

Essay Healing gardens—places for nature in health care

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“Healing garden” denotes a place, a process, and their intertwining. Consider first the place—a garden in a health-care facility. Most people’s idea of a garden would be a verdant place, dotted with flowers, nature in miniature symbolically and materially, a place that pleases the senses. Notably absent would be features that diminish the ability to enjoy and reflect on the surroundings—noise, crowds, threats, unwanted demands on attention. This consensual view of what does and does not belong fits many, though not all, of the gardens that now can be seen in health-care facilities, indoors and out.

Consider now the process. The word healing implies much: some conception of health; some departure from a condition of health; some possibility for recovering health; and some means for improving health. The simple fact that healing gardens now exist in widely varying health-care settings shows that they are allied with a broad conception of health, one that recognises that a person can move between greater and lesser degrees of health along diverse physical, mental, and social continua. Such a broad conception of health implies that departures from it can take many forms, and so in turn that the recovery of health may take many forms.

The broad conceptions of health and healing implicit in the term healing garden echo those already manifest in the health-care facilities where such gardens have been placed. General hospitals, for example, exist to meet the needs of diverse people with varied health problems. Some services provided in hospitals benefit any who enter them. Other services might be valued only by specific groups of patients. So, too, with healing gardens; they can provide both general and specific services in health care, according to general and specific needs.

Healing garden is perhaps an unfortunate name, since in popular parlance healing is perceived as synonymous with cure. No one would argue that a garden of itself can cure a person of cancer or mend a broken leg, and many would argue that gardens can serve health care even in settings in which unavoidable deterioration in health will continue. Terminally ill patients might value a hospice garden as a place for contemplation, for example. Also, visitors and staff, themselves not physically ill, might value a garden as a place for grieving or for a restorative respite from stressful caring demands. For such reasons, some proponents prefer different appellations for gardens in health care, such as therapeutic or restorative.

The appellation “healing” might be the source of the controversy that health-care gardens have aroused in some quarters. Little wonder that modern societies have entrusted highly trained professionals with the responsibility of caring for the health of individuals. Medical professionals commonly conceive of healing in

more exacting ways than other people. One could expect that of them, given their training in the use of specialised methods to treat specific illnesses in particular patients. And one might expect them, as responsible professionals, to scrutinise approaches to treatment that follow from vague conceptions of “healing”.

It would be a mistake, however, to attribute controversy about healing gardens primarily to medical versus lay conceptions of healing. Indeed, the impetus for creation of healing gardens has at times come from the medical staff at a facility. Some have wanted to soften and beautify a stark institutional environment. Others have wanted to create a calm refuge for peaceful respite from their hectic work. Still others have wanted to use gardens in treatment regimens. For example, some hospitals, such as the Good Samaritan in Portland, Oregon, USA, have patient-specific gardens with varied walking surfaces and planter heights where physiotherapists work on rehabilitation with people who have had strokes and those with spinal and brain injuries. When patients are outdoors, they may not realise that they are being guided through exercise routines. Similarly, at the Rusk Institute of Rehabilitative Medicine in New York City, a play-garden provides a setting where children with brain injuries can regain skills while at play outdoors instead of in a formal exercise room.

Proponents outside of the medical professions, such as landscape architects, have not sought to replace medical approaches so much as to translate the specifics of medically defined conditions into the design of gardens that will effectively support caring. Perhaps the best established and studied link from disease to garden design is that made for Alzheimer’s disease and other forms of dementia. Many residential and day facilities in the USA now have gardens for such patients. Among the design elements they commonly incorporate are: a simple looped pathway, because patients typically have impaired way-finding abilities; dark or tinted walking surfaces, because glare troubles ageing eyes; flowers



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that may evoke pleasant memories from early years, which many patients retain; and non-toxic plant materials, because patients with late-stage Alzheimer's disease tend to put things into their mouths. Evaluations indicate that these gardens improve quality of life for patients, afford an opportunity for them to exercise without becoming agitated, and lighten the burden of care for nurses.

To the extent that healing gardens arouse controversy, the main issue seems to be a mundane one: the allocation of scarce resources. Administrators, doctors, and nurses have opinions about how to prioritise the use of funding, space, and staff time. Their priorities reflect their perceptions of patients' needs. With today's strict budgetary constraints, even small expenditures for the installation and running costs of a garden can provoke indignation. Why a garden, of all things, instead of another MRI machine, when people have to wait so long for a scan?

Proponents might explain that a healing garden will provide specific benefits for a group of patients of specific concern, such as those with Alzheimer's disease. They can also observe that a healing garden provides general benefits. Notably, they can explain that a healing garden can serve as a restorative resource, helping patients, visitors, and staff alike to cope better with stress experienced in connection with their own or others' illness and admission to hospital. Finally, they might note that clinically significant benefits might over time translate into cost reductions.

Proponents can now marshal substantial evidence from diverse sources to support these arguments. In 1984, Roger Ulrich published a seminal article in *Science*. He reported that patients recovering from surgery who had a window view of trees from their hospital room had shorter postoperative stays, fewer negative evaluations from nurses, and lower consumption of potent analgesics than matched patients who had a view of a brick wall. Since then, the relevant experimental and observational evidence has steadily increased. The research on stress-reducing or restorative effects of nature experiences in general is a good example. Chronic stress can affect physical and mental health through increasingly well-understood physiological pathways, involving, for example, neurohormonal and immune function. Laboratory and field experiments have repeatedly found that natural environments better interrupt the stress process than predominantly built settings, even over brief periods. Although restoration may proceed for only a brief period with a visit to a healing garden, substantial benefits might accrue, reckoned over people and time.

Finally, consider the intertwining of place and process. Healing gardens figure in a broader transformation of the places where healing occurs, a transformation spurred on by recognition of the importance of place characteristics for health care. All human activities take place in some environment, and so do the biological,



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psychological, and social processes carried along in those activities. Yet, in the evolution of modern medicine and medical facilities, the role of the environment in health care has in important respects been neglected. Over recent decades, however, medical professionals, environmental psychologists, landscape architects, and others have insistently posed questions about the costs incurred with a view of the health-care environment that separates process from place. They have asked how the design of health-care environments might contribute to better outcomes for patients, visitors, and staff. Many have engaged together in an iterative process of design-research-design; research suggests modifications to earlier conceptions of how health-care environments should be shaped, opening the way for design refinements that, treated as hypotheses, help guide further research.

Sadly, many opportunities to make gardens available have been wasted. For example, in the UK, courtyards at some new hospitals set up under the private-finance initiative are minimally planted, and their doors are kept locked. There seems to be limited recognition among NHS officials, hospital architects, and private-finance clients that outdoor spaces can be important restorative settings. Gardens can be created in the barren spaces of a variety of existing facilities and in ones now under construction or in planning. Landscape architects with knowledge of plants and the literature on design of healing gardens should be hired to create them, and environmental psychologists with knowledge about relevant theory and methods should be enlisted to help assess their effects. These measures can only increase the likelihood that patients, visitors, and staff can use and benefit from contact with nature in health-care settings.

See **Essay** Evidence-based health-care architecture by Roger Ulrich page 538

Further reading

Cooper Marcus C, Barnes M. Healing gardens: therapeutic benefits and design recommendations. New York: Wiley, 1999.

Cooper Marcus C. Healing gardens in hospitals. In: Wagenaar C. The architecture of hospitals. Rotterdam: NAI Publishers, 2006: 314-29.

Health Council of the Netherlands and Dutch Advisory Council for Research on Spatial Planning, Nature and the Environment. Nature and health: the influence of nature on social, psychological and physical well-being. The Hague: Health Council of the Netherlands and RMNO, 2004.

Hartig T. Restorative environments. In: Spielberger C. Encyclopedia of applied psychology, vol 3. San Diego: Academic Press, 2004: 273-79.

Ulrich RS. View through a window may influence recovery from surgery. *Science* 1984; **224**: 420-21.