provider/Sex to Age)**
 - a. Belize City South Side (approx 50%/City)
- **Gradual Transfer of the Elderly**
 - a. 2016 to 2017 looking at **Voluntary Transfer**
 - i. Infrastructure is being fitted for 3000
 - b. 2018 Policy for **Mandatory Transfer**
 - i. Infrastructure will need to fitted for 6000
e.g. last Census presented 6000 + > 60 yrs
in Belize City alone

Provider BHP	Age 59	Age 60	Age 61	Age 62	Age 63	Age 64	Age> 65	Total
Male	20	22	19	11	19	11	254	356
Female	39	40	38	39	40	22	331	549
Total	59	62	57	50	59	33	585	905
BFLA								
Male	28	24	22	24	17	11	211	337
Female	39	33	39	29	28	28	275	471
Total	67	57	61	53	39	39	486	808
BMA								
Male	21	22	35	21	20	26	371	516
Female	48	42	50	39	27	37	569	812
Total	69	64	85	60	47	63	940	1328
MOH								
Male	32	36	26	33	16	23	316	482
Female	40	37	32	19	37	19	280	464
Total	72	73	58	52	53	42	596	946
Gr Total	267	256	261	215	204	177	2,607	3,987

Problems or Success

- Elderly Population Living longer
- Elderly Home Care growing in demand
- Social Programs not growing to pace
- NCDs - Burden of Diseases growing
- Pharmaceutical demand for NCDs in the Elderly unsustainable
- Lifestyle changes for the Elderly are minimum or nonexistent (Young-Old; 60 to 74 years)
- Health Education for Prevention and control of NCDs at a minimum

Mercy Clinic Services Budget

Population 1400 with a specific PMPM per service provided

Service	Budget	Cap
Pharmacy	143,808.00	11,984.00
Lab	123,312.00	10,276.00
Imaging	29,232.00	2,436.00

Mercy Clinic Services ... Pharmacy, Lab, Imaging

April 2016	Balance	May 2016	Balance	June 2016	Balance	July 2016	Balance	August 2016	Balance
13,903.68	(1,919.68)	13,146.84	(1,162.84)	13,523.88	(1,539.88)	12,184.09	(200.09)	13,292.67	(1,308.67)
20,044.60	-9,768.60	20,298.40	-10,022.40	17,541.70	-7,265.70	8,720.00	1,556.00	7,080.00	8.41
4,584.00	-2,148.00	7,167.00	-4,731.00	5,218.00	-2,782.00	1,352.00	1,084.00	286	1,077.88

NHI Mercy Clinic 2016 Jan 1st 2016 to August 31st 2016

SERVICES	PMPM	Per Month	8 Months
Pop 1400	18.25	\$25,550	\$204,400
Pharmacy	8.56	\$11,984	\$95,872
Lab	7.34	\$10,276	\$82,208
Imaging	1.74	\$2,436	\$19,488
Total	35.89	\$50,246	\$401,968

NHI Mercy Clinic 2016

Sept 1st 2016 to March 31st 2017

SERVICES	PMPM	Per Month	Next 7 Months	Total Additional Cost
Pop 2000	16.57	\$33,140	\$231,980	\$53,130
Pharmacy	8.56	\$17,120	\$119,840	\$35,952
Lab	7.34	\$14,680	\$102,760	\$30,828
Imaging	1.74	\$3,489	\$24,423	\$7,371
Total	\$34.21	\$68,429	\$479,003	\$127,281
Cost	- (1.68)	+ (\$18,183)*		
• PMPM Services (\$7,590) up	*PMPM Pharmacy (\$5,136)	• PMPM Lab (\$4,404)	• PMPM Imaging (\$1,053)	

NHI Mercy Clinic

Contract April 1st, 2017 - March 31st, 2018

Pop	PMPM 16.58	Pharm	Lab	Image	Total Month	3 Months
2000	\$33,140	\$17,120	\$14,680	\$3,480	\$68,420	\$205,260
2250	\$37,282	\$19,260	\$16,151	\$3,915	\$76,608	\$229,824
2500	\$41,425	\$21,400	\$18,350	\$4,350	\$85,525	\$256,575
2750	\$45,567	\$23,540	\$20,185	\$4,785	\$94,077	\$282,232
					Total	\$973,891
	PMPM \$15.00					12 Month 2018/19
3000	\$45,000	\$25,680	\$22,020	\$5,220	\$97,920	1,175,040

NHI Mercy Clinic

Path to Sustainability...

Total PMPM	Total Cost per Month	Yearly Cost
\$35.39 (1400 + member)	\$50,256	\$603,072
\$34.21 (2000 +member)	\$68,429 - \$94,077	\$821,148 - \$1,128,924
\$32.64 (3000 +	\$ 97,920	\$1,175,040
???		
???? (6000 members)		\$?????

Key Performance Indicators for Bonus Payments

January 1st to December 31st, 2013

No.	Key Performance Indicators	Target	Score	Results
1.	Percent of Medical Staff trained at 2 times during the year in Geriatric Medicine Documentation including NCD Protocols.	100%	15%	100%
1.	Percent of Basic Standards for a geriatric institution implemented Documentation: checklist	85%	15%	98.7%
1.	Conduct 4 hours of specialist clinic once a month	90%	15%	100%
1.	List of basic equipment installed and functional	95%	15%	99.5%
1.	Develop Geriatric Protocols for HTN and DM /Research Blister Package Report and Presentation	100%	20%	100%
1.	At least 85 percent of MC patients expressed full satisfaction with regard to services received from the MC	85%	20%	90%
	KPI Score Pass: 85%			100%

Poster Presentation (P-13)

- Caribbean Public Health Agency 59th Annual Scientific Meeting
May 1 – 3, 2014
- Improving chronic patient compliance with medication using monthly blister packing
A Hotchandani Mercy Clinic NHI

Objective:

To improve geriatric patient compliance to medication adherence by using a prepackaged monthly blister pack.

- **Design and Methods:**

- a. Patients with a high index of suspicion/confirmed non-compliance had their medications dispensed in the blister packing.

- b. Patients were required to bring in their previous blister pack before the next one would be dispensed.

Results:

- There were 27 patients in the study.
- After the first visit there was 56% compliance
- By the last visit compliance increased to 82%
- Some clinical data...e.g.

In hypertensive patients, there was an average reduction of 28 mmHg in the systolic pressure and 13.5 mmHg in the diastolic pressure

Conclusion:

- The use of monthly blister packing helped improve **patients' compliance**, **overall health** and was **economically feasible**.
- The results of the study show that all three aspects of the study improved with the use of blister packing.
- Discontinued...
 - a. 50% improve in compliance ? (young-old)
 - b. Did not replace home visits compliance
 - c. Elderly (middle to oldest old) <50% ...

Key Performance Indicators for Bonus Payments

January 1st to December 31st, 2015

No.	Key Performance Indicators	Target	Score	Results
1.	Percent of Medical Staff trained at 12 times during the year in Geriatric Medicine Documentation including NCD Protocols.	100%	15%	100%
1.	Percent of Basic Standards for a geriatric institution implemented Documentation: checklist	85%	15%	95.6%
1.	Conduct 4 hours of specialist clinic once a month	90%	10%	100%
1.	90% of Outreach visits per month. ***	90%	15%	100%
1.	At least 80 percent of hypertensive patients receiving care according to protocol	80%	15%	95%
1.	At least 80 percent of diabetic patients receiving care according to protocols	80%	15%	100%
1.	At least 80 percent of MC patients expressed full satisfaction with regard to services received from the MC	80%	15%	100%
	KPI Score Pass: 80%		100%	100%

Special
problem
with
Ageing

The diagram features a central light blue rounded rectangle divided into two vertical panels. The left panel contains the text 'Special problem with Ageing' and the right panel contains 'Burden of Chronic Disease is significant'. Two blue curved arrows connect the panels: one at the top pointing from left to right, and one at the bottom pointing from right to left. Below this rectangle is a dark blue horizontal arrow pointing to the right, containing the text '25% of all NCDs deaths occur below age of 60 years'.

Burden of
Chronic
Disease is
significant

25% of all NCDs deaths occur below age of 60 years

Home Care for the Elderly

Factors

“Elderly Poor”

- Lower incomes lead to shorter lifespan
- 50% of the Elderly are Poor

“Removing Barriers”

- Accessing care e.g. Clinical and Preventive type

“Health Promotion to the Elderly”

- improving Health literacy
 - e.g. different message
 - different style
 - special and tailored activities

Home Care for the Elderly *

Present Organization...

- Doctors and Nurses **
 - 50 Patients per Doctor per Month
 - No social workers
- NCDs Management **
- Compliance of Care
 - especially in relation to Pharmaceuticals
- Caregiver training to family members **
- Nutrition support **

** Inefficient and limited

* Need to Reorganize Health Care

Home Care for the Elderly

Delivered to...

- Elderly; Old - Old (especially > 84 yrs)
 - Live alone
 - Very poor
 - All those in Feeding Program and others
- Bedridden
- double- amputees
- Stroke patients (no mobilization)
- Mental Health component
 - Dementia, Alzheimer's etc

Home Care for the Elderly

Funded

- Clinical Care by NHI
- Feeding Program
 - Partially by NHI (via a rental subsidy)
 - Mostly by Private Sector Donations
- Monitored
 - NHI
 - Mercy Clinic Board
 - Human Development
 - Mental Association

Home Care for the Elderly

Challenges

Develop a model by both Private and Public sector that will work best in terms of acceptability and affordability

Ideal Model ?

needs to ensure effective management of the Elderly who are unable or do not want to access the institutional care

New Mix of Models with protocols tailored for each group related to compliance and measured outcomes will be required in the next 2 to 3 decades...

Pharmaceuticals for the Elderly

Factors

1. Non-Compliance

- potential life threatening problem
- expensive (clinical complications)
- Hoarding of Medications

2. Quality of the Generic Medications

- Purchasing in the unregulated private sector

3. Cost of Pharmaceuticals due to Volume

- multiple prescriptions for the NCDs

Pharmaceuticals for the Elderly

Re-Organization needed ...

- tailoring prescription Compliance to the different NCDs Protocols within the different elderly groups

 - e.g Reduce usage and waste of services

“Breaking All the Rules”

“ Retailoring of clinical protocols directed at most prevalent NCDs that affect the most vulnerable groups within the elderly population that are economically and socially marginalized “

Pharmaceutical for the Elderly

Need to be Delivered

Concept ... “Prevention”

not only for the young

the burden of Disease can be managed effectively
in the “old –Young” (60 to 74 years) to create
sustainability of the program

- wellness and lifestyle programs
- clinical management of NCDs
- Promotion of economic and social independence
of the elderly

Pharmaceutical of the Elderly

- **Funded**
 - NHI
 - via a centralized source of procurement
- **Monitored**
 - NCDs Protocols e.g. (DMII and HTN)
 - Via RAWA as per prescription patterns
 - Compliance via home visits
 - Clinical Audits

Pharmaceuticals of the Elderly

Challenges

- Non-Compliance
 - approx. 6% Hospital Admissions
 - health education to the Elderly
 - Mental disorders associated (Huge Barrier)
- Removing Barriers
 - Accessing care especially preventive care
 - Flexibility within protocols directed to towards better outcomes

Achievements

- Home Care
 - a. Better Compliance
 - i. Medication - utilization
 - ii. NCDs - adherence to Protocols
 - iii. Caregiver/family member Home training
 - iv. Feeding program – better nutritional value
- Pharmaceuticals
 - a. NCDs Medication Bulk Purchasing
 - i. quality, cost and volume
 - b. Use of RAWA to monitor utilization trends/caps
 - c. Legislation for GMPs by Ministry of Health

Lessons of Experiences

a. How will economies pay for it ? (Never...)

... argument that aging is not equal to poor health

b. Health Policies is equal to “Health Politics”

... Personal responsibility (Blame Game)

... weak / nonexistent Health Politics

e.g. Legislation on Products and services
directly related to negative health outcomes

cigarettes, sugar and alcohol drinks, saturated
oils, strong road traffic laws, etc

Lessons of Experiences

c. Avoidance of Privatizations of Health Laws

e.g. pharmaceutical industry

d. Social and Financial Government Policies

e.g. SSB contributions that are more reflective of the cost of aging including a buffer for those who will **require a safety net from risk pooling**

e. The Great Mix

e.g programs must include all Providers and Stakeholders in its Provision of Valued Services

i. Private sector (competitiveness/market forces)

ii. Public sector (single payer public system)

Basic Components of our Traditional Clinics



Screening



Clinical Examination



Pharmacy