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Strategies to improve allergen control in Canadian ARAMARK healthcare foodservice operations

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It is estimated by Health Canada that 3-4% of adults and 6% of children in Canada have food allergies. The only method of allergic reaction prevention is strict avoidance of the allergen.

OBJECTIVE: Currently, guidelines for developing an allergen prevention plan to prevent adverse reactions from occurring in healthcare foodservice operations are not available. It is imperative that all foodservice departments have effective allergen control processes to maximize patient safety. The purpose of this study is to identify strategies to optimize allergy control in Canadian ARAMARK healthcare foodservice operations. **METHODS:** Data for this research was gathered from literature reviews, analysis of submitted policies, one-on-one interviews, and from a National ARAMARK online survey. The data was analysed to identify practices that were perceived to be successful in controlling allergens. **RESULTS:** Since the literature review did not identify any direct comparative studies, we are unable to recommend truly evidence-based guidelines. 20 of 105 ARAMARK Food Service Managers and Registered Dietitians responded to the online survey. Out of the twenty completed surveys and three submitted policies the following key practices were perceived to optimize allergen control: Reliable methods to identify patient/residents food allergies upon admission; good processes to provide staff with current ingredient information and reference material; mandatory food allergy training at orientation and annual refreshers; identifying patient menus with allergy alert stickers; completing allergy audit test trays weekly; and ensuring that a qualified Supervisor is present at all times to handle food allergy concerns. **IMPLICATIONS & CONCLUSIONS:** This study provides strategies to improve allergy control, however the effectiveness of these strategies was not determined. The development of a standardized allergy awareness in-service program is recommended to improve control of allergens.

TITRE : Présence de malnutrition chez les aînés néo-brunswickois telle que rapportée par les professionnels de la santé.

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OBJECTIFS : 1) Connaître la situation actuelle sur le dépistage systématique de la malnutrition chez les aînés fréquentant les établissements de soins de santé du N.-B, et 2) Identifier la présence ou absence d'un dépistage systématique de la MPE, les méthodes de dépistage et les ressources (humaines et matérielles) utilisées, les facteurs limitant l'existence d'un dépistage et les mesures et ressources nécessaires à son l'implantation. **MÉTHODE :** Tous les hôpitaux et foyers de soins du N.-B regroupés par Régie de la santé ont été sollicités à l'aide de questionnaires réalisés auprès des médecins, infirmiers et diététistes. **RÉSULTATS :** Il a y 111 médecins (11%), 190 infirmières (30%) et 56 diététistes (36%) répartis dans 5 hôpitaux (2 francophones et 3 anglophones) et 35 foyers de soins (13 francophones et 22 anglophones) qui ont répondu aux questionnaires. Ces questionnaires ont été répondu en français (35%) et en anglais (65%). La majorité des médecins confirment avoir rencontrés des personnes malnutris peut importe la langue de travail (français 97%, anglais 91%) ou du type d'établissement (hôpitaux 93%, foyer 87%). Plusieurs infirmières affirment ne jamais avoir rencontré de personnes malnutris (26,2%). Le nombre de médecins qui disent avoir rencontrés plusieurs personnes malnutris (>20%) est plus élevé dans le milieu hospitalier (28%) que les foyers de soins (9%). **CONCLUSION :** La majorité des professionnels de la santé affirme avoir rencontré des personnes malnutris. Par contre, il existe une perception parmi ces professionnels que la malnutrition est très peu commun (<10%), particulièrement chez les infirmières (73%).

A comparison of conventional versus continental breakfast models at Trillium Health Centre

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Objectives: This study compared the impact of conventional hot breakfast versus continental cold breakfast models on patient consumption, cost and patient satisfaction. **Method:** Trillium Health Centre serves a continental breakfast. Over a one week period, a rehab unit composed of 50 patients was surveyed in-person regarding satisfaction with their continental breakfast. Their breakfast trays were audited for consumption over the same week. The food costs for that week of continental breakfasts were determined. One month later, a 10-day trial serving conventional hot breakfasts began. The same rehab units, composed of a different set of 50 patients, were surveyed in-person regarding satisfaction with their conventional breakfast. A consumption audit was completed over that week. The food costs associated with serving the conventional breakfast for one week was determined. The satisfaction surveys, consumption audits and costs were compared between the two breakfast models. **Results:** Using tests of hypothesis and regression analysis, p -values <0.05 were used to indicate significance. Patients consumed significantly greater amounts of the continental meals compared to conventional meals. There was no statistical difference between the daily cost of the breakfast items for each breakfast model. There was not a significant difference between patients' ratings of taste, variety or quality between the two models. However, temperature ratings of continental meals were significantly better than conventional meals. **Implications/Conclusions:** This study challenges notions held by many Food Service Managers about the benefits of a conventional breakfast. A weakness of the study is that different patients were surveyed in both groups. However, they were the same type of patient. This study suggests that the continental breakfast model may be superior to the conventional breakfast model for the attributes studied.

Vitamin B12 status in hemodialysis patients

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OBJECTIVES: Cobalamin has not been largely studied in the hemodialysis (HD) population and patients are not routinely screened for deficiency. Since cobalamin is protein-bound in the blood, little is lost in dialysate as free cobalamin, but it is unknown how much protein-bound cobalamin is lost. The normal reference range for cobalamin at St. Paul's Hospital (SPH) is 156-672pmol/L, however, there is conflicting opinion regarding what constitutes cobalamin deficiency. The objective of this project was to determine cobalamin levels in the SPH HD population and its correlation with various risk factors. **METHODS:** A retrospective chart review was conducted on 119 outpatient HD charts at SPH, 24 of which were excluded. The data recorded for each subject included serum cobalamin and other lab values, time on HD, BMI, age, history of liver disease, irritable bowel disease, type 1 and 2 diabetes, gastrointestinal surgery, atrophic gastritis, and current medications. **RESULTS:** The mean cobalamin level measured was 581pmol/L +/- 298pmol/L SD (n = 95); all values were within the normal range and six were marginal (<250pmol/L). No subjects received cobalamin supplements, but received a renal-specific multivitamin and mineral supplement (*Replavite*), which contains 6mcg of elemental cobalamin. The average time on HD was 35 months and average age was 71 years. Correlation analyses are pending. **IMPLICATIONS AND CONCLUSIONS:** Preliminary results suggest that cobalamin deficiency may be uncommon in this population, however future research could include serum homocysteine and methylmalonic acid to more accurately assess cobalamin status. Future research may also investigate cobalamin trends throughout the progression of chronic renal disease. Such research may enable dietitians to improve nutrition management of HD patients as it relates to cobalamin.

A description of vitamin D status in adults with cystic fibrosis at St. Paul's Hospital.

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Objectives: A large percentage of patients with cystic fibrosis (CF) experience diminished bone mineral density, which can be detrimental to lung function, prognosis and quality of life. Vitamin D is instrumental in bone density and can be deficient in CF patients with pancreatic insufficiency. Therefore, our objectives were to determine the serum vitamin D status (25(OH)D) of the patients at St. Paul's Hospital (SPH) CF clinic and to explore its relationship with characteristics of this population. **Methods:** Data collection was done through retrospective chart reviews of patients at the SPH clinic.

Characteristics included were: 25(OH)D, bone mineral density, lung function, vitamin, mineral and oral supplementation, anthropometrics, co-morbidities, genotype, and serum Vitamin A and E levels. Patients with recorded 25(OH)D levels and positive sweat test or genotype for CF were included. Descriptive and correlational analysis were performed using SPSS for Windows 10.0. Data on other characteristics that may correlate with 25(OH)D are presently being collected, including fat soluble vitamin intake.

Results: Mean 25(OH)D was 69nmol/L, and was found to be significantly correlated with serum alpha tocopherol levels and age (both $p < 0.05$). The mean 25(OH)D levels are below the recommended minimum of 75nmol/L.

Implications & Conclusions: The low mean 25(OH)D suggests that current supplementation levels may need to be reviewed for this population. The positive correlation between 25(OH)D and serum alpha tocopherol may reflect multivitamin supplementation or similar absorption capacity, while the positive correlation with age may reflect increased supplement compliance. The results from this study may be used to determine what characteristics could predict lower 25(OH)D levels.

Pregnant women's knowledge regarding gestational weight gain

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Objective: To evaluate the knowledge of Canadian pregnant women on appropriate weight gain during pregnancy, and to determine the source of this information. **Methods:** The Survey of Nutrition and Physical Activity (S.N.A.P) during pregnancy was conducted among pregnant women >14 weeks gestation and free of exercise-related contraindications. Women were recruited from prenatal classes in both Montreal (QC) and Ottawa (ON). They were visited at home and asked a series of questions regarding gestational weight gain (GWG) and pre-pregnancy body weight. The first 29 women participating in S.N.A.P were included and data analysis was based on the recommendations they received for GWG, the source of this information and their pre-pregnancy BMI. These data were compared to recommended GWG ranges from the OPDQ guidelines¹. **Results:** Of 29 women, 25 had received advice on GWG. This information was obtained from; physicians, books, prenatal classes, the internet, brochures and midwives. 48% received their information from written sources while 44% from their physician. Of those who received advice, 20% (5/25) were given a total goal weight outside their OPDQ recommended range. Of those 5 misinformed women, 2 did not disclose a source of information, 2 had a BMI > 27 and 1 received information from both a doctor and midwife. **Implications & Conclusion:** This survey suggests that while the majority of women are properly informed as to appropriate GWG, a significant number remains misinformed. There also seems to be a lack of consistency as to where women are receiving this information. Given that current OPDQ weight gain guidelines are dependent on women's pre-pregnancy BMI, it is essential that recommendations be given only by well informed health professionals to ensure individualized healthy pregnancy weight gains for all women.

¹ *Ordre professionnel des diététistes du Québec* OPDQ Online Manual
http://www.opdq.org/extranet/manuel/opdqManuel/Library/Contenu/femmes_enceintes/index.htm

Multivitamin and mineral prescriptive authority for dietitians: the influence on dietetic practice.

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Objectives: In April of 2007, Vancouver Coastal Health approved a policy to allow Vancouver Acute (VA) dietitians to prescribe multivitamin/mineral supplements (MVM). The objectives of this study were to determine if giving dietitians' MVM prescriptive authority has changed the total amount of MVM prescribed; and to explore dietitians' perceptions of the barriers and benefits to practice relating to the MVM prescription policy. **Methods:** A retrospective review of computerized patient medication records was completed. T-tests were applied to determine if there was a change in the number of MVM prescriptions following policy implementation. VA Dietitians also completed a survey to identify how the policy influenced their practice. Fisher's Exact Tests were used to analyze the significance of contingency between survey questions. **Results:** 52.5% of eligible dietitians completed the survey. 95% of survey participants felt that MVM prescriptive authority improved patient care. The major barrier to getting an order completed prior to prescriptive authority was difficulty obtaining the correct order. Prescriptive authority has reduced this barrier. T-tests performed on supplement orders found no significant differences in MVM prescription rate between the pre and post-policy implementation periods. **Implications & Conclusions:** Dietitians comprise a small proportion of the total number of professionals with MVM prescriptive authority. This is consistent with the non-significant change in MVM ordering observed. However, dietitians felt prescriptive authority improved patient care. This may be related to dietitians' gaining the ability to order the most appropriate MVM supplement. Given the results, MVM prescriptive authority may be a valuable initiative for other sites to pursue.

Are we prepared? A review of pandemic preparedness in foodservice in Ontario

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Objectives: Toronto's experience with Severe Acquired Respiratory Syndrome (SARS) in 2003 highlighted the need to prepare for the potential of a global pandemic. Past disaster and emergency experiences suggest that the continuation of the food and water supply may prove challenging. Guidelines to assist foodservice operations in planning are scarce in the literature. The objective of this study is to provide an overview of the current state of preparedness of foodservices in the healthcare sector in Ontario and to highlight potential areas for collaboration. **Methods:** A survey focusing on the seven main areas of pandemic planning was developed using both quantitative and qualitative methods. Eligible food service professionals or identified pandemic planning coordinators of health care facilities were invited to participate. Responses were received from 52 facilities with only 35 being fully complete and providing useable data. **Results:** 67% of respondents had developed a pandemic plan. Only one hospital reported being "very familiar" with government legislation related to pandemic planning in foodservice. 31% of those institutions with a plan had not shared it with their staff. 28% of those with a plan reported some stockpiling of food and water. Results indicate that there are a wide variety of approaches in use in foodservices to prepare for a pandemic. 83% of respondents agreed that they would use a tool designed specifically to strengthen foodservice pandemic plans. **Implications and Conclusions:** The responses to this survey suggest a critical need to develop a pandemic planning tool which will foster collaboration and assist with training and preparing for a global event. Foodservice experts must collaborate with distributors, suppliers and the healthcare sector to ensure continuation of the food and water supply.

Title: Menu Planning at Long Term Care Facilities: A Balance between Theory and Practice

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OBJECTIVES: The purpose of this research project was to 1) assess the prevalence of meeting the standards on the menu audit tool based on Canada's Food Guide (CFG); 2) identify the areas that dietitians find the most challenging when implementing the menus; 3) share strategies that have been developed and used at the long-term care facilities (LTCs). **METHODS:** Registered dietitians (n=21) who work in LTCs in British Columbia were recruited randomly to complete an online survey and participate in a telephone follow-up interview. The survey examined the areas of foodservice practices, challenges of implementing menus, and creative strategies used to encourage resident food consumption. **RESULTS:** The prevalence of meeting the standards was 100%. Dietitians expressed that encouraging residents to consume the minimum number of servings for vegetables and fruit and grain products recommended on the CFG was the most difficult. This is due to reduce appetite, changes in food texture requirements and dietary preferences. Dietitians have developed creative strategies to increase the nutrient-density of menu items. The major concern of dietitians was to achieve a balance between providing nutrition adequacy and good quality meals within foodservice budgets. **IMPLICATIONS AND CONCLUSIONS:** Provision of nutritionally adequate meals is essential for health maintenance of LTC residents. However, a high quality meal is not only about nutrition but needed to be acceptable and enjoyed by residents. To achieve this goal, more resources should be allocated to the fresh food purchases, nutrient-dense recipe development and qualified foodservice staff for food preparation. Taking measures to improve residents' intake and nutrition status could decrease the rate of malnutrition which may reduce the costs of health care services.

Title: Evaluation of Hospital Menus: A Need for Nutrition Care Standardization

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OBJECTIVES: Many hospitals' foodservice departments do not have nutrition standards nor do they conduct nutrition care audits, as it is not mandatory under the hospital act in Canada. Without nutrition care audits or standards, we cannot guarantee nutritionally adequate meals, which may increase patient recovery time and length of stay.

METHODS: A four-week menu from a community hospital in British Columbia was assessed using Canada's Food Guide (CFG). Descriptive statistics were used to identify the prevalence for meeting the requirements of CFG for each day. Included in this assessment were the number of servings of each food group based on adult ages 19-50 and the corresponding recommendations. **RESULTS:** The four-week menu did not meet the minimum required servings of each food group. Vegetables and fruit and grain products were below the recommendations for each menu day. Although milk and alternatives were provided more frequently, they still did not meet the recommendations. Meat and alternatives was the only group that followed the guide. As well, the menu did not provide a variety of vegetables and fruit or at least half of the grain products as whole grain each day.

IMPLICATIONS AND CONCLUSIONS: Provision of nutritionally adequate meals is crucial to the health and recovery of hospital patients. Since it is an integral part of therapeutic care, all menus should be analyzed and approved by dietitians to ensure nutrition adequacy. It is necessary to develop provincial nutrition care standards, which include nutrient targets and menu writing guidelines. Once these standards are implemented, regular menu audits should be conducted by dietitians for continuous quality improvement.

Phase II – Practice-based Evidence in Nutrition (PEN) evaluation: interviews with key informants

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Objectives: Dietitians of Canada has developed and implemented an innovative online decision support service for dietitians called Practice-based Evidence in Nutrition (PEN).

The objectives of this study were to identify the facilitators/barriers that enable/prevent dietitians from using PEN in their practice, and to evaluate the effectiveness of PEN as a

Knowledge Translation and Transfer (KTT) tool. **Methods:** Individual telephone

interviews were conducted with 17 key informants, as identified through consultation with the Co-directors of PEN, using a semi-structured interview schedule. Respondents

included dietitians (n=14) and professionals from outside of dietetics (n=3). **Results:**

Respondents identified the following facilitators and barriers to PEN use (in descending order of frequency): Facilitators: specific to dietetics; rigorous/expert review; easily

accessible; current; credible/secure; well organized and easy to use; overall valuable to practice; and provides good value for money. Barriers: cost; licensing issues; certain

organizational aspects; and perceived lack of training for pathway contributors.

Respondents felt that PEN helps to position dietitians as leaders and/or experts in the

healthcare field; that PEN helps to incorporate evidence into practice; and that PEN

engages practitioners, but that it lacks relevant content for some specific practice areas.

Implications & Conclusions: To overcome identified barriers, recommendations

include increased communication regarding PEN's editorial review process and rationale for current fee structuring. PEN was considered by most respondents to be an effective

KTT tool. Recommendations to enhance effectiveness were to: share PEN with allied

health professionals; continue to expand PEN content; and increase opportunities for

member interaction.

Portion controlled “regular” desserts for diabetics in a long-term care facility

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Quality of life is important to those living in long-term care facilities, and a liberalized diabetic diet is appropriate when blood sugars are reasonably controlled. Persons with diabetes may have 10% of their daily calories from sucrose. The aim of this project was to determine whether the residents living with diabetes may have “regular” desserts in portion controlled sizes to increase dessert variety and client satisfaction. Nine residents completed a questionnaire regarding dessert satisfaction. Recipe analysis was calculated using DC Recipe Analyzer and desserts were portion controlled to provide $\leq 30\text{g}$ (2 servings) carbohydrate. Based on estimated daily kcalorie requirements, residents are allowed to have a total of 4 to 5 servings of carbohydrate per meal. The diabetic portion controlled desserts (DPCD) were served at lunchtime only, for 5 days. At supper, the traditional diabetic dessert (usually fruit) was served. Blood glucose (BG) was measured as usual and was compared to previous BG values to determine the effect of DPCD on BG control. A second client satisfaction questionnaire was administered. Only 33 % of residents were satisfied with dessert selection on the initial survey. After receiving DPCD, the second client satisfaction questionnaire indicated that 100% of residents were satisfied and enjoyed the increased variety. There was no significant change in BG values taken during the study period when compared to previous BG values. According to the data collected, providing DPCD increases client satisfaction and quality of life. The sample size of this study was small, but this pilot project indicates that a 30g carbohydrate portion controlled “regular” dessert at lunchtime only, is a welcome addition for long-term care residents living with diabetes and does not negatively affect blood glucose values.

Documentation practices regarding patients' requiring enteral nutrition

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Documentation of nutrition care for enterally fed patients is essential to ensure nutrition objectives are met and for effective communication with other members of the medical team. Concerns regarding justification for nutrient requirements, enteral formula, formula changes, and addition of protein powder were expressed by the clinical nutrition department of a four site hospital center located in Montreal. Correct documentation is essential for legal and ethical concerns and for monitoring the overall quality of patient care. **Objectives:** To evaluate the charting practices of dietitians at a four site Montreal hospital center regarding nutritional care of patients receiving enteral nutrition. **Method:** An order form with all enterally fed patients within the hospitals was obtained. Their medical charts were then audited. Chart audits evaluated type of enteral formula, justification for chosen formula, justification for formula change, justification for energy, protein and fluid requirements and justification for addition of protein powder and pectin. Results of the study were presented to the Enteral Care Committee. **Results:** A total of 92 charts were audited. 60.9% of charts audited included justification for enteral formula and 77.0% of charts clearly justified a reason for formula change. 23.9% of charts justified energy requirements, 71.7% justified protein requirements and 13.0% justified fluid requirements. 20.7% of patients had protein powder added to their formula, while 42.0% of these cases were justified. 10.9% of patients had pectin added to their formula and 89.9% of these cases were justified. 71.7% of charts had progress notes charted at least once per week. **Conclusion:** Standardization of charting practices across all four sites would ensure thorough documentation of the standards evaluated. Suggested standards for charting practices were recommended; however further committee work is needed to implement standards of practice.

Interim evaluation of a series of workshops targeting families with children aged 4-10 in a low-income area of Hong Kong

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An interim evaluation was conducted on a community nutrition program run by a non-governmental organization in Hong Kong. The program targeted families with children aged 4-10 living in a low-income district. Each series consisted of five weekly workshops following an informational recruitment session. The program's objectives were to attract 25 families per series, and to increase nutrition knowledge and improve eating habits among participants. Data was collected from participants via an opinion survey at baseline, a weekly nutrition habits record with 11 yes/no questions, and a program evaluation form. After two completed series, the program reached 32 families, or 64% of attendance goals. It is suggested that attendance could be improved by trying different promotional strategies. Initially, only 28% of parents described their child's eating habits as "balanced". Baseline nutrition habits records showed that only 24% of participants drank 2-3 cups of milk daily, and 36% never ate junk food. At least 60% of respondents gave a positive ("healthy") response to the other categories, which included intake of other food groups, exercise, daily breakfast intake, and avoiding fast food. Overall, there was an increase in exercise, eating at set meal times, eating breakfast daily, and in intake of meat, vegetables, and milk, but a decline in intake of fruit and fluids, and in avoiding junk food and fast food within the group. Individually, however, participants' scores on the weekly nutrition habits record remained relatively stable, but in the final evaluation they reported that their nutrition knowledge had improved. The program should place more emphasis on improving eating habits, perhaps through individual goal-setting. Evaluation tools should also be redesigned to detect subtler behavioural changes.

Indicateurs cliniques des patients diabétiques suivis à la clinique pédiatrique de diabète à l'Hôpital régional Dr Georges-L.-Dumont (HRGD)

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Objectif : Évaluer les indicateurs cliniques du contrôle du diabète chez les enfants suivis à la clinique de diabète de l'HRGD. **Méthode :** Les résultats d'hémoglobine glycosilée, le poids, la taille, le sexe, l'âge, le type de traitement antidiabétique et le nombre d'interventions diététiques reçu dans la dernière année ont été recueillis au dossier médical des patients. Une moyenne annuelle de l'hémoglobine glycosilée a été calculée pour chaque patient afin de la comparer aux recommandations de l'Association canadienne du diabète (ACD). L'indice de masse corporelle (IMC) a été calculé à partir des dernières données enregistrées pour le poids et la taille. Cette donnée a ensuite été évaluée selon l'âge à l'aide des courbes de croissance du CDC (Centers for Disease Control and Prevention). **Résultats:** Parmi les 32 patients recevant des soins à la clinique pédiatrique de diabète, 29 ont été retenus pour faire partie de cette étude. Tous les sujets étaient atteints du diabète de type I et 59% d'entre eux utilisaient une pompe d'insuline. L'analyse des données démontre que 59% des enfants ont un IMC au-dessus du 85^e percentile sur la courbe de croissance du CDC. Près de 80% des enfants ont une valeur moyenne d'hémoglobine glycosilée au-dessus de la valeur recommandée par l'ACD. Finalement, les patients reçoivent une consultation avec la diététiste en moyenne deux fois par année. **Conclusion:** Puisque près de 60% des enfants diabétiques suivis à cette clinique sont obèses et que plus des trois quarts ont un contrôle glycémique sub-optimal, il serait souhaitable que ces enfants reçoivent davantage de soins spécialisés en nutrition afin de prévenir les complications d'un diabète mal contrôlé à long terme.

Title: Dietitians of Canada's Vision 2020: What do Registered Dietitians in the Champlain LHIN need to reach this vision?

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Objectives: In 2008, Dietitians of Canada (DC) set long-term goals for Canadian dietitians and the profession as a whole by publishing *Vision of the Preferred Future for the Dietetic Profession (2020)*. The purpose of this vision was to “help dietitians embrace their leadership roles” as a means of promoting health for all Canadians. The vision consisted of four priority areas. The objectives of this study were to assess current tools and resources available to dietitians who work in the Champlain Local Health Integration Network (LHIN) and to explore the needs of these dietitians in order to meet the four components of DC's *Vision 2020*. **Methods:** All dietitians in the Champlain LHIN registered with the College of Dietitians of Ontario were recruited as participants (n=384). An online survey consisting of 30 questions was designed and administered using SurveyMonkey. The questions were based on the four priority areas of the vision and participant demographics. Focus group sessions were conducted to further elaborate on the common themes that arose from the questionnaire. **Results:** One hundred and forty-three dietitians responded to the survey (response rate = 37.2%). At this point in time the survey is being analyzed and results are awaited. **Implications and conclusions:** The results of this study will be used to inform stakeholders of the perceived needs of clinical dietitians working in hospitals in the CLHIN for meeting Vision 2020 with the goal of working collaboratively in order to advance the dietetic profession.

TITLE: Key issues in the implementation and success of food skills programs for adults with mild to moderate developmental disabilities

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OBJECTIVES: Food skills programs for adults with mild to moderate developmental disabilities may help to improve dietary intake and provide an opportunity to gain skills required for independent living; however, these programs are not always offered. The objectives of this study were to explore the perceived barriers to offering food skills programs to adults with developmental disabilities and to make recommendations for overcoming these barriers.

METHODS: A semi-structured focus group was conducted with managers of community agencies serving adults with developmental disabilities residing in a mid-sized Southwestern Ontario city.

The focus group was audio-taped and transcribed verbatim. Multiple analysts extracted key themes from the data. Three semi-structured interviews were also conducted with managers of other community agencies within Southwestern Ontario that had implemented food skills programs for this population. Data from these interviews were used to either confirm or refute the barriers identified by the focus group and to help inform recommendations.

RESULTS: Barriers were identified as inadequate resources (e.g., funding and staffing), difficulty meeting the diverse learning needs of the population, difficulty transferring skills, and resistance to behaviour change. The barriers identified in the focus group were confirmed by the manager interviews. Suggested strategies for overcoming these barriers included employing a train-the-trainer approach and delivering food skill instruction in the home environment.

IMPLICATIONS & CONCLUSIONS: Although barriers exist to the implementation and success of food skills programs for adults with mild to moderate developmental disabilities, these may be addressed through program planning and design.

Process evaluation of the “Nutrition Tools for Schools” toolkit

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Objectives: A process evaluation can include the assessment of the tools and methods used in the implementation of a program. Nutrition Tools for Schools (NTS) is an elementary school program and toolkit developed by a group of Ontario public health dietitians (Creating a Healthy School Nutrition Environment [CHSNE] Health Unit Collaboration) to support the creation of a comprehensive healthy school nutrition environment. With public health support, a School Nutrition Action Committee (SNAC) leads the school community through the program’s four-step process using the NTS toolkit. The objective of this process evaluation study is to assess the enabling factors and barriers of implementation of the NTS toolkit in two Algonquin and Lakeshore Catholic District School Board elementary schools. **Methods:** A 16-item questionnaire was developed to gather qualitative and quantitative data on school readiness, time commitment, steps completed, toolkit usability, user satisfaction, and sustainability. The questionnaire will be distributed to members of the SNACs. **Results:** Pending. **Implications & Conclusions:** This process evaluation will identify the enabling factors and barriers to implementation of the NTS toolkit and will identify potential solutions to address challenges. The results and recommendations of this process evaluation study will be used to adapt the NTS program for future implementation within participating health unit areas.

Engaging community health centre clients in the development of food shopping education programs.

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Objectives. The purpose of this study was to engage clients at Kingston Community Health Centres (KCHC) in the development of a new food shopping program. The study aimed to 1) use community engagement as a strategy to address social exclusion, and 2) to develop recommendations for a food shopping program designed to reduce food insecurity in this population. **Methods.** Three semi-structured focus groups, with a total of 21 participants were completed in December 2008 and January 2009. Participants were asked to respond to four question areas: 1. factors they consider when shopping, 2. information they would find helpful when purchasing food, 3. barriers to participating in community education programs and, 4. preferences for program design. Themes were identified within each question area using a systematic analysis of abridged transcripts. Participants were offered the opportunity to provide feedback about the focus group process and maintain involvement in the planning of this new program. **Results.** Focus group participants considered cost, health effects and food quality when food shopping. Participants wanted information about label reading, managing chronic conditions, and understanding macronutrients. Barriers to participation in community food programs included time, transportation, childcare, location, content, facilitators, advertising and participation criteria. Incentives for participation included information, tasting new foods, eating, facilitators and socializing. Suggestions for program design related to addressing barriers and incentives and providing information in an interactive format. **Implications & Conclusions.** Focus groups were a useful method in enhancing community engagement in program planning at KCHC. Food shopping education programs should prioritize addressing barriers and incentives to guide program design. Information should focus on saving money when food shopping while managing chronic conditions.

Strategies to reduce waste in patient food services.

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OBJECTIVES; As an environmental initiative, the objective of the study is to determine strategies to reduce waste in patient food services (PFS), and to develop a communication tool to share the strategies with hospital food service managers (FSM). **METHODS;** An evaluation of waste reduction strategies was performed by completing a literature review, communicating with FSMs and environmentalists across Canada, developing and distributing an online survey for hospital FSMs in Ontario, and initiating a waste separation program. Data from all sources was combined to develop a communication tool containing strategies for waste reduction in PFS. **RESULTS;** 49 completed surveys were analysed (a response rate of 41%). Of the Ontario hospitals surveyed, only 4% base purchasing decisions on products with the least amount of packaging, 55% never perform waste audits on non-food waste returned on patient trays, and approximately 70% dispose recyclable and compostable wastes from returned patient trays into regular waste. A pilot waste separation program in a hospital dishroom stripping station resulted in a 50% reduction in regular waste, and a doubling in the amount of recycled waste at the station e.g. by recycling milk cartons and juice containers. There were no additional costs to initiate the program aside from better utilizing labour. The communication tool consists of three focus areas for waste reduction: waste audits, source reduction and prevention, and waste separation programs. **IMPLICATIONS & CONCLUSIONS;** FSMs are interested in environmental options for their facilities, but time, cost and labour are barriers that affect the implementation of waste reduction strategies in PFS. The tool developed in this study provides practical cost-effective options for FSMs to improve their environmental impact by reducing waste produced in PFS.

Determining caregiver satisfaction with feeding and swallowing team services at Wascana Rehabilitation Centre

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Objective: The Feeding and Swallowing Team (FST) is part of the Children's Program at Wascana Rehabilitation Centre (WRC). The FST is an interdisciplinary team of health professionals that specializes in the treatment of feeding and swallowing problems in children who reside in Southern Saskatchewan. This study aimed to determine the satisfaction of caregivers whose children had been seen by the FST at WRC. **Methods:** A questionnaire was developed based on a review of the literature and suggestions from members of the FST. Questionnaires were mailed to 36 caregivers whose children had been assessed by the FST at WRC within the previous year. Returned questionnaires were scored to determine the total satisfaction score of each caregiver, as well as the mean rating for each statement. Additional comments provided by caregivers were collected and used to supplement quantitative data. **Results:** Eight questionnaires were returned. Seven out of the 8 responding caregivers in this study were found to be satisfied, with a mean satisfaction score of 75%. Caregivers indicated that communication with members of the FST was effective. Caregivers also suggested that follow-up contact with the FST would be valuable and appreciated. **Implications & Conclusions:** Caregivers were found to be satisfied with services of the FST at WRC. Responses from caregivers provided valuable feedback to the FST that can be used to continue to improve services.

Oral nutrition supplementation practice for elderly clients in long term care facilities in Regina Qu'Appelle Health Region – a retrospective chart audit

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Objective: Oral nutrition supplements (ONS) are intended to help individuals who are unable to meet their nutrition requirements through food. Studies have shown that many ONS are prescribed without the use of nutrition screening tools or standard guidelines. The purpose of this study was to determine if conducting a chart audit of elderly residents receiving ONS over the last year could provide information on the rationale for ONS prescription and use in the Regina Qu'Appelle Health Region Long Term Care (RQHR LTC) facilities. **Methods:** A retrospective chart audit was conducted with 38 resident charts from four RQHR LTC facilities which did not employ dietitians. A standardized data collection tool was developed. **Results:** In the charts reviewed, documentation that was found on the practice of ONS included: brand of ONS used (89%), prescribers' identities (34%), and frequency of receipt (68%). The rationale for ONS prescription was not clearly indicated in 87% of the charts reviewed. **Implications & Conclusions:** The results of this study suggest that charts contain documentation on the practice of ONS, but offer limited information on the rationale for its prescription and use. Currently there are no standardized guidelines on ONS prescription or use in the RQHR LTC facilities. As the current literature suggests that a lack of criteria for ONS practice increases the number of inappropriate prescriptions, the development and use of guidelines may merit future study. The results of this study also suggest several areas where dietitian services may be valuable to the care of long term care residents.

Regina consumers' and trans fatty acids

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Objectives: Consumption of trans fatty acids (TFAs) has been linked to an increase in coronary heart disease as it increases low density lipoprotein cholesterol and decreases high density lipoprotein cholesterol¹. Recent data indicates that TFAs promote weight gain when compared calorie for calorie with saturated fat². The purpose of this study was two-fold: 1) to determine what Regina consumers know about TFAs and 2) to determine if consumer knowledge and perceptions of TFAs affect reported food purchases. **Methods:** 211 grocery shoppers were surveyed at 3 Regina grocery stores. Shoppers were asked about their knowledge and level of concern regarding TFAs, and whether TFA content of food affected their reported food choices. They were also asked where they locate information regarding TFAs on food packages. **Results:** 73% of shoppers reported making dietary changes to try and decrease TFA consumption, however 61% of consumers reported they would not change their favourite snack food if it contained TFAs. Significantly fewer shoppers aged 18-40 were concerned with TFAs than their older counterparts. 42% of shoppers indicated that TFAs are found in non-hydrogenated margarines, showing an erroneous belief. **Implications & Conclusion:** The findings from this study suggest that Regina consumers are aware of TFAs and some have a basic understanding of the negative health effects. However, there is still misinformation regarding this topic and further consumer education is required. The findings may be useful for health professionals to plan education strategies to better inform consumers about TFAs and their health implications. Government organizations should continue with the Trans Fat Task Force guidelines to reduce the amount of TFAs in the Canadian food supply.

TITLE: The effect of a healthy lifestyle group education session on self-reported and measured body weights and lifestyles of individuals with prediabetes.

AUTHORS: M Tomas¹, A MacDonald^{1,2}, J Mathysen³ and I Giroux¹, ¹Brescia University College, ²MSc Foods & Nutrition Candidate - Internship Stream, ³St. Joseph's Health Care, London, Ontario

Adoption of a healthy diet and increased physical activity has been shown to help prevent or delay onset of type 2 diabetes (T2DM) in individuals diagnosed with prediabetes. The Prediabetes Initiative community education program provides healthy lifestyle strategies that may help prevent or delay T2DM in these individuals. **Objective:**

To determine if healthy lifestyle group education for individuals diagnosed with prediabetes will influence self-reported and actual body weights, and lifestyle choices.

Methods: Participants self-reported weights on a questionnaire prior to a group presentation (T1) and were individually weighed immediately after. Participants were invited to a follow-up presentation two to six months later (T2). Self-reported weights, lifestyle changes, and actual weights were collected. Weights and weight changes from

T1 and T2 were analyzed for differences. **Results:** At T1, participants significantly underestimated their weights by 1.0 ± 2.1 kg ($p=0.0001, n=75$). At T2, self-reported weights were also significantly lower than measured by 1.7 ± 2.9 kg ($p=0.03, n=17$).

Participants demonstrated significant actual weight loss from T1 to T2 (82.6 ± 17.4 to 81.2 ± 17.4 kg), $p=0.009$ ($n=20$). At T2, 88.2% ($n=17$) reported they made lifestyle changes by modifying eating behaviours ($n=14$), increasing physical activity ($n=9$) or both ($n=8$) since T1. **Implications & Conclusions:** Healthy lifestyle education appeared

to have influenced these individuals to apply diet and physical activity strategies to assist in weight management. Although the individuals overestimated their weight loss, actual weight loss was significant. Further research is needed to determine if weight management strategies are maintained long-term among individuals who receive this group education and if they remain effective.

Nutrition Tools for Schools: A process evaluation of implementation in Algoma elementary schools

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OBJECTIVES: The objectives of this process evaluation are to 1) determine the degree to which elementary schools in Algoma are implementing Nutrition Tools for Schools (NTS); 2) identify facilitators and barriers to effective implementation. **METHODS:** All elementary schools in Algoma (65) and five outside of Algoma (total n=70) were provided a copy of NTS and assigned a Public Health Nurse or Dietitian to support implementation. An online survey was completed by public health staff for 62 elementary schools at baseline (October-December 2008) and 67 elementary schools at midpoint (January-February 2009). Data were collected using quantitative and qualitative questions. Yes and no questions determined which steps and activities were completed, while open ended questions were asked to describe facilitators and barriers to implementation. **RESULTS:** Sixty eight percent (n=40) of elementary schools were using NTS at midpoint, compared to 32% (n=20) at baseline. At midpoint, 40% (n=16) were in Step One, 20% (n=8) were in Step Two, 38% (n=15) were in Step Three and 2% (n=1) were in Step Four. Key facilitators to implementation included interest and commitment on behalf of the principal, staff and parents, school board endorsement of NTS, utilizing an existing committee, easy-to-use NTS resources (tools), public health support and student involvement. Barriers included finding time to meet, not viewing NTS as a priority, time commitment required, students and parents not being involved, difficulty finding a good leader and delayed distribution of French resources. **IMPLICATIONS AND CONCLUSIONS:** The results from this study will help Algoma Public Health improve the effectiveness of NTS implementation and may assist other health units/departments as they work with schools to create Healthy School Nutrition Environments using NTS.

Does the Thunder Bay Good Food Box Program increase fruit and vegetable consumption?

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Objectives: Using a validated Food Frequency Questionnaire (FFQ), this study was conducted to determine if new customers who purchase a Good Food Box (GFB) will increase their daily fruit and vegetable (F&V) consumption. **Methods:** A convenience sample of new GFB customers (n=41) was selected to participate in the telephone interviews. Twenty two customers were able to complete the pre-test questionnaire and 16 were able to follow up with the post-test questionnaire. The same six FFQ questions were asked in the pre and post-test. Demographic questions and questions regarding how they found out about the program were asked during the pre-test. Questions regarding length of time their Family or Single GFB lasted and if they personally felt their F&V consumption had changed since receiving their GFB were also asked. **Results:** Results from the F&V FFQ indicate that 10 of 16 customers (62.5%) increased their F&V consumption after receiving the GFB. Preliminary findings suggest that some customers expressed that since receiving the GFB they are now eating fresh F&V more often and the variety is increasing. Fifty percent of the customers indicated their GFB took approximately 2 weeks to consume, the remainder of customers were split between 1 and 3 weeks. The top two reasons customers decided to purchase the GFB were because they wanted to increase the variety of F&V in their diet and they were unaware that they qualified for the program until now. **Conclusions:** The majority of new GFB customers, who responded to the interviews, were found to increase their F&V consumption after receiving and consuming their GFB. Qualitative data will be assessed to give insight on how to make the GFB program better.

Healthy measures study: assessing participation rates using active consent vs. passive consent.

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Childhood obesity is a public health concern in Canada. There are few published Ontario data available on measured Body Mass Index (BMI) of children. **Objectives:** The objective of this study was to determine whether or not there was a difference in participation rates when active parental consent compared to passive consent was used when measuring BMI in grade 6 children in Cochrane and Moosonee. This study was conducted to help add to the experience of implementing obesity surveillance in Ontario. **Methods:** Height and weight measurements were taken by trained staff of those students who had returned completed and signed permission forms from their parents or guardians. Height and weight measurements were taken of each student using stadiometers and digital scales. All data were analyzed using SPSS and/or Epi Info by the Epidemiologist at the Porcupine Health Unit in Timmins. Results were then compared to previous surveys using passive consent in the same settings. **Results:** Comparing the data of total active versus passive consent, a participation rate of 42% (44/70 in Cochrane and 6/49 in Moosonee) was found using active consent, and a rate of 69% (53/71 in Cochrane and 26/43 in Moosonee) was found using passive consent. Participation rates decreased in Moosonee when active consent was used. Upon comparing active versus passive consent data within individual communities however, the difference in participation rates is not significant in Cochrane, however it is in Moosonee. **Implications & Conclusions:** Further qualitative research is required to determine whether or not schools' and parents' perceptions of such a project and whether active versus passive consent procedures affect participation rates.

Researching, examining and analyzing patient outcomes related to diabetes group education sessions.

S Doni*, J Guizzo, M Gravelle. Northern Ontario Dietetic Internship Program, Sudbury, Ontario.

Objectives: Diabetes self-management education (DSME) is an important component of diabetes care as serious complications may be prevented or delayed if individuals can effectively manage their diabetes. DSME has traditionally been on an individual basis, but this is often no longer a feasible option due to the high prevalence of diabetes and limited resource capacity. The purpose of this study is to determine the elements that make diabetes group education effective, as well as the outcome measures and tools that should be used to evaluate group education sessions. **Methods:** A literature review was conducted on research published between 2000 and 2008 to determine the elements of effective group education, the outcomes that should be measured, and the tools that should be used to evaluate group education sessions. **Results:** DSME curriculum must be client centered and emphasize knowledge and skills that will lead to sustained self-management efforts. The curriculum should reflect clinical practice guidelines while being highly interactive and relevant to the interests of learners. Group education sessions can be evaluated using a variety of health related outcome measures. Emphasis should be placed on measuring self-management behaviours, problem-solving skills, self-efficacy, quality of life, and patient satisfaction rather than diabetes knowledge or glycosylated hemoglobin. A variety of tools are available to evaluate type 2 diabetes group education including the Diabetes Care Profile, Diabetes Empowerment Scale, D-SMART, ATT-19, and the Diabetes Knowledge Test. **Implications and Conclusions:** Group education can be a successful and cost-effective alternative to individual counselling for diabetes education. Incorporating elements of effective group education and ensuring that sessions are continuously evaluated using appropriate outcome measures and tools are key aspects of successful diabetes group education.

The Development of a key informant survey to identify barriers and facilitators of recruitment and retention of Registered Dietitians in Northern Ontario.

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There is a longstanding shortage of Registered Dietitians (RDs) in Northern Ontario. Limited research exists on factors that affect recruitment and retention of RDs.

Objectives: To construct and pilot two key informant surveys directed at Registered Dietitians and their employers. To identify whether questions in the survey tools need to be altered to reflect understanding and clarity. **Methods:** Two key informant telephone surveys were developed with open-ended questions on recruitment and retention issues of RDs in Northern Ontario. The research design was structured in two phases:

1) pretesting and 2) piloting of a survey to a convenience sample of RDs and employers. Pretesting and piloting were conducted with RDs (n=3, n=7 respectively) and employers (n=1, n=6 respectively) in the Local Health Integration Networks 13 & 14. During each phase of testing, the respondents were asked a series of four cognitive testing questions after completing the surveys to assess the overall effectiveness of the survey. Audio taped transcripts were analyzed for understanding and clarity. **Results:** Seventy percent of RDs (n=7) and 60% of employers (n=6) responded. Results are pending data analyses. Preliminary results from the RDs and employer surveys suggested improvements to the wording and length of the survey questions. **Implications & Conclusions:** These results will be used to revise the survey for implementation. The data collected when the survey is administered will aid in future advocacy for Registered Dietitians in Northern Ontario and assist with Health Human Resource planning initiatives.

Using focus groups to explore Sudbury Community Food Advisor (CFA) satisfaction and program interests

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Objectives: The CFA program is a provincially funded initiative that utilizes aspects of the peer and lay education models to extend knowledge and skills in healthy food choices and safe food handling practices to community members. The purpose of this study is to use focus groups to investigate if and how the Sudbury CFA program can be improved by assessing current volunteer satisfaction and interest in program direction.

Methods: All eleven of the Sudbury CFA's were invited to participate. Two focus groups were held with 2 and 3 participants respectively for a total of 5 participants. A standardized interview guide was presented by the moderator to each group for discussion. Using NVIVO software, key themes and ideas were identified and summarized. Themes were evaluated for their frequency, extensiveness and intensity.

Results: Program strengths identified by participants included the opportunity to teach others, the opportunity to volunteer, the education updates and the social aspects of the program. Limited advertisement to specific community groups and feelings of having time wasted with low turnout for CFA activities were identified as program challenges. Strengths and challenges of the program management were also discussed and the suggestions for improvement were offered. Grocery Store Tours were favoured over the Good Food Box, Market Square and Canning and Preserving as potential program initiatives, however all four initiatives inspired discussion and interest among the groups. A limitation of this study is that the data are not representative of all Sudbury CFA's as focus groups did not reach saturation. **Implications & Conclusions:** The information collected from the focus groups will be taken into consideration by the program lead during program planning.

Determining the intermodal reliability between the paper and electronic versions of the NutriSTEP questionnaire

S.Paquette. Northern Ontario Dietetic Internship Program, Timmins, Ontario.

OBJECTIVES: This study contributes to the ongoing improvement of the NutriSTEP program for which only the paper version of the NutriSTEP questionnaire is currently available. The objective is to determine inter-modal reliability between parent's responses to a paper and electronic version of the NutriSTEP questionnaire and their child's overall nutritional risk score. **METHODS:** Parents of children between the ages of three and five with an email account and access to the internet attending the JK Registration Day for Timmins Public Schools were randomly selected to complete either the paper or the electronic version of the NutriSTEP questionnaire (n=70). Two weeks following the initial data collection the participants who complete the electronic version were contacted by telephone to remind them to complete the paper version they received and mail it in the preaddressed and pre-stamped envelope that was provided. The other half of the participants that previously completed the paper version were contacted by email with the electronic questionnaire for them to complete and submit. The electronic version is a PDF file created by the Porcupine Health Unit and an exact replica of the paper version. **RESULTS:** Forty out of 70 (57%) participants completed both versions of the questionnaire. Descriptive statistics will be used to describe the sample and intraclass correlation (ICC) and kappa coefficients will be used to determine intermode agreement. **IMPLICATIONS & CONCLUSIONS:** These results will determine if an exact replica of the current paper questionnaire administered electronically yields the same results and can therefore be used interchangeably. The main implication for practice will be to allow for the NutriSTEP questionnaire to be administered electronically which will result in greater accessibility of the tool.

A review of open tube feed preparation policies and procedures for the adult population.

L Tribe*, K Fisher. Northern Ontario Dietetic Internship Program, Sault Ste. Marie, Ontario.

Objectives: To determine the open tube feed policies and procedures recommended in practice guidelines and used in Canadian hospitals with respect to use of a laminar flow hood. **Methods:** A literature review was completed to determine the current recommendations for open tube feeds. In addition, Registered Dietitians from the Dietitians of Canada Nutrition Support network were contacted to participate (n=170) in an online survey regarding open tube feed practices at their hospitals. **Results:** The literature review, which included practice guidelines, indicated that open tube feeds could be hung safely for up to 4 hours with supplements added or up to 8 hours without. The literature did not indicate use of laminar flow hoods for adult patients. Only 9% (n=15) of participants completed the survey. Of those that participated, 71% hung their open tube feeds without supplements for up to 8 hours and 33% hung those with supplements added for up to 4 hours. Only one participant indicated use of a laminar flow hood. Current practice guidelines and/or manufacturer recommendations were followed by 47% of participants. **Implications & Conclusions:** The survey results, although a small sample size, concur with the current practice guidelines that use of laminar flow hoods is not indicated for adult patients. Due to increased costs associated with use of laminar flow hoods for open tube feed preparation, Sault Area Hospital (SAH) may want to consider evaluating whether there is any benefit to its use. Further research is indicated before recommendations can be made to support changes to present preparation policies and procedures related to hang times for open tube feeds at SAH.

Supporting teachers to promote a healthy body image in elementary school students.

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Objectives: Despite the expected provincial curriculum changes, the health unit wanted to move ahead to support teachers in the promotion of a healthy body image in elementary school students and improve their knowledge and confidence to teach and role model a healthy body image. **Methods:** A survey was developed and distributed to teachers to determine the specific resource topics and format they wanted from the health unit and to assess their current actions that might influence students' body images. The survey, distributed through Survey Monkey®, collected both qualitative and quantitative data. One hundred and twelve surveys were completed. Survey results along with input from key stakeholders and a literature review were used to guide the development of a "Frequently Asked Questions" tool and an accompanying in-service for teachers. These will be presented to three groups of teachers and evaluated using a post-in-service questionnaire. **Results:** While the pilot test evaluation results will not be available until May 2009, our objective is to improve teachers' knowledge and confidence in promoting a healthy body image at school and provide teachers with a useful resource. **Implications & Conclusions:** Positive results will provide the health unit with an evidence-based tool for elementary school teachers. Elementary schools offer a promising site for providing healthy body image promotion programs targeted at students as young as seven years old who are dealing with body dissatisfaction. Research has shown that teachers, above all other adults outside of the home have the greatest influence on children's health. Future use of this tool may help to create a more supportive social environment within elementary schools.

Evaluating the use of total parenteral nutrition at St Michael's Hospital: a retrospective chart review of the indications, implementation and duration

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Total parenteral nutrition (TPN) is a form of nutrition therapy which provides nutrients intravenously to the patient. Currently, St. Michael's Hospital (SMH) has an operational protocol pertaining to the use of TPN. It is unclear if the operational protocol is representative of actual practice. **Objectives:** To describe the use of TPN in adult patients at SMH in terms of indications, implementation and duration. To evaluate whether current practice meets quality criteria. **Methods:** A retrospective chart review of SMH adult patients (n=200) aged ≥ 18 years who received TPN during 2007- 2008 will be performed. Patients receiving home TPN prior to admission and patients transferred from another facility already receiving TPN will be excluded. Quality criteria were developed based on a literature review and current TPN operational protocol. Indications for TPN and the number of days of inadequate intake prior to TPN initiation will be reported. Implementation of TPN will be described as occurrence of TPN consult, assessments by both dietitian and TPN team, completed bloodwork, length of time between TPN order, line insertion and TPN initiation, type of line, time to achieve goal rate, and concordance between dietitian's recommended and actual TPN protein and energy delivered. Duration of TPN and reason for discontinuation will be collected. **Results:** Data collection is ongoing. **Implications & Conclusions:** Determining current TPN practice will allow for any necessary improvements to ensure the best patient care and cost effectiveness. In addition, the data gathered from this study is intended to provide baseline information that can be used in future quality improvement studies.

TITLE: Consumption of dietary flavonoids and their effect on cardiovascular related diseases

AUTHOR: R. Ubhi. Southeastern Dietetic Internship Program, Kingston, Ontario.

OBJECTIVE: To review the scientific evidence regarding the intake of dietary flavonoids and their effect on chronic diseases in adults. **METHODS:** Using major databases such as PubMed, Ovid, and Medline, a literature review was completed on food sources of flavonoids and their effect on cardiovascular disease (CVD). Seven studies focusing on dietary flavonoid intake and CVD in adults (> 18 years of age) were included in the review. Articles that focused on other chronic diseases were excluded from the review. Articles were evaluated and graded using Practice Based Evidence in Nutrition (PEN) guidelines. **RESULTS:** Strong evidence indicates that high intakes of the flavonoids kaempferol [white cabbage] and quercetin [apples] may reduce ischemic heart disease and ischemic heart disease mortality and a high intake of kaempferol may reduce the incidence of cerebrovascular disease. Consuming flavonoids like catechins [black tea] with a moderately low (<30%) fat diet reduces total and LDL cholesterol by significant amounts and may reduce the risk of coronary artery disease (CAD). The effect of black tea versus the low fat diet is unclear. Evidence suggests women consuming green or black tea extracts are at lower risk of cardiovascular disease and mortality from CVD and all causes than are men who consume tea. The addition of milk to black or green tea shows no effect on the antioxidant capacity of the flavonoids. **IMPLICATIONS & CONCLUSION:** Dietary flavonoid intake appears to be effective in reducing the risk of some cardiovascular related diseases. Although flavonoids in black tea may reduce cholesterol and lower the risk of CAD, the effect of black tea alone needs to be assessed. Further studies also must be done to assess gender differences of flavonoid consumption.

Are the current KDOQI nutritional guidelines for maintenance hemodialysis patients appropriate for the home hemodialysis population?

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Objectives: Limited research is available on nutrition recommendations for home hemodialysis patients, and currently no formalized guidelines exist for this population. The Kidney Disease Outcome Quality Initiative (K/DOQI) are evidenced-based clinical practice guidelines for all stages of chronic kidney diseases and related complications. The KDOQI nutrition guidelines for hemodialysis are based on patients receiving maintenance dialysis, and therefore may not be appropriate for the home hemodialysis population, who often dialyze more frequently. The development of specific recommendations and educational resources for this patient population would be beneficial. The objectives of this study are to assess the nutritional status, energy expenditure, and dietary intake of home hemodialysis patients, and compare these results to the K/DOQI guidelines to determine if they are appropriate. **Methods:** This prospective, observational study will examine the nutritional status of Toronto General Hospital's Home Hemodialysis patients who dialyze ≥ 20 hours per week. Nutritional status will be determined using validated techniques and questionnaires to measure body mass index (BMI), subjective global assessment (SGA), bioelectrical impedance analysis (BIA), energy requirements and dietary intake. Additional nutritional parameters including laboratory results and dialysis records will be analyzed. **Results:** Currently n=18: 14 males and 4 females, mean age: 43.6. Data collection is ongoing. **Implications & Conclusions:** The results of this study will provide the foundation for the development of new guidelines for home hemodialysis patients, allowing clinicians to provide evidence-based nutritional care to this population.

Air displacement plethysmography accurately measures percent fat mass relative to dual x-ray absorptiometry in healthy young women.

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Objective: To determine the agreement between percent fat mass (%FM) measured by dual x-ray absorptiometry (DXA) vs. air displacement plethysmography (ADP). **Methods:** Forty-five, reportedly healthy undergraduate females were recruited from the University of Guelph's Applied Human Nutrition program. Each subject underwent one full body DXA scan (Discovery Wii, Hologic inc., Bedford MA) and one ADP assessment using a BOD POD® (Life Measurement inc., Concord CA) to determine total %FM. The order of the two tests was random for each subject. The agreement between the two methods was assessed using a paired samples t test, simple linear regression and the method of Bland-Altman. **Results:** Analyses indicated no significant difference between %FM determined by DXA (27.1 ± 4.8), compared to ADP (26.1 ± 5.6). The bivariate correlation between the two methods was .867 ($p=.01$) indicating good agreement. Bland-Altman analysis revealed no significant bias between the two methods. ($R^2=.071$, $p=.076$). **Implications & Conclusions:** In research and practical settings DXA and ADP have become well-accepted methods of body composition assessment. These findings suggest that measures of %FM determined by these two methods did not differ in our sample of healthy young women indicating that they may be used interchangeably.

TITLE: Meal consumption and pressure ulcers in general internal medicine patients.

AUTHORS: K Warwick, W Li, C Miller, V Blunt, J Madill, A Ng, University Health Network, Toronto, Ontario.

OBJECTIVES: At University Health Network, reduction in incidence of pressure ulcers is a major organizational initiative. Hospitalized General Internal Medicine (GIM) patients have been shown to be at increased risk of pressure ulcers due to older age, decreased mobility, complexity of medical issues and poor nutritional status. Recent statistics for prevalence and incidence of pressure ulcers on GIM units at Toronto General Hospital (TGH) show an increase from 2006 to 2007. Nutrition is recognized as an essential component in preventing and treating pressure ulcers. Currently, nutritional intake information is gathered through nursing documentation, but results may be incomplete and no analysis of overall results is done. The purpose of this study is to more thoroughly evaluate food consumption of GIM patients and determine if there is a difference in meal consumption between patients with and without pressure ulcers.

METHODS: GIM patients at TGH who are on an oral diet on the Monday of each of four study weeks will be eligible for inclusion in the study. Once patients are consented, data are being collected on consumption of food from meal trays, prevalence of pressure ulcers, age, gender, diet order and referral to Dietitian. Data will be analyzed to look for associations between meal consumption and prevalence of pressure ulcers and other variables. **RESULTS, IMPLICATIONS & CONCLUSIONS:** At present, we have collected data for 44 subjects. The data will be analyzed using SPSS software. The results of the study will establish a foundation for future research on the possible association between dietary intake and pressure ulcers.

Evaluation of a single group inpatient heart healthy education session with respect to dietary behaviour change

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Adopting heart healthy eating behaviour is an integral component of cardiovascular disease treatment. The goal of the nutrition education session (NES) offered to patients admitted to the Heart and Vascular Program at St. Michael's Hospital is to educate patients about these heart healthy behaviours. NES received high ratings from patients in terms of their satisfaction and learning, and it remains to be determined if patients adopt the recommended dietary behaviours. The stage of change (SOC) construct, from the Transtheoretical model, can help to predict the likelihood of behaviour modification.

Objectives: To measure the SOC with respect to the adoption of specific heart healthy dietary behaviours of inpatients prior to and one month following NES; To assess the relationship between SOC and patients' demographics and reason for admission.

Methods: All patients admitted to the Heart & Vascular Program, > 18y, without renal disease, who comprehend English and can attend the session are eligible. Participants will complete a questionnaire before and one month following a 60 minute in-hospital interactive group NES which will measure the SOC for ten eating behaviours (based on National Cholesterol Education Program's dietary guidelines). Demographic data will include age, gender, number of individuals in household, country of origin, years lived in Canada, socio economic and marital status; and prior dietary education. Change in SOC categorization will be determined by chi-square test. **Significance:** The study is expected to yield new descriptive information on patients' progress through SOC for specific heart healthy dietary behaviours, which will help to develop the most appropriate delivery of dietary education for inpatients.

TITLE: Dietary adequacy and lifestyle habits of first year university students

AUTHORS: AE D'Ambrosio, ME Edmonds, AW Pullman, KJ Ferreira, RC Masters, EA Nikiforuk, LC Zalot, AK Finnie, LE Carde, SH Leavey, MM Saraiva, YY Dam, AM Duncan, JA Randall Simpson. University of Guelph Masters of Applied Nutrition, Guelph, ON.

Dietary and lifestyle habits developed during young adulthood can have immediate and future health implications. **Objectives:** The primary objective was to compare dietary intakes of female and male first year university students to the current DRIs. Secondary objectives were to compare lifestyle behaviours between genders including use of alcohol, recreational drugs, natural health products, and body weight satisfaction.

Methods: First year university students (120 females & 113 males) were assessed in the fall of first year. Dietary intake (including supplements) was estimated by multiple pass 24-hour recalls: lifestyle behaviours were gathered by questionnaire. **Results:** Mean intakes of carbohydrates, protein and fat intakes fell within the AMDR, although 26% of females and 37% of males had % fat > AMDR. Mean intakes of fibre, vitamin D and calcium were < AI. Further, 61% of females and 55% of males had intakes < EAR for folate and 41% of males had intakes < EAR for vitamin A. Intakes of sodium were > UL for 97% of males and 87% of females. Males had a higher prevalence of alcohol consumption (85% vs. 72%) and binge drinking (65% vs. 10%), whereas females used natural health products more frequently (39% vs. 26%) and had a lower body satisfaction than males (all $p < 0.05$). **Implications & Conclusions:** This study provides valuable information regarding the nutritional adequacy and lifestyle habits of first year university students, which can be used to improve nutrition education and body image programs on Canadian university campuses. Funded by the Danone Institute of Canada.

What is the rate of no shows for group diabetes nutrition education at the Youville Diabetes Centre, and how can the incidence of no shows be reduced?

A Miller, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba.

Objectives: To determine how the no show rate at the Youville Diabetes Centre (YDC) compares to literature and the Winnipeg and Brandon Regional Health Authorities (WRHA and BRHA); why clients fail to attend group diabetes nutrition education; and identification of methods to reduce incidence of no shows. **Methods:** Five community health centres in the WRHA and BRHA completed a survey addressing each health centre's no show rate and scheduling and client contact procedures. The 22 clients who failed to attend group diabetes nutrition education at the Youville Diabetes Centre from April 1, 2007 to March 31, 2008 responded to a telephone survey addressing non attendance and scheduling procedures. **Results:** 26% of clients at the YDC did not attend their scheduled group education sessions – the second highest rate of no show gathered from surveys, but lower than the average no show rate in literature. 80% initial and 50% return no shows were in the action or maintenance stage of change at time of non attendance and 70% had waited >1 month after registration for the session. Other commitments reduced ability to attend for 56% of no shows. 58% initial and 90% return no shows remembered receiving a confirmation letter, and 40% and 17% remembered a reminder telephone call. **Conclusions:** Results of the health centre survey are inconclusive. The majority of clients could not attend the education session due to other commitments. Follow-up telephone calls after no shows, reducing wait times after registration, email reminders, and encouraging cancellation rather than no shows have the potential to reduce the rate of no show at the YDC.

What is the rate of “no shows” for group diabetes nutrition education at the Victoria General Hospital Diabetes Education Center, why do patients fail to attend and how can the incidence of “no shows” be reduced?

A Nash, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

Motivation: Failure to attend (FTA) rates for diabetes education programs are rising negatively affecting healthy behavior reinforcements and the continuity of care. To encourage attendance, it is imperative to understand possible determinants to attendance and possible preventions of them. **Goal:** To determine FTA rates for Victoria General Hospital (VGH) Diabetes Education Center (DEC), identify strategies that could decrease the incidence of FTA and increase operational use of the clinic. **Methods:** A literature review was conducted examining FTA rates for outpatient clinics, reasons for FTA and strategies to decrease rates. Telephone interviews were given to non-attendees, gathering information on reasons for FTA and what would have encouraged attendance. Telephone interviews were also given to other hospital based DEC dietitians/nurses to compare FTA rates and success of implemented FTA prevention strategies. **Results:** FTA rates for diabetes education outpatient clinics worldwide vary from 4-57%. The VGH DEC currently has a FTA rate of 22%. Most non-attendees attribute FTA to being unaware of their doctor referral, finding information elsewhere or claiming they can deal with the disease themselves. Communication and administrative changes may help increase attendance. **Conclusion:** VGH DEC is consistently searching for methods to increase the effectiveness of their program and decrease the waiting period. Strategies should be focused on increasing DEC-Patient and Referral Source-Patient communication regarding both the referral and program objectives, as well as increasing patient reminders about the appointment. Strategies focused on administrative factors, including triaging for urgency, re-structuring the appointment letter form, and changing scheduling procedures may be effective in increasing attendance.

Building upon the skills, knowledge, and abilities of local food bank clients

A Desrosiers. Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba.

Objectives: The Community Dietitian at the Burntwood Regional Health Authority (BRHA) is attempting to identify an alternative method to using the food bank which would help the food insecure population in Thompson, Manitoba.

Methods: A low-literacy survey was given to food bank clients when attending food banks or various other programs in Thompson. An attempt to have focus groups was made by contacting a number of programs in Thompson as well as offering incentives for participants. Despite this, there were no focus groups conducted due to lack of participants. **Results:** Forty-eight surveys were completed by food bank clients, which were collected and analyzed. Of all the food bank clients who replied, 56% showed interest in having additional programs at the food bank, while 44% of clients did not show interest. The two services that food bank clients showed the most interest in having were monthly recipes and nutrition newsletters available at the food bank. Participation in additional programs is a challenge due to the 55% of survey respondents who stated they would not attend. **Conclusions & Implications:** The Community Dietitian at the BRHA can use the results to initiate written resources at the food bank such as monthly recipes and nutrition newsletters. Further advertisement of current programs is needed to establish a sustainable and realistic community kitchen.

Can bioelectrical impedance analysis be used to evaluate patients on long term TPN? A prospective audit of clinical practice

E Sullivan, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba.

Objectives: To determine if (1) Bioelectrical Impedance Analysis (BIA) can offer any additional useful information to nutrition assessments of patients receiving long term Total Parenteral Nutrition (TPN) and (2) to determine if BIA can supply additional useful information for decisions about TPN solution changes. **Methods:** Long term TPN patients had BIA measurements done as part of their regular follow up appointments. All of these patients were receiving regular infusions of TPN. Serum albumin, urea and creatinine were noted for this review. **Results:** All subjects with weight gain had increases in fat free mass (FFM). All three participants that experienced weight gain and participated in physical activity showed an increase in FFM. When changes in body composition were predicted three (25%) participants' absolute changes in fat mass (FM) and FFM were within 0.2kg of the predicted value determined using the participants' initial FM to FFM ratio. The other nine (75%) patients had body composition changes that would not have been predicted using weight changes alone. **Implications & Conclusions:** Our results suggest it is possible to preserve and even increase FFM in patients on long term TPN; future research needs to be done to verify these results. BIA may be a valid nutrition assessment tool and may be useful in clinical practice.

The safety and efficacy of protein supplementation in very low birth weight Infants in the neonatal intensive care unit

D Gullo, R Turenne. Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba.

Objective: The objectives of this research, in relation to very low birth weight (VLBW) infants in the neonatal intensive care unit (NICU), are to address the safety of Beneprotein based on previous research, the parameters used to determine safety of Beneprotein supplementation, and other protein supplementation available within Canada for use in this population. The effectiveness of protein supplementation to meet protein requirements for VLBW infants within the NICU will be determined. **Methods:** A literature review, retrospective chart review, at two NICU sites in Winnipeg, Manitoba, and a survey sent to NICUs across Canada, were conducted. In the chart review, VLBW infants prescribed Beneprotein were compared by their primary form of feed, expressed breast milk (EBM) or premature formula. **Results:** Twenty-one VLBW infants' charts were reviewed. The mean birth weight was 962 g (+/- 190) and mean gestational age 27.3 (+/- 1.6) weeks. Both infants fed EBM or formula met all recommendations for weight gain and growth while on Beneprotein supplementation. Infants fed EBM were found to be prescribed Beneprotein for a longer period of time and had a longer length of stay in hospital compared to infants on formula. Thirteen surveys were returned, with 69 percent from Eastern Canada. Protein supplements were used at 69 percent of the sites. **Implications & Conclusions:** Protein requirements in VLBW infants are met with the use of Beneprotein powder. There are many benefits to meeting the recommendation for protein intake in VLBW preterm infants. Beneprotein did not compromise infant growth and improved biochemical markers for health. It is the only available protein module within Canada that is appropriate for use within the NICU.

Pureed and blenderized diets: What are their intended use and are they nutritionally adequate compared to Eating Well with Canada's Food Guide?

J Mayor, Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba

Objectives: (1) To identify the intended use of blenderized and pureed diets in facilities across Canada, (2) To compare the number of facilities that have standardized menus and nutritional analysis on blenderized and pureed diets and (3) To analyze the standardized blenderized and pureed diets at Deer Lodge Center (DLC) in Winnipeg in comparison to the food groups as per the Eating Well with Canada's Food Guide (CFG).

Methods: A survey was emailed to dietitians across Canada to determine the current use of blenderized and pureed diets and their nutritional composition. Standardized menus for blenderized and pureed diets at DLC were analyzed to see if they meet the recommendations for each food group as indicated by the CFG. Two residents on blenderized and nine on pureed diets were audited for a 48 hour period (breakfast, lunch, dinner and snack intake was recorded). **Results:** Blenderized and pureed diets are prescribed for physiological and behavioural indicators such as, dysphagia, patient preference, eating too slowly or palliative care. 34% of facilities have standardized menus for blenderized meals and 66% for pureed. Only 10% have completed a nutritional analysis for the blenderized menu and 43% for the pureed. Standardized menus at DLC do not meet recommended servings of grain products. Males also do not meet recommended servings of meat and alternatives. **Conclusion:** Texture modified diets are being prescribed for more than traditional reasons, including convenience and behavioural indicators. Menus at DLC do not meet the recommendations of CFG in grain products and meat and alternatives (males) therefore, residents on these diets are not meeting CFG recommendations.

The unanswered question: what is the best diet to manage intestinal graft vs. host disease in the pediatric population?

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Objectives: (1) To determine if a “best” diet for gut graft versus host disease (GVHD) exists in the literature; (2) To obtain information from pediatric oncology centres across Canada regarding diets used at their centres; and (3) To review past charts from children that developed gut GVHD at Winnipeg’s Children’s Hospital and assess diet intake and changes in health status. **Methods:** An evidence based literature review was conducted. A survey was sent to dietitians via the Dietitians of Canada Pediatric Nutrition Network. Two charts of former patients with gut GVHD at the Winnipeg Children’s Hospital were reviewed and progression in health status was evaluated. **Results:** The literature review showed that nutritional therapy is very individualized and no standard diet exists as a best form for the nutritional management of gut GVHD in the pediatric population. Three of five pediatric oncology centres that responded to the survey based their GVHD diet on the 5-phase diet suggested by Seattle Cancer Care Alliance, while another centre used enteral nutrition as the main form of feeding. The fifth centre had no current information to offer. The chart review showed that patient #1 (receiving total parenteral nutrition [TPN] and oral intake) had a slower recovery than patient #2 (receiving strict oral intake). **Conclusion and Implications:** The five-phase diet is the most commonly used at centres across Canada. Further research is needed to confirm whether enteral nutrition may be beneficial and if TPN may be detrimental to recovery of gut GVHD. A prospective study is needed to better understand if specific foods benefit gut GVHD in the pediatric population.

Vitamin D status of obese patients with multiple sclerosis

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Objectives: Development of multiple sclerosis (MS) has been associated with vitamin D deficiency; therefore, patients with MS are advised to take vitamin D supplements. However, due to possible adipose tissue storage, obesity may contribute to decreased serum vitamin D levels. The objectives of this study were to determine if vitamin D deficient obese patients with multiple sclerosis (MS) require a higher amount of vitamin D supplementation to obtain sufficient serum 25-hydroxyvitamin D [25(OH)D] levels compared to non-obese MS patients and to identify a vitamin D supplement dose necessary to obtain serum 25(OH)D sufficiency (≥ 75 nmol/L) for obese patients with MS. **Methods:** A retrospective chart review of 335 patients with MS from the Multiple Sclerosis Clinic (Health Sciences Centre) in Winnipeg, Manitoba was completed for determining Body Mass Index (BMI), serum 25(OH)D levels, and vitamin D supplement dose. Of the 51 patients who met the study criteria, serum 25(OH)D levels and vitamin D supplement intakes were compared among established BMI groups to identify an optimal vitamin D supplement intake. **Results:** One hundred percent of the obese patients ($\text{BMI} \geq 30 \text{ kg/m}^2$) had insufficient initial serum 25(OH) D levels ($<75 \text{ nmol/L}$). The average daily vitamin D supplement dose of the obese patients was 1089 IU (sd =267.6) compared to >1400 IU taken by the non-obese patients. After supplementation, 89% of the obese patients remained insufficient for serum 25(OH)D. **Implications and Conclusions:** The results were inconclusive to determine a recommended vitamin D supplement dose. Further research (a prospective clinical trial) is necessary to conclude a specific suggested dosage of vitamin D supplement required to obtain serum 25(OH)D sufficiency and to determine if obese patients require a higher supplement dose compared to non-obese patients with MS.

Comparison of hydration status of residents receiving thickened fluids vs. thickened fluids and thickened supplements – a quality/service improvement project

J Machel. Manitoba Partnership Dietetic Education Program, Winnipeg, Manitoba.

Objectives: The purpose of this study was to assess the use of thickened fluids and thickened supplements in Long Term Care (LTC) facilities Canada-wide. Fluid intake of Deer Lodge Centre (DLC) residents receiving thickened fluids was compared to those receiving thickened fluids and thickened supplements to determine if hydration status differed between the two groups. **Methods:** A questionnaire was prepared and sent to members of the Dietitians of Canada Dysphagia Network, Gerontology Network and Winnipeg Regional Health Authority (WRHA) Dietitians working in LTC facilities (n = 683). For eight days fluid intake was recorded for residents receiving thickened fluids and thickened supplements (n=10) and residents receiving only thickened fluids (n=10).

Results: The questionnaire response rate was 11.6 % (n=79). All of the facilities used thickened fluids and 84.4% used thickened supplements. 10.4% (range 1%-50%) of facility residents were receiving thickened liquids, and 5.2% (range .5%-20%) of facility residents were receiving thickened supplements. The average daily intake for DLC residents receiving thickened fluids and thickened supplements was 1322 ml, while the average daily intake for residents receiving thickened fluids only was 1407 ml.

Implications & Conclusions: LTC facilities use a variety of thickened fluids and thicken a variety of different supplements. At DLC 50% (n=4) of residents receiving thickened fluids and thickened supplements failed to meet the recommendation of 1500 ml. All residents receiving thickened fluids should be regularly assessed for fluid intake and monitored to ensure residents receive thickened supplements when part of their nutrition care plan. It is imperative that inventive measures are taken to ensure dysphagic individuals receive adequate nutrition and hydration.

Determining the energy requirements of obese class II and III immobile patients.

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Energy requirements of obese, immobile patients have not been studied. Currently there is no predictive energy equation validated for use in this population. This poses difficulties for dietitians to determine caloric requirements for feeding with minimal risk of complications related to over- or underfeeding. **Objectives;**(1) To determine the resting energy expenditure (REE) of obese class II and III immobile participants using indirect calorimetry (IC) (2) To explore the accuracy of selected predictive energy equations for use in this population (3) To use each predictive equation with actual body weight, adjusted body weight and ideal body weight to determine which weight factor to use within the predictive equation to provide the most accurate estimate of REE (4) To determine the correlation between lean body mass (LBM) and REE. **Methods;** In a cross-sectional descriptive study, inpatients at St. Michael's Hospital with a BMI ≥ 35 kg/m² and immobile for \geq one month will have their REE measured using IC. REE will also be calculated using selected predictive energy equations with a variety of weight factors. LBM will be assessed using bioelectrical impedance analysis. Bland-Altman plots will be used to compare REE measurements from IC and from predictive equations. Spearman correlation will be used to determine the relationship between REE and LBM. **Results;** Data collection is ongoing. **Implications & Conclusions;** This study will provide new descriptive information on the energy needs and body composition of hospitalized patients who are obese class II and III and immobile. The study will also identify best energy predictive equation for this population that could be used by dietitians in order to optimize the nutritional care of these patients.

TITLE: Examining the relationship between celiac disease and depression

AUTHOR: K More. Southeastern Ontario Dietetic Internship Program, Kingston, Ontario.

OBJECTIVES: To provide evidence-based answers for health professionals faced with the following practice questions regarding Celiac Disease (CD) and depression: 1) Are adults, adolescents and children with CD at greater risk of depression and/or having depressive disorders? 2) Does consumption of a gluten-free diet (GFD) decrease the risk of depression or depressive symptoms in people with CD? 3) Is there a connection between tryptophan levels and depression in people with untreated CD? **METHODS:**

An extensive literature search was conducted using MEDLINE, PubMed and Cochrane databases. Thirteen articles, from 1991-2009, were critically appraised and their evidence assigned a grade using criteria from Dietitians of Canada's (Practice-based Evidence in Nutrition (PEN) guidelines for grading evidence. **RESULTS:** There is fair

evidence to suggest adults, adolescents and children with CD are at an increased risk of depression and depressive disorders regardless of sex, age at time of diagnosis or socio-economic status. Existing evidence also suggests that compliance with a GFD does not decrease the risk of depression or depressive symptoms in those with CD. Evidence suggests an impaired availability of tryptophan to the brain is a consequence of untreated CD, and the serotonergic dysfunction that could follow, may play a role in vulnerability to depression and depressive disorders. Serotonin and tryptophan may be recommended for treatment of depression where traditional antidepressants (SSRIs and TCAs) are not acceptable for use, however effective dosages have not been determined.

IMPLICATIONS & CONCLUSIONS: While GFD is used to treat the physiological symptoms of CD, it does not decrease the risk of depression associated with this condition. Further research into tryptophan and serotonin in CD and depression is needed to determine effective dosages for treatment.

Apports nutritionnels des résidents recevant une diète purée au Centre de santé des anciens combattants (CSAC)

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Objectifs : Évaluer les apports nutritionnels des résidents du CSAC recevant une diète purée et comparer les résultats aux apports nutritionnels de référence (ANREF) et aux recommandations du Guide Alimentaire Canadien (GAC). **Méthode** : Trois des 40 résidents du CSAC recevaient une diète purée et ont fait partie de cette étude. Les apports alimentaires ont été évalués directement pendant quatre jours. Le logiciel Food Processor 9.1.0 a été utilisé pour évaluer les apports nutritionnels moyens, ainsi que la « Table de composition des aliments, 3^e édition » pour la comparaison aux recommandations du GAC. **Résultats** : Deux tiers des résidents n'ont pas rencontré leurs besoins énergétiques. Aucun résident n'a rencontré les ANREF pour les vitamines E, D et B6, la thiamine, la niacine, l'acide folique, l'acide pantothenique, la biotine, le magnésium et le sélénium. De plus, aucun résident n'a consommé le nombre de portions recommandées dans le GAC, sauf 2/3 des résidents qui ont consommé le nombre de portions recommandées de fruits et de légumes. Même si la consommation de suppléments nutritionnels thérapeutiques améliore nettement les apports énergétiques et protéiques, il demeure que les apports en vitamines E, D, B6, thiamine, niacine, acide folique, magnésium et sélénium ne satisfont pas aux ANREF pour l'ensemble ou 2/3 des sujets. **Conclusion** : L'alimentation des résidents recevant une diète purée ne leur permet pas d'atteindre les ANREF. Une attention particulière devrait être portée aux nutriments provenant des groupes alimentaires des produits céréaliers, lait et substituts et viandes et substituts. Des apports insuffisants peuvent entraîner des conséquences importantes sur la santé et la qualité de vie des personnes recevant une diète purée.

Application des Lignes directrices canadiennes pour l'alimentation entérale et parentérale à l'unité des Soins Intensifs chirurgicaux médicaux de l'Hôpital régional Dr Georges-L.-Dumont.

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Objectif: Évaluer l'application de neuf des 19 recommandations émises par les Lignes directrices canadiennes pour l'alimentation entérale et parentérale (LDCAEP) à l'unité des Soins Intensifs chirurgicaux et médicaux de l'Hôpital régional Dr Georges-L.-Dumont (HRGLD). **Méthode :** Les données ont été recueillies au dossier médical et au chevet de tous les patients recevant une alimentation parentérale ou entérale, admis aux Soins intensifs chirurgicaux et médicaux entre le 19 septembre et le 19 décembre 2008.

Résultats : Quinze sujets ont fait partie de l'étude. Trois des neuf (33%) recommandations étudiées ont été respectées en tout temps: L'utilisation d'un agent de motilité de routine, l'utilisation d'une formule entérale à base d'huile de poisson lorsque recommandé, et la livraison non-simultanée de l'alimentation entérale et parentérale. De plus, le délai conseillé pour l'introduction de l'alimentation entérale fut respecté chez 90% des patients et 60% des sujets ont reçu le soutien entéral de préférence au soutien parentéral. Par ailleurs, 50% des sujets qui ont été alimentés par voie parentérale auraient pu bénéficier du support entéral. Seulement le tiers des sujets alimentés par la voie parentérale avaient des glycémies sous 10 mmol/L et aucun n'a eu de glycémie entre 4.4-6.6 mmol/L en tout temps, tel que recommandé. Chez les patients alimentés par la voie entérale 30% avaient un accès postpylorique comme recommandé et seulement 10% avaient une élévation de la tête de lit à l'angle approprié d'au moins 45°.

Conclusion : Bien que plusieurs pratiques rencontrent les recommandations des LDCAEP à l'unité des Soins intensifs chirurgicaux et médicaux de l'HRGLD, il y a certes des opportunités d'amélioration afin d'adopter des meilleures pratiques.

Évaluation du métabolisme phosphocalcique des patients hémodialysés de l'Hôpital régional Dr Georges-L.-Dumont.

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Objectif : Évaluer l'atteinte des valeurs cibles du métabolisme phosphocalcique des patients hémodialysés de l'Hôpital régional Dr Georges-L.-Dumont (HGLD) par rapport aux valeurs cibles du Kidney Disease Quality Initiative (K/DOQI) du National Kidney Foundation, et déterminer si ces paramètres sont influencés par d'autres facteurs.

Méthodes : Tous les patients (170) hémodialysés au mois de juillet 2008 à l'HGLD ont été retenus pour l'étude. Les résultats des tests sanguins du mois de juillet 2008 pour le calcium, l'albumine, le phosphate et la parathormone ont été recueillis au dossier informatisé des patients. Des moyennes, des fréquences et des tests de corrélation ont été effectués. **Résultats :** Seuls 15,3 % des patients respectent les quatre valeurs cibles des recommandations K/DOQI pour le métabolisme phosphocalcique optimal. Les valeurs cibles du calcium, du phosphate, du produit calcium-phosphate et de la parathormone sont rencontrées chez 70%, 51%, 85% et 31% de la population respectivement. Par ailleurs, le calcium corrigé tend à augmenter avec l'âge et il est plus élevé chez les femmes que chez les hommes. De plus, le phosphate et la parathormone tendent à diminuer avec l'âge. **Conclusion :** Ces résultats confirment la difficulté à atteindre les valeurs cibles du K/DOQI pour le métabolisme phosphocalcique chez l'ensemble des patients hémodialysés. Il serait important de développer un protocole d'intervention afin de surveiller de façon optimale le métabolisme osseux en tenant compte d'autres variables comme les chélateurs du phosphore et les analogues de la vitamine D utilisés dans le traitement.

Burnout and resiliency among dietitians

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Objectives: Although experiences of burnout are well documented among nurses, social workers, physicians, and other health professionals, there is limited research that explores similar experiences among dietitians. This study aims (1) to describe the varied qualitative dimensions of burnout that are particular to dietitians, (2) to identify the factors that might be deemed protective against burnout. **Methods:** Five dietitians were recruited from a larger study that assessed prevalence of burnout in Ontario, Canada, using the Maslach Burnout Inventory (MBI). Those who completed the MBI were invited to participate in two intensive interviews to describe their experience of burnout. The research was guided by a phenomenological framework to explore the lived experiences of burnout among five dietitians. Transcribed interviews are analyzed using NVIVO7 software. **Results:** Data analysis is in progress. **Implications & Conclusions:** This research will represent one of the first studies to understand dietetic work and experiences of burnout through a relational lens and will thus contribute to our understanding of how being a food and nutrition expert interrelates with the emotional and social forces that act on those who eat and on those who generate knowledge about food. Finally, the present research will allow for increased awareness regarding the prevalence and lived experience of burnout for those experiencing burnout, for those involved in the education and training of student dietitians, and for those in a position to offer support to dietitians who are struggling with job stress.

Patients' perceptions of the effectiveness of hospital-based nutrition counselling in acute care hospitals in Saskatoon Health Region.

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Objectives: Inpatient nutrition counselling provided by a dietitian is an important part of providing clinical nutrition therapy to clients in the Saskatoon Health Region (SHR). The effectiveness of inpatient nutrition counselling has not been assessed in SHR. The purpose of this survey was to determine the clients' perceptions of the effectiveness of inpatient nutrition counselling in SHR. **Methods:** A self-administered questionnaire (Clients' Perceptions About Nutrition Counselling) was provided to clients (≥ 18 years old) by the clinical dietitian following the inpatient counselling session. The questionnaire focused on where and how the clients' would like to receive nutrition counselling and if the information was easy to understand and suitable for their needs. **Results:** All respondents (n=13) indicated that they preferred to receive one-on-one counselling and 57% indicated that they would like to receive counselling in a hospital setting. The majority of respondents (77%) indicated that time spent with the dietitian was worthwhile, the dietitian provided useful and practical information and the dietitian provided support and encouragement. The respondents also indicated that they felt better emotionally (62%) and more in-control of their condition after the nutrition counselling (54%). **Implications and Conclusions:** These results of the survey suggest that clients' in SHR perceive inpatient nutrition counselling provided by a dietitian as an effective way to provide nutrition information.

Evaluating the impact of baby food making workshops on infant feeding practices in the Prince Albert Parkland Health Region.

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Objectives: In the Prince Albert Parkland Health Region (PAPHR), low socio-economic status, lack of food preparation skills, and lack of infant nutrition knowledge are barriers to caregivers following Health Canada's recommendations for the introduction of solids. The objective of this project was to determine whether baby food making workshops result in improved food preparation skills, infant nutrition knowledge, and feeding practices of caregivers within the PAPHR. **Methods:** Three baby food making workshops were held for parents/caregivers of children zero to three years. Questionnaires were distributed to baby food workshop participants pre- and post-workshop. Consenting participants were contacted via telephone one month following the workshop for completion of a follow-up questionnaire. **Results:** Of the 13 study participants, 11 (85%) indicated they had already introduced solids to their infant, with 10 (77%) reporting they had done so before six months of age (mean age of introduction = 3.8 months). Prior to the workshop, the most common first foods introduced were mashed potatoes (n=6) and iron-fortified rice cereal (n=5), where as post-workshop meat and alternatives, iron-fortified cereal and fruit were most common. Improvement from baseline was seen in questions regarding the appropriate age to introduce solids (n=6), the importance of introducing iron-rich solids (n=7), and participant confidence level in introducing solids to their infant. **Implications & Conclusions:** Participation in a baby food making workshop positively influenced the level of nutrition knowledge parents and caregivers had regarding age-appropriate feeding practices, infant readiness for solids, and their confidence level in introducing solids. There is a need for the increased availability of baby food making workshops within the PAPHR.

A retrospective chart audit of short-term parenteral nutrition usage in hospitalized patients in Saskatoon Health Region acute care facilities.

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Objectives: Parenteral Nutrition (PN) provides energy and essential nutrients through the venous route. Several studies have shown that short-term PN (≤ 10 days) is associated with increased complications. In the Saskatoon Health Region acute care facilities, St. Paul's Hospital (SPH) and Royal University Hospital (RUH) it is not known if short term PN is being prescribed appropriately. The purpose of this audit was to determine if short term PN was being prescribed according to ASPEN guidelines and determine if there was a difference in short-term PN prescription practices between RUH and SPH. **Methods:** The retrospective chart audit reviewed the medical records of 68 adult patients (aged 20-80 years) who received short-term PN (≤ 10 days) and were hospitalized between April 2007 and October 2008. **Results:** The most common indications for prescribing short-term PN were bowel obstruction (12%), ileus (12%), acute pancreatitis (10%), intestinal resection (10%) and Inflammatory Bowel Disease (9%). Short-term PN prescriptions were contraindicated according to ASPEN guidelines in the following situations: acute pancreatitis (30%), NPO (13%), malnourished with poor oral intake (13%), dysphagia (9%) and unable to feed via enteral nutrition (9%). Short-term PN was prescribed according to ASPEN guidelines in 66% of all cases in SHR. At RUH, short-term PN was prescribed according to ASPEN guidelines 52% of the time and 48% of the time at SPH. **Implications & Conclusions:** This chart audit demonstrated that there are situations in SHR where short-term PN is considered contraindicated according to ASPEN guidelines. SHR could benefit from stricter adherence to the ASPEN guidelines.

Perceptions of Canada's food guide among Chinese Canadians living in the greater Toronto area.

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Objectives: Canada's diverse population creates unique challenges for the delivery of culturally competent nutrition education and practice. This qualitative study explored Chinese Canadians' perceptions of *Eating Well with Canada's Food Guide*. **Methods:** Three focus groups (n=19) were conducted in the Greater Toronto Area. Ten males and nine females, aged 25-63, were asked about their perceptions of the English and Chinese print versions of the *Food Guide*. Focus groups were recorded and transcribed verbatim. Researchers analyzed the data using constant comparative methodology. **Results:** Participants had a strong interest in dietary advice and healthy eating but expressed confusion with the amount and variability of nutrition information available. *Canada's Food Guide* was well accepted by participants, whereas the Chinese translation was not. Having grown up with *Canada's Food Guide*, younger participants found it more relevant than older participants who were first-generation Chinese Canadians. None of the participants had seen the Chinese translation of the *Food Guide* prior to the focus groups and all experienced difficulty reading it. Younger participants were not sufficiently fluent in Chinese; older participants were confused with the use of both simplified and traditional Chinese characters. Errors found in the Chinese version hindered their acceptance of it and fuelled their mistrust in government publications. Older participants were also more wary of putting their trust in authorities due to past discrepancies in dietary advice. **Implications & Conclusions:** This study may provide new insight for healthcare professionals to provide appropriate nutrition information for cultural groups such as Chinese Canadians. This research also highlights the need for accurate and culturally relevant nutrition education tools for first-generation Chinese Canadians.

Title: Development of a nutrition education tool to improve adherence to the Ministry of Child and Youth Services Nutrition Guidelines in Student Nutrition Programs.

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Objective: Student Nutrition Programs (SNPs) provide nutritious foods within a community context so that children can attend school well nourished and ready to learn. In 2008, SNPs in Hastings and Prince Edward counties (HPEC) provided over 461,000 meals to over 9,300 local students in 133 breakfast, lunch and/or snack programs. In Ontario, food served in all SNPs must comply with a set of nutrition guidelines, newly revised in 2008 by the Ministry of Child and Youth Services (MCYS). The objective of this project is to develop a tool to assist HPEC SNPs improve their adherence to the MCYS nutrition guidelines, while keeping within budgetary and time constraints.

Methods: As part of a situational assessment, thirty-two volunteer coordinators with the SNP in HPEC were surveyed to determine their need of assistance with adhering to the MCYS guidelines. As a result an education tool was developed. Its components include: frequently asked questions about SNPs' objectives, fact sheets on grocery shopping and label reading, a product guide of foods that meet the MCYS guidelines, and a one week sample menu. The tool will be piloted in five local area schools and evaluated one month after it has been received.

Results: Results for this project are pending the evaluation of the pilot to be completed in May 2009.

Implications and Conclusions: The results of this pilot will be used by the HPEC Health Unit to identify necessary improvements to the SNPs. The final tool will assist the Health Unit to provide nutrition education to SNPs which will in turn improve the nutritional intake of participating students.

The effect of different commercially available smoothie products on blood glucose levels in healthy young adults: a pilot study

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A meal-planning tool known as the glycemic index (GI) should be recognized, as selecting foods with a low GI rating can present many health benefits. **Objectives:** 1) To test the effect of consuming various commercial smoothies on blood glucose concentrations over time in healthy individuals by measuring and comparing their GI values; and 2) to establish whether the smoothie products classify as low GI products. **Methods:** Finger prick blood samples were monitored over a two-hour period in 15 participants after they consumed a glucose solution that was used as a reference, and the smoothie products; two of which were made by one company and a third by a competitor company. Each participant's blood glucose concentrations were measured by means of a glucometer. **Results:** The smoothie products from both companies were low GI products. There was no significant difference in GI value between smoothie products made by the same company ($p=0.05$), however, there was a significant difference in GI value between smoothie products made by different companies ($p=0.05$). **Implications and Conclusions:** Identifying low GI foods can be beneficial to both healthy individuals and those with diabetes, as these foods help maintain a normal concentration of glucose in the blood and improve glycemic control. A food-licensing program exists to highlight the GI value of a food product by providing consumers with a credible marker to healthier food choices. Further research will be needed before a GI value can be established for the smoothie products, due to the relatively narrow demographic of the sample used in this study.