



# ZAGAZIG FACULTY OF MEDICINE

## Strategic Research Plan

2014 -- 2018

# **Strategic Research Plan of Zagazig Faculty of Medicine**

## **Preface**

On behalf of the members of Zagazig Medical Research Council (ZMRC) I'm pleased to introduce the updated strategic research plan of our faculty. The current plan was formulated in May, 2010 and implemented in September, 2010. Our vision is to "become innovative researchers and have outstanding position of medical research at the national and international levels". The mission is to develop a research capacity and capability, improve our community health status and improve Zagazig University position within the larger research communities in the world. This mission was translated into focused research on the topmost priority health problems in Sharkia Governorate, considering the following targets: 1) Disease mapping of Sharkia Governorate via epidemiological studies, 2) Clinical-based applied research for health problems of the topmost priority, 3) Advanced basic science and experimental research via new technologies like stem cell, medical nanotechnology and human genome related research. The research in these directions was distributed in 4 phases: phase one: 2010-2012 (Initiation Phase) along with CIQAP project of the Faculty with 50% of research directed to disease mapping, phase two: 2013-2015 (Sustainability Phase) with 50% of research directed to applied medicine, phase three: 2016-2018 (Consolidation Phase) with 60% of research directed to applied medicine and phase four: 2019 for evaluation of the previous phases and preparation for the next plan. Evaluation of phase one of the research plan raised a lot of concerns that require reform of the current plan. We have studied these concerns and met with stakeholders at different levels to reintroduce our priorities and redefine our objectives in a clear and applicable way to achieve our research vision.

I would like to thank my colleagues; members of the ZMRC and Faculty Staff for their cooperation and commitment to fulfill this hard task for preparation of this updated research plan which is focusing on directing research to priorities perceived from a lot of meetings and activities with stakeholders. These priorities include fields of liver diseases particularly viral hepatitis, obesity and related complications, addiction, cancer and new technologies of stem cell and nanotechnology researches. We hope to take a step forward towards enhancing research in our faculty.

**Dr Monkez M Yousif**

Vice Dean for Postgraduate Studies & Researches

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# Research Strategy Governness Bodies

Steering Committee: **Zagazig Medical Research Council (ZMRC)**

Chairman: **Dr Monkez M Yousif**

Professor of Internal Medicine

President of Zagazig Medical Research Council (ZMRC)

Vice dean of Postgraduate Studies and Research

ZMRC Secretary: **Dr. Seham Mahrous**

Professor of Clinical Pathology

Strategic Planning Advisor:

**Dr Abdellatif Elmor**

Professor of Community Medicine

**Teams of Initiatives:**

**Obesity:**

1. Dr Seham mahrous: Pofessor of Clinical Pathology (Coordinator).
2. Dr Eman Al-Shorbagy: Professor of Internal Medicine.
3. Dr Nagwa Samy: Assistant Professor of Internal Medicine.
4. Dr Abdellatif Elmor Professor of Community Medicine.

**Hepatitis:**

1. Dr Sahar Zaghloul: Professor of Internal Medicine (Coordinator).
2. Dr Laila Sherief: Professor of Pediatrics .
3. Dr Hala Ismael: Professor of Tropical Medicine.
4. Dr Abdellatif Elmor Professor of Community Medicine.

**Drug dependence:**

1. Dr Ahmad omar: Professor of Clinical Toxicology (Coordinator)
2. Dr Iman Abdel Rady: Professor of Clinical Toxicology.
3. Dr. Arwa Elsheikh : Lecturer of Clinical toxicology.

**Cancer:**

1. Dr Naglaa Fathi : Ass. Professor pathology of (Coordinator).
2. Dr Abdellatif Elmor Professor of Community Medicine.
3. Dr Rasha Lotfi Ass. Professor of Oncology
4. Dr Mona Fawzy Lecturer of Oncology

**Nanotechnology:**

1. Dr Mahmoud noumier: Professor of Clinical Toxicology (Coordinator)
2. Dr Yara El-Fakharany : Lecturer of Clinical toxicology
3. Dr Liala Sabik: Professor of Clinical Toxicology
4. Omaima Ibrahim Lecturer of Clinical toxicology.
5. Dr Seham mahrous: Pofessor of Clinical Pathology

# Introduction

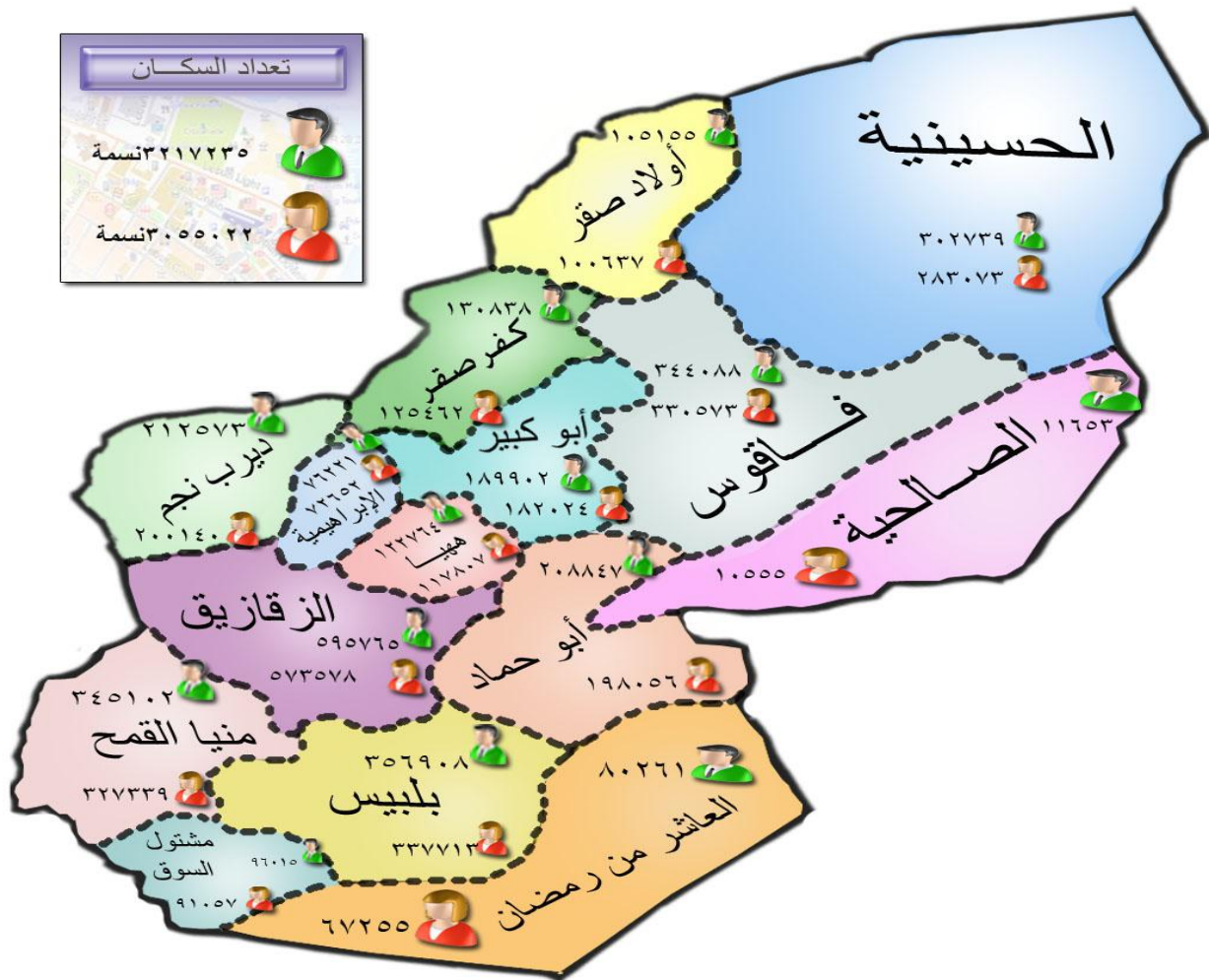
Zagazig University is one of the largest Universities in Egypt. It has been established in 1974. Faculty of Medicine, Zagazig University (**FMZU**) provides mainly El Sharkia population with health care and health care providers. FMZU health care extends also, to the surrounding Governorates, the Arabian Gulf Area and other countries (Africa- Malaysia- Syria).

The faculty of medicine represents the major bulk of Zagazig University with a total number of **2631** faculty staff members, **3574** undergraduate and **1102** post graduate students registered in the year 2013-2014.

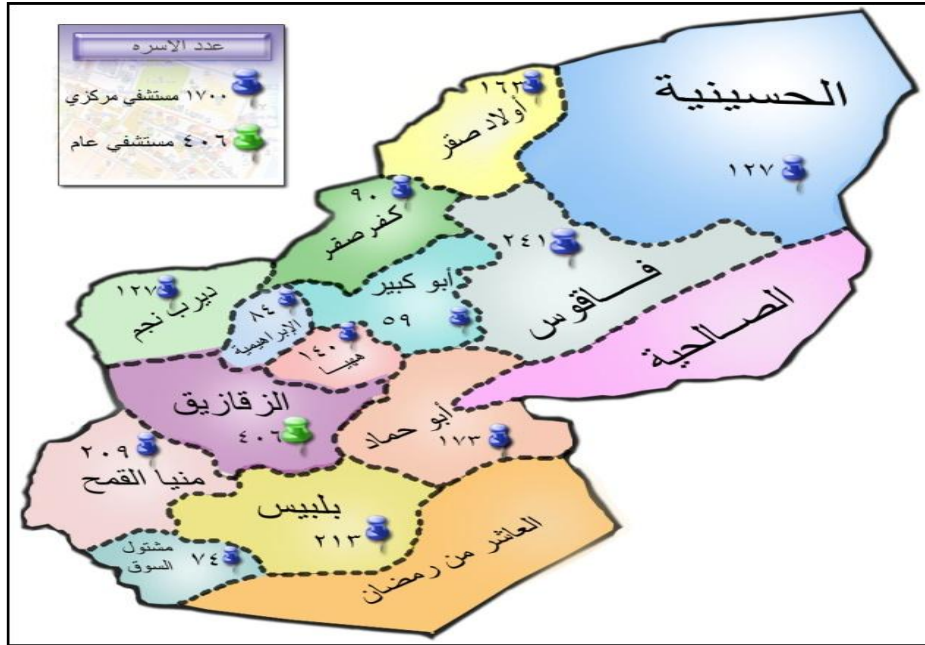
Faculty of Medicine, Zagazig University owes **9** hospitals that contain **2145** beds. The faculty contains **35** departments; 26 Clinical with 9 Academic departments. There are **73** Master and MD programs in our faculty. There is also a Medical Education Diploma Program.

## **Centers of Excellency:**

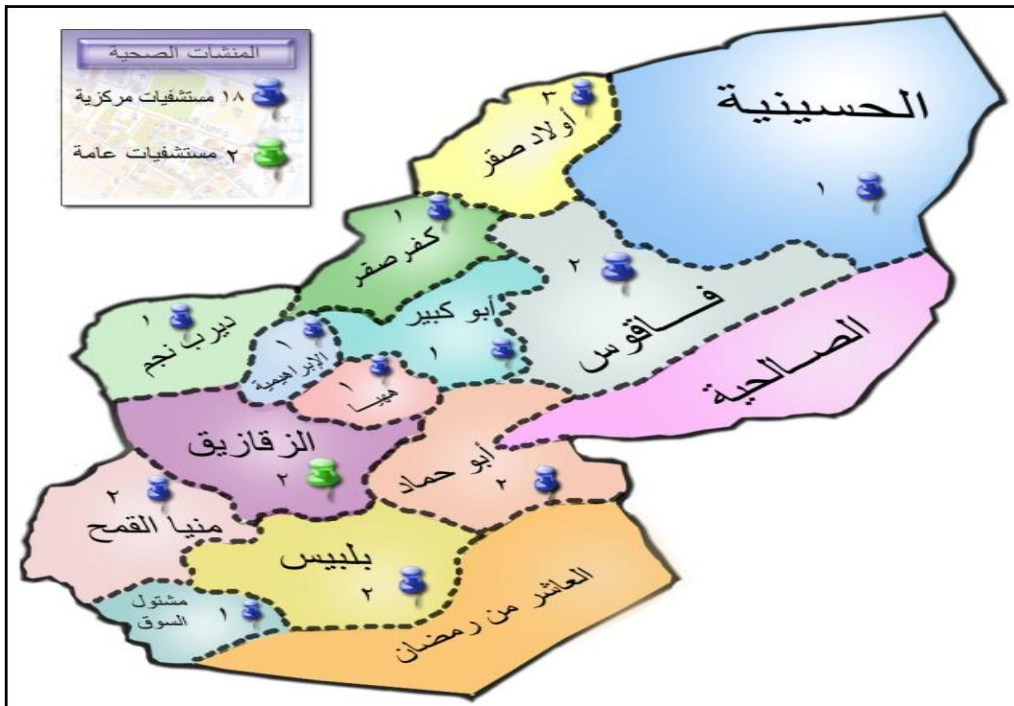
1. Zagazig Scientific & Medical Research Center (ZSMRC)
2. Zagazig Poison Control Center (ZPCC)



تعداد سكان محافظة الشرقية في المراكز ال ١٥



عدد أسرة المستشفيات التابعة لمديرية الشؤون الصحية بالشرقية



مستشفيات محافظة الشرقية التابعة لوزارة الصحة

# Strategic Research Planning Methodology

Strategic planning is a mean of establishing major directions for the university, college/school or department. Through strategic planning, resources are concentrated in a limited number of major directions in order to maximize benefits.

Zagazig Faculty of Medicine has engaged in an intensive, collaborative, and rigorous strategic planning process to guide our research over the next 5 years with the ultimate purpose of improving human health and reducing the burden of disease.

We did revise our current research situation (SWOT analysis) and after extensive workshops, meeting with stakeholders and brain storming we defined our values, vision, and mission and identified our research priorities.

## Vision

Our vision is to have an outstanding Faculty health research position and to become innovative researchers at the national and international levels.

## Mission

Improving our community health status via:

- Building distinguished research capacity of the Faculty.
- Having qualified researchers & community based research.
- Improving Infra structure of the faculty for scientific research.
- Having advanced Information Network technology Unit.
- Solving problem of fund raising for researchers.
- Incorporation of undergraduate students in scientific researches.
- Improving Zagazig University ranking among world universities.

## Values

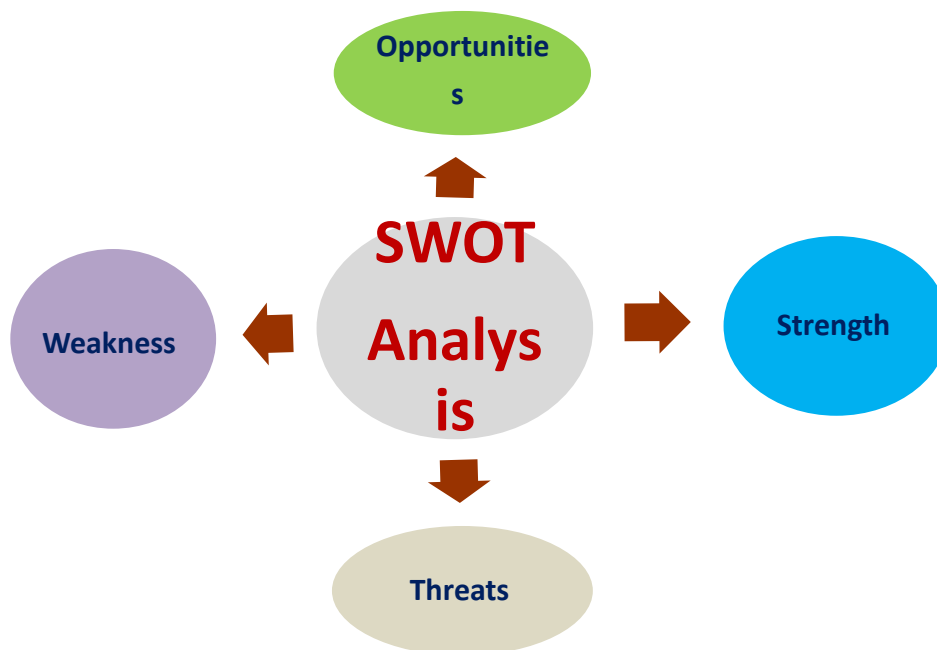
### 1. Reliability and Rigour In scientific research which means that

- the study protocol is being adhered to;
- the research is conducted in accordance with established ethical standards;
- meticulous records of all observations are maintained;
- data are analyzed and interpreted using appropriate statistical methods

- results are presented in such a way that other investigators can re-analyze the data

2. Research Focus
3. Teamwork and Collaboration
4. Research sustainability
5. Research flexibility

## SWOT Analysis



### STRENGTHS

- There is approved faculty research plan since 2010, which was evaluated after the first stage.
- There were training courses to improve research capabilities of the research staff since 2010.
- Our University research plan is based on community needs, by which the second stage of our research plane was modified.
- Highly selected motivated and dedicated faculty staff and students
- Positive academic environment represented in the form of highly dedicated faculty, supportive skillful knowledgeable staff members at a high level of skills and knowledge.
- Wide range of postgraduates study programs.

- Reasonable infrastructure to start with and upgrade.

## **WEAKNESSES**

- Very limited financial support and inadequate funding for scientific research.
- Limited scholarships and without good financial support.
- Resistance to change.
- Unsatisfactory communication between the different departments, as well as, between the staff themselves and between their students.
- Decreased number of staff participating in the research at the national and international levels.
- Increased educational load on the staff due to increased number of students.
- Brain drainage due to Immigration of the staff (internal or external).
- Little formal development for the future leaders.
- Little infra structure for stem cells and molecular biology.

## **OPPORTUNITIES**

- The government is giving special attention to improve the research to cope with the international levels.
- Establishing a supporting university environment for good knowledge and transparent attitudes.
- Presence of well established national standards to assess the quality ( NAQAAE)
- Establishing multiple communication channels with the big organizations both the governmental and the private ones to establish multicenter research projects.
- New opportunities to increase the amount of community based research.

## **THREATS**

- Unsatisfactory link between the scientific research and community needs .
- Poor economic condition of the country.
- Exhausting lifestyles for doctors in Egypt.
- Minimal involvement of NGOs in funding the research projects .
- Some of our infrastructures are too old to suit scientific research.

- Faculty is not ready yet for modern research e.g. stem cells and molecular biology.

## Research Priorities



### Research priorities:

Five strategic research priorities have been selected (Hepatitis, Obesity, Oncology, Addiction and Nano/Stem Cell Technology) based on the following feedbacks:

1. 2010 UN Report about human health status of Sharkia Governorate, Egypt)
2. The most commonly encountered health problems in Sharkia Governorate (according to the University Research Plan).
3. Recommendations of the "awareness workshops" with faculty staff
4. recommendations of the "2<sup>nd</sup> Annual Conference of Zagazig Medical Research Council; 18/2/2014"

**Seventy per cent (70%)** of departments' researches should cope with the faculty plan while 30% will be conducted according to Departments' special interest. Fund availability will be directed to research in the plan priorities. Implementation of the faculty research plan will be adopted by all faculty members and researchers and monitored according to a monitoring plan checked by ZMRC.

# General Goals of the Strategic Research Plan

## Action Plan of the Faculty of Medicine Zagazig University -( 2014-2018)

### GOAL 1: Enhance research environment

#### Major Objectives:

- To improve research capabilities of faculty staff.
- To improve the required infrastructure for the research.
- To increase % of scientific publications specially international ones.
- To increase research scholarships.
- To incorporate undergraduate students in research activities.
- To improve communication and awareness of faculty staff about research plan.

| Main Activities/<br>objectives   | Responsible<br>Team/Person   | KPI                      | Resources | Time<br>line |
|--|--|--------------------------|-----------|--------------|
| <b>1.1 To improve research capabilities of faculty staff by:</b><br>a-Training courses like: How to write a research proposal<br>b-workshops of research methodology | Project management unit<br>Department of Community Medicine  | Annually 10% improvement |           | 2014-2018    |
| <b>1.2 To improve research infrastructure:</b><br>a-Scientific and Medical Research Center<br>b-Poison Control Center  | Vice Dean of postgraduate and studies and research director of the center<br><br>Members of Clinical Toxicology And director of the center<br>Vice Dean of postgraduate and studies and research |                          |           | 2014-2018    |
| c-Faculty Scientific Journal   | Editorial Board of the Journal<br>Vice Dean of postgraduate and studies and research<br>Dean of Faculty  | International journal    |           | 2014-2018    |
| d-faculty publications storage   |  | Electronic data base     |           | 2014-2018    |

|   |  |  |  |           |
|---|--|--|--|-----------|
| e-Fund raising  | Vice Dean of postgraduate and studies and research<br>ZMRC     | Presence of account number for Scientific research support fund  |  | 2014-2018 |
| <b>To improve awareness of faculty staff about faculty research plan:</b><br>1-workshops<br>2-conferences | Vice Dean of graduate and scientific research                  | Allocation of 5% from the income of the specialized units for  |  | 2014-2018 |
| <b>To increase research scholarships</b>  | Vice Dean of postgraduate and studies and research<br>ZMRC     | Tempus Projects<br>Connect our researchers with wider world by building partnerships between our organization and national and international research centers.<br>Annual joint supervision<br>Annual publications of student's research activities |  | 2014-2018 |
| <b>To involve undergraduate students in research projects</b>   | Department of community medicine and other faculty departments |  |  |           |

**Goal No 2 Enhancement of community-based health research and improving the engagement of stakeholders.**

**Major Objectives:**

- Health mapping of Sharkia Governrate through community based researches.
- To Identify the detemnants and risk factors for the top most common Health

problems in Sharkia.

- To outline prevention programs for the top most health problems in Sharkia.
- To deepen and extend the cooperation between our organization and stakeholders.
- To introduce recent treatment modalities and new technology towards community health needs.

| <b>Main Researches &amp; Activities</b>  | <b>Responsible Team/Person</b>  | <b>KPI</b> | <b>Resources</b> | <b>Time line</b> |
|--|---|------------|------------------|------------------|
| <p><b>- To commit to community health data collection and health improvement efforts through establishing research projects targeting major health problems affecting our locality by:</b></p> <p>1-Mapping studies</p> <p>2-Health education programs</p> | <p>Community based researches of the 5 research fields<br/>30% of the studies</p> <p>Vice Dean for Postgraduate Studies &amp; Researches<br/>The council of scientific research</p> |            |                  | <p>2014-2018</p> |
| <p><b>To deepen and extend the cooperation between our organization and all stakeholders by:</b></p> <p>1-Work shops</p> <p>2-Conferences</p>  | <p>Vice Dean for Postgraduate Studies &amp; Researches<br/>The council of scientific research<br/>Teamwork of the 5 research fields</p>   |            |                  | <p>2014-2018</p> |

# Hepatitis Research Strategy

## Action plan ( 2014-2018)

### Team:

1. Dr Sahar Zaghloul: Professor of Internal Medicine
2. Dr Monkez yousif : Professor of Internal Medicine
3. Dr Laila Sherif: Professor of Pediatrics
4. Dr Hala Ismail: Assistant Professor of Tropical Medicine
5. Dr Abdellatif Elmor: Professor of Community Medicine

**GOAL 1:** Building Capacity to prevent and reduce hepatitis burden in Sharkia Governorate through high quality community based researches.

### Major Objectives:

- To map the hepatitis problem in Sharkia Governrate through community based researches.
- To establish comprehensive hepatitis registry in Sharkia.
- To Identify the determinants and risk factors for the most common hepatitis in Sharkia.
- To outline prevention programs for the commom hepatitis in Sharkia Governorate.

### Main Researches & Activities

Responsible  
Team/Person

KPI

Resources

Time  
line

|   |   |   |   |                  |
|---|---|---|---|------------------|
| <p><b>Studies on Prevalence, incidence, Risk Prediction and complications</b> - Collect and analyze relevant data from previous researches in the University and Ministry of Health and other International resources</p>                                 | <p>Internal Medicine, Tropical, Pediatric, Community Medicine, Clinical Pathology and other departments with Hepatitis team</p> | <p>- Finalize the required data<br/>- Write an actual reports</p> | <p>From departments, college funding, researchers</p> | <p>2014-2015</p> |
| <p>- Conducting studies to identify missing required data regarding prevalence and incidence, mode of transmission and most important risk factors e.g Renal patients, Oncology patients, Hematology patients.</p>  | <p>The research coordinator of all departments and the administrative members of the research unit.</p>                         | <p>Ending 5 researches in epidemiology</p>                        | <p>From departments, college funding, researchers</p> | <p>2014-2016</p> |
| <p>- Study epidemiology and natural history of liver cirrhosis , Hepatocellular carcinoma and co morbid factors (toxins, drugs, medical disease, HIV co infection)<br/>- Study prevalence of hepatocellular carcinoma in Zagazig University hospitals</p> | <p>The research coordinator of all departments and the administrative members of the research unit.</p>                         | <p>Ending 5 researches in epidemiology</p>                        | <p>From departments, college funding, researchers</p> | <p>2014-2016</p> |

|   |   |   |                                     |                  |
|---|---|---|-------------------------------------|------------------|
| <p>- Establishing a research unit for hepatitis related researches in collaboration with Advanced center for liver disease and Scientific and Medical Research center in Zagazig University</p> | <p>Hepatitis team, Postgraduate and research vice dean</p>                          | <p>Establishment of the research unit, its place and members</p>    | <p>college funding and donation</p> | <p>2014-2016</p> |
| <p>- Present Education programs to increase awareness about mode of transmission, ways of prophylaxis and living with a case of hepatitis</p>   | <p>Human resources Unit, Cultural affairs committee, and infection control unit</p> | <p>Ending 5 medical campaigns to coiffeurs, barbers, dentists..</p> | <p>College funding</p>              | <p>2014-2015</p> |

**GOAL 2:** Conduct tailored clinical researches to improve the quality of life of hepatitis patients through: better diagnosis, state of the art of treatment modalities and improving the prognosis of hepatitis patients.

**Major Objectives:**

- To formulate programmes for screening and early detection of hepatitis in Zagazig University Hospital
- To improve diagnostic techniques used in different kinds of hepatitis in Zagazig University Hospital.
- To apply recent and evidence based management modalities with better efficacy and less side effects.
- To produce and disseminate high quality, evidence-based up-to-date hepatitis related clinical practice guidelines.
- To improve the survival and quality of life of hepatitis patients.
- Clinical Networking with distinguished hepatitis institutes inside and outside Egypt .

| <b>Main Researches &amp; Activities</b>  | <b>Responsible Team/Person</b>  | <b>KPI</b>  | <b>Resources</b>   | <b>Time line</b> |
|--|---|---|--|------------------|
| <p><b>Offer health service for early diagnosis and treatment of Hepatitis and its complication</b></p> <ul style="list-style-type: none"> <li>- Study include early diagnosis by biochemical markers e.g in hospital workers and paramedics</li> <li>- Study the effect of drugs available and response rate</li> <li>- Study haematologic complications of treatment</li> <li>- Study endocrinal complication of HCV treatment</li> <li>- Study renal complication of HBV treatment</li> <li>- Study rheumatological manifestation of HBV</li> <li>- Study rheumatological manifestation of HCV</li> <li>- Study cutaneous manifestations of HCV infection</li> <li>- Prediction of presence of esophageal and gastric varices by measuring liver stiffness using transient elastography</li> </ul> | <p>Internal Medicine, Tropical Medicine and Pediatric Department, Liver center in Al Ahrar Hospital and Advanced Center for Liver disease and research team</p> | <ul style="list-style-type: none"> <li>- Ending 10 researches in response to treatment and its complication</li> <li>- Treating 20000 patients</li> </ul> | <p>Health Insurance, Ministry awards and Medical committee for students, employees and staff in the University, drug companies and charity organizations</p> | <p>2014-2018</p> |
| <p><b>Vaccination</b></p> <ul style="list-style-type: none"> <li>- study HBV vaccination efficacy in different groups (renal, maternal-fetal transmission..)</li> <li>- study duration of vaccine protection in HBV</li> </ul>   | <p>Supervisors of the research and Research team</p>  | <p>Ending 3 researches</p>  | <p>College funding and researchers</p>   | <p>2014-2016</p> |

|   |  |   |  |                  |
|---|--|---|--|------------------|
| <p><b>Project in liver transplantation</b></p> <p>Establishing a unit for liver transplantation</p> <ul style="list-style-type: none"> <li>- Study selection of the patients for transplantation</li> <li>- Study early and late post transplant complications</li> <li>- Study metabolic syndrome as a complication of liver transplantation</li> </ul>  | <p>Supervisors of the research and Research team in collaboration with International medical center <b>(IMC)</b></p> | <ul style="list-style-type: none"> <li>- Establishing the unit</li> <li>- Training the team</li> <li>- Ending 2 researches</li> </ul> | <p>College funding, researchers and donation</p> | <p>2014-2018</p> |
| <p><b>Project in hepatocellular carcinoma</b></p> <p>Establishing a group for hepatocellular carcinoma</p> <p>Study management of HCC: surgical Vs non surgical</p> <p>Study outcome of radiofrequency ablation of hepatic tumors</p> <p>Study Nitric oxide as a marker for tumor regression in patients with HCC following loco-regional therapy</p> <ul style="list-style-type: none"> <li>- Study effect of single nucleotide polymorphism of RECK gene promotor on HCC susceptibility and clinicopathologic features</li> <li>- Study diagnostic role of vascular endothelial growth factor (VEGF) in HCC in HCV related liver cirrhosis</li> </ul> | <p>Supervisors of the research in collaboration with Advanced Center for Liver disease</p>                           | <p>Establishment of the group,</p> <p>Ending 5 researches in this field</p>   | <p>College funding, researchers and donation</p> | <p>2014-2018</p> |
| <p><b>GOAL 3:</b> Conduct basic researches in molecular biology and genetic counseling to discover new line of therapy and intervention.</p> <p><b>Major Objectives :</b></p> <ul style="list-style-type: none"> <li>- To use molecular biology and genetic counseling for hepatitis risk</li> </ul>  |  |   |  |                  |

reduction and effective treatment

- To identify the genetic predisposition in most common hepatitis in Zagazig University Hospital.
- To introduce best strategies to prevent or reduce the risk of hepatitis through monitoring of patients and population at risk.
- To Strengthen the network and collaboration to the distinguished national and international Research center in molecular biology and genetic counseling

| <b>Main Researches &amp; Activities</b>  | <b>Responsible Team/Person</b>                | <b>KPI</b>  | <b>Resources</b>                | <b>Time line</b> |
|--|---|---|---------------------------------|------------------|
| <p><b>Basic research in stem cell therapy</b> as a therapeutic option of treatment</p> <ul style="list-style-type: none"> <li>- Establishing a stem cell therapy unit</li> <li>- Study stem cell therapy in liver cirrhosis and its outcome in human</li> <li>- Study stem cell therapy by different methods for liver disease in animals</li> </ul> | Supervisors of the research and Research team | <ul style="list-style-type: none"> <li>- Estabilshing stem cell therapy unjt</li> <li>- Training the team</li> <li>- Ending 2 researches</li> </ul> | College funding and researchers | 2014-2018        |
| <p><b>Basic researches in drug trials in different stages of the disease</b></p> <ul style="list-style-type: none"> <li>- Study of surrogate markers of portal hypertension and hepatic elastography before and after non selective beta blockers</li> <li>-Study of new drugs (DAA): Effecacy and side effects</li> </ul>                           | Supervisors of the research and Research team | Ending 5 researches in this field   | College funding and researchers | 2014-2018        |

|  |  |  |  |                  |
|--|--|--|--|------------------|
|  |  |  |  |                  |
| <p><b>Basic research in molecular genesis of the disease, response to treatment</b></p> <ul style="list-style-type: none"> <li>- Study gene polymorphism and severity of the disease</li> <li>- Study genetic factors predispose to drug response</li> <li>- Study prevalence and prognostic significance of CXCL10 plasma level as a predictor of therapeutic response in chronic HCV patients.</li> <li>- Study squamous cell carcinoma antigen (SCCA) versus alpha fetoprotein (AFP) as a screening marker for hepatocellular carcinoma</li> <li>- Study Golgi protein 73 as a biomarker for early detection of hepatocellular</li> <li>- Study effect of single neocleotide polymorphism of RECK gene promotor on HCC susceptibility and clinicopathologic features</li> <li>- Study diagnostic role of vascular endothelial growth factor (VEGF) in HCC in HCV related liver cirrhosis</li> </ul> | <p>Supervisors of the research and Research team</p> | <p>Ending 7 researches in this field</p> | <p>College funding and researchers</p> | <p>2014-2018</p> |

# Obesity Research Strategy

## Action plan ( 2014-2018)

### Team :

**Dr Seham Mahrous: Professor of Clinical Pathology (Coordinator ).**

**Dr Eman Elshorbagy : Professor of Internal Medicine .**

**Dr Nagwa Samy:Ass. Professor of Internal Medicine.**

**Dr Abdellatif Elmor: Professor of Community Medicine**

Obesity is an increasingly important public health concern in Egypt. An estimated (35 %.) of Egyptian adults (18.7 % males & 48.1 % females) are considered to be obese ( National nutrition institute, Final report on the national study: National study for assessment of bone mineral density (BMD) among Egyptian adults and adolescents in Egypt, 2004.Egyptians are the fattest Africans, says WHO,2010 , With nearly 70 percent of its adult population overweight or obese, Egypt is also the 14th fattest country in the world, according to the most recent World Health Organization statistics issued for the year 2010.

### **Comprehensive Intervention and main Strategies:**

Obesity is a complicated problem arising of interacting and multidimensional aspects.

WHO denotes that you have to manage obesity through a comprehensive strategy that considers: healthy Diets, healthy weight, active life, empowering people and community, healthy environment, policy change, and coordination with all stakeholders and NGOs.

### **Goals :**

1-Prevention and control of obesity and its complications among Sharkia population through high quality community based researches and programs aiming to: promoting healthful diets, healthy weight and active life.

2-Identify the most effective strategic interventions and management modalities to prevent and treat

unhealthy weight gain or to facilitate weight loss among obese people.

**Major Objectives:**

- Conducting epidemiological studies to assess obesity and its determinants in Sharkia governorate (2014-2015)
- Serves as a center of excellence and a guide Of research to mange obesity
- Identify the appropriate strategies for obesity prevention and treatment in real-world settings and diverse populations.
- Develop awareness and prevention programs to control obesity (2014-2016)
- Outline a comprehensive plan to prevent obesity and its complication in Sharkia(2014-2016)
- To introduce and facilitate different obesity treatment modalities in Zagazig University Hospitals(2014-2018)
- Use basic research and modern technology to advance obesity research and management.
- To coordinate with stakeholders to control and prevent obesity problems in Sharkia.
- Facilitate integration of research results into community programs and medical practice

| <b>Main Researches &amp; Activities</b>   | <b>Responsible Team/Person</b>   | <b>KPI</b>   | <b>Resources</b>  | <b>Time line</b> |
|---|--|--|---|------------------|
| <p><b>Epediomologic Research :</b></p> <p>1.1-Review Studies on Prevalence, incidence and Risk factors for obesity</p> <p>1.2-Collect and analyze relevant data from previous researches in the University and Ministry of Health and other International resources.</p> <p>1.3-Conducting studies to identify missing required data regarding prevalence and incidence of andmost important risk factors</p> <p>1.4 Establishing a research unit for Obesity related researches in collaboration with Scientific and Medical Research center in Zagazig University.</p> <p>1.5 Developing a Program for detection of risk factors for Obesity between the medical personnel and plans for control.</p> | <p><b>Public health</b></p> <p><b>Internal Medicine</b></p> <p><b>Pediatrics</b></p> | <p>-All data about calculated prevalence is available</p> <p>-Finalize equired data</p> <p>-Write an actual reports</p> <p>- Prevalence will be published in a paper</p> | <p>Funds available from departments and faculty &amp; Pharmaceutical industries</p> | <p>2014-2015</p> |

|   |   |  |  |                  |
|---|---|--|--|------------------|
| <p>1.6 Sharing the National program for surveillance of preschool children for obesity &amp; diabetes.</p> <p>1.7 Sharing the national program for reporting Obesity in Egypt.</p>  |   |  |  |                  |
| <p><b>Clinical Research :</b></p> <ul style="list-style-type: none"> <li>- Screening and early detection researches.</li> <li>- Research involving the diagnostic modalities.</li> <li>-Prediction and diagnosis of obesity complications</li> <li>- Management techniques and different treatment modalities.</li> <li>- Research for improvement of the drug formulation and development of new drugs.</li> <li>- Improve Measurement Tools, Technology, and Methods</li> <li>-Cooperation with Ministry of Health to perform National program for surveillance of preschool children for Obesity.</li> </ul> | <p>Internal Medicine, Tropical, Pediatric, Community Medicine, Clinical Pathology and other departments with Obesity team</p> |  | <p>college funding and donation</p> <p>Health Insurance, Ministry awards and Medical committee for students, employees and staff in the University, drug companies and charity organizations</p> | <p>2014-2018</p> |
| <p><b><u>Treatment of co- morbidities and advanced research :</u></b></p> <p><b>Coronary Heart Complications:</b></p> <ul style="list-style-type: none"> <li>-Studies on Drugs Used.</li> <li>- Studies on management of Complications.</li> </ul> <p><b>Advanced research:</b></p> <ul style="list-style-type: none"> <li>-Stem cell based therapy in myocardial infarction</li> <li>- Epigenetic studies on stem cells to develop cardiac pacemaker cells.</li> <li>- Studies on stem cell therapy of heart</li> </ul>  | <p>Internal Medicine, Tropical, Pediatric, Community Medicine, Clinical Pathology and other departments with Obesity team</p> |  | <p>college funding and donation</p> <p>Health Insurance, Ministry awards and Medical committee for students, employees and staff in the University, drug companies and charity organizations</p> | <p>2014-2018</p> |

failure.

- Studies on Cardiovascular Regeneration by stem cells progenitors.

- Studies on Stem Cell therapy of Coronary Heart Diseases.

- Studies on the behavior of Stem Cell Derived Cardiac Differentiation.

- Stem cell treatment of Cardiovascular diseases

- Stem Cell Treatment of Critical Limb Ischemia.

- **Diabetes:**

-Studies on Drugs Used

- Studies on management of complications

- Studies on Biochemical Changes

- Studies on radiological findings

- Studies on Gestational DM.

**Advanced research:**

Studies on the Pancreatic development of Human Islets from Pluripotent Stem Cells.

- Studies on the use of mesenchymal stem Cells in prevention of diabetic complications

- Role of bone marrow stem cells in treatment of diabetes

- Role of stem cells in repairing the damaged renal tubules

- Advance of researches on thyroid tissues autotransplantation and embryonic stem cell transplantation in therapy of hypothyroidism.

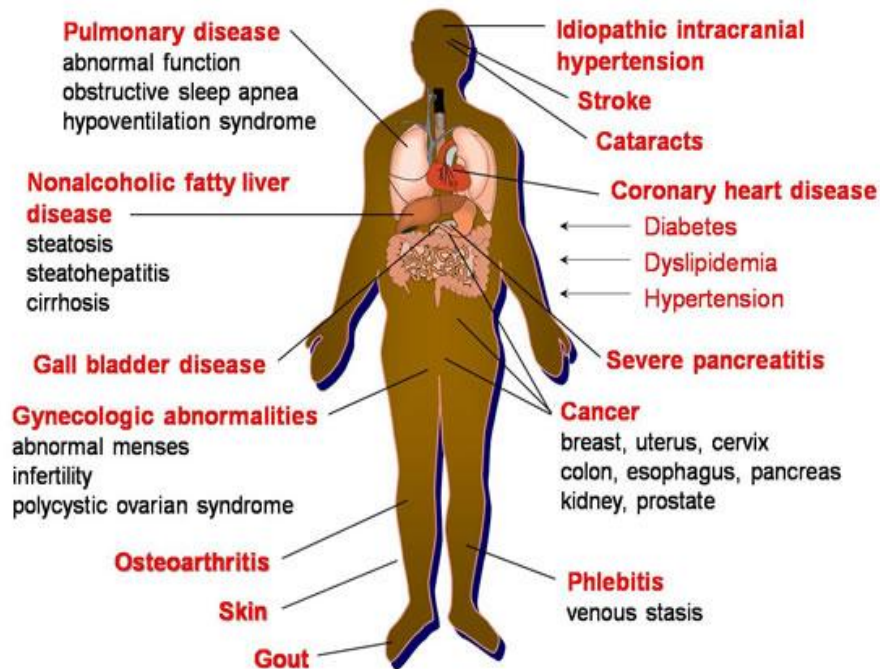
- Mesenchymal stem cell therapy for diabetes through paracrine mechanisms.

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| <p><b>Hypertension &amp; Thrombotic complications</b></p> <ul style="list-style-type: none"> <li>- Studies on Micro vascular anatomy of the eye.</li> <li>- Studies on vascular architecture of the brain</li> <li>- Studies on studying different areas of the brain.</li> <li>- Studies on studying the peripheral nervous system.</li> <li>- Stem Cell in Ophthalmology:</li> <li>- Stem cell treatment of Macular Degeneration and retina.</li> </ul>  |  |  |  |  |
| <p><b>Reproductive Complications</b></p> <ul style="list-style-type: none"> <li>-role of Stem Cells in treatment of male infertility.</li> <li>- Studies on the Embryonic Stem Cells and their role in female infertility.</li> <li>- Stem cell research in erectile dysfunctions.</li> <li>- Studies on development of Germ Cell line from Molecular Control of adult bone marrow-purified very small embryonic-like stem cells.</li> </ul> <p><b>-Liver Disease &amp; Dyslipidemia</b></p> <ul style="list-style-type: none"> <li>-Basic researches in drug trials in different stages of the disease</li> <li>-Basic research in molecular genesis of the disease, response to treatment</li> <li>-Autologus hematopoietic stem cell transplantation in end stage liver.</li> </ul> <p><b>-Orthopedic -Renal Complications</b></p> <ul style="list-style-type: none"> <li>-Studies on histological and ultra structure evaluation of healing in tissue injuries.</li> </ul> <p><b>- Neurological Complications:</b></p> |  |  |  |  |

|   |   |  |   |                  |
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| <p>-Epigenetic Regulation of Neural Stem Cell Proliferation and Differentiation.</p> <p>- Studies on human neuronal stem cells and their regulation</p> <p>- Studies on the different levels of molecular control of neuronal lineage of embryonic stem cells.</p> <p>- Studies on Cell therapy in spinal cord Injuries.</p> <p>- Pluripotent stem cells in neurodegenerative and neurodevelopmental diseases.</p> <p><b>-Cancer Risk</b></p> <p>-Studies on Stem Cell Role in Screening of Malignancy.</p> <p>- Gene expression and transcription factors in Cancer.</p> <p>- Studies on potential biomarkers for cancer diagnosis, prognosis and targets for stem cell therapy.</p> <p>- Role of stem cell in management of cancer</p> <p>-Prognostic significance of circulating tumour cells .</p> <p><b>-Risk Factors:</b></p> <p>- Projects to study the interaction between Obesity risk on body organs.</p> <p>-Studies to assess the molecular and genetic basis for Biologic Mechanisms Regulating Energy Balance and risk factors for obesity.</p> |   |  |   |                  |
| <p><b>Develop and implement awareness and educational programs 2014-2018</b></p> <p>-Training of trainers and health</p>  | <p>Public health</p> <p>Internal Medicine</p> | <p>-Training programs are available</p> <p>- Training is Implemented</p> | <p>Funds available from departments and faculty</p> | <p>2014-2018</p> |

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| <p>educators</p> <p>In a wide range of knowledge and skills, such as:</p> <ul style="list-style-type: none"> <li>- expertise in the basic, clinical, behavioral, and social sciences; epidemiology;</li> <li>- cultural competency; measures and methods; interventions; and translation and dissemination.</li> </ul> | <p>Pediatrics</p> <p>Physiology</p> <p>Rheumatology</p> <p>Psychiatry</p> <p>Anesthesia</p> <p>Medical education</p> <p>Quality Unit</p> |  | <p>Pharmaceutical industries</p> |  |
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## Medical Complications of Obesity



# Cancer Research Strategy Action plan

## Team

1. Dr Naglaa Fathi :Ass. Professor pathology of (Coordinator).
2. Dr Abdellatif Elmor Professor of Community Medicine.
3. Dr Rasha Lotfi Ass. Professor of Oncology
4. Dr Mona Fawzy Lecturer of Oncology

**GOAL 1:** Building a capacity to prevent and reduce cancer burden in Sharkia Governorate through high quality community based researches.

## Major Objectives:

- To map the cancer problem in Sharkia Governrate through community based researches.
- To establish comprhennsive cancer registry in sharkia.
- To Identify the detemnants and risk factors for the top most common cancers in Sharkia.
- To outline prevention programs for the top most cancers in Sharkia Governorate.
- To Conduct programmes for screening and early detection of cancer in Zagazig University Hospital

| Main Researches & Activities | Responsible Team/Person | KPI | Resources | Time line |
|------------------------------|-------------------------|-----|-----------|-----------|
|------------------------------|-------------------------|-----|-----------|-----------|

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|--|---|---|---|------------------|
| <p><b>1.1 - Studies on Prevalence, incidence and Risk Prediction for the most common cancers</b></p>   | <p>Community medicine and all clinical departments</p>                                    | <p>Ending 2 researches in this field every year</p> | <p>College funding and researcher s</p> | <p>2014-2018</p> |
| <p><b>1.2 - Radiological studies for early detection</b></p> <p>a- Mammogram for Breast Ca Screening.</p> <p>b- CT colonography for Colon Ca Screening.</p> <p>c- LDCT for Lung Ca Screening.</p>  | <p>Radio-diagnosis<br/>Medical oncology<br/>All clinical departments</p>                  | <p>Ending 2 researches in this field every year</p> | <p>College funding and researcher s</p> | <p>2014-2018</p> |
| <p><b>1.3 - Biomarkers for early detection</b></p> <p>a- Breast Ca Tumor Markers Project" in collaboration with 'Oncology Department' for early detection of cancer breast.</p> <p>b -"Hepatocellular Carcinoma Tumor Markers Project" in collaboration with 'Oncology Department' for early detection of HCC .</p> <p>c- Study squamous cell carcinoma antigen (SCCA) versus alpha fetoprotein (AFP) as a screening marker for HCC.</p> <p>d-Study Golgi protein 73 as a biomarker for early detection of HCC</p> <p>e- PSA for early detection of Prostate</p> | <p>Pathology<br/>Clinical Pathology<br/>Biochemistry<br/>Medical oncology<br/>Surgery</p> | <p>Ending 2 researches in this field every year</p> | <p>College funding and researcher s</p> | <p>2014-2018</p> |

**GOAL 2:-** Conducting tailored clinical researches to improve the quality of life of cancer patients through: better diagnosis, state of the art of treatment modalities and improving the prognosis of cancer patients.

**Major Objectives:**

- To improve diagnostic techniques used in different kinds of cancers in Zagazig University Hospital.
- To apply recent and evidence based management modalities with better efficacy and less side effects.
- To produce and disseminate high quality, evidence-based up-to-date cancer related clinical practice guidelines.
- To improve the survival and quality of life of cancer patients in Zagazig University Hospital.
- Clinical networking with distinguished Cancer institutes inside and outside Egypt .

| Main Researches & Activities   | Responsible Team/Person  | KPI   | Resources                              | Time line          |
|--|--|---|--|--------------------|
| <p><b>2.1- Studies on the radiological findings</b></p> <p>a. Various new MRI modalities including Mr mammography, MRA, , MRCP and MR Myelography.</p> <p>b. Recent computed tomographic examination, as Multislice CT examination in various tumors.</p> <p>c. Role of conventional angiography, MR angiography and Multislice CT in tumor</p> <p>d. Different Interventional Radiographic techniques in:</p> <p>e. Biopsy in malignant tumors</p> <p>f. Various embolization procedures in malignant tumors.</p> | <p>Radio-diagnosis</p> <p>Medical oncology</p> <p>Pathology</p> <p>Clinical Pathology</p> <p>Community medicine</p> <p>All clinical departmets</p> | <p>Ending 3 researches in this field every year</p> | <p>College funding and researchers</p> | <p>2014 - 2018</p> |



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| <p>bladder cancer (Comparative study).</p> <p>10- Limb sparing tumour surgery</p> <p>11- Bone and soft tissue reconstruction following tumour surgery.</p> <p>12- Role of Conventional and non-conventional methods in treatment of benign and malignant ORL- Head and neck lesions, including endoscopic, laser and power-assisted techniques.</p> <p>13- Reconstructive materials and techniques and their role in ORL- Head &amp; Neck surgery</p> <p>14- Radiotherapy and chemotherapy for head and neck neoplasms\</p> <p>15- Applied research about programs to improve quality of life of patients with cancer</p> <p>16- Studies about group therapy programs to improve survival for patients with cancer.</p> <p>17- Studies to find out suitable modalities to maintain proper functions of vital organs and systems of patient with cancer.</p> <p>18- Studies for prevention programs and ways to decrease side effects of chemo and radiotherapy</p> <p>19- Studies in the field of anticancer biological therapy.</p> | <p>Gynecology</p> <p>Urological surgery</p> <p>Orthopedic</p> <p>ENT</p> | <p>Ending 3 researches in this field every year</p> <p>Ending 2 researches in this field every year</p> <p>Ending 3</p> | <p>s</p> <p>College funding, researchers</p> <p>s</p> <p>College funding, researchers</p> <p>s</p> | <p>2014 - 2018</p> <p>2014 - 2018</p> <p>2014 - 2018</p> |
|--|--|---|--|--|

**2.3- Studies on Biopsy & cytology material**

**a - Studies on biochemical Markers**

1. Immunophenotyping classification
2. Expression of glypican-3(GPC-3)and 8-hydroxydeoxyguanosine (8-OHdG) in chronic hepatitis C and relationship with hepatocellular carcinoma
3. Significance of Glut-1,Ki-67 and VEGF in diagnosis of surface epithelial tumours of the ovary.
4. Evaluation of the role of mutant IDH1, EGFR and Bcl2 protein expression in distinguishing diffuse astrocytoma from astrocytosis.
5. Significance of D2-40, claudin-4 and Glut-1 immunostaining in differentiating malignant pleural mesothelioma from metastatic adenocarcinoma and reactive mesothelial cells

**b-Prognostic and predictive biomarkers for risk of invasion and recurrence**

1. Tumor markers and their role in head and neck tumors.
2. Immunohistochemical expression

Radiotherapy

Pathology &  
Clinical  
pathology  
All clinical  
departments

researches  
in this field  
every year

Ending 2  
researches  
in this field  
every year

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College  
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| <p>of cluster of differentiation CD-68 and Ki-67 in astrocytoma</p> <ol style="list-style-type: none"> <li>3. The value of immunoexpression of phosphatase and tensin homologue glucose transporter - 1 and B-catenin in endometroid carcinoma and its precursor lesions</li> <li>4. Diagnostic and predictive value of Survivin, p63 and CD15 in Non Hodgkin's lymphomas.</li> <li>5. The significance of claudin1 and S100A4 expression in colorectal carcinoma</li> <li>6. Predictive role of CDX2, MUC2 and MUC6 in progression of chronic gastritis to carcinoma</li> <li>7. Expression of Enhancer of zest homologue 2 and cytokeratin 5/6 in triple negative versus non triple negative breast cancer: An immunohistochemical study.</li> <li>8. Prognostic significance of Beclin-1 in DLBCL patients receiving immunochemotherapy.</li> <li>9. CD68, Topo11<math>\alpha</math> as prognostic factors in advanced stage HL.</li> </ol> <p>c. Biomarkers for predictive response to therapy.</p> <p>d. Biomarkers for targeted therapy.</p> | <p>Pathology &amp; Clinical pathology</p> <p>All clinical departments</p> | <p>Ending 3 researches in this field every year</p> | <p>College funding, researchers</p> | <p>2014 - 2018</p> |
|--|---|---|-------------------------------------|--------------------|

**GOAL 3:- :- Use of molecular biology and genetic counseling for Cancer Risk reduction and effective treatment**

**Major Objectives :**

- Identify the genetic predisposition in cases of the common cancers in Zagazig University Hospital.
- To introduce best strategies to prevent or reduce the risk of cancer through monitoring of patients and population at risk.
- Strengthen networking and collaboration to the distinguished national and international Research center in molecular biology and genetic counseling

| <b>Main Researches &amp; Activities</b>  | <b>Responsible Team/Person</b>   | <b>KPI</b>  | <b>Resources</b>                       | <b>Timeline</b>    |
|--|--|---|--|--------------------|
| <p><b><u>3.1-Molecular biology and Genetics</u></b></p> <p>a. Studies on genetic predisposition of the Egyptian population to cancer and their role in screening</p> <ol style="list-style-type: none"> <li>1. Genetic studies in cancer ovary and breast cancers (BRCA1, BRCA2)</li> <li>2. Genetic studies for different ORL- head and neck disease.</li> <li>3. Colon Cancer research project: all Colon Ca cases ≤ 50 years of age should be subjected to MAI and MMR genes testing.</li> <li>4. CYP1A1 gene polymorphisms and smoking status as modifier factors for lung cancer risk</li> <li>5. Impact of insulin-like growth factor 2, insulin-like growth factor receptor 2, insulin receptor substrate 2 genes polymorphisms on susceptibility and clinicopathological features of hepatocellular carcinoma</li> </ol> | <p>Pathology<br/>Clinical<br/>Pathology<br/>Biochemistry<br/>Medical oncology<br/>All clinical departments</p> | <p>Ending 3 researches in this field every year</p> | <p>College funding and researchers</p> | <p>2014 - 2018</p> |

|   |  |  |  |  |
|---|--|--|--|--|
| <p>6. Methylation status and protein expression of RASSF1A in breast cancer patients</p> <p>7. Role of DNA repair and cell cycle control genes in ovarian cancer susceptibility</p> |  |  |  |  |
|---|--|--|--|--|

## Addiction Research Strategy

### Action plan -( 2014-2018)

#### Team

1. Dr Ahmad omar: Professor of Clinical Toxicology (Coordinator)
2. Dr Iman Abdel Rady: Professor of Clinical Toxicology
3. Dr Arwa El-Sheikh: Lecturer of Clinical Toxicology
4. Dr Monkez Yousif : Professor of Internal Medicine

**GOAL 1:-** Building Capacity to prevent and reduce drug dependence burden in Sharkia Governorate through high quality community based researches.

#### Major Objectives:

- To map the drug dependence problem in Sharkia Governrate through community based researches.
- To identify the targeted populations of drug dependence
- To outline prevention and awarness programs for reducing incidence of drug dependence in Sharkia.
- To assess the effectiveess of prevention programs to improve them

according to community needs.

| Main Researches & Activities   | Responsible Team/Person            | KPI  | Resources                       | Time line |
|--|------------------------------------|--|---------------------------------|-----------|
| <p><b>- Studies on Prevalence, incidence , Risk and targeted populations Prediction for the addiction problem.</b></p> <p>- Researchs to measure Prevalence and incidence of drug dependence problem in sharkia govornorate</p> <p>Researchs to identify Risk factors and determinants of the addiction problem</p> <p>Studies to map the vullnearble groups -and targeted populations</p> <p>-Researchs to predict the most comonly abused drugs in sharkia govornorate</p> <p>- Epidemiological studies to evaluate the effectiveness of prevention and awarness programs</p> <p>-Including the undergraduate students in the mapping researchs</p> <p>-Networking with stakeholder and all responsible agents and isnstitution to contorl and prevent drug dependence probems.</p> <p>-Partnership with NGOs to control and</p> | Community medicine team            | Finalize the required data                   | College funding and researchers | 2014-2018 |
|  | Toxicology team                    | Collect positive results of screening        | College funding and researchers | 2014-2018 |
|  | Psychiatric medicine team          | Write an actual reports                      | College funding and researchers | 2014-2018 |
|  | All participants departments teams | Ending 2 researches in this field every year | College funding and researchers | 2014-2018 |

|                            |                         |   |  |           |
|----------------------------|-------------------------|---|--|-----------|
| prevent addiction problem. |                         |   |  |           |
|                            | Community medicine team | 60% of knowledge among different age population | Scientific research support fund<br>Zagazig University hospitals labs, centers and departments<br>Donations for faculty's current account<br>College funding and researchers | 2014-2018 |

**GOAL 2:-**

Conduct tailored clinical researches to reach good diagnosis, successful lines of treatment and effective rehabilitation programmes

**Major Objectives:**

- To improve diagnostic techniques used in cases of drug dependence in

Zagazig University Hospital.

- To apply recent and evidence based management modalities with better efficacy and less side effects.
- To produce and disseminate high quality, evidence-based up-to-date drug dependence clinical and rehabilitation practice guidelines.

| Main Researches & Activities  | Responsible Team/Person  | KPI   | Resources   | Time line   |
|---|--|---|---|---|
| <p><b>Studies concerning management modalities</b></p> <p>-Reserchs to identify different addicting agents presentations, complications and atypical presentations because of multiplicity of drugs.</p> <p>-Studies to evaluate of effectiveness of different methods of detox therapy, screening methods and confirmatory methods .</p> <p>-Studies to evaluate the effectiveness of different rehabilitation programmes and follow up of addicts .</p> <p>-Construct suitable specialized clinics &amp;hospitals for drug dependence management</p> <p>-Applied research by Scientific papers and thesis To apply recent and evidence based management</p> | <p>Toxicology team</p> <p>Toxicology clinical and laboratory team</p> <p>Psychiatric medicine team</p> <p>All participants</p> | <p>Ending 3 researches in this field every year</p> <p>Ending 3 researches in this field every</p> <p>Ending 3 researches in this field every</p> <p>Ending 3 researches in this field every</p> <p>Ending 3 researches in this field</p> | <p>Scientific research support fund</p> <p>Zagazig University hospitals labs, centers and departments</p> <p>Donations for faculty's current account</p> <p>College funding and researchers</p> | <p>2014-2018</p> <p>2014-2018</p> <p>2014-2018</p> <p>2014-2018</p> |

|  |   |            |  |               |
|--|---|------------|--|---------------|
| modalities with no or less side effects. | departments<br>teams<br><br>Toxicology team<br>and Psychiatric<br>medicine team | every year |  | 2014-<br>2018 |
|--|---|------------|--|---------------|

**GOAL 3:**

Conduct tailored experimental research using nanotechnology and stem cell to improve management of drug dependence.

**Major Objectives:**

- To investigate alternative and new drugs for treatment and protection against different addicting drugs.
- To investigate role of stem cell therapy and nanotechnology in management of drug dependence

| <b>Main Researches &amp; Activities</b>                                  | <b>Responsible Team/Person</b>     | <b>KPI</b>                        | <b>Resources</b>            | <b>Time line</b> |
|--|------------------------------------|-----------------------------------|-----------------------------|------------------|
| -Conducting research studies, thesis and papers for Evaluating the toxic | All participants departments teams | Ending 3 researches in this field | Scientific research support | 2014-2018        |

|  |                     |   |   |  |
|--|---------------------|---|---|--|
| <p>effects of the most commonly encountered drugs of dependence.</p> <p>-Searching new drugs of treatment with evaluation of their effects on decreasing addictive properties and their side effects.</p> <p>-Searching the role of stem cell therapy and nanotechnology in management of drug dependence</p> <p>-Joint supervision</p> <p>- Networking and partnership with National International institution in Nano technology and stem cells.</p> | <p>Biochemistry</p> | <p>every year</p> <p>Identify the prestigious Network.</p> <p>Partnership with 2 institutes.</p> <p>Joint supervision</p> | <p>fund</p> <p>Zagazig University hospitals labs, centers and department</p> <p>S</p> <p>Donations for faculty's current account</p> <p>College funding and researchers</p> |  |
|--|---------------------|---|---|--|

## **Nanotechnology Research Strategy Action plan ( 2014-2018)**

1. Dr Mahmoud noumier: Professor of Clinical Toxicology (Coordinator)
2. Dr Yara El-Fakharany : Lecturer of Clinical toxicology
3. Dr Liala Sabik: Professor of Clinical Toxicology
4. Dr Omaima Ibrahim Lecturer of Clinical toxicology.
5. Dr Seham Mahrous Professor of Clinical Pathology

**GOAL 1:-** Create a scientific basis to ensure the safe and responsible development of engineered nanoparticles and nanotechnology-based materials and products of medical importance Major

**Objectives:**

1- To develop the required infrastructure needed for medical nanotechnology and stem cell research during 2014-2016

2- To establish awareness of stakeholders in the different departments of the faculty to the different applications of nanotechnology.

| Main Researches & Activities  | Responsible Team/Person   | KPI   | Resources   | Time line |
|---|---|---|---|-----------|
| 1.1.1 Establishing Nanotechnology research unit in the Zagazig Scientific Medical & research center (ZSMRC) – faculty of medicine | Head of nanotechnology research project<br>Nanotechnology research team | Fulfilling of equipments, methods, man power, chemicals<br><br>Within the 1 <sup>st</sup> 6m  | - STDF Project Programme Grant<br>- The governorate funding | 2014-2016 |
| 1.1.2 Develop equipment , chemicals and team needed for the nanotechnology research project                                       | Nanotechnology research team<br>- Members involved in the research work | -Insure the availability of national guidelines within the 1 <sup>st</sup> 3m   | - University funding<br>-National banks<br>-Businessmen     |           |
| 1.1.3 Collect national & international guidelines about different methods & protocols of nano-research.                           | Nanotechnology research team  | -Insure the international Guidelines within the 2 <sup>nd</sup> 3m in the lab for application<br>-Write half annual reports about the steps done & others needed standard operation | -University funding<br>-Business men                        | 2014-2015 |
|   | Nanotechnology team , involved departments,                             |   | -University   |           |

|   |   |   |   |             |
|---|---|---|---|-------------|
| <p>1.1.4 collection of data about regulatory measures used in other nanotechnology units nationally &amp; internationally</p> <p>1.1.5 Formulate shared guidelines including the commonly used regulatory measures</p> <p>1.1.6 Formulate a unique and scientifically based regulatory measures specific for the nanotechnology unit-faculty of medicine- Zagazig University</p> <p>1.2.1 workshop to staff members, researchers and students</p> <p>1.2.2. Training courses for the nanotechnology team , researchers on the nanotechnology research protocols, methods in co-operation with other nanotechnology units in Egypt</p> | <p>administrative sectors</p> <p>Head of the nanotechnology &amp; Nanotechnology team</p> | <p>procedure manual (SOP)available in the lab</p> <p>2 workshops in the 1<sup>st</sup> 6 m</p> <p>2 workshops in the 2<sup>nd</sup> 6 m</p> <p>2 training courses /year</p> | <p>fund Pharmaceutical companies -Commercial labs - researchers</p> | <p>2014</p> |
|---|---|---|---|-------------|

**GOAL 2:-** Implementation of nanotechnology and stem cell in scientific research & learning curricula

**Objectives**

1- To prepare 30 modern research theses & papers aiming at establishing and

investigating nanotechnology use in medical aspects.

2- To develop under graduate curricula for medical students about the basics of nanotechnology and its applications by the end of 2016 .

| Main Researches & Activities  | Responsible Team/Person  | KPI  | Resources   | Time line |
|---|--|--|---|-----------|
| 2.1.1 Conducting research studies for development of new drug delivery system and using nanofilters for creating impurity free drugs using nanotechnology | -Epidemiology<br>-clinical toxicology,<br>-pharmacology<br>Depts<br><br>- nanotechnology team<br><br>Epidemiology, Oncology, pathology, pharmacology, toxicology departments & nanotechnology team | Ending 5 researches in new drug delivery system<br><br>Ending 5 researches in nanofilters uses<br><br>Concluding 5 researches in usage of nanoparticles in treatment of cancer | -University funding,<br><br>pharmaceutical companies,<br><br>STDF<br><br>University funding ,donations<br><br>Pharmaceutical companies, businessmen | 2015-2018 |
| 2.1.2 Conducting research studies to use nanoparticles in treatment of cancer   | Epidemiology ,Internal Medicine, Pediatric colleagues & nanotechnology team  | Ending 5 researches in new therapies of diabetes   | University funding ,<br><br>drug companies and charity organizations<br><br>Pharmaceutical companies<br><br>Businessmen                             |           |
| 2.1.3 Conducting research studies   | Epidemiology   | Ending 10 researches in nanotoxicology   | Industrial companies<br><br>Environmental   |           |

|   |  |   |  |                  |
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| <p>to use nanoparticles in discovering new therapies for diabetes</p> <p>2.1.4 Conducting research studies to investigate human risks &amp; the toxic hazards of nanotechnology &amp; nanomaterials</p> | <p>Clinical toxicology</p> <p>Occupational health nanotechnology team</p> <p>Medical education unit, nanotechnology team</p>                               | <p>Formulate the content</p> <p>Completing the ILO's</p> <p>completing the course &amp; program</p> <p>Getting the approval</p> | <p>associations</p> <p>College funding</p> | <p>2015-2016</p> |
| <p>2.2.1. define the content of undergraduate curricula about the basics of nanotechnology</p> <p>2.2.2. Identify the intended learning outcomes (ILO'S) of the course</p>                              | <p>Medical education unit</p> <p>-Educational &amp; Students affairs committee,</p> <p>- faculty council</p> <p>responsible departments</p> <p>Medical</p> | <p>Real implementation of the nanotechnology curricula in undergraduate program</p>   |  | <p>2016</p>      |



stakeholders.

| <b>Main Researches &amp; Activities</b>  | <b>Responsible Team/Person</b>  | <b>KPI</b>  | <b>Resources</b>                             | <b>Time line</b> |
|--|---|---|--|------------------|
| 3.1 .1 hold meetings to identify knowledge gaps , research strategies & results in nanotechnology research work  | Supervisors of the research and Research team                           | Exchange the obtained data & results nationally and internationally   | University & College funding and researchers | 2014-2016        |
| 3.1.2 hold meetings to communicate results to researcher &stakeholders   | Research team, involved departments in nanotechnology research projects | Discussion of obtained results in meeting and formulate it to be applicable.                                    | College funding                              | 2014-2018        |
| 3.1.3. questionnaires about the expectations, achievements & difficulties concerning the nanotechnology research | Research team , involved researchers , ZSMRC                            | Data collection and analysis of questionnaires result with recommendations                                      | University &College funding                  |                  |
|  |   | Declaring progression points, activities & results to target people and researchers and *dealing with pitfalls. | College funding , pharmacy companies         |                  |
|  |   | Mutual  |  |                  |

|   |  |   |  |                  |
|---|--|---|--|------------------|
| <p>3.1.4 quarter annual reports about the progression , pitfalls , activities&amp; results of the research work</p> | <p>Nanotechnology team, involved departments in nanotechnology research projects</p> | <p>experiences in the area of nanotechnology through talks and researches of different national units concerned with nanotechnology in conferences and *construct the recommendations from the displayed works(different researches ) in the closing session</p>    | <p>University &amp; college fund<br/>Pharmacy companies, business men, ZSMRC</p> | <p>2014-2018</p> |
| <p>3.1.5 Holding national conferences</p>   |  | <p>Participation of all national and most international units concerned with nanotechnology</p> <p>Weigh of participants and importance of scientific subjects, results and recommendations.</p> <p>finalize researches and declare results and recommendations</p> | <p>Businessmen<br/>-Pharmacy companies<br/>Governorate fund</p>                  | <p>2016-2018</p> |

|   |   |   |  |                              |
|---|---|---|--|------------------------------|
| <p>3.1.6 Holding international symposium every 2 years</p>                                  | <p>Nanotoxicology team and other departments</p> <p>Nanotoxicology team</p> <p>Clinical toxicology</p> <p>Occupational health</p> | <p>Hold 2 conferences</p> <p>Print &amp; distribute 50 brochures &amp; booklets</p> | <p>Governorate fund</p> <p>Environmental protection societies</p> <p>- Egyptian society of clinical toxicology</p> <p>- Pharmacy companies</p> | <p>2017-2018</p> <p>2018</p> |
| <p>3.2.1. awareness of stakeholders in industry by these recommendations through media,</p> |   |   |  |                              |

|   |  |  |  |  |
|---|--|--|--|--|
| <p>brochures, lectures,<br/>meetings,<br/>conferences</p>   |  |  |  |  |
| <p>3.2.2. awareness of<br/>stakeholders in<br/>ministry of<br/>environment &amp;<br/>environmental<br/>protection societies<br/>with the<br/>recommendations<br/>concerning the<br/>environmental<br/>impact of<br/>nanotechnology and<br/>how to deal with<br/>through media,<br/>brochures, lectures,<br/>meetings,<br/>conferences</p> |  |  |  |  |

## **Financial source for research plan support:**

The scientific research gets annual budget from the University's general budget, which is still not enough for scientific research support. So, our faculty exerted efforts to strengthen the expenditure on the scientific research which included:

- PCIQA project added more than 5 million LE for scientific research development from 2010 to 2012.
- The blood disease laboratory development project: from 2013 till now
- Getting 36 funded research projects from Zagazig University since 2009 till 2013. Their fund was estimated to be about 1,260000 LE.
- The construction of the scientific and applied research center. its budget till now about 1,500000 LE.
- The poison control center. About 700000 LE are added to it and it is under construction.
- Malyzian program contribution for development of the faculty's scientific laboratories which is estimated to be 8,000000 LE from 2012 to 2014.
- Allocation of 5% of the income of the faculty's specialized units which is approved by the University council in March 2014.
- Presence of an account number for Scientific research Support Fund. About 100000 LE are added to it from CIQAP project in February 2014.
- Financial support for the faculty members for international conferences' attendance which is increases annually.

## **Monitoring and Evaluation**

The plan will be regularly evaluated against the selected Key Performance Indicators(KPI).Also it shall be checked and assessed on yearly basis to modify it according to the new situations.There will be internal assessment team in each department and the strategic plan of all the departments will be monitored by the ZMRC of the Faculty and the assessment directions will consider the following :

- 1) Built in KPI
- 2) % of National and International Publications.
- 3) How many research projects started in the specified fields?
- 4) How many multidisciplinary research projects?
- 5) Percentage of staff involved in research projects?

- 6) How many projects are our students involved in and what was their role?
- 7) Are the research projects running according to the scheduled time?
- 8) What are the primary results?
- 9) Ongoing peer networking shall be adopted to ensure smooth implementation and feedback.

## **Strategic Communication Plan**

This plan will be engaged in valuable peer networking and shall be communicated to stakeholders through many channels:

- Faculty board and ZMRC to be launched and adopted officially.
- All head of department to be officially implemented.
- Workshops, meeting to orient staff and getting ongoing feed back and updating.
- Websites, Posters , etc..