### Interactive Use of Genograms and Ecomaps in Family Caregiving Research

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### Abstract

In this paper, we argue for the concurrent and comparative use of genograms and ecomaps in family caregiving research. A genogram is graphic portrayal of the composition and structure of one's family and an ecomap is a graphic portrayal of a person or family's social relationships. Although development and utilization of genograms and ecomaps is rooted in clinical practice with families, as research tools they provide data that can enhance the researcher's understanding of family member experiences. In our qualitative research of the supportive and nonsupportive interactions experienced by men family caregivers, the interactive use of genograms and ecomaps (i) facilitated increased understanding of social networks as a context for caregiving, (ii) promoted a relational process between researcher and participant, and (iii) uncovered findings such as unrealized potential in the participant's social network that may not be revealed with the use of the genogram or ecomap alone, or the non-comparative use of both.

### Key words

qualitative methods, genograms, ecomaps, social support, family caregiving

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## Interactive Use of Genograms and Ecomaps in Family Caregiving Research

Family caregiving research contributes to a body of knowledge that informs clinical practice with families across the life span. This research also generates innovative research methods to examine the dynamics of family caregiving including the experience of supportive and nonsupport interaction (which includes absence of expected support). The use of genograms and ecomaps (see <u>Figures 1 and 2</u>) is a valuable research strategy to provide a "visual means of facilitating discussions around the structure and strengths of networks" (Ray & Street, 2005, p. 545) although their original and predominant application is in family therapy. We argue for their increased utilization as a data generation method based on our experience of their contribution in a study of men family caregivers' experiences of supportive and nonsupportive interactions.

The purpose of this paper is to consider the use of genograms and ecomaps as heuristic tools in family caregiving research through examples of their use in our family caregiving research. These tools are graphic portrayals of family structure (genogram) and social relationships (ecomap) (Wright & Leahey, 2005). In our research with family caregivers, these paper-and-pencil activities depicted the caregivers' descriptions of their family structure, social networks, including supportive and nonsupportive relationships that incorporated health-related resources. Our goal is to address the methodological use of genograms and ecomaps in research through this paper, not to report study findings.

The interactive use of genograms and ecomaps in our research involved constructing and analyzing these diagrams concurrently and comparatively in conjunction with qualitative research interviews. The outcomes of this process included development of a rich contextual foundation for social support network research, a relational posture between the researcher and participant, and generation of useful questions during both the data generation and data analysis phases of research. Our concurrent and comparative use of genograms and ecomaps enabled us to identify new information such as the presence of shadow networks with potential for caregiver support within the participant's network of kin, friends and professionals. For the purpose of this paper, we will use examples from our current ethnographic study of perceptions of supportive and nonsupportive interactions of men caring for a spouse or parent with dementia. We have used genograms and ecomaps in other studies of perceptions of supportive and nonsupportive interactions of women and men in diverse family caregiving situations (Neufeld, Harrison, Hughes, & Stewart, in press; Neufeld & Harrison, 1998; Neufeld & Harrison, 1995) as well as in a study of parenting children with life-threatening heart disease (Rempel, 2005). Literature reflecting the use of genograms and ecomaps in research is limited.

### Background

Genograms and ecomaps are used extensively in clinical practice with families, less often in the preparation of clinicians, and rarely in research. Especially useful from a systems perspective, genograms help the clinician to diagram the members of a family in relation to each other; often including three generations, with a view to detecting repeated patterns (McGoldrick, Gerson, & Shellenberger, 1999). Although genograms have come to be used worldwide in diverse family situations, critique of the device as positivistic (Milewski-Hertlein, 2001) and based on traditional views of the family has led to further development of the tool to reflect diversity related to culture, gender, sexuality and spirituality. For example, conventional genogram format has been revised to reflect different religious affiliations (Frame, 2000), diverse cultures (Watts-Jones, 1997) cultural variables of ethnicity, gender, immigration, social class and spirituality (Thomas, 1998), and alternative family situations (Milewski-Hertlein).

The information garnered from ecomaps concerns the social networks of an individual or family and the nature of the bonds within their networks (Hartman, 1995). For assessment and intervention purposes, awareness of the extent and nature of one's social network is helpful for both the clinician and the client. For example, Hodge (2000) developed spiritual ecomaps to assess the role that spirituality plays in one's life and to provide information potentially useful in clinical practice with families. Although clinicians often use genograms and ecomaps in family therapy, implying a longer term and focused family-clinician relationship, Wright and Leahey with the Family Nursing Unit of the University of Calgary, have proposed the 15-minute family interview that includes completing a genogram and ecomap with the individual client in acute care settings (Wright & Leahey, 1999; 2005) although. Utility of this innovative clinical application is becoming evident in the literature (Holtslander, 2005).

In education programs, clinicians learn to use genograms and ecomaps in their clinical work with families. They also gain self-knowledge through intentional personal use of these tools to promote both self-awareness and sensitivity. For example, students construct ethical genograms, spiritual and cultural genograms and ecomaps to enhance understanding of their own backgrounds and to sensitize them to potential influences on their practice with families (Halevy, 1998; Keiley et al., 2002; Peluso, 2006).

There is emerging, although scant, evidence in the literature of genogram and ecomap use in research. Our search of health science literature published in English identified four studies. In three of the four studies, only one of the tools was used, either the genogram or the ecomap. Watts and Shrader (1998) utilized genograms to explore the presence of violence against women in Zimbabwe and Latin America. These researchers offered genograms as a research interview tool to document patterns of decision-making, conflict and vulnerability within families. Helling and Stovers (2005) suggested that genograms are useful in studies where family researchers are interviewing multiple family members. In their research with families transferring ranches from one generation to another, Helling and Stovers interviewed 3 to 8 family members from each family. Participants completed a genogram prior to the interview. The genogram provided a basis for formulating key interview questions and was helpful in ensuring that the researchers considered all family members for an interview. Helling and Stovers recommended that researchers use the genograms early in the data generation phase and that they keep them simple.

Ray and Street (2005) employed ecomaps in their study of caregivers of people living with motor neuron disease. The researchers were particularly interested in mapping supportive networks of "carers" to identify actual and potential sources of nurture. Ray co-constructed the ecomap with the participant during the first interview and presented the ecomap at the second and third interviews to discuss and map changes since the previous interview. This study highlighted the collaborative potential of the mapping exercise and the utility of the ecomap tool in documenting changes in a caregiver's support network over time.

We found one study in which the researcher employed genograms and ecomaps concurrently. Yanicki (2005) argued for the use of "clinical tools" in research with disadvantaged families whose vocabulary was limited and who tended to be more concrete in their thinking. She proposed that the genogram and ecomap exercises would enhance the low-income single mothers' descriptions of their family support from home visitation.

### Utility of Genograms and Ecomaps in Our Current Research

The concurrent and interactive use of genograms and ecomaps to enhance the qualitative data generated in semistructured interviews in our family caregiving research had several advantages. The process of constructing the genogram and ecomap, and the completed depictions provided a rich context for understanding the social networks of the caregivers who participated in our research. The collaborative diagramming between the researcher and participant facilitated a relational process that led to in-depth conversation and further disclosure of participants' experiences of supportive and nonsupportive interactions. Use of these tools supported the ongoing and iterative question-posing integral to qualitative data generation and analysis. The process of genogram and ecomap construction generated additional interview questions. Concurrent and comparative analyses of the completed genograms and ecomaps stimulated further questions useful in ongoing analysis of the interview data. Moreover, comparing the genograms and ecomaps during analysis uncovered findings that would not have been apparent had we only used one tool or used both but analyzed them separately. Each of these advantages will be discussed in-depth, drawing on illustrations from our research experience.

#### **Rich Contextual Foundation**

The interviewer drafted a genogram and ecomap following the first interview and presented them both to the participant during a second interview for confirmation, refinement and further development. Both the process of creating participant genograms and ecomaps based on data from the first interview and the subsequent data generated provided a rich context for understanding the social support network of each male caregiver and contributed new perspectives useful in data analysis.

We enhanced our understanding of the contextual influences on men's capacity for caregiving by incorporating in the genogram selected individual and family data beyond the traditional diagramming of each person's biological and legal place in the family, birth and marriage dates, and health conditions of various family members. Our expanded genogram data can be characterized by McGoldrick et al.'s (1999) designation of demographic information, functional information (i.e., objective data on the medical, emotional, and behavioural functioning of different family members), and critical family events. Specifically, we incorporated demographic information from the first interview regarding age, birth and death dates, geographical location, living arrangements, occupation, and education level. We selected these key demographic characteristics to augment our understanding of the caregiver's context in preparation for the second interview and to facilitate the participant's reflection on social support experiences during the course of the second interview. The pictorial nature of the enhanced genograms prompted the men to further describe their caregiving context. For example, the visual presence of Alzheimer disease in other family members and documentation of their care situation (e.g., in care facility or being cared for at home) led participants to describe the influence of that data on their current caregiving situation.

Information about how individuals functioned within the family included participant's positive or negative comments on emotional or behavioural patterns (e.g., "caring father"), as well as health status where relevant. We inserted these comments near the symbols that represented the corresponding family member. We incorporated critical family events into the genogram, often as a note off to the side. Critical events reflected relational losses and gains in the family through birth, death, separation, divorce, illness, and conflict. On the genogram, we also constructed a timeline of critical events related to the care recipient's illness (see Figure 1).

The augmented genogram data alerted us to geographic, employment and health issues that may have influenced potential family members' ability to provide help with caregiving as well as changes in the living situation of the caregiver and care recipient. Our focus on supportive and nonsupportive interactions determined what additional genogram information we pursued. This information proved useful in enriching our understanding of the caregiving context, including the potential for support mobilization or lack thereof. For example, changes in living arrangements were common in our sample of male family caregivers and we intentionally captured this data by encircling the members of a household with a solid circle and previous household configurations with a broken-line circle. In this way, we gained a pictorial depiction of household changes that stimulated interview

conversation about experiences of supportive and nonsupportive interactions based on living arrangements. Regarding employment details, one participant who was a retired teacher proudly talked about his three daughters who were all teachers, one of whom had recently retired. From a researcher's perspective, this relevant genogram data led to conversation during the ecomap exercise about factors related to the support he received from his daughters that included and went beyond their employment as teachers.

Ecomap data enhanced our understanding of the caregiving context by identifying key sources of support including connections with kin, friends, affiliations or club memberships, employers and professionals (see Figure 2). Each circle placed on the ecomap represented a relationship that influenced the caregiver's experience of caregiving. We depicted the nature of the relationship, including the dimensions of energy flow (i.e., reciprocal or one-way exchanges), intensity, and stress. We identified tenuous relationships on the ecomap, as well as support sources that were no longer helpful or relevant. We depicted these by broken lines. We added comments regarding frequency of contacts, indicating, for example, daily phone calls in comparison to monthly visits. Caregiver's comments pertaining to personality traits of others that seemed linked to their capacity to provide support were included on the ecomap more often than on the genogram but this documentation decision was arbitrary at times.

Key findings from our ecomap data related to the changing support networks of male family caregivers of a relative with dementia. Whereas relationships with family members remained relatively stable, either as sources of supportive or nonsupportive interactions, there were changes over time in friends and professionals as support sources. Ecomap data, namely broken-line circles, clearly depicted the friends who had fallen away since the care recipient's onset of dementia, an evident pattern among the study participants. Participants identified some friends as a continuing source of support as well as a new network of friends that developed for some of the men. Often these friendships arose from the support sources that the caregiver accessed because of the care recipient's illness. For example, many participants made acquaintances through advocacy and support groups and in some cases meaningful and enduring friendships formed. Another source of new friendships was through the formal caregiving network. One caregiver gained a special friendship with a person who worked at the facility where he had first placed his wife with advanced Alzheimer disease. We depicted these newly acquired supports by a "circle-out-of-a-circle" that showed that the friendship arose from a formal source of support. Several men in the study had participated in support groups in the early stages of their relative's dementia. Although the support group was no longer a key source of support, some of the men remained in contact with a friend that they had made during their time in the support group. In this situation, the solid circle coming out of the broken-line circle showed the ongoing friendship that had arisen from a past source of support.

The genogram and ecomap data provided a rich context for analysis of participant's perceptions of supportive and nonsupportive interactions as well as a means of comparing the networks of subgroups of caregivers and of exploring patterns of support over time. For example, when comparing the networks of sons and spouses, we noted a pattern of fewer supports for son caregivers as compared with male spousal caregivers. Sons tended not to involve themselves in support groups and did not identify fellow-caregivers as sources of support in the same way as spouses.

#### Participant-Researcher Relationship

Both the collaborative nature of genogram and ecomap data generation, and the appeal that the tools had for the participants contributed to rapport and exchange between the participant and the interviewer. This development

in turn facilitated participants' freedom of communication and rich descriptions of their experiences of supportive and nonsupportive interactions as caregivers.

The relational process of jointly diagramming the family structure and support network stimulated reflection for both the interviewer and participant that led to conversation about the participants' family and descriptions of experiences of supportive and nonsupportive interactions. The atmosphere of equality promoted by the joint efforts of the interviewer and participant in creating the genograms and ecomaps facilitated rapport. Sometimes this rapport led to disclosure of sensitive family information, often not easily shared with a stranger (i.e., the interviewer). For example, one participant, in the context of drawing the genogram, disclosed that his wife had not been able to handle being a mother and so other family members had raised their two sons. He pointed these family members out on the genogram as he related this sensitive information. During the process of genogram and ecomap construction, some men also identified a significant relationship with another woman that had arisen during the course of their spouse's illness. It seemed important to the men that they reveal the significant support they received from this new woman in their life and the ecomap exercise presented them with a non-threatening opportunity to share this sensitive information. Giving the woman a place on the ecomap was a way of validating the relationship and we respected the sensitive nature of this revelation in the conversation that ensued.

The participants' positive responses to the genogram and ecomap also played a role in stimulating self-reflection about their family history and context in relation to their current caregiving role. Rather than representing imposed research tools requiring completion, the genogram and ecomap captured the interest of participants and served as a catalyst for conversation. Participants remarked positively about what it was like to see their family members and support network mapped before them and they were keen to provide detailed structural and network information. Some participants retrieved photographs of family members to show the interviewer. In one such situation, the picture showed only three grown children, rather than the four indicated on the genogram. After naming each child in the picture, the man told the story of one daughter's sudden death. An 89 year-old participant had a piece of folk art that included all of the birthdates of his children and grandchildren and he brought the arrangement of decorated wooden hearts to the interview table to refer to as he provided detailed genogram information.

One man, highly engaged with the diagrams, removed them from the interviewer's hand, set them in front of himself and began making his own entries, documenting where his out-of-town siblings lived. He referred to the genogram and ecomap throughout the interview and concluded that the ecomap would be a helpful tool for him to reflect on his support network periodically as he cared for his wife with Alzheimer disease.

#### Concurrent and Comparative Use

A further advantage of using genograms and ecomaps interactively in our research was that their concurrent and comparative use uncovered data that may not have been apparent had we not used the tools, used only one, or used them separate from each other. During the course of the interview, the interviewer had the opportunity to raise questions about the genogram and ecomap. For example, the interviewer could ask about interactions with particular family members who were on the genogram but not on the ecomap. When a caregiver's support network primarily consisted of professional caregivers rather than family members, the interviewer could ask a question such as, "What is it like to have so many professionals in your life?" or "What is it like for you to only see your children on special occasions?"

The main finding that arose from our concurrent and comparative genogram and ecomap use was the identification of unrealized potential in the participants' support networks that we came to identify as their

"shadow" network. For example, one caregiver explained that the reason his daughter, who lived "down the street," was not included on the ecomap was her extensive family and employment responsibilities. He also commented that he did not expect her to help him with his caregiving and so this relationship was not a source of stress or disappointment for him. His relationship with his daughter was not a source of either support or nonsupport. In both the kin and professional realm, there was opportunity to ask participants to reflect on potential sources of support that apparently they had not fully realized. The circumstances of and possible reasons for this could then be explored. This exploration helped us identify the conditions that contributed to the experience of supportive and nonsupportive interactions for men caregivers in this study.

The genogram and ecomap data also revealed changes in the support network over time. The genograms and ecomaps were initially constructed using data from the first interview and then updated and revised when taken back to the participants in the second interview. Participants also identified sources of support that were helpful early in their caregiving experience but were no longer helpful at the time of the interview. For example, most men identified support groups for caregivers of relatives with Alzheimer disease as less helpful as their caregiving experience progressed and their focus shifted from securing information about the disease to securing resources to sustain caregiving.

A key aspect of data analysis was to examine each participant's genogram and ecomap to answer the following questions: Which genogram members did not appear on the ecomap? What genogram information available (e.g., geography, illness, death, and family dynamics) helped to explain the presence or absence of support? This analysis revealed patterns of supportive and nonsupportive interaction that we then further explored in the analysis of interview data.

### **Case Illustration**

To illustrate our use of these tools we present a composite case illustration of a 73 year-old retired schoolteacher whose spouse received a diagnosis of Alzheimer disease four years prior to the study (see Figures 1 and 2). At the time of our first interview, this man was caring for his wife in their family home. At the second interview, six months later, she had been in a care facility for four months. Through the process of drawing the genogram, the interviewer noted that a number of family members lived locally, including a son and daughter, and that living arrangements for the caregiver had changed recently. Since his wife was no longer living at home with him, he now shared his home with his recently divorced daughter. The caregiver indicated that the two younger sisters of his wife lived together and were healthy. The caregiver's brother was in the late stages of Alzheimer disease and lived in a care facility. Based on the genogram alone, one might assume a potential network of support within the caregiver's family, including his daughter who was living with him, his son, and his sisters-in-law. Through the process of drawing the ecomap, it became clear however that this man's main support was his son who lived in another province. The son and daughter who lived locally were emotionally unavailable due to their own family, employment and health issues and were unable to offer practical support to assist their father in caregiving. The caregiver expressed gratitude that his local son initiated a weekly dinner out, "although I always pay" was his added comment. During the ecomapping exercise, it also became evident that the caregiver's two sisters-in-law had been supportive before their sister's placement in a care facility. The caregiver stated that the sisters were angry with him for placing his wife in a care facility and no longer initiated contact with him, but visited their sister regularly.

Our case illustration also draws attention to the changes that occur within the support networks of caregivers. The Alzheimer support group, as depicted by a lighter circle is no longer helpful for the caregiver but he gained a friend

from this past source of support that we have depicted as "a circle-out-of-a-circle." The church remains as a source of possible support although the broken line of connection indicates the tenuousness of the relationship, as he no longer attends services regularly.

### **Reflections and Implications for Future Research**

Similar to the diverse applications of genograms and ecomaps in clinical practice and in the education of clinicians, we propose that there is potential for diverse application in research. For example, researchers can use genograms and ecomaps with different methodological approaches and methods, different caregiving situations and diverse research participants.

#### Potential Application in Diverse Methodological Approaches and Methods

Genograms and ecomaps are adaptable research tools that have utility in diverse qualitative study designs in family nursing research. Use of these tools for example, could elicit stories such as those generated in narrative inquiry. Participants' descriptions of changes over time would elicit process data integral to grounded theory research. Opportunity to identify differences between participants' ecomaps in home and long term care settings could yield data amenable to critical analysis. In our ethnographic study, data about support networks generated with an individual family member through the genogram and ecomap exercises provided rich contextual data. In a mixed methods approach, we envision the potential utility of quantifying the ecomap data to detect trends in the data or to develop taxonomies of caregiving networks. Varied sampling, data generation and data analysis methods also lend themselves to genogram and ecomap utilization, assuming that the practical and ethical implications receive due consideration.

Use of various sampling strategies, such as including multiple family members individually, conjointly or as a family group, could present issues of confidentiality and serial documentation for our consideration. For example, if all family members contribute to the construction of one composite genogram in their individual interviews, confidentiality is a concern. Sharing the genogram or ecomap data with other family members requires participant permission or consent even though one might consider the construction of a genogram, for example, as the gathering of factual, objective information. "Bare bones" genogram data pertaining to family composition including birth, marriage, and death dates appears straightforward. Even in this regard, however, different family members may have different knowledge or recall regarding birthdates and anniversaries, for example, and different sensitivities about other family members "getting it right." Unless researchers specify in the research design the sharing of data generated individually from multiple family members, the data collected in the context of an individual research interview is confidential.

Researchers can address this issue of confidentiality through an evolving or emergent research design whereby they negotiate with family members to reach agreement about sharing genogram and/or ecomap data with other family members either separately or together in a family interview. The researcher is asking the participants to consider sharing the genogram and/or ecomap data only; not all interview data. Reaching consensus among multiple family members regarding the family's genogram and collective family or household ecomap is a source of family level interactional data in addition to the outcomes of the paper and pencil exercises.

Implications for documentation include whether and how to record the contributions of each family member on a composite genogram or ecomap. We propose using one colour of pen or pencil with the first family member and different colours with subsequent family members to track who contributed which data. Depending on the

configuration of various family members, another method may be that all data provided by sons, for example, be one particular colour and all data from spouses another colour.

Depending on the purpose of the research and specific research questions, the researcher could generate genogram and ecomap data from individual family members and then compare findings in the context of a family interview, or alternatively, as an analytic process without the family's input. Circular questions regarding genogram or ecomap entries in the context of a research interview can yield additional relational data for analysis. For example, the interviewer could ask a woman what it is like for her to see that her husband did not include her on his ecomap when she included him on her ecomap. Both the nature and content of her response yields data for analysis.

#### Potential for Application in Diverse Family Caregiving Situations

The adaptable nature of genograms and ecomaps in research also ensures their utility in research about diverse family caregiving situations. In our study, Alzheimer's disease or other dementias represented a chronic and progressive disease and data generation occurred over time to capture the changes in supportive and nonsupportive caregiving interactions as the disease progressed. We portrayed these changes on the genogram and ecomap. One could also capture changes in social networks related to critical or episodic illnesses that resolve and /or change related to developmental changes in families. When constructing the genograms and ecomaps prospectively over multiple interviews, we suggest documenting "Time 1" data in one colour of pencil or pen and "Time 2" data in another colour as we did in an earlier study (Neufeld & Harrison, 1995).

In our ongoing research programs, we continue to employ genograms and ecomaps as data generation tools and anticipate their continued utility in studies of diverse caregiving situations. For example, in family caregiving research related to transitions for parents both when healthy babies are born and when babies are born with life-threatening conditions use of genograms and ecomaps can facilitate generation of information about intergenerational support. As we follow families longitudinally, the ecomaps of individual family members demonstrate how caregiving realities change through normal developmental stages and illness-related events. Use of genograms and ecomaps as research tools may contribute to generation of data generation that facilitates understanding of family health dynamics.

#### Potential Application to Diverse Research Participants

The user appeal of the genogram and ecomap as research tools means that they are potentially adaptable to participants of different age, gender, generation, cognition and command of the English language. Our study included several immigrants and frail older participants. The tools worked well for them. The pictorial nature of the tools contributes to their effective use with people whose first language is not English or with those whose comprehension of abstract questions is limited. This broad user appeal holds particular potential for intergenerational support research.

For example, in our ongoing research about transition to parenthood and intergenerational support we employ genograms and ecomaps with parents and grandparents. In research with parents and adolescents to assess readiness for transitioning youth from specialized pediatric care settings to adult care settings we can depict gains and losses in the social networks of youth and their families through serial genograms and ecomaps in research interviews with adult parents and their adolescents.

We are curious about potential for application of these tools with children and predict that both tools would have appeal for this age group as well. Connolly (2005) proposes the use of self-created genograms in which she asks students and clients to draw their family. She has found that this non-traditional creative approach to diagramming one's family ensures that non-traditional family structure is captured and sensitive issues are disclosed that can be discussed through further conversations. This may have application for children.

On the basis of our experience we believe that genograms and ecomaps are especially effective in furthering conversation with men, whatever their age or generation. In our caregiving research with women, we found that they typically were forthcoming regarding sensitive relational issues, such as relational strain with other family members. In comparison, men were not as forthcoming, but the interactive use of genograms and ecomaps facilitated more in-depth discussion. Our ongoing research with adolescents, parents and grandparents provides opportunity for us to analyze for gender differences in response to the use of genograms and ecomaps in research.

### Conclusion

We see the potential for genuine collaboration in the interactive co-construction of genograms and ecomaps with family caregivers who are willing to share their experiences for the purposes of research and knowledge development. We contend that much of the power of genograms and ecomaps in family caregiving research exists in the relational stance that this collaborative activity facilitates. In our experience, the concurrent and comparative use of genograms and ecomaps in family caregiving research our understanding of social networks as a context for caregiving, and promoted and uncovered findings that may not have become evident with the use of the tools singly or separately.

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### **Author Bios**

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# Figure 1



# Figure 2

