

Screening System and Comprehensive Care for Hypertension and Diabetes at Primary Health Care Level in Iraq

1. INTRODUCTION

1.1 Overview:

Hypertension and diabetes are considered the two major contributors, whether individually or by interacting collectively, to the occurrence of the main chronic non communicable diseases such as cardiovascular diseases, cerebrovascular diseases, renal disease, and retinopathy. They may also indicate the presence of other behavioural risk factors such as physical inactivity or unhealthy diet.

According to the STEPS survey on NCD risk factors conducted in Iraq in 2006 the estimated prevalence of high blood pressure is (40.4 %), and of hyperglycemia is (10.4%) among adult population (25-65 years of age). Specific population subgroups, mainly older age groups and females, are at higher risk than others, probably due to the associated risk factors.

It is well known globally that about one third of people with hypertension are unaware of their condition. Even modest elevation in blood pressure is associated with an increase in the prevalence of Heart and Cerbro-vascular diseases.

Similarly, diabetes is frequently not diagnosed until complications appear, and approximately one third of all people with diabetes may be undiagnosed. Chronic hyperglycemia is associated with long-term dysfunction, damage, and failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels.

Therefore, hypertension and diabetes can be considered the top candidates for early detection and management as part of control of major chronic non-communicable diseases.

The national STEP wise survey mentioned earlier revealed a high proportion of conditions with high blood pressure and hyperglycemia who were not aware of their conditions. These findings added to the considerable proportion of pre-hypertension and impaired fasting plasma glucose detected during the physical and biological measurements necessitates the establishment of a complementary system for early detection of hypertension and diabetes. In this respect a project has been developed for screening and comprehensive care for hypertension and diabetes in Iraq at PHC level.

1.2 Rationale:

Both hypertension and diabetes meet the essential criteria indicated for screening including:

- Both diseases represent important health problems that impose significant disease burden on adult population.
- The natural history of the diseases is well understood.
- There is a recognizable preclinical (asymptomatic) stage during which these conditions can be diagnosed.
- Tests are available that can detect the undiagnosed conditions in the preclinical stage.

Moreover, there is a clear clinical evidence that lowering blood pressure is beneficial to population and that the incidence of several leading causes of premature death among adult population can be reduced through early detection and management of high blood pressure.

Although there is no documented evidence about the cost-effectiveness of screening project in reducing morbidity and mortality attributed to diabetes, it

is very well known that treating cases diagnosed early in clinical practice would result in clinically important improvement in the outcome of the disease. These clinical findings rather necessitates establishing a screening system to address cases of type 2 diabetes due to the presence of the preclinical state. Screening is not recommended for type 1 diabetes because of the acute onset of symptoms.

It is also recommended that normotensive adults should measure their blood pressure at least once every two years. Also, individuals should be screened for diabetes every 3 years. The rationale for this interval is that the test will be repeated before substantial time elapses, therefore it is less likely that an individual with a false negative result to develop any of the complications to a significant degree within this period.

Persons with abnormal readings require more frequent measurements. The frequency of checkups should be based on the status of the individual.

In order to ensure the effectiveness of screening, the following areas were taken into consideration:

- Availability of Health Facilities and other resources needed to treat newly detected cases
- Screening should be a systematic ongoing process, and not merely a single one time effort.
- The cost of case finding and treatment is balanced against health expenditures as a whole.

1.3 Goal and Objectives:

Goal:

Prevention and control of major chronic non communicable diseases through early identification and proper management of hypertension and diabetes.

Objectives:

1. To identify the undiagnosed asymptomatic conditions of hypertension and diabetes among adult attendees 25 years and older to selected Primary Health Care centers.
2. To improve the quality of the health care services for hypertension and diabetes provided at primary health care level.
3. To strengthen the noncommunicable diseases surveillance system.

2. MATERIALS AND METHODS

2.1 Ethical Approval:

- Official approval has been obtained from the Ministry of Health for implementation and expansion of the project.
- The Directorates of Health agreed to follow the national action plan for NCD prevention and control.
- The eligible PHC attendants are informed about the objectives of the project and the importance of their participation.

2.2 Screening setting:

The effectiveness of screening projects depends on the health setting where it is performed. Based on the supposition that a screening system outside a health care facility may not be as effective as inside health setting, and assuming that the patient's first health care contact with the existing health system starts at Primary Health Care PHC level, it was recommended that PHC level must be the appropriate level for screening; therefore, PHC attendees should be screened to ensure that people with a positive screening test could obtain appropriate diagnostic testing, follow-up and care; in addition to proper utilization of available resources.

2.3 Screened population frame:

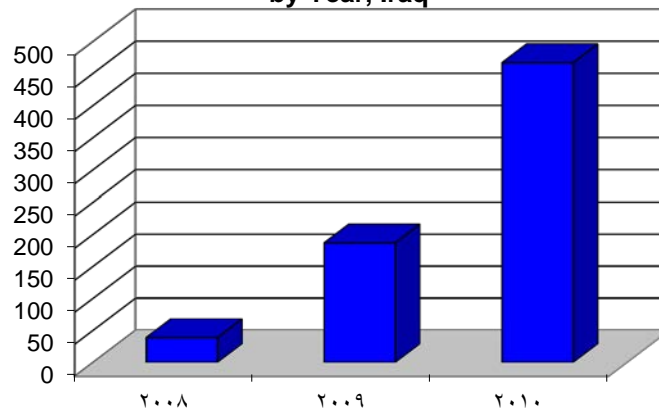
Selection of PHC centers:

The first phase of the project implementation has started in October 2008 on a sample of 41 PHC centers distributed among all governorates of Iraq that represented nearly 5% of the total number of the main PHC centers. They were selected in collaboration between the Central Statistical Organization CSO and the Directorates of Health. The selection was based on the population size in the catchment areas of these centers, the availability of

human resources, in addition to the security situation that permits proper implementation and supervision of the process.

Based on the ministerial plan to expand the project as an integral part of the health system developmental plan, a stepwise expansion began since 2009 on an annual basis to include all main PHCs by the end of 2012. The total number has reached around 47% of the major PHC centers by the end of 2010 (Fig1).

Fig (1) Number of Primary Health Care Centers Implementing Screening for Hypertension and Diabetes by Year, Iraq



In order to ensure proper implementation of the project and service delivery, certain selection criteria for the PHC centers were set based on the following:

- Type of the PHC center: it must be one of the main centers.
- Status of the building: to match with the MOH planning criteria
- Human resources: to have at least the minimum acceptable proportion of physicians and other personnel according to the population in the catchment area.
- Equipments: the PHC center to be well equipped with necessary examination and laboratory instruments.
- Site: Accessibility of the selected PHC center to people and supervisors, and the presence of general hospital within the catchment area for training of the health workforce and for the referral/ feedback of the cases.

Individual selection criteria:

Adults whose age is 25 years and above attending the PHC centers are considered eligible for screening according to the following selection criteria (Table 1):

Table (1) Individual Selection Criteria for the Screening Process

Inclusion age criteria:

- Any individual aged 25 years old and above is screened for hypertension.
- Any individual aged 45 years old and above is screened for diabetes

Exclusion criteria:

- Diagnosed cases: Patients with diagnosed DM and HT are not screened
 - Pregnancy: Pregnant women attending the selected PHCs are not subjected to screening for gestational hypertension (preeclampsia) or gestational diabetes mellitus (GDM).
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2.4 Screening testing:

Screening test is only applied to asymptomatic persons, who are unaware of their clinical condition and identify those individuals who are likely to have the disease. Those with positive screening tests need to pass through diagnostic tests to establish a definitive diagnosis.

Screening methods and cut off points

Screening method for High blood pressure:

- A standardized sphygmomanometer is used for screening. A set of standard instructions for BP measurement are followed in measurement.

High blood pressure (HBP) is defined as systolic pressure of 140 mm Hg or more and /or diastolic pressure of 90 mmHg or more where the result of examination is recorded as screening test positive (+ve).

Screening method for Hyperglycemia:

- 1- Fasting plasma glucose (FPG) is the preferred test.
- 2- Oral glucose tolerance test (OGTT) is also a suitable test;
The FPG test is preferred in clinical settings because it is easier and faster to perform, more convenient and acceptable to patients, and less expensive. Hyperglycemia is defined as the fasting plasma level of 126 mg/dl or more (equal to or more than 7 mmol/L) where the screening test is recorded as positive (+ve).
- 3- Casual plasma glucose measurements: is defined as a test performed any time of the day regardless the time since the last meal. A plasma glucose of 200mg/dl (11.1mmol/l) is considered hyperglycemia and the screening test is recorded as (+ve).

Confirmation of diagnosis of Hypertension and Diabetes:

Diagnosis of hypertension or diabetes should not be based on one single measurement; Diagnosis is only confirmed after more than one elevated readings at separate visits. Therefore, an individual with positive screening results for high blood pressure or for hyperglycemia is given an appointment on a different day to be retested to confirm the diagnosis.

Based on the WHO/ISH recommendations, as well as JNC7 guidelines, hypertension is defined as a systolic blood pressure of 140 mm Hg or more and /or diastolic pressure of 90 mmHg or more on an average of two or more readings taken at each of two or more visits after initial screening.

The diagnosis of diabetes among the screened +ve is confirmed when FPG reads ≥ 126 mg/dl (7.0 mmol/l) on the next visit. Still, if the diagnostic test result shows FPG < 126 mg/dl (< 7.0 mmol/l) and there is a high suspicion for diabetes, an OGTT should be recommended.

Drug History of glucocorticoids and nicotinic acid and other diabetogenic drugs intake should also be taken into consideration when performing the test.

2.5 Project preparation:

2.5.1 Personnel (annex1):

National expertise:

National expertise and consultants in the areas of Community medicine, planning, information system, statistics, and internal medicine (Cardiology and Endocrinology) from the MOH, MHE, and the CSO have participated and provided their technical support through various phases of work including the evaluation process.

Supervisors:

General central supervision by the MOH is carried out by the key senior staff members of the non-communicable section and other sections of the Directorate of public health at MOH in addition to representatives from other concerned directorates at the MOH mainly the Directorate of Technical Affairs. A number of MOH representatives are nominated as central supervisors for field work. Also, central supervisors from MOH/ Laboratory Department are assigned for supervision on PHC laboratory investigations and for statistical analysis.

At the level of Directorates of Health, local supervision is carried out by the NCD units managers in addition to an assigned team of laboratory supervisors from the reference laboratory and a programmer. In addition to

sharing the supervision process, the Head of the public health department and the directors of PHC sectors at District level carry out the responsibility of provision of supplies and equipments.

Supervisory reports are produced on regular basis and submitted to the Director General of the Directorate of Health at governorates. At central level, the information is analyzed by the NCD section at the Directorate of Public Health and a follow-up report is submitted to the policy makers and feedback is made to the Directorates of Health.

Central and local supervision has helped in analyzing the current situation of services and in the need assessment process at the directorates of health at governorate level. The Directors General of the DoHs, their deputies and other key administrative staff were personally engaged in the problem solving process carried out at the local levels based on the delegation of authorities provided to them by MoH at central level represented by the Directorate of Public Health, Directorate of Technical affairs, Directorate of Planning and Human Resources Development, Administrative, Legal and Financial Directorate and the State Company for Marketing Drugs and Medical Appliances (KIMADIA). Ministerial approval is obtained for further allocation of resources, and solving problems if they are beyond the ceiling of local authorities.

PHC screening team:

Physicians:

A mal-distribution of physicians was noticed among the PHCs within the same DOH for several social reasons. Some DOHs still have scarce human resources mainly due to the limited local staff and the high turn over of the non-resident staff members.

The scope of their work includes identification of the screened positive conditions, confirmation of the diagnosis, recording of the results, provision of

primary care and referral of the cases when indicated, in addition to follow-up of the detected cases and those previously diagnosed.

Laboratory personnel:

A biochemist and laboratory technicians are in charge of running the investigations at the PHC laboratories. However, due to the limited number of biochemists, the most experienced laboratory technicians are selected and well trained.

Registry/ paramedical staff:

It is recommended to have at least two members in each PHC center nominated to organize the registration and follow up of the participants in the screening project and the diagnosed cases. One of them should be a nurse or paramedical staff member to assist the physician in filling the patient record form together with other general information and in performing physical measurements.

Reception staff:

The PHC reception staff is trained to identify the eligible PHC attendants, and to refer the enrolled attendants to the registry staff.

Data entry staff:

In each PHC center, one data entry personnel is identified and trained. In collaboration with the registry staff, the registered data is computerized on regular basis, and monthly statistical reports are sent to the NCD unit at the governorate Directorate of Health (DOH) then to the central NCD section and the Computed Information Section at the Directorate of Public Health at the MoH.

Hospital staff:

A number of Cardiologists, Endocrine and Diabetes Specialists and Ophthalmologists have participated in training the PHC physicians and the process of referral and feedback to the PHC centers.

Also, reference laboratories were selected in each directorate of health by the Central Public Health laboratory. A biochemist is assigned from each reference lab to monitor the function of the PHC laboratories of the DOH, participate in need assessment and facilitate solving emerging problems in collaboration with the NCD managers and other related departments.

Data management personnel:

A programmer from the DOH is trained to monitor data entry process at the PHCs in the directorate and follow up the updates in the program with the Computed Information Section at the Directorate of Public Health at the MoH.

2.5.2 Supplies and equipments:

At the early beginning of the project in 2008, the required laboratory supplies and diagnostic equipments were procured by the WHO and distributed to the Directorates of Health DOHs based on their local needs. Later on and following the expansion of the project since 2009, further requirements were provided by the MoH/KIMADIA or directly procured by the DOHs in the governorates, in addition to utilization of the available equipments.

2.5.3 Materials prepared for the PHCs:

Necessary materials are prepared and distributed to the selected PHCs (annex2):

- Screening form.
- Follow up card.
- Screening registry.
- Laboratory registry.
- Patient record form.
- Referral form.
- Guidelines and manual.

Additional required materials are also published by the DOHs.

Also, the published national guidelines for management of Hypertension and of Diabetes are distributed to the PHC physicians (annex3).

2.5.4 Formulating a computerized data entry tool for the screening system:

The screening data entry tool is formulated utilizing Visual Foxpro by the programmers at the Directorate of Public Health/ MOH and the CSO, to be used by the data entry personnel at the selected PHC centers and supervised by the programmers at the directorates of health to produce local reports. Further analysis is applied at central level.

2.5.5 Pilot project of the screening

The screening project was piloted in one selected PHC center in Baghdad. Five day training workshop of the PHC staff. Physicians and other health workers, laboratory and administrative personnel were trained according to prepared schedule. This was followed by ten day screening implementation and data collection.

2.5.6 Training

National central training of trainers workshops are held by the NCD key national technical staff members at central level for the NCD focal points at the directorates of health in the governorates and related stakeholders. Objectives include training of the focal point and discussion of the action plan and provision of guidelines. Workshops are also held at the Central Lab for the local laboratory supervisors to discuss the methods of supervision, assessment of the requirements and problem solving. Also, central training activities are carried out for the programmers and the data entry personnel of the selected PHC centers at the directorates of health to practice the data entry program.

These would be followed by local meetings at the DoHs and competency based training workshops for all of the PHC physicians, all laboratory personnel, and the health personnel and administrative staff assigned for the project in the selected PHCs.

2.6 Complementary Comprehensive care requirements:

Several issues were required to accomplish the provision of proper care for the diagnosed cases in collaboration with other levels of care. Therefore, the followings were considered:

- **Establishment of recording system:**

In order to establish a solid recording system at PHC level, a comprehensive case record form has been developed, piloted, and annually updated. It is used and filled in for the previously diagnosed cases among the PHC attendees, and for those confirmed through the screening project.

This record form has been prepared to enhance the involvement and support paramedical staff in the care process through filling the first page of the record which is written in native language; Arabic; concerning general information,

information on risk factors, anthropometric measurement and recently, blood pressure measurement. The part filled by the physician is in English language and is designed to provide effective guidance in cases assessment and to save time in filling (annex4).

In order to incorporate this intervention into the existing national health system, the record has been used as an integral part of the patient record form at those PHC centers which adopt family medicine approach. It has also been introduced to the electronic Health Information System HIS at the PHC centers.

- **Capacity building:**

In order to strengthen the capacity of the primary health system to deliver quality health care services for the identified cases, the PHC physicians and paramedical staff are engaged in training courses at the hospitals within the catchment area under the supervision of the specialists in Cardiovascular, the Diabetes and the Ophthalmology clinics.

- **Enhancement of referral system:**

The diagnosed cases are referred to hospitals at secondary health care level where consultation is required for further investigations or management. The same hospitals are selected for training of the PHC physicians so as to build up a collaborative and interactive relationship between different levels of care, that would contribute to enhancement of feedback of the referred cases to the PHCs.

- **Introduction of treatment of hypertension and diabetes at PHC centers.**

As part of the Ministry of Health approach towards strengthening PHC services, official approvals are obtained to add the first line drugs for the treatment of hypertension and diabetes within the list of essential drugs of the PHC centers. PHCs have been recently supplied with these drugs to be prescribed under specific regulations by family physicians and by the other trained PHC physicians.

2.7 Implementation process:

2.7.1 Project setting:

The project implementation started in October/ 2008, except for DOHs of Duhok, Erbil, and Sulaimaniya where work started in November 2008.

A total of 41 PHC centers all over Iraq have been selected for starting the implementation of the screening system in 2008 that represented nearly 5% of the main PHC centers. Each of these centers serve a population of around (3000 to 120000) within the catchment area. The mean number of visits to each PHC center is around (3000/ month).

By the end of 2008, under MoH approval, a national plan developed to expand the project gradually on yearly basis to include all of the main PHCs at the DoHs all over Iraq. Accordingly, a stepwise expansion with multilevel care started reaching more than 47% of the main PHCs by the end of 2010.

2.7.2 Service delivery:

According to the selection criteria, the PHC attendees with the age of 25 years or more are screened for hypertension. Those with the age of 45 years and more are screened for hypertension and diabetes. If the attendant is already diagnosed with either condition, he/she will not be engaged in the screening process for that condition.

Based on the national guidelines, those with screening positive results would receive advices on life style modification and the test is repeated during the second visit. Patients with pre-hypertension or impaired plasma glucose are also encouraged to modify their life style.

The confirmed cases and those who are previously diagnosed receive primary health care and follow-up services. The conditions that require further

specialized assessment and management are referred to secondary health care level.

Detailed instructions were prepared and distributed to the PHC screening team, according to the duties of the assigned staff. It was also summarized as an algorithm for better memorizing.

2.7.3 Data collection and processing

Data collection:

Data is collected by direct interview with the eligible PHC attendees during the working hours. Clinical information is filled by the managing physician,

Recording and reporting:

Registries and records:

The eligible attendees are identified at the reception registry, provided with the screening form and referred to the screening registration room where information is completed and recorded at the screening registry. Information about the results of the screening and diagnostic investigations is eventually completed in the screening registry.

Records for the detected cases are prepared and general individual information is filled by the nurse/paramedical staff at the registry room, then the clinical information is completed by the physician. These records are filed with serial number for retrieval.

Electronic registration program is developed. Data entry is done at PHC center level. Electronic records are sent on monthly basis to the directorate of Public Health at the MoH where data is assessed and reports are made for each DOH.

Levels of Reporting:

Local level (Primary Health Care center): Data entry is carried out by trained personnel based on the data available in the screening registry. As part of the health information system, simple tabulation is made and both the tables and the electronic data are sent to the NCD unit at the Health Directorate on monthly basis.

Governorate level (Directorate of Health/ NCD Unit): collection of the reports, data checking, basic tabulation, sending electronic and printed outputs to the MOH, feedback to the PHC centers, and action to solve problems.

Central level (Ministry of Health): collection of the reports, further analysis, interpretation, feedback, decision making, intervention, in addition to monitoring trends.

Utilizing the prepared data analysis program, analysis and interpretation are centrally carried out, based on which the follow-up reports are prepared.

Monitoring of implementation:

Supervisory visits:

Direct supervision and coaching is carried out by central supervisors and the local NCD focal points to the concerned staff at the selected PHC centers. Appraisal of the work is made according to a set of criteria.

The function of the PHC laboratories are monitored by the assigned Biochemist from the reference lab at each DOH. The central Public Health laboratory in Baghdad took the responsibility of training and monitoring of the lab personnel at the PHCs in Baghdad Al Karkh and Al Risafa DOHs.

Data entry is monitored by the trained programmer at the DOH in collaboration with the central program supervisors.

Follow up meeting:

Several one day meetings are carried out for appraisal of the work team at the PHCs by the NCD focal points in each governorate to discuss the results of implementation, the strength and weakness points and the recommended appropriate solutions.

2.8 Evaluation

Central evaluation reports are produced twice yearly by the NCD section at the Directorate of Public Health of the MoH. The process includes project plan implementation, the progress in expansion of the PHC centers joined to the project according to the national plan, the timeliness of the monthly statistical report, other associated activities enhancing local public utilization of the services.

A joint work has started in conjunction with the General Inspector Office for evaluation of the DOHs performance. The project was also assessed by external organization

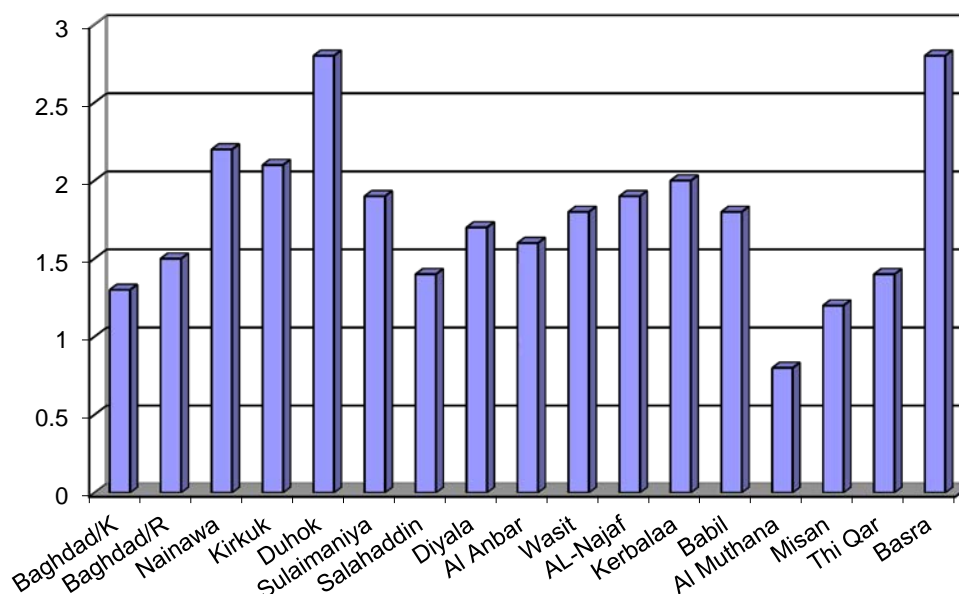
3. RESULTS

Based on the available DOH reports for the period from October/2008 through December 2010), the preliminary results showed the following:

3.1 Participation:

The screening registries showed that around 650,000 PHC attendants have participated in the project since October 2008 through December 2010. According to the available data of 2010, it was noticed that registered females were higher than males (apart from Al Muthana) with the mean female to male ratio of 1.7 (0.8 – 2.8) (Fig2)

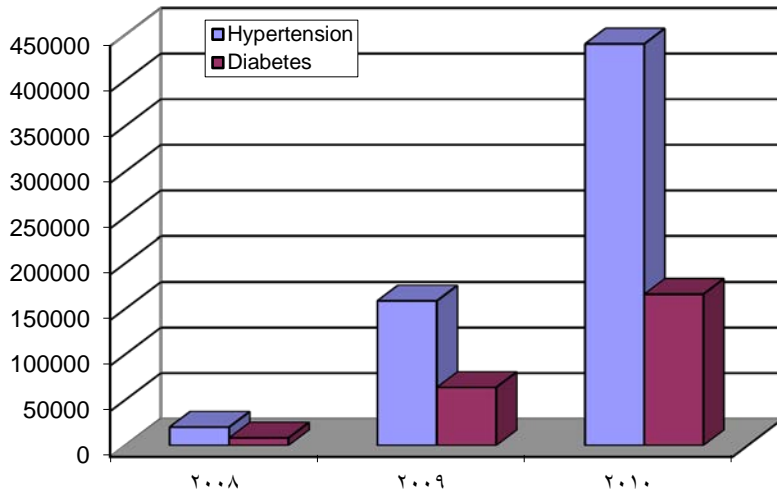
Fig (2) The Female to Male Ratio of the Registered Participants in the Screening System among the PHC Centers Attendants by the Directorates of Health, 2010



3.2 Screening tests:

More than 600,000 screening tests for hypertension were carried out for the PHC attendants aged 25 years and above, and around 240,000 screening tests were done for diabetes for forty five years and above PHC attendants (Fig 3)

Fig (3) Number of Screening Tests by the Type of Screening for the period 2008 through 2010*



* Data is not complete in two DoHs

Out of these screening tests, more than 100,000 tests revealed positive results for raised blood pressure and nearly 40,000 tests for hyperglycemia distributed to the DoHs of Iraq since starting the work to the end of 2010 (Fig 4, 5, 6).

Fig (4) Number of Screening Positive Tests for High Blood Pressure and Hyperglycemia at PHCs, Iraq (1/10/2008- 31/12/2010)

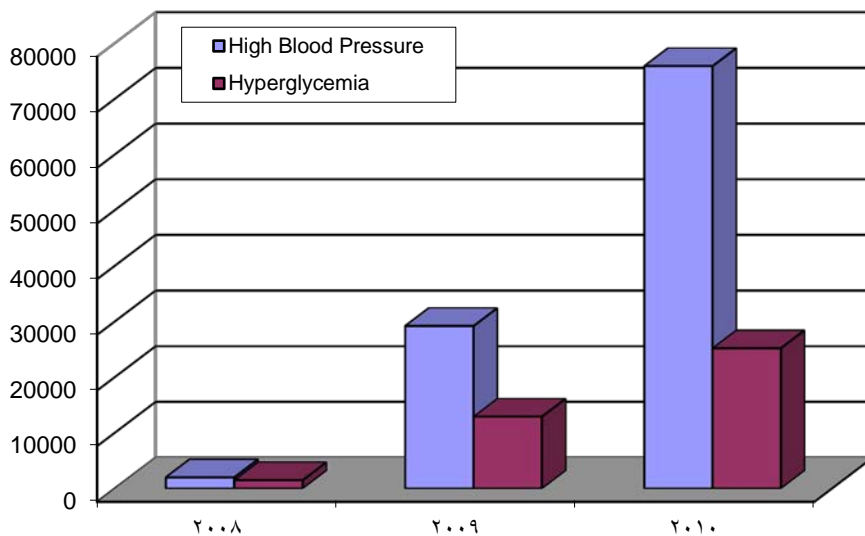
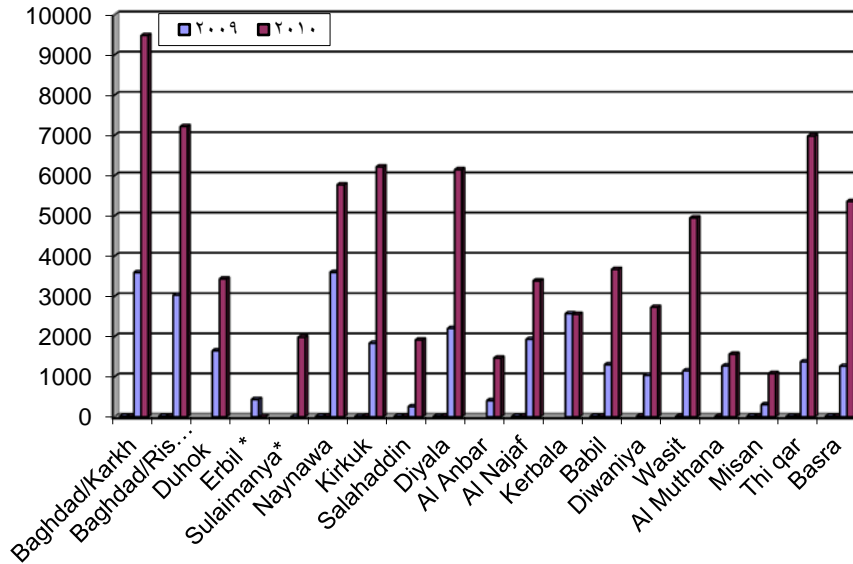
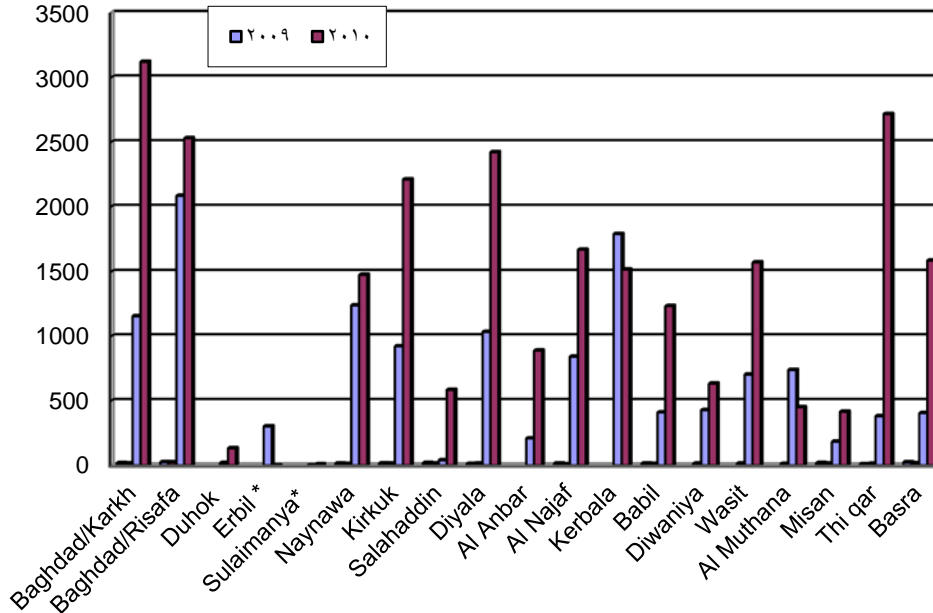


Fig (5) Number of Screening Positive Tests for High Blood Pressure by Years and Directorates of Health



* Data is not complete

Fig (6) Numbers of Screening Positive Tests for Hyperglycemia by Years and Directorates of Health*

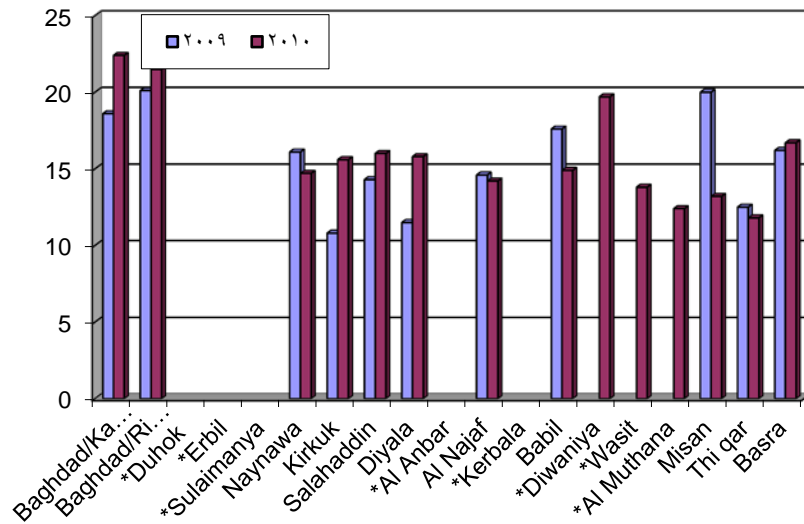


* Data is not complete

According to the screening statistics of the DoHs in the years 2009 and 2010, it was shown that the median percentage of positive screening tests for High

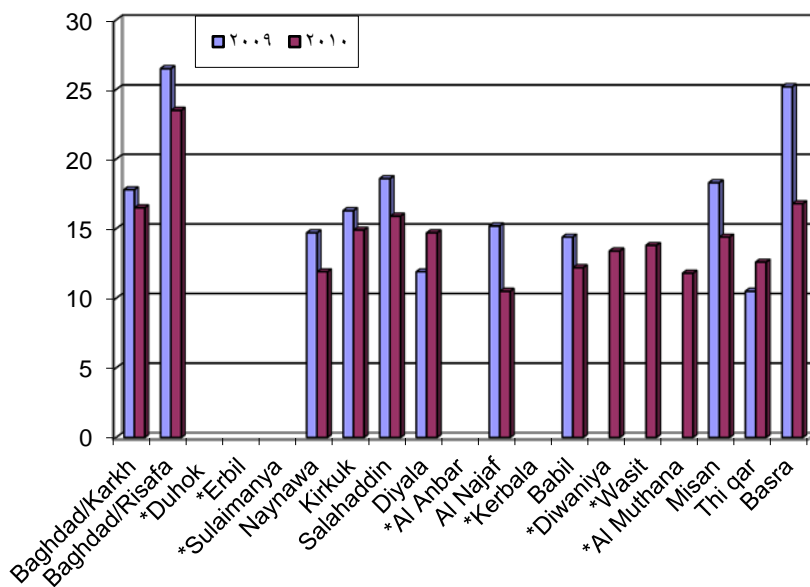
blood pressure were around 16%. As for hyperglycemia, they accounted for 15.4% and 14.1% respectively. Data of the DoHs that adopted high risk approach in implementing the project were excluded from calculation (Fig 7,8)

Fig (7) Percentage of Screening Positive Tests for High Blood Pressure by Years and Directorates of Health*



* Data is not included in calculation

Fig (8) Percentage of Screening Positive Tests for Hyperglycemia by Years and Directorates of Health*



*Data is not included in calculation

There has been a low response rate to the second confirmatory visits in most of the PHC centers till 2010. This may interfere with the proper interpretation of the results. However, (17.4 %) of the screening positive tests were confirmed for having hypertension, and (23%) were excluded, whereas (22.8%) of the screening positive tests were confirmed to have diabetes, and (27.7%) were not diabetic (Fig 9,10).

Fig (9) Proportional Distribution of The Diagnostic Test Results for Hypertension, by Directorates of Health (1/1-31/12 /2010)*

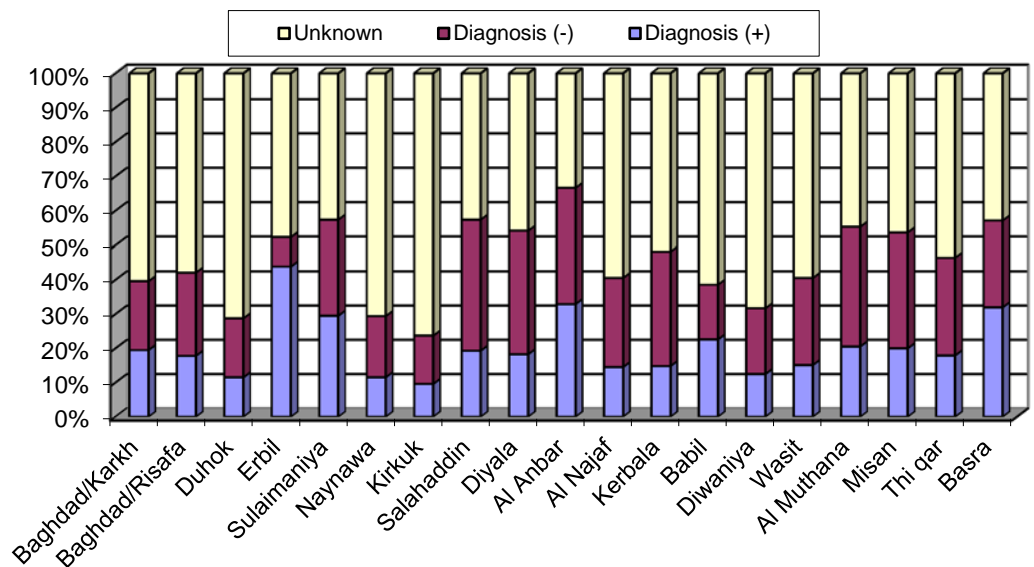
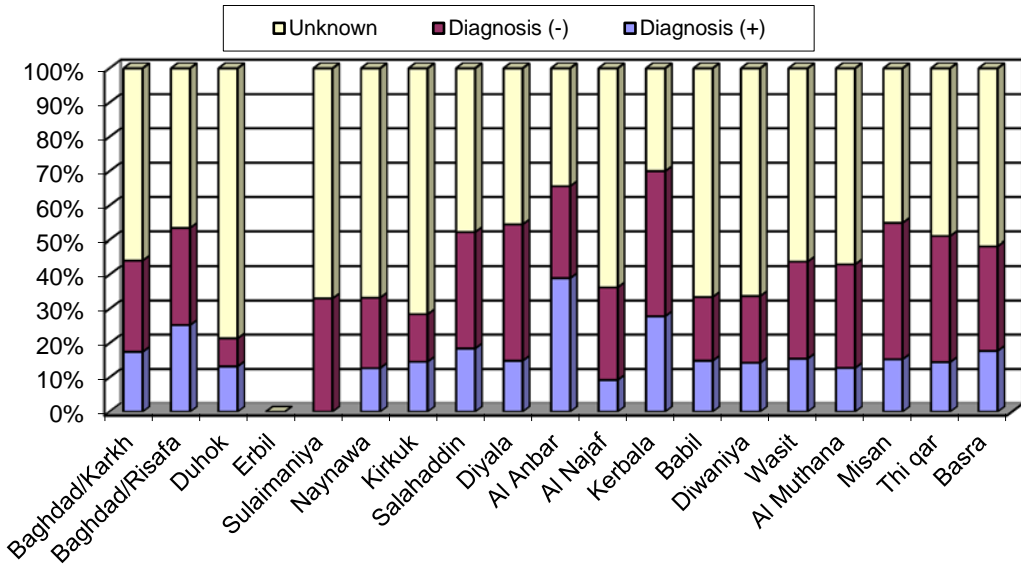
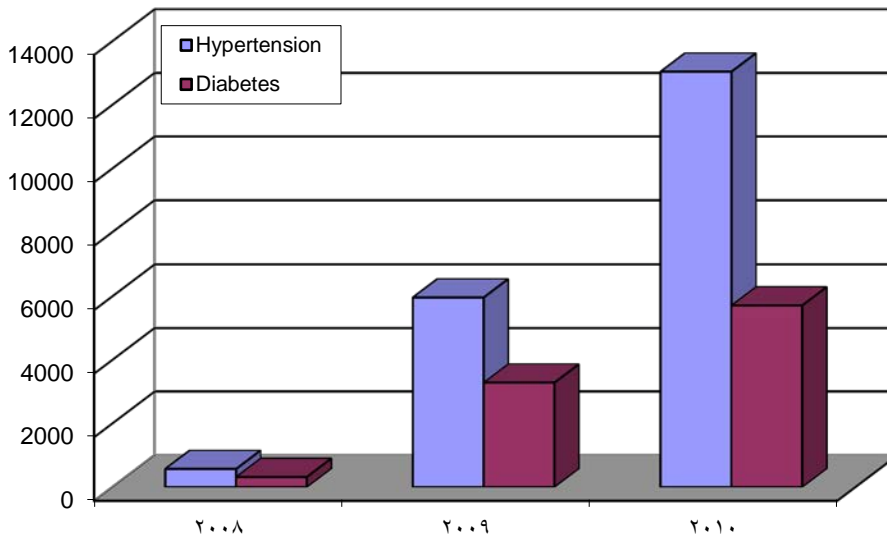


Fig (10) Proportional Distribution of The Diagnostic Test Results for Diabetes, by Directorates of Health (1/1-31/12 /2010)*



Accordingly, Around 19000 tests for hypertension and 9000 tests for diabetes were confirmed through the years of implementation (Fig 11).

Fig (11) Number of Confirmed Tests of Hypertension and Diabetes at the Selected PHCs, Iraq (1/10/2008- 31/12/2010)*



3.3 Recorded cases:

Among the selected PHC attendants more than 27000 cases were confirmed as having hypertension and/or diabetes through the screening process, in addition to the previously known cases that exceeded 100000 cases (Table2).

Table(2) Number of Diagnosed Cases of Hypertension and/or Diabetes through the project or previously known, by Year.

Years	Diagnosed Cases	
	Through Screening	Previously Known
2008	676	2537
2009	8930	27098
2010	17672	74537
Total	27278	104172

4. CONCLUSIONS:

- The screening system can contribute to the strengthening of the NCD surveillance system through monitoring of the newly diagnosed cases.
- It is evident that more than 16% of the PHC attendant adults of 25 years and older were with undiscovered high blood pressure and around 14-15% of the attendants of 45 years and older had hyperglycemia.
- More than 27000 cases of hypertension and/or diabetes are detected since the beginning of the project. This is expected to be doubled by the year 2012.
- The screening is sustained by the financial support of the of the MoH at central and DoH levels
- The system can be utilized in upgrading the referral/feedback mechanism between different levels of care.

5. RECOMMENDATIONS:

- Adoption of the screening and comprehensive care system as an integral part of the national health system with maintenance of financial and human resources.
- Strengthening the comprehensive multilevel services for the diagnosed cases.
- Adapting the electronic screening registry system by the national electronic health information system.
- Introduction of this system within the indicators for evaluation of the quality of the primary NCD care services in Iraq.