ANNEX 2

TO THE ECHI-2 REPORT, JUNE 20, 2005.

EXAMPLES AND DISCUSSION OF CONCEPTUAL MODELS OF HEALTH

During the first phase of ECHI-1, many discussions were held on concepts of health, health determinants and health policies, since these should be at the basis of the arrangement of indicators. This resulted in the four classes and further (sub-)group divisions as shown in the main text, *paragraph 4, box 1*. Of these discussions and the underlying documents, very little was documented in the ECHI-1 final report. This led to the situation that the conceptual background which was actually there was not recognised by many readers.

The basis for the discussions in the ECHI-1 team was the Canadian model of Marc Lalonde (Lalonde, 1974), as it is shown in *figure 1* (also shown in the main text, *paragraph 4*), and a refinement of this model, as used in the Dutch public health reports of 1998 and 2003 (*figure 3*; the *figure 2* which is also shown in the main text, *paragraph 4*, is a simplified version of this). One of the refinements is the concept that a person is healthy as long as he/she can cope with the set of external influences he/she is exposed to. These influences can be physical (e.g. air pollution, noise) as well as mental (hostile social surroundings). In Lalonde's terms this comes down to an equilibrium between 'biological/genetic factors' versus 'environment'. In this view, lifestyle is intermediate: it is a source of certain exposures, but can also be an expression of coping behaviour. The consequences are that the four determinant groups shown in *figure 1*, are not strictly of equal level.

This applies also to the determinant 'health care system'. The models shown in *figures 2* and *3* make a distinction between the determinants, on the one hand, and the health-promoting and prevention activities acting on them. In this way of presentation, the health care system is a health-promoting activity, but at the same time it works in most cases directly on the sick person, i.e. on health status, and not via one of the other health determinant classes.

Figure 1. Basic health field model, after Lalonde (1974).

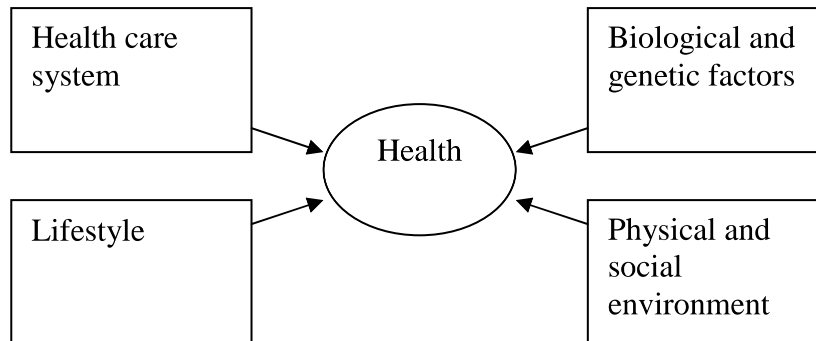


Figure 2. The basic health field model transformed to show the simplified causal chain.

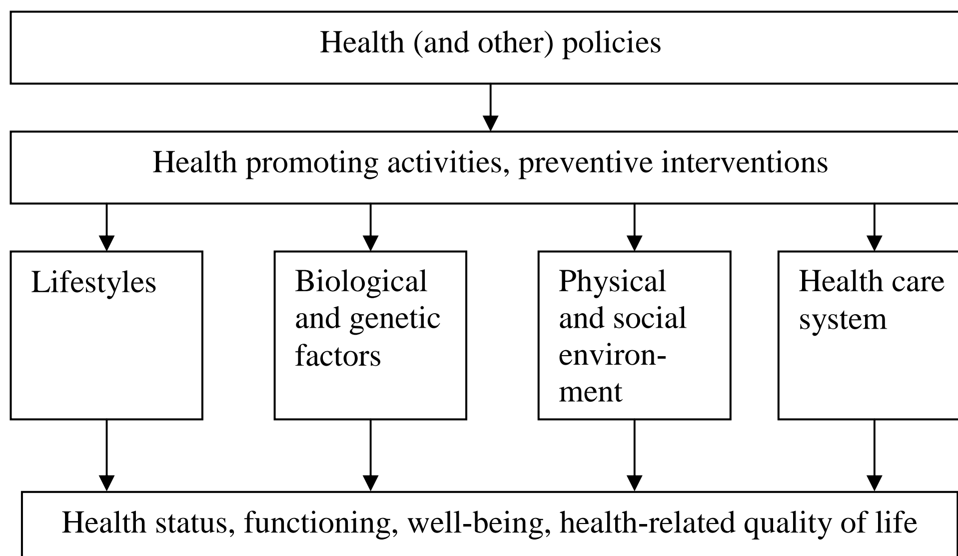
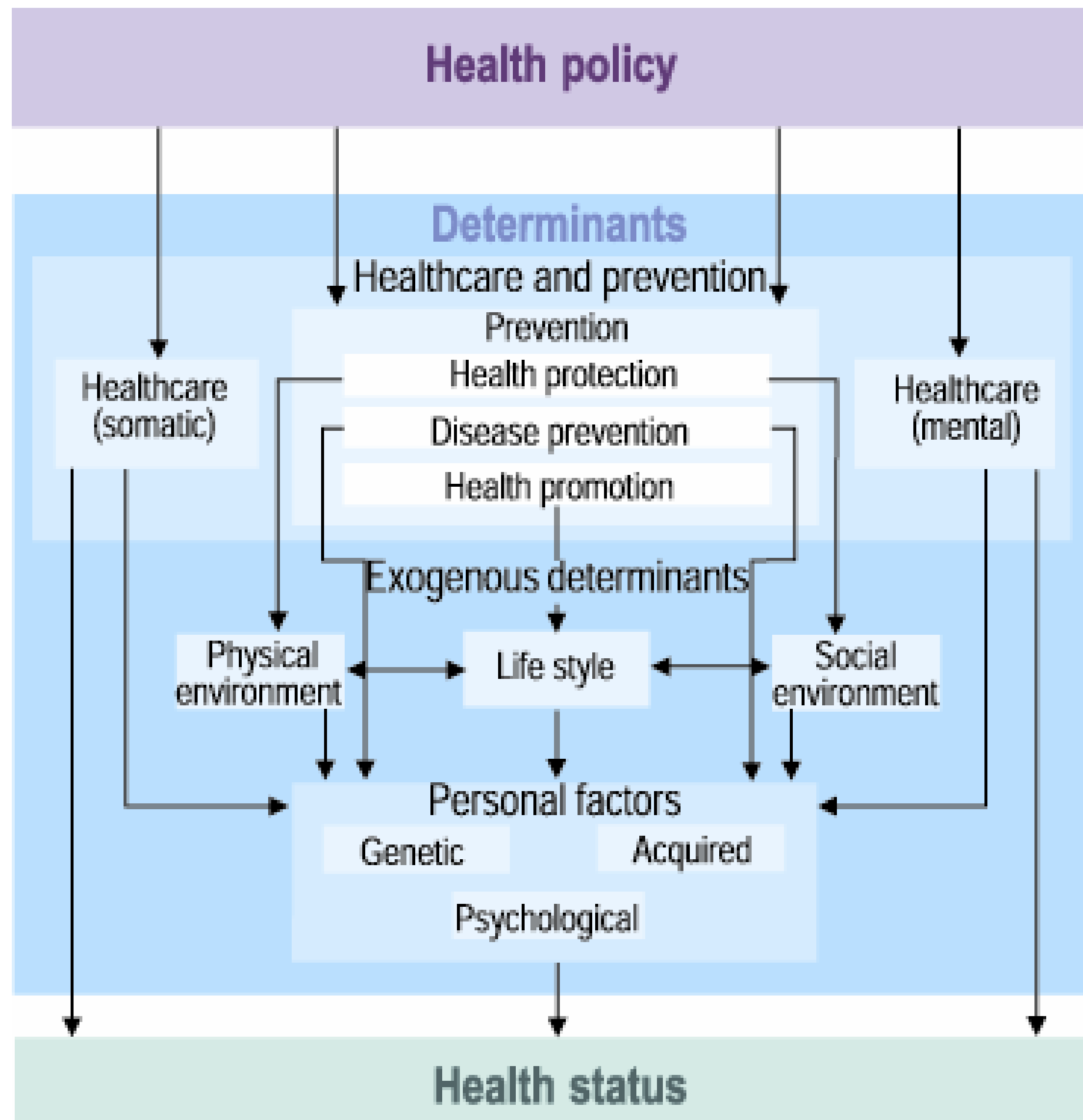


Figure 3. Elaboration of the health field model in the Dutch PHSF report (Van Oers, 2003)



Several HMP projects went into the exercise of producing conceptual models of health. Examples are the policy cycle model developed by the Workhealth project (Kreis & Boedeker, 2004; *figure 4*) and by the EUHPID project on health promotion indicators (Davies et al., 2004; *figure 5*). On close inspection, these models are much more similar than they look like. In the Workhealth model, for example, the orientation from activities to health is now directed from left to right. Differences with the other examples arise because besides health other endpoints have been chosen as relevant, such as productivity and costs, which are not primarily health-related.

It should be pointed out that many HMP projects have made efforts to fit their indicator proposals into the ECHI framework. Although it was acknowledged that different types of models could serve the purpose, they indeed succeeded to introduce all indicators they considered important.

Figure 4. The policy cycle model of the Workhealth project

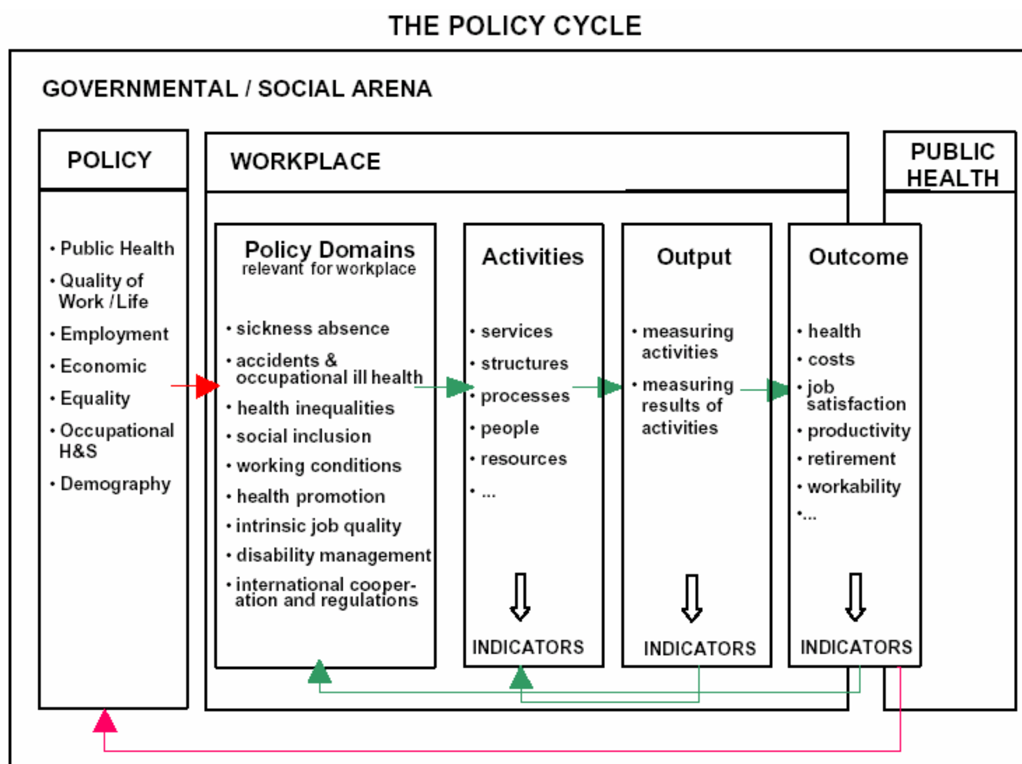
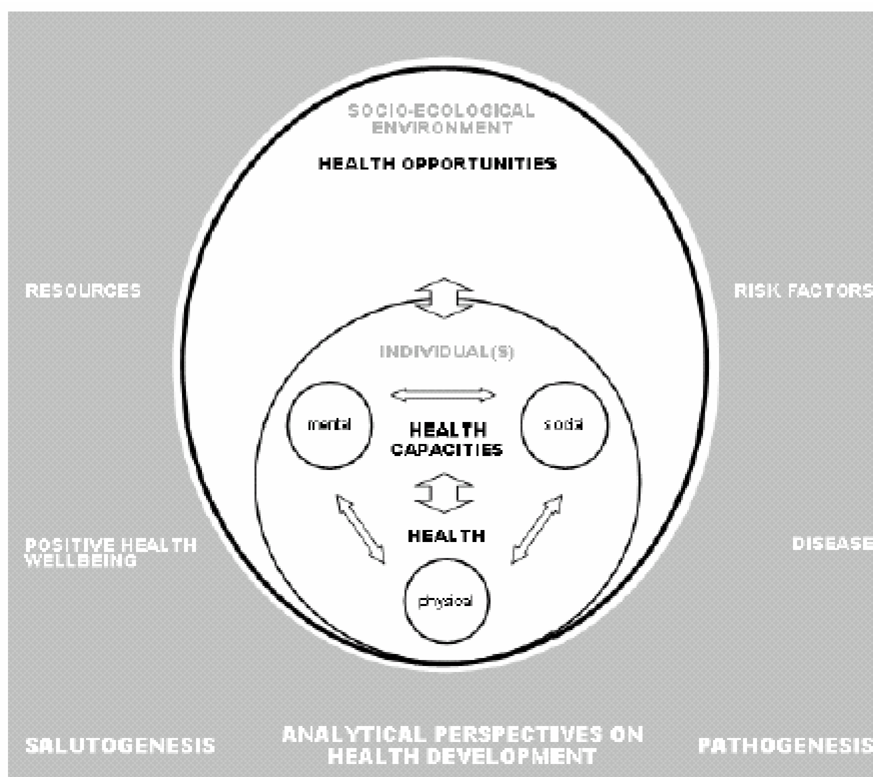
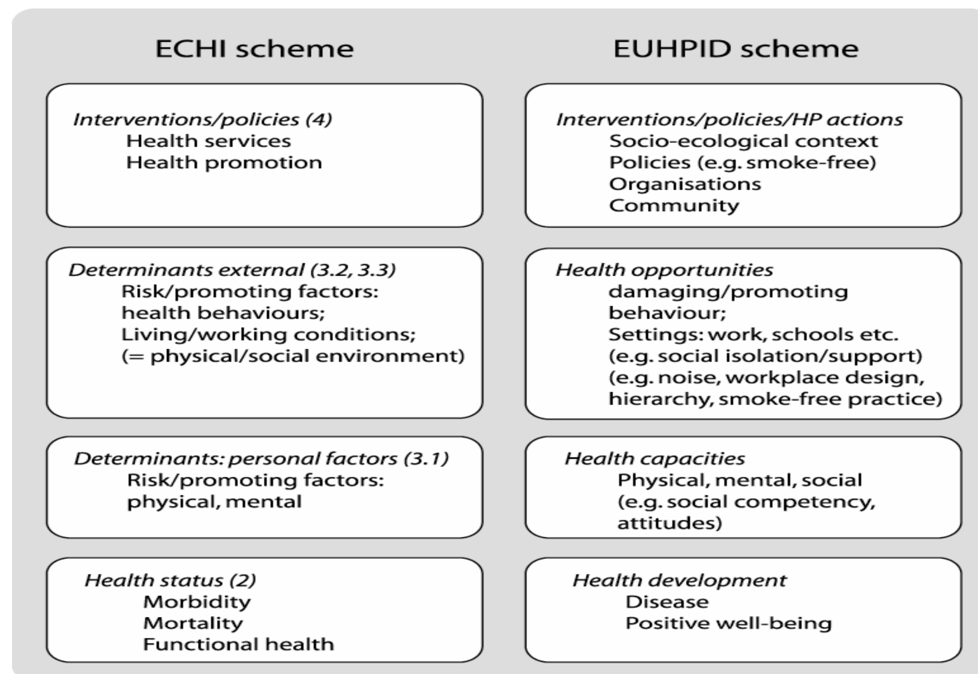


Figure 5. The health development model of the EUHPID project



The EUHPID model again looks very different, but has many similarities to *figures 2 and 3*. Health is explicitly worded in its positive (left) and negative (right) notions. The concept of 'health capacities' turns out to be very close to the 'personal factors' of *figures 2 and 3*, whereas the resources, risk factors and 'health opportunities' represent the other groups of health determinants. It is also crucial to this model that health is viewed as a dynamic process ('health development') like in the Dutch model described above. In *figure 6*, the correspondences between the ECHI scheme, as based on *figures 2 and 3*, and the EUHPID scheme has been specified, emphasizing again the similarities which exist in spite of the different terminologies (partly based on schemes from the EUHPID report which are not shown here). One important conclusion from the discussion with the EUHPID team was that there is a substantial lack of good data and indicators on the functioning and effectiveness of health promotion activities.

Figure 6. Correspondances between the ECHI and EUHPID conceptual models



Many recent models are centered around the term ‘performance’. Schematically, there are two variants. The first, broad one deals with ‘health (system) performance’. It basically covers all aspects that produce health, and therefore is quite similar to the model discussed earlier. The second variant rather focuses on the specific goals of the health services system and should be characterized as ‘health care system performance’. This type of model includes, apart from producing health, issues like ‘responsiveness’ (responding to the citizen’s justified expectations) and financial aspects, often covered by the term ‘sustainability’, which is the ability to sustain the system financially in the long run.

One example of a mix of these two variants is the recent Canadian 'Health indicators framework' (CIHI/Statistics Canada, 1999), shown in *figure 7*. On the one hand, it is *figures 2 and 3* upside down, with the living/working conditions and the environment split up. On the other hand, the bottom part with its specification of goals makes it at the same a model for health care system performance. It should be noted that in this model, preventive and health promotion activities are not explicitly mentioned. This is perhaps an expression of its hybrid character, trying to be a general health model as well as a system performance framework.

Figure 7. Canadian Health Indicators Framework.

Health Status			
Health Conditions	**Human Function**	**Well-Being**	**Deaths**
Alterations of health status, which may be a disease, disorder, injury or trauma, or reflect other health-related states	Alterations to body functions/structures (impairment), activities (activity limitation), and participation (restrictions in participation)	Broad measures of physical/mental/social well-being of individuals	Age or condition-specific mortality rates and other derived indicators
Non-medical Determinants of Health			
Health Behaviours	**Living and Working Conditions**	**Personal Resources**	**Environmental Factors**
Aspects of personal behaviour and risk factors that influence health status	Socio-economic characteristics and working conditions of population that are related to health	Measures the prevalence of factors, such as social support and life stress, that are related to health	Environmental factors that can influence health
Health System Performance			
Acceptability	**Accessibility**	**Appropriateness**	**Competence**
Care/service provided meets expectations of client, community, providers and paying organizations	Ability of clients/patients to obtain care/service at the right place and right time, based on needs	Care/service provided is relevant to client/patient needs and based on established standards	Individual's knowledge/skills are appropriate to care/service provided
Continuity	**Effectiveness**	**Efficiency**	**Safety**
Ability to provide uninterrupted, coordinated care/service across programs, practitioners, organizations, and levels of care/service, over time	Care/service, intervention or action achieves desired results	Achieving desired results with most cost-effective use of resources	Potential risks of an intervention or the environment are avoided or minimized
Community and Health System Characteristics			
Characteristics of the community or the health system that, while not indicators of health status or health system performance in themselves, provide useful contextual information.			

References:

CIHI/Statistics Canada. Roadmap Initiative … Launching the Process. Ottawa: Canadian Institute for Health Information, Statistics Canada, 1999.

Davies J, Hall C, Linwood E. The Development of a European Health Promotion Monitoring System (EUHPID). Report of a project funded by the European Commission under the Health Monitoring Programme, 2004.

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