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Using Ripple Effects Maps to Identify Story Threads:
A Framework to Link Private to Public Value

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Extension professionals must demonstrate organizational value to garner public awareness and support. Measuring and communicating outcomes that have public value can be challenging. In this study, Ripple Effects Mapping incorporating the Community Capitals Framework was used to evaluate a childhood obesity prevention study, iCook 4-H, of youth-adult pairs in Maine. The objective was to describe the process of generating impact statements through story threads about program benefits to the participants and the potential benefits to nonparticipants, such as family members, friends, and other community members. Extension professionals can use storylines, or story threads, as a qualitative research technique to generate stories about private and public value from participants' actions, experiences, and emotions following community programs. The story threads process can be used across disciplines to leverage community program data into public value messaging.

Keywords: ripple effects mapping, private value, public value, story thread, action statements

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Introduction

As funding opportunities are shifting and competitions for grant dollars increase, Extension programs need significant, measurable outcomes and impacts (Hachfeld, Bau, Holcomb, & Craig, 2013). Too often, program evaluation consists of data on inputs, activities, participants' involvements, and feedback or changes in knowledge without providing evidence of changes in behavior and potential long-term social, economic, and environmental changes (Franz & Townson, 2008; Riggins, 2017; Stup, 2003).

The value of community programs must be expressed in captivating ways to garner public awareness and support (Franz, 2011; Franz, Arnold, & Baughman, 2014). Common methodologies for expressing program value have included storytelling (Boyer et al., 2009; Franz, 2013), system-wide benchmarking (Archer et al., 2007), and impact indicators (Morse, French, & Chazdon, 2016). Determining value entails understanding and documenting what lies between the description of private benefit gained by the program participant and an expression of community benefit. Riggins (2017) emphasized that federal decision-makers must take this one step further by going from individual awareness and community-level outcomes to public value outcomes at a federal level.

The purpose of this article is to present a process that could be used to capture participant thoughts and communicate private value and public value of a health promotion program. Evaluation data generated from a 4-H obesity prevention program were used to identify story threads or storylines about linkages between private value and potential public value of the program. Ripple Effects Mapping (REM) incorporating the Community Capitals Framework (CCF; Emery, Fey, & Flora, 2006) was implemented as a qualitative evaluation of the evidence-based five-state study, iCook 4-H (White, Colby, Franzen-Castle, Kattelmann, & Olfert 2014), and data from Maine were used to detail the process.

Background

Value

Many public sector program leaders are able to articulate program benefits to their participants, and if they fail to do that, programs seldom survive initial offerings (Morse, 2009). Demonstrating program impact to the larger community may be especially challenging.

Bennett (1975) emphasized the need to report on the ultimate impact of programs, urging Extension to focus on the end results in addition to inputs, participation levels, knowledge gains, and even practice changes. Bennett and others concentrated on planning and evaluating for the public good by focusing on the ultimate impact to program participants (Bennett, 1975; Bennett & Rockwell, 1995; Radhakrishna & Relado, 2009; Rockwell & Bennett, 2004). Using principles of public sector economics, Kalambokidis (2004, 2011) developed a technique to help Extension

teams distinguish between the types of ultimate impact, splitting them into public value, the value to nonprogram participants, and private value, the value to program participants. Using this technique, teams can provide tangible examples, stories, and evidence of how the program benefits the program participants. This is essential because Extension's public funding depends on much more than direct participant support (Morse, 2009; Riggins, 2017).

Kalambokidis (2004, 2011) used logic to develop public value statements by linking private value benefits for participants to the public value benefits for nonprogram participants. Chazdon and Paine (2014) defined public value with a focus on the program audience, the credibility of the delivery organization, program outcomes, and broader impacts of programs found in the Evaluating for Public Value model. The term "broader impacts" represents the spillover or potential public value gained by nonparticipants. It is not enough to describe program benefits only in terms of participants; program providers must address how the program would impact constituents who did not participate. Public value statements, when substantiated with research, are perceived as more robust (Downey, Peterson, & Franz, 2017; Franz, 2015; French & Morse, 2015; Haskell & Morse, 2015; Kalambokidis, Hinz, & Chazdon, 2015; Morse, 2009).

Stories

Riggins (2017) discussed the challenge of translating individual-level program value or outcomes to national-level outcomes. An individual's success is invisible to people who have never seen, met, or heard of the program participant (Riggins, 2017). The success can be embedded or translated into a story, and if told well, lets people see value beyond the individual.

Stories allow people to open up and say what they know, think, and believe. For example, students in a Cornell action research class conducted a series of interviews with Extension staff members, some of whom felt they were in positions that were not valued by the Extension system. These interviews became stories about concrete practice, reflections, and making meaning from decades of skilled practice (Peters, Grégoire & Hittleman, 2004). These singular stories fostered a sense of individual as well as a larger sense of importance (Peters et al., 2004). These stories and others connect theoretically to other outcomes that may not be talked about as the social determinants of health and families (Riggins, 2017).

As noted by Krueger, "writers who best translate research findings use stories" (Krueger, 2010, p. 404). According to Cron (2012), the brain is wired to think in stories. Narratives are built to make patterns of data and use stories to make sense of the world (Rock, 2009; Zak, 2013). Although people listen and relate to stories in different ways, there are common components of good stories. At the very least, there is a character with a desire, who encounters a barrier or conflict, resulting in the character being transformed (Cron, 2012; Dixon, n.d.; Hill, 2011; Rock, 2009). In other words, there is a problem and solution, with a relatable protagonist, (i.e., called a hero in storytelling culture) at the center (Cron, 2012). Good stories do not have complicated words or emotions; they are understandable and human-centered (Dixon, n.d.; Hill, 2011).

Stories have common components and contain threads that grab the reader's attention. Stories connect people with emotions, are memorable, generate insights, and make a point (Dixon, n.d.; Krueger, 2010). The beginning and ending threads convey the character's actions, experiences, or emotions. The threads connect the story's point from beginning to end and can lead to a discussion of value beyond the individual level.

Evaluation of Youth Development Programs, in Brief

Stories are naturally embedded in youth-related programs. The 4-H program, delivered by Extension across the nation, is known for developing a child's interests through varied, personal experiences where meaningful face-to-face interactions are repeated and build toward a thriving trajectory for their lives rather than a static state. Thriving youth are more likely to achieve positive developmental outcomes (Arnold, 2015) and successfully transition to adulthood, marked by health and well-being, economic stability, and civic engagement (Arnold, 2018). Lerner, Almerigi et al. (2005) found that young people are more likely to thrive if they have mutually beneficial relations with the people and institutions of their social world. As they make positive contributions to self, family, community, and civil society, youth will thrive, and they unwittingly become the main characters in their own development stories.

Describing how youth thrive, develop, and contribute to community vitality demonstrates both private benefits and potential public benefits. The way they benefit can be illustrated by a story, often found in short-term evaluations, and can be used to collect evidence of changed behavior. Yet, those who evaluate youth programs have difficulty expressing public benefit or public value because most youth evaluation measures have not been designed to target a unit of analysis that fits between the capacities of young people and broader impacts of positive development in their communities (Lerner, Almerigi, et al., 2005; Workman & Scheer, 2012). Lerner, Lerner et al. (2005) stated that thriving youth who have the five Cs (competence, confidence, connection, character, and caring or compassion) in place develop a sixth C, contribution – to self, family, community, and civil society. This implies that the broader community (public) that is not directly involved in the youth program will also gain or benefit, and this broader impact (public value) should be measured (Chazdon & Paine, 2014).

Ripple Effects Mapping (REM) and Community Capitals Framework (CCF)

Chazdon, Emery, Hansen, Higgins, and Sero (2017) created *A Field Guide to Ripple Effects Mapping* to elucidate how this group process method unfolds to display the intended and unintended impacts of participant efforts in a way that encourages discussion and engagement. With REM, elements of Appreciative Inquiry (AI), mind mapping, group interviewing, and qualitative data analysis can be used in a retrospective approach to evaluate and understand a complex program's anecdotal outcomes and impacts on individuals, organizations, and communities (Emery et al., 2006; Emery, Higgins, Chazdon, & Hansen, 2015; Hansen Kollock, Flage, Chazdon, Paine, & Higgins, 2012). Program and community stakeholders can visually

map the "performance story" and document positive outcomes and changes. Three basic evaluation questions are used to explore the meaning participants make of skills, knowledge, and attitudes they gained, providing a way to reflect on the broader impacts (created or maintained) of their work together in the community (Baker & Johannes, 2013).

Emery and Flora (2006) recommended using the CCF approach for a comprehensive analysis of how successful communities work. Capitals are assets or resources within communities that directly impact the health and wellbeing of humans (Flora & Flora, 2008). Communities most successful in supporting sustainable and entrepreneurial development pay attention to the role of and interactions among all seven types of capital: Natural, Cultural, Human, Social, Political, Financial, and Built (Emery et al., 2006).

When CCF is integrated into the REM approach, perspectives on positive program outcomes and impacts from and on participants, stakeholders, and the community appear to be more detailed (Baker & Johannes, 2013; Hansen Kollock et al., 2012). While engaged in the process of connecting REM answers to Capitals, people think about how the program or experience might ripple and build community assets (Flores, 2013; Nathaniel & Kinsey, 2013). In this study, groups with youth members used a youth-friendly CCF description (Table 1) embedded in the REM process.

Table 1. Youth-Friendly Version of the Seven Community Capitals

Built	Structures and facilities that support a community, such as communications, roads, and buildings.
Cultural	Activities, foods, creativity (local traditions, art, and music), and ways of thinking that are familiar.
Financial	Money available to invest; includes helping or starting businesses and giving money and goods to those who need it.
Human	Knowledge, skills, and abilities of people; also includes leadership ability and health and wellness of people.
Natural	Natural resources and natural beauty like rivers, parks, outdoor recreation, and farmland.
Political	Access to decision-makers, such as student council, school board, or town councils. Power of individuals and groups to influence rules or budgets.
Social	Connections among individuals and groups that help make things happen; includes bonding with people you know and bridging to new people or seeing people in unfamiliar roles.

Adapted from Baker, Calvert, Emery, Enfield, & Williams (2010); Calvert, Emery, & Kinsey (2013); Catts & Ozga (2005); Chazdon, Scheffert, Allen, & Horntvedt (2013); Flora & Flora (2008).

REM, Storytelling, and Public Value

Starting in 2012, authors began to link Ripple Effects Mapping, storytelling, and public value in the context of identifying public value from the personal value expressed by community program participants (Flage & Chazdon, 2012; Franz, 2013, 2015). They proposed that private value

statements could be developed into related statements that depict value to the greater society. Here we describe a process using data from an Extension community-based program for generating impact statements using story threads to link private and public value.

A Family Pair Intervention Program

From 2013-2015, iCook 4-H, a childhood obesity prevention program, was implemented in five states (White et al., 2014, 2015, 2016, 2017). Family pairs ($n = 228$) of 9-10-year-old youth and their adult main preparer of food were recruited for the two-year control-treatment study ($n = 77$ control, 151 treatment). Recruitment was conducted by using flyers, newspaper and radio advertisements, posters, emails, and postings on social media. Recruitment efforts targeted low-income rural, and/or diverse populations. To be eligible, youth had to be at least nine years old before the start of the program and not turn eleven years before the end of that year, free from life-threatening medical illnesses, food allergies, and dietary restrictions and have access to a computer with Internet. Participating adults had to be the main meal preparer for the child with no physical restrictions for movement. A random numbers table was generated to determine whether a family pair was in the control or treatment group. The intervention for the treatment pairs included a two-hour, six-session curriculum about cooking, eating, and playing together. The goal was to achieve healthy lifestyles through increasing cooking competence, family mealtimes, and physical activity. After the 12-week curriculum was completed, treatment pairs were engaged for the remainder of the two years using website activities, monthly newsletters, and seasonal in-person booster sessions (White et al., 2017).

At the end of the two years, the 89 treatment pairs remaining in the study were invited to participate in a 90-minute group activity to discuss how the program had benefited them and others who had not been in the program. REM, incorporating CCF and using the highly interactive mapping approach, was used as the qualitative evaluation method with comprehensive training of facilitators to ensure fidelity (Baker & Gill, 2015). During September and October 2015, REM sessions were conducted across the five states with treatment pairs ($n = 35$ pairs) who agreed to participate in the program evaluation. Pairs received fifty dollars for their participation. The Institutional Review Board for the Protection of Human Subjects approved the study at each of the five state universities.

For this article, data from Maine were used to describe the overall process. Of the 24 possible pairs in Maine invited to complete one of three REM evaluation sessions, ten pairs (42%) agreed (White et al., 2017). Essential components of the REM/CCF evaluation (Table 2) included:

- Personnel. The REM facilitator/mapper and note-taker familiar with youth development understood the situation and mapping context. The facilitator ensured identical agendas, embedded with techniques to restate, summarize, and provide opportunities for attendees to member check (change how things were being written, and build on each others' statements by adding relevant observations).

- Mapping process. The session included (a) developing an Action Statement for what program activity was most important, (b) introducing the CCF with relevant, youth-friendly terms (Table 1), (c) asking ripple Questions 1-3, in a sequential order (Table 3), (d) linking each response with the CCF by letter or lines creating a web-like effect, and (e) introducing the terms bonding and bridging, and asking Questions 4-6 in sequential order (Table 3), getting feedback, and discussing how the group might use the data.
- Products. A physical map, which can be hand-drawn, provided descriptive data similar to the maps shown in Figures 1 and 2. At the end of the REM session, the map was photographed to preserve the data. Data were transferred to a report template and included participation statistics.

Table 2. Ripple Effects Mapping (REM) Approach

Personnel	Mapping Process	Products
Facilitator	*Arrange room: Seating around mapping area, Community Capitals Framework (CCF) signs, handouts, Appreciative Inquiry (AI) supplies*	Blank REM map
Facilitator	*Welcome: Introductions*	
Facilitator	*AI: Pairs discuss most important program activities; group chooses most important statements*	Action Statements
Facilitator and Note taker	*Full group discussion:* • *Introduce CCF & REM* • *Three questions* • *Link responses to one or more Capitals* • *Three questions identify responses that bond, bridge, and are most important* • *Feedback & use of data*	Physical REM map
		Session transcript
		REM map photograph
Facilitator	*Combine map and session transcript*	Typed report

Creating Action Statements and Conducting REM Featured in Mapping

Appreciative Inquiry (AI) discourse among participants (Table 2) focused on the program's positive effects. First, youth and adult pairs discussed, "What program activities did you think were most important in each area of cooking, eating, and playing?" Participants reported their answers and then voted for which was the most important for cooking, then most important for eating, and finally, for playing. Because of their foundational nature, these were called Action Statements because they directed or guided all following questions in the REM process. These Action Statements were used in the three basic REM questions (Table 3).

Table 3. Sequence of Ripple Effects Mapping (REM) Questions Building upon Action Statements*

Question 1 (Q1)	*What are people doing differently as a result of [insert Action Statement]?*	
Question 2 (Q2)	*As a result of Q1, who has benefitted and how?*	
Question 3 (Q3)	*As a result of Q2 & Q1, what changes do you see in the way community groups or institutions do things?*	

Upon completion of the three questions with answers linked to Capitals, the facilitator then asked three more questions, indicated by a symbol, and prefaced with, *"As a result of this mapping we have done so far . . ."*

Question 4 STAR		*Which change or impact was most important?*
Question 5 CIRCLE		*Which change or impact was the best bonding experience with someone you know?*
Question 6 TRIANGLE		*Which change or impact helped you make the most new relationships, "bridging" to new people or seeing people in new roles experiences?*

*Baker & Gills (2015), in a training video series used with iCook 4-H participants, detail the application of the steps in the this process. Chazdon, Emery, Hansen, Higgins, and Sero (2017) provide an in-depth description of the REM process (pp. 21–34).

Responses to Questions 1-3 resulted as each person reflected about their program experience. The central prompt, or map core, used by the program designers was "iCook 4-H Cooking, Eating, and Playing Together." Answers to Question 1, *"What are people doing differently as a result of . . ."* were written in a ring next to the map core (Figures 1 and 2). After all answers were recorded in the first ring, the facilitator asked participants to compare each answer to the Capitals. The first letter of each Capital identified by the participants was placed in front of each Question 1 response. Next, participants were asked Question 2, *"Who benefited from . . . (the answers recorded from Question 1).*" Each answer was compared to the CCF and linked by line, arrow, or proximity to a response in the first ring, thus creating a second ring. Using the same process with Question 3, "*What changed in the way community groups or institutions do things?"* created a third ring.

While the map was being created, a note-taker simultaneously recorded responses electronically on a mapping report template. Words on the map and the note taker's typed account were compared immediately after the event and assigned a session number (e.g., REM1). Data from the report template and map were used to discern story threads.

Figure 1. Model of the Ring Nature of a Ripple Effects Map
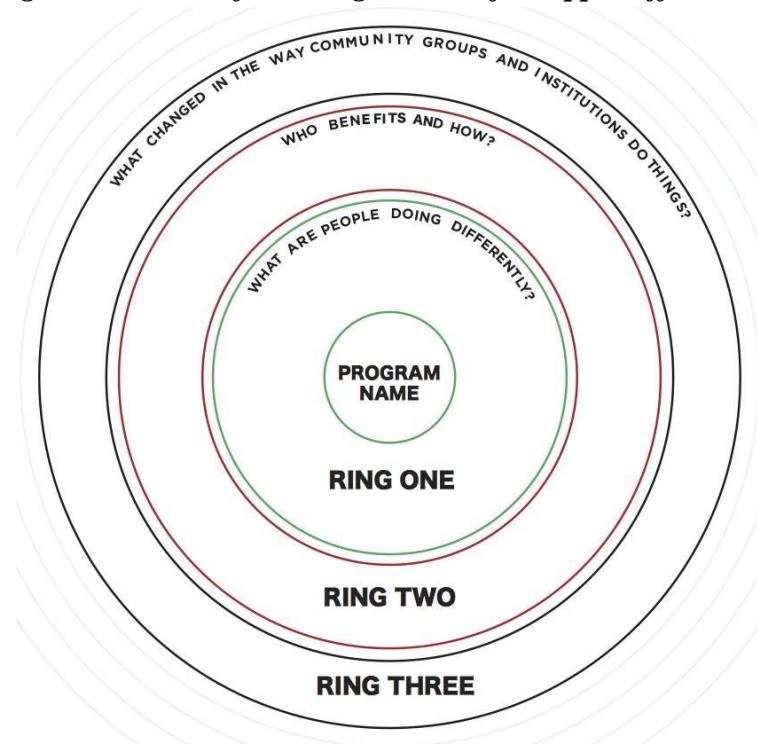
## Action Statements Identified by Youth-Adult Pairs

Action Statements, the most important, memorable, or successful actions from the intervention program's core areas of cooking, eating, and playing, from the three REM sessions are presented in Table 4.

Table 4. Action Statements: Core Program Activities Identified in Each Ripple Effects Mapping (REM) Session as Most Memorable

	Cooking	Eating	Playing
REM1	Learning to read recipes	Trying new vegetables, new mixtures, and new things	Running and checking your pulse
REM2	(Learning) kitchen skills and (having) time together	Trying new things	Laughing together and staying active
REM3	Cooking new recipes and using knives properly (and) avoiding cross-contamination	(Having) open conversations while eating together	Playing games together

Participants used their Action Statements as a foundation to respond to the questions in Table 3, first to questions 1-3, comparing their responses with the CCF, followed by responses to questions 4-6. An example of a partially completed map is shown in Figure 2.

Figure 2. A Partially Completed Map of REM1 Data
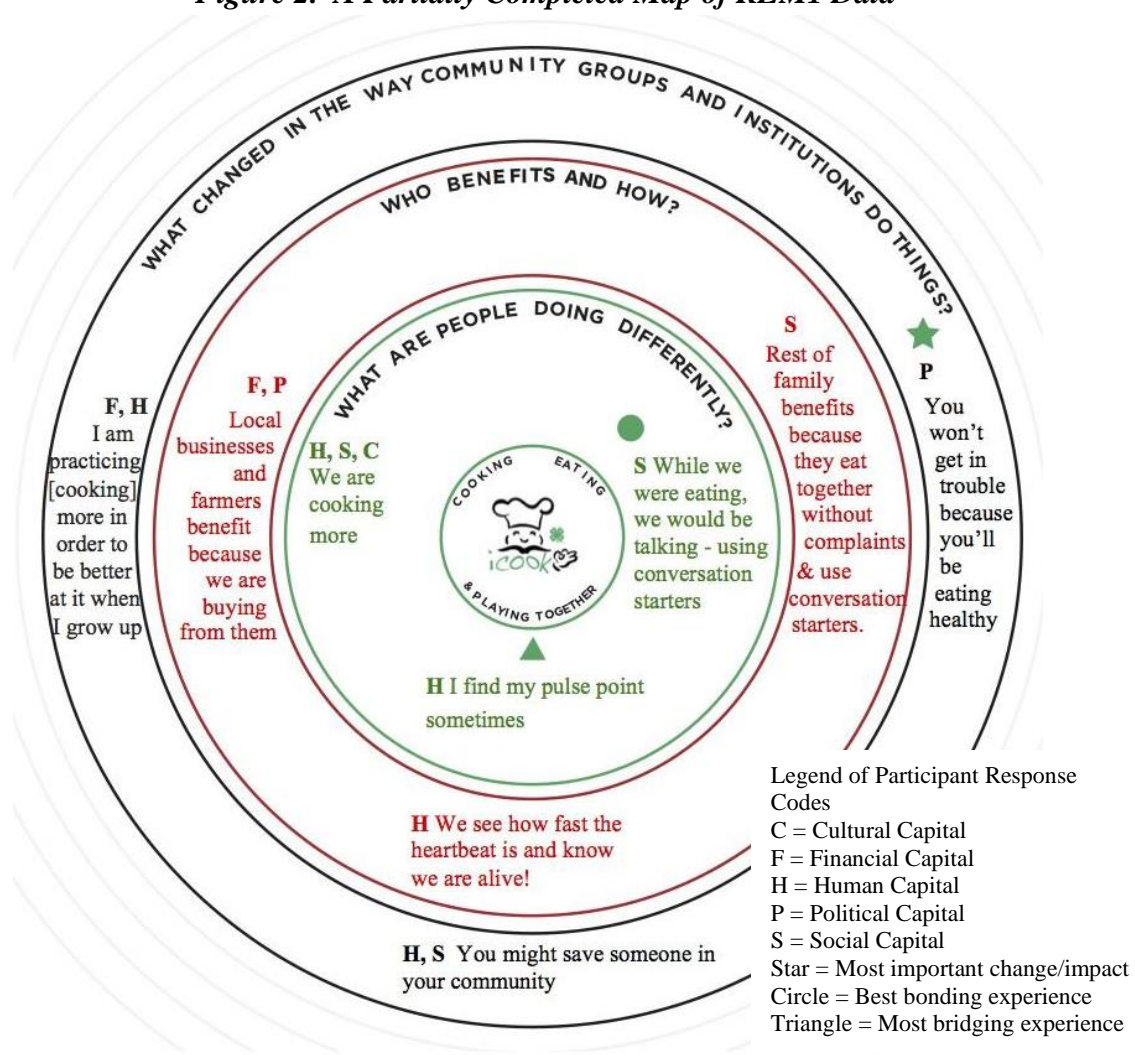
An example of raw data from one component, cooking, of REM1 (Table 5), shows how a typed report template makes it easier to read the three rings that connect to that REM's Action Statement. Note how the report template shows all verbatim responses for cooking not shown on Figure 2's partial map.

Table 5. REM1 Map Data in Report Template Format from Core Program Area of Cooking

Action Statement	Q1. People doing differently?	Q2. Who benefits? How?	Q3. Community doing differently?
Because we learned to read recipes . . .	"We are cooking more."	"[We are] supporting local businesses and farmers benefit because we are buying from them."	"I am practicing [cooking] more in order to be better at it when I grow up." "Our family is eating healthier more often; [our] church [has healthier] potluck dinners."
		"My children are benefitting because they will know how to eat healthy for the rest of their lives and keep out of hospitals." "We are giving children a good foundation of all [the Capitals] - all in balance."	"I'm making better eating choices." "We are inspiring other parents to cook more and to seek cooking classes for families – they have them now at Y-programs."
	"We are learning to cook independently."	"We (youth) will know how to cook when we grow up."	"[A youth said] we can teach our kids how to cook."
	"We are trying new recipes."	"Whole family benefits because older brother likes her cooking and so she tries new recipes."	"Youth and parents in class become a powerhouse in the home and earn more money to build a house."

Data Analysis

To be able to develop a story thread, consecutive data segments had to convey that someone was doing something (an action) differently than they had before and that they were benefitting now and possibly in the future, *and* that the changed behavior could benefit others who did not participate in the program. The map photos and reports were reviewed to find participants' words that referred to program benefits or value, including references to personal and family benefit because the program involved youth-adult pairs. Data were imported into NVivo 11 Pro for Mac software (QSR International) and coded and analyzed by question, Community Capitals, and value. Data were examined for pivotal words indicating changed behavior, motivation, or attitude for self, family, or beyond the family unit (Olfert et al., 2016, 2018; Olfert, Hagedorn et al., 2019; Olfert, King et al., 2019). The benefits reported by participants as being beyond their family unit were also assessed for consistent demonstration in this as well as other scholarly studies (Centers for Disease Control and Prevention, 2014).

Results and Discussion

During analysis, data appearing in word clusters that suggested a change were called word thread segments. These segments were connected into at least 16 story threads in the program's core areas of cooking, eating, and playing together. The focus of this article is on the process for developing three story threads in the program's core area of cooking.

Developing a Story Thread

Word thread segments were identified from the map and report template responses to Questions 1-3 (Table 6); they are the precursors to the story threads.

Table 6. Word Thread Segments: Precursors to Story Threads

Cooking Together Action Statement	Q1. People doing differently?	Q2. Who benefits? How?	Q3. Community doing differently?
Segment 1. Because we learned to read recipes . . .	**Segment 2**. . . . we are cooking more.	**Segment 3.** Local businesses and farmers benefit because we are buying from them.	**Segment 4.** (We are) practicing (cooking) more in order to be better at it when (we) grow up.

Word thread segments were connected into short paragraphs, emerging as a story thread as illustrated in Table 7, where word thread segments from one set of cooking data (Table 6 and Figure 2) were numbered to illustrate the progression of word thread segments into a story thread.

Table 7. Emerging Cooking Story Thread: Sequenced Ripple Effects Mapping Responses as A Short Paragraph

Sequential word thread segments connected, numbered	Segments connected, no numbers, as a story thread
1 Because we learned to read recipes, **2** we have been cooking more. **3** We supported local businesses and farmers who benefit because we bought from them. **4** We are practicing [cooking] more in order to be better at it when we grow up.	Because we learned to read recipes, we have been cooking more. We supported local businesses and farmers who benefit because we bought from them. We are practicing [cooking] more to be better at it when we grow up.

Note: The pivotal word "support" (i.e., "[we are] supporting . . .") found in the raw data recorded in report template (Table 5), emerges again in the story thread; whereas in the word thread segment, who benefitted and how were simply identified (Table 6).

Finding Value in Story Threads

Story threads were then examined for expression of value. Participants' own words provided examples of private value (personal benefit) and possible public value (benefit to those in the community who did not participate in the program) (Table 8).

Table 8. Cooking Story Threads with Private and Suggested Public Value

Because our group learned to read recipes, *we have been cooking more*. We <u>supported local businesses and farmers</u> who benefit because we bought from them. We are practicing [cooking] more *to be better at it when we grow up*.
Because our group learned to read recipes, *we learned to cook independently. We benefit because we know how to eat healthy for the rest of our lives.* It will <u>*keep us out of hospitals*</u>. *We kids see our families eating healthier more often. We are making better eating choices and will know how to cook when we grow up.* As adults, *we are giving children a good foundation.*
Because our group learned to read recipes, *we tried new recipes. Whole families benefited because family members liked our cooking, and so we tried [more] new recipes. They became a powerhouse in their homes.* In our community, we inspired other kids and parents to cook more and seek cooking classes for their families.

Note: These REM1 examples were selected from the report template (Table 5). *Private value is italicized* and indicates an outcome or impact that benefits the program participants. <u>Suggested public value is underlined</u>, indicating outcomes or impacts that may benefit those who did not participate in the program. A private benefit can be seen as a public benefit, e.g., the contribution to lower health care costs in some undefined future.

Selecting Private and Public Value Elements

As story threads emerged, it became evident how program participants, families, and even schools benefited from the program. Word segments were identified from the most common Capitals named by participants: Human and Social. Examples of Human Capital benefits include improved health, increased knowledge, gained skills or abilities, and gained leadership skills. Examples of Social Capital benefits include a sense of security, widened social network with increased community involvement, increased communication, changed motivation, and closer ties with or increased appreciation for family members leading to a better understanding of one another. The complexity with which the word segments connect to Social and Human Capital is seen in the REM1 story thread presented in Table 8 and conveys the potential for some participants to become change-makers within their families and society by influencing food and eating choices:

> Because our group learned to read recipes, *we learned to cook independently. We benefit because we know how to eat healthy for the rest of our lives.* It will <u>*keep us out of hospitals*</u>. *We kids see our families eating healthier more often. We are making better eating choices and will know how to cook when we grow up.* As adults, *we are giving children a good foundation that contributes to balance*.

Social Capital benefits noted in this story thread include a sense of independent identity now, (cooking independently) and in the future (eating healthy the rest of our lives), as well as bonding, acknowledged in the use of "we know" as a shared tie that will help them get by when they grow up. Human Capital benefits noted in this story thread include knowledge, skills, and abilities gained in reading recipes and cooking and increased awareness of connections between health and wellness. Additionally, future thinking was also demonstrated through knowledge

transfer of health costs and data that will not only benefit them but the larger community by decreasing health costs.

Story Threads Contribute to Forming a Public Value Narrative

Because people are wired to think in stories (Cron, 2012), and our brains try to make sense of all the data it continually receives, story threads that conveyed actions, experiences, or emotions of a character (i.e., program participant) were examined. When looking for a quality story thread to illustrate a "point," it was important to have a main character with some sort of conflict/challenge (problem) that resulted in a transformation (solution for them that may evolve into public good) (Dixon, n.d.; Hill, 2011; Rock, 2009).

Story threads that grab attention are important because they contribute to components of what Morse (2015) described as a Public Value Narrative: a story, participation statistics, knowledge of impact research about the result/solution/transformation for the main character, and a public value statement. Story threads found in REM/CCF contribute to (a) the story and (b) participant statistics, the first two components of a Public Value Narrative.

As story threads are evaluated for use in writing Public Value Narratives, it is important to determine if the reported change is isolated or unique to only one individual *and* if the situation is relatable to those who did not participate. REM story threads may provide terms for evaluators to find research documentation supporting the private benefit or value expressed by participants. This, in turn, may lead to crafting one or more fully formed narratives to acknowledge impact research about the result/solution/transformation for the participant and the broader impacts or spillovers for the community. Here are two story thread examples from our study, both relatable and non-unique, that show how to identify a set of pivotal word "clues" or connections to relevant impact research that may support long-term societal benefit:

- The italicized terms in REM1 word segments "We *kids* see our families *eating healthier* more often" and "We are making better *eating choices*" are related to research statements from Centers for Disease Control and Prevention (2014):
    - Healthy students are better learners;
    - Healthy students are more likely to have higher levels of education;
    - Healthy, successful students help build strong communities; and
    - The health of students is linked to their academic achievement, so by working together, we can ensure that young people are healthy and ready to learn.
- The italicized terms in REM3 word segment "[They/*kids*] benefited by *staying active* for *better health* and fitness" are related to research from the Centers for Disease Control and Prevention (2014):

- Students who are physically active tend to have better grades, school attendance, cognitive performance (e.g., memory), and classroom behaviors (e.g., on-task behavior); and
- Higher physical activity and physical fitness levels are associated with improved cognitive performance among students (e.g., concentration, memory).

Youth and adults in Maine's REM data set reported a desire to share the results of the maps with physicians, teachers, health clinics, and school boards with the intent of creating more programs in the community. They identified these people as public decision-makers and wanted the best possible information to persuade them of the program's value so other community members, in ever-widening circles, could also benefit.

Story Thread Cautions

The fourth column of Table 5 illustrates what participants perceived the community was doing differently because they learned to read recipes. However, there are cautions in interpreting and extrapolating to public value statements. Just because there might be potential public value in relatable story threads, a best practice would be to evaluate by asking two questions:

1. Can the content be verified as true in the community?

   - Example: The word segment, "church has healthier potluck dinners" might imply that families brought healthier foods to potlucks, thus benefiting the church members' health.
   - Investigate whether families are taking healthier food to potlucks. Do church members feel their potlucks are healthier now than in the past? Is there research about the relationship between community potlucks and healthier youth?

2. Is the example an isolated or unique impact or benefit for one person or one community, rather than being replicated in other communities and supported by other researchers?

   - Example: The word segment, "earn more money to buy a house" might imply that healthy cooking led to money saved (so you can buy a house).
   - Investigate: Did most families find savings through cooking skills? Did enhanced cooking skills give most participants greater earning power? Is this an outlier response for one individual that provides a novel approach to an old problem? Is there research that supports these outcomes?

If the investigated answer is "no" to any of these questions, these word segments or components in the story thread are not supported and do not appear to authentically express public value, the

indirect benefit to those who did not participate in the program. This does not mean the entire story thread is invalid, as is illustrated by participants who report *making better eating choices*, *eating healthier*, and *staying active*.

Although the goal of this study was to determine if story threads communicating private and potential public value could be found in one state, a limitation to the data might be that the sample is small. Yet, in this small subset, story threads *were* found with an embedded story that links to participants in the four other states. Further analysis of the five-state REM data may provide substantiation for the private and public value stories for the full study that were generated by this small data subset (Olfert, Hagedorn, et al., 2019). The questions can be asked: Do threads from one of the five states recur in the other four states? Are the threads supported by impact research about the projected result/solution/transformation the participants claim? Whether or not the statements are found in the other states, the important outcome is to relate the story thread to the specific community for targeted actions.

Conclusions and Implications

The purpose of this article was to describe a process of finding story threads that could be used across disciplines to create narratives to communicate private and potential public value from community programs. A subset of REM/CCF evaluation data from a five-state 4-H obesity prevention program generated in Maine was used to capture potential impacts of youth-adult engagement. The private benefits to participants in this subset were evaluated for evidence of public value. Framing REM questions with CCF helped participants think deeply about how their program experiences and subsequent actions, not easily seen by quantitative measures alone, might have impacted persons other than themselves.

The core structure of the iCook 4-H curriculum blended qualitative and quantitative measures. This blend used to create story threads could help Extension move beyond evaluation barriers and limitations. Often, Extension is only able to report on knowledge and/or intention to change and works primarily with cross-sectional or short-term pre- to post-program data. REM with CCF would help Extension take a more reflective approach to program evaluation and get at longer-term impacts when attempting to conduct follow-up assessments that involve impacts on direct and indirect participants. This would help Extension better tell their story and communicate not only private but also public value of program offerings.

REM/CCF research has focused on the interaction of community development and youth development programs where social capital is built rapidly (Baker & Johannes, 2013; Flores, 2013; Nathaniel & Kinsey, 2013; Hansen Kollock et al., 2012). *A Field Guide to Ripple Effects Mapping* (Chazdon et al., 2017) also documents programs that use issues chosen by participants take direct action toward civic engagement. The iCook 4-H curriculum used REM/CCF to explore whether broader outcomes are reached through educational intervention alone by honing in on story threads to produce public value narratives. Program funders, including Congress,

want to hear that their money is well spent in addressing public concerns. Using this or a similar tool would help Extension staff, program participants, and local communities build narratives for reporting and soliciting further funding for programs.

Because national and local stakeholders are eager for additional ways to create narratives that express the value of community programs, public value may be revealed by generating story threads that create compelling and comprehensive stories beyond the traditionally reported program outcomes (Riggins, 2017). Capturing relatable behavior and attitude changes as story threads, changes that have a documented research basis, strengthen the findings that the iCook 4-H intervention program may be effective in addressing the public concern of childhood obesity prevention (Olfert et al., 2016, 2018; Olfert, Hagedorn et al., 2019; Olfert, King et al., 2019). Compelling narratives like these may amplify broader outcomes and develop insight into program effectiveness, contributing to the cumulative value of the original program (White et al., 2017). They extend access and opportunity, bring awareness, and operationalize the construct of giving Congress members insight into how local Extension programming outcomes meet federal goals (Riggins, 2017).

For those not familiar with private/public value, the CCF framework, story threads, and the REM approach, this process involves many steps and linkages. A guide with examples of how to find word thread segments, the precursors to story threads, how these segments are connected, and how their connection to private and public value as illustrated in Tables 6 and 7, would help colleagues in other states and programs use this approach.

Evaluation specialists need authentic, relatable, non-manipulated, verbatim story threads, which by themselves do not reveal public value; the stories or value statements need to be validated by research-based data (Kalambokidis, 2004, 2011). Program professionals, many of whom have years of skilled practice, are fluent in the essence of their program (Peters et al., 2004). Extension staff members, provided with an easy-to-understand training about story threads and private and public value, could learn to identify, from REM or other anecdotal tools, word thread segments that convey relatable examples of individuals who had been deeply impacted by a program's core areas (i.e., in this program, cooking, eating, and playing together). The same fluency allows evaluation specialists to augment programmatic assertions with relatable stories linked with the relevant research that translates private value to public value.

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