PERSPECTIVE IN CARDIOLOGY

Perspectives On Optimizing Chronic Heart Failure Care Beyond Randomised Controlled Trials – What do we Consolidate and how do we Plan for the Future?

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In 2016, we steered a thematic series on optimizing congestive heart failure beyond the defining evidence hurdle, the randomised controlled trial (RCT) [1]. Alongside research advancements summarised in guidelines [2], cardiology service models have made leaps in the last several decades; an important area was the publication of a Taxonomy of disease management [3]. While the taxonomy provides a broad framework with pillars (domains) and components for each pillar (dimensions), it is more a jigsaw than a tested model. Individual health systems have to determine the right combination of funding and infrastructure (staffing, equipment and facilities). Thus, while all services have access to the RCT findings, the real world consequences can vary. In this editorial* we focus on service and therapeutic areas to consolidate and find new directions of thinking: firstly, consolidating delivery of evidence-based practice and the best clinical models of services to do so, in a cost efficiency context; and secondly, creating an environment for real time observations and partnerships to steer short and long term goals and including the generaration of local evidence where needed.

Health Services are machineries fuelled by adequate and consistent funding. It is hoped that improved community health translates to higher productivity with less medical resource utilisation. In developed nations adhering to guideline-based care has led to improvements in CHF major adverse cardiovascular outcomes (MACE). However, when heterogeneous demographic factors are encountered, unequal outcome gains are seen in some groups [4]. Despite all considerations, however, health budgets continue to rise towards unsustainable levels. Because of this, we believe that the most important paradigm for CHF and chronic diseases lie within health services models, and in defining the basic unit of a chronic disease health service (or a health cluster) and cost efficiency factors within it. CHF has common denominators in service elements, however the multidisciplinary machinery is compartmentalised into silos; in the Australian Medicare community care funded models it still remains a grey area where the boundaries between the different health providers are at. Thus seats for scientist and bureaucrats on the planning table must be a future priority.

CHF is a chronic condition, with a three phase natural history and without a cure. Hospital admissions and therapies for patients with higher New York Heart Association Class (NYHA III and IV) contribute to high costs. Fonarow *et al.* from the OTIMIZE-HF study showed that a quality improvement process of care is vital in achieving MACE and other targets [5]. The role of cardiologists is to lead this process and link it to other important service elements, preferably within a health cluster. To run a coordinated service, accessing multidisciplinary elements, maintaining good communication and optimising therapy require flexible care models. The components and dynamism of such models should be a primary focus of studies, with the aims to understand: a. Constituents of political, administrative and medical teams: the breath and overlaps of teams roles in finding common ground and facilitating needs in the cluster; b. Memorandum of understanding on effecting change: The evidenced process needed by these groups to steer future directions; c. Data sharing and mining capabilities: how to create efficient pathways to record and access data across the health cluster to facilitate reliable audits timely.

'*Health Cluster*' is a loose term to describe an aggregation of services within a defined geographical boundary served by one or several '*Health Networks*' or Tertiary Teaching Hospitals. Within them are housed buildings, equipments, multidisciplinary staffing, health, policy and research infrastructure, and the capacity to serve sickest patients presenting with any acuity. Tertiary centres lag with triaging high volumes *e.g* stable outpatients (plateau or phase 2), being responsive when they sit at the boundaries of acute and palliative phases and subacute presentations such as dyspnoea or chest pains requiring investigations. With communication, sharing of information timely and connectivity across the cluster have also had its challenges. A third issue of importance is broader roles of non-hospital based and allied health in relationship to research and teaching. The first

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and second issues acknowledge that the foundations for futuristic planning must factor sharing workload across the cluster. Community centres excel in managing and triaging patients who are not acutely unwell. Hospital in the home can also take on some acuity. For this to succeed, however, greater engagement between health networks and community health services with planning and communication (shared information) must be addressed. The improved efficiency and reduced duplication will reduce costs. A host of medicolegal considerations exist, however it is a direction we must steer towards. The third area of defining the roles of health practitioners in the cluster and beyond clinical duties require at the minimum honorary associations. Practitioners billing from public Medicare funds could help steer data *via* the research infrastructure within the cluster to funding bodies. This will allow information to steer planning discussions. Finally, creating an environment for transforming novel observations to solutions. CHF research could benefit from studies on: i. Patient populations: Phase 4 studies on comorbidities, Phase 1-4 studies on ethnicity and response to treatments and outcomes, novel risk determinants; ii. Electronic communication methods – real time data; data mining, addressing Taxonomy domains (3); iii. Outcome measures particularly improving readmissions and cost efficiency [4-13] (Fig. **1**).

In developed nations, globalisation has seen a change in demographics. Declines in CHF mortality have been achieved; however, there are now greater considerations within subpopulations. In planning for the future, we must pause and look at the new landscape. To optimise CHF care we need to recognise that with any chronic diseases the treating specialist must be engaged with a multidisciplinary structure. Health practitioners must also be more conscious of cost-efficiency determinants. Consolidating the strongest evidence with local thinking will be vital. When planning for the future engaging tertiary and community services at all levels will provide the best canvas for observations and translation. Supplementing this are other long term players like drug companies where greater levels of corporation with the health cluster will also benefit to ensure the findings are translated and trial participation is facilitated for willing participants. Finally, each system has to determine the right combination of infrastructure (staffing, equipment and facilities) and funding. It is also important to ensure we consolidate and deliver proven care well and engage to provide collaborative opportunities to identify gaps and discover solutions. Achieving this will then ensure consistent funds to the health cluster and greater funding streams for novel research.
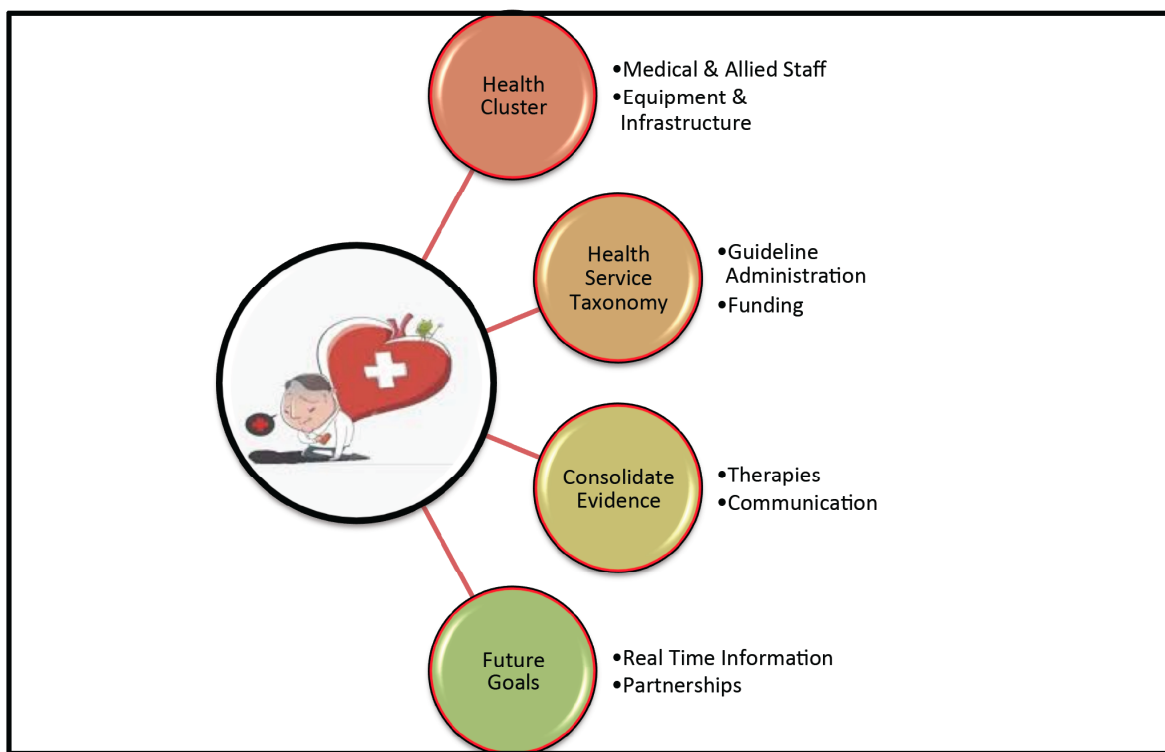

Fig. (1). Heart Failure sub-specialist are the hub that steer the patient's journey through their illness. Cardiologist must factor 4 important spokes to deliver optimal care: a. Health Cluster – practitioners need to be engaged in health jurisdiction that serves the doctors and patients needs. Engagement in education and policy should also be encouraged; b. Taxonomy of CHF management – presently Federal Government funding and policy determines what in the guidelines are achievable. Greater control within health clusters could be considered. It is vital the community health services and practitioners have a voice in this planning; c. Consolidate Evidence – novel therapies such as ARNi, SGLT-2i and access to advanced device therapies must be delivered with the OPTIMIZE-HF standards in mind. The aim is to explore avenues to deliver trial level evidence and its outcomes; d. Future Goals – observations tested through, bench to bedside or bedside to bench, are best supported by partnerships and sharing of information. Common databases help observations and partnerships facilitate research opportunities with rapid translation.

LIST OF ABBREVIATIONS

ARNi	=	Angiotensin Receptor-neprilysin Inhibitor
CHF	=	Congestive Heart Failure
OPTIMIZE-HF	=	Organized Program to Initiate Lifesaving Treatment in Hospitalized Patients With Heart Failure
SGLT2i	=	Sodium glucose co-transporter 2 inhibitors.

DISCLOSURES

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