

# Country report Malta – April 2015



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Prepared for the EACPR "Country of the Month" initiative

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**Health care | Risk factors| Prevention methods| Prevention activities| Cardiac rehabilitation| Future**

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## I. Structure of Health care in Malta

The Republic of Malta (1) is an archipelago in the centre of the Mediterranean covering 316 km<sup>2</sup>. With a population of 425,384 and a population density of 1,346 residents per square kilometre, it is the most densely populated country in the European Union.

Public primary health care is delivered by general practitioners working in nine Health Centres and also by general practitioners working in private practice. Although primary health care public services are free at the point-of-care and readily accessible, two-thirds of primary health care is delivered by the private sector as it is more convenient to use and offers better continuity of care. There are 100 family practitioners per 100,000 individuals providing advice on primary prevention and acting as gatekeepers to further care.

Secondary and Tertiary health care are delivered from the acute general university hospital, an oncology centre, a dermatology centre and a geriatric/rehabilitation hospital. A district general hospital delivers care on the sister island of Gozo (population: 30,000 people). Specialist outreach clinics are increasingly being provided from the community-based Health Centres. A number of small private clinics and hospitals operate independently.

There are 3 cardiologists per 100,000 inhabitants, providing a comprehensive array of cardiac services including coronary interventions, device implantations and structural procedures offered free of charge at the public general hospital. Procedures and investigations that cannot be delivered due to lack of throughput sufficient to maintain expertise, or equipment such as ablation procedures and myomectomy procedures are performed overseas (mainly in the United Kingdom, within the framework of a bilateral agreement).

Total health expenditure as a percentage of gross domestic product (GDP) was 8.7% in 2012 and 9.1% in 2013, below the EU average of 9.6%. One third is private spending (2.9% of GDP, compared to 2.3 % in the EU) while public spending accounts for 5.6% of GDP, below the EU average of 7.3%.

The Public Health System is funded through general taxation and coverage is universal irrespective of contributions paid. Funding covers the cost of consultations, hospitalisations, diagnostic work-up, cardiac rehabilitation and an extensive list of chronic condition medications. Cardiovascular prevention and the resources required such as risk factor testing are available free at public points of care, or facilitated within the private sector since laboratory testing for common risk factors is provided free of charge.

## References

- 1) [Malta in Figures 2014.National Statistics Office](#) (pdf)
- 2) [Health at a Glance 2014.OECD](#) (pdf)
- 3) [Azzopardi Muscat N, Calleja N, Calleja A, Cylus J. Health System Review. Health Sytems in Transition. 2014.](#)
- 4) Department of Health Information and Research. European Health Interview Survey 2008.

## II. Mortality and Risk factor statistics

### CVD Mortality

Life expectancy at birth in 2013 was 78.9 years for males and 83.2 years for females with a median age at death for males of 76 years and 82 years for females. 40.1% of deaths were due to diseases of the circulatory system, including ischaemic heart disease (21.8%), cerebrovascular disease (8.5%) and other heart diseases including heart failure (7.2%).

The age standardised death rate (SDR) from these causes (European Standard Population as reported by WHO) was 189/100,000 translating into a new age standardised mortality rate (European Standard Population developed by Eurostat) of 404/100,000. In 2012, Healthy Life years (HLY) at birth was over 70 years; within the EU it was the highest for Malta and Sweden (7). Men can expect to live more than 90% of their life expectancy without limitations and women over 85%.

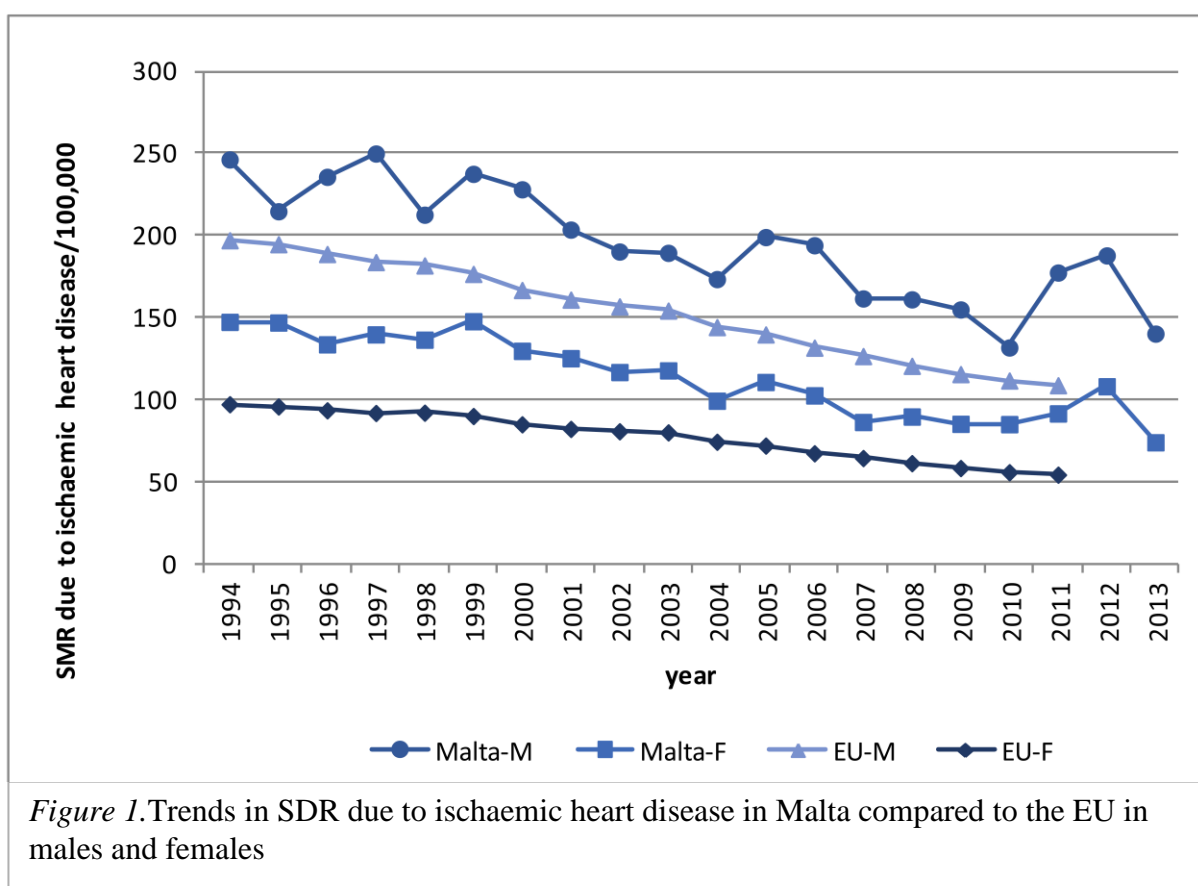


Figure 1. Trends in SDR due to ischaemic heart disease in Malta compared to the EU in males and females

Source: [WHO/Europe-Health for all Database \(HFA-DB\)](#); reproduced from the National Mortality Registry 2013, [Directorate for Health Information and Research](#).(pdf)

### PCI resources

There are two catheterisation centres in the public sector, and one private centre. In 2014, 2,600 catheterisation studies were performed (577/100,000) with 870 percutaneous coronary intervention (PCIs) (193/100,000); of which 225 were Primary PCIs.

## **Main CVD risk factors**

### *Smoking*

Daily smokers reduced from 23.2% (2002) to 20% (2008), the 5th lowest in Europe (men 3.6%, women 15.8%). Second-hand smoke exposure was estimated to be 24.2% at home and 28% in public places and at the workplace (EHIS 2008).

### *Alcohol*

Alcohol consumption was 7.3 Litres per capita. Weekly binge drinking (>6 units) doubled to 13.5% between 2002 and 2008; with monthly binge drinking tripling to 13%, mainly in youths. School-aged students self-reported consuming 5 or more drinks in the previous month-the third highest in Europe.

### *Physical activity*

The lowest levels of daily physical activity recorded within the EU, with 56.5% reporting low level of physical exertion (in 2008). However, respondents reporting moderate physical activity doubled from 7.1% in 2002 to 16.6% in 2008. (EHIS 2008)

### *Diet*

47% of the population add salt regularly when cooking, with 24% always adding salt at table. Salt usage was not significantly associated with education. Three quarters of the population report consuming fruits at least daily, while half of the population report consuming vegetables daily.

### *Childhood Obesity is growing (3)*

At 5-6 years, 10.4% of boys were obese and 15.3% were overweight, whilst 9.7% of girls were obese and 18% were overweight (using International Obesity Task Force criteria).

### *Adult Obesity*

28% of females and 29.6% of males are obese, whilst 26.9% of females and 47.2% of males are overweight. Malta has the highest obesity amongst EU adult males and the third highest rate amongst EU females.

### *Hypercholesterolaemia*

Since 1984, the prevalence of hypercholesterolemia has decreased. In 2010, 40% had a total cholesterol level of between 5.00 and 6.18 mmol/L whilst 22% had levels greater than 6.18 mmol/L.

### *Hypertension*

The prevalence of stage 1 hypertension (systolic  $\geq 140$ -159 mmHg or diastolic  $\geq 90$ -99 mmHg) is 23.5% and a further 8.5% have stage 2 hypertension (systolic  $\leq 160$  mmHg or diastolic  $\leq 100$  mmHg).

### *Diabetes*

The prevalence rate amongst the population aged 20-79 years is 10.1% with a higher rate in women (10.7%) than men (9%). When comparing the estimates for the 27 EU

member states Malta ranks 8th highest with an estimated national prevalence for those aged 20 to 79 of 9.8%.

<b>RISK FACTOR</b>	<b>Male (%)</b>	<b>Female (%)</b>	<b>Comments</b>
<b>OVERWEIGHT: ADULTS</b>			Age 25-64 years
<b>Overweight (BMI: 25.00-29.99% )</b>	47.2	26.9	EHES 2010
<b>Obese (BMI: &gt;30%)</b>	29.6	28.0	EHES 2010
<b>OVERWEIGHT: CHILDREN</b>			Age 5-6 years
<b>BMI: Overweight</b>	15.3	18	IOTF Ranges: Boys: BMI 17.55-19.77 Girls: BMI 17.34-19.64 Grech V, Farrugia Sant'Angelo V, 2009
<b>Obese BMI: &gt;30/</b>	10.4	9.7	IOTF Ranges: Boys: BMI > 19.77 Girls: BMI > 19.65 Grech V, Farrugia Sant'Angelo V, 2009
<b>BLOOD PRESSURE</b>			Age 25-64 years
<b>Normal Blood pressure</b>	66.9	68.7	EHES 2010
<b>Stage 1 hypertension (%)</b>	30.8	16.3	EHES 2010
<b>Stage 2 hypertension (%)</b>	2.3	15.1	EHES 2010
<b>DYSLIPIDAEMIA</b>			Age 25-64 years
<b>Total serum cholesterol 5-6.18mmol/L</b>	39.1	41.4	EHES 2010
<b>Total serum cholesterol &gt;6.18mmol/L</b>	29.7	14.7	EHES 2010
<b>DIABETES</b>	9	10.7	Age >18years EHES 2010

Sources:

- 1) [Directorate for Health Information and Research. National Mortality Registry. 2013](#)
- 2) EHIS 2008: Directorate for Health Information and Research. European Health Interview Survey 2008. Summary Statistics, Lifestyle Report
- 3) [Grech V, Farrugia Sant'Angelo V. Body mass index estimation in a school-entry aged cohort in Malta. \*Int J Pediatr Obes \[Internet\]\*. 2009 Jan](#)
- 4) EHES 2010: Directorate for Health Information and Research.
- 5) The European Health Examination Survey Pilot Study. 2010 (EHES)
- 6) [Directorate for Health Promotion and Disease Prevention. Food and Nutrition Policy and Action Plan for Malta. 2015.](#) (pdf)
- 7) [Health at a Glance 2014. OECD](#) (pdf)

## III. Main actors and Prevention methods

### Who Delivers?

The main stakeholders are

- Central direction: The Ministry of Health – Director General Health, Department of Health Promotion and Disease Prevention
- Primary Health Care
- Secondary Care: Mater Dei University Hospital and other Hospitals, including the private sector
- Maltese Cardiac Society
- The General Public

### Primary Care

General practitioners (GPs) form the front line for primary prevention-but 'the relatively limited numbers of GPs per capita results in bottlenecks in the provision of primary care services' (1). Preventive efforts are not coordinated and have to be sought by the individual. In 2011, 45% of GPs perceived workload and time constraints (2) to be the main barriers to preventive care, as well as having difficulty regarding which guidelines they should follow. To date, there is no structured program to ensure health checks by the general practitioner for the at-risk individual. GPs work with Consultant Physicians based in the multidisciplinary health centres, where the main focus is on the prevention of cardiovascular disease. Chronic Disease Management Clinics and Chronic Kidney Disease Prevention clinics have recently been established, as well as Nurse-based Lifestyle clinics providing motivational interviewing and guidance.

National strategic plans have directed public investment into e-health, including online laboratory results and hospital discharge summaries, as well as digital image archiving (PACS) systems over the last few years. As a result, primary and secondary care providers can access patient information, facilitating preventive care. Access is also available to patients and private practitioners via [MyHealth](#), the national portal for online access to health records, once authorisation by the patient is provided using an electronic ID. Although this does not include medical notes, such e-health modalities have already enhanced communication and care across the primary-secondary care interface.

### Secondary Care

Secondary care focuses on diagnostics and therapeutics, including the provision of secondary and tertiary prevention. In 2014, 2,600 catheterisations were performed (577/100,000) with 870 percutaneous interventions (PCIs) (193/100,000) of which 225 were Primary PCI. 188 patients underwent Coronary artery bypass grafting (47/100,000). A minority of in-patients are managed in the private sector. In 2014, the Cardiology Department at Mater Dei Hospital hosted the annual meeting of the Maltese Cardiac Society, with the theme of preventive care.

Private clinics and hospitals frequently mount public campaigns targeting cardiovascular risk, raising awareness. Patients have become more pro-active and increasingly seek check-ups, particularly in the context of a positive family history.

## Guidance

European guidelines are used as the basis for contextual adaptation—for example, the ESC Hypertension guidelines (3) were used as the starting point in formulating local adaptation, whilst also drawing on other recently published guidelines. In 2011, the Health Department recommended that [HeartScore®](#) be used as the reference for access to free point-of-care treatment for dyslipidaemia. As from this year, selected general practitioners have been empowered to provide access to free treatment for hypertension - based on the guidelines on hypertension. Prescription practices will be audited, providing quality control.

## Quality Control

Various reports contain information relevant to cardiovascular risk including the Annual Mortality Report (4), Hospital statistics from the National Hospital Information System database, Surveys including the European Health Interview Survey 2008 (5), European Health Examination (6) Pilot Study (Malta) 2010; Malta Health System Review 2014 (1). Audits have also been carried out by individual practitioners.

The European Health Interview Survey (2008) revealed that 80% or more of those over 45 years had checked their blood pressure in the previous 12 months. 66% or more of those over 15 years had checked their cholesterol levels within the last 12 months, rising to 80% of 65-74 year olds. Two thirds had checked their blood glucose at least once in their lifetime, and of these 74% had checked their glucose levels within the last year, rising to 81% of those aged 65-74years.

In the Health Examination Survey: Pilot study (2010), comparisons were made with the anthropometric data gathered in the (Malta) MONICA study (1984); this showed a substantial downward shift in the prevalence of high cholesterol. In 1984 78% had a cholesterol level over 5mmol/l, with 48% of the population having a total cholesterol over 6.18mmol/l (high). This reduced to 22.5% in 2010. Those within the desirable range also increased from 21.9% to 37.3%. However, the EHES 2010 still showed that 60% of over 18 year olds had an elevated total cholesterol level. In this population, 57.6% had LDL levels of 3.34mmol/l or less (defined then as 'optimal', based on the American Heart Association), whilst 11.3% were within the 'High' range (4.13-4.9mmol/l) and 1.6% in the 'Very High' range of >4.9mmol/l.

A comparison of measured blood pressure from 1984 to 2010 in 25 to 64 year olds (MONICA and EHES) revealed that 48% of the population had an elevated blood pressure reading in 1984, reducing by 15% in 2010, with a considerable reduction in stage 2 hypertension in males. The proportion with normal blood pressure (<140mmHg systolic AND <90mmHg diastolic) increased from 52.2% (1984) to 67.9% (2010); Stage 1 Hypertension reduced from 31.8% (1984) to 23.5% (2010) and Stage 2 Hypertension from 16% (1984) to 8.5% (2010). There were no gender differences in 1984; the 2010 data revealed a drop in Stage 2 hypertension in men of 13%-with only a 1% drop in women. In Stage 1 Hypertension, the reverse occurred, with a drop of 14% in women, and only 1% in men. Overall, there was a reduction in blood pressure, with a considerable reduction in male Stage 2 hypertension.

Of those on antihypertensive medication, 50.8% were not well-controlled, with 61.8% of women and 37.8% of men above the normal range.

In EHES 2010, the prevalence of elevated blood glucose rose from 12.2% of those aged 41-60 years, rising to 21.6% of those over 60 years. Diabetes prevalence for those over 18 years was 9.8% (10.7% of women and 9.8% of men). There was an underestimation of 5% found on comparing self-reported prevalence in the EHIS 2008 as compared to the measured blood glucose in the EHES 2010. 57.1% of diabetics over 18 years old had an HbA1c level higher than 6.5%; with 62% of women and 53% of men exceeding this level.

### References:

- 1) [Health System Review, Healthcare Systems in Transition](#): Malta (pdf)  
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WHO Regional Office for Europe
- 2) [The attitudes, knowledge and practices of Maltese family doctors in disease prevention and health promotion](#)  
Lynn Pace, Mario R, Sammut, Charmaine Gauci  
Malta Medical Journal, Volume 26 Issue 04, 2014
- 3) [Management of Arterial Hypertension, ESC Clinical Practice Guidelines](#)  
European Heart Journal: 34; 2159–2219
- 4) [National Mortality Registry](#), Department of Health Information and Research  
2013
- 5) [European Health Interview Survey 2008](#)
- 6) [European Health Examination Survey](#)



## IV. Main Prevention activities

### Central Direction and Campaigns

The Strategy for the prevention and Control of non-communicable diseases (NCDs) in Malta was published in 2010 (1), under the aegis of the WHO, with widespread publicity on national TV and newspapers. This targets risk factors (diet, physical activity, tobacco and alcohol, obesity, hypertension and hyperlipidaemia and carbohydrate abnormalities) common to multiple NCDs and high risk groups, targeting at-risk individuals and population risk reduction by controlling social determinants. It empowers users and health care providers to use primary health services more effectively through the development of a health information system and effective health promotion initiatives.

The Healthy Eating Lifestyle Plan (2007) (HELP) (2) lists permissible and prohibited food and drinks in the school environment. The Healthy Weight for Life Strategy: A National Strategy for Malta (2012-2020) (3) promotes healthy eating amongst adults. The strategy focuses on consumer education in order to improve food choices made by consumers and thereby increasing fruit and vegetable intake as recommended in Malta's National Cancer Plan 2011–2015 (4). The Healthy Weight for Life Strategy for Malta (3) highlighted the use of economic instruments and regulations to reverse the global obesity epidemic in the short term, without harming or disadvantaging communities.

The targeted policies have been successful in reducing high serum cholesterol; this may be due to specific legislation and policies introduced around 20 years ago regarding entitlement to free cholesterol medication (5).

Legislation has been an important factor in implementing change, with Malta being one of the first countries to implement a smoking ban in all public buildings in 2013 which has led to consistent decline in smoking prevalence. In 2011, binge drinking was targeted through restrictions reducing access to lower priced alcohol, and its consumption in specified areas, with concurrent awareness campaigns.

Malta is also a signatory to the Vienna Declaration (2013) and the European Charter on Counteracting Obesity (2006) which place special emphasis on subsidies, reformulation and marketing restrictions.

A number of research studies have been commenced to have a better understanding of the situation. Elaborate National health interview surveys having been carried out in 2002 and in 2008, while another one is being carried out in 2014/5. In addition, a food and nutrition survey is being launched during 2015 in order to build a macronutrient profile of the Maltese population.

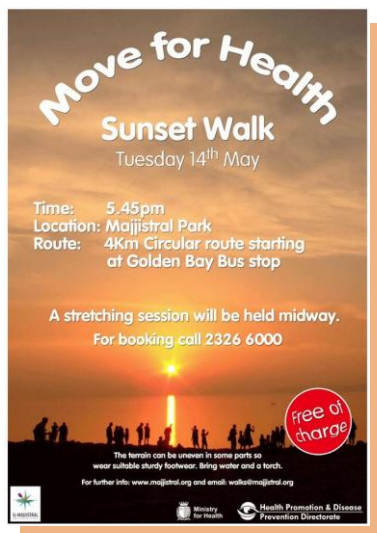
### Health Promotion Campaigns

The Department of Health Promotion and Prevention is a very strong advocate for lifestyle changes. Its main targets are smoking cessation, healthy diet, physical activity and obesity. Smoking is tackled through 'Quitline' (a telephone based smoking cessation service) and regular intensive support smoking cessation clinics in the community. The latter are in the format of group sessions with a 6 week duration. The smoking cessation unit also trains personal and social development (PSD) teachers in effective teaching

practices addressing smoking harms with students. The Department of Health Promotion visits workplaces and provides employee sessions over 6 weeks. “Quit smoking and win” campaigns are regularly held in conjunction with the commencement of new smoking cessation classes. In 2008, a campaign targeting girls aged between 13 and 16 was developed.

The department offers overweight and obese individuals assistance through community-based group, weight reduction clinics and aerobic classes. Individual counselling is also available.

The Health Promotion Department runs numerous campaigns targeting a reduction in salt intake, higher consumption of fruit and vegetables and reduced fat intake. The Department also provides toolkits and educational materials for individuals and institutions targeting various risk factors to assist frontline practitioners. It promotes various campaigns targeting childhood obesity and sedentary lifestyle such as [free bowling during summertime](#) (6), and the ‘Walking Bus’ campaign. Through an EU co-funded project, it offers a weekly portion of fruit or vegetables to eligible schoolchildren aged between 3-10 years. It promotes guided walks and treks of various difficulties [in scenic areas](#).



## Education

The Medical School was established in 1676; 750 medical students are enrolled; and prevention is included in the curriculum, with the [ESC guidelines](#) featuring prominently. The Maltese Cardiac Society also promotes ESC guidelines, including those on [prevention](#), through regular clinical updates. The guidelines also feature prominently during its annual meeting which attracts a large multidisciplinary audience. European guidelines serve as the basis for the development of contextual hospital guidelines. Prevention of cardiovascular disease was the main theme of the 2014 annual meeting of the Maltese Cardiac Society, which enjoyed excellent international keynote speakers in its accredited programme. The Maltese Cardiac Society raises public awareness, through outreach programs such as especially on World Heart Day, in collaboration with the Malta Medical Students’ Association. Nurses participate in prevention activities, running lifestyle clinics which are expanding in the health service.

## References:

- 1) [A Strategy for the Prevention and Control of Noncommunicable Disease in Malta](#)  
WHO MiNDbank
- 2) [Healthy Eating Lifestyle Plan](#), HELP (pdf)  
Education Division, Malta
- 3) [A Healthy Weight for Life: A National Strategy for Malta](#) (pdf)  
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- 4) The [National Cancer Plan](#) 2011-2015 (pdf)
- 5) [Health System Review, Healthcare Systems in Transition](#):Malta (pdf)  
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- 6) [Eden Leisure's Bowling to fight Child Obesity is a huge success](#)  
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## V. Cardiac rehabilitation

Cardiac rehabilitation is a nurse-led programme provided by a multidisciplinary team including nurses, physiotherapists, nutritionists, dieticians, psychotherapists and consultant cardiologists at the acute general hospital. Its primary focus is rehabilitation after cardiac surgery and myocardial infarction with no pre-specified age limits. The programme is delivered on an out-patient basis in three phases:

- An initial assessment within days of the event
- Group exercise programs and educational sessions over six weeks.
- Blood tests and anthropometric measurements are recorded at the initial assessment, at the end of the program and after one year.

The program is based on the British Association for Cardiovascular prevention and rehabilitation standards and components. In 2007, 200 patients were enrolled, rising to 1,390 last year. Referrals include almost all myocardial infarctions, post PCI, CABG and valve replacements, directly from within cardiac services, which may explain increasing awareness of the service and its rapid uptake. During 2014, 300 invitations were not accepted by the patients; outcomes of the programme are reviewed internally. The public programme is provided free at point-of-care.

The private sector also runs tailor-made rehabilitation programmes, which are used by a small number of patients.

## VI. The Future

### Needs

In spite of a robust reduction, CV mortality is still above the average EU level.

The National Health Systems Strategy for Malta 2015 (1) identifies 'increasing knowledge and understanding of self-care such as self-monitoring for disease control. Special attention will be given to

- Diabetes
- Hypertension
- Encouraging regular and planned health checks and
- Maintaining good health

This will require patient education, better toolkits and skillsets.

### Possibilities

- NCD strategy 2010
- The new Tobacco Directive 2014/40/EU will assist anti-smoking efforts.
- Food and Nutrition Action Plan for 2015-2020: [Dietary change](#) through a collaborative inter-sectoral policy, adopting a life course approach to improve the local environment making healthy choices easier.
- [Bill to reduce obesity](#) (pdf, Maltese and English)
- Public Health priorities including [diabetes](#)
- Resource limitations: e.g. plans to increase the number of nutritionists
- Technological development-leveraging online resources for public engagement and change.

**Obstacles** (to a certain extent a paradigm shift will be required).

- Cultural attitudes including food choices and sedentariness provide strong obstacles to risk reduction.
- Inadequate skillsets and human resources
- Demographic and social changes (2): Ageing population with a total fertility rate of 1.43 in 2012 (EU average 1.56) and a demographic old-age dependency ratio of 25.8% in 2013, which is set to rise to 33.2% in 2020 - meaning a decrease from four working age people per person over 65, to three in less than a decade. In recent years Malta has faced inward migratory flows from North Africa-often undocumented - and EU migrants, all of whom are entitled to free healthcare. The stream of refugees across the Mediterranean is mostly young men - who may also represent an opportunity in an ageing population. (To date there is no discernible impact on cardiovascular disease or its prevention).

### Plans

System plans are laid out in the various strategies targeting smoking, diet, obesity, diabetes and changing the environment. Many of these have public support that will facilitate their adherence.

Multidisciplinary Clinics will be established whose main function will be health checks prevention, screening and diagnosis, supported by continued professional development coordinated from specialist units and services in secondary care.

### **Optimising prevention and rehabilitation efforts**

- Rehabilitation: optimising access and further development for other cardiac conditions, such as heart failure
- Education will be required for this paradigm shift addressing the public, patients and healthcare practitioners to focus on outcomes
- Adaptation to changing population needs will be required, with personalised design and tailoring to develop or identify more effective tools.
- Publicity as education leveraging media and the web
- Collaboration with patients and interested parties to develop synergism e.g. walking clubs, cookery circle using newer technologies

### **References:**

1) [A National Health Systems Strategy for Malta](#) (pdf), 2014-2020

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2) [The 2015 Ageing Report](#), Underlying Assumptions and Projection Methodologies

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