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Practices of Future Foresight in Management of Non-Communicable Diseases
-An Early Attempt towards Focusing on 'Foresight Economy' Labs.

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ABSTRACT

Future foresight have been more linked with technological changes and innovative disruptions than socio-economic challenges. With the development of foresight, science efforts should be directed towards tackling humanity chronic problems than just focusing most of the efforts on future technological developments and advancements only. Focusing the foresight analysis on the increase of Non-Communicable Diseases (NCD's) doesn't only help us to tackle current and future health community issues, but in fact direct the focus of the efforts on mitigating the progressive development of future socio-economic and quality of life challenges. The world need more work in utilising strategic foresight in dealing with Socio-Economic challenges. The holistic approach of SF studies targeted to overcome the usual challenges that face the future socio-economic change where NCD's are expected to become more of epidemic problem in many countries and specially in the Arab and Asian emerging economy countries. The future carries a catastrophic result where 90% of the population in a country like Bahrain might be at risk of NCD during their life in the next 50 years, unless radical lifestyle changes are done. Utilising a technique called 'foresight economy' lab (FEL) the problem statement is shifted from solutions of increasing the NCD's clinics in Community Health Centre (CHC's) to more challenging the CHC's staff towards better explore early NCD's risks, i.e. focusing in increasing their capacity through collaboration of all the community services. This paper concludes with what FEL's bring in as opportunities that would help in drastically reducing the percentage of population at NCD's risk, from having 90% to 50% at risk in 20 years from now and with minimal resources.

Keywords: Future Foresight, Foresight Economy, Non-Communicable Diseases, Community Health Centres, Strategic Foresight Research.

INTRODUCTION

This paper shall study the exploration efforts of FELs that targets to establish future practices that would improve the quality of life by the early detection of citizens with Non-Communicable Diseases (NCD's) risk factors, to prevent chronic disease and reduce the mortality from cardiovascular diseases. This early detection shall be called exploration. The target of the exploration is to create a major development in the country that would complement the current growth effort.

Many rich developed and developing countries having many distributed healthcare services that take the role of NCD's clinics. However, almost all of these countries suffer the continuous alarming increase of NCD's in the last four decades to the extent it became like an accepted norm in the communities of many parts of the world.

The instability in trends and ratios reflects the lack of regularity of exploring NCD patients during non-NCD clinics. This lacking of capacity to pull patients before reaching the stage

where they are totally diseased with one of the NCD's showed a great opportunity for mitigation of NCD's risks in future generations. This could be achieved with a foresight lab that shows the socio-economic of NCD's if they continue to spread with the same speed and rate. It is called for short Foresight Economic Lab (FEL).

The FEL focus on optimising the knowledge assets of all the community members in dealing with risk factors of such chronic diseases. Foresight of the future can help in tackling one of the greatest challenges our humanity would face in the next three to five decades that is control of NCD's over the quality of our extended life.

The lab which targets to mitigate NCD's risks was established in Bahrain in coordination with primary health care in Ministry of Health. Cardiovascular disease, diabetes, respiratory diseases, and cancer all are type of disease that are directly and indirectly to NCD's, were considered the top four reason, or killers of Bahraini citizens. The FEL focused on improving the effectiveness of knowledge assets in the areas of exploration, prevention and early detection of risk factors citizens through different techniques. The goal of FEL is to mitigate the potential increase of chronic diseases that would lead to stretching of treatment services to a high expensive and daunting results.

The FEL focused on developing a culture of early detection in the next twenty years using pull techniques, i.e. early explorations, that could outreach people with potential risks, in collaboration with schools, community centres, health centres, private hospitals, major shopping centres and media. However, the main player in this long term campaign was and still is the healthcare services staff in CHC's starting from the health visitor, social worker, paramedical staff and family physicians. FEL made the CHC's staff feel the threat and to appreciate the potential positive change they could do for reducing the risks of their community through implementing End-Customer-End technique that was developed during the FELs. 'End-Customer-End' helps the healthcare staff to work as a team that target to increase their hit rate in discovering potential future NCD's patients through empathetic mindset, i.e. a mindset that feels and addresses the ultimate needs of the customers and not their wants only. This means discovering or exploring those patients with NCD's risks is more important for their benefit and for the sake of the future generations. End-Customer-End therefore works on satisfying society needs and not only current patient satisfaction with the daily services only.

In order to enhance the capacity for exploration, the services of NCD's where separated between past-current and future patient services. The efforts for chronically ill patients who needs quality of life were separated from the more essential future foresight efforts in relevant to most of the citizens who are likely to have a chronic illness with the development of life style and increase in ages.

Citizens awareness programs shifted from just focusing on practices of learning how to avoid chronic diseases and NCD's, to more focusing on self-exploratory about NCD's risks possibility and directly reporting this to CHC's. This meant an increase in the detection capacity of NCD's symptoms services through the same human assets but with creative exploitation and exploration.

A communication model was established to enhance the catchment of any potential NCD's risk patients floating between private clinics, health centres, government hospital, public schools, chronic diseases clinics and records departments. The clear challenging target for all was to

catch 8 out of 10 general patients visiting any of the mentioned clinics, or services and identify which type of risk they carry and then identify a tracking record for them.

The project targeted to minimize people with chronic diseases by 2030 through FEL's early detection based on pull thinking, then identify the risk factors leading to these diseases and try to illuminate them through FEL's again. Codification of patients with NCD's risks was applied in order to minimize patients with potential coming complications from NCD's chronic diseases and driving away patients from risks leading to number one killer complication, i.e. cardiovascular diseases.

The NCD's exploration FEL targeted to minimize the high demand on the emergency beds, compared to the percentage of the population in the next 20 years and thus minimize the need for hospitalization. The focus of this FEL were two parts (early detection + NCD risk-free educated healthy citizens).

LITERATURE REVIEW

Defining the Importance of Strategic Foresight for Socio-Economic Challenges

Richard Slaughter (2012) defines strategic foresight (SF) is about maintaining a high-quality, coherent and functional forward view to detect adverse conditions, guide policy and shape strategies. While it is impossible to predict the future, SF found to help analysing the future environment and develop its capability for responding to future challenges.

Harvard's Andrew Leigh (2003) seen that such SF brings in different perspectives that help in broadening governments and public sector menu of policies and services. This is may be mainly due that SF found to involve options and future scenarios that might affect today's decisions.

Godet (2008) seen that SF plays a role in raising the capacity of any process through moving the community or the organisation mindset from analysis of the environment to studying the possible alternatives for the strategic vision for the future. The foresight makes the mindset questions what scenarios could be applied? what are the strategic options? And what are the strategic decisions? Such questions help to define what the organization stands for and what they aim to do.

The practices and purposes of foresight work quite naturally depending on the business or issue in question. Obviously, true foresight can help you in building long-term scenarios and in guiding your strategic targets and road-mapping. Foresight is also about tracking foreseeable changes in consumer sentiment and behaviour. Thus, you may identify new opportunities (or risks) even in the short term.

Therefore, the purpose of any strategic foresight when tackling a socio-economic issue could be first turning the changes in the business environment to the issue own advantage. The second purpose of SF when tackling socio-economic change is about setting a direction that would focus the efforts on what the future environment will be like and why. Therefore, SF requires continuously new updates about the future and how it would affect the specific working methods across all organization levels.

SF link the mission, purpose, effectiveness, performance to the bottom line of the business or the issue tackled. As times change, so may the organization's purpose and therefore this step is essential to designing strategy which conforms to the aim. To answer the question 'what could

happen? it involves the development of possible scenarios for the future. This is done by first scanning the environment in order to discern patterns and trends.

The Holistic Approach of Strategic Foresight

Strategic Foresight is about combining methods of futures work with those of strategic management. It is about understanding upcoming external changes in relation to internal capabilities and drivers. Market Foresight is about the consideration of possible and probable futures in the organization's relevant business environment, and about identifying new opportunities in that space. This is simply because thinking across current industry boundaries is today an important source of innovation.

Strategic Foresight is a concept about mirroring the possible and potential futures against the understanding of organization-specific capabilities, and those of one's competitors. Ultimately, Strategic Foresight is about the strategic choices you make based on this combination of external and internal insight.

There lots of recent work that tries to study the basis of the strategic foresight, one of which is the work of Hines and Gold (2013). SF can be categorised to be based on the historical events, evolving paradigms and new waves of predictive perspectives. SF also can become from interpretive studies, critical action learning as per studies of Slaughter (2012).

The Challenges of Strategic Foresight

A strategic decision is either one that creates an irreversible situation, or it would anticipate an environmental change that would provoke an irreversible situation. In light of this definition, the setting a SF means departing from the status quo and this is usually challenging. The limitations for considering SF, is ambiguity, reluctance to change, unwillingness to objectively view reality and risk, which would help to frame the concept and its usefulness before attempting to apply it. Hines et al (2017) describes SF as differentiation from typical business challenge through trying to eliminate the ambiguity which is likely to cause doubt about the usefulness of the process.

Other coming psychological challenges on how might we best manage our memories and mobilize the past to enhance the wellbeing of the community in the future. Situational awareness and consideration of the future, even if it does not yield a single concrete way-ahead, will enable the concerned parties to be more aware of environmental changes and be prepared to react to indications more rapidly.

Improving the NCD's Exploration Process

All the healthcare staff mentioned (from health visitors till family physicians) were ready to for the early detection of patients both through physical analysis and then deep screening. A standard form for cases of early detection was conducted. Specifically, the family physicians were asked to choose 10 people from their daily list of up to 50 patients to meet a hit rate of 90%.

If a person is diagnosed with a non-chronic disease and is irregular in treatment, he / she is referred to a non-communicable disease clinic. While people detected with NCD's risk are referred to the health educator to work with them as mentor.

FEL is about Projection of better Hit Rate

In order to decrease the severity of NCD's risks and decrease their probability of occurrence or control, as per the formula: *Risk=probability x severity*, FEL was design to enhance the practice of hit rate.

Despite all the world class appreciated primary care services and variety of care clinics, including NCD's specific clinics, as diabetes clinic, obesity clinic, blood pressure management clinic and nutrition clinic to decrease the risks to NCD's, the capacity for early detection of risk factors was very weak. Besides, the lack of adherence to clinical guidelines for early detection, the primary care staff had low monitoring of detected cases and poor follow-up to the persons exposed to the risk of NCD's.

Through FEL, a standardized system for early detection of risk factors was developed where registration form is designed to ensure monitoring of detected cases in order to convert the path flow of people at risk of any of the NCD's. Patients explored with early detection of risks of NCD's complications were thoroughly explained the other complication that comes with it, as heart stroke, body stroke, blindness, total renal failure and even amputations.

FEL helped to develop a type of competition for early detection methods and confining the proportion of NCD's patients who might go to the risk of heart diseases without being detected. FEL found that proportion of diabetic patients are beyond those 35.7% with controlled diabetes and hypertensive patients are beyond the 47.8% with controlled pressure. FEL helped to discovering the risk factors of the community and reducing the beneficiaries of all types of clinics in relevance to non-communicable diseases who are in need of health centre 8.9%.

Percentage of newly discovered patients with NCD's per doctor per day increased from below 1% to 25% in just the first few days. This exploration effort was working in parallel to the efforts of improving NCD's clinics appointment system from an average of a month to less than two hours. The home visits awareness program was increase for selective families with NCD's patients. The screening throughput process of probable NCD risk patients reduced also from 2.5 hours to 20-30 minutes.

Number of patients whose risk factors were detected / total number of patients attending public clinics reached 40%. While number of diabetes patients with controlled diabetes/ total Diabetics patients reached 43%. In the other hand, the number of hypertensive patients with controlled pressure/ total patients with hypertension reached 48%.

Duration of the actual consultation for patients with NCD risks were increased after 6 months from starting the program in the model CHC. Time allotted for risk identified NCD's now is easier.

The FEL built a system of communication and periodic review and a knowledge-sharing groups for the chronic diseases reduction in all Bahrain. The long objective FEL is to promote the lifestyles necessary for patients in the region and periodically. An agreement was made also with the emergency team to follow NCD's cases once identified with risks.

FEL Outcomes

Risk factors for NCD's found to be correlated with physical inactivity, unhealthy food, bad practices as smoking and drinking alcohol, obesity and high cholesterol. The early detection through effective exploration would help to manage these bad practices earlier and thus

mitigate the coming generations risk, away from chronic diseases. The idea is to raise the (capacity vs. demand) through early exploration of risk factors that lead to these NCD's. This would help to develop a future, within 20 years, of citizens with minimal complications from chronic diseases and thus reducing also the cardiovascular related diseases that mostly leads to emergency beds and thus the need for hospitalization.

The FEL enhanced peers training in management of chronic patient through effective management of actual consultation time. Chronic diseases clinic now takes on average only approximately 12 minutes with nurses and 6 minutes with the physician and wait 5 minutes for it to continue.

Sustaining FEL Outcomes

While strategic foresight processes have been largely examined in the context of private sector companies, little has been written about the future of the public sector, Dove (2012). Through the strategic foresight we can re-examine the public organization's aim and objectives in light of the possible future scenarios in order to make informed decisions about the direction of the organization.

The establishment of the Risk Factors Clinic (RFC) came to support the efforts and the raising of the capacity for early exploration. This reduced the patients overall journey for diagnosis to be 10 minutes and a designation of a followup plan with the nurses to only 8 minutes.

Before the kick off of the FEL the high cost of treatment of NCD's was expected to multiply at least 3 times by 2050, despite the advancement of the technology. The continuous high population growth rate and extension of the life expectancy at birth would continue to create a huge high demand on the primary health services and thus it would've influence it capability in creating effective exploration for those prone to NCD's risks in next 30 years.

Dealing with the future in construction of more advanced health centres and hospitals would have not solved the rising percentages of NCD's among the population. The catchment of 9 out of 10 patients targeted by each family physician in the first CHC and then the next 5 CHC's whom spread the model of early detection through focused exploration, showed that the non-intervention of the future of (20 to 30 years) would've carried even more alarming high incidence of non-communicable diseases and controllable deaths from cardiovascular related diseases.

Studies of GCC and specifically Bahrain history showed that in the last three decades and despite again the high advancement of primary care clinics and related early detection services, patients of high blood pressure increased by 12%, diabetic disease increased 14.3% while the cholesterol level patients increased by 40.6%. In the same time weight gain and obesity amongst the citizens increased by 36.3%, where lack of physical activity increased by 57.1%. Besides the tobacco consumption increased by 19.9% amongst young generations. Other complications of NCD's have been on the rise. For example, diabetes lead to increase of heart and brain attacks, kidney failure, blindness, neuropathy, difficulty in healing wounds and amputation of the limbs.

Process of Establishing a Specific Context Foresight

Foresight is more than ideational, it is regarded as a communication tool and a key towards achieving higher organisational, or community impact or even outcome. Foresight according to Gergen (1985) is a social construction, a methodology by which we can make and account for the world in which we live in. Therefore, the exercise of foresight establishes a process of

interaction and meanings that can be embedded into the accepted versions of reality. With foresight, the collected macro trends of the context under focus help to provide orientation for the decision-makers and stakeholders (Rollwagen, et al. 2008). Therefore, foresights are thought to focus on the future, while dealing with it as a reality of today. Be it anticipation of social, health, economic, political and/or technological trends, the foresight exercise will help to shape the strategic decisions needed to deliver better results to the concerned parties.

Daheim and Urez (2008) specified that foresight start with future intelligence gathering how the process can widespread in a specific business context and through different methodologies. Foresight as seen by Henshel (1981) looks for stages of the social construction in a holistic way, but in a specific context. Foresight can help in overcoming different challenges to overcome a specific impact that affecting the current business decision-making (Rollwagen et al, 2008).

There have been many studies about the best structured way of producing and delivering a specific context foresight in relevance to an appropriate time perspective (Rollwagen, et al, 2008). Foresight can be drawn from the organisational procedures, goals and practice. Or it can come from result of the different levels of interaction with decision-makers.

Understanding the future challenge of Non-Communicable Diseases

WHO defined that most of the deaths in the future would continue to come from the Non-Communicable Diseases (NCD's) and even in developed countries as OECD countries. Therefore, Wepner and Giesecke (2018) seen that NCD's such as cardio-vascular problems, diabetes, cancer, multi-skeletal disorders, depression and neurologic disorders would be the main causes of deaths, but would develop earlier as diseases among underprivileged people in Europe in the last thirty years.

In a huge EU funded foresight project called Foresight and Modelling for European Health Policy and Regulation, called for short (FRESHER), Wepner and Giesecke (2018) showed the influence of NCD's related diseases on the scenarios of policies direction with stakeholders from health, research, care, patient organisations, insurances and policy-making that go beyond the usual activities and pose alternatives that promise to be more successful.

From an analysis of trends that affect NCD's, a future foresight study is needed in the area with focus on rich developing countries and emerging economies. Today, the focus of the future foresight of these countries became more diverted on national medical insurance programs than on setting plans for more advanced facilities that would absorb the rising amount of patients.

The unique about the FRESHER study is that it identified socio-demographic development far beyond the usual determinants of tobacco and alcohol consumption, salt, sugar and fat intake, or sedentary behaviours by focusing on scenarios with one comprehensive approach that is "health in all EU policies", Wepner and Giesecke (2018). The significant NCD's trends expected in the next decades helped to The study showed the socio-economic impacts of NCDs that are beyond medical and healthcare services only. Thus Wepner and Giesecke (2018) study shows us that management and mitigation of NCD's risk should go beyond the traditional approach of health policy and out of the box thinking is needed to pay tribute to the complexity of future health systems.

FRESHER study showed that NCD's could influence socio-economic aspects like equity, literacy, mobility or urban planning. Therefore, systematic and holistic approach is needed in order to

address all NCD's drivers and determinants, if countries and communities are expected to enjoy a healthy life and well-being.

CASE STUDY

Purpose of Case Study

This case focuses on showing the power of future foresight and v*isualisation in shifting a country focus towards quality of life practices* and how to make it less dependent on primary care services only. Through FEL techniques, we show how, with visualisation, o*bservation data collected* for the early detection of non-communicable diseases (NCDs) visualised outcomes of NCD's influence help to focus the efforts on e*nhancement of capacity of NCDs' detection. This program influenced many inter-related programs as the family physician program and the triage system in the CHC's. Also*, the program helped to enhance the early *detection of* anxiety patients and prioritising emergency care beds.

This project targeted to help the government decision makers to shift their attention to how to create a country to be one of the top 10 countries health-wise (no lack of exercise, no smoking, good family history, no obesity, etc.), more than just a country with best healthcare facilities and services.

Foresight Methodology

Representation of alternative futures of population with NCD's were simulated with possible emerging health scenarios. The foresight was used to test the future with practices as-is, or when early exploration is done for detecting population with risks of NCD's. Rather than just extrapolating past NCD's trends, the project used FEL 'hit rate' challenge to show the importance of managing the foresighted future of population growth with more risks of NCD's.

The risk for NCDs were illustrated with experts challenging the CHC's staff with in workshops as well as in an online survey and subsequently combined in a next step to four scenarios depicting possible futures. The main challenge in the FEL's to define the foresighted determinants that would lead or stay to lead to certain trends with negative health effects that would lead to raising the risks of NCD's and how could they be changed?

Overall, socio-demographic and economic trends were considered to be important drivers in the reduction of the incidence of NCD's. Citizen empowerment was seen latent factor by first helping them to understand their levels of NCD's risks as early as possible.

Piloting the Early Detection Capacity

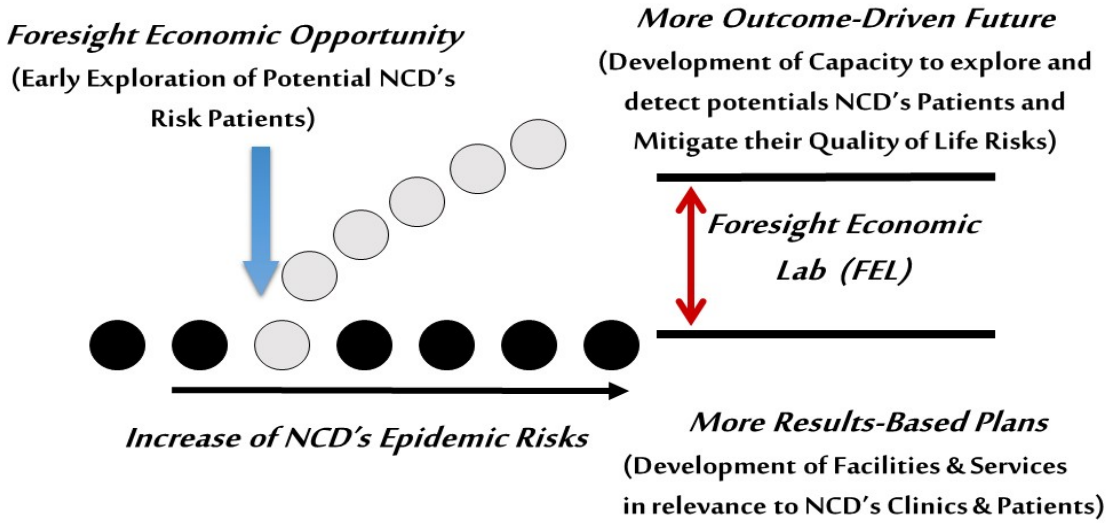
A specific health centre was defined for carrying a pilot study of a random sample with 1000 patients to diagnosed on WHO NCD Risk Factor scale of 10 (100%). The patients were from both genders and from different occupations. More than 91% were shown to be likely to suffer one of the NCD's in the next 10 years. Then, two CHC's were identified to be the model centres that would identify a target population of 50 patients that would have the risk of NCD's in coming future or already being diseased with it without being identified.

Mitigation of NCD's Risks through FEL's

Foresight economy lab (FEL), as shown in Figure (1) illustrates first the socio-economic risks of the increase of the alarming NCD's epidemic risks among all the nation citizens, where more results-based strategic plans put by the healthcare authority and their stakeholders won't lead to real solutions. i.e. Even development of facilities and services in relevance to NCD's clinics and patients might lead to going round the problem and actually solving this epidemic that would deteriorate the quality of many citizens and specially those above 60 years old.

Therefore, with introduction of FEL a mindset for seeing the foresight economic opportunity would be introduced. An early exploration of potential NCD's risk patients would lead to more outcome-driven future practices. i.e. The capacity would be developed to explore and detect potentials NCD's patients and mitigate their quality of life risks, as shown again Figure (1).

Figure (1) Role of FEL Opportunity in mitigating the NCD's Risks

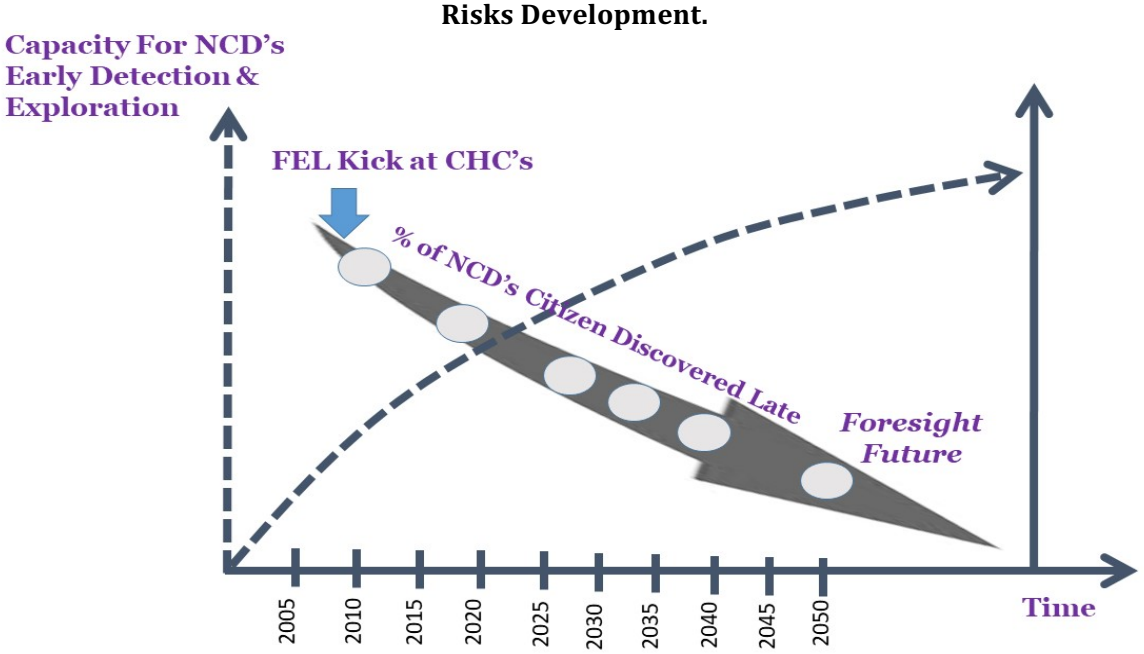


Besides competing in raising the capacity for hit rate, i.e. percentage of patients identified with risks of NCD's as per WHO scale from first time, each centre approached a differentiated post-NCD identification protocol. One of the two early model CHC's focused its efforts on working with families, while the other centre focused on the wellness, especially with those patients with a risk factor of less than 10 years.

Both CHC's worked on same methodology of changing the life style of the patients and their families. A bundle of programs that focused on improving sleeping, eating, socialising, cutting out or reducing smoking, and, most of all, lightly exercising was mentored through the nurses, the health visitors and social workers. The results were amazing. Both centres managed to reduce those patients with NCD's risk factor of 10 years from being, on average, 80% to 56% (either by pushing them totally out of risk factor 6% or delaying their risk factors to occur in 20 years). The programs helped to reduce the risk factor in 20 years to be pushed towards after 60, especially in 30% of the young patients. In young people, they managed to reduce the risk factors for NCDs in 45% of them and now almost 70% of the young patients identified have their risk factors in the range after 15 till 40 years.

The goal of the project was set to raise the healthcare staff and the country capacity for the early detection and exploration of NCD's against the % of NCD's citizen discovered late with higher risks symptoms. The time for foresighted future was set to be by 2050, as shown in Figure (2).

Figure (2) The Foresighted Future Challenges of Early Exploration of the NCD's before further Risks Development.



Using the Power of Observation in tackling NCD's

All the participating healthcare staff in CHC's from family physicians to social workers and health visitors were asked to use the power of observation, which is 50% dependent on physical observations without the need for deep analysis, in order to segregate or code and thus screen patients with risks of NCD's. The programme showed that even if considering families with no history of NCDs, we would almost get the same figure (89%) at risk.

The same study was extended to all health centres and later even to the 'Schools Health Programme' where more than 30,000 students from 13 to 18 years old were included. The number again showed a relatively high level compared to the students' ages: i.e., on average, 40% would get NCDs in next 20 years.

There are now more than 32 health centres in which follow this early catchment and exploration programme. The risk factors in the general population and specially amongst those below 20 years old have now dropped from 91% to 82% in just 3 years, without adding any extra resources.

NCD's Exploration Opportunities

All CHC's staff (i.e. family physicians, nurses, administration staff, health visitors, awareness specialists and social workers) were explained a foresight economy technique that the researcher developed called exploration of opportunities. In order to create their commitment every member of the team was asked to choose a minimum of 10 patients with a challenge to explore whether they would be prone for any of the NCD's risk in their life. The challenge was that they should get a hit rate of 80% before the deep diagnostics. This meant also the family physicians would need to give more authority to nurses, social workers and health visitors to spot NCDs earlier and in order to measure their hit rate.

Improving NCD's Knowledge Management Programme

In order to capture more NCD's risk patients Knowledge Management (Called NCD's-KM) was implemented. NCD's-KM started with increasing the availability of the health visitor in all highly populated areas, such as shopping centres, etc. around the year. The performance of each of the primary care teams was measured in terms of how they innovate in creating

awareness in their potential population. This meant creating of knowledge sharing practising communities of collaborative partnership programmes with involvement of large organisations such as universities, government organisations, etc. and measure their hit rates.

The program helped to develop the knowledge base the percentages of NCD's at risk of those aged between 15 and 75 years. The CHC's team worked together not only to explore, but also to track and analyse in greater depth the type of results of this exploration, such as continuous blood analyses, to help create better forecasting and then make intelligence level decisions in the areas of BMI, high blood pressure, high fasting sugar levels, HBA1C, total cholesterol levels, LDL, HDL and triglyceride levels. The CHC's team started then to share the best practices of patients' NCDs' discovery and management programmes.

DISCUSSION AND CONCLUSION

This research helped all involved primary healthcare staff working in CHC's from the family physicians, nurses, health visitors, social workers and dieticians, all appreciate the foresighted future if the current practices doesn't change. The FEL have been used to raise the capacity of those healthcare staff to capture risks of NCD's on the population, specially that in diseases as diabetes, blood pressure, cholesterol and obesity which are spread in the Gulf Cooperation Council (GCC) in general and specifically in Bahrain. The trends and drivers shape transformative scenarios and their potential for future policy options, specifically, how to extend health policy and make it adaptable to current challenges posed by NCD's.

FEL proven to be a good methodology for improving outcomes in relevance to socio-economic projects as the NCD's exploration project and even in enhancing the Hit Rate for acceleration of the related outcomes.

Sustaining FEL outcomes through establishing a specific context foresight would help to understand the future challenges of Non-Communicable Diseases (NCD's). FEL might be further explored as a foresight methodology that mitigate a socio-economic problem as NCD's risks on the population through effective knowledge management programme.

This paper opens a line for future research on the priority of raising the capacity of the healthcare staff by making them foresight the results of their deeds and contemporary practices. The research gives lots of lessons of role of FEL in improving the learning by doing projects and how it helps to create a management of change for the mindset of healthcare professionals and in the same time improves the future extended health policies.

The limitation of the research is that it didn't show the risks of NCD's on the future society performance, and how the improvement of the health policies of early exploration of NCD's amongst the population would help in the meeting the Sustainable Development Goals on NCDs.

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