State of ISRAEL
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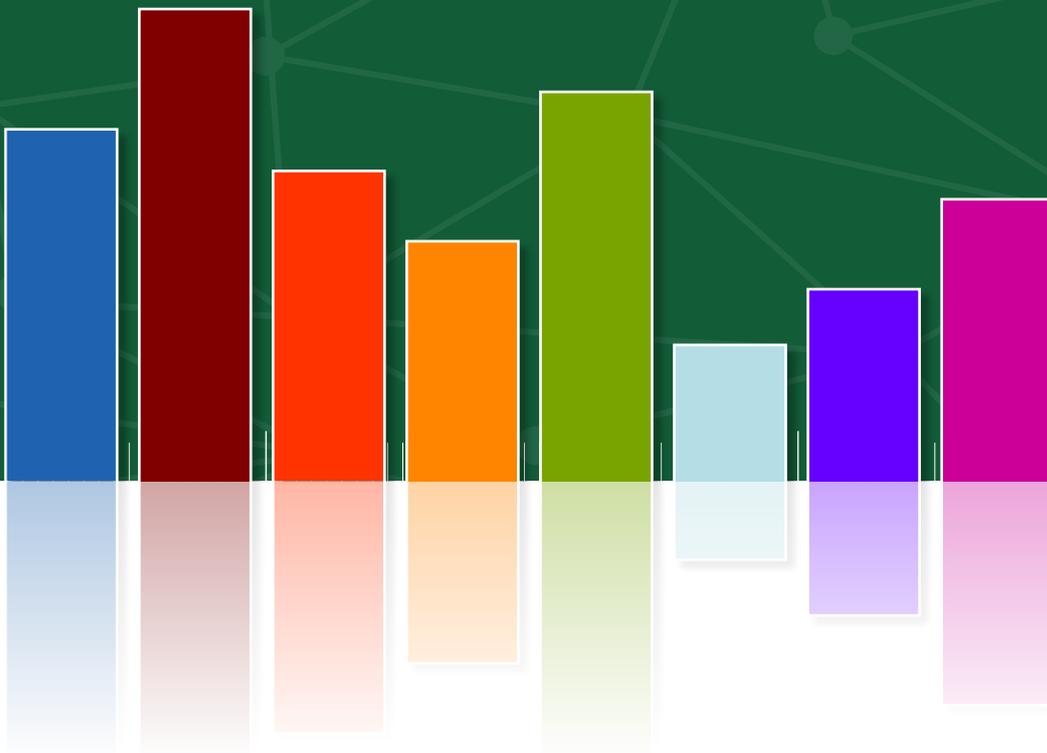Institute for Health
Policy Research

The Health Council

NATIONAL PROGRAM FOR QUALITY INDICATORS IN COMMUNITY HEALTHCARE

English Summary Report
2011-2015

התכנית הלאומית למדדי איכות לרפואת הקהילה בישראל

NATIONAL PROGRAM FOR QUALITY INDICATORS IN COMMUNITY HEALTHCARE

المشروع الوطني لمؤشرات الجودة الطبية للصحة الجماهيرية في إسرائيل

National Program for Quality Indicators in Community Healthcare in Israel

English Summary Report

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Compiled by:

Orly Manor, Weissam Abu Ahmad, Arie Ben-Yehuda, Ehud Horwitz, Yael Wolff-Sagy**,** Ora Paltiel, Vered Kaufman-Shriqui, Ronit Calderon, Michal Krieger, and Amir Shmueli

Program directorate of the National Program for Quality Indicators in Community Healthcare in Israel. Braun School of Public Health and Community Medicine, Hebrew University – Hadassah, Jerusalem

Program Directorate

Professor Orly Manor (QICH Director), Biostatistics, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Mr. Weissam Abu Ahmad, Instructor and Researcher, Statistics and Information Systems, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Professor Arie Ben-Yehuda, Head of Internal Medicine, Hadassah Medical Center, Hebrew University

Dr. Ehud Horwitz, Clinical Pharmacist, Instructor and Researcher, Hadassah Medical Center, Hebrew University

Dr. Yael Wolff-Sagy, Epidemiology and Quality Indicators, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Professor Ora Paltiel, Epidemiologist, Director of the Center for Clinical Epidemiology, Senior Attending – Hematology, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Dr. Vered Kaufman-Shriqui (QICH Deputy Director), Social Epidemiology and Health Promotion, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Professor Ronit Calderon, Epidemiologist – Maternal-Child Health, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Dr. Michal Kriger, Internal Medicine and Infectious Disease, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Professor Amir Shmueli, Health Economy and Health Policy, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Program Staff

Elad Harats, MD-MPH student, Research Assistant, School of Medicine, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Sara Sarafzadeh, Research Assistant, School of Medicine, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Nura Abdel Rahman, Doctoral student, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Aravah Kedar Tirosh, MPH student, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Leah Abrams, Research Assistant, School of Medicine, Braun School of Public Health and Community Medicine, Hebrew University-Hadassah

Partner List

Clalit Health Services

Professor Arnon Cohen	Head of Quality Measurement and Research Department, Chief Physician's Office
Galit Benbnishti	Head of Organizational Business Intelligence
Calanit Kaye	Head of Nursing, Community Medicine
Dr. Doron Komenshter	Epidemiologist, Department of Quality Indicators and Research, Chief Physician's Office
Dr. Mina Rotem	Coordinator of Quality and Risk Management, Community Nursing Department, Community Medicine
Dr. Nicky Lieberman	Head of Community Medicine
Dr. Sari Dotan-Greenberg	Head of Research Information, Research and Information Department, Chief Physician's Office
Dr. Yair Birenbaum	Chief Physician
Elan Feldhamer	Department of Data and Research, Chief Physician's Office
Liat Elnekaveh	Coordinator of Quality Indicators, Department of Quality Indicators and Research, Chief Physician's Office
Professor Margalit Goldfracht*, RIP	Head of Quality Assurance, Community Medicine
Tamara Korman	Organizational Business Intelligence, Computing Department

| Dr. Michal Shani | Department of Quality Indicators and Research, Chief Physician's Office |
| GaliaNiv | Head of the Department for promotion of Quality and Professional Guidance, Senior Head nurse Staff |

* Professor Margalit Goldfracht*, pioneer in the field of healthcare quality in Israel, and an important contributor to the improvements in the quality of community healthcare services in Israel, had passed away at time of the report's production.

Maccabi Health Services

Dr. Einat Elran	Director of Quality Management, Health Division
Dr. Erika Cohen-Yunger	Deputy Director of Quality Management, Health Division
Rachel Marom	Director of Information Services and Quality Assurance, Information Systems and Communication Technology, Department of Data and Teleprocessing
Nesya Gordon	Informatics and Data Infrastructure, Quality Management
Guy Levy	Director of National Quality Indicators, Information Services and Quality Assurance, Information Systems and Communication Technology
Davir Wiznitzer	System Analyst, Business Intelligence Management, Department of Information Systems and Community Technology
Professor Nachman Aish	Health Division Head, Vice CEO

Meuhedet

Liora Valinsky	Director of Clinical Quality
Nurit Choen	Deportment of Business Intelligence
Ruth Eliezer	Director of Business Intelligence
Sarit Katz	Director Medical Systems, Computing and Information Systems
Dr. David Mossinson	Medical Vice CEO

Leumit Health Services

Dr. Eran Matz,	Director of Community Medicine
Nirit Peretz,	Head Business Intelligence
Dr. Doron Dushnitzsky,	Director of Health Systems Development
Professor Shlomo Vinker	Head of Medical Division

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Israel Society for Quality in Health Care

With gratitude for your significant contribution,

The Directorate of the National Program for Quality Indicators in Community Healthcare in Israel

Contents

Foreword

"Efforts to improve quality require efforts to measure it" [1]

The *National Program for Quality Indicators in Community Healthcare in Israel (QICH) Report* is produced in coordination with the four health plans in Israel (*kupot cholim*). The purpose of this report is to evaluate the quality of community-based medical care in Israel, including improvements and modifications to the healthcare system introduced over time, and variations in quality of care between subgroups.

The first program report was published in 2004 for data from 2001-2003. The last program report presented results for the measurement years 2012-2014 [2]. This report presents results of indicators for the measurement years 2011-2015. New indicators results are presented for the years 2013-2015 only.

Quality indicators in this report are derived from data provided by the four health plans in Israel. The QICH program focus on health and wellness and disease management within eight major clinical fields. All data presented in the report underwent internal review, as well as external auditing by an accredited professional.

We hope the information in this report will benefit the general public, healthcare providers, and policy makers.

Introduction

The healthcare system in Israel places great importance on quality. Healthcare quality can be defined as a measure of the extent to which healthcare providers improve the probability of desired health outcomes in accordance with current professional literature [3].

Healthcare quality comprises various elements, including:

- Effectiveness – improving health as a result of treatment

- Safety – preventing harm to patients as a result of faulty treatment

- Timing – beginning treatment at the right time and for the right length of time

- Suitability – consideration of preferences, needs, and patient values

- Efficacy – efficiently using available resources to ensure high quality treatment

- Equality – guaranteeing an equal quality of treatment, unaffected by personal variables such as sex, ethnicity, and socio-economic position.

In 1995, Israel implemented the National Health Insurance (NHI) law providing a standardized basket of medical services to all residents by the four health plans. The need for quality medical care is apparent from the core tenets of the NHI law of "justice, equality, and mutual assistance", in which "healthcare services included in the basket of medical services will be offered based on medical considerations, with reasonable quality, in a reasonable timeframe, and at a reasonable distance from the place of residence of the insured person". The Ministry of Health supervises the implementation of the law and external organizations were established for the purpose of "accompaniment and evaluation of the effect of the NHI law on health services in Israel, as well as their quality, efficiency, and expenditure" (The Health Council and The Israel National Institute for Health Policy and Health Services Research).

The model upon which the law is based is that of "managed competition" between the health plans. Since the basket of services is uniform across all four health plans and the insured do not pay direct dues to the health plan (apart from minimal copayment for the use of certain services), competition between health plans is therefore based on the quality of medical care and the nature of the services offered. Notwithstanding the shortcomings of this market model, as well as issues related to the availability of data, there are regulatory, administrative, and financial barriers that may affect and

impede the provisions for high quality medical care. Studies show that reductions in quality of medical care are a common reaction to budgetary distress.

In light of the above, the need for the assessment of the quality of medical care in Israel became clear. In March 2004, the Ministry of Health inaugurated the National Program for Quality Indicators in Community Healthcare (QICH) in Israel funded by The Israel National Institute for Health Policy Research. The program developed out of a research initiative at Ben-Gurion University headed by Professor Avi Porath and Professor Gadi Rabinowitz, with the help of Dr. Anat Raskin-Segal in conjunction with Israel's four health plans [4]. The cooperation of the health plans with each other and with the program in setting quality indicators, assessing the indicators on a regular basis, and publishing them are noteworthy and are one of the cornerstones of the program's success.

The program aspires to provide the public and policymakers with information regarding the quality of healthcare services supplied by the health plans to strengthen and improve medical care offered to Israeli residents. In order to achieve this goal, the program publishes the results of a national set of quality indicators for community healthcare (herein "indicators"). This assessment enables an evaluation of the development of quality medical care over time and identification of areas that require intervention and improvement – ranging from data collection to care. In addition, the national dataset is used to compare Israel's achievements with those of other countries.

The program has set a high standard for measuring quality. Indicators are carefully chosen by a consensus of representatives from each of Israel's four health plans and are based on national and international guidelines. All processes undergo strict internal and external auditing.

Measuring the quality of care is a complex matter and a current topic of debate both in academia and in practice. Over the last decades, indicators have been developed to assess the quality of community health care in numerous countries [5]. Quality indicators were implemented in the United States [6],Sweden [7], England [8], Australia [9], and in the Organization for Economic Co-operation and Development (OECD) [10].

Measures included in the Israeli program relate to the quality of clinical care as drafted by professional authorities nationally and worldwide, and are rooted in similar established measures from the countries mentioned above.

Indicators were selected based on five criteria:

1. <u>Significance</u> – the indicators reflect the quality of treatment (preventive or active) of common illnesses in clinical fields relevant to community healthcare.
2. Evidence-based – the indicators reflect the quality of treatment of illnesses, in which medical treatment has proven to be effective and contributes to decreasing morbidity.
3. <u>Quantification</u> – the indicators reflect the quality of treatment in clinical fields where both morbidity and the decreasing in morbidity are quantifiable.
4. Feasibility – the indicators reflect the quality of treatment in fields with available and reliable data.

5. <u>Implementation</u> – the indicators can be implemented in the setting of community healthcare.

The set of indicators include two indicator categories:

- Prevalence (e.g. the rate of asthma patients in the general population), used as a denominator for various indicators
- Quality of medical care
  - Prevention and health promotion (e.g. breast cancer screening rates – mammography in the past two years)
  - Treatment (e.g. appropriate treatment rates for asthma patients)
  - Outcome (e.g. rates of diabetics whose HbA1c levels are lower than 7%).

All indicators, except antibiotic usage indicators, are presented as rates – the number of people in a defined group who satisfy specified criteria (e.g. the number of people who received the influenza vaccination among individuals aged 65+ years). The indicators are stratified according to gender, and age (determined by a team of experts), as well as socio-economic position determined by the entitlement to an exemption from copayments for medical services.

Methods

Data Sources

The data presented in the report are based on information from patient's electronic medical records provided by Israel's four health plans. As part of their active and voluntary participation in the QICH program, the health plans provided data for quality indicators for the years 2013–2015 that were then aggregated into the national set. Data for the years 2011-2012 were retrieved from former reports, Data provided by the health plans were anonymous and did not include any personal identifiers, ensuring confidentiality.

Population

The report is based on information, which originated in the computer databases of each health plan, for the insured population in the health plans. Data were missing for a small percentage of the population, about 0.7%, who are not included in this report. Additionally, members with incomplete membership in a given health plan during the study period are not included in the report. This group includes those who switched health plans within each measurement year. In 2015, approximately 190,000 people (1.7% of insured persons in 2015) switched health plans [11]. Soldiers are not included in the report; however, this only affects rates for the age group 18-24 years. Aside from these minor exceptions, the report includes the entirety of Israel's population, approximately 7.86 million people. It is important to note that many indicators assess the quality of care provided by the family physician and data are therefore limited to patients with clinic visits. A recent study by Clalit Health Services has shown, however, that the majority of insured individuals visit their family doctor regularly, with over 90% of insured patients having at least one annual visit and 97% with at least one visit within a five-year period [12].

Collecting and reporting data for the entire insured population in Israel enables the assessment and monitoring of the quality of healthcare for smaller sub-groups, identified by age, gender, and socio-economic position.

Variables

Indicators are presented as rates for the overall population over the five-year measurement period, as well as categorized into relevant sub-groups such as sex, age, and socio-economic position. Socio-economic position is the basis for entitlement to exemption or reduction in the payment of deductibles or copayment for health services. Data provided by the health plans for 2015 indicates that the lower SEP population includes approximately 11.5% of the entire insured population. This rate has been stable over the course of the five years presented in this report. Exemption privileges are determined in paragraph 8 of the NHI law and these criteria are updated periodically. Throughout the measurement period a full or partial exemption is based on a number of criteria, including National Insurance (Bituah Leumi) stipend privileges, such as the pension stipend and dependent's pension, large family stipend, and so forth. For the purpose of this report, individuals exempt or partially exempt are referred to as the "lower SEP" population.

Report Structure

This report is a summary version of the Hebrew report. It includes the following information:

- The rate of each indicator specified for the relevant population for the years 2011-2015. New measures are presented for years 2013-2015 only.
- The summary of the findings by clinical field including main findings by year, age, gender, and socio-economic position.
- International comparisons for seven selected indicators.
- A selection of research abstracts presented in scientific conferences during the years 2014-2016.

The Hebrew report contains additional information including the following chapters: detailed results on new indicators (a list of the new indicators is presented in the following section); topic in focus- cancer: screening and risk factors, with detailed results for the time period from the program initiation and up to 2015; selected results by health plan-seven indicators are presented by health plan after adjusting for gender, age and socio-economic position. In addition, the Hebrew version includes an appendix containing all indicators by health plan stratified by age, gender and socio-economic position. Information available only in Hebrew can be received from QICH directorate upon request.

Work Plan

The preparation of this report included the following stages:

- **Indicators included in the report and indicator specifications**

This report includes most indicators presented in the 2012-2014 report [2] and a number of new indicators. Furthermore, definitions of a number of indicators were updated in order to increase their validity and update them to match the recent evidence.

New indicators: Under the field of health promotion, information on the prevalence of overweight, normal weight or underweight among adults aged 20-64 is included for the first time, in addition to the information on the prevalence of obesity in this age group. Under the field of cancer screening, information on cervical cancer screening is included for the first time. Three new indicators examine proper screening, lack of screening and over-screening for cervical cancer. Under the field of child and adolescent health, information on the prevalence of anemia among infants is included for the first time. Under the field of elderly adults, information on the prevalence of underweight and the rate of adults who experienced a significant weight loss is included for the first time.

Updated indicator: LDL cholesterol target value in the framework of secondary prevention was updated: from a target value of below 100 mg/dL to a target of either a value below 70 mg/dL or high-intensity statin therapy.

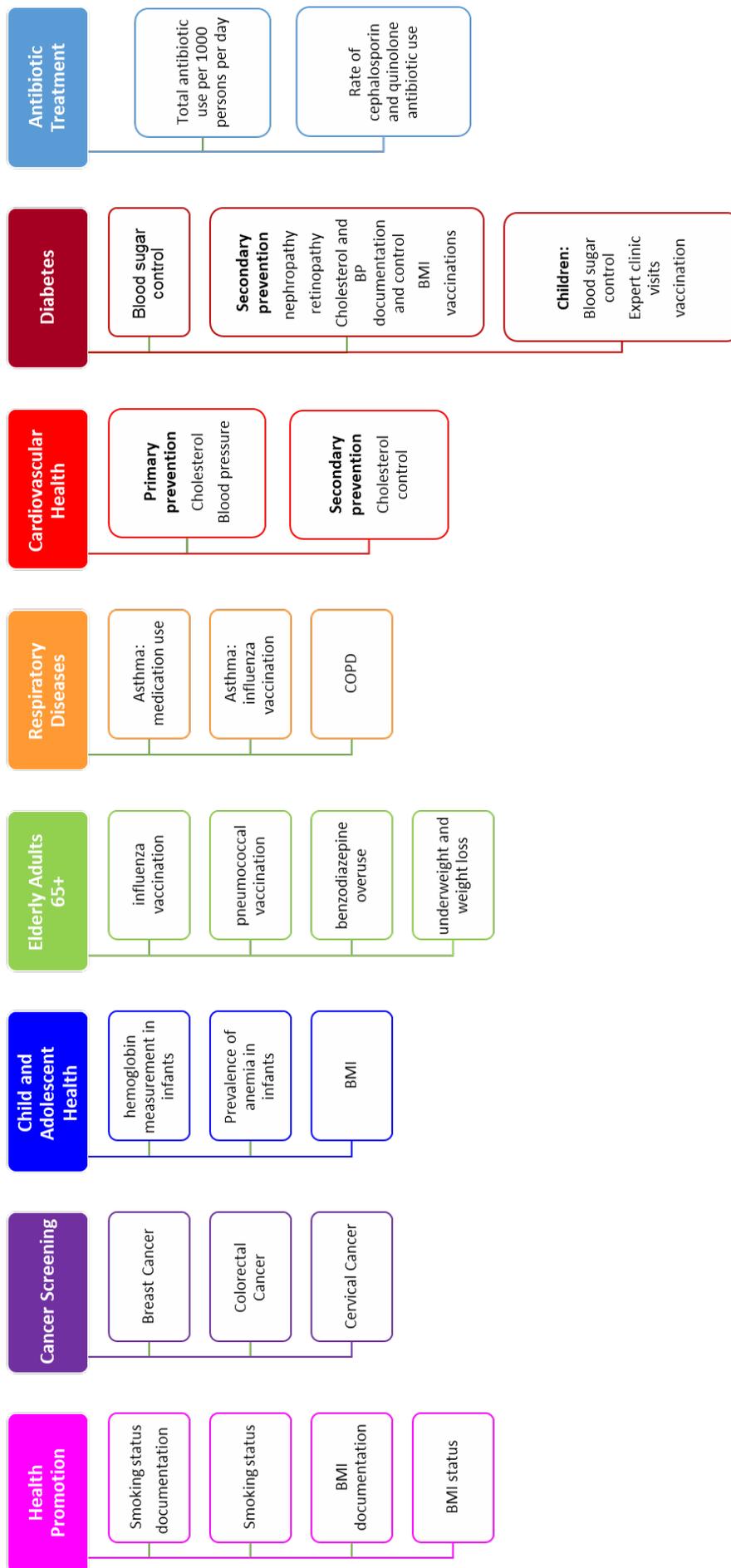A map of the indicators by field is presented in Figure 1.

Antibiotic Treatment

- Total antibiotic use per 1000 persons per day
- Rate of cephalosporin and quinolone antibiotic use

Diabetes

- Blood sugar control
- **Secondary prevention**
  - nephropathy
  - retinopathy
  - Cholesterol and BP documentation and control
  - BMI
  - vaccinations
- **Children:**
  - Blood sugar control
  - Expert clinic visits
  - vaccination

Cardiovascular Health

- **Primary prevention**
  - Cholesterol
  - Blood pressure
- **Secondary prevention**
  - Cholesterol control

Respiratory Diseases

- Asthma: medication use
- Asthma: influenza vaccination
- COPD

Elderly Adults 65+

- influenza vaccination
- pneumococcal vaccination
- benzodiazepine overuse
- underweight and weight loss

Child and Adolescent Health

- hemoglobin measurement in infants
- Prevalence of anemia in infants
- BMI

Cancer Screening

- Breast Cancer
- Colorectal Cancer
- Cervical Cancer

Health Promotion

- Smoking status documentation
- Smoking status
- BMI documentation
- BMI status

<u>Figure 1</u>: QICH indicators map by field, 2016

- **Indicator specification updating**

Identification of the patient population, i.e. those with a disease or disorder, is based on variety of sources including the purchase of medications, laboratory testing, or the billing of a procedure. (This process reflect issues related to data and diagnostic uniformity between health plans that rely on, among other things, the quality and availability of information passed from hospitals). A comprehensive database that includes all relevant medications and procedures is utilized and continuously updated for the relevant measurement period.

- **Data auditing**

Data from each health plan was examined at three levels: an internal data audit was conducted within each health plan, the QICH program's directorate performed a data audit, and the health plans and program directorate underwent an external audit process by a certified external auditor. The objective of the audits was to ensure a high level of consistency between the health plans' data. The evaluation included logic checks, subgroup analyses, and an examination of trends over time. The external evaluation focused on the production process and indicator construction within each health plan, as well as, processes for creating indicators for the entire population. Throughout the auditing process, methodologies, control processes, documentation, and lessons learned were examined. This approach enables continuous improvement in indicator reporting. Topics that were emphasized in the audits conducted for this report include: improvement of the unification between health plans using flowcharts, examining a variety of sources of information in each health plan (laboratories, medical record, pharmacies), and an in-depth study of medication-based measures using the classification of the Anatomical Therapeutic Chemical level 5 (ATC). Also, QICH program directorate has recently introduced a tailor-made computerized system to formulate the algorithms, which unified the definition files, enabling standardizations, and decreasing the chance for error.

- **Validation of Findings**

Health surveys, including those polished by The Israel Central Bureau of Statistics and The Israel Center for Disease control, and consultations with experts are used to validate the results.

Data Quality

This report is based on data from the entire population of Israeli citizens, not a representative sample. Thus the data presented here are not susceptible to sampling error. However, other sources of error are possible [14].The methods created for data collection includes an extensive evaluation program intended to minimize the chance of various errors, including differences between health plans in documentation and coding of their insured population's characteristics, and is based on recommendations noted in the US Agency for Healthcare Research and Quality report entitled, *Methodological Considerations in Generating Provider Performance Scores for Use in Public Reporting* [5].This method has certainly led to fewer errors, but is unable to eliminate them entirely.

Main Findings

The *current report* shows continuing trends of improvement in numerous indicators and stability, frequently at high level in other indicators. These results are mainly due to the concentrated efforts of Israel's health plans and their targeted activities in community medicine. Figure 2 presents the indicators by field according to the trend (increased/ decreased/ none) observed in 2011-2015.

Noteworthy are the increased rates of colon and breast cancer screening, An improvement was observed also in the in rates of diabetic patients achieving glycemic control as well as in height and weight documentation (for the assessment of BMI) among adults. The latter findings are of particular significance considering the increasing prevalence of obesity. Among the elderly population, improvements were observed for influenza vaccinations rates and long-term benzodiazepine usage.

Despite these findings, gaps in the quality of care remain. Several indicators demonstrate disparities between those exempt from copayments for medical services corresponding to the lower socio-economic stratum of the population and those non-exempt from medical copayments, i.e. the general population. Additionally, a number of measures failed to show real improvement in the period examined, for example LDL control within the framework of primary prevention.

Main Findings by Field

Health Promotion

Obesity

- The documentation rate of the BMI components among adults (aged 20-74) increased during the measurement period (2011-2015), from 82.6% in 2011 to 88.8% in 2015. In 2015, the documentation rate was higher for women compared to men (91.0% vs. 86.3%), and for the lower SEP population compared to the general population (91.2% vs. 88.4%). The rate increased with age up to 95.8% among those aged 55-64, and thereafter decreased to 83.4% among the 65-74 age group.

- The prevalence rate of obesity among those aged 20-74 remained stable in the measurement period, and was 24.1% in 2015. In 2015, the rate was higher for women compared to men (25.3% vs. 22.7%), and for the lower SEP population compared to the general population (37.0% vs. 22.1%). The rate increased with age, up to 33.8% among those aged 65-74.

- The prevalence rate of overweight among individuals aged 20-64 remained stable during the 3-year measurement period (2013-2015), and was 34.2% in 2015. In 2015, the rate was substantially lower for women compared to men (28.9% vs. 40.4%), and for the lower SEP population compared to the general population (32.7% vs. 34.4%). The rate increased with age up to 40.1% among those aged 55-64.

- The prevalence rate of normal weight among those aged 20-64 remained stable in the 3-year measurement period (2013-2015), and was 39.8% in 2015. In 2015, the rate was higher for women compared to men (43.1% vs. 36.0%), and lower for the lower SEP population compared to the general population (29.0% vs. 41.0%). The rate declined with age, down to 27.4% among those aged 55-64.

- The prevalence rate of underweight among those aged 20-64 remained stable in the 3-year measurement period (2013-2015), and was 2.5% in 2015. In 2015, the rate was two times higher for women compared to men (3.5% vs. 1.4%), and slightly higher for the lower SEP population compared to the general population

(2.7% vs. 2.5%). The rate decreased with age, down to 0.8% among those aged 55-64.

Smoking

- The rate of smoking status documentation among individuals aged 16–74 increased in the measurement period, from 79.4% in 2011 up to 91.0% in 2015. In 2015, the rate was higher for women compared to men (92.6% vs. 89.2%), and in the lower SEP population compared to the general population (95.2% vs. 90.4%). The rate increased with age, up to 96.5% in the 65-74 age group.

- The rate of smoking among individuals aged 16-74 decreased in the measurement period, from 21.1% in 2011 to 19.3% in 2015. In 2015, the smoking rate among women was 2.1 times lower compared to men (12.6% vs. 26.9%), and higher in the lower SEP population compared to the general population (21.5% vs. 19.0%). Among the age groups 16-24 and 65-74, smoking rates were relatively low; the highest rate observed was 23.4% among the 45-54 age group.

Cancer Screening

Breast cancer mammography screening

- The rate of mammography screening among women aged 51-74 increased in the measurement period, from 66.8% in 2011 to 70.8% in 2015. In 2015, the rate was slightly lower for lower SEP females compared to the general female population (69.3% vs. 71.3%). The rate increased with age up to 73.7% among those aged 65-69, and decreased to 67.1% among women aged 70-74.

Colorectal cancer screening

- The rate of colorectal cancer screening among individuals aged 50-74 increased in the measurement period, from 51.2% in 2011 to 59.1% in 2015. In 2015, the rate was higher for women compared to men (60.4% vs. 57.7%). The screening rate increased with age up to 66.3% among those aged 70-74.

Cervical cancer screening

- The rate of women aged 35-54 who underwent appropriate screening for cervical cancer (at least one PAP smear test during the past 3 years) slightly decreased

from 47.1% in 2013 to 45.5% in 2015. In 2015, the rate among lower SEP females was lower compared to the general female population (33.8% vs. 46.8%). The screening rate decreased with age down to 40.3% among women aged 50-54.

- The rate of women aged 35-54 who had not had at least one PAP smear test for cervical cancer screening during the past 5 years, remained stable during the 3-year measurement period and was 46.9% in 2015. In 2015, the rate was higher among lower SEP females compared to the general female population (57.5% vs. 45.8%).

- The rate of women aged 25-64, who underwent over-screening for cervical cancer (performed more than one PAP smear over a 3-year period) decreased slightly from 39.0% in 2013 to 37.0% in 2015. In 2015, the rate was 1.7 times lower among lower SEP females compared to the general female population (23.0% vs. 38.8%).

Children and Adolescents Health

Height and weight documentation for children

- The height and weight documentation rate among children aged 7 years old increased during the 5-year measurement period from 66.5% in 2011 to 77.9% in 2015. In 2015, the rate was slightly lower among girls compared to boys (77.4% vs. 78.5%), and higher among children from lower SEP families compared to the general population (81.8% vs. 77.7%).

- The documentation rate of BMI components among adolescents aged 14-18 increased from 72.5% in 2011 to 76.3% in 2015. In 2015, the documentation rates were similar for boys and girls, and higher among adolescents from lower SEP families compared to the general population (80.2% vs. 75.9%).

Anemia screening for infants

- The performance rate of anemia screening (hemoglobin testing) among infants increased from 83.0% in 2011 to 86.3% in 2015. The screening performance rate was slightly higher among infants from lower SEP families versus the rest of the population (87.8% vs. 86.2%).

- The prevalence rate of anemia among infants slightly decreased in the 3-year measurement period, from 8.6% in 2013 to 8.1% in 2015. In 2015, the rate was slightly lower among females compared to males (7.9% vs. 8.3%), and among infants from lower SEP families compared to the rest of the population (7.3% vs. 8.1%).

Older Adults, aged 65+ years

Influenza vaccination

- The influenza vaccination rate among adults aged 65+ years increased in the 5-year measurement period, from 58.7% in 2011 to 63.2% in 2015. In 2015, the rate was lower among women compared to men (61.4% vs. 65.6%), and similar for both the lower SEP and general population.

Pneumococcal vaccination

- The pneumococcal vaccination rate among adults aged 65+ years remained stable during the 5-year measurement period, and was 77.0% in 2015. In 2015, the rate was lower among women compared to men (75.3% vs. 79.0%), and was higher among the lower SEP population compared to the general population (79.2% vs. 76.0%).

Benzodiazepine Usage

- The rate of benzodiazepine overuse among those 65 years and older remained stable during the measurement period (2011-2015) and was 5.2% in 2015. In 2015, the rate was higher among woman compared to men (6.2% vs. 4.0%), and among the lower SEP population compared to the general population (7.0% vs. 4.1%). The rate increased with age, from 3.0% among adults aged 65-74 to 11.5% among those aged 85+.

- The rate of long-acting benzodiazepine usage among adults aged 65 years and older decreased during the measurement period, from 3.8% in 2011 to 2.4% in 2015. In 2015, the rate was higher among women compared to men (2.8% vs. 2.0%), and in the lower SEP population compared to the general population (2.7% vs. 2.3%). The rate was higher among adults aged 75+ (2.7%) compared to those aged 65-74 (2.2%).

BMI in elderly adults: Documentation and distribution

- The documentation rate of BMI components among adults aged 65-84 remained stable during the period 2013-2015, and was 81.0% in 2015. In 2015, the rate was similar in men and women, higher in the lower SEP population compared to the general population (82.7% vs. 79.9%), and higher among adults aged 75+ (83.1%) compared to those aged 65-74 (79.7%).

- The prevalence rate of underweight in adults aged 65+ remained stable during the measurement period, at around 13.0%. In 2015, the rate was higher for women compared to men (13.8% vs. 11.7%), and slightly lower for the lower SEP population compared to the general population (12.0% vs. 13.5%). The rate increased with age, from 11.3% among those aged 65-74 to 20.6% in the 85+ age group.

- The rate of persons aged 65+ experiencing significant weight loss in the past two years, remained stable at around 6.0% in 2013-2015. In 2015, the rate was slightly higher among women compared to men (6.7% vs. 5.5%), and in the lower SEP population compared to the rest of the population (6.8% vs. 5.7%). The rate increased with age, from 5.0% among the 65-74 age group to 9.2% in those aged 85+.

- The prevalence rate of overweight among individuals aged 65-84 remained stable in the 3-year measurement period, and was 33.1% in 2015. In 2015, the rate was higher among women compared to men (37.7% vs. 27.6%), and among the lower SEP population compared to the general population (38.3% vs. 29.6%).

Chronic Diseases

Respiratory Diseases

Asthma

- Prevalence rate of persistent asthma among Israelis aged 5-44 was 0.8% in 2015. The prevalence rate was lower among women (0.7%) compared to men (1.0%), and higher among the lower SEP population compared to the general population (1.8% vs. 0.8%). The rate varied with age, the lowest rate was observed among those aged 15-24 (0.5%) and the higher rate was seen among those aged 5-14 (1.0%) and 35-44 (1.1%).

- The rate of patients with proper controller medication use (that is with an Asthma Medication Ratio (AMR) ≥ 0.5) among those suffering from persistent asthma increased from 65.9% in 2012 to 68.8% in 2015. In 2015, the rate was similar for both genders, and lower among the lower SEP population (62.2%) compared to the general population (69.8%). The rate decreased with age, from 73.3% among patients aged 5-14 to 65.7% among those aged 35-44.

- In 2015, the rate of influenza vaccination among patients suffering from persistent asthma was 41.7%. The rate increased during the measurement years from 36.3% in 2011. In 2015, the rate was higher among women compared to men (43.4% vs. 40.3%), and among lower SEP population compared to the general population (55.3% vs. 39.7%). The lowest rate was seen among patients aged 25-34 (38.4%) while the highest among the 5-14 (43.0%) and the 35-44 (43.4%) age groups.

Chronic Obstructive Pulmonary Disease (COPD)

- The rate of individuals recently diagnosed with COPD or those at a high-risk for COPD, in the 50-74 age group, who underwent diagnostic spirometry was 65.8% in 2015. The rate was lower among women compared to men (63.5% vs. 67.3%), and higher for lower SEP patients compared to the general population (66.8% vs. 65.1%). The rate increased with age, up to 68.9% in the 65-74 age group.

Cardiovascular Health

Cholesterol Levels

- The rate of Israeli citizens aged 35-54 who underwent LDL cholesterol level assessment increased during the 5-year measurement period from 85.9% in 2011 to 87.9% in 2015. In 2015, the rate for women was higher than for men (91.6% vs. 84.0%) and among the lower SEP population compared to the general population (93.0% vs. 87.5%). The rate was higher among those aged 45-54 (91.1%) compared to those aged 35-44 (85.4%).

- The rate of Israeli citizens aged 55-74 who underwent a cholesterol level assessment decreased during the 5-year measurement period from 78.0% in 2011 to 76.1% in 2015. In 2015, the rate among women was higher than for men (78.1% vs. 73.8%) and the rate among the lower SEP population was higher than in the general population (81.9% vs. 74.0%). The rate was higher among persons aged 65-74 (82.7%) compared to those aged 55-64 (71.7%).

- The target LDL cholesterol level according to coronary heart disease risk groups (based on the Framingham score) was achieved in 82.9% of the population aged 35-74 years in 2015. The rate slightly decreased from 84.0% in 2012. In 2015, the rate was higher among women (85.9%) than among men (79.0%). About 70% of the population were defined as "low-risk" for coronary heart disease and among those 89.1% achieved the target LDL cholesterol level. About 28.0% of the population were classified as "intermediate risk", among those the rate of achieving the target LDL cholesterol level was 71.6%. Only 2% of the population were classified as "high-risk" and among those, as in former years, only 29.0% achieved the target LDL cholesterol level.

Blood Pressure Documentation

- During the measurement period, the BP documentation rate among Israeli citizens aged 20-54 increased from 90.2% in 2011 to 92.9% in 2015. In 2015, the rate was higher among women (95.5%) than among men (90.1%), and among the lower SEP population (94.8%) compared to the general population (92.8%). The rate increased with age, from 89.1% among subjects aged 20-24 up to 96.0% among those aged 45-54.

- During the measurement years, BP documentation rate among Israeli citizens aged 55-74 remained stable and was 83.0% in 2015. In 2015, the rate was higher among women (84.1%) than among men (81.8%), and among the lower SEP population (87.8%) compared to the general population (81.3%). The rate was higher among those aged 65-74 (87.9%) compared with those aged 55-64 (79.7%).

Tertiary Prevention of Heart Disease

- Among patients aged 35 years and above who underwent cardiac bypass and/or cardiac catheterization during the past five years, 81.9% purchased LDL cholesterol lowering medication in 2015. During the measurement years, the rate declined from 84.8% in 2011. In 2015, women purchased less medications than men (78.6% vs. 82.8%). The rate among the lower SEP population was slightly higher compared to the general population (82.7% vs. 81.4%). The rate increased with age up to 86.3% among patients aged 65-74.

- Among patients aged 35 years and above who underwent cardiac bypass and/or cardiac catheterization in the past five years, 61.2% in 2015 achieved a target LDL cholesterol level ≤ 70 mg/dL, or have been under high-intensity statin therapy. The rate increased from 55.9% in 2013. In 2015, the rate among women was lower than among men (52.6% vs. 63.9%), yet was similar for both the lower SEP population and the general population. The rate increased with age from 55.5% among those aged 35-44 up to 65.0% among those aged 55-64, but then declined to 42.5% among patients aged 85 years and older.

Diabetes

Adults 18 years and older

- During the measurement period, the prevalence rate of diabetes among Israeli citizens aged 18 and above increased from 9.1% in 2011 to 9.7% in 2015. The prevalence rate of diabetes among men was higher compared to women (10.3% vs. 9.2%). The rate among the lower SEP population was 3.6 times higher as compared to the general population (25.5% vs. 7.1%). The prevalence rate increased with age. Among those aged 40-44 the rate was 3.2% and reached its maximum value of 33.3% among those aged 75-79.

Quality of Treatment among Diabetics

- The rate of diabetics, aged 18+, whose HbA1c was assessed at least once a year remained stable during the 5-year measurement period. In 2015, the rate was 90.1% and was similar for both genders, but slightly higher among the lower SEP population compared to the general population (91.7% vs. 89.1%). The rate increased with age up to 92.6% among those aged 75-84, and decreased to 87.4% among those aged 85+.

- The rate of diabetic patients aged 18-84 achieving glycemic control (HbA1c ≤ 7% or 8%, depending on age and length of disease) increased by 4% during the measurement period, and was 67.6% in 2015. The rate increased with age; among patients aged 40-44 the rate was 49% compared to 85.5% among those aged 80-84. The rate was 5% higher in women compared to men, but was similar for both the lower SEP and the general population.

- The rate of uncontrolled diabetes among diabetics aged 18 and older (HbA1c > 9%) decreased during the measurement period, from 13.6% in 2011 to 11.0% in 2015. In 2015, the rate was lower among women compared to men (10.2% vs. 11.8%), but higher among the lower SEP population compared to the general population (12.0% vs. 10.4%). The rate decreased with age down to 5.9% among patients aged 85+.

Monitoring complications for patients with diabetes mellitus

Diabetic retinopathy

- The rate of eye examination among diabetics aged 18-84 remained stable during the 4-year measurement period, and was 75.8% in 2015. In 2015, the rate was higher among women than men (77.2% vs 74.5%) and slightly higher among the lower SEP population as compared to the general population (76.7% vs. 75.3%).

Diabetic nephropathy

- The rate of diabetic patients aged 18+ who underwent a yearly urinary protein test increased during the 5-year measurement period, from 74.4% in 2011 to 80.2% in 2015.

- The rate of diabetic patients aged 18-84 who had a yearly documentation of their glomerular filtration rate (GFR) remained stable during the 5-year measurement period, and was 91.7% in 2015. In 2015, the rate was higher among women compared to men (93.0% vs. 90.6%) and among the lower SEP population compared to the general population (94.0% vs. 90.4%).

- The rate of diabetic patients aged 18-84 suffering from diabetic nephropathy remained stable during the 5-year measurement period, and was 31.0% in 2015. In 2015, the rate among women was lower compared to men (28.9% vs. 32.9%) and higher in the lower SEP population compared to the general population (38.0% vs. 26.9%). The rate increased with age up to 49.3% among those aged 75-84.

- Among diabetic nephropathy patients aged 18-74, the rate of those treated with ACEI/ARB medications remained stable during the 5-year measurement period, and was 75.7% in 2015. In 2015, the rate was lower among women compared to men (74.8% vs. 76.2%) and higher among the lower SEP population compared to the general population (78.4% vs. 73.7%). The rate increased with age up to 81.6% among diabetic nephropathy aged 65-74.

Monitoring and controlling diabetic co-morbidities

- The blood pressure documentation rate among diabetic patients aged 18 and above remained stable during the 5-year measurement period, and was 91.5% in 2015. The rate was higher among the lower SEP population versus the general

population (93.0% vs. 90.7%), and increased with age up to 94.3% among patients aged 65-74.

- The target blood pressure rate (blood pressure ≤140/90 mmHg) was achieved in 2015 among 83.7% of diabetic patients aged 18 and above. The rate remained stable during the 5-year measurement period.

- The rate of LDL cholesterol tests in diabetic patients aged 18+ years remained stable during the 5-year measurement period, and reached 90.6% in 2015. In 2015, the rate was higher among women compared to men (91.7% vs. 89.6%), and among the lower SEP population compared to the general population (92.5% vs. 89.6%). The rate increased with age to 93.7% among patients aged 75-84.

- The rate of diabetic patients aged 18+ years who reached the target LDL cholesterol level (LDL cholesterol ≤ 100 mg/dL) remained stable during the 5-year measurement period, and was 64.3% in 2015. In 2015, the rate was lower among women compared to men (60.8% vs. 67.8%), and higher in the lower SEP population compared to the general population (66.6% vs. 62.9%). The lowest rate was observed among patients aged 35-44 (48.1%), whereas the highest among those aged 65-74 (70.3%).

- The rate of BMI documentation among diabetic patients aged 18+ years increased during the 5-year measurement period, from 86.0% in 2011 to 89.2% in 2015. In 2015, the rate was higher among the lower SEP population compared to the general population (90.3% vs. 88.5%). The rate increased with age up to 92.6% among patients aged 65-74.

Vaccinations

- The rate of influenza vaccination among diabetic patients aged 18+ years increased during the 5-year measurement period, from 55.5% in 2011 to 62.9% in 2015. The rate was higher among the lower SEP population (67.5%) compared to the general population (60.3%), and increased with age to 72.3% among patients aged 75-84.

- The rate of pneumococcal vaccination among older patients with diabetes mellitus (65–74 years) increased from 81.8% in 2011 to 85.4% in 2015. In 2015, the rate was lower among women (83.7%) compared to men (86.9%), and higher among the lower SEP population (86.4%) compared to the general population (84.6%).

Diabetes- Children and Adolescents (aged 2-17)

- The prevalence rate of diabetes among children and adolescents (aged 2-17 years) increased during the 5-year measurement period, from 0.10% in 2011 to 0.12% in 2015. The rate increased from 0.05% among children aged 2-9 to 0.21% among children aged 10-17.

Quality of treatment among diabetic children and adolescents

- The rate of diabetic children and adolescents aged 2-17 who had a least one visit to a pediatric diabetic clinic, increased during the 5-year measurement period, from 85.5% in 2011 to 87.5% in 2015. In 2015, the rate was higher among the lower SEP population compared to the general population (89.6% vs. 82.2%), and among patients aged 2-9 than those aged 10-17 (90.6% vs. 86.7%).

- The rate of diabetic children and adolescents (aged 2-17) who underwent HbA1c testing at least once a year, increased during the 4-year measurement period, from 73.0% in 2012 to 76.6% in 2015. In 2015, the performance rate was similar in both genders, but slightly lower among the lower SEP population compared to the general population (76.2% vs. 77.6%). The rate was higher among patients aged 10-17 compared to those aged 2-9 (77.7% vs. 72.3%).

- The rate of uncontrolled diabetes (HbA1c > 9%) among children and adolescents (aged 2-17) decreased during the 5-year measurement period, from 44.0% in 2011 to 36.6% in 2015. In 2015, the rate was higher among females compared to males (38.2% vs. 35.0%) and higher among the lower SEP population compared to the general population (38.5% vs. 31.8%). The rate was higher among patients aged 10-17 than those aged 2-9 (39.1% vs. 26.2%).

- The rate of influenza vaccination among diabetic children and adolescents increased during the 5-year measurement period, from 41.8% in 2011 to 54.0% in 2015. In 2015, the rate was higher among females compared to males (55.0% vs. 53.1%) and higher among the lower SEP population compared to the general population (56.4% vs. 48.0%).

Antibiotic Usage Rate

The total antibiotic use per 1000 persons per day

- The rate was stable during the 4-year measurement period, and was 21.4 DDD/1000 persons/day in 2015. In 2015, the rate was higher among women than men (24.8 vs. 18.0 DDD/1000 persons/day). The rate was 1.8 times higher among the lower SEP population compared to the general population (35.1 vs. 19.6 DDD/1000 persons/day).

Cephalosporin and Quinolone usage rate per day

- The rate of cephalosporin and quinolones usage alone was 24.2% from the total antibiotic usage in 2012, and decreased to about 22% during 2013-2015. In 2015, the rate was higher among women versus men (24.0% vs. 19.3%), and 1.3 times higher among the lower SEP population compared to the general population (28.2% vs. 20.6%).

Main findings compared to international outcomes for seven indicators

1. **Rate of breast cancer screening – mammography**

   In 2015, the national rate of breast cancer mammography screening among women aged 65-74 in Israel was 71.2%. In 2014 [14], the average rate of mammography screening among women aged 50-69 in 33 OECD countries was 59.7%, while the Israeli rate was 69.7%. Israel ranked in the third quartile of mammography screening, while Denmark, Finland and Holland achieved higher rates (83.9%, 82.8%, and 79.4%, respectively); and Australia, France, and Italy presented lower rates (54.2%, 52.5%, and 57.0%, respectively).

2. **Rate of colorectal cancer screening**

   In 2015, the national rate of fecal occult blood screening in the last year or a colonoscopy in the last decade among those aged 65-74 in Israel was 66.6%. The national rate was higher than the reported rates in other countries. For example, the average rate in the OECD countries in 2010 for colorectal cancer screening (fecal occult blood screening once every two years) among those aged 50-74 was 12.7% [15]. The highest rate was seen in Germany (54.7%). The rate of appropriate screening (defined as fecal occult blood test once per year or flexible sigmoidoscopy once every five years, or colonoscopy once every ten years) in the United States among adults aged 50-75 years insured by Medicare (federal insurance program) and private insurance was 67.4% and 62.8%, respectively in 2015 [16].

3. **Rate of influenza vaccination for older adults**

   In 2015, the national rate of influenza vaccination among those aged 65 years and older in Israel was 63.2%. In 2014 [17], the average rate of influenza vaccination in 27 OECD countries was 45.6%, while the Israeli rate was 63.8%. Israel ranked in the highest quartile of influenza vaccination rates, while Britain, Chile and Mexico achieved higher rates (72.8%, 74.9%, and 82.3%, respectively); while Denmark, France and Sweden presented lower rates (43.0%, 48.5%, and 49.7%, respectively).

4. Rate of documentation of Body Mass Index (BMI) components for older adults

In 2015, the national rate of documentation of BMI components among those aged 65-84 in Israel was 81.0% with an absolute increase of 1.0% since 2013. The rate of documentation of BMI components in the last two years in the United States [18] among adults insured by Medicaid, Medicare and private insurance aged 18-74 in 2013 was 89.6%, 75.9% and 75.7% and in 2015 was 93.3%, 80.8% and 75.2%, respectively.

5. Rate of long-acting benzodiazepine usage

In 2015, the national rate of long-acting benzodiazepine usage was 2.4%. In 2013, the rate of long-acting benzodiazepine usage in Israel was 3.1%; while Finland, Holland, New Zealand and Sweden reported lower rates (0.45%, 1.1%, 2.1% and 2.4%, respectively). Belgium, Denmark and Canada reported slightly higher rates (3.4%, 3.7% and 4.0%, respectively). In Norway, Ireland, and Korea the rates were significantly higher that year (6.2%, 7.7%, 8.4%, and 20.5%, respectively) [19].

6. Rate of controlled HbA1c levels among diabetics

In 2015, the rate of diabetics aged 65-84 who achieved glycemic control (HbA1c ≤ 7% or 8%, depending on age and length of disease) was 77.6%, while the rate of HbA1c testing among diabetics was 90%. The rate of diabetics achieving glycemic control was generally higher in Israel compared to other countries. In Sweden, in 2012, for example, the rate of diabetics who achieved glycemic control defined as HbA1c less than 7.9% was 78%, and the rate of those with HbA1c less than 6.9% was 55% [20]. In the United States in 2015, the rate of diabetic patients aged 18-75 insured by Medicare, Medicaid and private insurance who achieved glycemic control (defined as HbA1c less than 8%) was 62.7%, 45.5%, and 55.3%, respectively. The rate of HbA1c less than 7% for selected diabetic patients insured by Medicaid and private insurance was 32.4% and 36.7%, respectively [21].

7. Rate of blood pressure (BP) less than or equal to 140/90 mmHg in individuals with diabetes mellitus

In 2015, the national rate of BP less than or equal to 140/90 mmHg in individuals with diabetes aged 18 or older in Israel was 81.4%. The rate of BP less than or equal to 140/90 mmHg in individuals with diabetes in the United States [22] among

adults insured by Medicaid, Medicare and private insurance aged 60-85 years in 2015 was 67.9%, 54.7% and 60.5%, respectively.

Summary Results Table

Table 1: Quality Indicators in Community Healthcare 2011-2015, Rates

Measure	[1]2011	[2]2012	2013	2014	2015
Health Promotion					
Documentation of Body Mass Index (BMI) components for adults (ages 20-74 years)	82.6%	85.6%	87.1%	87.4%	88.8%
Prevalence of obesity for adults (ages 20-74 years)*	24.6%	24.4%	24.0%	24.1%	24.1%
Prevalence of overweight among adults (ages 20-64 years)*	-	-	34.1%	34.2%	34.2%
Prevalence of normal weight among adults (ages 20-64 years)*	-	-	40.1%	39.9%	39.8%
Prevalence of underweight among adults (ages 20-64 years)*	-	-	2.5%	2.5%	2.5%
Smoking status documentation (ages 16-74 years)	79.4%	79.7%	83.9%	88.3%	91.0%
Rate of smoking (ages 16-74 years)	21.1%	20.7%	20.2%	20.1%	19.3%
Cancer screening					
Breast cancer screening – mammography (women, ages 51-74 years)	66.8%	68.4%	69.9%	69.6%	70.8%
Colorectal cancer screening (ages 50-74 years)	51.2%	55.2%	56.5%	58.4%	59.1%
Proportion of women aged 35-54 who were screened for cervical cancer in the last 3 years*	-	-	47.1%	46.7%	45.6%
Proportion of women aged 35-54 who were not screened for cervical cancer in the last 5 years*	-	-	47.4%	47.2%	46.9%
Proportion of women aged 25-65 who were over-screened for cervical cancer*	-	-	39.0%	38.1%	37.0%

[1]Source: Report 2011-2013
[2]Source: Report 2012-2014
*New Measure, the rates were calculated for years 2013-2015
**Updated Measure, the rates were calculated for years 2013-2015

	Measure	[1]2011	[2]2012	2013	2014	2015
	Child and adolescent health					
	Rate of hemoglobin measurement for infants aged 9-18 months	83.0%	84.3%	84.8%	85.6%	86.3%
	Prevalence of anemia among infants aged 9-18 months*	-	-	8.6%	8.4%	8.1%
	Documentation of height and weight for children (age 7 years)	66.5%	69.3%	72.7%	75.2%	77.9%
	Documentation of Body Mass Index (BMI) components for adolescents (ages 14-18 years)	72.5%	72.2%	76.8%	76.7%	76.3%
	Elderly adults					
	Rate of influenza vaccination for older adults (ages 65+ years)	58.7%	60.2%	62.4%	63.4%	63.2%
	Rate of pneumococcal vaccination for older adults (ages 65-74 years)	75.9%	77.4%	78.7%	78.3%	77.0%
	Rate of Documentation of Body Mass Index (BMI) components for older adults (ages 65-84 years)**	-	-	80.0%	78.9%	81.0%
	Prevalence of underweight for older adults (ages 65+ years)	-	-	12.7%	12.8%	12.9%
	Rate of adults aged 65 and older who experienced significant weight loss in the last two years	-	-	6.2%	6.0%	6.1%
	Prevalence of obesity for older adults (ages 84-65 years)			33.5%	33.3%	33.1%
	Rate of benzodiazepine overuse for older adults (ages 65+ years)	4.9%	5.3%	5.2%	5.3%	5.2%
	Rate of long-acting use of benzodiazepines for older adults (ages 65+ years)	3.8%	3.6%	3.1%	2.6%	2.4%
	Respiratory Diseases					
	Prevalence of persistent asthma (ages 5-44 years)	0.7%	0. 9%	0.9%	0.8%	0.8%

[1]Source: Report 2011-2013
[2]Source: Report 2012-2014
*New Measure, the rates were calculated for years 2013-2015
**Updated Measure, the rates were calculated for years 2013-2015

	Measure	[1]2011	[2]2012	2013	2014	2015
	Asthma medication ratio (AMR) greater than or equal to 0.5 (ages 5-44 years)	-	65.9%	66.2%	67.9%	68.8%
	Rate of influenza vaccination for individuals with persistent asthma (ages 5-44 years)	36.3%	36.5%	37.3%	41.6%	41.7%
	Rate of overuse of asthma relief medications among patients aged 5-44 with persistent asthma	-	-	38.5%	37.8%	38.4%
	Rate of diagnostic spirometry testing in patients with COPD or those at high-risk for COPD (ages 50-74 years)	-	41.8%	52.4%	57.0%	65.8%
	Cardiovascular health					
	Rate of cholesterol level testing (ages 35-54 years)	85.9%	86.5%	87.1%	87.3%	87.9%
	Rate of cholesterol level testing (ages 55-74 years)	78.0%	77.4%	78.0%	76.7%	76.1%
	Rate of achieving target LDL cholesterol in those at high-risk for heart disease (ages 35-74 years)	-	84.0%	83.6%	83.3%	82.9%
	Rate of LDL cholesterol level less than or equal to 160 mg/dL in those at low-risk for heart disease (ages 35-74 years)	-	90.4%	90.1%	89.4%	89.1%
	Rate of LDL cholesterol level less than or equal to 130 mg/dL in those at medium-risk for heart disease (ages 35-74 years)	-	72.4%	71.8%	71.7%	71.6%
	Rate of LDL cholesterol level less than or equal to 100 mg/dL in those at high-risk for heart disease (ages 35-74 years)	-	28.4%	27.7%	28.2%	28.9%
	Documentation of blood pressure (ages 20-54 years)	90.2%	91.1%	92.1%	92.1%	92.9%
	Documentation of blood pressure (ages 55-74 years)	81.4%	80.6%	82.8%	81.9%	83.0%

[1]Source: Report 2011-2013
[2]Source: Report 2012-2014
*New Measure, the rates were calculated for years 2013-2015
**Updated Measure, the rates were calculated for years 2013-2015

	Measure	[1]2011	[2]2012	2013	2014	2015
	Rate of use of LDL-lowering drug therapy post-cardiac bypass surgery and/or cardiac catheterization (ages 35+ years)	84.8%	84.2%	82.9%	82.1%	81.9%
	Rate of LDL cholesterol level less than or equal to 70 mg/dL or high-intensity statin therapy in individuals aged 35+ years after cardiac catheterization/surgery**	-	-	55.9%	57.5%	61.2%
	Diabetes					
	Prevalence of diabetes mellitus (ages 18+ years)	9.1%	9.5%	9.6%	9.7%	9.7%
	Documentation rate of hemoglobin A1c (HbA1c) levels for individuals with diabetes mellitus (ages 18+ years)	89.7%	89.0%	89.6%	89.7%	90.1%
	Assessment of adequate control of hemoglobin A1c for individuals with diabetes mellitus (ages 18-84 years)	-	63.2%	64.3%	66.4%	67.6%
	Rate of HbA1c greater than 9% for individuals with diabetes mellitus (ages 18+ years)	13.6%	12.4%	12.2%	11.6%	11.0%
	Documentation rate of eye exams for individuals with diabetes mellitus (ages 18+ years)	-	76.6%	74.3%	75.1%	75.8%
	Documentation rate of urinary protein for individuals with diabetes mellitus (ages 18-84 years)	74.4%	76.3%	77.8%	79.0%	80.2%
	Documentation of glomerular filtration rate (GFR) in individuals with diabetes mellitus (ages 18-84 years)	91.1%	90.7%	91.3%	91.3%	91.7%
	Rate of diabetic nephropathy in individuals with diabetes mellitus (ages 18-84 years)	31.5%	29.9%	30.1%	30.5%	31.0%
	Rate of treatment with ACEI/ARB for diabetic nephropathy in individuals with diabetes mellitus (ages 18-74 years)	76.4%	77.9%	76.8%	76.3%	75.7%
	Documentation rate of blood pressure for individuals with diabetes mellitus (ages 18+ years)	90.5%	89.6%	91.1%	90.6%	91.5%

[1]Source: Report 2011-2013
[2]Source: Report 2012-2014
*New Measure, the rates were calculated for years 2013-2015
**Updated Measure, the rates were calculated for years 2013-2015

| Measure	[1]2011	[2]2012	2013	2014	2015
Rate of blood pressure less than or equal to 140/90 mmHg in individuals with diabetes mellitus (ages 18+ years)	82.3%	83.4%	83.7%	83.7%	83.7%
Documentation rate of cholesterol in individuals with diabetes mellitus (ages 18+ years)	90.7%	90.3%	90.8%	90.5%	90.6%
Rate of LDL cholesterol less than or equal to 100 mg/dL in individuals with diabetes mellitus (ages 18+ years)	63.4%	63.8%	63.8%	63.2%	64.3%
Documentation rate of Body Mass Index (BMI) components in individuals with diabetes mellitus (ages 18+ years)	86.0%	86.6%	88.0%	87.7%	89.2%
Rate of influenza vaccination in individuals with diabetes mellitus (ages 18+ years)	55.5%	57.5%	61.2%	62.2%	62.9%
Rate of pneumococcal vaccination in individuals with diabetes mellitus (ages 65-74 years)	81.8%	83.9%	85.3%	85.6%	85.4%
Prevalence of diabetes mellitus (ages 2-17 years)	0.10%	0.11%	0.11%	0.12%	0.12%
Rate of diabetes clinic visits in children with diabetes mellitus (ages 2-17 years)	85.5%	86.1%	86.5%	87.5%	87.5%
Documentation rate of hemoglobin A1c levels for children with diabetes mellitus (ages 2-17 years)	77.7%	73.0%	74.5%	75.4%	76.6%
Rate of HbA1c greater than 9% for children with diabetes mellitus (ages 2-17 years)	44.0%	43.1%	38.2%	36.7%	36.6%
Rate of influenza vaccination in children with diabetes mellitus (ages 2-17 years)	41.8%	45.1%	48.3%	50.3%	54.0%
Antibiotic Treatment					
Rate of total antibiotic use per 1000 persons per day	-	21.2	21.1	20.7	21.4
Rate of cephalosporin and quinolone antibiotic use, of total antibiotic drugs	-	24.2%	21.8%	22.0%	22.1%

[1]Source: Report 2011-2013
[2]Source: Report 2012-2014
*New Measure, the rates were calculated for years 2013-2015
**Updated Measure, the rates were calculated for years 2013-2015

<u>Figure 2</u>: Trends in the levels of quality indicators 2011-2015[1,2]
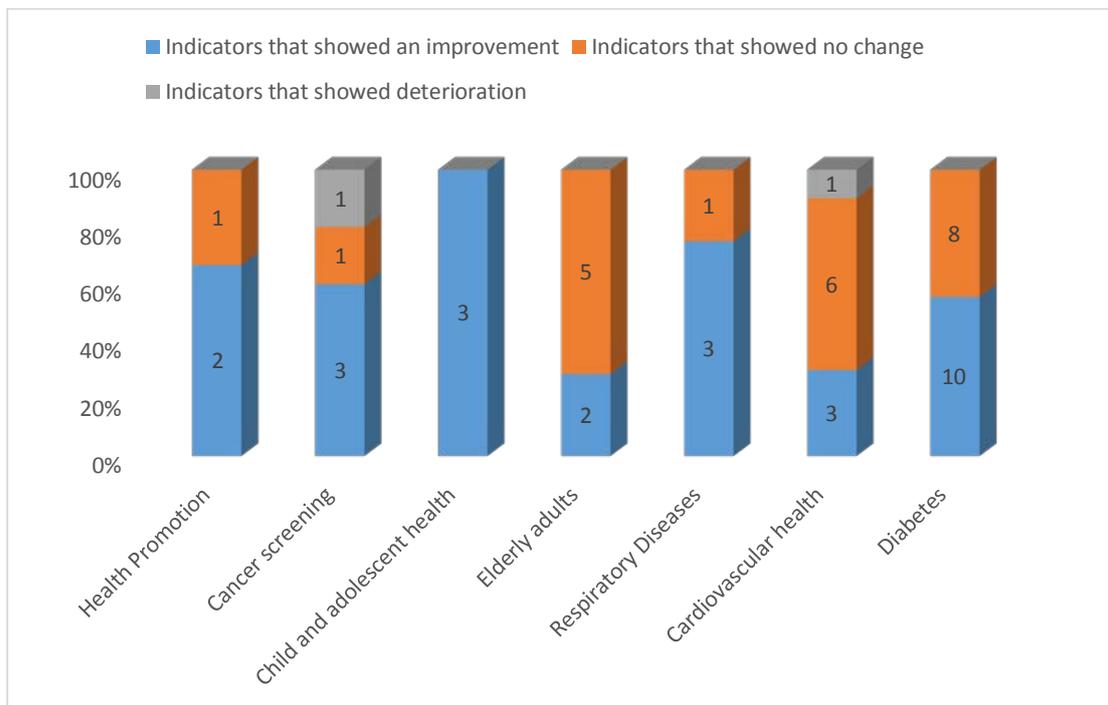
1. Change has been defined as ±2 percentage points in the last 4-5 years or in new indicators ±1 percentage point in the last 3 years
2. Indicators of prevalence were not included

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Research: Selected abstracts presented in scientific meetings, 2014-2016

Primary Prevention of Cardiometabolic Disease – Is Everybody Receiving Quality Care?

10th European Public Health Conference, Vienna, 2016

V Kaufman-Shriqui[1,2], R Calderon-Margalit[1,2], W Abu-Ahmed[1,2], M Krieger[1,2], E Horwitz[2,3], A Shmueli[1,2], A Ben-Yehuda[2,3], O Paltiel[1-3], and O Manor[1,2] on behalf of the QICH-program.

Background: Low cardiometabolic risk profiles in younger adults increase longevity, reduce morbidity, and lower the burden of healthcare in the long-term. A healthy cardiometabolic risk profile includes controlled blood pressure and cholesterol levels, a normal body mass index (BMI), and a non-smoking status. The study aims to characterize the quality of preventive healthcare for cardiometabolic disease in the adult population in Israel (2012-2014).

Methods: Data from the Israel National Program for Quality Indicators in Community Healthcare (QICH) (2012-2014) were examined for the adult population, aged 20-54 years. QICH data comprises electronic patient records collected for the entire Israeli population from all four health plans in Israel. Data were aggregated to create the national indicator set. Data were stratified by year, gender, age, and socio-economic position (SEP).

Results: In 2014, rates of primary prevention of cardiometabolic disease in community healthcare were: 85% controlled blood pressure, 64% controlled cholesterol levels, 76% had non-obese BMI, and 80% were non-smokers. Subgroup analyses revealed higher rates of cardiometabolic prevention with increasing age, among women, and among low-SEP individuals. During the study period absolute rate differences for blood pressure documentation were 7% lower for adults 20-34 years compared with 45-54 years, for cholesterol documentation was 6% lower among adults aged 35-44 years than 45-54 years, and for BMI documentation was 7% lower among adults aged 20-34 years than 45-54 years. Rates among women were higher than for men with marked differences among young adults. In 2014, documentation rates of cholesterol levels for women were 91% and only 83% for men, and 93% among individuals of low-SEP in comparison to 87% in the general population.

Conclusions: High rates of primary prevention for cardiometabolic disease are achieved in Israel but with lower rates among young adults and men.

Main messages:

1. Young adults and men are identified as requiring improved basic preventive care.
2. Targeting primary prevention of cardiometabolic disease among young adults and men will have substantial direct and indirect effects on healthcare costs.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare
3. Hadassah Medical Center, Jerusalem, Israel

Optimizing Quality Measurement: Appropriate Controller Therapy for Asthma

International Society of Quality in Health Care (ISQUA), Tokyo, 2016

Michal Krieger[1,2] Shiri Guy-Alfandary[3], Ehud Horowitz[1,2], Orly Manor[1,2], on behalf of the Steering Committee, the National Program for Quality Indicators in Community Healthcare, Israel.

Objectives: Asthma is a common chronic disease. Although regular daily controller therapy is considered the mainstay of persistent asthma management, under-treatment is not uncommon. Therefore, appropriate controller therapy is an essential target for quality measurement.

This study seeks to assess alternative quality measures for appropriate controller therapy for asthma. The study results will help to create a process quality measure that correlates with both disease outcome and quality of care.

Methods: Pharmacy data for 12,412 Israeli persistent asthma patients aged 5-44 years was extracted from Maccabi Healthcare Services computerized database for 2012-2013. Data was collected anonymously to ensure confidentiality. We assessed three alternative pharmacy-based quality measures:

1. Controller medication use: the rate of persistent asthma patients who were dispensed at least three controller medications in different months during the measurement year.
2. Reliever medication overuse: the rate of persistent asthma patients who were dispensed at least 6 canisters of reliever medications during the measurement year. Reliever medication overuse is a characteristic of uncontrolled asthma.
3. Rate of persistent asthma patients with AMR (Asthma Medication Ratio) > 0.5. AMR is the ratio between controller medication and total asthma medication purchased in one year. The AMR measure is in current routine use by the Healthcare Effectiveness Data and Information Set (HEDIS) developed by the American National Committee for Quality Assurance.

We examined the association between each measure and systemic steroid use, serving as a marker for the outcome of asthma exacerbation. For each measure, we calculated the rate of systemic steroid use by patients fulfilling and not fulfilling the measure criteria. The difference was evaluated using Pearson's chi-squared test (χ^2). We also examined the extent of overlap between patients conforming with the three measures.

Results: There was no association between controller medication use and systemic steroid use. The rate of systemic steroid use was 25.7% and 25.6% in patients fulfilling and not fulfilling this measure respectively, (p=0.88). Rate of reliever overuse and rate of patients with AMR $\geq$ 0.5 were significantly and similarly associated with systemic steroid use. For both measures the rate of systemic steroid use was 23% and 32% in patients fulfilling and not fulfilling each measure respectively, (p<0.01). There was a 79% agreement between these two measures. Systemic steroid use dropped progressively with higher AMR values.

Conclusions: A process quality measure should ideally correlate with disease outcome and reflect the quality of medical care. Three alternative pharmacy-based quality measures for appropriate controller therapy for asthma were assessed. Asthma exacerbation was utilized as disease outcome. Rate of controller medication use had no association with this outcome. Rate of reliever overuse and rate of patients with AMR $\geq$ 0.5 were equally associated with this outcome. There was a 79% agreement between these two measures, yet the AMR measure may better reflect the quality of medical care, especially in severe asthma cases which are difficult to control. The AMR measure has recently been incorporated into the Israel National Program for Quality Indicators in Community Healthcare due to its strong correlation with disease outcome and quality of medical care.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare
3. Maccabi Healthcare Services

Israel's Elderly Population: Do They Receive High Quality Care?

Vered Kaufman-Shriqui[1,2], Rachel Podell[2], Ronit calderon-Margalit[1,2], Arye Ben-Yehuda[1,3]

Objectives: In developing countries, elderly populations are growing exponentially; those aged 65 years or older are expected to comprise 14% of the Israeli population by 2030 and other countries expect larger proportions. This study aims to evaluate the quality of primary care provided to elderly Israelis and identify those who receive low quality care so as to enable planning interventions targeted to specific subgroups.

Methods: Five elderly-specific (65 years and older) indicators which originated within the framework of the Israel National Program for Quality Indicators in Community Healthcare (QICH) were selected: influenza and pneumococcal vaccination, body weight documentation, and benzodiazepine and long-acting benzodiazepine use. QICH comprises data from patient's electronic medical records provided by the four Israeli health plans. Data were collected anonymously from practically all Israelis aged 65 years and older (817,575 individuals in 2013). Data were stratified by year, gender, age, and socio-economic position (SEP). Low SEP is defined as exemption from co-payments for medical services.

Results: Influenza vaccination rates increased since the first measurement (2002) from 42.0% to 62.2% (2013). In 2013, those in the 65-74 year age group had the lowest rate of vaccination (58.4%); women aged 65-74 years old had lower rates than men of the same age group (57.0% vs. 60.1%). Rate of pneumococcal vaccination increased since the first measurement (2005) from 25.9% to 74.9% (2013). Females were vaccinated at lower rates compared to males (73.5% vs. 76.5%); individuals of low SEP were vaccinated more compared to the general population (77.0% vs. 73.7%). Body weight documentation reached 81.8% in (2013). The 85 years or older age bracket had the lowest rate (71.5%). Two benzodiazepine-use indicators were first measured in 2011. The rate of benzodiazepine overuse remained steady around 5% during the 2011-2013 measurement period; the rate of long-acting benzodiazepine use fell from 3.8% (2011) to 3.1% (2013). Benzodiazepine over and long-acting use were highest among those aged 85 years or older (10.8% and 4.1%, respectively) and among women of this age group (11.7% and 4.3%, respectively). Individuals with low SEP overused benzodiazepines at a higher rate compared to the general population (6.5% vs. 4.2%).

Conclusions: Most indicators demonstrated improvement, yet women received lower quality care than men in all measures. High elderly influenza and pneumococcal vaccination

rates will decrease the burden of influenza and pneumococcal disease on the Israeli healthcare system. High body weight documentation rates allow for future quality indicator development to measure the rate of unintended weight loss in the elderly. The relatively high rate of benzodiazepine overuse and long-acting use confirms the need for continued practitioner-focused benzodiazepine prescribing education, in order to reduce the risks of high elderly benzodiazepine usage. Recognizing elderly Israeli populations who receive less than optimal care enables further development of population-specific healthcare changes to provide quality care to specific subgroup populations of elderly Israelis.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare
3. Hadassah Medical Center, Jerusalem, Israel

Longitudinal Adherence to a National Screening Program for Early Detection of Colorectal Cancer in Israel

International Society of Quality in Health Care (ISQUA), Tokyo, 2016

O. Paltiel[1], D. H. Jaffe[1], O. Manor[2]

Objectives: In Israel, Ministry of Health Guidelines recommend annual screening with fecal occult blood testing (FOBT) for early detection of colorectal cancer (CRC) in adults aged 50-74 years. The National Quality Indicators in Community Healthcare program (QICH) measures yearly compliance with CRC screening guidelines, using data from electronic medical records. QICH data cover virtually the entire civilian population in Israel, insured in one of four health maintenance organizations (HMOs). Apart from yearly FOBT, screening colonoscopy every 10 years is also considered adequate screening. We aimed to assess longitudinal adherence to screening guidelines by a) measuring the number of FOBT or colonoscopy exams in the target population during 5 years of follow-up and b) evaluating characteristics associated with non-adherence or incomplete adherence.

Methods: The study population included all Israelis insured by HMOs aged 50-70 at the time of enrollment on 01/01/2008, excluding individuals with colon cancer diagnosed prior to the study period. We measured the number of FOB tests performed until 31/12/2012. We then explored demographic, health and behavioral characteristics associated with non-adherence or partial adherence. Finally, a multivariable model was constructed in which the outcome variables were 1 (any adherence) versus non-performance of FOBT in the entire study period or colonoscopy in the past 10 years and 2 (full adherence) FOBT done every year for 5 years or colonoscopy in the past 10 years.

Results: Thirty percent of 1,298,698 eligible Israelis did not perform a single screening test during the study period.

Variables associated with non-adherence (odds ratios>1, p<0.001) included age 50-59 compared to 60-70 years, male sex, exemption from co-payments (indicating lower socioeconomic status), obesity, and nonperformance of other screening tests (such as mammography or PSA). In contrast, patients with a diagnosis of hypertension or diabetes were more likely to undergo screening for colorectal cancer at least once.

As for full adherence, only 25% of the target population performed FOBT every year during the study period (or colonoscopy in the past 10 years). Complete adherence was more likely to be due to performance of colonoscopy in the

10 years prior to measurement, and not to consistent yearly FOBT, which was in fact performed by only 4% of the eligible

Israeli population. Factors associated with incomplete adherence were similar to those mentioned above for nonadherence except for diabetes, which was associated with poorer longitudinal compliance.

Conclusion: The study results indicate important gaps in longitudinal adherence to CRC screening. Despite the steady improvement in the overall percentage of Israelis who carry out a screening test in individual years (up to 57% in 2013), a substantial proportion (30%) does not take part in any CRC screening, and the probability that an individual will consistently perform FOBT every year for five years is very low (4%). Quality indicators need to take into account longitudinal measures of performance since cross-sectional measures fail to identify risk groups who never comply with screening guidelines. Efforts to improve the consistent participation and perseverance in screening programs are required in order to substantially influence CRC mortality.

1. Braun School of Public Health and Community Medicine, Hadassah Medical Organization
2. Braun School of Public Health and Community Medicine, Hebrew University, Jerusalem, Israel

Diabetic Nephropathy: Healthcare Quality Indicators Outcomes

The 6-th International Jerusalem Conference for Health Policy, Jerusalem, 2016

Michal Krieger[1,2], Vered Kaufman-Shriqui[1,2], Wiessam Abu-Ahmed [1,2], Orly Manor[1,2], Arie Ben-Yehuda[2,3], on behalf of the Steering Committee, the National Program for Quality Indicators in Community Healthcare, Israel.

Background: Nephropathy is a common complication of long-standing diabetes inflicting 20-40% of patients. In Israel, diabetes is a leading cause of end stage renal disease accounting for ~43% of dialysis patients. Angiotensin Converting Enzyme Inhibitors or Angiotensin Receptor Blockers (ACE-I/ARBs) are indicated in diabetic patients with proteinuria in order to retard renal disease progression.

Study Question: To evaluate the prevalence, monitoring and ACE-I/ARBs therapy of renal disease among Israeli adult diabetic patients.

Methods: Data was originated within the framework of the Israel National Program for Quality Indicators in Community Healthcare (QICH) for 2014, based on patient's electronic medical records provided by the four Israeli health plans. Diabetic nephropathy measures include three domains:

1. Renal function monitoring [Glomerular Filtration Rate (GFR) and urinary protein excretion].

2. Prevalence of nephropathy (GFR<60 ml/min/1.73m² or abnormal urinary protein).

3. ACE-I/ARBs therapy for nephropathy.

Data was stratified by age, gender, and Socio-Economic Position (SEP). Low SEP was defined by exemption from medical co-payments.

Results: In 2014, the prevalence of diabetes among Israeli adult population was 9.7% (481,730 patients). Rates of GFR and urinary protein documentation were 91.3% and 79% respectively. The overall prevalence of nephropathy was 30.5%, steadily increasing from 9.6% in the 20-24 age bracket to 53.3% in the 80-84 age bracket. Nephropathy was more prevalent among men (32.4% vs. 28.6%) and low SEP (37.7% vs. 26.4%). Overall rate of ACE-I/ARBs therapy was 76%. Lower rates were observed in younger patients.

Conclusions: This is the first national-level report on diabetic nephropathy in Israel. The observed prevalence of nephropathy was consistent with the literature. Higher prevalence

was observed in men, low SEP and older patients. Despite an overall acceptable rate of ACE-I/ARBs therapy, relatively low rates were observed among young adults.

Health Policy Implications: Our findings mandate further investigation and can guide policy planning, especially focusing on therapy for young diabetic nephropathy patients.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare
3. Hadassah Medical Center, Division of Medicine, Jerusalem, Israel

Using Risk Scores to Identify Vulnerable Populations: A Case for LDL Cholesterol

Ronit Calderon-Margalit[1, 2], Dena Jaffe[2] and Orly Manor[1, 2] on behalf of the QICH-program

Background: The Adult Treatment Panel III (ATP III) guidelines for target levels of LDL-cholesterol according to risk stratification were published in 2002 and, thereafter, widely accepted. Accordingly, LDL-cholesterol goals by risk for coronary heart disease (CHD) events are <160mg/dl, <130 mg/dl, and <100 mg/dl for low, intermediate, and high risk patients, respectively. The Israel National Program for Quality Indicators in Community Healthcare (QICH) has collected data annually since 2002 for the entire Israeli population using electronic health records. Intermediate outcome measures were used to assess primary and tertiary preventive care for the general adult population and patients with diabetes or CHD. Up until 2012, a single outcome measure (LDLC 160>mg/dl) was used as a primary prevention measure in addition to LDL-C<100 mg/dl among patients with either diabetes mellitus (DM) or CHD. In 2012, QICH updated these outcome measures to reflect the ATP III guidelines.

Objectives: To examine the impact of risk stratification on LDL control measures.

Methods: The Framingham risk score of cardiac morbidity was calculated for adults aged 35-74 years, who were not identified as having either DM or CHD. Individuals were stratified into low risk (0-1 risk factors), intermediate risk (>2 risk factors and 10-year CHD risk <20%), or high risk (10-year CHD risk ≥20%, DM or CHD). The proportion of each stratum achieving the appropriate LDL-C goals was calculated. The high-risk stratum was assessed according to primary prevention or by disease risk group (DM or CHD).

Results: In 2012, the target population for primary prevention of CHD included 1,035,351 individuals aged 35-74; 92% of this population had LDL-C levels below 160 mg/dl, the former target of the QICH program. Of the 739,110 individuals with low risk of CHD, 91% have reached the <160 mg/dl goal. Of the 279,210 individuals with intermediate risk, 72% have reached the <130 mg/dl goal. Only 18% of the 17031 high risk individuals reached the <100mg/dl goal. This rate is much lower than the target achieving rate among other tertiary prevention high risk groups; among patients with documented CHD, 72% had LDL-C levels below 100 mg/dl. Similarly, among patients with DM, 63% have reached this goal. These rates among CHD and DM patients have increased throughout the QICH program period and have reached a plateau around 2008.

Conclusion: While a single outcome measures reflected the majority of the population, it missed the critical minority who needs attention. Risk stratification should be used whenever possible. It remains to be studied whether identifying these high-risk patients will improve their outcomes in the years to come.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare

Do Community Healthcare Quality Indicators of The Treatment of Diabetes Mellitus Improve Health Outcomes?

International Society for Quality in Health Care (ISQUA), Rio de Janeiro, 2014

Ronit Calderon-Margalit[1,2], Dena Jaffe[2] and Orly Manor[1,2] on behalf of the QICH-program

Objectives: Assessment of adherence to guidelines for the management and care of patients with diabetes mellitus (DM) has been a cornerstone of the Israel National Program for Quality Indicators in Community Healthcare (QICH) since its inception in 2002. We aimed to evaluate if better quality of care was associated with improved health status.

Methods: Process and intermediate outcome quality indicators, reported to the QICH directorate by the four healthcare providers in Israel, were summarized and presented as age standardized rates by year (2002-2010). Indicators for health outcomes were collected from various national datasets through 2012 or the latest available. Data for end stage renal disease (ESRD) were obtained from the Israel Dialysis Registry and the Israel Center for Disease Control and incidence rates for ESRD with underlying diabetes were calculated. Data on blindness in Israel was obtained from the Ministry of Social Affairs and Social Services as the number of individuals who received a certificate of visual impairment due to diabetes and incidence rates were calculated. Records of death due to diabetes were obtained from the Israel Central Bureau of Statistics. Regression models were fit to study trends for these outcomes and a change point estimate in 2006 was used to determine statistical significant changes in trends associated with QICH indicators.

Results: Increased rates of appropriate diabetes care were observed for many QICH indicators. For example, annual HbA1c testing increased from 81% in 2002 to 93% in 2010, annual urine testing for microalbuminuria increased from 35% in 2002 to 74% in 2009-2010, and annual ophthalmologic testing increased from 57% in 2002 to 63% in 2010. Intermediate outcomes, including controlled (HbA1c<7% among patients<75 years old) and uncontrolled (HbA1c>9%) diabetes increased during the initiation years. Specifically, the rate of controlled diabetes increased from 37% in 2002 to 45% in 2006 and remained stable through 2010 and the rate of uncontrolled diabetes improved from 21% in 2002 to 13% for the years 2007-2010. Health outcomes for patients with DM improved during the study period. Between 2000 and 2012, age-standardized amputations rates from DM decreased from 16 to 12 per 100,000 for males and from 8 to 5 per 100,000 for females. Among males, the rates decreased by -0.06/100,000/year in 2000-2006 and by -0.72/100,000/year from 2006-2012 (p-value for change=0.01). Less dramatic changes in rates were observed for

females during these time periods (-0.20/100000/year for 2000-2006 and -0.41/100,000/year for2006-2012) (p=0.16). Between 2000 and 2010, the rate of diabetes-related ESRD decreased from 2.3 to 1.8 per 1000 patients with DM. In 2006, the rate of decrease doubled, however, this change was not statistically significant. From 2002 to 2012 the rate of diabetes-related blindness decreased from 1.5 to 0.3 per 1000, respectively. No statistically significant change in trend was noticed at the 2006 change point. Mortality from diabetes decreased during the study period in all sub-populations in Israel. A significant reduction in this trend after 2006 was observed for Arab males and females (p=0.022 and 0.036, respectively).

Conclusion: Decreased rates of diabetes-related complications in target organs and mortality were observed since the establishment of QICH. Accelerated decreases were noted for amputations among males and mortality in the Arab population. This study suggests that concentrated efforts to improve primary care of patients with DM may indeed improve health outcomes at a national level. Future individual-focused studies are warranted to support these findings.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare

Accurately Assessing the Quality of Diabetes Care in Israel

Dena H. Jaffe[1,2], Michal Kriger[1,2], Orly Manor[1,2] and Arie Ben-Yehuda[2,3] on behalf of the QICH-program

The goal of healthcare quality indicators for patients with diabetes mellitus (DM) is to improve health, minimize disability and reduce disease-related mortality. The Israel National Program for Quality Indicators in Community Healthcare (QICH) is a population-based assessment program developed together with Israel's four health plans. During the decade since the program's inception, two critical issues related to diabetes quality indicators were identified: are all patients with DM detected? and is the target level for hemoglobin A1c (HbA1c) control appropriate for this population?

Issue 1: In 2004, DM patients were defined based on diabetes medication purchases. Analytic standardization of HbA1c testing across laboratories in Israel expanded the inclusion criteria to include those with glucose>200 mg/dL or HbA1c>6.5%. This target population adjustment resulted in relative increased prevalence of ~15% or an additional ~46,000 cases of diabetes.

Issue 2: Recent evidence and guidelines note that restrictive glycemic control may be harmful for specific sub-populations, including elderly and long-term DM patients. In 2002, 39% of the DM adult population reached the target level for adequate HbA1c control of <7%. In 2012, 63% of this population attained adequate control, however with stratified target levels – <7% for adults 25-74 years with DM<10 years and <8% for adults 25-74 years with DM≥10 years or adults 75-84 years .

The utility of quality indicators in healthcare are contingent on maintaining their relevance. Recent revisions to the QICH diabetes measures more accurately reflect Israel's DM population guideline-appropriate care.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare
3. Hadassah Medical Center, Division of Medicine, Jerusalem, Israel

Timeliness of Colonoscopy Follow-up After Fecal Occult Blood Testing: A National Study

Annual Research Day, Israel Cancer Association, Tel Aviv, 2014

Dena H. Jaffe[1,2], Orit Paz-Stotsky[1], Balkees Omari[1], Orly Manor[1,2], Arnon Cohen[4], Einat Elran[5], Liora Valinsky[6], Eran Matz[7] and Ora Paltiel[1-3] on behalf of the QICH-program

Background: Colorectal cancer (CRC) is the second leading cause of cancer deaths in Israel. Early detection using fecal occult blood testing (FOBT) or colonoscopy has been shown to substantially reduce mortality. The effectiveness of FOBT depends on prompt follow-up of positive results with definitive testing via colonoscopy .

Objectives: To measure performance of follow-up colonoscopy following a positive FOBT at the national level and to assess predictors of timeliness of care.

Methods: A national historical prospective study of 67,329 Israeli adults aged 50-74 years with a positive FOBT from 1/2008-9/2012 using electronic health records from all four Israeli health plans. Predictors of timeliness of colonoscopy included age, sex, an indicator of socio-economic status (SES), comorbidities, and health behaviors. Regression models were used to examine the multivariate relationship .

Results: Seventy-one percent of adults with a positive FOBT underwent a colonoscopy during the study period, with a median time to colonoscopy of 112 days. Predictors of delayed colonoscopy (>90 days) included individuals who were older (65-74 vs 50-64 years, OR 1.1, 95% CI 1.05-1.15), of lower versus higher SES (OR 1.3, 95% CI 1.24-1.35), ever versus never smokers (OR 1.1, 95% CI 1.01-1.12), body mass index ≥30 versus <30 (OR 1.1, 95% CI 1.06-1.15), 2-3 vs 0-1 comorbidities (OR 1.1, 95% CI 1.08-1.18) and had 2+ versus 0-1 visits to their family doctor in a year (OR 1.2, 95% CI 1.06-1.30).

Conclusion: Approximately 30% of all Israelis do not receive a follow-up colonoscopy after a positive FOBT and about 50% of those undergoing the colonoscopy are tested within three months. Timeliness of care is predicted by socio-demographic, behavioral and health-related factors. Particular attention directed at those at-risk for non-performance of a timely colonoscopy may improve survival from CRC in Israel.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare
3. Hadassah Medical Center, Division of Medicine, Jerusalem, Israel
4. Clalit Health Services
5. Maccabi Healthcare Services
6. Meuhedet Health Fund
7. Leumit Health Fund

Measure Development at the National level: Shared Trust and Goals- a Lesson from Glycemic Control

International Forum for Quality and Safety in Healthcare, Paris, 2014

Dena H. Jaffe[1,2] and Orly Manor[1,2] on behalf of the QICH-program

Context: The National Program for Quality Indicators in Community Healthcare (QICH) is a population-based assessment program. In full partnership with all four health plans, QICH develops process and outcome indicators for electronic health records. Implementation of new indicators or changes to existing indicators require substantial efforts at the health plan level to create or update their information technology (IT) system and educate and train administrative staff and health professionals of the measure's utility and purpose .

Problem: Over time, no improvements were observed for the quality indicator for effectiveness of care for appropriate glycemic control in adult patients with diabetes defined as of hemoglobin A1c (HbA1c) <7%.

Assessment of the problem and analysis of its causes: As part of QICH's routine evaluation process, in 2010, periodic trends in the appropriate glycemic control in patients with diabetes were evaluated and only minimal improvements were observed following the initial monitoring period (2002-2006). Compared to other Western countries, population control rates of 48% were within an acceptable range, however with room for improvement .

Engaging staff: In June 2010, a half-day symposium was devoted to the state of quality in community healthcare. Specific attention was given to the use and relevance of glycemic control measures in patients with diabetes and included a panel comprised of representatives from all four health plans, the National Diabetes Council (NDC) and QICH. Concerns were raised from both panelists and audience members regarding intensive glycemic control in vulnerable populations and its effect on outcomes, considering recent studies, for example, the Action to Control Cardiovascular risk in Diabetes trial (ACCORD) and the Action in Diabetes and Vascular Disease (ADVANCE) trial.

Strategy for change: QICH sought to engage primary care physicians, health plan administrators and the NDC. The initial half-day symposium was intended to create a shared understanding of the goals and challenges for managing and monitoring patients with diabetes. Short-term (measure improvement) and long-term (outcome assessment) goals were established.

Intervention: As part of the short-term strategy, a two-stage revision process was employed for updating the quality indicator for glycemic control. The staged update was a result of a lag in NDC endorsement of glycemic care management and the limitations of the IT systems within each health plan. Initially (2011), the quality indicator for glycemic control was stratified by age, with a less stringent HbA1c target for elderly patients aged 75+ years (<8%). In 2012, following NDC support and the availability of uniform and valid data from each health plan, further stratification of target levels was integrated into the measure according to disease duration. Namely, patients under 75 years treated for the disease for 10+ years were given less intensive target values (<8%)

Measurement of improvement: Improvement was measured according to health plan and physician feedback as to the representativeness of the indicator. Prior to indicator updates, control rates for HbA1c in the adult population with diabetes was 48%. At stage 1 (stratification by age) control rates were 52% and by stage 2 (stratification by age and disease duration) control rates were 63%. Long-term assessment of outcomes is currently under study .

Effects of change: The stratified representation of glycemic control provided health plans and physicians with a more accurate assessment of their patients in order to identify those at an increased risk for complications. These effects were expressed at all levels during conferences and anecdotally .

Lessons learnt: Measure development at a national level requires shared trust and shared goals. Involvement of stakeholders at all levels for creating an atmosphere of working through consensus and cooperation is essential.

Message for others: Measure development through cooperation and consensus is essential for changes to the quality indicator monitoring system at the national level.

1. The Hebrew University- Hadassah
2. National Program for Quality Indicators in Community Healthcare

The National Program for Quality Indicators in Community Healthcare: Lessons from the Community to Hospitals

The Israel National Institute for Health Policy Research, International Workshop on Hospital Quality Measures, Dead Sea, 2014

Orly Manor[1] on behalf of the QICH-program

The National Program for Quality Indicators in Community Healthcare (QICH) is a population-based assessment program. In full partnership with all four health plans operating in Israel, QICH develops electronic health records-based quality indicators that assess both adherences to evidence-based medicine (process) and health status (outcome). In addition to measure development, QICH is responsible for annual public reporting. QICH faces numerous challenges, spanning issues relating to provider and physician support, information technology, standardization, transparency and evidence-based quality indicators, with the understanding that these challenges are moving targets that require systematic review and updating. In addition to internal complexities, the relevance of QICH must also consider quality assessment at the international arena, both for guidance and as a benchmark of success. Naturally, these challenges are relevant to a national framework assessing quality in the hospital setting. Furthermore, cross-fertilization between community and hospital quality assessment is essential for improving the quality and safety of healthcare, for example by enhancing continuity of care, and will ultimately lead to better health system-wide.

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1. The Hebrew University- Hadassah, National Program for Quality Indicators in Community Healthcare