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Building multidisciplinary, interdisciplinary, and transdisciplinary surveillance partnership

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Conflictos de interés: Los autores declaran no tener conflictos de interés alguno.

Editorial

A discipline is a branch of knowledge. Examples are biology, chemistry and history. Real world problems are complex problems which do not respect artificial disciplinary boundaries. Public health surveillance is increasingly facing new challenges that require multiple disciplinary partnership to resolve. Partnership refers to two or more people or organizations that work together. The terms multidisciplinary, interdisciplinary and transdisciplinary are often used interchangeably but they have specific meanings. The objectives of this keynote presentation are to (1) define and compare the three multiple disciplinary approaches, using examples of several surveillance networks including the World Alliance for Risk Factor Surveillance (WARFS) and Americas' Network for Chronic Disease Surveillance (AMNET); (2) discuss a number of promotors of teamwork and partnership building; and (3) present a roadmap on where to find multiple disciplinary collaboration based on a review of the knowledge universe.

A multiple disciplinary approach is especially effective to: resolve a real world problem, resolve a complex problem, provide different perspectives, create comprehensive hypotheses, develop consensus definitions and guidelines for complex conditions, and pool resources and expertise. The multidisciplinary approach “draws on knowledge from different disciplines but stays within the boundaries of their fields” (1). The interdisciplinary approach “analyzes, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole” (2). The transdisciplinary approach “integrates natural, social and health sciences, and humanities, and in so doing transcends each of their traditional boundaries” (3). In other words, the keywords of the 3 approaches are: additive, interactive and holistic, respectively. My mathematical examples for them are 2+2=4, 2+2=5, and

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2+2=yellow, respectively. We can also add our everyday food examples: multidisciplinary is like a salad bowl (in which the ingredients remain intact and clearly distinguishable); interdisciplinary is like a melting pot (such as a fondue or stew, in which the ingredients are only partially distinguishable); transdisciplinary is like a cake (in which the ingredients are no longer distinguishable, and the final product is of a different kind from the initial ingredients).

There are ways to promote teamwork and partnership building. Eight promotors are summarised in my acronym "TEAMWORK" which refers to Team, Enthusiasm, Accessibility, Motivation, Workplace, Objective, Role and Kinship. They mean (1) Good selection of team leader and team members, (2) Personal commitment of team members, (3) Physical proximity of team members, (4) Incentives, (5) Workplace support, (6) Common goal and shared vision, (7) Clarity and rotation of roles, and (8) Communication and constructive comments among team members. Both WARFS and AMNET offer successful partnership in one or more of the eight promotors.

In epistemology (the theory of knowledge), some disciplines (e.g. biology and chemistry) are considered closer together, while other disciplines (e.g. biology and history) are deemed farther apart. In general, a multiple disciplinary approach that combines disciplines that are more disparate from one another is more likely to achieve new insight for a complex problem than disciplines that share similar epistemological assumptions. Early work of Russell on the global brain (4) and of Turnbull on design criteria for a global brain (5) has led to my hierarchy of disciplines that links up disciplines in natural sciences, health sciences, social sciences, engineering sciences, management, and humanities. Linking of these knowledge subsystems in the knowledge universe helps us locate different disciplines for teamwork to solve a real world problem. If the problem is not very complex, disciplines from the same knowledge subsystem, for example, health sciences, may suffice. But, if the problem is more complex, then disciplines from two or more knowledge subsystems, for example, health sciences, social sciences and management, may be required.

We conclude that further understanding of the multidisciplinary, interdisciplinary and transdisciplinary approaches of collaboration, and teamwork promotors, will help global surveillance partnership building.

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