

## 3. CHARP components

### 3.1 Environmental, food and full body monitoring

| Services provided  | Period    | Estimated service recipients |
|--|-----------|------------------------------|
| Measurements of <i>background radiation</i> and surface contamination of objects | 1990–1993 | 561,000                      |
| Measurements of locally produced <i>food</i> for radiation contamination         | 1990–1996 | 139,000                      |

55. Providing measurements of background radiation and surface contamination of objects, as well as measurements of locally produced food for radiation contamination (dosimetry), was the starting point of CHARP. The 1990 IFRC assessment report concluded that radiologically the main problem was the contamination of the soil, and there was a need for regular radiological monitoring of locally produced food. It noted that various restrictions resulted in serious alterations to people's lifestyles and diet, and that the lack of reliable information and secrecy caused serious distrust towards the authorities and general anxiety among the affected population.

“The lack or unreliability of information, particularly in relation to levels of radioactivity ... is one of the crucial factors in the widespread anxiety about the poorly understood consequences of radiation exposure.”

**1990 IFRC assessment report**

56. To address the identified needs the report recommended “the provision of accurate information to people directly affected by the accident ... and the provision of simple, easily usable, rugged and reasonably priced handheld Geiger counters to Red Cross workers in order to help allay many of the fears of the affected population.”

57. The first 350 ALNOR dosimeters were delivered in October 1990. Choosing more expensive foreign-made radiation meters (300 Swiss francs per unit) over the locally produced ones was deliberate: in the atmosphere of distrust towards anything (information, equipment, measurements) coming from the state authorities, people in the affected areas trusted the information more if it was obtained using foreign-made equipment. Environmental monitoring using portable radiation meters was also well suited for the Red Cross, since staff and volunteers could easily operate the equipment after short basic training.

58. The radiation monitoring started in December 1990, first via dosimetry points established at large settlements and operated by the local Red Cross staff and volunteers. Since the 1990 assessment report also suggested “regular radiological monitoring of milk, meat, vegetables and other locally grown produce”, food monitoring started in July 1991, when the first 30 LB 200 food monitors were received. In addition to stationary dosimetry points, measurements were performed by the MDL teams: this enabled a number of remote rural areas to be reached that would otherwise have had limited access to reliable information. Radiological monitoring was provided directly at the household level, with beneficiaries receiving immediate feedback about the level of contamination. Environment radiation monitoring continued until the end of 1993, when it became clear that no significant increase in radioactivity levels was registering any more; food monitoring continued for another three years and was stopped by the end of 1996.

In nuclear and radiological emergencies, providing accurate information about the consequences of disaster becomes one of the key forms of assistance, a key “benefit” for the affected populations.

59. *The importance and impact of the dosimetry programme component can hardly be overestimated.* In nuclear and radiological emergencies, providing accurate information about the consequences of disaster becomes one of the key forms of assistance, a key “benefit” for the affected populations. The Red Cross monitoring of the radionuclide contamination of the environment, food and human beings effectively provided beneficiaries with indirect psychological support as early as 1991–1993, thus contributing to alleviating the mental health impact of Chernobyl, which was identified as “the largest health problem caused by the accident to date” by the Chernobyl Forum Expert Group on Health only in 2006. It also contributed to the awareness among Red Cross workers about the importance of addressing psychosocial needs, thus laying the ground for a subsequent PSP. As the 1990 IFRC assessment report pointed out: “A Red Cross worker armed with counselling skills, a Geiger counter and appropriate publicity material could do much to help the population affected by Chernobyl disaster come to terms with their new situation.”

International Red Cross and Red Crescent monitoring of the radionuclide contamination of the environment, food and human beings effectively provided beneficiaries with indirect psychological support as early as 1991–1993.

## Recommendation 1

**R1.1** Monitoring the levels of radiation contamination in food and the environment using simple portable measuring equipment/counters and providing immediate feedback to beneficiaries directly contributes to the alleviation of fear and anxiety, reducing the level of stress and improving the mental health of the affected populations. Wherever such needs exist, and are not sufficiently addressed by governments and other actors, the *National Red Cross or Red Crescent Societies should consider providing such radiation monitoring services at both emergency and recovery phases* following a nuclear or radiological accident.

**R1.2** Taking into account the technological advances since the 1990s (including the increased portability and affordability of commercially available radiation meters), *other ways of implementing environmental monitoring could also be considered*, such as distributing portable dosimeters to the affected communities, providing training courses for communities, and focusing on food monitoring and full body scans only.

## 3.2 Medical screening

| Services provided  | Period    | Estimated service recipients |
|--|-----------|------------------------------|
| Examination of people for internal irradiation (full body scans)/health checks/ blood and urine analysis | 1992–1997 | 401,000                      |
| Thyroid gland screening  | 1993–2011 | 1,605,000                    |

### 3.2.1 Screening for individuals' contamination

60. In 1992–1997, CHARP medical screening focused on *measuring the level of individuals' contamination using full body scanning equipment* installed on MDLs. These focused on rural areas, though occasionally provided screening in cities and towns (e.g., screening students who came to towns from contaminated areas).

61. Since little was known at the time about the consequences of radiological contamination, the data collected through whole body monitoring complemented those collected during the environmental monitoring (mainly food items) to assess the overall level of contamination of people and its consequences for health. When higher than acceptable levels of internal irradiation (over 10kBq) were detected, the patients were referred to the specialized radiology centres for treatment. Wherever locally produced food, milk or forest products were identified as the potential source of contamination, recommendations and advice on protective measures were provided on the spot.

### 3.2.2 Screening for thyroid gland pathologies

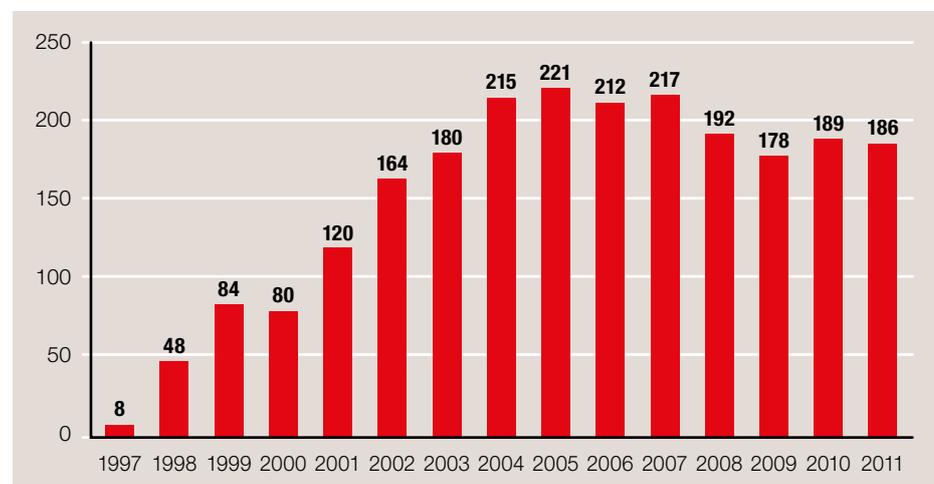
62. The possibility of an increase in thyroid gland pathologies due to irradiation was raised soon after the disaster. The 1990 assessment report noted “a widespread conviction among the population and medical profession that there are substantial increases of pathological changes in the thyroid due to radiation exposure”. In March 1991, the IAC mentioned a possible future increase in such pathologies. In December 1992, the first cases of thyroid gland cancer among children were reported in Belarus.

63. In response to these reports it was decided to *add screening for thyroid gland pathologies to MDL medical examinations*: in September 1993, all MDLs were equipped with ALOKA 250 (Japan) ultrasound scanners. The second CHARP evaluation (February 1996) suggested focusing all medical screening on detection of thyroid gland pathologies, primarily among children (0–18 years at the time of the accident). This recommendation was confirmed by all subsequent programme evaluations (1999, 2002, 2005). *From 1996 and until the end of the programme, medical screening focused mainly on detecting thyroid gland pathologies.*

64. During programme implementation, MDL teams gradually perfected their screening techniques, upgraded ultrasound equipment and generally improved the quality of screening. This resulted in increased detection of various thyroid pathologies (Figure 3.1). Once pathology was detected, the patient would be referred to the local diagnostic centre or dispensary, where most MDL teams were based. Whenever the patient visited the respective centre for confirmation of the diagnosis and was subsequently treated, the centre would inform the Red Cross MDL team, and the data would be recorded in the Red Cross database.

65. Though the benefits of thyroid gland screening are often presented as early detection of thyroid gland *cancer*, the number of confirmed cancer cases among those screened was relatively small, ranging around 60–80 per year (0.03–0.09 per cent of the total number screened) in 1994–2001 and increasing to 160–220 cases per year (0.18–0.24 per cent) in 2002–2011. Thyroid gland cancer, if undetected, develops very slowly and rarely leads to the patient’s death, even

**Figure 3.1** Number of thyroid cancer cases detected by CHARP Red Cross MDLs, 1997–2011



Source: CHARP Programme Proposal 2012

if untreated: during the whole of CHARP there were only two cases of deaths from thyroid gland cancer among the patients identified through screening. According to health experts from the Bryansk Radiology Centre, the number of deaths from thyroid gland cancer in the oblast remained stable after 1980, despite a growing number of cases detected.

66. While detecting cases of thyroid gland cancer was important, the *main benefit of CHARP medical screening was detecting numerous thyroid gland pathologies*. Unlike thyroid gland cancers, their incidence was very high: in 2002–2011 the MDL teams would consistently detect some thyroid gland pathology in almost half of all the screened patients. According to the data quoted in the 2001 IFRC appeal, the average incidence was more than 16 times higher than in countries not affected by the Chernobyl disaster. The number of cases of thyroid gland cancer among Chernobyl-affected children (1,418) in 1986–2010 was as high as the number of similar cases registered all over the world.

The main benefit of CHARP medical screening was detecting numerous thyroid gland pathologies.

67. It is currently internationally recognized that the *increased number of thyroid gland pathologies is directly related to the effect of radiation*. Most importantly, since the thyroid gland directly influences the functioning of most other body systems and is often connected with depression or other psychological disorders, detecting and treating thyroid gland pathologies directly contributed to improving the general and psychological well-being of the patients in the affected areas. *Focusing medical screening on detecting thyroid gland pathologies, therefore, directly addressed one of the important health needs of the populations affected by the consequences of the Chernobyl disaster*.

### 3.2.3 Other types of screening

68. In 2008, screening for *breast cancer* was added to the list of MDL medical examinations. It covered the female population aged 35–40 (i.e. those who were 10–15 years old at the time of the Chernobyl accident), who could be diagnosed using ultrasound scanners (for older women mammography was recommended). Though it proved relatively successful (many of those diagnosed with thyroid gland pathologies were also diagnosed with various breast pathologies), such screening was not done on a large scale, mostly because no direct connection with the consequences of the Chernobyl accident was confirmed.

69. On occasion, at the request of the health authorities, screening for other types of health problems would be performed on a small scale. However, re-orienting CHARP medical screening towards detecting *other pathologies* (e.g. cardiovascular disease or other cancers listed as the main causes of mortality in the affected areas) has never been considered, possibly because they could not be directly attributed to the effects of radiation.

## Recommendation 2

**R2.1** *Medical screening for possible radiation-related or other health pathologies after a nuclear disaster can be a viable assistance option for the Red Cross Red Crescent, in particular in situations where the public health system lacks resources to address this need, or has to allocate limited resources to addressing other health priorities.*

**R2.2** *The exact kind of pathologies to be screened for will be determined by the specificity of the affected area, the endemic pathologies prevailing, the nature of the radioactive contamination and a number of other context-specific factors. It will therefore be important to work in close contact with the public health authorities and the scientific community, and to “expect the unexpected” – that is, be open to dealing with any new emerging pathologies.*

**R2.3** *Since radiation-related health pathologies can manifest in significant numbers years after the emergency, it would be important to closely monitor the situation to identify an appropriate time for medical screening.*

**R2.4** *Taking into account the fact that medical screening is potentially a long-term medical intervention, the modalities for its implementation, patients’ follow-up, funding and eventual phasing out should be clearly agreed with the public health authorities at the inception stage.*

## 3.3 Psychosocial support

| Services provided | Period    | Estimated service recipients |
|-------------------|-----------|------------------------------|
| Direct PSS        | 1997–2011 | 190,000                      |

### 3.3.1 The need for PSS

70. In 1990, the IFRC was one of the first international organizations to recognize that “one of the most damaging aspects of a disaster such as the Chernobyl accident relates to the *psychological problems* apparent in the population affected by such a disaster”. The IAEA and WHO affirmed that “psychosocial effects of a radiation emergency can far outnumber any direct effects” only in 1995, and it was not until 2006 that the Chernobyl Forum Expert Group on Health concluded that “the *mental health impact of Chernobyl is the largest health problem caused by the accident to date.*”

In 1990, the IFRC was one of the first international organizations to recognize that “one of the most damaging aspects of a disaster such as the Chernobyl accident relates to the *psychological problems* apparent in the population affected by such a disaster”.

71. Recognizing that both CHARP medical staff and Red Cross workers lacked the basic psychological support skills, the 1990 assessment report suggested holding workshops aimed at “imparting simple counselling skills to members of the medical profession dealing with people affected by the accident and active Red Cross nurses/volunteers”. The first IFRC plans of action in 1991–1992 proposed addressing psychological problems by, among other things, “upgrading psychological centres with appropriate diagnostic and treatment equipment; organizing consultations at regional and district level; organizing self-assisting groups guided by Red Cross social workers; organizing seminars on stress reduction and psycho-hygiene; and training Red Cross workers in close cooperation with psychological institutions”.

### 3.3.2 Starting PSS in CHARP

72. In the initial years of CHARP, however, the plans for recommended psychosocial support programme (PSP) related services were not implemented. This reflects a general trend at the time: while the international community recognized the importance of stress and anxiety among the Chernobyl-affected populations, in 1990–2000 it focused more on the material, medical, scientific and technical aspects of assistance.

“In attempting to assess the consequences of the Chernobyl accident, there is no currency conversion by which we can equate a given number of radiation induced cancer victims with the hundreds of thousands of people whose lives have been disrupted or who are afflicted by anxiety, depression and the physical consequences of stress. What is certain, however, is that much less scientific effort and media attention has been devoted to the latter.”

**Professor Terence Lee, international conference “Health Consequences of the Chernobyl and Other Radiological Accidents” (Geneva, November 1995)**

73. This issue was raised again in 1996, when the CHARP evaluation proposed a pilot PSS project, focusing on “developing the capacity of National Societies’ staff and volunteers to provide adequate, reliable and understandable information” to the affected population. In April 1997, a CHARP PSS coordinator was recruited, and in May 1997, the PSS pilot project officially started in Belarus with the first training of trainers (ToT) workshop in Gomel.

### 3.3.3 PSS activities

74. Recognizing that National Societies’ staff and volunteers had little knowledge and experience in providing PSS, the PSS pilot project was to be implemented in three stages: (1) preparing National Societies to provide the affected communities with PSS by creating the core of PSS trainers/instructors who would then train Red Cross workers, visiting nurses, volunteers and community social workers in the basics of PSS, (2) providing the affected population with psychosocial services and (3) “spreading PSS” to other National Societies’ programmes.

75. The first stage (1997–2001) focused on *training* Red Cross and medical staff. Approximately 200 Red Cross staff and volunteers including 50 trainers were trained in 20 workshops, and 80 per cent of trained instructors subsequently conducted PSS workshops and training courses for Red Cross staff, visiting nurses and MDL personnel. In later years, refresher courses on specific subjects were conducted once every one or two years. The curriculum included basic stress management and PSS techniques, and was based on the reference

documents from the Danish Red Cross/IFRC Reference Centre for Psychological Support created in 1993.

76. Red Cross and MDL staff, visiting nurses and volunteers then applied the new knowledge and skills in their daily work. The psychological support was provided when beneficiaries visited the Red Cross medico-social centres, were visited at home by Red Cross nurses, or were screened by the MDL staff. From 2001, on there seemed to be an increased focus on public lectures and brief seminars, as well as publishing articles, radio interviews and TV presentations on various aspects of PSS.

### 3.3.4 Limitations of PSS implementation

77. Implementing the PSS component within CHARP, however, turned out to be more complicated than expected. When CHARP started, *providing PSS to disaster victims was a new and emerging type of humanitarian activity everywhere in the world.* The international and Red Cross Red Crescent experience in designing and implementing PSPs in different cultures was therefore quite limited.

78. *The concept of PSS was equally new for the National Societies in Ukraine, Belarus and Russia.* As pointed out in the PSS assessment report (June 1998), the overall approach based “on the hierarchical structure” in the former Soviet Union was still “very present in mentalities”. The programme, which aimed at “giving back to each individual his autonomy, his capacity to make choices and be determinate”, was new and often difficult to understand. In addition, the *three National Societies were not sufficiently familiar with the concept of community work* “on the basis of the community itself, and not on the basis of a top-down hierarchy”, which was essential for the proposed PSS to be effective.

79. In view of the above, *choosing a ToT approach for PSS was somewhat overambitious.* While ToT works well when a set of simple, easily transferrable skills is to be imparted, PSS skills, even at the basic level, are neither “simple” nor “easily transferrable”. As a result, a substantial part of the CHARP PSS activities had to focus on training and then “retraining” the Red Cross programme staff in basic stress management and PSS techniques. However, even with this additional input many of the trained staff preferred focusing on enhancing awareness about psychosocial needs and basic stress and anxiety self-management via lectures, seminars, articles and interviews, rather than working directly with individuals.

### 3.3.5 PSS as a separate programme component

80. It is important to note that *since 1991 all CHARP components effectively provided or contributed to providing indirect psychological support to the affected population.* Monitoring of environmental radiation and food, medical screening, and the distribution of information materials, vitamins and milk powder, in one way or the other, contributed to alleviating stress and anxiety caused by the fear of radiation and the effects of socio-economic changes among the affected population. *In a way, in 1991–1997 CHARP “mainstreamed” psychosocial support into all its activities long before the terms “mainstreaming” and “psychosocial support” were coined.*

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81. Introducing PSS as a pilot project in 1997 was a logical continuation of previous activities and the way to explicitly acknowledge the importance of PSS. Subsequent training of CHARP staff and volunteers in basic PSS skills contributed to an increased awareness of the importance of PSS and enhanced their knowledge and skills in providing psychological assistance to beneficiaries. The skills and techniques learnt also helped Red Cross workers to deal with their own stress and burnout, thus contributing to the overall effectiveness of their work. In this sense the PSS project successfully supported other programme components.

### Recommendation 3

**R3.1** *Providing psychosocial assistance to the affected population by supplying accurate information on the levels of contamination and recommendations on a healthy lifestyle in the contaminated areas should be the primary focus of Red Cross and Red Crescent assistance and recovery programmes following nuclear and radiological disasters. Both need to be provided continuously at emergency, assistance and recovery stages.*

**R3.2** *Rather than designing separate “psychological support programmes”, the IFRC and National Societies should focus instead on mainstreaming PSS into all their assistance and/or recovery activities. In other words, all interventions are to be designed in such a way that they contribute to reducing fear, anxiety and stress and generally improving the psychological well-being of the affected populations. At the recovery stage all activities should in particular aim at helping people feeling better about themselves and their environment, restoring hope and the “will to live”, and facilitating a return to “normality”, and so on.*

**R3.3** *To support the PSS mainstreaming it is also recommended that all the Red Cross and Red Crescent staff involved are trained in dealing with psychological issues following a nuclear emergency. The training should aim at providing them with the necessary PSS skills required to provide such assistance directly, if and when needed, enhancing their awareness of the importance of PSS issues and their understanding of how all their other programme components contribute to providing PSS to beneficiaries.*

### 3.4 Distribution of multivitamins, milk powder and medicines

| Services provided   | Period    | Beneficiary estimates |
|---|-----------|-----------------------|
| Distribution of <i>milk powder</i> to children living in contaminated areas                     | 1993–1999 | 378,000               |
| Distribution of <i>multivitamins</i> to children living in contaminated areas                   | 1993–2011 | 721,000               |
| Providing <i>L-thyroxin and other drugs</i> , mainly to patients with thyroid gland pathologies | 1998–1999 | 31,000                |

82. Distributing *multivitamins*, generally containing vitamins C, D and B-group with iron, folic acid, stable iodine and micronutrients, and *milk powder* to children started in 1993, when it was established that poor diet caused by excessive restrictions on food consumption in the affected areas contributed to a number of health-related problems. The vitamins and milk powder were mostly distributed through children’s institutions, such as kindergartens (for children 3–7 years old) and schools (7–14 years old). Milk powder was distributed until 1999, while vitamin distribution continued until the end of the programme.

83. The actual effectiveness and impact of vitamin and milk distribution was not assessed during the CHARP implementation: the programme basically operated on the assumption that “milk and vitamins are good for you”. Also, in the former Soviet Union, milk was traditionally distributed to workers in industries considered “harmful” to health, including nuclear power plants, so people associated milk distribution with “being taken care of” and believed that milk could accumulate and eliminate any harmful substances from the body. While the strictly medical effectiveness of vitamin and milk distribution can be and often is contested, *providing vitamins and milk in the CHARP context effectively contributed to the alleviation of stress, anxiety and fear among the affected populations, in particular the children’s parents*, thus effectively tripling the number of actual beneficiaries of this component.

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84. *Medicines*, predominantly L-thyroxin for thyroid gland patients, were distributed during 1998–1999, mostly due to the severe economic crisis and resulting inability of many patients diagnosed with respective pathologies to obtain the required medicine locally. Medicines were distributed through visiting nurses, directly to medical institutions that followed the patients’ cases, and sometimes directly by MDL teams. The distribution was discontinued when the acute needs were generally addressed.

85. Medicine distribution within the framework of CHARP *responded to short-term identified needs, and stopped*, once these were generally addressed. This is certainly a *good example of the programme flexibility and attentiveness to needs during the first decade of its implementation*. The programme did not limit itself to assisting patients with diagnosis, but effectively provided timely follow-up and assistance whenever the beneficiaries could not obtain it from the public health service.

#### Recommendation 4

**R4.1** Taking into account their psychological support value and the specific context of a particular nuclear or radiological emergency, the *distribution of vitamins, micronutrients and milk powder to children in the affected areas – within the limits identified by the IFRC policies – can be considered as a viable component of Red Cross Red Crescent nuclear and radiological response programmes*.

**R4.2** Whenever patients, in particular those who are part of medical screening or other International Red Cross and Red Crescent Movement medical assistance programmes, can not obtain prescribed *medicines from public health or commercial sources, the Red Cross Red Crescent might consider supplying them with the required medicines for a limited period of time*.

### 3.5 Distribution of information materials

| Services provided   | Period    | Leaflets and brochures distributed |
|---|-----------|------------------------------------|
| Distribution of <i>information materials</i> (brochures) on protection from radiation | 1994–2011 | 210,000                            |

86. Providing accurate information to people directly affected by the accident was identified as the priority task in the 1990 needs assessment. “Facilitating printing and distribution of accurate information to the population on the effects of contamination and advice on the most appropriate behaviour in such an environment” was included in the first and the second CHARP plans of action (1990–1992) and continued until the end of CHARP in 2012.

“Since doubts still exist in the minds of many people as to the credibility of information provided by the government, the information provided by the Red Cross might be more readily accepted.”

**League/IFRC Assessment Report, February 1990**

87. *Information was disseminated in various forms, the most common being brochures and leaflets, public lectures, articles in the local press, interviews on local radio and television, and training and information sessions for Red Cross staff and volunteers, medical staff and teachers directly involved in dealing with the affected populations. Information materials were also distributed during environmental and food monitoring, and medical screening. The contents included general information about the risks and health consequences of radioactive*

contamination and advice on a healthy lifestyle in the contaminated areas. One brochure dealt specifically with radiation and nutrition; another focused on the specific needs of pregnant women. Later in the programme the contents focused more on healthy lifestyle and nutritional safety, in particular in relation to locally picked mushrooms and berries.

88. Though CHARP records only provide data on the number of brochures produced, since information materials were regularly distributed during other programme activities, in one way or another most beneficiaries of other programme components received some information materials from CHARP. On the basis of the indirect evidence and feedback from interviews, it appears that *dissemination of information materials on the consequences of radioactive contamination and on safe behaviour and a healthy lifestyle in the contaminated areas did help address the vital need to reduce stress and anxiety both directly and by reinforcing the messages delivered by other CHARP activities.*

## Recommendation 5

**R5.1** Providing the population affected by the consequences of nuclear or radiological disaster with accurate and timely information on the levels of radioactive contamination, safe behaviour and a healthy lifestyle in the contaminated areas should be considered as an essential component of any International Red Cross and Red Crescent Movement assistance, recovery and rehabilitation programmes after such disasters.

**R5.2** The key messages contained in the information materials should be consistent with and reinforce the messages delivered by other programme components and activities: any data about the levels of radioactive contamination should be presented in units actually used during environmental monitoring, information on a healthy lifestyle in the contaminated areas should be consistent with that provided by medical staff during medical screening, and so on.

**R5.3** To ensure that the messages reach the intended audience and produce the intended impact, it is important to *check the target audiences' understanding of the messages, and to continuously review and reassess the effectiveness of all forms of information distribution during programme implementation.*



