# Preface

## Executive Summary of the Project

The Dual Diagnosis Program (DDP) at the Parkwood Institute in London, Ontario offers services to patients with comorbid developmental disabilities and mental illnesses—otherwise said to have a dual diagnosis (DD). With no governing bodies to mobilize and connect DD patients with appropriate resources, an underrepresentation in available research, and a general lack of attention from the greater public, Parkwood's program stands as the epicenter for DD care and is tasked with providing treatment for their habilitation. This responsibility is impeded by the complexities and challenging behaviours characteristic of these individuals, which pose unique barriers to conventional healthcare provision that demand updates to Parkwood's current model of care. Through the delivery of an extensive literature review and a presentation to be given to Parkwood Institute staff in January 2019, this project aims to identify limitations in three aspects of DD treatment—inpatient, transitional, and outpatient settings—and define a concise, best practice approach to evidence recommendations to be made to Parkwood as they update current proceedings.

## Connection to Course Concepts

**Health Literacy.** Health literacy is an integral skill for every individual involved in DD patient care to possess. DD outpatients are most often cared for by either community caregivers within supportive housing or family members. It is important that these individuals are health literate because they are highly involved in their day-to-day care. For example, caregivers often assist DD patients with the administration of their medication. An understanding of patients' medication, doses, and dosing intervals is crucial to ensuring proper management of their conditions. Furthermore, DD patients often rely on their family members to navigate the healthcare system for them. It is essential that family members are equipped with strong health literacy skills to ensure they can evaluate the information being provided to them by healthcare professionals and advocate for individuals with DD. Involving family members in the consultation and treatment process for DD patients has been beneficial to their well-being, which further emphasizes the importance of ensuring these individuals remain informed and knowledgeable in the care process. Within the hospital setting, ER staff have been reported to exhibit a lack of empathy towards DD outpatients. Stigmatization of DD patients suggests a lack of understanding among healthcare professionals and signals the need to integrate further training into medical and nursing curriculums in regard to caring for the DD population. Lastly, the majority of research surrounding novel therapies that has been recently published is preliminary and their long-term effects have not been clinically analyzed. Thus, physicians must rely on their own health literacy skills to critically evaluate the merit of new and innovative treatments.

**The Responsibility of Health Leaders.** The concept of leaders in health having a responsibility to maintain health standards and equity of care is pertinent in the DD community. Currently leadership is ineffectual across the continuum of care for DD patients. In general, the oversight of DD programming is fraught with disorganization. This is due to the fact that it is managed provincially by two separate ministries – the Ministry of Health and Long-Term Care (MHLTC) and the Ministry of Community and Social Services (MCSS). The former oversees hospital and community care, while the latter addresses developmental services like disability support, community engagement and case management. Community Networks of Specialized Care is an initiative formed by MCSS to coordinate DD services, but it remains ineffective for the DD population as the organizations are disjointed. On a narrower scope, inadequacies within the DD staffing model also need to be addressed as doctors and nurses are often ill-equipped to handle the intricacies of this condition and do not effectively communicate care practices to caregivers. Therefore, leaders in the dual diagnosis field maintain an integral responsibility to support health standards for the dual diagnosis patient population.

**Socioeconomic Status and Health.** The effect of socioeconomic status (SES) on health is visible in almost all aspects of individual well-being. The population of DD patients is no exception to this trend. In outpatient care, dual diagnosis patients face a lack of government funding for community housing and are often overlooked. Other distinct populations, such as families, are prioritized over DD patients to receive low income housing services and as a result, the gap between low SES DD patients and DD patients supported by families with high SES is immense. Furthermore, a current lack of government supported vocational engagement opportunities places the burden of integration into the community on families. However, in lower SES communities, facilities and opportunities for DD patients are sparse and therefore the standard of care varies with SES. In addition to the variable resources for DD patients, the quality of healthcare received by DD patients varies with SES. Current inpatient facilities for DD patients are at capacity, and as a result, patients are forced to turn to outpatient care resources to fill their treatment needs. However, outpatient staff are often ill-equipped to deal with the challenging behaviours that DD patients present, and as a result, there is a high demand for properly trained and experienced staff in the field. As is the case with any resource, an increase in demand causes a proportional increase in price, and therefore higher SES in the DD population correlates to improved caregiver quality and thus improved health outcomes.

## Recommended Next Steps

After conducting an extensive review of literature, there are some steps that need to be taken into consideration with regards to the Dual Diagnosis Program. There is limited research on DD patients and the care that is being provided to them, so the first step in improving the model of care for DD patients is to conduct more research on treatments and ideal care practices. Further research will help inform current Dual Diagnosis Programs and help with the implementation of ideal care models. In addition to more research, another recommended step is to develop a system for the transition of DD patients between inpatient care and outpatient care. Currently, there is a lack of effective transitioning of DD patients, resulting in patients repeatedly returning to the hospital. To address this issue, a liaison that connects patients to the various resources out in the community and ensures effective supports are put in place may be beneficial. This will allow for a transition that is effective and allow for better integration of DD patients back into the community. Overall, more research and better transitioning for the DD patients using a liaison are recommended as the immediate next steps in achieving ideal care for this patient population.

# Dual Diagnosis: Identifying Limitations in Current Models of Care

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## Dual Diagnosis: Identifying Limitations in Models of Care

Dual diagnosis (DD) is a term used to describe patients with concurrent developmental disabilities and mental illnesses. It is estimated that around 40% of individuals with a developmental disability also have a comorbid mental illness (KPMG, 2012). Independently, these conditions are universally recognized with accessible and well-evidenced treatment practices in place (Lunsky & Puddicombe, 2005); however, these methods are often ill-equipped to handle the unique needs of the dually diagnosed. Due to inadequate services and the challenging behaviours DD patients exhibit, they are often excluded from and do not respond well to conventional treatments, resulting in poorer health outcomes and a lower quality of life (KPMG, 2012). The immense challenges patients face in accessing necessary services are compounded by the fact that professionals often feel ill-equipped to treat them—further straining provision of care (Lunsky, Gracey, & Gelfand, 2008). Minimal research in this field also exacerbates issues for DD patients, as a lack of evidence-based strategies yields inconsistent care practices between healthcare providers—ultimately preventing a consensus on best practice (Lunsky & Puddicombe, 2005).

These problems are apparent within every setting of DD care: the inpatient environment, the outpatient environment, and during the transition between them. This literature review will address the issues associated with this continuum of care—focusing on the inadequacies of current practices and examining novel methods for providing specialized care to DD patients.

## Reliance on Inpatient Services Present an Unsustainable Solution

Shortcomings in the continuum of DD care were outlined in a report by Lunsky and Puddicombe (2005), which surveyed the responses of Ontario psychiatric healthcare professionals to current DD treatment practices, with aims of identifying critical areas of concern. Their feedback highlighted limitations to optimal care resulting from inadequacies in current systems—namely, the adverse effects of overreliance on inpatient services, and the difficulties that DD challenging behaviours present to treatment provision.

In hospital, the complexity of DD patients demands unique care from professionals specially trained to address their comorbid diagnoses. Lunsky and Puddicombe's (2005) report reveals that specialized psychiatric facilities tailored towards dual diagnosis patients have a very limited number of beds, many of which are inaccessible to in-need, severely-debilitated DD patients due to 'bed blockers'—inpatients who no longer require hospitalization but remain institutionalized. To explain this, their report suggests that scarce outpatient options cause many DD patients to spend unnecessarily long durations in hospital. Lunsky et al. (2006) further explored DD-induced stress on the capacity of inpatient facilities through analysis of 3927 randomly collected mental health patient cases from nine Ontario psychiatric facilities. Their study found that despite recommended levels of care being generally higher for populations with concurrent developmental disabilities, only a few DD patients actually required inpatient psychiatric hospital support—the rest would benefit most from specialized community residences and other outpatient resources (Lunsky et al., 2006). Given that these non-institutional resources are sufficient, Lunsky et al. (2006) suggested that specialized psychiatric hospitals should invest in research to develop better methods for triaging incoming DD patients to ensure high-risk, high-need patients have priority access to beds.

Even if these facilities could accommodate the high patient demand, herding DD patients into hospitals is often counterproductive to their habilitation. After analyzing all CAMH patients with autism spectrum disorder between 1998 and 2004, Palucka and Lunsky (2007) deemed the hospital experience—specifically the non-freely accessible food, varying personnel, noise, disruption to routine, and limited access to outdoor space—especially aggravating to patients' conditions, and to unfavorable behaviours. They noted locked seclusion rooms and mechanical or pharmaceutical restraints had to be used in 69% of cases. To avoid using these interventions, their study suggests that DD inpatient experiences should be limited as much as possible to avoid exposure to triggering hospital stimuli—primarily by trying to keep them situated in the community. However, this approach may not always be possible. In a qualitative study focused on Ontarian psychiatric care, Puddicombe and Lunsky (2007) found that aggression was the main barrier to discharge for DD patients, ultimately contributing to further inpatient facility stress. No matter the treatment setting, both preventative and reactive strategies are needed to help DD patients cope with challenging behaviours. Hunter, Gardner, Wilkness, and Silverstein (2008) suggest psychiatric care practitioners adopt new approaches to best address DD behaviours—notably, the Multimodal Functional Model (MFM) for patient interactions. Their paper outlines the use of this methodology through various case examples—all which emphasize the practitioner's identification of a patient's individualized vulnerability factors, and avoidance of their aggravation through selective practices. They describe the method as 'best practice' and stress its successful implementation in various U.S. facilities. Otherwise, Lutzker (2018) suggests that the most effective treatment strategies for addressing aggression are those grounded in applied behavioral analysis (ABA) techniques and social learning theory, which respectively account for environmental triggers of behaviours and look to modify behavior through imitation of others. The author distinguishes these strategies—such as positive behavior support (PBS)—as they reduce aggressive behaviours by replacing them with positive behaviours rather than solely discouraging aggression. In practice, comprehensive analysis of treatment information, patient history, functional assessments of contexts for aggressive behaviors, social ecology, and the motivation of the patient and their caregivers need to be established to create personally-tailored interventions meant to be implemented constantly—in all settings—to provide a standardized, durable, and effective treatment option. Influenced by this analysis, these interventions focus on creating enriching activities in place of non-stimulating situations that lend themselves to aggression.

Limitation of these practices to solely clinical interactions may explain DD patient overreliance on inpatient factions, and thus Lutzker (2018) recommends the application of PBS-like practices in all aspects of outpatient environments including in families, schools, and community involvements. The adoption of such techniques seems to be seldomly accomplished; Balogh et al. (2017) documented that within a cohort of 66,484 patients with intellectual disabilities, DD individuals had increased hospital readmission rates post-discharge due to outpatient program inadequacies and exacerbation of caregiver burnout by challenging behaviours. Participants surveyed by Lunsky and Puddicombe (2005) agreed with this finding, also suggesting that high readmission rates result from the actions of staff unable to provide adequate care.

## Optimizing Staff Performance

One aspect that needs to be considered when caring for patients with a dual diagnosis is the staff. In order to provide ideal care to this patient population, the mental health of the staff should be considered, as well as the care that they provide. Nurses have reported high stress levels when working with the dual diagnosis patient population, and this issue should be addressed because nurses are a vital component (Puddicombe & Lunsky, 2007). One study was conducted by Azimi, Modi, Hurlbut, and Lunsky (2016), involving a retrospective chart review of physical health information gathered by the psychiatric nurse. In this study, the psychiatric nurse found that these patients had more health problems than what the caregivers reported or were aware of. Thus, nurses are essential for providing more comprehensive and intensive monitoring of the health issues this patient population presents with.

There are various staff roles that need to be in collaboration in order to provide ideal care to DD patients. An article was written by Summers et al. (2016), discussing the redesigned program for adults with a dual diagnosis in Toronto, Canada. This article mentions the important roles and functions of interprofessional team members who work with DD patients. These roles include a behavioural therapist, a developmental services worker (DSW), occupational therapist (OT), psychiatric nurse, psychiatrist, psychologist, social worker (SW), and recreational therapist. The role of behavioural therapists is to assess the behaviours of the DD patients and develop effective intervention and support plans for both the patients and their caregivers. Developmental services workers help carry out therapeutic programming for DD patients, as well as implement the behavioural plans and activities of daily living for each individual. Occupational therapists conduct assessments on the patients’ functioning and environment, then consider methods and/or adaptive equipment that help with self-care, productivity, and leisure activities. The psychiatric nurses look at the medical and mental health history of the patients, conduct risk and pain assessments on the patients, and inform them and their caregiver(s) on mental health conditions and medications. The functions of the psychiatrist are to perform assessments on the mental health of each patient, provide a diagnosis, implement a biopsychosocial care regimen, prescribe medications if needed, and provide leadership to the interprofessional team. The psychologist conducts assessments on the cognitive, adaptive, and social-emotional functioning of each patient, implementing the biopsychosocial model alongside the psychiatrist, and helps lead the cognitive behavioral therapy (CBT) groups. Social workers assess the family and caregiver environments and their stress levels, providing additional supports and/or services that may be needed as well as help lead the CBT group with the psychologist(s). The recreational therapist is staged in an inpatient setting and develops recreational therapeutic programs for the patients. Overall, the article included important roles of various staff disciplines and stressed the need for interprofessional collaboration when providing interventions and treatments for DD patients.

Additionally, studies were conducted that mentioned the issues staff faced when working with DD patients. A study by Lunsky, Gracey, and Gelfand (2008) created focus groups consisting of psychiatric staff from emergency rooms (ERs), including psychiatrists, nurses, and social workers from 6 hospitals in Toronto, Ontario. The study examined issues that DD patients faced from the perspectives of the ER staff. They reported a general lack of knowledge, training, and available services among ER inpatient care and caregiver outpatient care. ER staff were also uncomfortable with the aggressive behaviours that DD patients frequently exhibited during visits, which often led to distress among the staff. The study included suggestions made by the staff, highlighting that better communication was needed between the hospital and outpatient services. The ER staff often found that they were not given enough information about DD patients upon their admittance into the hospital, thus making it more difficult for them to know how to treat these patients. The ER staff also suggested that better access to DD experts and resources (ie. workshops) were needed to alleviate stress when dealing with psychiatric crises among the DD population. Clegg and Bigby (2017) suggested that using DD specialists to inform the nursing staff on each patient’s behaviours and mental functioning would be helpful for nursing staff to understand how to interact with and provide care for these patients.

Another study conducted by While and Clark (2014) in the United Kingdom (UK) focused on developing and testing the effectiveness of a competency assessment for nurses who work with intellectually disabled patients, including DD patients. These researchers administered their competency assessment tool on focus groups of experienced, trained nurses at a local hospital. When interviews of trained nurses were conducted, the nurses reported that they had a very limited understanding of the roles that were expected of them when providing care for this patient population. Thus, the researchers advocated for a competency assessment to evaluate the knowledge and skills of the nurses who care for DD patients. This tool would provide a framework for understanding the skills nurses have, as well as determine whether core educational programs for healthcare staff need to be altered to better train and prepare nurses.

## Complexities of the Inpatient to Outpatient Transition

While it has been suggested that a shift to community care for these patients is ideal, inpatient programs should still continue to serve select patients who require more specialized forms of hospital care on a short-term basis. To ensure that the appropriate patients receive inpatient care, there must be a maintenance of patient flow from hospital beds to suitable community settings after receiving appropriate treatments.

Accessing and receiving appropriate care from community-based resources can often be challenging for DD patients due to a variety of systemic factors. Durbin, Sirotich, Lunsky, and Durbin (2017) examined data from 2611 adults in community mental health programs and found that DD patients were more likely to have unmet personal care, transportation, basic education, and treatment information needs than individuals with only a developmental disability. While these findings suggest that improvements to the quality of specialized DD patient services are necessary, other studies indicate that an increase in the overall quantity of these resources is also warranted. A national study conducted by Lunsky, Garcin, Morin, Cobigo, and Bradley (2007) examined the mental health services for individuals with developmental disabilities. This study found that patients face difficulties accessing appropriate psychiatric care in their communities because there is an absence of specialized health services available for DD patients, particularly in rural regions. In regard to existing resources, the current supply of community-based resources is insufficient—evidenced by numerous DD patients who reported waiting over three months to receive much needed healthcare services (Lunsky et al., 2007). As a result of the long waiting lists for these services, McMorris, Weiss, Cappelletti, and Lunsky (2013) found that families were often responsible for providing care to these individuals, which contributed to caregiver burnout. Furthermore, this qualitative study, which surveyed families and outpatient staff, noted that community-based resources have generally taken a reactive, rather than proactive approach in dealing with DD patients—meaning that individuals and families are only connected with these services after a crisis has occurred (McMorris et al., 2013).

The absence of a robust continuum of care that guides individuals before, during, and after their psychiatric crises means that DD patients have difficulty navigating community resources. In times of need, these individuals resort to seeking care in hospital ERs. Weiss, Lunsky, Gracey, Canrinus, and Morris (2009) conducted a qualitative study based on the perspectives of caregivers and found that the escalation of challenging behaviours and the lack of appropriate community resources for dealing with mental health crises were the predominant causes of ER visits by individuals with developmental disabilities. The study also noted that although only a small portion of individuals with developmental disabilities visited the ER for psychiatric purposes, those who did access it were frequent visitors. Lunsky, Tint, Robinson, Khodaverdian, and Jaskulski (2011) suggest that these individuals return to the ER because problems from prior visits remained unresolved. Furthermore, many of these patients were sent home without follow-up appointments or knowledge about available resources for future crises, signalling the need for a formalized procedure to connect families and caregivers to community services (Lunsky et al., 2011). Research by Spassiani, Abou Chacra, and Lunsky (2017) reinforces the idea that ERs are ill-suited environments for supporting DD patients and points to the demand for liaison workers to bridge the gap between hospital and community care by ensuring follow-up and successful implementation of crisis plans.

In 2018, the South West Local Health Integration Network (LHIN) identified a general lack of coordination between hospitals, primary care providers, and community services in implementing a continuum of care for mental health patients from their intake to discharge (KPMG, 2017). Numerous other regional organizations, such as South East LHIN, Champlain LHIN, and North Simcoe Muskoka LHIN, have already implemented novel case management models to combat poor continuum of care for mental health patients. While these solutions are not designed specifically for the dual diagnosis population, the issues of poor case management and disconnect between services in mental health parallel those that are apparent within dual diagnosis patient care.

East LHIN established a transitional case management (TCM) model to bridge the gap between hospitals and community services. Individuals are linked to community mental health services prior to discharge, and for 8-10 weeks following discharge, transitional case managers support patients and ensure their needs continue being met. Implementation of this model has improved health outcomes and integrated patients back into the community (KPMG, 2017).

Champlain LHIN approached the continuum of care problem by establishing five distinct case management models that vary in intensity depending on client needs. Each case management model is designed for a specific target population and varies in approaches, service structures, client-staff ratios, functions, frequency, and duration. For example, patients who have a severe mental illness and are high service users would receive additional support in the form of supported employment, skills development, and housing support (KPMG, 2017).

North Muskoka LHIN established four key recommendations to improving case management among mental health patients: standardizing processes for intake and assessment between organizations, ensuring a discharge plan is established as part of client care, establishing a means of re-entry to case management services if needed, and creating hospital protocols for connecting individuals to community services prior to discharge. These approaches acknowledge that while standardized practices are needed between institutions, complex care patients require individualized, patient-centered support in order to be successfully integrated back into the community (KPMG, 2017).

## Inadequacies in Outpatient Care

Following the transition from a hospital setting, outpatient care also presents significant complications. Recently, Baldacchino et al. (2011) noted a shift from institutionalization to community-based care in an attempt to reduce patient confinement. However, this shift has proven unsuccessful with current literature revealing issues in outpatient staff perceptions of DD patients, staff training, and care practices.

Caregivers of DD patients from rural communities hold an overwhelmingly negative perception of dual diagnoses among outpatient staff. Through a qualitative study interviewing outpatient caregivers and DD patients, Kreitzer, McLaughlin, Elliott, & Nicholas (2016) demonstrated the trepidation evoked by the mere label of a ‘dual diagnosis’. Before dual diagnosis patient care can be improved, the stigma caregivers possess regarding DD patients needs to be remediated. Perhaps a lack of understanding from insufficient training is at the root of the issue, as outpatient service providers stated they possessed neither the “expertise [n]or the staff resources” to work with DD patients (Kreitzer et al., 2016). To initiate recognition for the DD label, public health campaigns or other informational resources aimed at healthcare professionals are recommended to increase awareness of dual diagnoses. To address the insufficient training of outpatient staff, formally developed training programs should be implemented to better equip outpatient staff for the treatment of DD patients. Furthermore, in addition to a lack of specialized training for inexperienced staff, caregivers noted a lack of recognition for experienced staff in the field (Kreitzer et al., 2016). Therefore, outpatient staff receive insufficient training, and caregivers that gain informal skills from years of experience remain unrecognized. To combat the resulting high turnover rates (Kreitzer, McLaughlin, Elliott, & Nicholas, 2016), staff with informal training from years of experience should be recognized and their experience incentivized monetarily to maintain quality care from these caregivers.

Through a retrospective cohort study, Balogh et al., (2018) discovered that DD patients are admitted to ERs at nearly double the rate of patients with a mental illness, suggesting severe inadequacies in both discharge planning and outpatient follow-up. Furthermore, qualitative research from DD patients, family members, and ER support staff revealed that despite these frequent visits, DD patients faced immense discrimination from hospital workers who often denied them care altogether by refusal of admission into hospital facilities (Spassiani et al., 2017). DD patients are therefore subject to inadequate resources in the community, leading to a cyclical process of inadequate care in the ER setting. To prevent the cyclical process of frequent

ER visits, swift discharge, and subsequent readmission, Spassiani et al. (2017) suggest significant changes to discharge practices and care by emergency department staff, including increased awareness of dual diagnosis and formal training for outpatient staff.

The cyclical process of DD patient transition from the ER setting back to the outpatient setting reveals a reliance on hospital care as a result of inadequate outpatient settings. In a recent qualitative study interviewing outpatient caregivers and DD patients, Kreitzer, McLaughlin, Elliott, and Nicholas (2016) revealed a general lack of access to affordable housing—particularly transitional housing—for DD patients. Current practices rely on low income housing that prioritizes distinct populations (e.g. families) over dual diagnosis patients. To maintain equity in health care for DD patients, this insufficiency must be remediated. Given that funding may not be available, perhaps current housing systems could be restructured for optimal use. A current study monitoring DD patients found that specialized community treatment homes improved patient outcome by measures of target behaviours and several social validity measures (e.g. police calls, hospital admissions) in a one year follow-up (Chartier & Feldman, 2015). This study provides significant evidence for the effectiveness of a shift to short-term community-based services with specialized care to optimize DD patient benefits.

In addition to large structural changes, care in the outpatient setting can also benefit from minor changes such as improving medication adherence. In a follow-up study of 3,905 eligible community-based Medicaid enrollees aged 18–64 with a dual diagnosis, Tan et al. (2015) noted the complicated medications that DD patients receive and the improper administration of this medication regimens by outpatient caregivers. This lack of medication adherence is burdensome, as it reportedly accounts for 28% more total inpatient, outpatient, and ER visit costs (Tan et al., 2015). To increase adherence after DD patients transition back into community life, caregivers should receive specialized training and have access to resources for medication administration. Additionally, an electronic aid such as a mobile application may be beneficial for medication reminders and instructions for the dosing regimens of the DD population.

The deficiency in the outpatient standard of care for DD patients is compounded by a lack of engaging programming. Qualitative interviews of adults with a dual diagnosis and their caregiving parents demonstrate that vocational activities are insufficient and families are forced to engage DD patients in the community themselves (Nicholas et al., 2017). Vocational activities provide the opportunity for patients to develop social skills and introduces a sense of purpose into their lives (Nicholas et al., 2017). When these vocational needs are not met, DD patients rely more heavily on their families, resulting in decreased self-sufficiency (Nicholas et al., 2017). Because of this subsequent inability to care for themselves, families of DD patients are concerned for the quality of life of these patients (Nicholas et al., 2017). Therefore, community engagement through vocational activities are highly recommended to improve DD patient outcome in the outpatient setting.

From outpatient staff perceptions of the DD label, and inadequacies in staff training and care practices, it is clear that the outpatient setting requires significant improvements to properly treat DD patients. This insufficiency places a significant burden on inpatient care settings, including increased ER visits with inadequate discharge planning. Therefore, improving outpatient services should be a top priority to improve DD patient outcome by reducing both the burden on inpatient services and the cyclical practice of DD patient care. However, in addition to improving care in the outpatient and inpatient sectors, employing innovative and novel care practices may help to break the current repetitive cyclicity DD patients face.

## New Directions and Innovations in Care

Alterations to treatment practices will enhance the quality of care that patients receive. Part of this process involves increasing familial and patient involvement in care. Family members are crucial because they navigate the healthcare system, advocate for patients, address system deficits, and play a significant role in patient care—for example, in assisting patients in adhering to their medications (Nicholas et al., 2017; Tan et al., 2015). However, a study conducted by Nicholas et al. (2017) discussed how family members of DD patients, despite being their primary caregivers, felt unwelcomed, belittled, or dismissed by the clinicians treating the patient. In addition, family members struggle to navigate the unstructured outpatient system. When providing care, family members should be included as part of the process—additional training or guidelines for clinicians on how to provide better guidance for them would be beneficial.

Research has shown that additional input from the patients themselves could also be beneficial to care. Because it can be difficult to evaluate DD patients' responses to questions, self-reporting—for those who are able to articulate their responses unhindered by cognitive defects—is a valuable tool for resolving this issue (Scott & Havercamp, 2018). In this study, patients were able to verbalize their responses to questions in a survey, or if they were nonverbal, used sign language or writing. It was shown that responses from DD patients who self-reported using the Brief System Inventory (BSI) tool significantly differed from responses from nurses evaluating the patients—the BSI results showed that the patients were at a higher level of mental health risk than previously thought. There are already specific questionnaires designed for self-assessing mental health in people with developmental disabilities, such as the Glasgow Depression Scale for People with a Learning Disability, Glasgow Anxiety Scale for People with an Intellectual Disability, and the Glasgow Depression Scale–Carer Supplement (Sullivan et al., 2018). This concept might also be extended to long-term care when regularly assessing a patient's mental well-being.

New therapies also have the potential to enhance quality of care for DD patients. There are many modified therapies which show promise in treating dual diagnosis patients, but almost all of them need to be researched further before they can be included in a standard model of care. However, it is difficult to organize randomized clinical trials among DD patients because of a small population size and difficulty obtaining consent. Obtaining data through other methods is therefore beneficial and can be effective as it is easier to translate evidence received from them into clinical practice (Carrick & Randle-Phillips, 2017).

CBT, which is quite often used for DD patients, has not shown entirely conclusive results in every study in which it has been used. In addition, it has generally only been used in patients with mild to moderate intellectual disability and comorbid depression. Although it is likely a feasible treatment option, more controlled studies are required to confirm this, and in the meantime, it should be used on a case by case basis (James, 2017).

Solution-focused brief therapy (SFBT) has also shown promise in treating DD patients. Differences in cognitive ability of DD patients necessitate the modification of SFBT procedures to accommodate for this. For example, it is recommended that scales should be made shorter or delivered in a different format, such as through visuals, when possible. When applied to DD patients, SFBT was able to improve a number of issues, such as depression, anxiety, and relationship issues. However, more research needs to be done before SFBT can be implemented as a standard treatment. (Carrick & Randle-Phillips, 2017)

Dramatherapy is a socioemotional therapy which uses theatre techniques to help access and organize thoughts. A DD patient showed improvement in his condition after undergoing dramatherapy, as reported in a case study (Feniger-Schaal, 2016). Dramatherapy itself is a developing field which shows promise in treating individuals with intellectual disabilities, so it should be considered as a promising future avenue (Tomasulo & Szucs, 2015).

As for standard guidelines, *Canadian Family Physician* has published a set of consensus guidelines for treating individuals with developmental and intellectual disabilities. For DD patients specifically, working with an interdisciplinary team and with caregivers (which may include family) is emphasized. The HELP guideline is an acronym that is used to assess causes of distressing behaviour sequentially and systematically (Sullivan et al., 2018).

In addition to involving families and patients in the treatment process, large-scale changes in caregiving have been created and implemented in regions of Canada and the United States. For example, the Flexible Assertive Community Treatment Team – Dual Diagnosis (FACTT-DD) program in the Ottawa region is a novel model of community care, focusing on improving the skills mix of staff involved in treatment, communication between staff members, and vocational and occupational support for patients (Farrell & Pow, 2016). On the other hand, the Systemic, Therapeutic, Assessment, Resources and Treatment (START) model of care, which focuses on improving prevention and intervention services in communities, is used in nine American states and has improved service experiences while reducing challenging behaviours and emergency psychiatric service use in patients (Beasley, Kalb, & Klein, 2018).

FACTT-DD was implemented in the Royal Ottawa Mental Health Centre in the last two years, and is based off of a recent model from the Netherlands. The goal of the program is to optimize service availability in the local community for DD patients by creating teams of staff for the purpose of outreach and treatment. There are several points to consider when looking at FACTT-DD. Firstly, the program has created an ideal skills mix of staff for each team—notably in each team there are more DSWs than nurses. The program overall is a mixture of Assertive Community Treatment (ACT), which treats community-based DD patients and monitors their progress, and intensive case management in the form of staff collaboration. The entire program follows the biopsychosocial model, which is an important guideline.

START works in a similar biopsychosocial manner. The program also uses many different approaches, including solutions-focused, person/family-centered, biopsychosocial, and multidisciplinary assessment and treatment methods. START addresses the needs of individuals and their support networks, while improving the level of expertise and connection in community-based care.

Overall, there are a breadth of solutions to the problems with current models of DD care. Many are still in development, but will hopefully develop into viable treatment options after further research.

## Conclusion

The literature cited in this paper specifically suggests that insufficiencies in outpatient resources have placed a significant amount of pressure on hospitals to deliver care to DD patients. However, inpatient settings are suboptimal for treating this population and should be reserved for high-risk patients. For the majority of DD patients, a lack of formal procedures connecting individuals from the hospital to community-based services has rendered current transition processes ineffective. In addition to recommendations for improvements to the continuum of care, current literature on DD patients investigates innovative models of care that may introduce novel treatment practices. However, the recommendations presented are limited, as advances in care for DD patients suffer from a lack of research surrounding this comorbidity. Furthermore, the majority of existing research in this area relies on administrative data or the perspectives of families, caregivers, and hospital staff. While it was mentioned that a patient's perspective is an extremely valuable tool in treatment, the inability of certain patients to clearly articulate their viewpoints prevents researchers from gathering conclusive evidence that fully encompasses the preferences of this diverse patient population. Nevertheless, current research outlines major systemic issues in the continuum of care for DD patients and provides a clear direction for stakeholders, such as healthcare professionals and policymakers, to invest in treatment and programming efforts that will improve the quality of life and care for these individuals.

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