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Lynn Sudbury-Riley & Philippa Hunter-Jones

Facilitating inter-professional integration in palliative care:

A service ecosystem perspective.

Abstract

A paradigm shift toward healthcare inter-professional collaboration is leading to searches for ways to better facilitate integration. However, policy rhetoric often fails to acknowledge the complexity of healthcare service systems, and the difficulties involved in achieving successful collaborations. Consequently, more research is called for. We utilize the concept of a service ecosystem, a perspective currently prominent in service science, which is transforming the ways service systems are studied. This research aims to examine palliative care provision through a service ecosystem lens in order to uncover previously unidentified insights and opportunities for improvement. The palliative care ecosystem under study encompasses a defined geographical area of the UK. Data comprises pathographies (i.e., narratives of illness) with patients and their families (n=31) and in-depth interviews with a variety of palliative care providers (n=21), collected between 2017 and 2018. Capability issues comprising collaboration, coordination, and resource integration, together with communicating value all emerged as common themes impacting palliative care services. Taking a service ecosystem perspective, we also found shared intentionality for better integration and collaboration, with a desire among palliative care providers for the ecosystem's hospice organization to take the role of leader and facilitator. Acting on these

findings, we demonstrate the ways new institutional arrangements provide a foundation for value cocreation. We make a contribution to the burgeoning service ecosystem literature which currently lacks empirical insights, particularly in health. We argue that in complex service systems such as healthcare, the focus must be on service design rather than organizational design, approached from the perspective of aggregation of service providers. We demonstrate empirically how reconfiguring resources and developing new institutional arrangements at the meso level can change micro-macro level interaction, enabling the emergence of new and enhanced value cocreation in palliative care.

Keywords

Service ecosystem; service-dominant logic; palliative care; integrated care; hospice; service system; value; cocreation.

INTRODUCTION

In the UK, the National Health Service (NHS) Long Term Plan (2019) promises a new service model with “properly joined-up care” (p.6) delivered “in the optimal care setting” (p.33) to better meet community needs through service redesign. This standpoint mirrors a paradigm shift currently replacing traditional models of individualism and autonomy across many countries (Spinnewijn et al., 2020; Liberati et al., 2016; McDougall et al., 2016). Collaborations can potentially outperform solo providers on quality assessment, compliance, health status, and patient satisfaction (Beirão et al., 2017). Importantly, collaboration failures are central to care failures (Reeves et al., 2017).

Applicable to many aspects of healthcare, the ambitions laid out in the NHS Long Term Plan (2019) are particularly pertinent to palliative care. Palliative care signals a shift from curative treatment: it attempts to relieve physical suffering while encompassing psychosocial, emotional, spiritual, and social care (Zaman et al., 2017). This holistic approach requires multiple actors, including family caregivers, general healthcare professionals (general practitioners (GPs), community nurses, social workers, care workers) and specialist palliative care (SPC) providers (palliative care doctors and nurses, hospice staff). Hence, the need to be 'properly joined up' is particularly evident, yet participation of these different actors will vary and sometimes conflict (Zaman et al., 2017), and concrete guidelines on how to actually achieve this are sparse (Visser et al 2020). Palliative care happens in hospitals, hospices, or a patient's home. One patient may have to navigate their way through multiple places during their illness, each individual journey is unique, underscoring 'the optimal care setting' which may differ between patients (Zaman et al., 2017), or at different times during a patient's illness. Finally, 'meeting community needs' is accentuated in palliative care because philosophically it aims to provide emotional and physical comfort not only to patients, but families too (Zaman et al., 2017). Additionally, there are huge and increasing pressures on community resources (Hoare et al., 2019), hospital deaths in high numbers are unsustainable (Gomes et al. 2013), and aging populations coupled with increases in the prevalence of chronic health conditions mean demand for palliative care services will accelerate dramatically (Bone et al., 2018).

What constitutes good palliative care is still open to debate, given cultural, social, and individual differences, alongside pluralistic palliative care services (Zaman et al., 2017).

Nevertheless, benefits of palliative care include ease of suffering, support for both patients and their families, improvements to quality-of-life, and reductions in medical costs (Berry et al., 2016). Yet, evidence reveals the need for vital changes to the current organization of care (Hynes et al., 2015). Consequently, the study of palliative care services is important and timely.

Integrated palliative care

Health services are complex systems (Grudniewicz et al., 2018) that policy rhetoric often fails to acknowledge (Hoare et al., 2019). Such systems suffer problems of coordination, inter-collaboration, and communication between different providers (Lanham et al., 2013). Hence, there has been a prominent revival of boundary spanning theories with studies focusing on power struggles, control, trust, status, and cultural issues that negatively impact effective collaboration (Collyer et al., 2017; Liberati et al., 2016). In the UK, palliative care is highly politicized and fragmented, spanning primary, secondary, and community care, and delivered by SPC and non-SPC providers from different medical disciplines, which can intensify such problems (Abrams et al., 2019). Yet, few literatures focusing on interdisciplinary aspects of palliative care comprise UK data (Visser et al. 2020), focus on palliative care delivered to patients in their own homes (Abrams et al., 2019), or include hospices (Krawczyk, 2019). More importantly, the patient is often conspicuous by their absence from research. When patients are included, studies are usually concerned with professional boundaries and emotional ties between patients and professional caregivers, and are thus limited to spotlighting dyadic relationships (Abrams et al., 2019). Consequently, there are calls for more comprehensive and inclusive studies that focus on a wide variety of

actors that, crucially, include the patient's own perceptions (Khosla et al., 2016; Spinnewijn et al., 2020). A service ecosystem perspective has the potential to answer these calls.

Service ecosystems

In 2004, Vargo and Lusch converged theories and ideas from over a century to propose a new paradigmatic lens for examining organizations and society, called service-dominant logic (S-DL). Several major refinements (Vargo and Lusch 2008, 2016) have developed S-DL into a shared understanding of value among an increasingly diverse group of global scholars. Fundamentally, S-DL proposes that all organizations and society are concerned with service exchange for benefit (value). Actors (social and economic) exchanging service for service cocreate value through resource integration, which is enabled and constrained by institutions (culture and norms) and institutional arrangements (interdependent sets of institutions), establishing nested multiple systems of value cocreation which provide the context for future value cocreating activities (Lusch et al., 2016). According to S-DL, these cocreation activities occur within a service ecosystem, defined as a "relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange" (Vargo and Lusch, 2016, p. 161). Service ecosystems therefore represent interactions between actors and institutions, actor-environment interactions, and energy flow. Hence this perspective expounds the complexity of systems which provide service, integrate resources, and cocreate value (Edvardsson, et al. 2011; Vargo and Akaka, 2012). The first column of table 1 identifies key foundational principles of SD-L and important elements of the service ecosystem perspective; the second column further explains each of these fundamentals.

Table 1 Here

S-DL is less an academic theoretical invention and more a synthesis and extension of research primarily in the marketing discipline around services, relationships, and systems (Gummesson et al., 2019). SD-L is also transdisciplinary, drawing on work from diverse fields. Through an in in-depth review of the literature, we identified numerous theories (and families of theories) mentioned as core antecedents to or influences on S-DL. These include, *inter alia*, actor-network theory (ANT), practice theory, institutional logics, structuration theory, complexity theory, and theories of social capital. Several excellent conceptual papers explain the ways in which these kernel theories and concepts have influenced the service ecosystem lens, and while it is beyond the scope of this paper to describe specifically how each theory informs SD-L, we have mapped these key influences against the foundational principles in Table 1. For interested readers, Vargo and Lusch (2016) provide an exceptional overview of the development of SD-L in relation to institutional theory, network theory, service science, and practice theory. Pop et al.'s (2018) work on service ecosystems and institutions is also noteworthy, as is Polese et al.'s (2017) explanation of the need for a complex systems approach. Frow et al. (2016) explain the explicit links between practice theory and value cocreation, while later (Frow et al. 2019) linking practice theory to service ecosystem wellbeing. Laud (2015) unequivocally links SD-L to social capital theory, and articulates the key service ecosystem concepts of structuration and resource integration. Taillard et al. (2016) elucidate the centrality of emergence and intentionality to service ecosystems.

This synthesis of ideas, concepts, and thought has produced a new logic of and for the market and society, a perceptual lens through which value cocreation is possible through resource integration and mutual service provision that take place within a service ecosystem

(Vargo and Lusch 2008, 2016). This relatively new perspective is transforming the study of service (Lusch et al., 2016; Taillard et al., 2016), not least because it takes a more holistic and dynamic outlook toward the whole system (Maglio and Spohrer, 2008; Peters, 2016). SD-L attempts to overcome the sometimes myopic conceptualizations of organizations and society due to academic silos while, importantly, better emulating the dynamics of real-world processes (Vargo and Lusch 2011). The fourth column in table 1 summarizes several advantages of the holistic service ecosystem lens over its constituent antecedents.

SD-L extends prior conceptualizations of value by suggesting it can only be cocreated, hence transcending prior organization-centric views on value determination (Polese et al. 2017), overcoming limitations inherent in perspectives that concentrate on restricted numbers of actors (Vargo and Akaka, 2012), and enabling a wider perspective to examine mutual independence from which new institutions emerge (Fujita et al. 2018). This perspective moves from a focus on outputs to relationships, and therefore has much in common with ANT and the sociological perspective of entanglement that reflects dynamic interactions and assemblages (McDougall et al., 2016; Latour, 2017). However, it extends traditional concepts of networks by incorporating the interdependencies between system levels (Meynhardt et al., 2016; Vargo and Lusch, 2017), with the meso level critical to joining the micro and macro levels through institutional arrangements (Lusch et al., 2016). S-DL also emphasizes the aggregate effect of the interactions between the different organizational networks and actors (Beirão et al., 2017; Frow et al., 2016) which can spotlight new value opportunities (Beirão et al., 2017; Frow et al., 2016). This multi-dimensional approach is richer and deeper than those studies that focus solely on a single level (Meynhardt et al.,

2016), which is particularly important in health where macro-level and local micro factors are impacting care (Grudniewicz et al., 2018; Hoare et al. 2019).

A service ecosystem focuses on collective wellbeing rather than solely collective intent (Vargo and Lusch, 2017). Additionally, it overcomes limitations of traditional theories that focus on effectiveness via intra-organizational perspectives and processes while failing to address social needs (Meynhardt et al., 2016; Vargo and Akaka, 2012). The recurrence of value cocreation behaviors enable the service ecosystem to adapt to the environment and shape it for future value cocreation activities (Fujita et al. 2018). The goal of intentionality emphasizes why service ecosystems exist: in order to cocreate value (Vink et al. 2020), with new forms of value cocreation leading to innovation and emergence of new ways of cocreating value in a self-perpetuating cycle (Koskela-Huotari et al. 2016; Storbacka et al. 2016).

Vargo and Lusch (2016, 2017) take care to stress that this new lens is not a replacement of any preceding theoretical concepts, but rather a way of organizing knowledge through a common framework that is more useful to practitioners insofar as it provides better normative insights (Vargo and Lusch 2011) than many theories that are criticized by practitioners as unrelated to the increasingly complex world in which they operate (O'Leary and Boland 2019). On these bases, we suggest a service ecosystem viewpoint is relevant to the study of palliative care services, as explained in the final column of table 1. Using this new lens answers calls for more comprehensive investigations into collaboration in healthcare services (Beirão et al., 2017), that better reflect the new paradigm of patient-centeredness (Frow et al., 2016), while taking consideration of macro-level forces that

impinge on micro-level patient interactions and the way palliative care services are designed.

The research reported here is part of a larger study designed investigating value within a particular palliative care ecosystem comprising a demarcated UK geographical area serving a footprint of around 140,000 residents registered to 15 GP practices. An acute hospital, a team of community nurses, and 7 residential care homes also serve the area. Figure 1 shows the ecosystem diagrammatically. The meandering lines connecting the organizations at the meso level represent the institutional arrangements that link them, and in reality the ecosystem also has an immeasurable number of possible relationships between the different actors. We define all relevant actors within this area as part our palliative care ecosystem, because a patient living in this geographic area could receive care from one or more of these provider actors.

Figure 1 Here

Our overall aim is therefore to investigate the previously unidentified insights and opportunities for enhanced value cocreation by examining palliative care through an ecosystem lens. In so doing, we contribute to the literature on service ecosystems which currently comprises a great deal of conceptual thought but lacks empirical insights, particularly in health (Beirão et al., 2017; Black and Gallan, 2015; Frow et al., 2016; Lusch et al. 2016; Vargo and Lusch, 2017). This is the first study to utilize the theoretical concept of a service ecosystem to examine palliative care.

METHODS

The study originated when a hospice in Southern England comprising inpatient, outpatient, and hospice@home services requested us (service science academics experienced in palliative care services) to 1) investigate perceptions of care among patients and their families, and 2) examine the current palliative care landscape within 'their patch'. This patch is what we define as our palliative care ecosystem (figure 1). Using recommended procedures (Murtagh et al., 2014), we estimate that of the average of 1400 deaths per year in the catchment area, approximately 80% (n = 1120) would benefit from palliative care. On average, 590 of these patients access hospice care, with around 440 (75%) of these having cancer diagnoses. As the study location is the UK, the GP practices, community nurses, and the acute hospital are Government funded, free at the point of delivery. The residential care homes are privately owned. The hospice is 11% Government funded, with remaining annual running costs reliant on charitable donations.

Ethics

The University's Research Ethics Committee approved the study. Research protocols, participant information sheets, and consent forms all confirmed that the study was opt-in, totally voluntary, anonymous, and in confidence. All participants gave written informed consent and understood they were free to stop the interview at any time, and could withdraw from the study up to the point of transcription (one week from the date of the interview), after which time the data would be anonymized. With permission, interviews were recorded and transcribed verbatim, then audio recordings were destroyed.

Data Collection

With patients and families we collected data using pathographies: a type of first-person narrative about illness experiences. Pathographies articulate hopes, fears, and occurrences, providing rich insights into diverse experiential aspects of illness, placing the person at the center of the story (Hunsaker Hawkins 1999). To keep pathographies on track and aid systematic data collection, we used the trajectory touchpoint technique (TTT) (Sudbury-Riley et al., 2016), a rich-picture based methodology designed to capture the experiential dimensions of palliative care from patient and family perspectives. The TTT compliments pathographies, encouraging stories of an illness using a journey perspective from diagnosis to the present day (Sudbury-Riley et al. 2020). With healthcare professionals, we used semi-structured interviews. The interview schedule comprised questions around their observations of the major issues facing palliative care, experiences of referral criteria and processes, and perceptions of unmet needs. In keeping with the service ecosystem approach, we then asked for suggestions for improvement, illustrating some of the issues they raised with examples of patient experiences we had collected earlier.

Recruitment technique differed by participant. For hospice inpatients, during ward rounds a SPC doctor used expertise to decide which patients were well enough to participate. A senior nurse then explained the study and provided information leaflets detailing how to volunteer. Recruitment of outpatients and family caregivers was via posters and information leaflets given out at reception and to various caregiver and wellbeing groups. All recently (within 6 months) bereaved families, hospice@home users, GP practices, care homes, and the community nursing team received information sheets and invitations to volunteer. The hospital does not have a bespoke palliative care unit. However, a hospice trustee linked us

to a Frailty Consultant and we used snowballing to recruit hospital nurses who had administered palliative care in the previous 6 months. Table 2 shows the final sample.

Table 2 here.

Most inpatients chose their bedside for their interview, though others preferred to talk in a quiet room at the hospice. Some bereaved families opted to be interviewed at the hospice, others, along with hospice@home patients and their families, elected for the researcher to visit them at home. All interviews with professionals took place at their organizations. An experienced post-doc researcher collected the data between 2017 and 2018.

Data Analysis

Adopting a constructivist approach (Denicolo et al., 2016), we manually thematically analyzed the data utilizing a deductive, theoretical approach to search for latent themes, employing the six stages recommended by Braun and Clarke (2006). Specifically, we utilized the key foundational premises of a service ecosystem, detailed in table 1, as our theoretical starting point. Using a 'top-down' approach, the two authors individually examined the data to understand how value is determined within this service ecosystem. We analyzed the data to uncover interactions and interdependencies between the different actors, evaluating the institutions and institutional arrangements that help actors coordinate for value cocreation, and the ways in which they were constrained. Finally, in line with the service ecosystem perspective that focuses on emergence (Taillard et al., 2016) we searched the data for normative insights and practical suggestions for resource application and reconfiguration for

enhanced value cocreation (Vargo and Lusch, 2011). We then shared and reviewed our analyses, reaching consensus for the dominant themes that emerged.

RESULTS

We uncovered innumerable examples of value cocreation, particularly in the dyadic patient-provider encounters. Care delivered with kindness, compassion, and high levels of professionalism gave patients dignity and left them and their families feeling more secure, more comfortable, and less afraid than they had at the point of diagnosis. Understanding these service dimension where value cocreation does occur is undoubtedly vitally important. Our results uncovered many areas of excellence where the service performs optimally and needs no alteration. For the sake of brevity, and cognizant of the aim of the current paper to investigate previously unidentified insights and opportunities for improvement, we limit results here to three major themes. The first, capability for value cocreation, comprises three interrelated elements of collaboration, coordination, and resource integration. The second, communicating value, focuses on information flows, perceptions of value, and value propositions. The third collates results around intentionality. We then briefly present some of the practical changes already implemented in order to demonstrate the important concept of emergence.

Capability for Value Cocreation

Collaboration

Collaboration is imperative for value creation (Vargo and Lusch 2008). Examples of multiple actors cocreating value emerged, particularly in end-of-life planning: *"…we work in*

partnership with them [hospice], and the GP, the family, and obviously the resident themselves, according to how they wish their end-of-life to be" (CHM). The centrality of family caregivers as key actors in this collaboration was obvious throughout patient and professional narratives, with hospital staff fully aware that due to community resource limitations, it was usually only due to the ability of a patient's family that patients were discharged to die at home. Discussions illustrated the conflict between national health and social care policy and reality (Hoare et al. 2019): *"I find it quite sad, the whole national thing is about where you want to die, but the hard thing is people want to go home to die and we are struggling to support that"* (HS). An interesting flip-side emerged to the family-professional collaborations, where professionals told of family members trying to provide care for longer than perhaps they should, with some feeling *"guilt about trying to let go and let us actually step in and help them"* (CN). Here, then, is an example where a healthcare professional, a community nurse, actually perceived her role as one of supporting the family in order to support the patient. Our results suggest that rather than the inter-*professional* collaborations upon which so much important research focuses (Collyer et al., 2017; Liberati et al., 2016), the service ecosystem lens, which demands a 'zooming out' to scrutinize value cocreation from a wider configuration of actors (Vargo and Lusch, 2016) uncovers a more realistic perspective of what actually happens.

Coordination

We also found a lack of normative structures and formal coordinating arrangements where *"there's no joined up thing and there's no proper care plan and there isn't enough time to order the equipment"* (CN). Frequently, it was sheer determination by individual actors integrating resources that enabled value cocreation, illustrated by this example where a

patient was determined to die at home, yet there was no support in place: *"he's half hanging out of the bed, needing his skin checking, and he did die at home a few days later and I was pleased we contributed to that but that was very much a sticky-tape and staples way of, oh you do a bit and we'll do a bit"* (CN). Ultimately, some failures negatively impact the final service user (Black and Gallen, 2015; Vargo et al., 2008), with coordination and integration between providers *"appalling…the left hand doesn't know what the right is doing"* (Bereaved Caregiver).

We found entrenched professional dogmas hindered collaboration and led to conflict and perceived care failures. GPs believed too many hospital doctors attempt to *"medicalize death"*, while hospital nurses noted a reluctance among hospital doctors to move to palliation, *"I think it's unrealistic, what they want to do to a 95 year old"* (HS). When probed, hospital nurses acknowledged a completely different perspective between nurses and hospital doctors: *"I think it's, you know, they're taught and their whole ethos is around preserving life"* (HS). Such conflicting clinical approaches (Liberati et al., 2016) are often a result of differing habitus (Bourdieu, 1977), due to dissimilarities in training, rituals, and interactions with colleagues and patients (Spinnewijn et al., 2020). Bourdieu's related concept of field (nested overlapping social environments) is also useful here to examine the ways power distributions can lead to disputes that hinder coordination (Lusch et al., 2016). Power differences became apparent, with nurses expressing a belief that although they disagreed with hospital doctor's reluctance to move to palliation, families would often take the viewpoint that "*the doctor's right: yes doctor, no doctor, kind of thing"* (HS). Conflicts were not limited to hospital staff, with patients and families narrating instances of conflicting prognoses between hospital and hospice doctors, and a distressing incident told

by a bereaved participant of when she called an ambulance for her husband to be taken to the hospice, yet although he *"had already started with the death rattle…"*, the ambulance staff wanted to take him to hospital.

Resource Integration

Resource integration problems led to wastage. Participants recounted occasions where patients had received duplicated visits from community and hospice nurses, effectively for the same purpose. Wastage left community nurses in particular feeling pressured and undervalued, with many resentful that it is their hospice counterparts who tend to receive accolade for end-of-life care. Clearly, research integration, so crucial to service ecosystem effectiveness (Wieland et al., 2016; Vargo and Lusch, 2016), was problematic, and ultimately impacted patients: *"I was discharged from hospital… but there were no beds at the hospice …so I went from all care to no care"* (In-patient).

A service ecosystem lens gives prominence to actor generated institutions and institutional arrangements for coordination (Lusch et al., 2016). Probing successful coordination between care homes and the hospice revealed this emerged due to a previous realization that care homes were not equipped to deal with palliative care. Hitherto, residents were required to move when they needed end-of-life care. Perceiving this as unfair, one care home manager decided to let people die in that home. Consequently, she turned to the hospice and found a partner willing to share operant resources by providing support and expertise to care home staff. As a result of this actor finding agency (Storbackaet al., 2016), new structure, and therefore new value, was cocreated. Via word of mouth, news of this arrangement spread to other care homes within the ecosystem. Through creating integrative links these actors

effectively created new partnerships and new cocreation practices at the meso level, which is crucial in healthcare given the importance of micro contexts (Lanham et al., 2013; Spinnewijn et al., 2020).

Communicating Value

Information Flows

Effective information flows are required for value cocreation (Black and Gallan, 2015). Inevitably, however, information shortfalls between providers, especially around patient transfer, led to problems. Community nurses noting the challenge of getting a late referral to a patient they haven't met before, "*and we're really unaware of what conversations they've had and what their wishes are, and we don't get that information on our referrals; it feels uncomfortable and it doesn't feel like we then providing the best care than we can do".* Communications with families, too, was problematic, particularly around advanced care planning (ACP): *"the Doctor was talking about the do not resuscitate form. I was taken aback, nobody said that Jim was about to pass away…"* (Bereaved family).

Value Perceptions

Beyond information flows, ascertaining individual value perspectives in any service is crucial from a SD-L standpoint (Vargo and Lusch, 2008) because they impact service design and delivery. One manager of a large care home told of the centrality of clear communications around care standards because the home was "*staffed by a lot of overseas nurses, who have cultural differences, and different views of end-of-life care"* (CHM). Instances of vastly different expectations of value also materialized between different family members, and

patients, too, expressed different perceptions of value with these often being from one extreme, *"quite a noisy room"* to "*, I did feel quite isolated at times",* illustrating the need for patients to be included in decision making: certainly, we found value to be uniquely and phenomenologically determined (Vargo and Lusch 2004, 2008).

Value Propositions

Value propositions, communications statements that articulate the purpose of the service (Frow et al. 2016), are integral to service ecosystems for linking actors and networks (Maglio and Spohrer, 2008). Because individual actors cannot create value (Vargo and Lusch 2008, 2016), value propositions can help move towards an enhanced understanding of value and the actor's role in its cocreation. In contrast, our findings revealed a situation where *"we all play our separate roles rather than agreeing what our roles will be in the care of this patient"* (HS). This was particularly apparent among other professionals in relation to the hospice, *"I don't think it is always clear what its role is. Is it as an adviser at a distance? A provider of care? …"* (GP). Additionally, value propositions shape expectations of value-in-use in a specific context (Edvardsson et al., 2011). Misconceptions that hospice care is solely for the dying abounded, often caused a delay accessing care for patients: *"I thought Hospice? You go there to die!"* (In-patient), and bereaved families who expressed regret at their hesitancy: "*we thought, 'no we're not ready for that.' Had we known, we would have done it earlier".*

Intentionality

Recall one of the differences between a service ecosystem perspective and other theoretical lenses is a focus on the wellbeing of the ecosystem itself (Frow et al., 2019; Vink et al.,

2020). Consequently, during interviews we probed respondents as to what, from a practical perspective, could improve service for patients and staff. One common and consistent theme emerged: the opportunity for the hospice to take a more strategic role. A willingness to learn from each other, with the hospice leading the integration efforts, emerged strongly. Community nurses felt a step towards better coordination was role clarification of community and hospice nurses, providing an example of the need for clear value propositions. Hospital staff and GPs also felt that the hospice, as a SPC provider, should take an enhanced educational role. Participants desired specialist input from the hospice around the practicalities of symptom management. Community nurses felt opportunities to accompany hospice nurses on home visits would help greatly, particularly in the area of difficult conversations: *"I'd much prefer to go with someone and just observe how they have those conversations, it is hard to be taught how to have a conversation"* (CN). Hence, practical suggestions of new ways of sharing operant resources to enable ecosystem change for strategic benefit (Vargo and Lusch, 2016) were numerous.

Emergence

The hospice has begun to act upon many results. First, the hospice reached out to GPs and local communities to better articulate its value proposition. For GPs, this includes posters, letters, and face-to-face meetings, while community events focus on generating awareness and understanding of hospice services and how families can access them. Second, a new ACP communications skills training package has been developed and delivered to hospice staff, GPs, community nurses, and hospital staff, illustrating how ecosystem innovations emerge through sharing and integrating resources (Polese et al., 2017). Its success has led

to its delivery outside this particular service ecosystem and into other hospitals, hospices, and community trusts in nine other regions. Third, the hospice has hired a new clinical consultant in an education lead role whose responsibility is to work on education and shared learning activities through case studies. Fourth, the hospice has changed the configuration of its hospice@home service and created a new role of 'hospice community registered nurse' to provide support for health and social care professionals. Tasked with using the principles of situated learning, this new post holder will develop palliative and end-of-life care skills, improve knowledge, and build confidence in others. Fifth, the ACE project (Advocating for Clinical Excellence), designed to improve palliative care education, has been extended to include the community nursing teams. Finally, the hospice executive has approved funding for a new community care coordinator and recruitment will take place shortly. What we have here are microfoundations for service ecosystem transformation, where intentionality has led to planned and emergent innovation via changes to institutional arrangements for enhanced value cocreation (Peters, 2016; Taillard et al., 2016).

DISCUSSION

Supportive of previous literature, we found resource issues (Hynes et al., 2015) and poor communication and integration among the various providers (Liberati et al., 2016) to emerge as contributing factors that negatively impact the patient experience. In line with the research aims, this discussion focuses on the practical recommendations for improvement that results revealed, as well as implications for service ecosystem literature. What also clearly materialized from the professional interviews was a real concern for

patients and families, particularly when the focus moved to unmet needs. Mutualistic relationships require multi-way information flows (Black and Gallan, 2015), so in the interviews with professionals we utilized examples where value co-destruction (e.g. poor coordination) had resulted in less than optimum care for patients, effectively removing the distinction between service provider and recipient to examine the service from the vantage point of each (Frow et al., 2016; Gummesson et al., 2019). This shifted discussions from problems to practical ideas for innovation, revealing clear intentionality to improve the wellbeing of the ecosystem. The unexpected appetite among diverse professionals for the hospice to take a lead in the ecosystem goes against much previous literature on power and legitimization of professional boundaries (Liberati et al., 2016; Powell and Davies, 2012). We uncovered a strong desire for collaborative power, which, in contrast to the zero-sum situations found when one actor dominates another, represents agentic power of inter-professional team-working (Nugus et al., 2010).

Viewing the overall offering of the system of service systems as the value constellation, actors can collaborate to innovate (Beirão, et al., 2017). These innovations need consideration of operant resources nested within the ecosystem. Resource integration allows the service ecosystem to be (re)formed (Vargo and Akaka, 2012) which starts with shared intentionality (Taillard et al., 2016). Our results manifested shared intentionality and identification of ways in which operant resource integration, in the form of the hospice expertise, could enhance value cocreation. Interestingly, Peters (2016) argues that the term emergence is preferable to (re)formation, because emergence suggests from the pre-existing arises something new. Certainly the hospice was a pre-existing agent, but the suggested new roles of leader and facilitator actually removes some of the usual tension

between structure and agency, and instead encourages the hospice to take the role of 'institutional entrepreneur' as the actor to initiate the changes (Hartmann et al., 2018). Just as power can be agentic, so too can dependence of one actor on another be beneficial to the ecosystem when it leads to increases in trust and collaboration (Frow et al., 2016).

That the hospice acted upon these findings is important. Here are microfoundations of an enhanced service ecosystem insofar as actor engagement, the roles of specific actors in building new capabilities, and the emergence of new institutional arrangements for service pave the way for future value cocreation (Barney and Felin, 2013; Hartmann et al., 2018). Inherent in the dynamics of system changes is the agency of actors to find solutions in order to create value (Storbackaet al., 2016), which is particularly crucial in healthcare given the importance of local contexts (Lanham et al., 2013; Spinnewijn et al., 2020). Paradigm shifts in palliative care demand more than training existing clinicians: changes to core ways care is organized and delivered are needed (Hynes et al., 2015). While still very much in their infancy, the changes made thus far in terms of sharing operant resources for reconfiguring service have the capacity to be significant. New institutional arrangements such has sharing critical case studies and situated learning will in time potentially change and evolve habitus due to interaction with different individuals and external influences (Spinnewijn et al., 2020). Tentatively, we suggest that we have already begun to see the new cycle of arrangements to cocreate value which, in time, will lead to more intentionality and more innovation (Koskela-Huotari et al. 2016; Storbacka et al. 2016), paving the way for further enhancement of the ecosystem wellbeing (Frow et al., 2016).

The study of microfoundations to value cocreation is still in its infancy, though in the social science literature more generally the need to connect micro and macro factors continues to be an important debate. How micro level factors aggregate to the collective level is fundamental to understating the origins of capability (Barney and Felin, 2013) to better equip actors to deal with macro level pressures. Macro level trends demand examination of value in the unique service context in which it emerges (Meynhardt et al., 2016). We illustrate the ways micro level initiatives implemented so far are already resulting in meso level changes to the service system. The new communications strategies targeted at GPs and the local community aim to clarify the hospice's value proposition, which should ultimately lessen hesitancy and delays to referral. These meso level changes should eventually decrease the number of hospital admissions, hence they respond to macro level pressures. The inclusion of pathographies of patients and their families and the subsequent introduction of interdisciplinary case study and situated learning aim to improve patient-centered care. The new meso-level community care coordinator aspires to foster interdependence and coordination among actors to change the way palliative care is organized and delivered in the community. These results therefore demonstrate empirically the ways in which institutions and institutional arrangements change the micro-macro level interaction (Lusch et al., 2016).

In sum, we found the service ecosystem lens, as a conceptual framework that organizes and integrates many different theories and models (Vargo and Lusch, 2016), to be highly advantageous in spotlighting palliative care improvements. Examining value cocreation from the perspective of multiple actors meant we zoomed out from the narrowly defined clinical micro perspective that comprises much healthcare research (Beirão et al., 2017). Taking a

generic actor-to-actor perspective removed predefined roles of service provider and user (Fujita et al. 2018), which emerged as particularly important to family caregivers who are clearly both service users and providers that cocreate value. The service ecosystem lens enabled us to examine multiple networks nested within the overall system, but rather than take an organizational level view of service, the incorporation of the systemic perspective (Maglio and Spohrer, 2008) enabled a richer analysis from micro, meso, and macro levels, which is important in healthcare systems (Meynhardt et al., 2016). We demonstrated empirically how a focus on value cocreation expands the study of institutions from concentrating on conflict to one of intentionality (Taillard et al., 2016) to reform and reconfigure resources in order to stimulate innovation (Lusch et al., 2016) for ecosystem wellbeing (Frow et al., 2016) and the emergence (Peters, 2016) of new real-world value cocreation practices .

CONCLUSIONS

Aggregation in palliative care, like many health services, is complex. Literature often calls for emergence without analyzing the mechanisms, processes, actors, and micro level factors that lead to aggregation (Barney and Felin, 2013). By examining the microfoundations of future value cocreation, we have uncovered previously unforeseen aggregates that have the potential to transform palliative care services within this service ecosystem. Of course, not all interactions lead to resource integration (Peters, 2016), and these new integrations are very much in their infancy. Opportunities exist for study into the ways in which microfoundations of value cocreation develop shared heuristics that provide some stability within the ecosystem (Lusch et al., 2016). This research has resulted in new institutional

arrangements that lay the foundations for integration in ways that previously did not exist. Aligned institutional arrangements facilitate improved service through optimum use of resources and synergies, and can ultimately reduce costs (Hartmann et al., 2018) by reducing duplication and resource wastage.

Barney and Felin (2013) argue strongly that scholars researching capabilities should focus on organizational design. We disagree with this perspective. We argue that in complex service systems, the focus must be on service design rather than organizational design, approached from the perspective of aggregation. No single organization can deal effectively with the macro level pressures facing palliative care. The search for solutions needs to be not at the organizational level or even the network level: it needs to consider new ways of designing service through the shared institutional arrangements of interdependent assemblages of institutions that are nested and interlocking within the service ecosystem (Wieland et al., 2016; Vargo and Lusch, 2016). From a service ecosystem perspective, innovation is a change in value cocreation, with new institutional arrangements serving as the context for future value cocreation (Lusch et al, 2016). Even ideas for innovations and improvements, as we have demonstrated here, develop not at the single organizational level but from joint action (Koskela-Huotari et al., 2016).

Much of the extant service ecosystem literature is conceptual. Consequently, there are major calls for empirical studies into service ecosystems in general (Koskela-Huotari et al., 2016; Vargo and Lusch, 2017) and health service ecosystems in particular (Beirão et al., 2017; Black and Gallan, 2015). Previously underexplored, it is important to understand the forms and roles that shape ecosystem practices (Frow et al., 2016), to include public,

private, and organizational actors and their interactions (Beirão et al., 2017), in order to begin to close the gap in how complexity can be better managed (Gummesson et al., 2019). This research responds directly to these calls.

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Table 1: Service Ecosystem Key Theoretical Premises

Key foundational premises	Conceptualization	Theoretical foundations	Key theoretical inferences	Practical implications for palliative care
Service is the fundamental basis of exchange.	Note the distinction between service (a process) and services (units of output). Human beings rely on each other via exchange of skills and competences, for mutual wellbeing.	Service Marketing Service Design Marketing Management	Moves away from a principal focus on outputs to processes (service provision and value cocreation). Cocreation of value is foundational to markets. A service-centered view is inherently beneficiary oriented and relational. Exchange comprises relationships rather than transactions.	Mirrors the health paradigm shift from traditional paternalistic professional and passive patient towards a more enabling and collaborative partnership.
Value is *co*created by multiple actors, always including the beneficiary.	A collaborative, concurrent process of producing value, materially and symbolically. An individual actor cannot create value, they can only participate in the creation and offer value propositions. Not to be confused with a position that all actors are identical	Actor Network Theory (ANT) Stakeholder Theory Relationship marketing	Moves away from dyadic or even triadic and micro perspectives which are too restrictive. Provides a more comprehensive understanding of networks: moves from predesignated roles of provider and service user to a generic actor-to-actor orientation. Encourages less myopic, organizational and role level view of service, to holistic perception of value.	Palliative care, as a type of holistic care, requires input from multiple actors. In the UK, these actors span primary, secondary, and community services.
Value is always uniquely and phenomenologically determined by the beneficiary	Different actors perceive different realities based on their perspectives and roles (habitus and field)	Consumer Culture Theory Theory of Consumer Taste Formation	Concentrating on limited actor categories is insufficient: there is a need to zoom out to understand the configurations of a multitude of interconnected actors. Value assessment requires consideration of the multiple dimensions of value, within a given context.	Palliative care evaluation requires service user and provider perceptions rather than pre-determined quality of care indicators. Each palliative care service experience is unique.

				Palliative care providers cannot assume they know what patients and their families need from the service.
Value-in-use	Context is essential for understanding the perception and determination of value. Value is phenomenological, multidimensional, and emergent, hence the determination of value differs throughout the service ecosystem.	Extends as far back as Aristotle. Marketing Theory	The potential for resources becoming realized is contextual and each context is unique. Transcends prior views on value-in-use, taking the perspective that value can only be cocreated. Evaluation of value-in-use is based on the ability of the ecosystem to adapt within its specific social context Value propositions shape expectations of value-in-use in a specific social context. Value propositions can move actors from passive to active players.	Understanding service and value can in this way helps to spotlight to palliative care providers that they alone cannot create value. Value propositions help diverse actors (SPC and non-specialists) providers to articulate the purpose of their service, help understanding of the key linkages within the overall palliative care service ecosystem, and encourage new and dynamic relationship formation
Value cocreation is coordinated through actor-generated institutions and institutional arrangements	Institutions are rules, norms, meanings, symbols, conventions, normative and heuristic guidelines. Serve as constraints on individuals' behavior (agency versus structure) Institutional arrangements are interdependent sets of institutions Embedded in social networks and associated institutions are relationships between actors.	Practice Theory Habitus (internalized, mental schemata) Field (overlapping domains of social structure) Institutional Theory Institutional Logics New Institutional Economics	This is the service ecosystem: the mechanisms of coordination and cooperation involved in cocreation of value Actors constrain and coordinate themselves through institutions and institutional arrangements. Institutions can lead to ineffective dogmas, ideologies, and dominant logics. Acknowledgement and understanding of the existence and role of institutions and institutional arrangements are essential to understanding value cocreation. Actors sharing institutions leads to enhanced network effects for improved value cocreation.	Reflects the promised service model of "properly joined-up care" Effective collaboration – enabled through enhanced coordination and institutional arrangements – can improve patient care and reduce care failures. Philosophical differences between palliation (care) and the focus of other disciples (cure) can lead to tensions between SPC and non-SPC providers, and between different disciplines (e.g. oncology and cardiology)

			Enables zooming out for a more holistic, dynamic, and realistic perspective of value creation, through exchange, among a wider, more comprehensive configuration of actors. SDL's perspective on value cocreation expands the study of institutions to incorporate cooperation and coordination as well as causes of conflict and its potential resolution.	
Value cocreation occurs through resource integration	All social and economic actors are resource integrators Value creation can only be fully understood in terms of integrated resources applied for another actor's benefit (service) within a context. Operant (e.g. human skills and knowledge) and operand resources (e.g. physical assets) do not have intrinsic value. They become valuable only when applied or integrated.	Resource Exchange Theory Complex Adaptive Systems (CAS) Theory Service Science Economic Growth Theory Resource Based Theory of the Firm	Moves away from linear and flow views of value creation towards a dynamic and complex exchange perspective. Each integration of resources changes the nature of the network: hence network understanding alone is inadequate and a more dynamic systems orientation is necessary. Service provision implies the ongoing combination of resources, through integration, and their application, driven by operant resources	Mirrors the paradigm shift toward inter-professional collaboration replacing traditional models of individualism and autonomy. Current and future severe pressures on palliative care resources demand new ways of working.
A service ecosystem comprises Micro, Meso, Macro Levels	These levels do not exist independently of each other. Changes at one level impact other levels	Structuration Theory	Structural assemblages require analysis at various levels of aggregation. Enhanced analysis of structural assemblages. Shifts attention from parts to the whole.	Palliative care actors are all part of a larger and more complex service system. Macro (government and social) pressures impact palliative care patient encounters (micro level). The ways in which palliative care services are

			An oscillating foci is required to adequately understand activity at any level Reveals additional structural details not apparent from a more dyadic, micro-level view, or even a focus on the micro-macro without consideration of the meso level	(re)designed at the micro and meso (organization) levels can alleviate (or intensify) some pressures.
Intentionality	The service ecosystem can be (re)formed when actors, viewing themselves as part of the larger system, intentionally reconfigure institutional arrangements that guide value cocreation. Differentiates service ecosystems from biological ecosystems	Theory of Effectuation	Innovation is not only the result of producers and inventors. Resource integration provides opportunities for the creation of new potential resources. Intentionality is encouraged to enhance shared worldview. Uncovers insights into ways actors can intentionally influence long-term change	Palliative care services can be enhanced when actors consider their role in their ecosystem vis-a-vis other actors. Any palliative care actor can become an innovator by identifying new ways of integrating operant resources to cocreate value. Palliative care actors can be encouraged to become institutional entrepreneurs
Service Ecosystem Wellbeing	The focus of the service ecosystem is collective wellbeing. Value cocreation enables wellbeing	Viable Systems Approach Social Capital Theory	Social and cultural capital are resources that enhance organizational performance.	Adoption of the ecosystem perspective can strengthen and develop new relationships between actors which in turn strengthens the viability of the service ecosystem.
Emergence	A property of a system that is not present in its parts, but that arises from their interaction Process of coming into view after being concealed	Emergence Theory	Service ecosystems are envisaged and created through institutionalization. The emergence of intentional, long-term change happens in service ecosystems—a critical understanding that has been absent in previous literature.	Changes the focus from understanding how and why discord occurs, to how shared purposes between multiple actors can lead to new ways of working to create new resources and improve the palliative care service to patients and families.

Table 2. Participants

Participants	**n**	**%**
Hospital Staff (HS)		
Nurses	7	13
Frailty Consultant	1	2
General Practitioners (GP)	5	9
Community Nurses (CN)	4	8
Care Home Managers (CHM)	4	8
Inpatients	4	8
Day/Outpatients/Hospice@Home	14	27
Caregivers (current patients)	4	8
Bereaved Caregivers	9	17
Total	**52**	**100**

Figure 1. Palliative Care Ecosystem