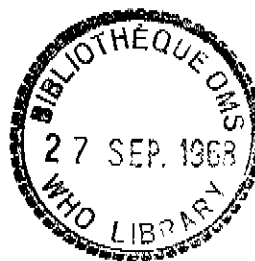




WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTÉ

EXPERT COMMITTEE ON EARLY
DETECTION OF CANCER

Geneva, 11-16 November 1968



CANC/WP/68.3

ORIGINAL: ENGLISH

INDEXED

REPORT ON THE HUNGARIAN CANCER SCREENING MOVEMENT

by

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Screening in Hungary is carried out by cancer service centres which were set up in factories and villages with the main purpose of executing the early cancer detection programme for female genital cancer. These centres are run by full-time physicians who perform the screening of women coming voluntarily or summoned individually, and in necessary cases they are helped by special gynaecological consultants who offer their assistance at fixed hours on set days of the week.

Once or twice a year, well-prepared screening campaigns are carried out in factories, using films, posters, booklets, personal propaganda, lectures, etc. These campaigns are held more often sometimes, depending on the number of workers in the factory.

As may be seen later, we have performed 400,000-500,000 screenings annually in this system of gynaecological screenings, comprising about 20% of the female population between the ages of 30 and 69 years. In the future it is hoped to extend the number of examinations, mainly through the oncological screening of hospitalized patients. The screened material based on hospitalized patients represents slightly biased material which of course may be easily separated from the screening data of the first group. The examinations carried out in hospitals may yield a further 150,000-200,000 screenings annually.

During a period of 16 years we performed 7,330,175 screenings (see Table I), among which 19,873 malignant cases were detected. During that 16-year period, these cases averaged 0.27% of the total number of the population screened. Later on we shall give a more detailed analysis of the year 1967 which is the last available full year, and we shall also demonstrate the actual effectiveness of screenings by showing the cases of precancers, benign tumours and other pathological alterations found during these screenings and sent for therapy to the appropriate institutions. The high number of screenings performed during the period of 16 years results from the fact that a considerable percentage of women between 30 and 69 years of age were screened several times, and sometimes more than once during a year.

As shown in Table I, a tendency towards stabilization may be seen in the proportion of screening yields from 1960 onwards. The fluctuation of yields between 1952 and 1956 was probably due to the participation of

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general practitioners in these screenings who were not properly trained for this purpose. Another explanation might be the lack of satisfactory equipment.

Towards the end of the fifties, all cancer service centres and consultation rooms in outpatient **departments** were equipped with colposcopes and compulsory gynaecological training was organized for screening physicians. They were also trained in other screening methods for different cancer sites. During the years 1960-1967, 39 cytodiagnostic centres were created and are now functioning. The centres are operated by pathologists trained in cytology, helped by trained assistants. The whole network has a capacity of approximately 80,000 smears a year, which is still too low a figure because about half a million screenings a year are estimated to be necessary. Therefore the further development of these centres is under consideration. It is also intended to consider the cytological examination as a first-step screening, which could select the patients for a further second grade screening.

Almost 100% of 20,000 cases screened in the early detection programme **are** histologically verified and the majority consist of female genital tract and breast carcinomas.

Experience has shown that the present method for early detection of female genital cancer, supplemented by the Schiller iodine test, could make it possible to find out in due course the early alterations on the cervical surface and to detect the majority of cervical cancers at an early stage. However, there will always be a certain percentage of undiscovered cervix carcinomas, particularly in those women with no apparent symptoms.

Table 2 represents the qualitative analysis of the screenings and also a survey of increasing indices at three-year intervals for cervix and breast carcinomas. For cervix carcinoma, the Heymann stage distribution has been used and for breast carcinoma, that of Steintal has been applied, and about 200 gynaecologists and oncologists are using such stage distribution. The TNM system was introduced in larger institutions during the past few years but it has not yet been adopted for screening purposes due to difficulties of comparison.

The number of early breast cancer cases discovered during the years under consideration maintain a fairly uniform level, with the exception of the inexplicable deviation in 1958. The number of breast cancers detected in the first and second stages varied between 70% and 80%. The number of advanced cancer cases among women asking voluntarily for screening is significant, and this is typical for women coming too late for examination having neglected their symptoms.

Looking at the absolute numbers of carcinomas detected by the screenings, we are startled to find that the number of breast carcinomas diagnosed increases in the period from 1960 to 1967 while at the same time the

incidence of cervix carcinomas is fairly constant. The explanation of this phenomenon may presumably be found in the repeated screenings at which women are examined whose precancerous or other gynaecological alterations were already observed and cured in the preceding years. A decrease in the incidence of cervix carcinoma can be noted not only in the screening records, but also, though to a lesser degree, in the data collected from the whole country. It would be incorrect to attribute such a favourable phenomenon only to the screening itself, although it has, to a certain extent, played a part in this coincidence.

The immediate influence of the screening, as has already been pointed out, consists of the identification and treatment of the gynaecological alterations, while its additional effect may be seen in its catalyzing action in gynaecological health care. Since the beginning of oncological screening work gynaecologists have become more and more accurate in performing their professional examinations.

In 1955 only 23.9% of the detected cases of cervix carcinoma were operable (stages 0 and I), while this number rose to as high as 45.1% in 1967. The total number of the stages 0, I and II. equalled 75.1% of all cases. These cases can also be classified as conditions belonging to the stage of curability.

In Tables 1 and 2 the effectiveness of the screening work is demonstrated. In this material the documentation of patients with malignant tumours has been surveyed more closely - in 1967, 496,646 examinations. The screenings have been controlled through random examinations by the State Oncological Institute and in representative procedures by the county head oncologists.

There were two methods for the control of the material reported. One of them consisted in the further observation of the status of patients, whose lesions had been diagnosed at an early stage by the screenings, although such procedure shows only the cases detected while no information is obtained on the cases which remain undetected; while the other method consisted of the comparison of the screening results with those of experienced and well-trained oncologists.

The registration of data on the tumour patients whose lesions had been detected by the screening during the period under review is now finalized and the retrospective assessment of these data will be published at a later date. Following the second method in our table, we have analyzed the examinations performed by 10 head oncologists during the period 1963-67. In their material the proportion of the early cases is more favourable than the average of the whole country. Our head oncologists owe their better results to a better professional training, the routine use of the colposcope and, last but not least, to a more intensive application of cytological methods, while the better results found of breast carcinoma may be considered as a consequence of the follow-up of the lesions of the breast which were found.

Table 4 presents the statistical assessment of the results obtained in the screening in 1967. (The number of screenings and positive findings differ to a certain extent, because more than one disease was sometimes listed for a single patient.)

In 1967, 1,481 malignant tumours were identified by screening. Tumours of the female genital tract account for more than half of all tumour cases detected. This group has not been divided further in our table, but such further division would certainly demonstrate a startling annual rise of corpus and ovarian carcinomas in the screening material.

There is a uniform opinion throughout the world of the high cost of screening, since the yield as regards malignant tumours is known to be rather low. In 1967 the yield was 3 per 1000 women examined. However, the practical results achieved (which can be seen from these tables) may counter such a negative viewpoint, especially when based on the concept of prevention.

In about 20% of the women examined (the 23% given in Table 4 applies to the diagnoses the number of which is not identical to the number of persons examined), some kind of alterations were found which needed either medical treatment or further observation. To ensure cancer prophylaxis, all these women were sent to institutes providing organized health care and treatment. We are convinced that the control of simple diseases of the female genital tract decreases the probability of the occurrence of carcinomas. Mastopathies failing to respond to the usual therapy often reveal operable carcinomas.

Tables 5 and 6 show the stage distribution of patients who had (or were registered for) cervix carcinoma and breast tumours in 1967. The first column shows data collected from the whole country. The second column presents the screening cases, which have been separated from the mass of data listed in the first column, while the last column conveys detailed information of the cases which have been identified outside the screening programme. The high standard of the screening documentation is seen from the fact that one cannot find any case in the screening records for which the stage of the disease at the time of its detection was not specified. The country-wide reporting system gives exact definitions of stage in 98.5% for cervix carcinoma, and 97.6% for breast carcinomas. 45.1% of the cervix carcinoma cases were operable (stages 0 and I) in contrast to an operability of 24% of the cases reported outside screening programmes. As for the advanced cases, the difference was even more significant, i.e. 40.9% against 24.3% detected at screenings.

Nearly 80% of breast tumours detected by screening were operable (I and II stage) while the percentage of operability amounted to only 58.7% among patients admitted to health institutes outside screening programmes.

In what has been said above we wished to present a picture of the mass-screening programmes carried out in Hungary. Our efforts are directed towards the prevention and early detection of the so-called accessible cancers. Our examinations are carried out first of all for practical purposes. Worldwide screening work is carried out in small, circumscribed areas, taking account of recent scientific advances, although mainly by means of cytological smear techniques only.

Owing to the extensive examination material, we could not go into details of all the problems involved in this work. This task is carried out by cancer service centres which are responsible for cancer registration in the respective areas. The 20,000 cases of malignant tumours, detected by the oncological network mostly in early stages, prove that we have chosen the right method by giving a wide coverage for our mass screening programmes.

TABLE 1

NUMBER OF MASS SCREENINGS IN HUNGARY

1952-1967

<u>Year</u>	<u>Number of screenings</u>	<u>Number of malignant tumours detected</u>	<u>Tumour cases detected expressed in % of screenings</u>
1952	461 326	2366	0.51
1953	609 890	2094	0.34
1954	513 071	1524	0.30
1955	505 578	770	0.15
1956	426 249	591	0.14
1957	378 015	655	0.17
1958	418 289	657	0.16
1959	412 411	812	0.20
1960	389 933	934	0.24
1961	392 896	1181	0.30
1962	448 217	1199	0.27
1963	455 027	1307	0.29
1964	454 466	1386	0.30
1965	477 418	1481	0.31
1966	490 733	1435	0.29
1967	496 646	1481	0.30

TABLE 2

NUMBER AND STAGE DISTRIBUTION OF CERVIX AND BREAST
TUMOUR CASES DETECTED IN GYNAECOLOGICAL CANCER
SCREENINGS IN THE YEARS 1955 - 1967

Year	Number of cases		Stage distribution of the cases (%)				
	cervix	breast	cervix			breast	
			0-I/a-I	II	III-IV	I-II	III-IV
1955	330	151	23.9	31.5	44.6	70.2	29.8
1958	235	170	31.0	25.1	43.9	57.7	42.3
1961	478	308	44.7	24.7	30.6	75.6	23.4
1964	471	421	47.8	27.4	24.8	80.2	19.8
1967	456	433	45.1	30.6	24.3	79.0	21.0

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1955 = 100

1955	100	100
1958	71	113
1961	145	204
1964	143	279
1967	138	287

TABLE 3

STAGE DISTRIBUTION OF CERVIX AND BREAST TUMOURS
DETECTED AT SCREENINGS BY 10 HEAD ONCOLOGISTS

Year	Cases		Stage distribution of the cases (%)				
	cervix	breast	cervix			breast	
			0-I/a-1	II	III-IV	I-II	III-IV
1963	78	69					
1964	86	87					
1965	88	106					
1966	47	97					
1967	48	81					
1963-67	347	440	60.8	26.8	13.0	83.9	16.1

TABLE 4

RESULTS OF CANCER SCREENINGS IN HUNGARY IN 1967

Number of screenings: 496 646	Number of diagnoses	Number of diagnoses in % of the screenings
Classification of diagnoses:		
Without symptoms	448 686	
Benign tumours	21 552	4.3
Erythroplakia	64 564	13.0
Mastopathies	19 525	3.9
Other alterations, needing further observation or treatment	7 293	1.5
Malignant tumours	1 481	0.3
Specified: female genital tract	754	
breast	433	
skin	169	
other localization	125	
Total alterations	114 415	23.0

TABLE 5

STAGE DISTRIBUTION OF CERVICAL TUMOUR CASES
REPORTED OR DETECTED IN 1967

Stage	Reported cases (country data)		Cases detected at screenings		Other cases reported	
	Number	%	Number	%	Number	%
O-I/a-I	445	30.7	206	45.1	239	24.0
II	467	32.2	140	30.6	327	32.9
III-IV (curable + incurable)	517	35.6	110	24.3	407	40.9
Uncleared	22	1.5	0	-	22	2.2
Total	1451	100.0	456	100.0	995	100.0

TABLE 6

STAGE DISTRIBUTION OF BREAST TUMOURS
REPORTED OR DETECTED IN 1967

Stage	Reported cases (country data)		Cases detected at screenings		Other cases reported	
	Number	%	Number	%	Number	%
I-II	1162	62.9	331	79.0	831	58.7
III-IV (curable + incurable)	642	34.7	102	21.0	540	38.2
Uncleared	44	2.4	0	-	44	3.1
Total	1848	100.0	433	100.0	1415	100.0