



Cancer

The World  Bulgaria

Sofia, 2007

- This Almanac is a beginning for all of us.
- For us, the thousands of people, who do not know anything else about cancer except that it is a very serious disease.
- For us, the people with cancer, and for our families. We, who breathlessly read these pages, thought over about many things, and read again, lived with the book over and over again.
- The Almanac is not only created by us but it is for us too – the doctors of our patients. We also live through it, but the most important thing for us is to find everything that we can help with.
- The Almanac is also for the decision-makers, not only for the individuals, but for discussions, concerning the problem as a whole - for the documentation, for the financing.
- The Almanac is a partner of the society and the patient's organizations, a partner of the media, of the parents and families, of the educational institutions, and last but not least - a partner of science.
- The Almanac stimulates comparison with the world, comparison between institutions and society, between past and present, since comparison is known to be a good ground for reaction, new ideas and creativity.
- Today cancer is a problem of great significance, affecting people, families, and countries. This is so despite of the colossal progress achieved by science and technology, by the established rules for action and behavior. It is a unique biological phenomenon, but the factors that cause it are reasonably well known, which makes the prevention possible today.
- The accents outlined in the Almanac lead to the following:
We can beat cancer today, but only if we unite against it with knowledge and responsibility in our behavior and actions!



Ivan Chernozemsky
Editor-in-chief



Cancer in Figures

Situation Perspectives

*In the European countries
each year 3.2 million people
fall ill from cancer and 1.7
million die from it.*

*Bulgaria is among the coun-
tries with the lowest mortal-
ity rates.*

In the highly-organized societies the information about oncological diseases is most detailed, most accurate and includes more attributes than the information about all other chronic diseases.

In Bulgaria, the obligatory registration of malignant diseases was initiated together with the creation of the specialized oncological network in 1952. It was codified with Instruction of the Ministry of Health (MoH) No. 858/05.03.1964 and with Ordinance of MoH No. RD-09-451/29.06.1990 and Ordinance of MoH No. 34/2005.

Bulgaria has an acknowledged, national informational system for cancer diseases that is of the highest possible level.

The image shows a detailed medical form titled "BULPOC KARTIČKA" (Bulgarian Cancer Card). It is a structured document with multiple sections and fields for data entry. The sections include: 1. Patient identification (name, date of birth, sex, address, phone number); 2. Clinical history (date of diagnosis, symptoms, previous treatments); 3. Diagnostic procedures (type of biopsy, imaging studies); 4. Pathological findings (tumor type, stage, grade); 5. Treatment plan (surgery, chemotherapy, radiation therapy); 6. Follow-up and prognosis. The form is designed to be filled out by a physician or medical specialist.

Every physician/medical specialist is required to send a “rapid notification” to the Regional Oncological Center where the patient’s permanent residence is for each newly diagnosed cancer case, for a person suspected of having cancer, for carcinoma in situ (since 1975), as well as for those who have died from a malignant neoplasm.



Information about malignant diseases is received in the National Cancer register from the regional registers in the country. The information is checked for consistency and completeness of the data, and for coincidences between the clinical and morphological diagnoses. A new, detailed variant of the fast notification was established in 1992. (Nomenclature 12 for medical forms, serial number 120A of

MoH), including extra information. Since 1993, the patients are tracked out by type of treatment and comparison between topographical and morphological diagnosis.

The International classification of diseases, 10th revision from 1992, was introduced in Bulgaria in January 2006 (it can be found on ICD-10 web-address <http://www.who.int/classifications/icd/en>).

The data for the incidence of malignant diseases as well as the included additional data is used for epidemiological research, for making administrative decisions and for other purposes. The information is accessible to all interested individuals and institutions.

Indices Used

Incidence Rate – the new cases for a defined period within the population in risk during the same period.

Prevalence – all the present cases of the illness, regardless of the time when they originated.

Mortality rate – the deceased people for a defined period within the population in risk during the same period.

Methods of expressing these indices

By means of the absolute amount of cases of the disease

By means of the so-called crude rate – age structure of the population is not taken into consideration.

By means of the so-called standard rates - equalization of age differences by calculating them in regard to the world standards for age structure of the population all over the world as of 1960.

Cancer in the world

EUROPE

In the European countries every year 3.2 million people are taken ill with cancer, and 1.7 million people die from the disease. Happily for us Bulgaria is among the European countries with one of the lowest mortality rates.

USA

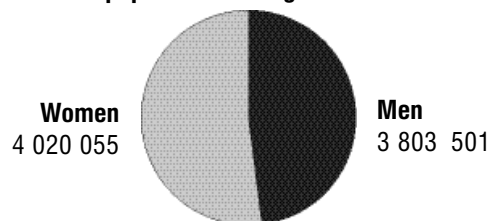
People taken ill with cancer for one year:
- more than 1.4 million people.

Deceased from cancer:
- 1 person every 58 seconds;
- 1500 people daily;
- 560 000 people annually.

The total number of people killed in all the military battles during the 215-year long history of the USA - 652 799.

Cancer in Bulgaria - 2003

Total population of Bulgaria - 7 823 556



Registered new cases

| Number | | Crude rate per 100 000 | Cases per hour |
|--------|--------|------------------------|----------------|
| 30 193 | | 385.9 | 3.4 |
| Men | 15 704 | 15 704 | 412.9 |
| Women | 14 489 | 14 489 | 360.4 |

Registered deaths

| Number | | Crude rate per 100 000 | Deaths per hour |
|--------|------|------------------------|-----------------|
| 15 725 | | 201.0 | 1.8 |
| Men | 9260 | 243.5 | |
| Women | 6465 | 160.8 | |

Registered existing patients

| Number | | Crude rate per 100 000 |
|---------|---------|------------------------|
| 223 984 | | 2862.9 |
| Men | 92 747 | 2438.5 |
| Women | 131 237 | 3264.6 |

Statistical/epidemiological data about Bulgaria in the following pages is derived from *Cancer Incidence in Bulgaria 2003*, Vol. XIV, Bulgarian National Cancer Registry, Sofia, 2006.

Republic of Bulgaria in 2003

Newly registered patients in the 10 most frequent cancer sites

| Males | Number | Percentage |
|----------------------------------|--------|------------|
| Trachea, bronchus and lungs | 3181 | 20.30 |
| Prostate | 1403 | 8.90 |
| Colon | 1229 | 7.80 |
| Stomach | 1175 | 7.50 |
| Rectum and anus | 967 | 6.20 |
| Bladder | 906 | 5.80 |
| Larynx | 624 | 4.00 |
| Pancreas | 573 | 3.60 |
| Kidneys and other urinary organs | 352 | 2.20 |
| Liver and bile | 338 | 2.20 |

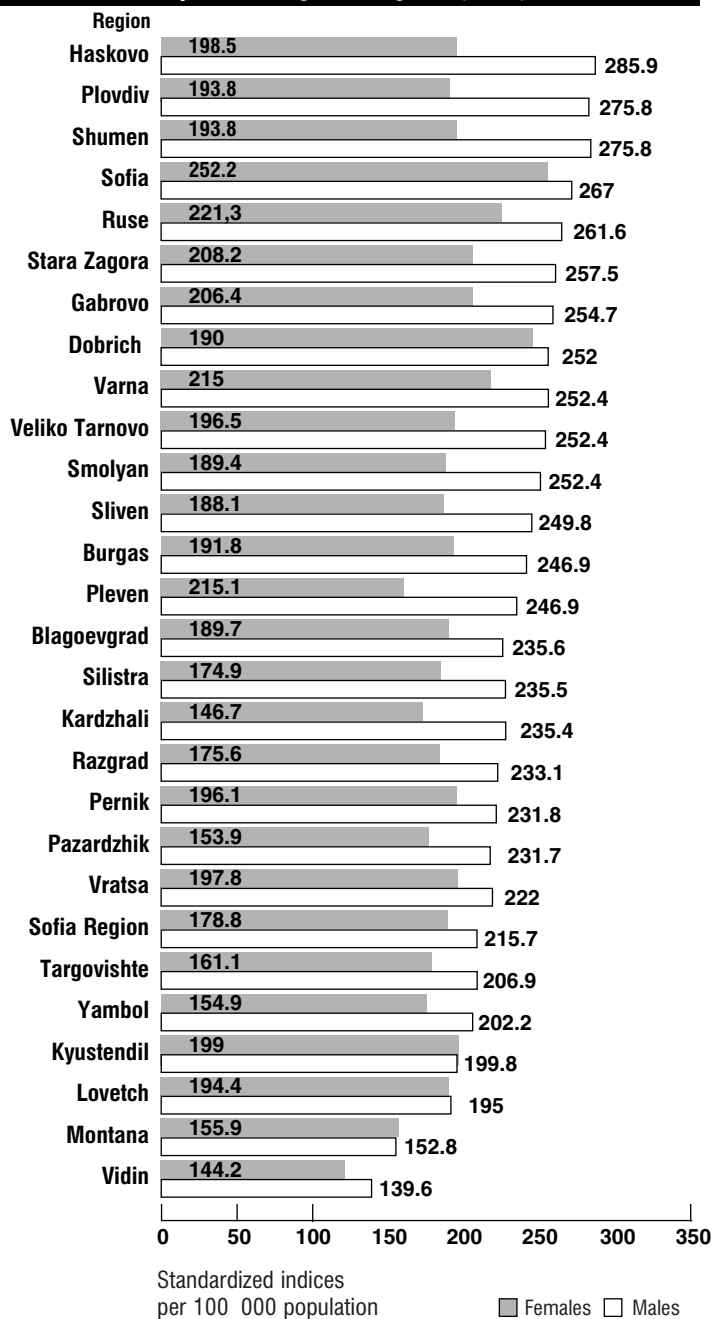
| Females | Number | Percentage |
|--|--------|------------|
| Breast | 3513 | 24.24 |
| Corpus uteri | 1139 | 7.90 |
| Cervix uteri | 1096 | 7.60 |
| Colon | 1056 | 7.30 |
| Ovary and uterine tubes | 788 | 5.40 |
| Rectum and anus | 708 | 4.90 |
| Stomach | 675 | 4.70 |
| Trachea, bronchus, lungs | 565 | 3.90 |
| Pancreas | 438 | 3.00 |
| Brain and other Central nervous system | 274 | 1.90 |

Number of deaths for the 10 most frequent cancer sites

| Males | Number | Percentage |
|--|--------|------------|
| Stomach | 2585 | 27.9 |
| Prostate | 727 | 7.8 |
| Colon | 715 | 7.7 |
| Rectum and anus | 537 | 5.8 |
| Pancreas | 503 | 5.4 |
| Liver and bile ducts | 470 | 5.1 |
| Bladder | 330 | 3.6 |
| Larynx | 326 | 3.5 |
| Brain and other Central nervous system | 297 | 3.2 |

| Females | Number | Percentage |
|--|--------|------------|
| Breast | 1138 | 17.6 |
| Stomach | 573 | 8.9 |
| Colon | 534 | 8.3 |
| Lung, Bronchus | 501 | 7.8 |
| Rectum | 396 | 6.1 |
| Ovary and uterine tubes | 388 | 5.9 |
| Pancreas | 362 | 5.6 |
| Cervix uteri | 356 | 5.5 |
| Liver | 316 | 4.9 |
| Brain and other Central nervous system | 247 | 1.90 |

Cancer Morbidity in the Bulgarian regions (2003)



Morbidity rate in Bulgaria (2003) according to the number of patients by leading sites

| Localization | Total | Indice | % |
|-------------------------------------|--------|--------|------|
| Skin cancer | 47 878 | 612.0 | 21.4 |
| Breast cancer | 38 634 | 493.8 | 17.2 |
| Cancer of corpus uteri | 14 967 | 191.3 | 6.7 |
| Cancer of cervix uteri | 12 200 | 155.9 | 5.4 |
| Cancer of the colon | 11 482 | 146.8 | 5.1 |
| Rectum cancer | 9565 | 122.2 | 4.3 |
| Cancer of the pharynx and the mouth | 9786 | 125.1 | 4.4 |
| Cancer of the lung and trachea | 9555 | 122.1 | 4.3 |
| Cancer of the bladder | 8013 | 102.4 | 3.6 |
| Cancer of the prostate | 7439 | 95.1 | 3.3 |

Cancer mortality in 25 countries per 100 000 inhabitants (2002)

| Country | All organs | | Colon and Rectum | | Liver | | Lung and bronchus | |
|----------------|------------|---------|------------------|---------|-------|---------|-------------------|---------|
| | Males | Females | Males | Females | Males | Females | Males | Females |
| USA | 152.6 | 111.0 | 15.2 | 11.8 | 4.4 | 2.0 | 48.7 | 26.8 |
| Austria | 156.0 | 106.7 | 20.1 | 13.9 | 7.1 | 2.5 | 37.7 | 12.1 |
| Bulgaria | 139.5 | 86.3 | 17.1 | 11.4 | 7.3 | 3.2 | 39.1 | 6.9 |
| Croatia | 212.6 | 104.6 | 23.4 | 13.0 | 7.3 | 3.2 | 65.3 | 9.7 |
| Czech Rep. | 216.4 | 126.6 | 34.0 | 18.0 | 7.7 | 3.6 | 61.8 | 12.8 |
| Denmark | 179.2 | 148.1 | 23.3 | 19.2 | 3.4 | 2.3 | 45.2 | 27.8 |
| Finland | 130.2 | 93.0 | 11.5 | 9.8 | 4.2 | 3.0 | 34.4 | 8.2 |
| France | 191.7 | 96.3 | 18.2 | 11.8 | 11.4 | 2.5 | 47.5 | 8.0 |
| Germany | 161.8 | 110.4 | 19.9 | 15.7 | 4.9 | 2.1 | 42.4 | 10.8 |
| Greece | 148.2 | 81.9 | 9.7 | 8.0 | 11.3 | 5.1 | 49.8 | 7.6 |
| Hungary | 271.4 | 145.1 | 35.6 | 21.2 | 7.8 | 3.8 | 83.9 | 22.3 |
| Italy | 170.9 | 95.2 | 16.5 | 10.9 | 12.6 | 4.8 | 50.1 | 8.5 |
| Japan | 154.3 | 82.2 | 17.3 | 11.1 | 21.0 | 6.7 | 32.4 | 9.6 |
| Norway | 156.7 | 109.1 | 20.1 | 16.8 | 2.0 | 1.3 | 32.7 | 13.5 |
| Poland | 203.5 | 110.6 | 18.2 | 11.4 | 4.3 | 3.2 | 68.4 | 12.3 |
| Portugal | 160.2 | 87.3 | 20.0 | 11.9 | 5.5 | 1.9 | 29.9 | 5.3 |
| Romania | 159.4 | 93.7 | 13.6 | 9.0 | 8.8 | 3.9 | 47.1 | 8.1 |
| Russia | 205.0 | 101.6 | 18.9 | 13.6 | 5.8 | 2.6 | 63.0 | 6.2 |
| Slovakia | 224.5 | 110.3 | 33.2 | 16.0 | 6.6 | 2.9 | 59.9 | 8.2 |
| Slovenia | 200.6 | 117.1 | 24.1 | 14.0 | 6.6 | 2.4 | 54.0 | 11.9 |
| Spain | 173.6 | 81.9 | 18.5 | 11.3 | 8.4 | 3.3 | 49.2 | 4.7 |
| Sweden | 135.1 | 102.8 | 14.9 | 11.1 | 4.2 | 2.4 | 22.6 | 12.9 |
| Netherlands | 181.6 | 119.8 | 18.9 | 14.4 | 2.5 | 1.3 | 57.6 | 15.6 |
| Turkey | 107.8 | 58.7 | 5.8 | 5.4 | 2.5 | 1.4 | 44.1 | 4.9 |
| United Kingdom | 162.3 | 122.7 | 17.5 | 12.4 | 2.8 | 1.5 | 42.9 | 21.1 |

**Frequencies are standardized according to age in comparison to WHO demographic data.*

Cancer mortality in 25 countries per 100 000 inhabitants (2002) contd.

| Country | Breast | | Prostate | | Uterus | | Esophagous | | Stomach | |
|----------------|---------|-------|----------|--------|--------|---------|------------|---------|---------|--|
| | Females | Males | Cervix | Corpus | Males | Females | Males | Females | | |
| U.S.A. | 19.0 | 15.8 | 2.3 | 2.6 | 5.1 | 1.2 | 4.0 | 2.2 | | |
| Austria | 20.6 | 18.4 | 4.1 | 2.5 | 3.8 | 0.7 | 10.3 | 6.5 | | |
| Bulgaria | 16.0 | 8.9 | 8.0 | 2.8 | 2.4 | 0.5 | 15.0 | 7.6 | | |
| Croatia | 16.0 | 13.5 | 5.0 | 2.5 | 5.8 | 0.8 | 19.4 | 8.0 | | |
| Czech Rep. | 20.0 | 17.2 | 5.5 | 4.6 | 4.7 | 0.7 | 12.1 | 6.4 | | |
| Denmark | 27.8 | 22.6 | 5.0 | 2.9 | 7.0 | 1.9 | 5.4 | 3.3 | | |
| Finland | 17.4 | 18.0 | 1.8 | 2.7 | 2.5 | 1.2 | 7.9 | 4.5 | | |
| France | 21.5 | 18.2 | 3.1 | 2.2 | 8.6 | 1.2 | 7.0 | 3.1 | | |
| Germany | 21.6 | 15.8 | 3.8 | 1.9 | 5.0 | 1.0 | 10.3 | 6.4 | | |
| Greece | 15.4 | 11.2 | 2.5 | 1.3 | 1.3 | 0.4 | 8.9 | 4.3 | | |
| Hungary | 24.6 | 18.4 | 6.7 | 4.1 | 9.1 | 1.3 | 18.2 | 8.5 | | |
| Italy | 18.9 | 12.2 | 2.2 | 32.2 | 3.4 | 0.7 | 12.6 | 6.5 | | |
| Japan | 8.3 | 5.7 | 2.8 | 1.3 | 7.5 | 1.1 | 28.7 | 12.7 | | |
| Norway | 17.9 | 28.4 | 3.5 | 2.3 | 3.3 | 0.9 | 9.4 | 5.0 | | |
| Poland | 15.5 | 12.4 | 7.8 | 2.8 | 4.7 | 0.8 | 16.6 | 6.2 | | |
| Portugal | 17.0 | 19.9 | 4.5 | 1.9 | 5.6 | 0.9 | 20.3 | 10.1 | | |
| Romania | 16.7 | 9.0 | 13.0 | 2.0 | 2.8 | 0.5 | 17.0 | 6.6 | | |
| Russia | 18.0 | 8.2 | 6.5 | 3.6 | 6.9 | 1.2 | 31.8 | 13.5 | | |
| Slovakia | 19.3 | 16.5 | 6.1 | 5.1 | 8.2 | 0.5 | 16.6 | 6.4 | | |
| Slovenia | 22.1 | 18.8 | 4.7 | 3.0 | 4.8 | 0.9 | 17.0 | 8.2 | | |
| Spain | 15.9 | 14.9 | 2.2 | 2.4 | 5.1 | 0.5 | 11.4 | 5.4 | | |
| Sweden | 17.3 | 27.7 | 3.1 | 2.3 | 3.3 | 0.9 | 6.8 | 3.8 | | |
| Netherlands | 27.5 | 19.7 | 2.3 | 2.4 | 6.8 | 2.2 | 9.1 | 4.1 | | |
| Turkey | 9.7 | 5.0 | 2.4 | 2.0 | 2.0 | 1.4 | 10.4 | 5.4 | | |
| United Kingdom | 24.3 | 17.9 | 3.1 | 1.8 | 9.0 | 4.1 | 8.7 | 4.0 | | |

Bibliography: Ferlay J. Bra P. Pisani P. Parkin. *DM GLOBOCAN 2002: Cancer Incidence, Mortality and Prevalence Worldwide*. IARC CancerBase No. 5 version 2.0. IARC Press. Lyon 2004. American Cancer Society. *Society Surveillance Research*. 2006.

Stages of cancer

It is particularly important to establish the stage of each cancer site where the disease has been found. Diseases established at an earlier stage have a better prognosis.

The correct defining of the stage depends to a great extent on the method used to determine the diagnosis. The most reliable method is the histological one.

Data for Bulgaria (2003)

| Site | Total number | Stage I | % | Stage II | % | Stages III&IV | % | Without stage | % |
|-----------------------|--------------|---------|------|----------|------|---------------|------|---------------|------|
| Respiratory system | 4515 | 113 | 2.5 | 333 | 7.4 | 3404 | 75.4 | 665 | 14.7 |
| Breast | 3518 | 747 | 21.3 | 1671 | 47.5 | 999 | 28.3 | 101 | 2.9 |
| Colon | 2385 | 160 | 7.0 | 721 | 31.6 | 1138 | 49.8 | 366 | 11.6 |
| Stomach | 1850 | 57 | 3.1 | 176 | 9.5 | 1195 | 64.6 | 422 | 22.8 |
| Rectum | 1675 | 183 | 10.9 | 524 | 31.3 | 796 | 47.5 | 172 | 10.3 |
| Prostate | 1403 | 162 | 11.5 | 489 | 34.9 | 633 | 45.1 | 119 | 8.5 |
| Bladder | 1141 | 188 | 16.6 | 515 | 45.1 | 371 | 32.5 | 67 | 9.9 |
| Corpus uteri | 1139 | 598 | 52.2 | 326 | 28.6 | 165 | 14.5 | 50 | 4.4 |
| Cervix uteri | 1096 | 344 | 31.4 | 336 | 30.6 | 381 | 34.8 | 35 | 3.2 |
| Ovary & uterine tubes | 790 | 160 | 20.2 | 127 | 16.1 | 454 | 57.5 | 49 | 6.2 |

Data for Bulgaria (2003)

| Sites | Clinical % | Cytological % | Histological % | Others % | Death certificate only % |
|-----------------------|------------|---------------|----------------|----------|--------------------------|
| Lungs & trachea | 0.2 | 9.2 | 41.0 | 36.4 | 13.2 |
| Breast | 2.8 | 3.6 | 86.1 | 5.5 | 2.0 |
| Colon | 0.6 | 0.4 | 75.9 | 13.4 | 9.7 |
| Stomach | 0.7 | 0.6 | 55.1 | 23.5 | 20.1 |
| Rectum | 0.7 | 0.5 | 80.9 | 9.7 | 8.2 |
| Urinary bladder | 0.6 | 0.1 | 87.2 | 7.9 | 4.2 |
| Uterine corpus | 0.2 | 0.2 | 97.4 | 1.1 | 1.1 |
| Ovary & uterine tubes | 3.2 | 2.9 | 80.3 | 10.1 | 3.5 |

Age and probability to develop cancer

Age is a factor of primary importance when determining the probability for the emergence of a cancer disease. With the exception of the group of child tumors, there is

an increase of cancer incidence with the advancing of age in all remaining sites. This is shown convincingly in the following table.

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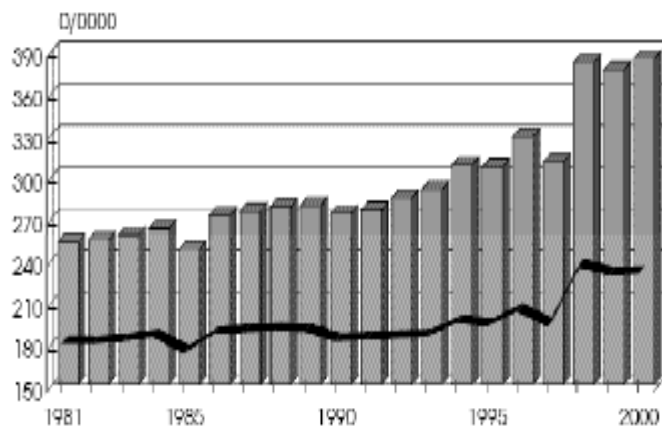
| Age/period | | to 39 (%) | 40 to 59 (%) | 60 to 69 (%) | 70 and more (%) | Throughout life span (%) |
|-----------------------|--------|--------------------|-----------------|-----------------|-----------------|--------------------------|
| All sites | Male | 1.43 (1 to 70) | 8.57 (1 to 12) | 16.46 (1 to 6) | 39.61 (1 to 3) | 45.67 (1 to 2) |
| | Female | 1.99 (1 to 50) | 9.06 (1 to 11) | 10.54 (1 to 9) | 26.72 (1 to 4) | 38.09 (1 to 3) |
| Bladder | Male | 0.02 (1 to 4375) | 0.40 (1 to 250) | 0.93 (1 to 108) | 3.35 (1 to 30) | 3.58 (1 to 28) |
| | Female | 0.01 (1 to 9513) | 0.12 (1 to 816) | 0.25 (1 to 402) | 0.96 (1 to 40) | 1.14 (1 to 88) |
| Mammary gland | Female | 0.048 (1 to 209) | 4.11 (1 to 24) | 3.82 (1 to 26) | 7.13 (1 to 14) | 13.22 (1 to 8) |
| Colorectal | Male | 0.07 (1 to 1399) | 0.90 (1 to 111) | 1.66 (1 to 60) | 4.94 (1 to 20) | 5.84 (1 to 17) |
| | Female | 0.06 (1 to 1567) | 0.70 (1 to 143) | 1.16 (1 to 86) | 4.61 (1 to 22) | 5.51 (1 to 18) |
| Leukemia | Male | 0.15 (1 to 650) | 0.22 (1 to 459) | 0.35 (1 to 284) | 1.17 (1 to 85) | 1.50 (1 to 67) |
| | Female | 0.13 (1 to 788) | 0.14 (1 to 721) | 0.19 (1 to 513) | 0.78 (1 to 129) | 1.07 (1 to 93) |
| Lungs & bronchus | Male | 0.03 (1 to 3244) | 1.00 (1 to 100) | 2.45 (1 to 41) | 6.33 (1 to 16) | 7.58 (1 to 13) |
| | Female | 0.03 (1 to 3103) | 0.80 (1 to 125) | 1.68 (1 to 60) | 4.17 (1 to 24) | 5.72 (1 to 17) |
| Skin Melanoma | Male | 0.13 (1 to 800) | 0.51 (1 to 195) | 0.51 (1 to 195) | 1.25 (1 to 80) | 1.94 (1 to 52) |
| | Female | 0.21 (1 to 470) | 0.40 (1 to 248) | 0.26 (1 to 381) | 0.56 (1 to 178) | 1.30 (1 to 77) |
| Non-Hodkin's lymphoma | Male | 0.14 (1 to 722) | 0.47 (1 to 215) | 0.56 (1 to 178) | 1.57 (1 to 64) | 2.18 (1 to 46) |
| | Female | 0.09 (1 to 1158) | 0.31 (1 to 320) | 0.42 (1 to 237) | 1.29 (1 to 77) | 1.82 (1 to 55) |
| Prostate carcinoma | Male | 0.01 (1 to 10 149) | 2.66 (1 to 38) | 7.19 (1 to 14) | 14.51 (1 to 7) | 17.93 (1 to 6) |
| Uterine cervix | Female | 0.15 (1 to 657) | 0.28 (1 to 353) | 0.15 (1 to 671) | 0.22 (1 to 464) | 0.74 (1 to 135) |
| Uterine corpus | Female | 0.06 (1 to 1641) | 0.72 (1 to 139) | 0.83 (1 to 120) | 1.36 (1 to 74) | 2.61 (1 to 38) |

Data for the population of the USA - they refer to cases diagnosed in 2000 and 2002. Source: American Cancer Society Surveillance Research. 2006. <http://srab.cancer.gov/devcan>.

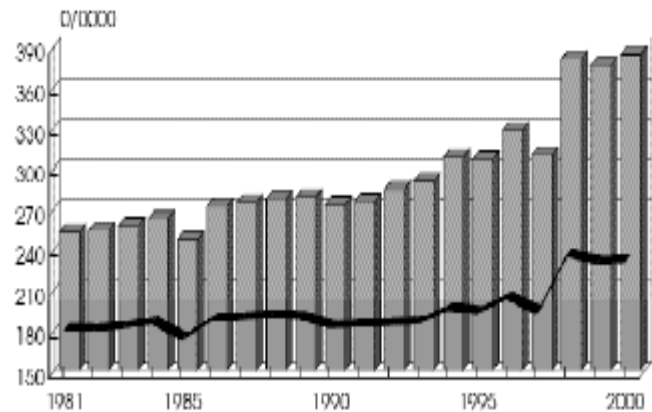
Cancer - an increasingly frequent disease

The frequency of newly established cancer cases has been on the increase every year, in particular in countries with an aging population and with marked signs of “civilization” – smoking, obesity, and immobilization.

The tables given below represent the picture of the Bulgarian population for the period 1981-2000.



In males the frequency has grown most with prostate cancer, cancer of the colon, rectum, and bladder, and has decreased at cancer of the stomach. Very high frequency still remains with cancer of the lungs!



In females frequency increase is greatest at the cervix uteri, followed by cancer of the mammary gland, the corpus uteri, the colon and ovaries. A decrease is observed only in cancer of the stomach!

The columns reflect the annual crude rate of newly established cancer patients.
The black curve represents the standard rates.

Five-year Survival Rates –

current standard for the surmounted barrier towards life

The stage when the illness is diagnosed is a basic factor for surmounting the Five-year cancer survival barrier. The data from the following table – which is for the USA (1995-2003) – convincingly endorses this principle.

Organ All stages % Initial stage % With regional metastases % With distant metastases %

| Organ | All stages % | Initial stage % | With regional metastases % | With distant metastases % |
|-------------------------|--------------|-----------------|----------------------------|---------------------------|
| Breast | 88.2 | 97.9 | 81.3 | 26.1 |
| Colon and rectum | 64.1 | 90.4 | 67.9 | 9.7 |
| Esophagus | 14.9 | 31.4 | 13.8 | 2.7 |
| Larynx | 65.6 | 83.8 | 49.9 | 18.5 |
| Liver | 9 | 19 | 6.8 | 3.4 |
| Lung and bronchus | 15.3 | 49.5 | 16.2 | 2.1 |
| Melanoma of the skin | 91.6 | 98.3 | 63.8 | 16 |
| Oral cavity and pharynx | 59.4 | 82.1 | 51.3 | 27.6 |
| Ovary | 44.6 | 93.6 | 68.1 | 29.1 |
| Pancreas | 4.6 | 16.4 | 7 | 1.8 |
| Prostate | 99.8 | 100 | 0 | 33.5 |
| Stomach | 23.2 | 58 | 21.9 | 3.1 |
| Testis | 96 | 99.4 | 96.3 | 71.7 |
| Thyroid | 96.6 | 99.5 | 96.4 | 60.0 |
| Urinary bladder | 81.8 | 94.2 | 48.4 | 6.2 |
| Uterine cervix | 73.3 | 92.4 | 54.7 | 16.5 |
| Uterine corpus | 84.4 | 96.1 | 66.3 | 25.2 |

With distant metastases %

Progress in oncology is persuasively shown by the following table, representing the Five-year survival rate of the most frequent malignant sites in the USA over the period 1974-2001 in percentages.

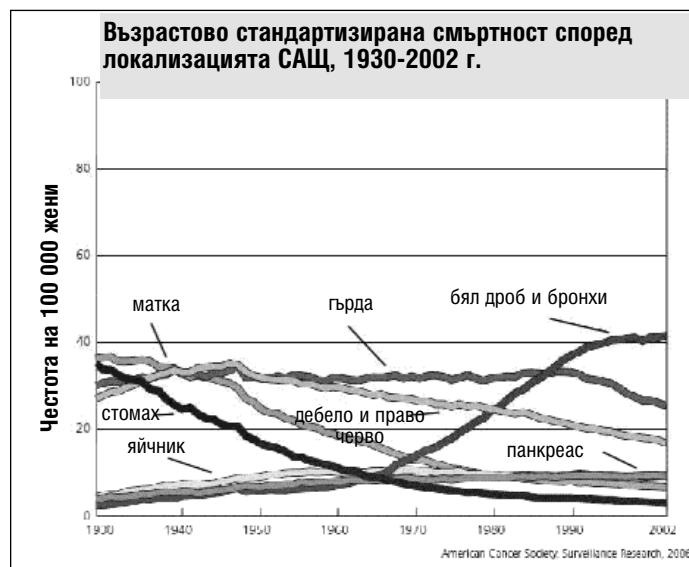
| Sites | 1974-1976 | 1983-1985 | 1995-2001 |
|----------------------|-----------|-----------|-----------|
| Total | 50 | 53 | 65 |
| Prostate | 67 | 75 | 100 |
| Testis | 79 | 91 | 96 |
| Melanoma | 80 | 85 | 92 |
| Mammary gland | 75 | 78 | 88 |
| Hodgkin's lymphoma | 71 | 79 | 85 |
| Endometrium | 88 | 83 | 84 |
| Urinary bladder | 73 | 78 | 82 |
| Cervix uteri | 69 | 69 | 73 |
| Larynx | 66 | 67 | 66 |
| Kidney | 52 | 56 | 65 |
| Rectum | 49 | 55 | 65 |
| Colon | 50 | 58 | 64 |
| Non-Hodgkin lymphoma | 47 | 54 | 60 |
| Oral cavity | 54 | 54 | 59 |
| Leukemia | 34 | 41 | 48 |
| Ovary | 37 | 41 | 45 |
| Brain | 22 | 27 | 33 |
| Multiple myeloma | 25 | 28 | 32 |
| Stomach | 15 | 17 | 23 |
| Lung and bronchus | 12 | 14 | 15 |
| Esophagus | 5 | 8 | 15 |
| Liver | 4 | 6 | 9 |
| Pancreas | 3 | 3 | 4 |

Cancer mortality - ultimate sign of progress

Mortality rate is the fundamental indicator for oncological diseases. Apart from being an expression of the most painful personal tragedy of the ill person and his/her family, this indicator, especially when it is examined in connection with the amount of ill people, reflects the effectiveness of early diagnosis and its accuracy, level of successful treatment and realization of active observation after the treatment.

Logically, the first breakthrough in stopping the growth and decreasing the mortality rate was registered in the countries, where the presence of these factors is most pronounced. For example, the death rate in the USA decreases in more than 20 localizations, including those, where incidence rate keeps increasing. We are showing two graphs for this country, because they convey a positive tendency.

For some countries it has been achieved, but for other countries, including ours, this is the benchmark, which demands constant observation.



Bibliography: US Mortality Public Use Data Tapes 1960-2002, US Mortality Volumes 1930-1959, National Center for Health Statistics, Centers for Disease Control and Prevention, 2005



Financing

and
economic losses
from cancer

Cancer diseases require greatest financing and lead to greatest economic losses compared to all other diseases.

This is applicable for counties and societies with developed economy and efficient health care system.

Financing objects

In the developed societies a complex of expenditures for oncological diseases receives financing. Indirect losses also have to be taken into account:

- ▼ Direct expenditure for diagnosing, treatment and rehabilitation;
- ▼ Funds for payment in case of inability to work, disablement pensions;
- ▼ Indirect losses due to deaths or impaired work capacity of people that contribute financially to society;
- ▼ Expenditure for screening and prevention;
- ▼ Investments for technical development;
- ▼ Research activities;
- ▼ Education and qualification.

Financing Indicators

- ▼ The primary indicator for the amount of financing is the absolute sum, allocated from the Gross Domestic Product (GDP);
- ▼ The primary indicator for the contribution of the country in the financing of the “problem cancer” is the share of its GDP, allocated for cancer.

USA: The Big Country

USA is the country with the most detailed and systematic, most accessible and comprehensive data about the ways of financing the demands and economical consequences of oncological diseases, available for the longest period known.

In the USA each year for health services is spent 14-15% from its GDP - 40% out of these funds are allocated for oncological diseases.

Amount of basic fund allocations for oncological diseases in USA in billions dollars

| Years | Direct expenditure | Sick-leave and pensions | Indirect losses | Total |
|-------|--------------------|-------------------------|-----------------|-------|
| 2002 | 60.9 | 15.5 | 95.2 | 171.6 |
| 2005 | 74.0 | 11.0 | 125.0 | 210.0 |

Dynamics of direct expenditure for oncological patients over the 1963-2005 period in USA.

| Years | 1963 | 1972 | 1980 | 1985 | 1990 | 1995 | 1999 | 2002 | 2005 |
|------------|------|------|------|------|------|------|------|------|------|
| Billion \$ | 1.3 | 3.9 | 13.1 | 18.1 | 27.5 | 41.2 | 47.0 | 60.9 | 74.0 |

Treatment costs for the 13 most frequent malignant tumors in USA

| Sites | Frequency: % in 1998 | Expenditure | | |
|----------------|----------------------|---------------------------------|------------------------|--|
| | | Relative share of cost per site | In billions \$ - 1996. | Average costs in \$ per case in the 1st year |
| Mammary gland | 18.2 | 13.1 | 5.4 | 9 320 |
| Colorectal | 11.7 | 13.1 | 5.4 | 21 608 |
| Lung | 12.5 | 12.1 | 4.9 | 20 340 |
| Prostate | 13.6 | 11.3 | 4.6 | 8 869 |
| Lymphoma | 4.2 | 6.3 | 2.6 | 17 217 |
| Bladder | 4.0 | 4.2 | 1.7 | 10 770 |
| Uterine cervix | 2.3 | 4.1 | 1.7 | 13 083 |
| Head/neck | 3.3 | 4.0 | 1.6 | 14 788 |
| Leukemia | 2.1 | 2.8 | 1.2 | 11 882 |
| Ovary | 1.7 | 3.7 | 1.5 | 32 340 |
| Melanoma | 5.2 | 1.7 | 0.7 | 3177 |
| Pancreas | 2.1 | 1.5 | 0.6 | 23 504 |
| Esophagus | 0.9 | 0.9 | 0.4 | 25 886 |
| Other | 18.1 | 21.2 | 8.7 | 17 201 |
| Total | 100.0 | 100.0 | 4.10 | - |

Funds from the National Budget of the USA

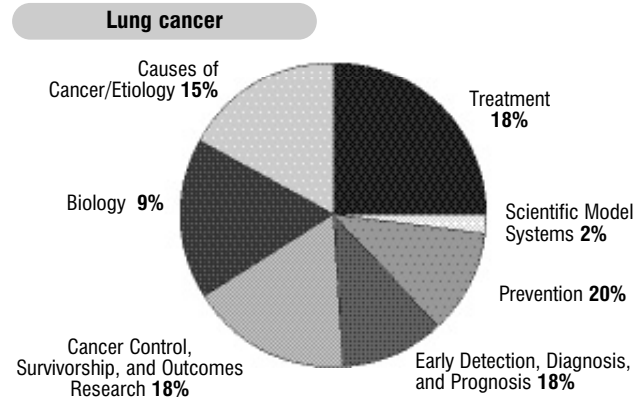
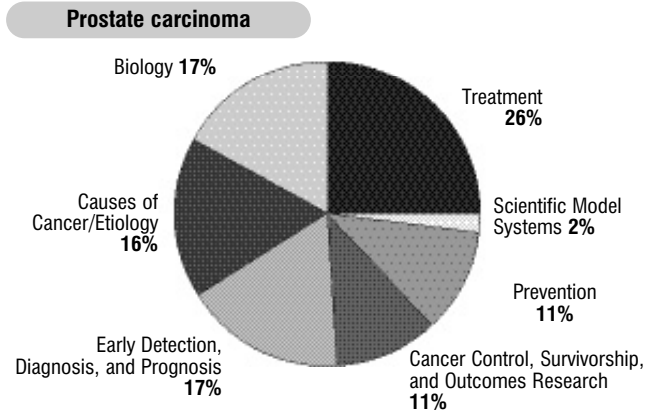
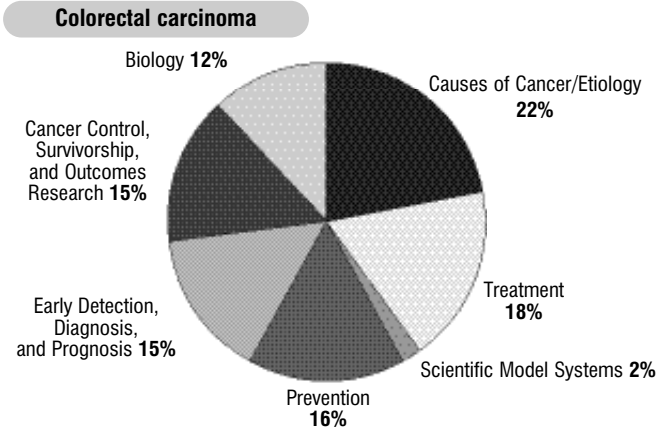
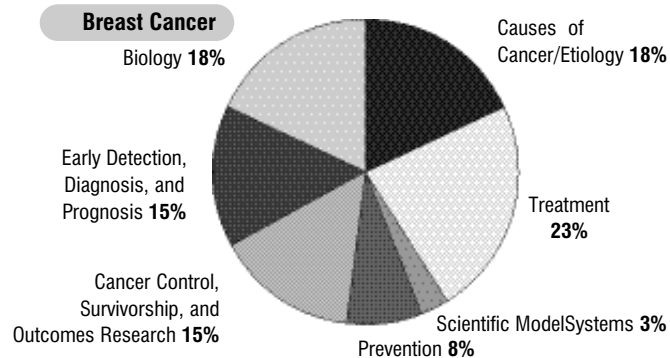
delivered through the National Cancer Institute (NCI) for scientific research projects

NCI delivers app. 5000 grants for research projects carried out in 600 institutions in the USA each year, with an average size of the grant about 400 000 dollars. The whole sum allocated for research projects in 2006 is around 4.8 billion dollars.

Allocated sums for research projects according to sites of the malignant tumors (in million \$)

| Sites/years | 2001 | 2005 |
|----------------|-------|-------|
| Bladder | 27.2 | 30.1 |
| Mammary gland | 475.2 | 560.1 |
| Uterine cervix | 72.6 | 81.7 |
| Colorectal | 207.4 | 253.1 |
| Kidney | 21.7 | 32.9 |
| Lung | 206.5 | 266.1 |
| Melanoma | 71.8 | 102.9 |
| Prostate | 258.0 | 309.0 |
| Ovary | 76.9 | 97.7 |

Structure of allocated funds for research projects for four tumor sites in USA



Finland: The Small Country Fight against cancer – national priority

- ▼ Independent country since 1917;
- ▼ Population: 5 249 000;
- ▼ People diagnosed every year with cancer: around 25 000 persons;
- ▼ Mortality rate from cancer: 2004 – 143.81/100 000 standardized population - lowest rate in the EU, where the average is 183.75;
- ▼ 5-year survival: > 60%; leukemia in children: >90%;
- ▼ 21st November 1936: the “Finnish Cancer Association” is established – the first public organization for fight against cancer in the country;
- ▼ 1948: The “Finnish Cancer Foundation” is established
- ▼ the second public organization created for fight against cancer;
- ▼ 1952: The Finnish National Cancer Registry is established;
- ▼ 1961: The first patient organization is established;
- ▼ 1963: Population screening for cervical cancer starts;
- ▼ 1969: The “Finnish Foundation for Research on Cancer” is established – its main goal is collecting and allocating funds for scientific research;
- ▼ 1976: Decision of the Parliament for taking steps towards decrease in tobacco smoking;
- ▼ 1980: Established the first hospice for terminally ill;
- ▼ 1987: Starts a population screening in the whole country for cancer of the mammary gland; from the early 1990’s start mamographical examinations in the whole country;
- ▼ 1996: Conducted the biggest research in Europe for the uses of PSA-tests for early detection of prostate carcinoma;
- ▼ 1994: Begins a population examination for colon and rectum cancer;

- ▼ 2000: Tobacco smoking amongst men is 28%, after amounting to 70% in the 90’s;
- ▼ Funds given by public anti-cancer organizations for scientific research in the country in the period:
2000-2006: 17 million Euros;
2007: 3 million Euros.

Cost of Cancer in Finland

Total invested and spent funds:

- 1996 – 330 million Euros;
- 2004 – 520 million Euros (60 % increase).

Structure:

- ▼ hospital services – 45%
- ▼ out-hospital services - 20%
- ▼ free medicines for the patients – 12%
- ▼ for screening – 2%
- ▼ for rehabilitation – 1%
- ▼ from lost working capacity – 20%

Prices for the Treatment of One Patient

- ▼ average for all sites of cancer diseases – 30 000 Euros (86% for hospital treatment and 14% for non-hospital treatment);
- ▼ for patients with breast cancer – approx. 14 000 dollars. (Source http://www.cancer.fi/english/organisation/publications/the_costs_of_cancer/).Bulgaria: Our Country

Bulgaria: Our Country

Financing of the health services in Bulgaria

The financing of the health services in the country is based on two sources:

▼ Public Funds – including financing from the State and Municipal budgets, and also from the social health insurance system;

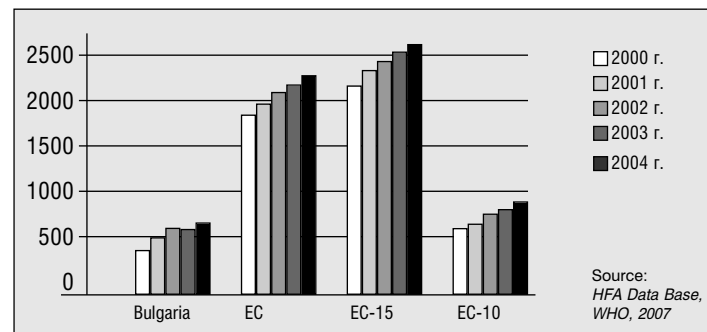
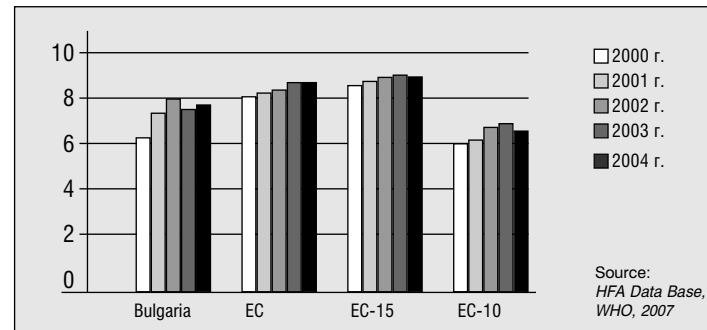
▼ Private financial sources – direct payments from physical persons and legal entities, private health insurance companies, donations.

In contrast with most of the countries where National Health Accounts function that accurately depict all the sources of financing of the health services, **in Bulgaria we still don't have such an accounting system and we do not have national statistical data for the total health expenditures.** We can get an idea about the total health expenditures from the database of WHO - "Health for Everyone", where expert ranking of some indicators is performed. In 2000 in the Bulgarian health sector were invested 6.2% of GDP, representing 76% of the average level for the EU – 8.1%, and identical with the level of EU-10. In 2004 the financing improves, as 7.7% of GDP is allocated for it, which is 88% of the average level for the EU – that means it is 15% higher than the average level for EU-10 (fig. 1).

The conclusions from the above show that **the health sector consumes a relatively big amount of financial resources.**

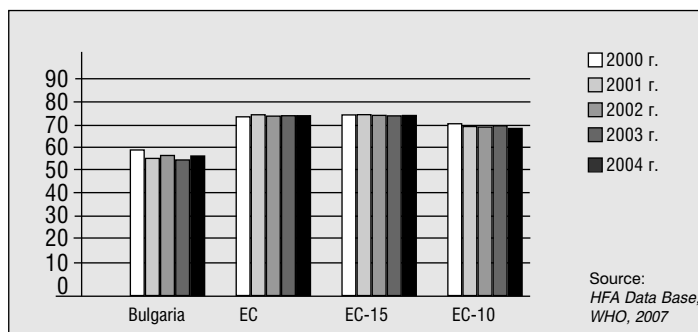
We are behind the European standards in another indicator – health expenditure per capita of the population. For 2000, it is calculated that Bulgaria consumed 381 international dollars per capita of the population, which is 5 times less than in the EU, and 40% less than in EU-10.

For 2004 - 635 international dollars were consumed but still this is only 28% of the level in the EU and 73% of the EU-10 (fig. 2).



The financial effects of the health services in Bulgaria from public resources – from the State's and Municipalities' budgets - can also be ranked as one of the most unfavorable (lowest) in the whole EU, and also in comparison with the other EU-10 members.

The part of the public expenses compared to the total health care expenses for the year 2000 is 59.2 %, for 2004 - 55.8%, which means that the other 45-46% were contributed mainly from the household budgets (since the private health insurance companies are marginally developed, this source of funding can be neglected). In the developed countries, the public health expenses are 75-76%, and in the 10 members of the EU - around 70%. In the whole EU, Cyprus is the only country with a lower rate of public health expenses. Romania is ahead of Bulgaria by 60%.



Financing of the Oncological Services in Bulgaria

The financing of the oncological services in Bulgaria demonstrates all the problems related to the fact that there is no system for National Health Accounts, the lack of public financial resources - from the State and Municipal budgets, and the increasingly regulated or not regulated direct payments from the patients and their families. The dimness over the information about the total quantity of money, consumed for the needs of the oncological help becomes even bigger, as the accounting of the expenses for diagnoses or types of diseases is not a systematic approach in the financial statistics.

The direct medical expenses, made in the system of health services for oncological prevention, diagnosing, treatment and rehabilitation come from the following sources:

State Budget

▼ *From the budget of the Ministry of Health are financed:*

a) Absolutely free medicines for patients (as stipulated in Regulation №. 34/25.11.2005 of MoH), as for 2007 were planned 98 million Leva (the official Bulgarian currency - BGN) for medicines, of which 60-70 million were for people with oncological diseases.

b) The National Health Programme for Oncological Screening, (the last one finished in 2006) with an average financing between 600 000 and 700 000 Leva annually, covering only the expenses for consumables and a small number of prophylactic examinations.

c) Investment expenses for the Specialized Hospital for Active Treatment of oncological diseases.

d) Financing of dispensary and hospital care with 500 Leva for in-patients (this is applicable only in Sofia-city Regional Dispensary) and 5 Leva for registering a person with newly diagnosed oncological diseases.

▼ *From the budget of the Ministry of Labor and Social Policy is paid prosthesis, anti-decubitus mattresses and other social appliances.*

Municipal Budgets

a) Grants for financing of the Regional oncological dispensaries to which the State has delegated the responsibility for delivering specialized treatment, based on Financial Standard for treated ill person every year. For example, in 2007 is applied Decision No. 926 that stipulates that for each treated ill person should be paid 458 Leva (it is queer how this calculation has been made, as for Sofia-city Regional Dispensary the price is 500 Leva?!). On the other hand, the number of patients,

planned for treatment, is usually cut down and does not cover the actual needs. For 2007, the Ministry of Finances has planned around 29 million Leva for subsidizing oncological dispensaries, which are financed by the municipalities.

b) Municipal investment expenses for Regional oncological dispensaries.

National Health Insurance Fund (NHIF)

a) Primary medical services – NHIF-payments are based on the capitation principle (the number of people listed with the general practitioner); for prophylactic examinations of health insured people - 6.50 Leva each; payment is allocated also for adding an entry into a dispensarization list (for example for cancer complications). Based on the existing information it is not possible to calculate what part of the primary medical services is performed for prevention of oncological diseases and what for treatment of cancer complications.

b) The specialized medical services – medical examinations and analysis for prevention and treatment of cancer patients are not systematized according to diagnosis, which does not allow accurate calculation of the actual size of the financing. By our judgment, only for screening, along with some high-tech examinations, NHIF pays 10 million Leva per year, although the calculated needs only for 4 basic localizations are 19.2 million Leva. It is obvious, that the planned and the actual financing cover a small part of the needs, for example the planned mammographical examinations are 68 911, but the needs are much higher.

c) Hospital medical services – for 2007, NHIF paid with the so called “clinical paths” of which 23 are for oncological treatment and diagnoses. The planned financial resource for 2007 is 40 million Leva, for radiotherapy – 6472 thousand Leva; for hematology – 19 531 thousand Leva and palliative care – 3272 thousand Leva.

For comparison, in 2003, with 17 oncological “clinical paths” were paid only 15 million Leva. Apart from these paths, medical help is provided to patients through other (non- oncological) clinical paths oriented to other medical procedures. By our judgment, the financing of the medical help for cancer patients from NHIF was over 70 million Leva in 2007. Despite of the increase of NHIF-financing for oncological activities, the amounts paid for medical help in most cases **do not cover even 50% of the actual expenses**.

d) Medicines and other medical products – there is also no precise information, but last year about 30 million Leva was paid.

Household budgets – detailed studies are missing, but different sociological researches show that the direct (regulated or non-regulated) payments are not less than the public expenses.

Voluntary Funds for Health Insurance - their total expenses per annum are 15 million Leva, as part of these funds is allocated for prevention and cancer patient’s treatment.

Contracts and Direct Buying of Medical Services from Companies and Organizations – unidentified.

Charity organizations and funds – unidentified.

General conclusions

From the depicted situation about the financing of the direct medical expenses for oncological help in Bulgaria can be concluded that:

- ✓ the public financing of the oncological help is expanding and it reaches around 200 million Leva;
- ✓ Compared to the developed countries, which allocate

30-40% of their total funds for oncological help, in Bulgaria we have much less funds in either absolute or relative values.

✓ The scattered character of the financing from many sources and by different methods, which do not reveal the various diagnoses or the class of diseases, creates obstacles to evaluate the actual and the needed amount of financing.

✓ A transition to the method of financing through **Diagnose-related groups** (DRG's) of the treated patients is a much better and fair decision for distribution of the scarce public resources of the country.

✓ The prices and the financial standards applied for financing from the public budgets do not rely on objective evaluation of the whole price of the help, as well as on the prognosis for the amounts of work. Due to the fact that the prices do not cover the prime costs, more expenses are transferred to be paid by the patients and their families, for this reason the hospitals make debts too.

✓ Funds should be invested in some specialized research in order to reveal the direct expenses from all possible sources: for prevention, diagnosing, treatment and rehabilitation, as well as the group of social expenses - arising from temporary and permanent loss of work efficiency, or premature death, caused by oncological diseases, in the country.

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(The article was especially written for the Almanac)

The fading away of donation activities

by the public organizations for fighting cancer in Bulgaria



Financial status of "Fight against Cancer" Foundation for the first 6 months of 2007

| Revenues | Leva | Expenditures | Leva |
|---|--------|---|---------|
| Donations - from 12 companies | 13 000 | Medical programmes, as follows: | 14 890 |
| Donations in-kind | 9600 | ✓ smoke-cessation | 720 |
| Interest - from bank accounts and own funds | 5513 | ✓ primary and secondary prevention | 1848 |
| | | ✓ palliative care | 800 |
| | | ✓ cancer patients at home | 1022 |
| | | ✓ qualification courses for medical professionals | 900 |
| | | Donations in-kind | 9600 |
| | | Office expenses (salaries, rent, etc.) | 9010 |
| | | Public relations | 179 |
| Total | 28 113 | Total | 33 679* |

* The difference between revenues and expenditures is covered by internal assets and saved funds throughout the years of existence of this leading Foundation, founded in 1991.



Primary prevention

Risk factors
Carcinogens

Over 85 % of the oncological diseases on our planet arise as a consequence of the contacts of its inhabitants with carcinogenic risk factors or are result of their impact on the population

Primary Prevention of Cancer – the most effective, but also the hardest way for realization

The primary prevention of cancer shows how to cut off the contact of people with the so-called carcinogens and risk factors with carcinogenic effect. This would result in dramatic decrease of the cancer diseases. The environment has a huge significance for the occurrence of cancer, even when the oncological disease is genetically conditioned. The primary prevention is hardly achievable, because the risk factors are not only numerous, but also firmly connected to the industry, automobile transport, eating habits, the taking of medicines, the way of living – the habits and pleasures of nowadays people, and probably of the people of tomorrow! This is the reason for a great development of the study of carcinogenesis, and how we can start solving many problems. An example of this is the famous:

“EU Cancer Code”.

Its first 6 points concern primary prevention:

1. Do not smoke; if you smoke, stop doing so. If you fail to stop, do not smoke in the presence of non-smokers.
2. Avoid obesity.
3. Undertake some brisk, physical activity every day.
4. Increase your daily intake and variety of vegetables and fruits: eat at least five servings daily. Limit your intake of foods containing fats from animal sources.
5. If you drink alcohol, whether beer, wine or spirits, moderate your consumption to two drinks per day if you are a man and one drink per day if you are a woman.
6. Care must be taken to avoid excessive sun exposure.

It is specifically important to protect children and adolescents. For individuals who have a tendency to burn in the sun active protective measures must be taken throughout life. For further information see www.cancercode.org/code_01.htm.

We are going to begin our presentation with actions against the factors, shown above in pts. 3 and 4 of the Code, as they are acknowledged in:

Recommendations of American Cancer Society (ACS), published in “**CA – A Cancer Journal for Clinicians**”. 2006.

Recommendations for Individual Choices

1. Maintain a healthy weight throughout life. Balance caloric intake with physical activity.

▼ Avoid excessive weight gain throughout life.

Achieve and maintain a healthy weight if currently overweight or obese.

2. Adopt a physically active lifestyle.

Adults: Engage in at least 30 minutes of moderate to vigorous physical activity, above usual activities, on 5 or more days of the week; 45 to 60 minutes of intentional physical activity are preferable.

▼ Children and adolescents: Engage in at least 60 minutes per day of moderate to vigorous physical activity at least 5 days per week.

3. Eat a healthy diet, with an emphasis on plant sources. Choose food or beverages in amounts that help achieve and maintain a healthy weight.

▼ Eat 5 or more servings of a variety of vegetables and fruits every day.

▼ Choose whole grains in preference to processed (refined) grains.

Limit consumption of processed and red meats.

4. If you drink alcoholic beverages, limit consumption. Drink no more than 1 drink per day for women or 2 per day for men.

▼ The recommendations from the next section of this document should be seen as a more flexible approach in healthcare policy, which could also be applicable for Bulgaria.

Recommendations of ACS **How to limit the sedentary way of living**

- ▼ Use stairs instead of elevator;
- ▼ If it is possible go to your workplace by foot, or with a bicycle;
- ▼ Exercise during lunchtime;
- ▼ Use the 10 minute break for exercise, or fast walking;
- ▼ Instead of sending e-mails to your colleagues, go to see them personally;
- ▼ Dance with your wife/husband, or with friends;
- ▼ Plan an active vacation instead of a tour with vehicles;
- ▼ Carry a pedometer with you, and try to increase the steps;
- ▼ Sign in to a sport organization;
- ▼ Use a stationary bicycle while watching TV;
- ▼ Gradually increase the time for physical activities.

ACS Recommendation for Community **Action to prevent diseases, incl. cancer**

Public, private, and community organizations should work to create social and physical environments that support the adoption and maintenance of healthful nutrition and physical activity behaviors.

- Increase access to healthful foods in schools, work-sites, and communities.
- Provide safe, enjoyable, and accessible environments for physical activity in schools and for transportation and recreation in communities.

The social, economical and cultural factors connected to the activity of the individual, influences the individual's attitude towards eating and physical activity. For example, the long working time and assignment of extra work leads to decreasing of the time for preparing meals at home, and to increasing of the search for fast food and ready-to-cook food. Also the time for resting is limited, automobile transport is preferred; much time is allocated to electronic devices for pleasure and communication. These factors lead to a way of life with less physical activity and irrational nutrition. The most important thing is that in this case the bad consequences are for the poor people. These things demand the development and appliance of strategies and programmes for planning of the populated areas, for the transport, for the physical education in the schools. The relevant institutions should treat these problems seriously, and the health specialists must take a leading role for popularizing of scientifically approved actions.

According to the most respected experts, the factors of risky nutrition, overweight and decreased physical activity shown above are responsible for 35-38% of the cancer cases.

Tobacco Smoking and Cancer

A risk factor responsible for about 30-35% of the cancer cases is tobacco smoking. This is the conclusion of scientific research, presented in more than twenty thousand scientific publications. The data from them is well summarized in one of the last chapters of the so called “Orange Monographs”, published by the International Agency for Cancer Research (IARC). The recent data and the problems, related to the topic “Tobacco Smoking and Cancer” can be presented in **4 groups**:

- ▼ Data for carcinogenic content of the tobacco smoke; damaged tissues and organs; risks of passive smoking;
- ▼ Data for the death rate and the economic losses;
- ▼ Data for the behavior of the individual and different population groups;
- ▼ Data for the publicity campaigns, the state institutions, the international organizations.

About **the first group of questions** we must keep in mind that until the year 2000, in the cigarette smoke were found and proven 69 carcinogens. Amongst them are 12 of the strongest chemical carcinogens. It is also known that tobacco smoking is connected to the risk of development of cancer in at least 18 sites and organs of the human body.

The risk for development of lung cancer is around 23 times higher amongst men smokers, and 13 times higher amongst women smoker, compared to people who have never smoked. Tobacco smoking is the main reason for diseases of the heart and vascular system, of the brain, of the chronic bronchitis and emphysema; it is also connected to the development of gastric ulcer.

Passive smoking is related to a high health risk, because tobacco smoke from the environment contains around 4000 substances, for 50 of which it is known that they cause cancer in humans. Except lung cancer, passive smoking causes coughing, release of spittle, discomfort in the area of the chest and decreasing of the

functions of the lung in non-smokers. It is very dangerous for children to inhale tobacco smoke. Each year in the USA it causes between 150 000 and 300 000 infections of the respiratory system (pneumonia) amongst the children at an age below 18 months. As a result, between 7500 and 15 000 kids are hospitalized annually. Passive smoking increases the amount of asthmatic attacks and aggravates the disease amongst 200 000 to 1 000 000 children with asthma.

At the moment, in the USA, data for increased risk for breast cancer as a result of inhaling tobacco smoke from the environment is analyzed by the government.

The second group of data and problems on the topic “Tobacco Smoking and Cancer” includes the most numerous and most expressive data – **the data for the death rate from cancer amongst smokers.**

According to the recent data the diseases caused by tobacco smoking will kill around 650 million from the 1.3 billion smokers in the world.

In 2000, there were around 4.8 million premature death cases, caused by the use of tobacco, distributed evenly between the developed (2.43 million) and the developing (2.41 million) countries.

Tobacco smoking is the reason for at least 30% of all lethal cases due to cancer, and 87% of the cases of death due to lung cancer. The statistics in Great Britain shows that from every 1000 smokers at the age of 20: 1 will be killed, 6 will die in a car accident, 250 will die at middle age due to tobacco smoking, and another 250 will die at advanced age due to the health consequences, caused by tobacco smoking.

Economical losses are most methodically investigated in the USA. In this country tobacco smoking has caused 164 billion (not million!) dollars yearly expenditure in the area of public health services, including expenses for treatment of adults, newly born children, losses attributed to decreased productivity and increased death rate.

The yearly losses for the period 1997-2001 for the economy of the USA, caused by the increased death rate due to tobacco smoking are calculated to be 92 billion dollars, which is an increase with over 10 billion dollars compared to the period 1995-1999. Only the medical expenses, connected to tobacco smoking during 1998 were 75.5 billion dollars which is 8% of all personal medical expenses. This means that the huge expenses for each adult smoker during 1999 were 1623 dollars. In 2001 for treatment of diseases, caused by tobacco smoking were spent 12 billion dollars. *Each pack of cigarettes, sold in 1999, has a cost to society as follows: 3.45 dollars for medical care, for the consequences of tobacco smoking, and also 3.73 dollars for loss of productivity, or total 7.18 dollars for a pack.*

Data about people's behavior

With the existing tragic consequences of tobacco smoking it would be normal to expect decreasing in the number of smokers and of people that start smoking, and also increasing of the number of people that gave up smoking.

However, the data of WHO shows a different trend. In 2003, the number of smokers in the world is calculated to be 1.3 billion people (over 1 billion men and around 250 million women); 30 million adolescents start smoking too. It is expected that by 2025, the number of smokers will increase to 1.7 billion people. In several research projects, realized in 77 countries for the period 1998-2000 amongst young people at the age of 13-15, 15% of the boys and 6.6% of the girls say that they have smoked cigarettes; 10.9% of the boys and 7.4% of the girls acknowledge that they have tried other tobacco products. In every region of the world there is a trend of increasing of the tobacco smoking amongst the adolescent girls. Most significant increase of tobacco smoking in the last ten years is registered in the developing countries from Asia and Africa, and right after them - in the

countries in transition, amongst which is Bulgaria. The trends in the most developed and rich countries are not less interesting. An example for this is the data for the USA. The yearly consumption of cigarettes in the USA decreases. The peak was during 1963, with 4345 cigarettes per capita of the population, decreasing to 1791 in 2004, which is 59% less. Although for the period 1983-2003 the smokers' percent decreases among all educational levels, the biggest decrease in tobacco smoking – 43%, is among the college graduates. Among the adults without elementary education the decrease is from 41% to 27%.

The fourth group of questions, connected to tobacco smoking and health is about the actions of the international organizations, the governments, the local authorities, the non-governmental public organizations. These institutions appreciate the importance of the actions against tobacco smoking. One of the first activists in this trend is King James I of England, who in 1604 describes very artistically, but also very accurately the nonsense and harms for the health caused by tobacco. There are many solutions, programmes, actions. Amongst them, the most efficient ones turned out to be the ones, which included rising of cigarette prices. From the international documents it is important to note that in May 2003, in 123 countries members of the World Health Assembly was approved the first Global Contract in the area of the public health – The Convention for Tobacco Control. Despite of the numerous programmes, decisions, and economic measures, tobacco smoking is still one of the biggest threats for the health and life of the people on our planet. According to the experts from WHO, the number of people who die of tobacco smoking will increase to 1 billion people in the 21-st century, which is 10 times more than the victims of tobacco smoking for the 20-th century – 100 million. There is no other agent, factor or habit that causes more death cases. Even cancer kills less people, than

the vascular and respiratory diseases caused by tobacco smoking. And still we smoke; those who are around us smoke, even many medical doctors smoke too.

Tobacco Smoking in the Republic of Bulgaria

Available Information

1986 – Research from the so called SINDY-programme;
 1999 – European school research project for alcohol and other drugs (ESPAD) – for the spreading of tobacco smoking among teenagers in 30 European countries;
 2001 – National research (as a part of population census);
 2002 – Global Youth Tobacco Survey of an international project of WHO, CDC-Atlanta and others; 2164 students at the age of 13-16 years from Bulgaria;
 2004 – Programme SINDY: covered 5614 people at the age of 25-64 years;
 2003 – Second examination of ESPAD – among students born in 1987;
 2005 – National Association against tobacco smoking, together with MoH, NHIF, Doctors Union and SINDY - Survey for smoking habits among medical doctors in Bulgaria

Collected Information

Smokers over the age of 25 in Bulgaria for the period 1952-2001

1952 – 1 000 000 smokers (13.7% of the population);
2001 – 2 730 000 smokers (40.5% of the population; men – 51.7%; women – 29.8%);

Deaths caused by tobacco smoking 1975 - 2005

Males – 303 049

Females – 24 555

.... which means that in Bulgaria 30 people die every day as a result of tobacco smoking.

Relative percent from all deaths

| Year | Males | Females |
|------|-------|---------|
| 1975 | 27% | 4% |
| 1985 | 30% | 6% |
| 1995 | 31% | 2% |
| 2005 | 32% | 3% |

Smoking among teenagers

In 1999, regularly or incidentally 37% of the teenagers in Europe have smoked. Bulgaria is at the first place for both sexes in average, and on the 3-rd place for boys. Regularly (daily) have smoked 30% of all teenagers. Among 15-year old teenagers in Europe, the highest frequency of the smokers is in Bulgaria: boys – 31.3%; girls – 42.7% (2002).

Tobacco Smoking Among Medical Doctors

▼ 33.9% from the medical doctors in Bulgaria smoke regularly, 10% - incidentally, which means 43.9% in total;
 ▼ Male medical doctors smoke 18.5 cigarettes a day, and female medical doctors smoke 11.8 cigarettes a day;
 ▼ 46.4% of male medical doctors and 27.3% of medical female doctors smoke on forbidden places, including in the presence of a patient.

Territorial division of tobacco smoking in Bulgaria

Region Veliko Tarnovo – 47.7% of all citizens are smokers, followed by Pleven, Yambol, Silistra, Montana;
 Lowest percent: Region Smolyan – 25.2% of the citizens.

Activities against Smoking in Bulgaria

“National programme for limiting of tobacco smoking in Bulgaria”

Decision No.15 of the Council of Ministers from 14.01.2002. Period for realization - 2002-2005.

- ▼ 8.12.2004 – Prohibition of tobacco smoking at public places under shelter and workplaces;
- ▼ 1.01.2005 – Regulation that permits some exceptions to the prohibition;
- ▼ Passed “Law on tobacco and tobacco products” – maximum quantity of tar in 1 cigarette – 10 mg; and of CO – 10mg;
- ▼ Regulation for requirements for the labels, markings and outer look of the tobacco products;
- ▼ 2004 and 2006 – Changes in the “Law on tobacco and tobacco products”: sanctions if the allowed quantity of tar is violated, if the rules for labeling, marking and outer look are violated; also sanctions after violation of the prohibition for selling of tobacco products at sports events and other public events, prohibition for selling to people under the age of 18.
- ▼ 7.11.2005 – Ratified Convention for Control over Tobacco;
- ▼ 2006 – Change of Art. 218. Paragraph 2 from the Health Law – the fine for violation of any prohibition for smoking is increased from 3000 to 10 000 Leva for legal entities;
- ▼ 1.01.2006 – the excise over cigarette is increased, which caused increasing of the retail prices with more than 40%. As a result, the consummation was decreased with 31% in March 2006, compared to March 2005.
- ▼ February 2006 - Participation in the First Conference of the Member States of the Convention for Control of Tobacco;
- ▼ From 2005 - participation of the Ministry of Health in the realization of the Stability Pact with another 7 coun-

tries from Southeast Europe for the consolidation of controls over tobacco and cigarettes.

- ▼ Courses for training general practitioners, specialists and experts from the Regional Institute for Protection and Control of Public Health (RIPCPH) for consultancy skills in anti-smoking campaigns addressed to the public;
- ▼ Guidance in training medical specialists in their work on stop-smoking campaigns; a film for such campaigns was made;
- ▼ Annual competitions for funding of small projects, publication of promotional materials, etc.
- Since 1995 an annual International competition is launched for children’s drawing on the topic: “No to cigarettes.”

The Reality

On completing the National Programme 2002-2005 (financed only by 10-12% of the funding originally allocated by the Council of Ministers) the following was determined:

- ▼ Smoking has increased in frequency and intensity;
- ▼ Smoking is with steady increase both in men and women;
- ▼ Smoking shows a reduction in the starting age;
- ▼ An annual growth of incidence of lung cancer is registered;
- ▼ In view of mortality, caused by cardiovascular and brain diseases, Bulgaria is on the first place in the EU.

The Future

The National Programme for the 2007-2013 period comprises an impressive Action plan prepared by the Ministry of Health - it envisages 12 areas and 71 tasks. The allocated Budget is 8 655 000 BGN.

Carcinogenic agents

The Monographs of the **International Agency for Research on Cancer** in Lyon (IARC) - part of WHO, provide information on environmental factors, which can increase the risk of cancer. They include chemical substances and complex admixtures; contact of people in a certain working environment; physical and biological agents and factors connected with the way of life. National health institutions use this information for their actions to reduce contact with carcinogenic agents. Published studies have been examined by interdisciplinary working groups, consisting of experts who have to evaluate the proofs whether an agent increases the risk of cancer. The principles, procedures, and research criteria used in the evaluation are described in the Introduction of each of the monographs.

Classification

WHO experts have examined over 900 agents from 1971 to mid 2007. 101 of them contain an agent which causes certain cancer (group 1), probably causes cancer - 69 (group 2A), and 245 are possible carcinogens (group 2B). Thus the total number of agents with a carcinogen risk is 415.

Further down in the text we give the agents with the widest and most common contact with medical personnel, people working in industry, daily life and habits, nutrition, contact with biological and physical agents, including viruses. More details can be found at <http://monographs.iarc.fr/ENG/Classification/index.php>

Medicaments

Azathioprine (1);
Chlornaphazine (I);
Chlorambucil (1);
Methyl — CCNU (1);
Cyclophosphamide (1);
Cyclosporin (1);
Melphalan (1);
MOPP (nitrogen mustard + vincristine + procarbazine + prednisone) (1);
Myleran (1);
Thiotepa (1);
Treoosulphan (1);
Adriamycin (2A);
Azaridine (2A);
BCNU (2A);
CCNU (2A);
Chlorozotocin (2A);
Cisplatin (2A);
N-Ethyl-N-nitrosourea (2A);
Nitrogen mustard (2A);
Procarbazine hydrochloride (2A).

Hormones

Diethylstilbestrol (1);
Oestrogen replacement therapy (1);
Oestrogen nonsteroidal (1);
Oestrogen, steroidal (1);
Oral contraceptives, combined (1);
Oral contraceptives, sequential (1);
Androgenic (anabolic) steroids (2A).

Other medicaments

Phenacetin (1);
Arsenic and arsenic compounds (1);
8-Methoxypsoralen (Methoxalen) + UVR (1);
Chloramphenicol (2A);

Organic compounds and habits

Alcohol drinking (1);
Aflatoxins (1);

Betel quid (1);
Coal-tar pitches (1);
Coal tars (1);
Shale oils (1);
Soots (1);
Tobacco products, smokeless (1);
Tobacco smoke (1);
Salted fish, Chinese style (1);
Creosotes (2A);
Mate hot drinking (2A);

Inorganic compounds

Asbestos /азбест/ (1);
Beryllium and beryllium compounds (1);
Cadmium and cadmium compounds (1);
Erionite (1);
Chromium and chromium compounds, hexavalent (1);
Nickel and nickel compounds (1);
Silica, Crystalline (1).
Talc asbestiform fibres (1);

Industrial processes and occupations

Aluminium production (1);
Auramine, manufacture of (1);
Boot and shoe manufacture and repair (1);
Coke production (1);
Coal gasification (1);
Furniture and cabinet-making (1);
Haematite mining, underground with exposure to radon (1);
Iron and steel founding (1);
Magenta, manufacture of (1);
Paint Manufacture and Painture (1);
Rubber industry (1);
Sulfuric acid mists (1);
Textile Manufacturing Industry (1);
Wood dust (1);
Diesel Engine Exhausters (2A);
Glass Manufacture Industry (2A);
Spraying and Application of Nonarsenical Insecticides (2A).

Other chemicals

4-Aminobiphenyl (1);
Benzo(a)pyrene (1);
Benzene (1);
Benzidine (1);
Bis(chloromethyl)ether and chloromethyl methyl ether (1);
Ethylene oxide (1);
Formaldehyde (1);
Mustard gas (Sulphur mustard) (1);
1-Naphthylamine (1);
Vinyl chloride (1);
Benzidine-based dyes (2A);
Captafol (2A);
1,3 Butadiene (2A);
Dibenz(a,h)anthracene (2A);
Dimethyl and Diethyl sulphate (2A);
Dimethylcarbamoylchloride (2A);
Epichlorohydrin (2A);
Ethylene dibromide (2A);
IQ (2 amino-3 methyl-imidazol [4,5f] - quinoline) (2A);
4,4'-Methylene bis (2-chloroaniline) (MOCA) (2A);
N-Methyl-N'-nitro-N- nitrosoguanidine (MNN6) (2A);
N-Nitrosodiethylamine (2A);
Polychlorinated biphenyls (2A);
Styrene oxide (2A);
Tris(2,3-dibromo-propyl) phosphate (2A);
Trichloroethylene (2A);
Tetrachloroethylene (2A);
1,2,3-Trichloropropane (2A);
Vinyl bromide (2A);
Vinyl fluoride (2A).
Acrylonitrile (2B);
Benz(a)anthracene (2B);
Propylene oxide (2B);

Physical agents

Radon /радон/ (1);
Solar and UV Radiation (1).

Biological agents

HBV (1);
HCV (1);
HDV (3);
Schistosoma haematobium (1);
Opisthorchis viverrini (1);
Clonorchis sinensis (1);
Helicobacter pylori (1);

HPV

Types 16 and 18 (1)
Types 31 and 33 (2A)



Secondary prevention

Early detection
through
screening

*Secondary prevention
helps to avoid cancer
to appear in an advanced
stage and allows treatment
of precanceroses*

The priority of the present day is early detection of cancer

Today this is the priority policy of the WHO and all international and national health organizations - to work for secondary prevention of cancer, i.e. the detection of cancer and its treatment in precancerous occurrence or in the earliest stage of development.

The reason is that the way of life in our days is difficult to be changed, although it causes 85-90% of the registered cases of cancer. The great majority of people today continue to lead this high-risk way of life.

The WHO documents on the early detection of cancer

Numerous documents from resolutions of Sessions and Meetings of the WHO note that early cancer detection should be one of the priorities in the healthcare activities in all countries. The fact that treatment and outcome of cancer diseases are by far more favorable when the disease is established prior to the appearance of symptoms, when the process is localized in the organ gives ample ground for such a policy.

The Strategy

Early detection should be part of a wider strategy – beginning of a treatment without delay and the subsequent monitoring of the health status and results of the treatment.

Two activities are particularly important for the realization of the strategy of early detection, namely:

- ▼ Healthcare propaganda amidst the population in all age groups. When people are not aware of the symptoms of early cancer, early precanceroses detection is but an illusion.
- ▼ Carrying out of screening according to a certain programme. Even a well designed programme for screening

has small chance for success if effective healthcare propaganda and the successive treatment of precanceroses or early discovered diseases are not carried out.

No effective early detection is possible if:

- ✓ There are no constantly functioning systems for the training of the medical staff that delivers primary medical care for the detection of precanceroses and tumors in an early stage;
- ✓ When there is no easy access of the public to a health specialist - respectively specialists, trained in the early discovery of cancer;
- ✓ Every person with a doubt of having cancer is not sent immediately for a precise diagnosis and application of the respective treatment in a health establishment, specialized in this field. Access to such health institutions should be ensured for these people.

Guidelines of the American Cancer Society (ACS)

Since the year 2000, ACS has been publishing its Guidelines for the early detection of cancer annually, in *CA – A Cancer Journal for Clinicians*, which is available free of charge for physicians and other specialists. The materials with the guidelines are also accessible in the Internet on the following address:

<http://Caonline.AmCancerSoc.org>.

Here we shall give ACS Guidelines. 2006 (CaCancer J Clin. 2006; 56; 11-25). The Guidelines refer to people with an average risk without symptoms of the disease.

Breast cancer

Women over 20 and more are advised to carry out the following:

- ▼ Self check-up.

These women have to be informed with the opportunities, limitations and periods for checking. In case of suspicious formation they should consult a specialist in

mamology.

B) Clinical breast exam (CBE) should be part of a periodic health exam, about every 3 years for women in their 20s and 30s and **every year for women of 40 and over.**

C) Yearly mammogram.

Recommended for women 40 and over, prior to it clinical breast exam should be performed.

Cervical cancer

For women at the age of 18 and more screening is recommended through a smear with the so called Pap-test. This should begin about 3 years after the first vaginal intercourse but not later than 21. It should be done yearly with an ordinary Pap-test or every 2 years with the so called liquid-based Pap test.

After 30 and in case of normal results the examination can also be performed within a 2-3 years interval.

This examination could also be augmented by an examination for the presence of a human papiloma virus (DNA-test) every 3 years.

With women at 70 and more, as well as these with 3 or more negative results from the Pap-test, as well as with women with hysterectomy and negative results for the last 10 years further examinations can be stopped.

Endometrial (Uterine cancer)

At the time of menopause, all women should be informed about the risks and symptoms of endometrial cancer, and strongly encouraged to report any unexpected bleeding or spotting to their doctors.

Colon and rectal cancer

Beginning at age 50, both men and women at average risk for developing colorectal cancer should use one of the screening tests below.

▼ fecal occult blood test (FOBT) every year or fecal immunochemical test (FIT) also every year;

▼ flexible sigmoidoscopy every 5 years;

▼ in addition to FOBT and FIT every 5 years is added a flexible sigmoidoscopy;

▼ double contrast barium enema every 5 years;

▼ colonoscopy every 10 years

The Prostate Gland

For men at 50 and above.

Digital-rectal examination by a specialist urologist combined by a PSA clinical and laboratory examination of the blood for men at the above age and an expected average life expectancy of 10 years and more.

General prophylactic examinations for cancer

General prophylactic examinations for cancer are part of the periodical examinations for the health status of men and women at 20 and above. Physically the state of the thyroid gland, the ovaries, testes, lymph nodes, the oral cavity and the skin are examined by the physician.

Early detection of cancer in Bulgaria

National week and month for breast cancer

The National week and month for breast cancer was the leading event for early discovery of cancer and prevention of this disease.

Bulgaria joined this world campaign in 2001, after a proposal made at a Medical session organized by Astra-Zeneca, Bulgaria.

The initiative came from the company and the Foundation "Fight against Cancer", followed by the National Specialized hospital for active treatment and the National Cancer register.

The first National week took place between March 26th-31st 2001, with the active participation of many regional governors, mayors, the heads of the 50 leading medical establishments, hundreds of specialists, and above all - thousands of women from all over the country. 18 691 women were examined in many medical offices - 6 707 of them with a mammography examination, 478 suspicious cases were established, and in 90 of them were proven cases of breast cancer.

In connection with the week a great number of promotional materials were published, lectures were organized, including talks on national and local radio stations. The press gave full coverage of the event. A specialization course for physicians was also held in Sofia (May 19-20), a hot-line was launched, together with an e-mail for questions and answers. A big press - conference was held, with the participation of the wife of the President, who was Patron of the event.

The second National Campaign was held in October 2002 as part of the World campaign in October. The international Women's Club-Sofia, and in particular the wives of the Ambassadors of the USA and Spain, together with

some companies such as Avon Cosmetics-Bulgaria, Coca Cola, Astra Zeneca and some other took an active part in the preparations.

A meeting was held in the National Assembly with the participation of Government representatives, members of Parliament, public figures, specialists, and women participating in the movement. A course should also be mentioned - for X-ray specialists and general practitioners; a jogging event was held with the participation of the Patron of the week - the wife of the Prime Minister.

The reports of examinations included 12 004 mammography examinations and 1947 combined examinations - gynecological and mammography, revealing 114 breast and cervix tumors.

The widest scope - in numbers and variety - of events were included in the Third Campaign, held in October 2003. It was mostly organized by the "National Association of Women with Oncological Diseases" and their supporters, and the Foundation "Fight against Cancer", with the active participation of the International Women's Club-Sofia, which gave a mobile mamograph as a present.

The month began with a religious ceremony in the "St. Nedelja" Cathedral in Sofia and ended with a charity Ethno-jazz concert in the "Bulgaria" Concert hall. Avon Cosmetics-Bulgaria organized lectures on cancer prevention of the breast in seven towns. The company also organized a campaign for the gathering of donations for the purchase of a mobile mamograph. A total of 30 000 women were examined, detecting 108 cases with tumors.

In 2004 other religious denominations joined the campaign (for instance believers from the Sofia synagogue), charity events were also held, concerts, a jogging event for women - again with the participation of the wife of the Prime minister.

The President's Office was active again and in particular the First Lady once again was patron of the campaign.

Approximately 40 000 women were examined and 120 breast tumors were found.

The subsequent campaigns with free of charge examinations and events accompanying the campaigns were held in **2005 and 2006** throughout October. The number of examined women was once again about 40 000 each year.

Unfortunately all these campaigns did not lead to any organized population screening.

Screening in the Healthcare System

WHO: Screening is a highly organized specific healthcare activity.

Screening in healthcare is an organized population survey through tests and equipment for the detection of diseases at an early stage with people who are considered healthy.

Principles for the building up of screening activities according to the WHO

- ▼ Screening is carried out for diseases of importance to public health.
- ▼ The disease should have a distinctive pre-clinical stage.
- ▼ The disease should have an effective, safe and ethical method for its discovery in an early stage.
- ▼ For the disease there should be available a method with the above features for curing it.
- ▼ A political will should be present for the financing of screening and all ensuing steps.
- ▼ The costs of screening and interventions connected

with it should be equal to the effect of alternative investment of resources.

Main requirements

Prior to taking a decision for conducting a screening, an analysis and evaluation is made from ethical, legal, social, medical, organizational point of view in order to ensure high quality screening.

The necessary human and financial resources should be present, together with the possibility to ensure equal access to screening to various socio-economic groups of the population.

Screening in oncology

1. Should be selected - sites with high frequency, marked mortality rate, and a comparatively effective cure (especially in the early stages).
2. Screening is carried out provided there are sufficient reliable, inexpensive and comparatively simple methods, which the population is ready to accept and are effective in detecting the disease.
3. Screening is carried out whenever a quick and adequate further examination is provided together with treatment of the established cases.
4. A key factor for the positive effect of screening is the reduction of morbidity and a fall in the number of cases at an advanced stage.
5. The usefulness of effective screening can be seen only when sufficiently high numbers of the population are included.
6. Negative phenomena also exist: psycho-social negativism, false positive results, and delayed treatment when there are false negative results.
7. Screening should be carried out only when a high quality national or regional programme is present.
8. Screening at the request of individuals, the so called 'opportunistic screening', is not recommended as a social practice. In such cases this is rather a prophylactic

examination, not screening.

9. Screening requires a pre-testing through randomized clinical studies. Their results should be properly evaluated by independent experts.

10. A centralized data-base of the persons, subject to screening, also for the indices of the tests and the collected data should be present.

11. When screening is performed, a monitoring of the results of the clinically observed persons should be provided in accordance with the respective indicators.

The European Community and cancer screening

Secondary prevention of cancer and its center – population screening, a keynote place in the well known **European programme for actions against cancer** (this is the first document in the field of public health adopted by the European Community) and in all subsequent programmes, action plans and decisions of the European Council and the European Parliament. As far back as 1996 was created also a Consultative Committee for Cancer Prophylaxis.

Guidelines of the European Community for Cancer Screening

Decisions on implementation of cancer screening programmes must be made as part of a general priority-setting exercise on the use of health-care resources.

The contemporary requirements for executing a screening programme are observed only when the following tests are performed:

1. Pap smear screening for cervical abnormalities - starting at the latest by the age of 30 and definitely not before the age of 20. In some cases the

tests could be performed in the age interval 30-60.

2. Mammography screening for breast cancer in women aged 50-69 in accordance with

European guidelines on quality assurance in mammography screening for breast cancer in women aged 50-69;

3. Faecal occult blood screening for colorectal cancer in men and women aged 50-74. The time interval is 1-2 years and in case of a positive result a colonoscopy has to be performed.

4. Potentially promising screening tests currently being evaluated in randomised controlled trials, include:

▼ prostate-specific antigen (PSA) testing for prostate cancer;

▼ mammography screening for women aged 40-49 for breast cancer;

▼ immunological Faecal Occult Blood Testing (FOBT) for colorectal cancer;

▼ flexible colonoscopy for colorectal cancer.

Other cancer screening test are not yet recommended for EU-wide population-based

cancer screening, although they already may be used in individual screening on

demand. Such tests may provide individual benefits but at the same time may also

lead to adverse effects for individuals (e.g. unfounded anxiety) and the public (e.g.

additional financial burden). Recommendations for such tests cannot be made until

they have shown to have benefits such as reducing disease-specific mortality or

improving survival.

Economic efficiency of cervical screening

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Medical activities should follow medical needs, principles and ethics. While, in contrast, the logic of the economist is the logic of the rational use of limited resources for the realization of these activities.

Two main economic assessments are applied with cervical cytological screening, as it is with other health programmes: financial assessment of efficiency and technical efficiency of screening. (1.2)

Financial efficiency is assessed through the cost-effectiveness analysis, based on the monetary mechanism for evaluation of expenditure and efficiency.

Technical efficiency of health programmes is determined through various analyses of the cost-minimization analysis, cost-benefit analysis, and cost efficiency, in the narrow sense of the term.

Most cost-effectiveness analyses measure efficiency in terms of years of lives saved. They have established that cervical screening, generally speaking, does not save costs, its effect as a whole lies in preserving women's lives, as well as improving the quality of their lives. (1)

The cost in these analyses most often includes all direct and indirect costs for prophylactics, discovery and treatment of a certain disease.

Thus, the economic analyses for the evaluation of cervical screening include the cost of the screening test itself, the additional diagnostic tests in pathological findings, and the cost for curing and treatment of possible complications. In these costs should be included indirect costs from the difference in morbidity and deaths, between

screened and non-screened persons, taking into account the economic effect of non-realized work force, ensuring transport to and from a medical establishment, childcare. (1. 2)

Based on various studies of the cost-effectiveness approach the particular parameters of cervical screening have the following features:

The age range

The most suitable age range for the start of a screening programme is 30-35 years, the peak of morbidity is 10 years later, and invasive cancer is comparatively rare with women in the 20-35 age interval. Pre-cancer changes with young women most often pass, with a minimal risk of progression. At the same time screening of women over 65 is also with a low cost-effectiveness, owing to the rare frequency of the disease at this age, the application of screening at a younger age, as well as higher death-rate from other causes.

On the screening interval

Considering the specificity and sensitivity of the test, shortening the screening interval increases the cost of the study quicker than its effectiveness. In this connection, making the interval longer from 3 to 5 years, aims at bringing down the costs when a sufficiently reliable screening methodology is being applied. Making the interval shorter, within an interval of 1-2 years, is not effective, owing to an increase of costs per year's life saved, from the greater number of tests carried out and the discovery and cure of more minor changes, which spontaneously regress. In these cases in order to ensure higher effectiveness, we have to increase the range of the population subject to screening. (3)

About the diagnostic reliability of the test

An unfavourable cost-efficiency ratio is observed after the application of tests with a low specificity or high sensitivity, owing to a high number of false positive results, leading to increase of costs, without leading to life elongation. According to world standards the cost of a screening test

(Pap-test) is seen as an average of 10 Euros. In Bulgaria this cost is twice lower – about 5 Euros, due to the absence of a real evaluation of human labour, as well as owing to the non-inclusion of equipment depreciation and running costs for premises.

In general terms calculations show that at a population of 1.8 million women (between 25-60) its total screening would cost 9 million Euros. A screening interval of 3 years, in fact means annual financing of 3 million Euro, which would guarantee 91.3% preventive effect, with no more than 10 screening smears in the life-time of every woman.

We calculated the costs in Bulgaria, according to the number of registered cases, and in connection to the data-base of the value for treating of these cases, adopted in the EU since 2004, in order to establish the cost of various treatments per patient, depending on the weight of the found disease.

Necessary financing for treatment of cases of cervical cancer per year and costs adopted by the EUa

| Stages of cancer of the cervix | Cases for 2001 | Costs according to data from the EU | |
|-------------------------------------|----------------|-------------------------------------|-----------------------|
| | | Unit (per case) | Total (for all cases) |
| Cancer of the cervix (III-IV stage) | 347 | 30 000 | 10 410 000 |
| Cancer of the cervix (I-II stage) | 670 | 9 000 | 6 030 000 |
| CIS* | 275 | 300 | 82 500 |
| Carcinoma in situ | 1292 | 16 522 500 | |

CIS – Carcinoma in situ*

This analysis shows, that the annual investment of 3 million Euros for carrying out of a cervical population screening in Bulgaria would save considerable amount of money - mainly from the treatment of later invasive forms of the disease, which today, at the present level of incidence, would cost about 16.5 million Euros annually, according to the European standards and none less than half this sum, considering the amount of the real expenditures in Bulgaria.

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(The article was especially written for the Almanac)

Oncological screening in Bulgaria

In the development of activities, associated with oncological screening in Bulgaria could be specified **three periods**:

First period - the early 70s to the end of the 80s of the 20th century;

Second period - the last decade of the 20th century;

Third period – from the beginning of the 21st century to the present.

In the first period Government bodies organized screening for cancer of the cervix through the count of cyto-smears of over 1.5 million women above the age of 30 within an interval of 2 years. This was accompanied by the creation of a National Center and 13 regional centers with well trained medical doctors, nurses and laboratory technicians; this was also the basis of an organization for taking cyto-smears and their reading, with the subsequent examination of pathological findings, including data for neoplasms.

The weakness of this period was manifested in the absence of a screening register, insufficient control, and in particular the requirement for a controlled number of examined persons, which led to recording a cyto-smear, taken from one woman, and reporting it as taken from several women.

In spite of this, prophylactic screening led to a considerable reduction of cervical cancer morbidity.

With the changes preceding and accompanying the big political transition in 1989, the organization of this screening collapsed, and towards 1993 not more than 300 000 cyto-smears were examined annually. No efforts were made for the realization of breast cancer screening in this and the subsequent periods.

From the first years of the 21st century began some attempts for the creation of contemporary screening for breast cancer, cervical cancer, cancer of the prostate.

The first projects were planned to be carried out in several towns and regions of the country.

On January 13th, 2000, a Programme for Prevention and Early Diagnostics of Cancer was adopted by the Municipal Council of the town of Kozloduy. Under the terms stipulated in the Programme the Municipality was expected to sign a contract with a team of experts. A study began with the taking of 58 cyto-smears from 29 women. With this the programme came to an end, prior to its real start.

A second regional project was initiated by the company Astra Zeneca. Bulgaria, with the objective to perform a pilot cancer screening of the mammary gland in the region of two oncological clinics – one at the town of Stara Zagora and the other one in the town of Veliko Tarnovo. The screening programme and the project for a screening register were prepared by leading specialists. A mamograph was provided to the clinic at Veliko Tarnovo. On December 13th, 2000, from the Embassy of the United Kingdom an announcement for the beginning of the pilot project was made. Unfortunately, it failed to be realized, within a short time, for reason beyond the control of the company initiating the project.

A third regional cancer screening project of the mammary gland and also with taking cyto-smears was discussed and accepted at the town of Gabrovo in 2001, but was never realized.

With its Decision No. 267 from 27 April 2001 the Council of Ministers adopted a National Screening Programme for Cancer (in connection to the National Health Strategy “Better Health for a Better Future of Bulgaria” (2001-2006), which included an Action Plan as well.

The organizations to whom it was entrusted to were the Ministry of Health, NHIF, Regional Health Centers, and general practitioners. Financing allocated for the screening included 19.1 million Leva, provided by NHIF for breast cancer (9.9 million Leva); for cervical cancer (7.8 million Leva) and for prostate cancer (1.5 million Leva). Another nearly 5 million Leva were allocated from the

Republican Budget, with estimates of 998 000 Leva for 2001 and 695 000 Leva for 2006.

Five mamographs for population screening were purchased under this programme, and 100 000 Leva were allocated for training courses of medical specialists, for training materials, films for the mamograph and for administrative costs.

In the following year funds were allocated mainly for the purchase of films. A training course was also held in the town of Vratza.

Following an initiative of the Minister and Deputy Minister of Finance, 13 mamographs for 1.5 million BGN were supplied in 2005, they were distributed in hospitals and clinics for the improvement of diagnostics as well as for prophylactic examinations.

The Ministry of Health reported that the expenditure for the period 2000-2005 (under Decision No. 267 of the Council of Ministers) amounted to 2 203 055.63 Leva. The Ministry also noted that screening tests had been included among the obligations of general practitioners and specialists in outpatient treatment which are paid by the NHIF.

Nevertheless, no one noted that these were prophylactic examinations, not screening ones, and were not part of a population screening, subject of the Decision of the

Council of Ministers.

Thus, while a National screening programme was not carried out, instead, a new initiative sprang up in 2005. The Expert-council of the Ministry of Health had taken a decision to open a procedure for delivering a grant for a project of a National Programme for Organized Screening of Breast Cancer and Cervical Cancer. Specialists drew up a project according to the requirements of the call for proposals of the grant and on April 4th, 2005 sent it to the Deputy Minister of Health. This was the end of this new national initiative for onco-screening.

Soon afterwards the start of another initiative took place and proved to be successful – examinations began with a mobile mamograph. Medical check-ups began by specialists from the National Oncological Medical Center with a mamograph donated by Avon Cosmetics–Bulgaria. They began on July 7th, 2005, at the town of Ardino, in the presence of officials, medical doctors and the local inhabitants. Several women were examined

Thus, considering that a population screening for breast cancer for 1 040 000 women between the age of 50-69 in the country is missing, at least it became possible to examine several hundred women in a practically forgotten region of the country...



Cancer sites

*8 Cancer sites are presented –
the ones with highest
incidence rates*

Cancer staging

The objectives of cancer staging were articulated by UICC more than 40 years ago. They are:

- ▼ To aid the clinician in the planning of treatment
- ▼ To give some indication of prognosis
- ▼ To assist in evaluation of the results of treatment
- ▼ To facilitate the exchange of information between treatment centres
- ▼ To contribute to the continuing investigation of human cancer

Cancer staging is essential in patient care, research, and cancer control activities.

All clinical practice guidelines for the management of cancer use the assessment of extent of disease and cancer stage at diagnosis to guide appropriate treatment recommendations.

The accurate documentation of stage at diagnosis allows for regional population-based evaluation of outcomes, clarification of controversial areas of oncology and the evaluation of the potential benefits of screening programs. The accurate assessment of cancer incidence by stage enables appropriate estimate of local resource needs and proper health-care planning.

The TNM classification is an anatomically based system that records the primary and regional nodal extent of the tumour and the absence or presence of metastases.

Each individual aspect of TNM is termed a category.

- ▼ the T category describes the primary tumour site;
- ▼ the N category describes the regional lymph node involvement;
- ▼ the M category describes the presence or otherwise of distant metastatic spread.

The definition of each category depends on the site and histology of the cancer and is described in detail in the sixth edition of The TNM Classification of Malignant Tumours.

To simplify the description the categories can be grouped together as a stage grouping and given a Roman numeral stage (Stage I, II, III, and IV).

Lung cancer

Lung cancer is the leading in frequency cancer site affecting Bulgarian male population both in terms of incidence and mortality. In women it is at the eighth and fourth position according to incidence and mortality. In 2003, all patients diagnosed and still alive with lung cancer were 9555 people. Since 1981 its incidence is constantly increasing, especially in women – almost doubled.

Symptoms occur too late. Some early symptoms are voice change, constant cough mixed with blood streaks, chest pain or recurrent chest infections, as pneumonia or bronchitis. This scarcity in the presentation symptoms could explain its insidious onset and late diagnosis.

Stages of Lung cancer at diagnosis - Bulgaria 2003

| Stage | I | II | III | IV |
|--------------------|-----|-----|------|------|
| Percent % | 2.2 | 5.5 | 77.2 | 15.1 |
| Number of patients | 84 | 206 | 2892 | 564 |

Risk factors

Smoking, incl. passive smoking and tobacco chewing; professional exposure to radon, asbestos, esp. in combination with smoking; heavy metals exposure (chromium, cadmium, arsenic; organic solvents, radiation and tuberculosis. When young people are diagnosed with LC, it is usually due to inherited predisposition.

Early Diagnosis

When the diagnosis is made it is usually too late.

Although promising at their introduction, methods like radiography, endoscopy failed to prove effective in early stages and didn't reduce significantly its mortality. On the other hand, the spiral computer tomography and sputum investigation proved higher efficacy in its early detection.

Lung cancer basically is manifested into two distinct types – small cell type (13%) and non-small cell type (87%). They have different clinical features, prognosis and management.

The staging of non-small lung cancer (NSLC) follows the TNM classification. Small type lung cancer due to its extreme aggressiveness has only localized and spread stage. In localized stage it is limited to only one side of the chest (lung), its adjacent lymph nodes, incl. supraclavicular nodes and the pleura (without effusion). All other locations are feature of the spread stage.

Treatment

It depends on the clinical and histology diagnosis, as well as on the stage. It includes surgery, radiotherapy, chemotherapy, incl. newest targeted therapeutic agents as gefitinib (Iressa®) and erlotinib (Terceva®). Surgical method is usually the only treatment modality sufficient in the first stage. Survival proves to be higher in patients with NSLC if surgery is followed by chemotherapy. If the disease has already spread, surgical method is followed both by chemotherapy and radiotherapy. When bone metastases are present, usually biphosphonates as Zoledronate (Zometa®) could prevent rapid bone loss. NSLC - in stages I and II (found in less than 10% of the cases), lung resection is radical enough. In stage IIIA, chemotherapy is given before and after surgery. In stages IIIB and IV the disease is considered too advanced and no surgery is possible as treatment modality. It could be done only as palliation, apart from chemotherapy and radiotherapy.

Until now, the standard treatment combination for patients with NSLC was limited to only to platinum based drugs – Cisplatin or carboplatin in combination with a third generation agent (paclitaxel, gemcitabine (Gemzar®), docetaxel (Taxotere®) or vinorelbine. But newer drug as taxanes and topotecam showed greater

response up to 40% (topotecan) and 50% (paci). Cisplatin, etoposide, vincristine, doxorubicin and cyclophosphamide are among most frequently used modalities.

A research on the efficacy of bevacizumab (Avastin®), which is a recombinant monoclonal antibody against the vascular endothelial growth factor (VEGF), proved to be a great breakthrough in the therapy of lung cancer. Two-component, based on platinum regime, plus bevacizumab is the new treatment standard for selected patients with NSLC.

Small cell lung cancer (SCLC) is extremely aggressive type of cancer. Usually 75% of patients are already in a spread stage when diagnosed and have worse prognosis. The only treatment – polychemotherapy is according to the physical status of each patient and the disease. In early localized stage, surgery is followed by chemotherapy. The chance for complete cure in this early stage is about 30%. Radiotherapy is used for better local control

when no chemotherapy has been given. In stage III is used only radiotherapy and chemotherapy, mostly with alkalinizing agents.

The combination of chemotherapeutic drugs includes Cisplatin or carboplatin and etoposide for 3 months. Most of the patients enter remission and improve. FDA already approved gefitinib (Iressa®) for NSLC patients, only after advice given by a specialist. It acts by inhibiting growth hormone receptor and should not be used in early stage patients. Surgical method here is used only on rare occasions, as lymph node removal before chemotherapy. When the patient enters into remission, radiotherapy to the skull could be applied as preventative method.

Survival

The survival of patients with LC after treatment has increased in the USA from 37% in 1975 to 42% in 2000. Though, patients still have extremely low 5-year survival rates of only 15% for all stages.

Breast Cancer

This is the leading cancer site for women – in terms of incidence, mortality and research.

Signs and symptoms

The earliest sign of breast cancer is usually an abnormality detected on a mammogram before it can be felt by the woman or a health care professional. Larger tumors may become evident as a painless mass. Less common symptoms include persistent changes to the breast, such as thickening, swelling, distortion, tenderness, skin irritation, scaliness, or nipple abnormalities such as ulceration, retraction, or spontaneous discharge. Typically, breast pain results from benign conditions and is not an early symptom of breast cancer.

Risk factors

Aside from being female, age is the most important factor affecting breast cancer risk. Risk is also increased by inherited genetic mutations in the BRCA1 and BRCA2 genes, a personal or family history of breast cancer, high breast tissue density (a mammographic measure of the amount of glandular tissue relative to fatty tissue in the breast), biopsy-confirmed hyperplasia (especially atypical hyperplasia), and high-dose radiation to the chest as a result of medical procedures. Reproductive factors that increase risk include a long menstrual history (menstrual periods that start early and/or end late in life), never having children, recent use of oral contraceptives, and having one's first child after age 30. Some potentially modifiable factors that increase risk include being overweight or obese after menopause, use of postmenopausal hormone therapy (especially combined estrogen and progesterin therapy), physical inactivity, and consumption of one or more alcoholic beverages per day. Many studies have shown that being overweight also adversely affects

survival for postmenopausal women with breast cancer. Breastfeeding, moderate or vigorous physical activity, and maintaining a healthy body weight are all associated with a lower risk of breast cancer. A medication called tamoxifen decreases breast cancer risk in women at increased risk. A recent study confirmed that another medication, raloxifene, is as effective as tamoxifen in reducing the risk of invasive breast cancer in postmenopausal women and may have fewer side effects. However, raloxifene is not yet recommended by FDA for the prevention of breast cancer. Cancer-causing mutations in the inherited susceptibility genes BRCA1 and BRCA2 account for approximately 5%-10% of all breast cancer cases. Widespread testing for these mutations is not recommended because they are present in far less than 1% of the general population. However, women with a strong family history of breast and/or ovarian cancer should be offered counseling to determine if genetic testing is appropriate. Recent studies suggest that prophylactic removal of the breasts and/or ovaries in BRCA1 and BRCA2 mutation carriers decreases the risk of breast cancer considerably, although not all women who choose this surgery would have developed these cancers. Women who consider these options should undergo counseling before reaching a decision.

Treatment

Taking into account tumor size, stage, and other characteristics, as well as patient preference, treatment may involve lumpectomy (surgical removal of the tumor with clear margins) or mastectomy (surgical removal of the breast) with removal of some of the axillary (underarm) lymph nodes (to obtain accurate information on stage of disease). It may also involve radiation therapy, chemotherapy, hormone therapy - tamoxifen, aromatase inhibitors – Letrozole (Femara®), Anastrozole (Arimidex®) Exemestane (Aromasin®), or targeted biologic therapy (trastuzumab). Monoclonal antibody

immunotherapy with trastuzumab (Herceptin®) is sometimes used in women whose cancer tests positive for HER2/neu, the protein that Herceptin® is directed against. Two or more methods are often used in combination. Recently in postmenopausal women with hormone sensitive breast cancer preference is given to treatment with aromatase inhibitors in both early and advanced stages. Statistically there is more pronounced reduction of remote recurrences following treatment with Letrozole (Femara®) in comparison to tamoxifen. Numerous studies have shown that, unless cancer has spread to the skin, chest wall, or distant organs, long-term survival rates after lumpectomy plus radiation therapy are similar to survival rates after mastectomy. To ascertain whether cancer has spread beyond the original tumor site, a relatively new technique called sentinel lymph node biopsy is reducing the need for full axillary lymph node dissection in women with early-stage breast cancer. Lymph nodes draining the tumor site are tested and only those nodes that are suspected to be cancerous are removed. Sentinel lymph node biopsy is preferable to axillary lymph node dissection (removal of lymph nodes in the underarm area) because fewer lymph nodes are removed, so there is a lower risk for side effects such as lymphedema, a swelling of the arm that can be painful and disabling. Eligible women who elect to have sentinel lymph node biopsy should have their breast cancer surgery at a facility with a medical care team that is experienced with the technique. For women undergoing mastectomy, significant advances in reconstruction techniques provide several options for breast reconstruction, including the timing of the procedure (i.e., during mastectomy or in the time period following the procedure). The

exact percentage of mammographically detected ductal carcinoma in situ (DCIS) that would progress to invasive breast cancer without treatment is not known. However, data from mammography screening trials suggest that the majority of such cancers will progress. Since there are no tests at this time that can reliably predict which cases will progress, it is recommended that all patients with DCIS be treated. Treatment options include lumpectomy with radiation therapy or mastectomy; either of these options may be followed by treatment with tamoxifen.

When bone metastases are present the treatment with bisphosphonate – Zoledronate (Zometa®), Ibandronate (Bondronat®) and Clodronate (Bonefos®) should be applied. Data from clinical trials indicate that Zometa is most effective in reduction and postpones in time occurrence of bone related complications.

Survival

The 5-year relative survival for localized breast cancer (malignant cancer that has not spread to lymph nodes or other locations outside the breast) has increased from 80% in the 1950s to 98% today. If the cancer has spread regionally, the 5-year survival is 83%. For women with distant spread (metastases), the survival is 26%. Survival after a diagnosis of breast cancer continues to decline after 5 years. The survival rate at 10 years for all stages combined is 80% compared to 89% at 5 years. Caution should be used when interpreting 10-year survival rates since they represent detection and treatment circumstances 5-15 years ago and may underestimate the expected survival based on current conditions.

Colorectal cancer

In contrast to the stomach cancer, the incidence of colorectal cancer (CRC) in Bulgaria is constantly increasing. For the last 20 years it has almost doubled and the death rate even tripled. According to the National Cancer Registry, in 1996 CRC was second to lung cancer with 2200 newly diagnosed patients, most of whom (57%) in advanced stages III and IV. In 2003 their number increased to 3960. CRC is still the second most common cancer - in males after the lung cancer and in females after the breast cancer.

Risk factors

The risk of developing CRC is increasing with age. In Bulgaria among 30 year old people the incidence is 4/100 000, while at the age of 80 it is 120/100 000. Indeed, about 50% of all patients are older than 50. The risk is increased in patients with some inherited syndromes or with acquired mutations as Familial adenomatous polyposis (FAP) and Hereditary non-polyposis CRC (HNPCC). Patients who have been treated for CRC or have had a polyp removed are still considered at increased risk for recurrence. Some other conditions that predispose risk are ulcerative colitis or Crohn disease.

There are number of environmental factors which are easily avoidable and are considered to contribute to increased risk – obesity, sedentary lifestyle, smoking, regular alcohol consumption, diet rich in red meat and low vegetable intake.

On the other hand, people who use regularly non-steroid drugs (e.g. Aspirin), hormonal drugs (estrogens or progesterone) or HMG-Co-A reductase inhibitors (e.g. cholesterol lowering drugs – Statins) are at lower risk for developing CRC. However, it is not recommended to take these drugs for CRC prophylaxis only.

CRC is a type of disease that could easily be prevented by screening. The screening is recommended to all peo-

ple at the age of 50 and should continue till 75. The screening aims at detection of early premalignant forms (polyps) or preinvasive CRC.

Symptoms

CRC is usually asymptomatic in early stages and symptoms occur when it infiltrates the bowel wall or causes bowel obstruction. In advanced stages it invades the adjacent organs – bladder, prostate, uterus, vagina or os sacrum. Apart from such local symptoms, patients develop nonspecific complaints as pale skin, fatigue, appetite and weight loss, liver enlargement. When the cancer is located to the right part of the colon it remains longer unnoticed and usually causes anemia and fatigue. In some cases it grows sufficiently and patients could locate it by palpation. When the cancer is more distally located – near the rectum, patients see blood in the feces and falsely ascribe it to hemorrhoids. This is a frequent mistake and delays the correct diagnosis, esp. in elderly patients. Patients suffer frequent defecation and feel incomplete bowel emptying. Gradually patients develop fecal incontinence or complete bowel obstruction.

American Cancer Society Recommendations for the Early Detection of Cancer in Average-risk

Asymptomatic People

1. Fecal occult blood test (FOBT) or fecal immunochemical test (FIT) - annual, starting at 50 years of age, or:
2. Flexible sigmoidoscopy every 5 years, starting at 50 years of age.
3. Annual FOBT (or FIT) and flexible sigmoidoscopy every 5 years, starting at 50 years of age or:
4. DCBE every 5 years, starting at 50 years of age.
5. Colonoscopy every 10 years, starting at 50 years of age.

Currently there is no screening program for CRC in

Bulgaria, rather than an opportunistic model – the patient requests examination when some symptoms develop.

Treatment

Main treatment modality is the surgical method. In the initial stage, when no metastases are present, it is usually a curative option. Sometimes, the patient should be left with a definitive artificial anus on the front abdominal wall. Additionally the patient is treated by chemo- and radiotherapy.

Oxiplatin in combination with 5-Fluorouracil (5-FU) and Levcovorin (LV) (FOLFOX) is a new effective combination for the advanced disease, when metastases are present.

Adjuvant or combined chemotherapy is not so toxic anymore, even for patients above 70 years of age.

FDA has already approved two principally new drugs - so called targeted therapy - Avastin®

(bevacizumab), which blocks the vascular formation in the tumor and Erbitux® (cetuximab), which block the growth factors for the tumor.

The standard of adjuvant chemotherapy in Bulgaria is a 5-day regime of 5-Fluorouracil and LV. It is given only after surgical removal of the primary tumor. In patients with metastases (stage IV) is used the FOLFOX, FOLFIRI combinations or monotherapy with Xeloda®.

Cancer of the stomach

In 2001 there were 7 million people in the world who died from malignancies. Gastric cancer was the second most frequent type after lung cancer causing 842 000 deaths. Almost 2/3 of those patients died in developing countries. The highest frequency of gastric cancer is in Japan and Russia, Eastern Europe, Central and South America (esp. Chili). Age standardized death rate in Japan was the highest (69.2/100 000 in men, 28.6/100 000 in women). Gastric cancer incidence rate is gradually decreasing during the last years in Bulgaria. In 1981 it has been 23.5/100 000 in male population, while in 2003 it was 16.9/100 000. In women this decrease was from 13.2 to 7.2/100 000. In 2003 there were 1850 newly diagnosed patients (1175 men and 675 women). In the same year, the number of all patients diagnosed with gastric cancer and alive was 5950 people.

Gastric cancer is usually diagnosed too late in Bulgaria and most of the patients are in stages III and IV (64.6%), and only few are diagnosed in the early I stage (3.1%) or II stage (9,5%). This late-stage diagnosis could account for the worsening survival rates. In 2003 gastric cancer was the second most frequent type for cancer death (9.6% or 1511 deaths).

Risk factors

In 1994 the International Agency for research on cancer in Lyon defined the infection with *Helicobacter pylori* (H.p.) as the predisposing factor for gastric cancer. Using prospective cohort studies it was found that the H.p. infection is twice more frequent in patients with gastric cancer. Indeed, gastric cancer geographical distribution follows the H.p. spread – highest among developing countries. It is suggested that the decrease in gastric cancer incidence is due to antibiotic regimes, proven extremely effective in its eradication, as well as the higher

quality of food processing and storage.

There are still some foods, considered to be risky for gastric cancer development – salty fish, smoked meat (containing nitrosamines), and the vitamin C deficiency. Surgical resection of the stomach is also risk factor, due to pH imbalance that it creates. There are also some other diseases related to higher risk of gastric cancer development – stomach atrophy, gastric polyps, pernicious anemia (10%) and ulcer disease (4%).

Symptoms

In its early stage gastric cancer is usually asymptomatic. Most of its early symptoms are nonspecific and are attributed to other chronic disease. The symptoms could even be blurred by the incorrect use of H₂-blockers for acid reduction. In a study, involving 18 000 people, it was found that the three most frequent early symptoms in gastric cancer patients are weight loss, gastric pain and nausea. Other rarer symptoms include difficulties in swallowing, melena and early satiety. Lower gastrointestinal tract blood loss as indicating symptom is observed in only 20%, while blood vomiting in only 12%. On the initial examination is usually present a palpable abdominal mass, rarely lymph node metastases above the left clavicle (Virchow gland) or adjacent to the umbilicus (Sister Joseph Mary's gland) or in both ovaries (Krukenberg). Sometimes there is extreme seborrhea (Leser-Trelan sign), acantosis nigricans or icterus. However, none of these symptoms is specific to gastric cancer only. There are also some other vague correlations for its early diagnosis with serum markers as CEA, CA 19-9, CA 72-4, and pepsinogen II to pepsin I ratio, as well as increased fibrinogen > 301 mg/dL. Due to their poor correlation neither the diagnosis nor the follow up development should be based strictly on them.

Early diagnosis

In its early stages, barium swallow has poor sensitivity allows detection of only 14% with 50% false negative results. Endoscopy plays leading role, which combined with dye spraying and multiple biopsies, has sensitivity of about 98%. This is an extremely useful method in those 5% of cases, where gastric cancer develops as a small mucosal protrusion without ulceration, or one of its more advanced type – linitis plastica.

After the endoscopic and biopsy confirmation, the patients undergo computer tomography for further staging of the local disease. It has however limited sensitivity of about 60%. A better PET method using labeled fluoro-deoxyglucose (FDG) is more precise – 83% sensitivity. This method detects much more precisely lymph node metastases, which are frequently missed by CT.

Another method for exact preoperative staging of intramural local spread is endoscopic echography, which has 77% sensitivity for defining the depth of invasion and 69% for lymph node status. In 23% of the patients however these imaging modalities will miss metastases and explorative laparoscopy is recommended.

Treatment

Gastric cancer is treated basically by surgery. Due to the extremely dense blood and lymph vessel supply of the stomach, it spreads easily. According to this, the resection could be extended to the adjacent organs – esophagus, duodenum. Most surgeons prefer a resection line of at least 5 cm away from the diseased tissue.

Survival

Five year survival rates after surgery in stage II is about 30-50% and only 10-25% in stage III. There is high risk of recurrence – 67% in the operation zone of the anastomosis – 54% and in the nearby nodes – 42%. To prevent this, surgery is usually followed by adjuvant chemotherapy. Only 22% recur due to missed distant metastases at the initial staging. To minimize such risk, patients are treated with combination of adjuvant chemotherapy and radiotherapy. Some studies demonstrated 23% better survival. Chemotherapy, as the only adjuvant method, didn't show any advantage, even in triple combination of drugs. The same goes for the neoadjuvant regimes (before surgery). In advanced stages surgery and radiotherapy are used as palliative methods.

Prostate Cancer

Incidence rates of prostate cancer have changed substantially over the last 20 years: rapidly increasing from 1988-1992, declining sharply from 1992-1995, and increasing modestly since 1995. These trends in large part reflect increased prostate cancer screening with the prostate specific antigen (PSA) blood test. Moderate incidence increases in the last decade are most likely attributable to widespread PSA screening among men younger than 65.

Signs and symptoms

Early prostate cancer usually has no symptoms. With more advanced disease, individuals may experience weak or interrupted urine flow; inability to urinate or difficulty starting or stopping the urine flow; the need to urinate frequently, especially at night; blood in the urine; or pain or burning with urination. Continual pain in the lower back, pelvis, or upper thighs may be an indication of metastatic disease. Many of these symptoms, however, are similar to those caused by benign conditions.

Risk factors

The only well-established risk factors for prostate cancer are age, ethnicity, and family history of the disease. More than 65% of all prostate cancer cases are diagnosed in men 65 years and older. Recent genetic studies suggest that strong familial predisposition may be responsible for 5%-10% of prostate cancers. International studies suggest that a diet high in saturated fat may also be a risk factor. There is some evidence that the risk of dying from prostate cancer may increase with obesity.

Early detection

At this time, there are insufficient data to recommend for or against prostate cancer testing in men at average risk of developing the disease. Two large clinical trials

designed to determine the efficacy of PSA testing are underway in the US and Europe.

Treatment

Treatment options vary depending on age, stage of the cancer, and other medical conditions, and should be discussed with the individual's physician. Surgery, external beam radiation, or radioactive seed implants (brachytherapy) may be used to treat early stage disease; hormonal therapy may be added in some cases. Hormonal therapy, chemotherapy, radiation, or a combination of these treatments is used to treat metastatic disease. Bone metastases are preferably treated with biphosphonate Zoledronate (Zometa®), since this is the only biphosphonate with registered in clinical trials positive effects against complications in patients with such metastases. Hormone treatment may control prostate cancer for long periods by shrinking the size of the tumor, thus relieving pain and other symptoms. Careful observation ("watchful waiting") rather than immediate treatment may be appropriate for older men with limited life expectancy and/or less aggressive tumors, as determined by cell type.

Survival

More than 90% of all prostate cancers are discovered in the local and regional stages; the 5-year relative survival rate for patients whose tumors are diagnosed at these stages approaches 100%. Over the past 25 years, the 5-year survival rate for all stages combined has increased from 69% to nearly 100%. According to the most recent data, relative 10-year survival is 93% and 15-year survival is 77%. The dramatic improvements in survival, particularly at 5 years, are partly attributable to earlier diagnosis and improvements in treatment.

Bladder cancer

Bladder cancer affects about 302 000 people each year worldwide, 75% of whom are men, and causes 3.2% of all cancer mortality. It affects people 6 times more frequently in the developed than in the developing countries, mostly in Western Europe, North America and Australia.

Bladder cancer is a relatively frequent disease in Bulgaria. Its incidence rate is constantly increasing and now it is 56% more common than 25 years ago. The absolute number of all newly diagnosed patients with bladder cancer in 2003 was 1141. In relation to all types of cancer that are diagnosed each year in Bulgaria, bladder cancer is comprises 5.8% and 1.6% of cancer incidence in men and women respectively. Men are affected 6 times more frequently than women.

Once diagnosed with bladder cancer, men die three times more frequently than women. In relation to other malignancies, bladder cancer is the seventh of all cancer related deaths in men.

Thanks to the constantly improving early diagnostics methods of bladder cancer, 61.5% of all patients diagnosed in 2003 in Bulgaria were in stages I and II, while 32.5% were in the advanced III and IV stage.

Risk factors

Cigarette smoking imposes to 2-6 times higher risk, which is proportionate to the cigarette number per day and the number of years of smoking abuse. Though decreased, the risk is present even after complete cessation of smoking and becomes average after about 15 years later. The risk of bladder cancer is also increased in contact with some professional hazards – aniline dyes (benzidine and 2- naphthylamine), tar and auramine. Some drugs also pose and increased risk – phenacetine, chlorpromazine, cyclophosphamide, as well as chronic infection with *Schistosoma haematobium* and dwelling catheter.

Histologic variants

Bladder cancer is an urothelial type of tumor - stems from the transition epithelium of the bladder. There are also other types of bladder cancer, which start from the glandular epithelium – adenocarcinoma, and from the squamous epithelium – squamous cell carcinoma. The latter represent about 10% of all bladder cancer types.

Symptoms

One of the earliest symptoms of Bladder cancer is painless bloody urine. Pain is present in clot formation and in advanced disease, as well as when coexisting bladder infection develops, or when the urethras become blocked. Due to the quite expandable bladder structure, the cancer could remain unnoticed for long time and become symptomatic until it invades the neighboring organs and causes difficulties in the urine outflow. In advanced stages it metastasizes in lymph nodes around the lumbar vertebra and the bones themselves, causing pain.

Diagnostics

The main method of early diagnostics is cystoscopy – direct visualization of the inner bladder surface, during which probes are obtained for histology confirmation under a microscope. It could occur at several locations on the inner surface of the bladder simultaneously. That is why several biopsies are taken usually, sometimes aided by fluorescent dyes (photodynamic cystoscopy). It is important the procedure of cystoscopic sampling to be performed immediately after an episode of bloody urine for greater accuracy.

For precise staging there are several other modalities:

- ▼ transurethral resection, brush biopsy and urinary cytology;
- ▼ ultrasonography – intravesical or transabdominal;

- ▼ intravenous pyelography
- ▼ CT and MRI scans
- ▼ Lymphadenectomy
- ▼ Chest x-ray films
- ▼ Bone scans are probably only indicated for symptomatic disease or in patients with advanced and high-grade disease;

Treatment

When the disease has been properly staged, the patient will be offered the most accurate therapeutic method. In the initial stage the patient is treated by transurethral resection (TURB), electro-coagulation or surgical excision. Due to the high recurrence rate of early stage bladder cancer (70%), these patients are typically advised to undergo cystoscopy, urine cytology, and repeat TURB (as indicated) at 3-month intervals in the following two years.

To decrease this risk, patients undergo additional intravesical chemotherapy or vaccine instillations (Bacille Calmette-GuOrin). The latter shows higher complete response rates (70%) compared with other drugs, as well as lower cost.

The major treatment options for invasive bladder cancer

include radical cystectomy, preoperative irradiation and cystectomy, chemotherapy followed by cystectomy, or definitive irradiation. Surgical method and radiotherapy have almost the same efficacy in T2-T3a stages. In T4 stage radiotherapy shows 35-45% 5-year survival rate. Radiotherapy follows the surgical therapy when it is not radical (some amount of tumor tissue could not be removed) and especially in patients with adenocarcinoma.

Sometimes it is possible the surgical method to spare part of the bladder, but is used only in patients in initial stage (less than T3).

Although the use of neoadjuvant chemotherapy (before radiotherapy or surgery) increases local control, there appears to be no increased survival. Chemotherapy is used mostly in patients in advanced stage (>T4b) with no other complicating health conditions. It includes a Platinum-based regime (MVEC). A newer combination includes Gemcitabine and Cisplatin. If these patients show good response as decrease in tumor size or distant metastases disappearance), they could be treated further by cystectomy. When there is no response, palliation is a salvage method - painkillers, haemostatic drugs, or indwelling catheterization.

Endometrial Cancer

New cases

Incidence rates of endometrial cancer have been decreasing by about 1% per year since 1998 after a period of increase during the previous decade.

Deaths

Death rates from cancer of the uterine corpus have been stable since 1991 after decreasing, an average of 1.6 % per year from 1975-1991.

Signs and symptoms

Abnormal uterine bleeding or spotting is a frequent early sign. Pain and systemic symptoms are late signs.

Risk factors

Estrogen is a strong risk factor for endometrial cancer. Factors that dramatically increase estrogen exposure include estrogen replacement therapy (without use of progestin) and obesity. In addition, risk is increased slightly by tamoxifen use, early menarche (onset of menstruation), late menopause, never having children, and a history of polycystic ovary syndrome. Progesterone plus estrogen replacement therapy (called hormone replacement therapy or HRT) does not appear to increase risk. Research has not implicated estrogen exposures in the development of other types of uterine corpus cancer that are more aggressive and have a poorer prognosis. Other risk factors for uterine corpus cancer include infertility and hereditary nonpolyposis colon cancer (HNPCC). Pregnancy and the use of oral contraceptives provide protection against endometrial cancer.

Early detection

Most endometrial cancer is diagnosed at an early stage because of postmenopausal bleeding.

Women are encouraged to report any unexpected bleeding or spotting to their physicians.

Treatment

Uterine corpus cancers are usually treated with surgery, radiation, hormones, and/or chemotherapy, depending on the stage of disease.

Survival

The 1- and 5-year relative survival for uterine corpus cancer is 92% and 84%, respectively. The 5-year survival rate is 96%, 67%, and 23%, if the cancer is diagnosed at local, regional, or distant stages, respectively.

Cervical cancer

This is the second most common cancer site affecting women in the world. In 2005 there were about 500 000 newly diagnosed patients and about 260 000 deaths, 80% of them were from the developing countries. The number of all women who are still alive with cervical cancer (CC) is 1 million.

The main reason for its spread is the low quality of health care systems, especially in those poor countries where no screening is available. Without prompt government action worldwide it is estimated that these numbers will rise with more than 25% in the next 10 years.

In the EU countries there are about 33 000 women being diagnosed each year with CC, with higher incidence in the Eastern countries of the continent.

In 2003, in Bulgaria CC was the third most frequent cancer diagnosed in women (7.6%), after the breast (24%) and uterine cancer (7.9%) with absolute number of newly diagnosed patients 1096, and standard incidence rate of 27,3/100 000 women.

In 2003 the number of all alive patients diagnosed with CC was 12 200. It means that of all women in Bulgaria (4 020 055), every third woman in a thousand had CC.

During the last 20 years CC has doubled its incidence rate in Bulgaria.

Death rate

The total number of patients who died due to CC in 2003 was 356, or it means that every third patient died. For the period of 1980-2002 the death rate has doubled from 3.8/100 000 to 7.45/100 000. This rate however started decreasing for the first time in 2001 (9.1/100 000) and 2003 (8.9/100 000).

CC affects countries with poorly organized health systems with no screening. The reason for the sharp rise in CC incidence in Bulgaria in the late 80's of the last century was that the mass screening was replaced by the

opportunistic model. According to the study of the organization Alliance "Psychology and Health", only 50% of all women at least once have undergone screening. In addition - the smears are taken as part of the staging, not as part of the screening. It was also found that CC was more common in poor and ethnic communities with low education level.

All these facts explain the high percent of patients being diagnosed in the advanced stages II and III.

Risk factors

It was proven that the main risk factor for CC is the Human papilloma virus (HPV), which is a sexually transmitted infection. Indeed, it is regularly found in more than 70% of the cervical smears. Not all types of HPV however are carcinogenic. Only types 16 and 18 were found to have malignant potential. Some additional contributing factors are: co-infection with several types of HPV or other STD (Herpes virus, Chlamydia, Gonorrhoea), smoking. In most cases, the infection clears spontaneously. In case of chronification there is increased risk of cancerous transformation of the cells of the cervix. If untreated, these transformed cells could turn into cancer after a 10-20 year period. This however is sufficient time for timely detection and treatment.

Women who start early their sexual contacts and are promiscuous are at greater risk of infection. Still, the risk is not eliminated in monogamy as well.

Signs and symptoms

Usually, there are no symptoms before the premalignant cells become malignant and invade the nearby tissue. One of the most frequent early symptoms is the intermenstrual bleeding, which might be irregular or immediately after sexual intercourse. The CC could also mimic a prolonged and heavy cycle. Some other symptoms are postmenopausal bleeding (for women in climax) or heavy vaginal mucous secretion.

Early detection

Pap test is a simple and efficient procedure, in which cervical cells are being taken and sent for microscopic evaluation. Premalignant cells are developing comparatively slowly, so that there is usually enough time for detection and successful treatment if screening periods are regular.

According to the present standards, starting from 2003 onwards, the cervical screening in Bulgaria should be performed by the specialists in Gynecology.

Treatment

Before invasion, treatment by electro-coagulation is sufficiently effective. Cells are being destroyed by electricity, cryotherapy or laser. When invasive, CC is treated by surgery or radiotherapy and chemotherapy in some cases.

Survival

Survival rate is about 100% in women diagnosed in a preinvasive stage.

Vaccines against HPV

Risk of infection for every woman is present after starting sexual contacts. It means that it would be feasible to make a vaccine earlier in life. The available vaccines build protection against HPV types 16 and 18.

In 2006 the European Commission approved the licensed recombinant vaccine Gardasil®, developed by Merck & Co Inc, which builds immunity against four HPV types – 6, 11, 16, and 18. Its license includes vaccination of women in the age interval of 16-25. It is applied in three consecutive applications in fixed intervals. Another vaccine is Cervarix®, by GlaxoSmithKline which is bivalent, against types 16 and 18.

Summary of recommendation for prophylaxis

People who have more sexual contacts, especially the promiscuous, are at greater risk.

Young people are infected much easily - even in a single intercourse.

Women should try to avoid early pregnancy.

The risk increases significantly after the fifth pregnancy.

Avoid smoking.

Use condoms- they protect against another types of STD's as well.

Regular screening after the age of 25 or at the latest two years after the first sexual contact is recommended.



Everyone and all together

With more actions
and more efficiently
against cancer

*From the beginning of the
new century the leading prin-
ciple of the international
health care organizations is:
Everybody – on all levels and
from all over the world – to
unite each other, to work and
fight together!*

World Cancer Declaration – adopted by the World Cancer Congress on July 8-12, 2006

The detailed text of the Declaration (which is translated in extenso and published in the Bulgarian original) could be downloaded from the internet on the following address: http://www.2006conferences.org/pdfs/WCC_2006_September_12_Draft_Actions_with_rationales.pdf. For further information visit also the site www.world-cancercongress.org.

The European Union and the fight against cancer

The very first programme of the EU in the field of health care was against cancer. It was stated in the Resolution of the Council and the Representatives of the Governments of the Member States, meeting within the Council, of 7 July 1986, on a programme of action of the European Communities against Cancer (OJ C 184, 23.7.1986). Since 1988, three action plans in the context of the "Europe against Cancer" programme were adopted, covering the periods 1988-1989, 1990-1994 and 1996-2000. By Decision No 521/2001/EC of the European Parliament and of the Council of 26 February 2001, a further extension of the "Europe against Cancer" programme was decided, where emphasis was laid on the necessity for actions in the field of cancer prevention, better information of the general public, health education in schools and training of general practitioners in the field of cancer. The core of the Programme again was to promote working partnerships between all national "actors" and creation of a long term strategy for reducing cancer deaths. A new initiative was the launching of the European Code against cancer as an important document of the EU. Perhaps the most important positive result ensuing from the activities of the three action-plans was the reduction of cancer mortality with 10% in the period 1987-2000. The

most negative result was a steady increase of tobacco smoking amongst women. Due to that a 5% - increase in the mortality of women-patients with smoking-dependant sites was observed.

The European Parliament urges for the establishment of Breast Cancer Units in each European country

A Resolution for more vigorous actions against breast cancer was taken by the European Parliament in 2003. Three years later, i.e. in October 2006, was adopted a new Resolution with the following 4 key-requirements to be implemented by each EU Member State:

1. To develop a working system for population breast screening where the standards for quality will be abided properly;
2. To establish a system of breast cancer units in each region of the EU member countries;
3. To provide protection for the women with breast cancer, including her will to work and preserve her present job;
4. To pay particular attention to young women with breast cancer.

Breast cancer is the first cancer site with such priority requirements for each EU Member State. The Resolutions give basis for very active policy-measures manifested so far by many international and national organizations, in numerous initiatives and activities.

EUROCHIP-2 (European Cancer Health Indicator Project)

EUROCHIP focuses on fighting inequalities in cancer. It is a multidisciplinary, multinational project and its aim is to improve information and knowledge on cancer. It will add value to each country's and all Europe's action through data comparison. The starting point is the EUROCHIP-1 network and it will proceed by improving and enlarging this network of networks on cancer to include all member and candidate States. The international group of experts, engaged by EUROCHIP-2

(<http://www.tumori.net/eurochip/>), will liaise with networks, international agencies, institutions, ministries of health and medical association to thus promote action, analyze data, and disseminate results. EUROCHIP-2 aims to improve access to and organization and integration of information and knowledge on cancer in all EU countries in order to more take more effective action. The specific aims of EUROCHIP-2 are:

- ▼ To maintain and extend the system of cancer networks created for the EUROCHIP-1 project into a larger network involving all 25 European countries, new health institutions and other chronic disease networks;
- ▼ To liaise with sources of cancer data (e.g. Cancer Registry networks, the EUROCARE-high resolution study network, EUROSTAT, the HIS/HES system, other networks involved with smoking, etc) to induce these primary fonts to standardize their information collection, presentation and quality control procedures;
- ▼ To encourage the setting-up of data collection in areas where information is unavailable;
- ▼ To check the quality and standardisation of available cancer data and that becoming available during the project.
- ▼ To encourage action based on EUROCHIP-2 findings to reduce inequalities in cancer surveillance and control and to identify deficiencies in European health systems.

European School of Oncology (ESO)

ESO was founded by Umberto Veronesi and Laudomia Del Drago in 1982, with the aim of contributing to the reduction of deaths from cancer due to late diagnosis and/or inadequate treatment. ESO's mission is reflected in its motto "Learning to Care", which stresses the concept of studying and learning and also of caring for the patient in a global sense. By improving the skills of all health professionals dealing with cancer patients, ESO shortens the length of time needed to transfer knowledge from advanced research centres to daily practice, combining advanced technology with humanism in care.

Contrary to other institutions, ESO does not wish to last for ever: it hopes to be dissolved in the foreseeable future, as soon as cancer can be beaten.

Leading oncologists from around the world have played a key role in the foundation of the School. Now, after over 20 years of existence, ESO is the oldest and most structured organisation exclusively dedicated to increasing the knowledge of health professionals in all fields of cancer medicine under the auspices of an international scientific committee (whose head is Prof. Veronesi) and advisory board, ESO President is L. Del Drago, Rome, and managing Director is U. Rock in the headquarters in Milan. The School's partners, staff, other ESO offices and supporters all over the world, including more than 50 people in ESO offices, over 1000 lecturers and experts and more than 20,000 alumni, have been crucial to the success of ESO in its first 20 years.

Basic activities:

Inside track conferences; Master classes; Advanced courses and seminars; Training courses in native language

ESO Clinical Fellowship Programme

The aim of this programme is to support the training needs of European oncologists willing to improve their clinical skills in a specific area of cancer medicine. Eligible candidates to the programme must have at least 3 years' experience with cancer patients, describe the aims of the requested training period, have a letter of support by their head of department and a letter of acceptance by the host institutions. Priority will be given to EU citizens and destinations can only be EU cancer centres. The length of the training period is a minimum of 3 months and a maximum of 6 months.

For more information refer at:

http://www.cancerworld.com/cancerworld/home.aspx?id_sito=1&id_stato=1

Presidents who left a long-lasting trace in the fight against cancer



**President Richard Nixon
(1913-1994)**

"I will also ask for an appropriation of an extra \$100 million to launch an intensive campaign to find a cure for cancer, and I will ask later for whatever additional funds can effectively be used. The time has come in America when the same kind of concentrated effort that split the atom and took man to the moon should be turned toward conquering this dread disease. Let us make a total national commitment to achieve this goal. America has long been the wealthiest nation in the world. Now it is time we became the healthiest nation in the world."

These are the words of President Richard M. Nixon in his historic 1971 State of the Union address – it depicts the strong conviction of the Government of the United States of America to place the fight against cancer as its priority policy.

As part of this national effort, in October 1971, the Army's Fort Detrick, Maryland, biological warfare facility was converted to a cancer research center, eventually becoming the Frederick Cancer Research and Development Center, an internationally recognized center for cancer and AIDS research.

On December 23, 1971, President Nixon followed through on his promise as he signed the National Cancer Act into law, declaring, "I hope in the years ahead we will look back on this action today as the most significant action taken during my Administration."

The National Cancer Act (P. L. 92-218). "The War on Cancer" gave the NCI unique autonomy at NIH with special budgetary authority – to its budget were added an extra 100 million USD.

The National plan to combat cancer, initiated by President Nixon, was continuously developed and enlarged over the next decades. The budget for research allocated to the NCI was 150 million USD and it multiplied 30 times in 2005 when it reached 4.6 billion USD. Over this period and with this funds were realized over 500 000 experiments with animals and were published more than 1.5 million scientific articles in the field of cancer research.



Jacques Chirac

presented on March 23, 2003 at the Elysée Palace the main trends of the “Cancer Plan” for a five-year period. The principal objectives and the plan for realization are as follows:

Objectives

1. Prevention: development of the promotion of favorable to health attitudes:

- ▼ To decrease by 30% the tobacco smoking of the young people;
- ▼ To decrease by 20% the tobacco smoking of the adults;
- ▼ To decrease by 20% the number of adults dependent on alcohol;
- ▼ To promote the food hygiene;
- ▼ To reinforce the fight against professional and environmental cancers;
- ▼ To set up a national data base and to develop specialized new registers;

2. Early detection: to implement new strategies and put into practice coherent efforts on the whole territory:

- ▼ For the breast cancer - 80% of the women between 50 and 74 years must profit from tracking;
- ▼ For the cancer of the cervix - 80% of the women between 25 and 69 years must profit from tracking;
- ▼ For colorectal cancer - to set up an experimental strategy of tracking that could be generally applied afterwards;
- ▼ To improve the conditions of early detection of the melanoma;
- ▼ To guarantee access to the tests of genetic predisposition.

3. To apply a personalized programme of care and a multi-field assumption of responsibility within the frame-

work of a network (functioning since 1971) covering 100% of the patients.

- ▼ The patient must be in the heart of a system of quality care and of transparency;
 - ▼ To coordinate systematically the care at the hospitals next to the patient’s residence, and in particular the installation of a *Medical communicating file for cancer and of a Regional cancer pool*;
 - ▼ To make a specific effort aimed to children and old people;
 - ▼ To give access to information;
 - ▼ To be more attentive with the sick people and their expectations - in particular an easier access to the chemotherapy at the place of residence, and to take better account of the fight against pain;
 - ▼ To offer the broadest access to the diagnostic and therapeutic innovations, in particular by widening the range of imagery apparatuses (IRM, scanner, MT);
4. To continue the efforts to prolong the professional life of patients;
- ▼ To improve the security measures for employees and their return to employment after treatment;
 - ▼ To extend the access of the patients to loans and insurance plans, particularly by providing authentic information on Belorgey convention*
 - ▼ To facilitate the presence of the parents near their sick child;
 - ▼ To support the access of patients to the hospitals for psychological support, recreational activities and assistance;
5. To encourage the fast transfer of knowledge from science towards the therapeutic applications;
- ▼ To define three priority axes of research:
 - ✓ epidemiologic research;
 - ✓ research in social sciences;
 - ✓ biology of the genome (to have in particular a base of 100 000 tumors for analysis) and clinical research.

* Programme which prevents the banks to refuse giving a credit to cancer patients.

- ▼ To include at least 10% from the patients in clinical trials at the reference centers;
- ▼ To introduce the policy of research by programmes;
- ▼ To create "*cancèropòles*" - *Comprehensive cancer centers*, at regional and interregional level;
- ▼ To support the collaboration between the public and the private entities;
- ▼ To promote sites working on an international scale.

The realization

1. The plan will be controlled by the National Cancer Institute (NCI) and will aim:

- ▼ To ensure a better coordination of all the stakeholders in the fight against cancer, and to develop partnerships with private entities;
- ▼ To define, finance and control a total strategy of research and of corresponding action plans;
- ▼ To propose a global vision of the fight against cancer;
- ▼ To impel and follow the implementation of the plan at the various levels.

2. To provide means for implementation of the action:

- ▼ Financing: the plan involves an investment of 100 million Euros in 2003, and must reach 640 million Euros at the end of 2007;
- ▼ To train better the professionals, in particular by reform of the basic education, increase in the educational services and reinforcement of the supporting medical professions;
- ▼ A regional and national mechanism in order to ensure follow-up by the Cancer coordination centers and the regional networks, and establishment of a Correspondent cancer center in each regional Agency of Hospitalization;
- ▼ A tool of evaluation of the public policy, in regard to the launching of the plan, and its perception by the pro-

fessionals and the patients.

The fight against cancer constitutes one of the priority subjects of the five-year period of the President of the Republic. Three years after launching of the cancer plan, on April 28, 2006, Jacques Chirac presented the second set of measures of this national project.

Now there are four priorities:

The first priority is addictions. A plan against tobacco must be compiled. Indeed the measures so far accounted for 1 400 000 smokers less, but it is still the cause for 22 000 deaths per year. 11 000 are the deaths due to alcohol consumption. Further to the greatly harmful addictions, the President added the use of cannabis. A center to fight addictions will have to be set up in each hospital.

The second priority is early detection. It is required to implement the most comprehensive system for early detection.

After launching the tracking of cervix uteri cancer, tracking of the prostate cancer will start in pilot regions.

The third priority is scientific research, in particular of the genome in cancer. The goal is to provide more targeted treatments and to highlight genetic predispositions. The Regional cancer pools will have to install platforms in order to establish the identity-chart of the tumours. For each rare tumour, a center of reference will be designated by the National Cancer Institute.

The fourth priority is to provide better conditions for normal life of the patients. This will comprise a procedure for autorisation of the establishments entitled to deal with the cancer patients, as well as certification of the teams working in these centers. In addition, the efforts to introduce innovative equipment, in particular in medical imagery, will continue.



World Health Organization (WHO) and Cancer

Resolutions of the General Health Assemblies

WHA 51.18 – Global strategy for non-communicable diseases prevention and control.

WHA 53.17 - Global strategy for non-communicable diseases prevention and control.

WHA 56.1 – Tobacco control.

WHA 57.12 - Global Strategy for Reproductive Health, incl. control of corpus uteri cancer.

WHA 57.16 - Health Promotion and Healthy Lifestyles.

WHA 57.17 - Global Strategy on Diet, Physical Activity and Health.

WHA 58.22 - Cancer prevention and control.

The Global and Regional organizations against cancer

WHO/UICC Alliance on Global Cancer Control

This organization was created on June 3, 2003 in Chicago. This is the first official coalition of the leading global organizations in the area of human health – WHO, and in the in fight against cancer – UICC.

The coalition is open for membership from all sectors of the global spectrum, i.e. governments, NGOs, industries, scientific institutions, media, individual medical specialists, etc.

Four specific areas of activity were announced and still have priority:

- ▼ stimulating all countries to have their programmes for complex cancer control;
- ▼ recognition by the people all over the world of the priority importance that cancer prevention and healthy lifestyle have;
- ▼ better understanding and addressing the actions towards the real needs of the people with cancer diseases;
- ▼ promotion of the applied cancer research.

The focus is on the need to assess the cancer control as a top priority global problem not only for all significant international organizations, but also a personal topic for all international and national leaders. And finally, all this must not be delayed in the future – now is the time!

More information on the Alliance could be obtained at info@uicc.org and www.UICC.org.

Union International Contre le Cancer (UICC)

The International Union against Cancer (UICC) is the leading international non-governmental organization dedicated exclusively to the global control of cancer.

Its **vision** is of a world where cancer is eliminated as a major life-threatening disease for future generations.

UICC's **mission** is to build and lead the global cancer control community engaged in:

- ▼ sharing and exchanging knowledge and competence;
- ▼ transferring scientific findings to clinical, patient and public settings;
- ▼ systematically reducing and eliminating disparities in prevention, early detection and treatment, and
- ▼ delivering the best possible care to people living with cancer in every part of the world.

UICC develops its work in **four strategic directions**:

- ▼ Cancer prevention and control;
- ▼ Tobacco control;
- ▼ Knowledge transfer;
- ▼ Capacity building and supportive care.

Knowledge transfer includes both the international cancer fellowships programme and the TNM prognostic factors project.

UICC organizes the World Cancer Campaign and the World Cancer Congress.

On 4 February each year, UICC coordinates World Cancer Day.

The World Cancer Declaration, adopted at each World Cancer Congress, outlines specific actions the global cancer control community should take in the following two to three years.

Organization and governing bodies

Founded in 1933, UICC is an independent, non-governmental association of more than 280 member organizations in more than 90 countries.

UICC is governed by its member organizations, which meet in a general assembly, held in conjunction with the World Cancer Congress, every two years. Between assemblies, UICC is governed by a board of directors, elected by the general assembly, which is responsible for programme structure and implementation.

UICC is non-profit, non-political and non-sectarian. Its headquarters are in Geneva, Switzerland. It creates and carries out programmes around the world in, collaboration with hundreds of volunteer experts working in the four strategic directions.

UICC membership is open to governmental and non-governmental organizations substantially engaged in the control of cancer. It is also open to ministries of health. Members must be directed by a governing body, one or more members of which hold medical or other scientific qualifications. It may also include lay people.

Service and advantages for members

UICC ensures that the right policy environment exists to keep cancer control on international health agenda.

UICC helps its members to adapt strategies to remain competitive in a world where resources are scarce.

UICC provides its members with scientific information, advocacy tools and contacts. UICC publications ensure the sharing of information. UICC international cancer fellowships provide opportunities for professional development to researchers, staff and volunteers. Every two years UICC organizes a World Cancer Congress to address key issues affecting cancer control, and allow discussion among members from around the world.

Being the world's largest association of cancer-fighting organizations, UICC is a resource for action and a voice for change.

European Society of Medical Oncology (ESMO)

The European Society for Medical Oncology (ESMO) is the leading European non-profit professional organization for medical oncology, with a focus on promoting multidisciplinary cancer treatment around the world.

Since its foundation in 1975, ESMO has continuously expanded its mission, aiming to create a wider community of people involved in the multifaceted aspects and phases of cancer: a community of professionals who share the common goal of providing optimal care to all cancer patients. The Society focuses on a multidisciplinary approach to treatment and has expanded to include radiation and surgical oncologists, as well as other healthcare professionals involved in cancer care. ESMO aims to unite physicians, caregivers and patients in a global alliance, committed to combating cancer and ensuring equal access to quality multidisciplinary treatment.

Through the years, the Society has strived to meet the needs of both oncologists and patients. For oncology professionals, ESMO serves and offers support to its members in their daily practice and careers by sharing knowledge and expertise through scientific and educational activities. For patients, ESMO partners with cancer patient associations and groups, by promoting direct and pro-active involvement of patients in educational, political and networking activities.

Annals of Oncology is ESMO's official scientific publication. With a rejection rate of over 75%, Annals of Oncology publishes highly selected articles and editorials from worldwide experts. It is a multidisciplinary journal publishing articles addressing medical oncology, Surgery, Radiotherapy, pediatric oncology, basic research and the comprehensive management of patients with malignant diseases.

American Cancer Society (ASCO)

As the world's leading professional organization representing physicians who treat people with cancer, ASCO is committed to advancing the education of oncologists and other oncology professionals, to advocating for policies that provide access to high-quality cancer care, and to supporting the clinical trials system and the need for increased clinical and translational research.

The American Society of Clinical Oncology (ASCO) is a non-profit organization, founded in 1964, with overarching goals of improving cancer care and prevention, and ensuring that all patients with cancer receive care of the highest quality. More than 25,000 oncology practitioners belong to ASCO, representing all oncology disciplines (medical, radiological and surgical oncology) and subspecialties. Members include physicians and health-care professionals participating in approved oncology training programs, oncology nurses and other practitioners with a predominant interest in oncology.

ASCO publishes the Journal of Clinical Oncology (JCO), one of the leading scientific editions in the field of clinical oncology. ASCO also supports a site named People Living with Cancer (www.plwc.org) whose target is the patients and their families and provides them with oncologist approved information helping them to make informed decisions about their treatment.

In July 2006 was published jointly by invitation and consent in both the Journal of Clinical Oncology and the Annals of Oncology.

The ASCO-ESMO Consensus Statement on Quality Cancer Care

The American Society of Clinical Oncology (ASCO) and the European Society for Medical Oncology (ESMO) are both dedicated to the provision of quality cancer care to patients worldwide. Recognizing that resources, financial and otherwise, vary greatly from country to country and that systems for providing medical care are similarly varied. ASCO and ESMO nevertheless believe that health-care plans should aspire to meet certain common goals to ensure access to, and the continuity of, quality cancer care.

1. Access to Information

Patients should receive adequate information about their illness, possible interventions, and the known benefits and risks of specific treatment options. These matters should be discussed with qualified healthcare personnel who are committed to responding forthrightly to patient inquiries. Patients should have the ability to ascertain names, Roles, and the qualifications of those who are treating them.

2. Privacy, Confidentiality and Dignity

Patients should have the benefit of privacy with respect to their diagnosis and treatment. Medical records and other patient-specific information, including genetic information, should be regarded as private except to the extent that they are required to be shared for treatment or payment purposes. If access to patient-specific information is necessary for research efforts, including clinical trials, epidemiological research, translational research, or other clinical investigations. Patients should be given the opportunity to agree to such uses of their personal information for the benefit of cancer patients in general. Patients should be treated with dignity at all times.

3. Access to Medical Records

Patients should be permitted to review their medical

records and obtain copies for free or for a reasonable fee. Healthcare providers should be available to explain the contents of medical records to patients.

4. Prevention Services

Individuals should be advised with respect to the prevention of cancer and should be provided any preventive interventions that are evidence-based and available.

5. Nondiscrimination

Access to healthcare services should be provided without discrimination regarding race, Religion, Sex, national origin, or disability. Patients should also be free from discrimination on the basis of their disease, with respect to both employment and health insurance accessibility.

6. Consent to Treatment and Choice

Patients should be empowered to participate in decision making about their treatment and care to the degree that they desire, and the healthcare team should respect those decisions. Patients should have access to a second opinion and the ability to choose among different treatments and providers.

7. Multidisciplinary Cancer Care

Optimal treatment of cancer should be provided by a team that includes, where appropriate, multidisciplinary medical expertise composed of medical oncologists, surgical oncologists, radiation oncologists, and palliative care experts, as well as oncology nurses and social workers. Patients should also have access to counseling for their psychosocial, nutritional, and other needs.

8. Innovative Cancer Care

Patients should be offered the opportunity to participate in relevant clinical trials and should have access to innovative therapies, which may improve their disease outcome.

9. Survivorship Care Planning

Cancer survivors should be provided a comprehensive care summary and follow-up plan at the completion of primary therapy and should be systematically monitored for long-term and late effects of treatment. The need for

rehabilitation services should be evaluated as part of the long-term follow-up plan.

10. Pain Management, Supportive and Palliative Care
Quality cancer care requires pain management, including the use of opioid analgesics and other supportive care, for conditions induced by cancer treatment or by the disease itself. When effective cancer therapy is no longer available, patients should have access to optimal palliative care and counseling with respect to end-of-life issues.

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Balkan Union of Oncology – B.U.ON

The Balkan Union of Oncology – B.U.ON is established in 1995. Its members are 8 Balkan countries – Greece, Turkey, Bulgaria, Serbia, Romania, Moldova, Albania, and Macedonia.

Since its establishment, the Union aims to join the efforts and potential for study and explanation of the reasons for the cancer incidence rate in this region, and also sharing of experience in the area of prevention, diagnostics, treatment, and scientific research.

Important place in the realization of these goals play the scientific meetings and especially the congresses, as well as the official magazine of the Union – Journal of the Balkan Union of Oncology (J.B.U.ON.). Up to now are printed 11 Volumes – 43 issues. With more than 800 articles published so far, 86% are from authors from the Balkan countries.

The last - 6th Congress of B.U.ON was convened in Sofia from 13 to 16 September 2006 – the year of the organization's anniversary. For the first time in its history, the Congress started with a meeting of the patients and their organizations, with doctors, statesmen, donors, representatives of the different institutions. The meeting was called “Living with Cancer in the Balkans” and it provoked high interest and further activities.

The scientific reports were dedicated to a wide range of problems with an emphasis on basic cancer sites for the population in this region – breast, lungs, colon, and female organs. For the first time were discussed modern trends and standards in the nursing practice in oncology and of the young specialists in oncology.

B.U.ON is governed by a managing body, in which one vice-president and one member are from Bulgaria. Six specialists represent Bulgaria in the editorial board of J.B.U.ON.

Bulgarian National Oncology Association (BNOA)

The main goals of the association which has a Management Board, (consisting of 7 people, and established on 10th of October 2001), are:

- ▼ To provide help for the development of oncology in all its aspects;
- ▼ To help for the elaboration and the proper application of the medical standards in oncology;
- ▼ To promote front line methods in the experimental and clinical oncology;
- ▼ To establish and develop relations with governmental and non-governmental organizations and with international institutions and organizations;
- ▼ To provide help to health-care professionals in their scientific interests and to improve their knowledge and practical abilities on oncology;
- ▼ To popularize the achievements of oncology among the Bulgarian citizens;

Means of the Association to fulfill its goals:

- ▼ To elaborate and create medical standards in oncology;
- ▼ To offer to the government and other organizations solutions and tools for improving the legislation;
- ▼ Providing consultations to the executive bodies of the Ministry of Health, the National Health Insurance Fund (NHIF), the Health Commission at the National Assembly and other key-note organizations, when elaborating, creating and applying anti-cancer activities;
- ▼ With printed editions, digitally-based information and the other media it popularizes the achievements in oncology.

National Association of Oncology Treatment-Facilities (NAOTF)

It works in benefit of society for the development and establishment of the National oncological network and in fulfillment of the Oncological doctrine. It assists the Ministry of Health for improvement of the quality of life of the people with malignant diseases, and for maintaining the National oncological network.

It provides assistance to the Oncological Dispensaries (Oncology Treatment-Facilities), where doctors and other personnel actively seek for diagnoses, treat and observe people with malignant diseases and precanceroses by:

- ▼ organizing, guiding and controlling all activities of the oncological services on the territory of the region they support;
- ▼ organize and perform prevention examinations on a large scale, by implementing national and regional screening programmes. The people with non-malignant, precanceroses and carcinoma in situ are situated in a separate group, and are observed for one year after received treatment;
- ▼ perform complex treatment of malignant diseases;
- ▼ conduct dispensary observation of every person with malignant disease with current address in its area, and also of the treated ill people from other hospitals in the region. The observation is performed by a specialist and continues until the end of life of the patient;
- ▼ together with state and non-governmental organizations are carried out activities on health-education about the risk factors, the healthy way of living, prevention, early detection and treatment.

Bulgarian Oncological Association (BOA)

It is a key national scientific association in the area of oncology, with traditions as a successor of the National Scientific Medical Oncology Association (1999-2000). In the last years it organizes and performs annual national conferences, where the first “Medical Standards for Systematic Treatment of Solid Tumors with Medicines” in the country were elaborated. These standards are updated every year to match the European and international criteria.

An important place in the activity of the association holds the issuing of The Scientific Journal of BOA – this is an edition where the Bulgarian specialists in oncology show progressing activity in science.

Bulgarian Oncological Nurse Association (BONA)

The association aims to establish a better position and improve the prestige of health care specialists, working in the oncological sphere in the following aspects: professional, moral and ethical, to establish and develop partnerships with national non-governmental and governmental organizations, international institutions and organizations; to help for elaboration of the medical standards in oncology; to offer to the government ways and solutions for elaboration of legislation in the area of health care in oncology; to help increase the scientific interests and to improve the knowledge and practical skills in oncology of health care specialists, to popularize the achievements of oncology among the population and to assist prevention of oncological diseases.

“Fight Against Cancer” Foundation

It is registered in March 1991. The funds of the foundation are collected by donations from legal entities and individuals. From 1991 to 2006 were made 332 financial and donations-in kind from 172 companies and organizations, and also from hundreds of individual donors with a financial equivalent of 991 157 USD, invested by the foundation. The financial policy of the foundation is directed to solving the priority problems of the hospitals for oncological care:

- ▼ Donated funds to 26 hospitals;
- ▼ Bought and paid 33 apparatuses for diagnostics and treatment;
- ▼ Bought spare parts, accessories and recycled 14 apparatuses;
- ▼ Donated 47 types of medicines (34 300 packages);
- ▼ Donated consumables - total amount of 25 670 sets;
- ▼ Donated funds for 6 repairs of hospital rooms, offices and laboratories in 2 hospitals;
- ▼ Donated funds for building a Chapel in the National Oncology Hospital.

The second principle activity of the foundation is to implement the following medical programmes:

- ▼ Helping people with operation of the bladder and the column. With the mediation of “Bulllko” (Organization of the patients with stoma-devices) the foundation has donated 16 137 collectors, 1757 other consumables, 1220 kg of cotton wool, and published 6 editions of booklets to inform the people with stoma;
- ▼ Participation in providing palliative care for cancer patients in their homes. After a proposal is made from a commission in Sofia Oncology Dispensary, the Foundation provides financial help for people in need. By the end of 2006 are given funds to 352 patients in terminal

stage.

✓ Fight against tobacco smoking – in two offices for quitting of smoking, where - during 12 years - thousands of patients were treated with modern methods. An experimental programme is implemented in 10 schools in Sofia for diminishing the smoking among school children.

▼ 88 printed materials are published and distributed free of charge;

▼ Provided help in the organization and sponsored 54 thematic courses for training of oncological specialists, 7 scientific conferences, 11 symposia and 2 national congresses in oncology.

▼ The Foundation implements an “International Programme” with the European School of Oncology (ESO). With the sponsorship of the foundation until 2002 were accomplished 8 courses;

▼ Programme “Stimulating young specialists in the medical specialty “Oncology”. For the third time is given the diploma “Young oncology specialist” and a financial award of 500 Leva.

▼ “Early detection and treatment of breast cancer among women”. In this area the Foundation has:

✓ organized 2 national conferences;

✓ published and distributed 9 editions on the topic;

✓ helped with the organization of the first October days for fight against breast cancer, under the auspices of the First Lady of Bulgaria.

The foundation has close relations with many similar organizations and institutions from USA, England, Israel, Greece, and in the country – with the Bulgarian Red Cross, Bulgarian National Health Promotion Center and many other.

National Association of the Women with Oncological Diseases and Their Partners (NAWODTP)

In July 2001 in Plovdiv was registered the first in our country citizens association in the field of cancer. Identical associations were registered in 7 more cities. On September 10, 2002 was officially registered the National Association of Women with Oncological Diseases and Their Partners. Since its establishment it is member of the European Cancer Patient Coalition (ECPC).

In every document of the Association, the leading position is dedicated to prevention and early detection of oncological diseases. The Association adopts a programme for 2002-2003, and gets actively involved in the Month for Fight against Breast Cancer (October).

On 15th of August, 2003, in Varna was established the first in the country House for People with Cancer.

The association published its first editions – books for breast cancer, calendars for the years 2004 and 2005.

A National conference was organized - in Haskovo on 16th of December, 2005.

In many towns of the country were created new associations of and for patients with oncological diseases, including their spouses, friends or parents, of children with oncological problems.

Under the motto “For the Sake of Life - Together Against Cancer” the association united the organizations of patients with oncological diseases from 51 cities in Bulgaria in the BULGARIAN ASSOCIATION OF PEOPLE WITH ONCOLOGICAL DISEASES and Partners – a member of the American Cancer Society. Its Internet site is: www.bulgariancancerassociation.org.

Association of the Patients with Oncological Diseases and Friends (APOD; in Bulgarian - APOZ)

APOZ is a non-governmental organization whose aim is to care for patients with oncological diseases and their families in Bulgaria. The association was established by 16 patients with oncological diseases in Sofia in April, 2004, and registered in May, 2004.

Since May, 2004 it is a member of the European Coalition for Fight against Cancer (ECPC), and an associated member of the European Coalition for Fight against Breast Cancer (EUROPA DONNA).

APOZ has a wide range of activities. It supports a free National phone line – 0800 11202 – with offices in three cities. The phone is answered by people with the disease, who owing to their experience can be of help for solving the problems that the patients face in their fight against the disease. APOZ has a serious publishing production – a periodical magazine named “Labyrinth”, and many brochures.

The Association prepares many national and regional projects for prevention, early detection and screening. It regularly organizes patient forums for increasing the knowledge in health topics and popularizing of the need for regular examinations. The first forum was in September, 2005 in Sofia, and the second one again in September, 2006, in Plovdiv. A group of specialists prepared and published “Analysis of the Oncological Help in Bulgaria – National Research for 2006” which consisted of 200 pages.

The organization initiated and realized several meetings with the executive bodies of the Ministry of Health, with experts, media and foreign specialists.

Europa Donna – Bulgaria (EDB)

Its establishment is a natural result of the 3-year active work of the National Association of Women with Oncological Diseases and Their Partners.

Registered in May 2004 as the 34th member of the European Coalition for Fight against Breast Cancer – EUROPA DONNA.

In the country there are 14 regional associations, namely in the towns of: Blagoevgrad, Bourgas, Vratza, Gabrovo, Lovech, Pleven, Plovdiv, Razgrad, Rakovski, Sliven, Sofia, and Shumen.

The organization initiated the “Faculty for Self-education”, where the patients meet with the best specialists in oncology, so that they can get an answer to the thousands of questions that interest them. The idea was given in a lecture by Prof. Chernozemsky, and in 2004 eight more lectures were delivered by leading specialists in oncology. Faculties for Self-education started in Blagoevgrad, Bourgas and Sliven. In 2005 the coordinators of APOZ and EDB participated in an educational seminar on Teamwork. Materials for the activity of EUROPA DONNA in Europe are translated and distributed in the country.

A National Patient Forum was organized in the National Palace of Culture-Sofia. For the period March 2004 - December 2004, weekly visits were organized in the National Oncology Hospital. The psychologist of the association (Mrs. Vessela Kapitanska) and volunteers from the Association (Mrs. Stanka Andreeva, Mrs. Lilly Asenova and other former cancer patients), met personally with women just before or after their operation. In April 2005, by the idea of Vessela Kapitanska and the painter Mrs. Peneva, with the support of Mrs. Evgenia Adarska, became possible the realization of an Art Club (even for just a couple of months).

Club “Young Oncologist”

It was created on the 4th of December, 2004, with the help of club “Onco-world” and “The World” Foundation. This Club is the only organization in Bulgaria uniting the young specialists in oncology. Created by and for doctors, the Club’s main goal is to encourage the young specialists in Bulgaria to share their ideas and to establish contacts.

Major support for the Club’s creation was provided by Prof. Ivan Chernozemsky and “Hoffman La Rosh-Bulgaria”. It has about 40 members, mainly doctors, specialists in chemotherapy, but also medical doctors from other areas of oncology. The Club aims that all new candidates are below the age of 40. The meetings are convened 2-3 times a year at different places in the country. Every meeting has a varied lecture programme, where lecturers are leading Bulgarian and foreign specialists with international recognition.

The lecture-course combines speeches about clinical cases, information about international events, and also an open discussion on different problems; there is also information about specializations and education of the young oncologists. The Club is a place where the young medical doctors develop communicational, language and lecture skills. The Club supports a web site – www.Youngoncologistbg.com, for fast access to the latest advances in oncology, live discussion on various problems, etc. From the site materials from past meetings can be downloaded, applicants can sign-in and there could be found many links with other organizations. The Club is always open for new members.



The Human-being
the Spirit,
the Pain,
the Strength!

*Both the Universe
and the Pain retreat
from the human strength!*

The individual with cancer

What do I feel? ...

How could I get over it? ...

How should I find support? ...

Receiving a diagnosis (let it be breast cancer with metastasis this time) is something very personal. Every woman uses her experience, derived from other hard situations she went through, her belief and strength, and builds strategies how to fight. The acceptance of the diagnosis is a continuous process of adaptation. In a moment like this you have to know that other women also went through the same experience and felt the same way as you do.

Finding a way of expression of the thoughts and feelings of the woman after hearing the diagnosis breast cancer, and its meaning improves the acceptance of the diagnosis and the quality of life of the woman. In such hard moments you can find your strengths and weaknesses. You can deepen your relationships with others, or make new friendships.

Although it is very hard, in a moment like this you will have to learn many new things.

Many women, if not all women, share the opinion that the diagnosis metastatic breast cancer is far worse than the former diagnosis – breast cancer.

Feelings caused by the diagnosis

It is normal to feel very shocked from such a diagnosis. You can feel faithless and unable to understand what really is happening. You might feel like an outsider watching a scene. You can express the feeling with the words “this can not be happening to me”.

The feeling of lost control is also natural. When you are diagnosed with cancer, it is natural to feel as if you cannot control your body and your life, and to face an unsure

future is a very hard thing to go through.

It is natural to feel angry, to feel envy and sadness. To ask yourself the question: “Why me? Why not her?” To feel envy toward all the “healthy” people that you see around you. To feel sad that you have to fight with the situation that this diagnosis means. To feel angry at everybody else, angry at God. To feel angry because of the loss of control over your life.

It is natural to feel angry about your former treatment and the doctors, that did it, and to feel in doubt if it was the right one. Was that treatment the best and most suitable? You may have to make sure once again that what was decided then was the right thing to do. You can feel angry at the people around you because they do not notice and realize how serious your situation is. You can be angry about the lack of support by your partner, your family, by close friends. You can feel isolated and lonely, despite of the fact that the intentions of the other might be good. In many cases people do not know how to treat a person with cancer; they do not understand what he/she feels. Your diagnosis actually reminds the others that they are not immortal - something that they will find very difficult to understand and accept.

You might feel that others ignore you. From time to time you might want to act as if things are not that serious. Others might advise you to think positive, which is a hard thing to do.

You might come to the condition to pray to God or to Nature to prolong your life; to ask for permission for one of your wishes to come true, if you “are behaving well”. You might make a promise, for example: “If I could see my daughter married, I wouldn’t ask for anything else”. However, if you live longer than you expect or fulfill what you wanted to do, you might feel guilty that you did not keep your part of the promise. If the feeling of guilt is very strong, it would be good that you seek help from a psychologist, psychiatrist or a priest.

Some women with the diagnosis metastatic breast can-

cer may feel that in some way they are the reason for the development of the disease or that they are being punished for something wrong they have done. You may ask yourself: “Where did I go wrong?” or “What did I do so that something like this happens to me?” You have to know that neither the occurrence of breast cancer, nor the developments of the disease are events that depend on you. Maybe nothing that you have done could be connected to these events. There is no evidence that, for example, stress might cause the development of the disease. Some women, who have metastatic breast cancer, might feel like another hospital “case”. And it is normal – many examinations and methods of treatment may make you feel more like a “case”, than like a human being with a medical problem. Many times you might feel that the oncologist or surgeon don’t consider you as a person, and their attention is focused only on the cancer. Although there will be some doctors that will pay attention to the things that bother you, there will be others, whom you have to ask directly to do it. If the problem is not solved, then change the doctor. You have the right of an opinion from another doctor! Some women think that it helps them when they are accompanied by someone who is close to them when going to a hospital. Some women think that they are guilty for being dependant on other people for the everyday work at home, for the care for their children or for themselves. Sometimes it is hard to ask for what you need, but remember that asking for help may help you, so that you will have more energy to do something that you really want and need to do. Faced with the diagnosis cancer, people often ask themselves: “Do I live like I want to live?”, “What is the main purpose of life?”, “Does God exist?”, “Is there life after death?”, “Why should I and my closest people suffer?”

The answers to these questions you should try to find with the help of a psychologist or a priest. It is natural that many of you might feel sadness, sorrow and depression. These are not signs of weakness, but reaction of a

huge loss. The loss is connected to the loss of a part of your body, like for example the breast, the illness itself, financial troubles, changes in relationships, losses from the changes in the situation.

The overcoming of the loss is a continuous process. Give yourself the opportunity to live all the way through the sorrow and the sadness - it is important, so that you can fight against cancer. After some time most women share the opinion that stress decreases. However, for some women the sadness is heavier and more continuous and it can lead to the need of specific treatment.

Apart from the emotional response to the diagnosis metastatic cancer, its treatment and the development of the disease itself may lead to depression also. Reasons for this might be metastasis in the brain, changes in some blood ingredients, chemotherapy, and hormones. Here are some questions, to which by giving your answers you can reach to the reasons for depression and its characteristics:

- ▼ Have you lost interest or pleasure from different activities or work?
- ▼ Do you often feel hopeless?
- ▼ Do you often feel guilty?
- ▼ Do you often feel useless?
- ▼ Do you often feel like crying?
- ▼ Is it harder for you to see the funny side of things, to laugh?
- ▼ Do you often get angry?
- ▼ Do you have trouble with your sleep?
- ▼ Do you find meetings with close friends less enjoyable?
- ▼ Do you feel less motivated to participate in the everyday activities at home?
- ▼ Do you feel depressed?
- ▼ Do you feel obsessed by your feelings? Do you find it hard to control them?
- ▼ When the things look hopeless, is it hard for you to carry on?

If you feel sorrow, sadness or depression, which have obsessed you, seek help from a doctor. The women with metastatic breast cancer are facing many fears when they have to accept their diagnosis. To feel fear is not a sign of weakness, but a natural reaction in a very serious situation. Fear may come from: the unsure future and the pain going along with it; from the dependence on other people; from doubts whether you are going to make it; from changes in your relationships with your family or friends; from what would happen to your family; from the feeling that you are left alone by your closest people, for the future of your kids and partner; from loss of work and financial troubles; from the waiting of the examination results, of the treatment, but the strongest fear is the fear of death!

And still, when it comes to a disease, of which depends the life of a person, there can not be easy answers to many questions. Every single person finds the answers alone and deals with them as good as he/she can. Here are some thoughts of women, which have been diagnosed with metastatic breast cancer. Some of these thoughts might be helpful for you. Some may be suitable for you. Others may be hard to put into practice.

- ▼ Keep the flame of hope. You have to think that you can be healed. That, maybe there will be a new treatment discovered, which will help you. That you are going to live much more than it is expected. That you will not suffer much, that you will find a way to feel comfortable. That you will be supported by your family, your friends and the medical group. That you will be able to speak about your most important problems and the understanding of how to overcome them. That you will participate in every important medical decision about your disease. That you will participate in every important event.
- ▼ Find something that is very important for you and makes you happy. For example, the time spent with your family and friends, music, nature, movies, and try to do it persistently.
- ▼ Keep setting small goals for yourself for every week or month. For example, a holiday with the children, and when you achieve it, set a new goal. Save your power for things that you want to achieve.
- ▼ Live with the present, as much as you can. The past cannot be changed, and the future is unknown. Many of the things we fear may not happen at all. Concentrate your attention on life, not on death.
- ▼ Think of your disease as a challenge. Realize that you have control over your reaction in a certain situation, independent from the fact that you cannot control what is happening to you as a whole. Find a way of being grateful for the past and for the forthcoming life experience.
- ▼ Make jokes as much as you can, so that you keep a

high spirit.

▼ Careful exercises, suitable for your condition, can decrease stress and help your body feel as good as possible.

▼ Learn to accept all negative feelings – fear, sorrow, despair. This will make them go away faster.

▼ Keep reminding yourself that everything is changing, including every feeling and pain.

▼ Seek contact with others, so that you don't feel lonely and you add more sense to your life.

▼ Seek deep spiritual connection. It can be with God or Nature. Maintain the feeling that you control the choice of what care you get, as you participate in taking decisions for the treatment, which you are receiving. Seek as much information as you think you would need.

▼ In bad moments, remember all the good ones, and think that there are going to be much more of them in the future. Share what you need to share with your family, your friends, the medical specialists that deal with your treatment. Allow the others to help you. Help the others to understand what they can do for you and what you can do for yourself.

▼ Try not to be isolated from your family and friends. Arrange a meeting with friends if you feel bad.

▼ Learn to be calm and try to relax. Find a way of taking a good rest.

▼ Make notes in a notebook, trying to understand and to express your feelings.

▼ Help somebody else. This will distract your attention from your own condition.

▼ Participate in breast cancer support-groups. This will make you feel that by sharing your experience you will help other women in your situation.

Two poems in Bulgarian from cancer patients are published here in the Bulgarian original

“I make a Bow”

by Nikolinka Tzvetkova

“Optimistic”

by Pepa Tarakchieva (1966-2006) - not published before she died from cancer.

Information resources on cancer

One of the best weapons in the fight against cancer is to have information about it. Information for:

- ▼ the patients
- ▼ their families
- ▼ the health care providers
- ▼ the society as a whole

This section contains some of the most important international and Bulgarian sites with information about oncology. Here are some examples:

International sites

World Health Organization (WHO) – www.who.int.

International Agency for Research on Cancer (IARC) – www.iarc.fr. You can reach the most important editions and classifications in the field of cancer on the following web-page – www.iarc.fr/IARCPress/pdfs/index1.php.

Cancer Web – <http://cancerweb.ncl.ac.uk>.

Cancer World – www.cancerworld.org.

Union International Contre le Cancer (UICC) – www.uicc.org.

The European Association for Research and Treatment of Cancer – www.eortc.be.

Association of European Cancer Leagues (ECL)- <http://ecl.uicc.org>.

Federation of European Cancer Societies (FECS) – www.feecs.be.

European School of Oncology (ESO) – http://www.eso.net/esonet/home.aspx?id_sito=1&id_stato=1.
Official journal of the organization is European Journal of Cancer - http://www.elsevier.com/wps/find/journaldescription.cws_home/104/description#description

National Cancer Institute. USA (NCI) – www.cancer.gov.

National Guideline Clearinghouse. USA – (NGC) - www.guideline.gov. NGC is a public resource for evidence-based clinical practice guidelines. NGC is an initiative of the Agency for Healthcare Research and Quality (AHRQ) (<http://www.ahrq.gov/>)

National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology.
USA – www.nccn.org.

American Cancer Society (ACS) – www.cancer.org. One of the most important resources in the site is for cancer statistics - http://www.cancer.org/docroot/STT/stt_0.asp. CA: A Cancer Journal for Clinicians is a peer-reviewed journal of the American Cancer Society. Readers have free access to it through the internet - <http://caonline.amcancersoc.org/papbyrecent.dtl>.

National Institute for Health and Clinical Excellence. UK - cancer service guidance - <http://www.nice.org.uk/guidance/CSG/published>.

Institut Nationale du Cancer. France - <http://www.e-cancer.fr/>.

European Institute of Oncology. Milan (Italy) – www.ieo.it.

Data base for medicines – www.drugs.com.

Sites in Bulgarian

The major Bulgarian libraries – <http://mail.nacid-bg.net/bgnew/librariesbg.shtml>.

The International Healthcare and Health Insurance Institute (IHII)-Sofia has an online information center with various resources – books, magazines, etc. - <http://elibrary.zdrave.net/>.

Pharmacy site – www.pharmacy-bg.com.

Information site for doctors and patients – www.doctorbg.com.

Information site for patients with easy to comprehend articles - www.arsmedica.bg.

■ It wasn't an easy job to sort and present everything that fills up the pages of this Almanac. We confess that we were not prepared for the dimensions of the achievements in the fight against cancer throughout the planet in the last decades; but also for the remaining threat for all of us – even with such a progress! We sorted out everything important and beyond question – that, which the civilized, organized and responsible society accepts, applies and uses.

■ A long list of also important problems was left out of the presentation, because of the limited volume of this book. Other problems need further discussion and decisions to be taken by expert forums and by the state authorities. Such is the case with the activity of the existing system that covers the specialized oncological hospitals and the other medical out-patient services and hospital network. There is significant inconsistency in the approach of health institutions and specialists in the area of oncological diseases; the required national control whether the standards and the oncological doctrine for observation are applied is not followed up completely. In that direction, the achievements in Ireland and the Scandinavian countries may serve as a good example for further development of the oncological health care in our country.

■ A modern national programme against cancer is more than required, so the state authorities should pay more attention, allocate more funds and provide constant care for this big national problem. Now we need an active population screening, which is also stipulated by the European Community, whose member is our country.

■ Last, but not least, it is important for all of us, all Bulgarians, to realize what is required by the modern primary and secondary prevention of cancer, and more importantly - to start observing the requirements. And, if a disease occurs, with the strength of our spirit to help the modern requirements for diagnostics, treatment and dispensary care to be applied.

■ We owe our most sincere gratitude for all that was sent and shared to prepare the Almanac to: Assoc.-prof. Evg. Delcheva, Assoc.-prof. V. Tenev, Assoc.-prof. Sh. Danon, Assoc.-prof. V. Zlatkov, Assoc.-prof. Zdr. Valerianova, Dr. P. Kostova, Dr. M. Gavrilova, and for the bibliographical outlook – to Kr. Terziev.

Ivan Chernozemsky
Editor-in-chief

About the Almanac

This book was designed for the society in Bulgaria: the Government, the patients and their families, the medical professionals, the NGOs, the financial institutions and companies, the media and the ordinary citizen.

The aim was to present current noteworthy data, rules and tendencies, related to priority cancer problems:

- ▼ occurrence and epidemiology;
- ▼ finances and economic losses;
- ▼ primary and secondary prevention;
- ▼ the leading cancer sites for Bulgaria – lungs, breast, colon and rectum, stomach, prostate, bladder, endometrium, cervix uteri, pancreas, ovaries; neoplasms in children and melanoma.
- ▼ policy and actions of WHO, UICC, governments, NGOs.

Existing data and tendencies for Europe, EU, USA were used to introduce them to the Bulgarian society and to compare them with the situation in Bulgaria.

The data revealed some optimistic features for Bulgaria: low cancer mortality of all sites, i.e. 156/100 000 standardized rate (as of year 2004 – the lowest in the EU, following Finland); decreasing incidence of stomach cancer and neoplasms in children; national cancer registration since 1952; progressive development of one national and 13 regional cancer centers; very active patients' organizations; active national campaigns against breast cancer each year.

The situation, however, is not so optimistic in a large number of other important characteristics, such as: leading place in EU in mortality from cervical cancer and possibly in the level of tobacco smoking, especially in young people; there is a governmental Act from the year 2001 for National Screening Program but such screening is still not initiated; only 4,3% of GDP are given for health care and 0,4% of GDP are allocated for oncological diseases.

There are only 2 linear accelerators in the country and 11 very old Russian cobalt machines. Existing funding covers up to 40% of the needs for adequate chemo- and hormone therapy.

Science is poorly supported, regardless of the good traditions and well trained specialists. Only clinical trials show increasing number.

Cancer education is scattered in different departments of medical universities; however a post-graduate system is well organized and over 400 clinicians received speciality in oncology.

International contacts of Bulgarian oncology did not show notable progress. Recently the Bulgarian National Association of Oncology became member of UICC after a withdrawal of the country in 1994. Since 2004 the country is an active member of Europa Donna programs.

There is active participation of Bulgarian oncology in the activities of the Balkan Union of Oncology (B.U.ON). On 13-16 September 2006 in Sofia took place the 6-th Congress of B.U.ON, attended by more than 600 oncologists.

Since 1999 Bulgaria is well recognized member of the European Network of Cancer Registries (ENCR). Since 1990 all data on cancer incidence in Bulgaria has been published in English.

Since 2005 Bulgarian oncology is very active partner in Eurochip-2 program of the EU.

As far as the current status and future of the health care system for cancer in Bulgaria is concerned, it needs evaluation and improvements. A system for control of all medical units dealing with cancer, as it is in Ireland and in the Scandinavian countries should be implemented. A modern National Cancer Control Program is a priority need too.

CANCER
The World – Bulgaria
Almanac
2007

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