

Manitoba access to the Science of Early Child Development (SECD) resources is part of Manitoba's Action Plan, under the Canada-Manitoba Early Learning and Child Care Agreement for residents of Manitoba. In order to access them you must do so from a computer or device located in Manitoba.

# Using SECD Resources for Professional Development for Health Care Service Providers

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SECD resources are an ideal, cost-effective way to provide professional development to health care service providers who work with young families. You could explore the suggestions below independently, or if you are a supervisor, consider selecting a topic to explore at a staff meeting – or have staff members sign up on a rotating basis to choose a topic.

With the variety of elements within SECD, there are several ways to address a topic at meetings. For example, show videos, distribute the easy-to-print short readings and “consider” examples, use questions on the SECD webpage for group discussion, and/or show the “Interact” review games or slideshows. Sometimes, it can be useful to have people to do a short reading before the meeting so everyone has given some thought to the topic ahead of time.

You can incorporate SECD professional development (PD) briefly, with 15 minutes at each meeting, or go more in depth and devote more time to a particular topic.

At each session:

- Try to **include some theoretical/research-based information** that might be new for staff. Relate it to your work with families and children.
- Include some **practical ideas** that staff can apply immediately. Have staff commit to try something new.
- Leave **time for discussion** so people have time to consider how the information relates to their work and new ideas they would like to try.
- Devote time at the next meeting to **review the previous topic**, discuss what people tried and how it went.

On the follow pages, you will see some possible PD topics and SECD content that will support your staff learning. Feel free to explore the resources to come up with ideas that will inform and inspire your co-workers.

**Free access in Manitoba: [mb.scienceofecd.com](http://mb.scienceofecd.com)**

Suggestions are from:	Module abbreviations are:
<ul style="list-style-type: none"> <li>• SECD Prenatal Development Module</li> <li>• SECD North American Edition living textbook</li> </ul>	<ul style="list-style-type: none"> <li>• PN = Prenatal Development</li> </ul> <p>Five North American modules:</p> <ul style="list-style-type: none"> <li>• BD = Brain Development</li> <li>• CC = Coping and Competence</li> <li>• CL = Communicating and Learning</li> <li>• EC = Ecology of Childhood</li> <li>• DH = Developmental Health</li> </ul>

- **Epigenetics and Developmental Origins of Health and Disease (DOHaD)** – See PN p. 1.0 (Introduction) to review information about **environmental influence on genes and developmental plasticity of the brain**. View “Lye - gene by environment interaction”, and “Gluckman - developmental plasticity”. Discuss aspects of the environment that affect the developing brain, and how, in your work, you could **promote environments that stimulate optimal brain development**. View “Matthews - the developing brain”. **Explore how your work builds resilience in families and children, and the implications of windows of sensitivity for early development**. **Review sensitive periods** in BD p.1.2 and think about how and when you could share this information with families.
  - On PN p. 2.2 see the readings “Origins of lifetime health around the time of conception” and “Prenatal origins of obesity”. Further information on this topic is on p. 3.1 in the reading “Obesity prevention source: Prenatal and early life influences”.
  - BD p. 1.2 looks at **how experiences influence early brain development** from infancy throughout the earlier years of childhood. View the video “Santos - experience” to learn more about how experiences sculpt the brain from the point of conception onward. Think about the life course and intergenerational implications of this information. On BD p. 2.1B view the video “Gluckman - developmental origins

concept” and read the article “Developmental origins”. Think of examples of how you have observed the influence of experiences and environments on learning and development.

- **To go deeper** on epigenetics and DOHAD:
  - On page 1.0 of PN, explore the Tour of basic genetics link and complete the Memory Match game to review key terms from the site.
  - See the BD module p. 2.1A section “**Epigenetics**” and the PN p. 1.0 section “**Prenatal development**”.
  - Review PN p. 2.3 for information on how prenatal alcohol intake influences epigenetics, and the fetal HPA axis (stress response) in Dr. Weinberg’s videos.
  - See PN p. 2.2 to learn more about the fetal origins of type 2 diabetes in Dr. Wicklow’s videos.
  
- **Effects of Long-Term Stress on the Brain and Mental Health** - Learn more about **how adverse circumstances and the resulting stress can negatively affect fetal development and programming** in “Matthews - maternal adversity” on PN p. 1.1. Reflect on coping and self-care strategies that women and families use prenatally to reduce stress by viewing “Prenatal self-care strategies” on the same page. Read more about the impact of cortisol on the developing brain prenatally under “Want to know more?” in Working Paper No. 3 from the Centre on the Developing Child, particularly the first two sections titled “The Issue” and “What Science Tells Us”. On CC p. 1.2 see the section “Responding to stress”. Discuss the benefits of stress, and concerns related to toxic stress. Reflect on **how could use this information in your work to support families to manage stress and promote child development** while living in stressful environments.
  - Learn more about **risk factors for postpartum depression** on PN p. 1.2 in “Dennis - risks for postpartum depression”. Review the section “Maternal stress” on PN p. 2.3, and particularly “Kuzawa - prenatal stress” and “Matthews - maternal adversity outcomes”, to explore **how maternal stress during pregnancy may influence a baby’s response to stress after birth**. Discuss how these risk factors are associated with stress in families, and the impact on prenatal and different domains of child development.
  - **To go deeper** on stress, the brain and mental health:
    - Review the reading on PN p. 1.1, “Working Paper No. 10: Early Experiences Can Alter Gene Expression and Affect Long-Term Development” by the

National Scientific Council on the Developing Child. Note the sections that pertain to **stressful, adverse living environments and the epigenetic effects of stress**.

- View Kolb’s “Ice storm example of prenatal stress” and Read “Prenatal Maternal Stress” to learn about the Quebec Ice Storm project on PN p. 2.3. On PN p. 1.2 view “Wicklów - prenatal depression and violence” to learn about the growing knowledge base regarding **associations between exposure to higher levels of glucocorticoids in utero, including violence during pregnancy, and greater risk for poor health outcomes in adulthood**. Reflect on how these elements are associated with the above topic on Epigenetics/DOHaD.
- **Influence of Determinants of Health in Pregnancy** - On PN p. 1.2, read the section “Determinants of Health” and later on the page, view “Morris - adolescent pregnancy” and read “Adolescent Pregnancy”. Review the section on “Health disparities” including the reading in the Want to Know More? section, “WHO - Health of Indigenous Peoples”. Reflect on how this information broadens your understanding of influences on prenatal health. View the video “coping strategies and social support” on PN p. 2.3 to hear **examples of how to manage stress during pregnancy** and think about how these examples relate to the determinants of health. Consider the opportunities for social connection that exist for families in your community during pregnancy, as well as resources you can use to support families to manage stress effectively.
  - See the section “**Maternal obesity, excessive weight gain & diabetes**” on PN p. 2.2. View “Crespi - evolutionary aspects of obesity” and click on “Economic Data” to read the “Food Price Survey – Select Items Comparison Nunavut”. Consider the reflective questions listed below this reading. Discuss **how food prices, income and environment shapes eating patterns**. View the video “Gluckman – malnutrition” later on this page to learn more about unbalanced nutrition during pregnancy. Review the section “Nutritional environments” on PN p. 3.1 for more on this topic, as well as its effects on Indigenous peoples. The video, “Morris - the environment and diabetes” on PN p. 1.2 further explores **the impact of the determinants of health on outcomes for mothers living with diabetes**.
  - Review DH p. 1.1 and discuss how social determinants of health and socioeconomic status gradients influence life course trajectories.
  - **To go deeper** on determinants of health in pregnancy:

- Learn more about **how health care providers can influence preconception and prenatal health** on PN p. 3.0. On PN p. 2.1 in the section “Prenatal care” and on PN p. 3.3, learn **how access to quality prenatal care enhances family outcomes**.
  - Read more about **how the social determinants of health influence family outcomes** in the PN p. 2.1 “Want to Know More?” section readings, “Social Determinants of Health: Key Concepts” and “Great expectations”. Later on that page, review the sections “Population health” and “Preconception care”. Reflect on how your work supports preconception and prenatal care of families and how this aligns with the upstream, innovative approaches that most benefit population health. View “Heaman - factors influencing access to prenatal care” and relate it to your own place of employment. How does your workplace promote **access to prenatal care, particularly for vulnerable populations, and what barriers to accessing this care** are present? What are **strategies to reduce these barriers**?
  - Review DH p. 2.1 on **social determinants of health** to learn more about the **implications for child development**, as well as ways that we can begin to improve the circumstances in which families live.
- **Alcohol Use in Pregnancy** - See the **Fetal Alcohol Spectrum Disorder (FASD)** reading on PN p. 1.2. Learn about research into FASD and its effects on offspring by viewing “Weinberg - animal models” on PN p. 2.0 and “Weinberg - prenatal alcohol and epigenetics” on PN p. 2.1, and on PN p. 2.3 in “Weinberg - prenatal alcohol exposure”. **Discuss how alcohol exposure during pregnancy may influence behaviour and development of children.**
    - **Preconception alcohol exposure of sperm** may also influence fetal gene expression, as discussed in “Weinberg - alcohol and gene expression” on PN p. 3.1. Discuss how this aligns with information on epigenetics (see p. 2 in this document) and what this might mean for health promotion efforts.
    - Review the document “Talking about substance use during pregnancy: Collaborative approaches for health care providers” on the Centre of Excellence for Women’s Health website. Reflect on your comfort level discussing substance use with prenatal clients. Discuss whether you have tried in practice any of the responses to challenging statements recommended in the reading. If so, reflect on the effectiveness of the approach used.

- **Maternal Changes and Fetal Development during Pregnancy** - View the Interact “Body changes during pregnancy” and “Morris - maternal physiologic adaptations” on PN p. 1.2 to learn about **physical changes that occur during pregnancy**.
  - Read articles at the bottom of PN p. 3.1 in the “Want to Know More?” section to learn about **oral health and nutritional needs during pregnancy**.
  - On PN p. 2.5 view “Barr – pre-birth memory” and “Werker - prenatal tuning” to learn **how prenatal memory and language skills begin to develop in utero**. Discuss how this information could be used with families and how it may influence parenting behaviours.
  - Review BD p. 2.1A to learn how the fetal brain develops and the impact of the environment on prenatal brain development.
  - **To go deeper** on maternal changes and fetal development:
    - Review PN 1.0 information on **prenatal growth and development**.
    - Read the first section on PN p. 1.1 on the placenta to learn about the **role of the placenta during pregnancy**. Later on this page, read about **how the fetal HPA axis develops**. Reflect on what we are learning about how the womb environment might affect the development of this system and potential implications for a baby’s future health outcomes.
    - On PN p. 2.2, learn about new research on animals that involves **the microbiome and the potential influence of probiotics on inflammatory processes linked to preterm labour**.
- **Preconception and Prenatal Care** - Read about preconception and prenatal care on PN p. 2.1. The videos by Morris and Heaman explore **access and decision-making related to prenatal care as well as barriers to access to prenatal care**. Hear from Phillips-Beck about research looking at how Indigenous parents tend to decide whether or not to breastfeed during the prenatal period, and reflect on the implications of this research in your work.
  - Explore **information on the importance of intervention to improve health in the preconception period** on PN p. 2.2 by viewing “Gluckman – preconception factors” and reading “The Prenatal Origins of Obesity: Evidence and Opportunity for Prevention” on the Encyclopedia on Early Childhood Development website. Focus on the sections indicating research results, gaps, conclusions and implications. Consider how you might use the postpartum period to plan interventions at an individual, family, group or population level depending on your type of practice.

- On PN p. 2.4, read about the **AMPATH project that has had remarkable success in promoting maternal health**. Later on this page, review newer models and research regarding delivery of prenatal education.
- On PN p. 3.3, watch “Lye - lifecycle interventions” and reflect on **the impact of public health and early childhood interventions throughout the lifespan**.
- **To go deeper** on preconception and prenatal care:
  - Review PN p. 3.0 to learn more about **health promotion** in the preconception and prenatal period.
  - On PN p. 3.2, learn about **prenatal screening for violence** and abuse of adolescents in “Morris - prenatal violence screening”.
  - Learn about **the four delays related to maternal mortality** in “Bocking - four delays” on PN p. 2.4.
  - Review the subsection on Prenatal nutrition programs on PN p. 3.1 and read “Intervention strategies to improve nutrition and health behaviours before conception”, as well as “Men’s information on how to build a healthy baby”. Reflect on **how fathers and parenting partners are included in preconception and prenatal care** in your workplace, and how you could further enhance your work with this population.
- **Nurturing Care and Brain Development** – in the brain development module, review **why nurturing, sensitive care is so important for children’s overall health and well-being**. Look at BD p. 2.2 to delve into this topic and see examples of “**serve and return**” interactions.
- **Emotional Learning and Aggression** – CC p. 2.3 has a wealth of information including videos and readings. The topic of **play-fighting/rough and tumble play** is explored and could form the basis for staff discussion, focusing on implications for your work with children and parents.
- **Self-Regulation** - Look at CC p. 1.1 to learn about self-regulation. View “Shanker – **supporting self-regulation**” (CC p. 3) and “Corter – **self-regulation and dramatic play**” (CC p. 1.1). Discuss strategies for sharing this information with parents.
- **Active Play** – Select materials from CC pp. 2.6 and 3.3 on Active Play. There are numerous readings – choose one or two and ask staff to read prior to the staff meeting so that they can discuss together. Brainstorm **ways to share information on active play** with parents.

- **Risky Play** – See sections on Risky Play on CC pp. 2.6 and 3.3. There is a wealth of information, including videos about types of risky play, **opportunities for children, challenges and hurdles**. These videos and readings provide lots of “food for thought” and can spur discussion.
- **Reflective Practice** – See CL pp. 3.1 and 3.2 for expert interviews and readings on reflective practice, invitations, documentation and more. The material can be used to provoke people to think deeply about the work they do. **How to support reflective practitioners, tools, benefits, and the role of observation and documentation** are all considered.