The making of an evidence champion

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Presenter Disclosure

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The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

A Culture of Excellence: Evidence-based Public Health Practice

Evidence Exchange
Your public health nursing e-source

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Objectives – what you will learn!

1. Describe elements of a continuing education program to prepare public health nurses for evidence-based practice
2. Describe a model for rating the strength and quality of evidence from research and practice
3. List three examples of effective Champion roles

Evidence-based practice

Barriers	Facilitators
✓ Low comfort with search techniques	✓ Individual knowledge & EBP skills
✓ Perceived lack of time to search for the best evidence	✓ Beliefs that EPB improves outcomes
✓ Challenges with critically appraising research	✓ Belief in ability to implement EBP
✓ Negative attitudes toward research	✓ Mentors/teachers who are skilled in EBP
✓ Lack of administrative/ organizational support	✓ Administrative/organizational support
	✓ Time, Patience & Ongoing Support

Champion

"Individuals who dedicate themselves to supporting, marketing, and 'driving through' an innovation"

Greenhalgh, et al, 2005

Evidence Champion Qualifications

1. Endorsement of LHD employer
2. Baccalaureate prepared PHN or other baccalaureate prepared PH professional
3. Minimum of **two** hours per week time commitment
4. Interest in evidence-based practice
5. Interest in the coaching role
6. Knowledge of population-based PH practice
7. Strong verbal communication skills
8. Internet access

The Evidence Champions (n=32)

- Average age = 48.3 years old
- 100% ~ baccalaureate degree
- 31% ~ Master's or higher
- Average years in public health=13.5

Evidence Champions

Introductory two-day training

- Define EBP
- Structure practice question
- Locate evidence
- Rate strength & quality of evidence
- Apply findings to practice
- Develop champion role
- Motivational interviewing

Defining Evidence-based Public Health Practice

Process of combining
- Best evidence available
- Health data
- Public health expertise
- Client, family, community, stakeholder preferences

… the available body of facts or information indicating whether a belief or proposition is true or valid

Adapted from Brownson (2010) Evidence-Based Public Health. Oxford, University Press.

Where to Find Evidence

The Guide to Community Preventive Services

www.thecommunityguide.org

health-evidence.ca
Promoting evidence-informed decision making

http://health-evidence.ca/home

Where to Find Evidence

THE COCHRANE COLLABORATION®

The Cochrane Collaboration
www.cochrane.org

THE CAMPBELL COLLABORATION
What helps? What harms? Based on what evidence?

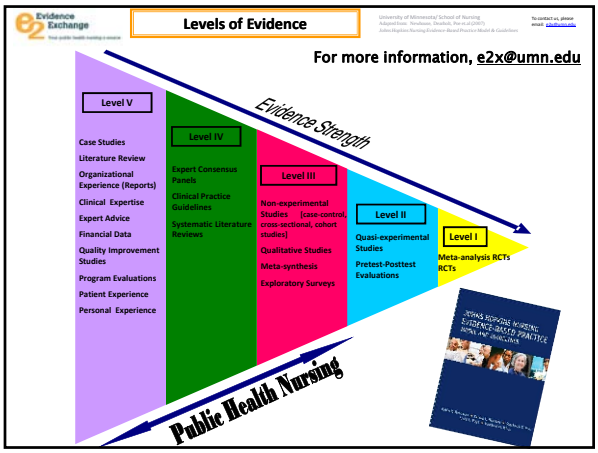
www.campbellcollaboration.org

Where to Find Evidence

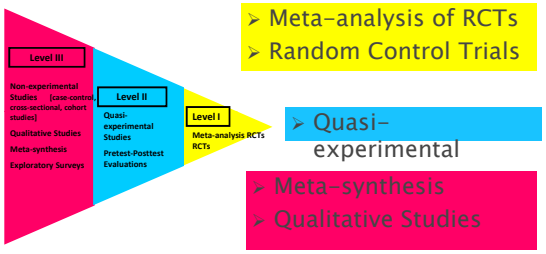
Google Scholar BETA

MINNESOTA MDH DEPARTMENT of HEALTH

Minnesota Department of Health Barr Library



Evidence from Research



- Meta-analysis of RCTs
- Random Control Trials
- Quasi-experimental
- Meta-synthesis
- Qualitative Studies

Evidence from Practice

- Expert consensus panels
- Practice guidelines
- Systematic literature reviews
- Case studies
- Organizational reports (program evaluations, grant reports, community assessments, etc)
- Practitioner experience
- Cumulative wisdom

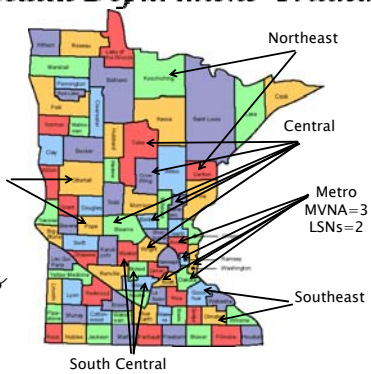
Evidence Rating Scale

Strength of Evidence		
Level I (strongest): Experimental Study (Randomized Controlled Trial or RCT); Meta-Analysis of Research Findings		
Level II: Quasi-Experimental Studies		
Level III: Non-Experimental Studies; Qualitative Studies ; Meta-Syntheses		
Level IV: Expert Consensus Panels (ex: practice guidelines); Systematic Literature Reviews		
Level V (weakest): Case Studies, Literature Review, Organizational Experience (reports), Clinical Expertise, Personal Experience		
Quality of Evidence		
A. High	Research	Consistent results with sufficient sample size, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence
	Summative Reviews	Well-defined, reproducible search strategies; consistent results with sufficient numbers of well define studies; criteria-based evaluation of overall scientific strength and quality of included studies; definite conclusions
	Organizational	Well-defined methods using a rigorous approach; consistent results with sufficient sample size; use of reliable and valid measures
	Expert Opinion	Expertise is clearly evident
B. Good	Research	Reasonable consistent results, sufficient sample size, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence
	Summative Reviews	Reasonable, thorough and appropriate search; reasonably consistent results with sufficient numbers of well defined studies; evaluation of strengths and limitations of included studies; fairly definitive conclusions
	Organizational	Well-defined methods; reasonably consistent results with sufficient numbers; use of reliable and valid measures, reasonably consistent recommendations
	Expert Opinion	Expertise appears to be credible
C. Low quality or major flaws	Research	Little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn
	Summative Reviews	Undefined, poorly defined, or limited search strategies; insufficient evidence with inconsistent results; conclusions cannot be drawn
	Organizational	Undefined or poorly defined methods; insufficient sample size, inconsistent results; undefined, poorly defined or measures that lack adequate reliability or validity
	Expert Opinion	Expertise is not discernable or is dubious

Adapted from Johns Hopkins Nursing *Evidence-Based Practice Model and Guidelines* RP Newhouse, SL Dearholt et al; Indianapolis, IN: Sigma Theta Tau Press, 2007

Random Control Trial

Local Health Department Trainings



LHD Staff Trainings

Evidence-based Practice

Practice Question

Part of Every Day PHN Practice

Evidence + research + practice + client preference

Translation to Practice

Practice Questions

Can we reuse masks for DOT visits?

What type of incentives work best to motivate parents to change behavior?

Best practice for effective meetings?

What is the most effective format to communicate resources to community partners?

Best practices for assessing caregivers needs to prevent burn out?

How to reduce subsequent teen pregnancies?

Strategies for immunization noncompliance?

Interventions to increase duration of breastfeeding by women receiving PHN home visits?

How can we get culturally diverse families to stop bed-sharing?

How much information can be provided during a home visit?

Recommended Immunization Schedule for Persons Aged 0 Through 6 Years—United States • 2009

For those who fall behind or start late, see the catch-up schedule

Vaccine ▼ Age ▶	Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	19–23 months	2–3 years	4–6 years
Hepatitis B[1]	HepB	HepB				HepB					
Rotavirus[2]			RV	RV	RV[2]						
Diphtheria, Tetanus, Pertussis[3]			DTaP	DTaP	DTaP	see footnote 3	DTaP				DTaP
Haemophilus influenzae type b[4]			Hib	Hib	Hib[4]	Hib					
Pneumococcal[5]			PCV	PCV	PCV	PCV				PPSV	
Inactivated Poliovirus			IPV	IPV		IPV					IPV
Influenza[6]						Influenza (Yearly)					
Measles, Mumps, Rubella[7]						MMR		see footnote 7			MMR
Varicella[8]						Varicella		see footnote 8			Varicella
Hepatitis A[9]						HepA (2 doses)				HepA Series	
Meningococcal[10]										MCV	

Range of recommended ages

Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 1, 2008, for children aged 0 through 6 years. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. Licensed combination vaccines may be used whenever any component of the combination is indicated and other components are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the relevant Advisory Committee on Immunization Practices statement for detailed recommendations, including high-risk conditions: http://www.cdc.gov/vaccines/pubs/acip-list.htm. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

Nurse Family Partnership Selected Outcomes

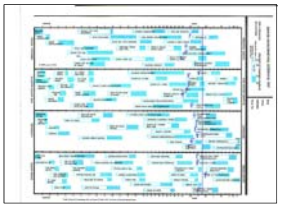
Pregnancy
- 23% reduction in subsequent pregnancies 2 years after child's birth
- 79% reduction in preterm deliveries among women who smoked

Child Health and Development
- 48% less child abuse and neglect
- 67% reduction in child behavioral & intellectual problems age 6
- 59% reduction in arrests at child age 15

Family Self-Sufficiency
- 61% fewer arrests of mothers 15 years after child's birth
- 46% increase in father presence in the household
- 20% reduction in welfare use

When is there sufficient evidence to change the way you practice? What evidence do we have to continue current practice?

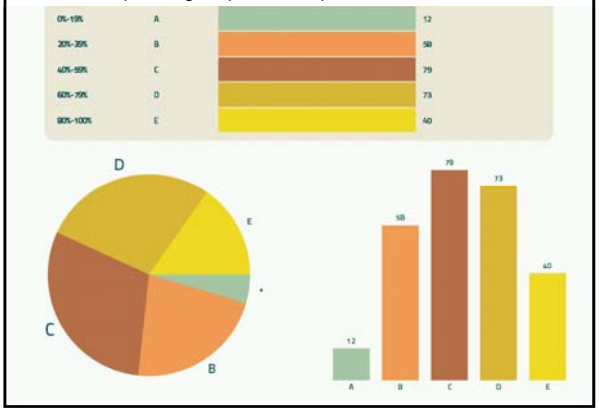


Evidence Supporting PHN Practice

- Brain development
- Back to Sleep
- Attachment
- Nurse Family Partnership
- Vitamin D promotion
- Depression Screening
- Immunization recommendations
- Epidemiology
- NCAST
- Breastfeeding
- Maslow's hierarchy
- Smoking cessation
- Prenatal Care
- Folic Acid

Distribution of 263 responses on June 1, 2011 in answer to the item, "Estimate the percentage of your current practice that is based on evidence."



Champion Updaters

- Monthly 1-hour conference calls held at two different times
- Facilitated by project coordinator and graduate assistant
- Champions submitted articles
- All reviewed same article and shared rationale for how and why ratings were assigned

Guides for Dissecting Evidence for Practice

◂to be used in conjunction with▸
Johns Hopkins Nursing Evidence-Based Practice Model and Guidelines

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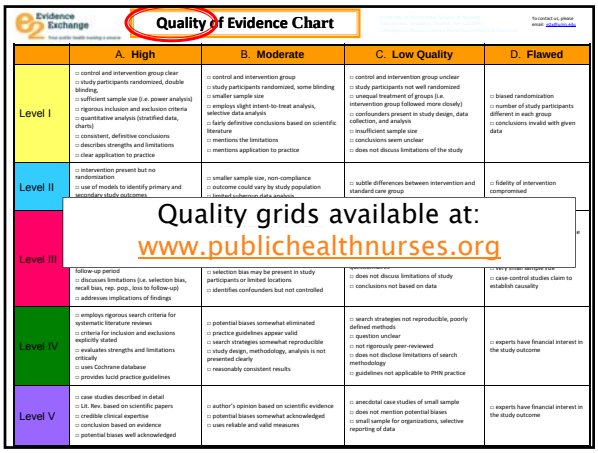
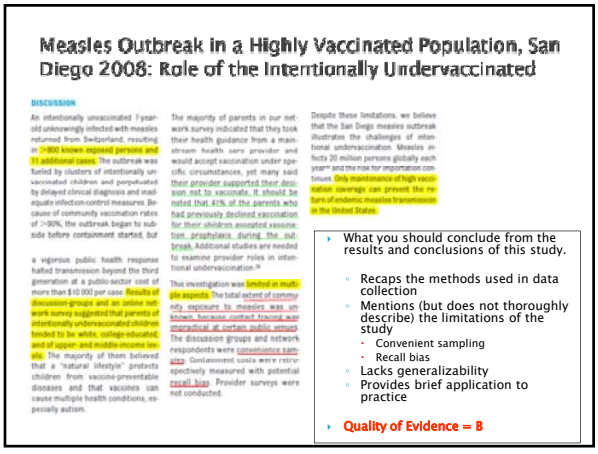


Evidence Exchange

Quality of Evidence Chart

	A. High	B. Moderate	C. Low Quality	D. Flawed
Level I	□ control and intervention group clear □ study participants randomized, double blinding, □ sufficient sample size (i.e. power analysis) □ rigorous inclusion and exclusion criteria □ quantitative analysis (stratified data, charts) □ consistent, definitive conclusions □ describes strengths and limitations □ clear application to practice	□ control and intervention group □ study participants randomized, some blinding □ smaller sample size □ employs slight intent-to-treat analysis, selective data analysis □ fairly definitive conclusions based on scientific literature □ mentions the limitations □ mentions application to practice	□ control and intervention group unclear □ study participants not well randomized □ unequal treatment of groups (i.e. intervention group followed more closely) □ confounders present in study design, data collection, and analysis □ insufficient sample size □ conclusions seem unclear □ does not discuss limitations of the study	□ biased randomization □ number of study participants different in each group □ conclusions invalid with given data
Level II	□ intervention present but no randomization □ use of models to identify primary and secondary study outcomes	□ smaller sample size, non-compliance □ outcome could vary by study population □ limited subgroup data analysis	□ subtle differences between intervention and standard care group	□ fidelity of intervention compromised
Level III	follow-up period □ discusses limitations (i.e. selection bias, recall bias, rep. pop., loss to follow-up) □ addresses implications of findings	□ selection bias may be present in study participants or limited locations □ identifies confounders but not controlled	□ does not discuss limitations of study □ conclusions not based on data	□ case-control studies claim to establish causality
Level IV	□ employs rigorous search criteria for systematic literature reviews □ criteria for inclusion and exclusions explicitly stated □ evaluates strengths and limitations critically □ uses Cochrane database □ provides lucid practice guidelines	□ potential biases somewhat eliminated □ practice guidelines appear valid □ search strategies somewhat reproducible □ study design, methodology, analysis is not presented clearly □ reasonably consistent results	□ search strategies not reproducible, poorly defined methods □ question unclear □ not rigorously peer-reviewed □ does not disclose limitations of search methodology □ guidelines not applicable to PHN practice	□ experts have financial interest in the study outcome
Level V	□ case studies described in detail □ Lit. Rev. based on scientific papers □ credible clinical expertise □ conclusion based on evidence □ potential biases well acknowledged	□ author's opinion based on scientific evidence □ potential biases somewhat acknowledged □ uses reliable and valid measures	□ anecdotal case studies of small sample □ does not mention potential biases □ small sample for organizations, selective reporting of data	□ experts have financial interest in the study outcome

Quality grids available at:
www.publichealthnurses.org



Measles Outbreak in a Highly Vaccinated Population, San Diego 2008: Role of the Intentionally Undervaccinated

DISCUSSION

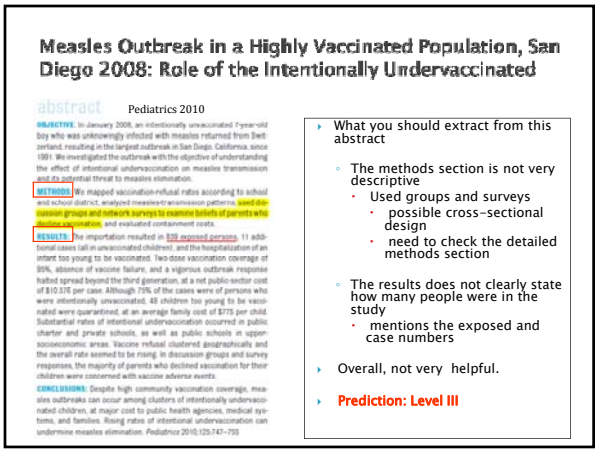
An intentionally unvaccinated 7-year-old unknowingly infected with measles returned from Switzerland, resulting in >900 known exposed persons and 11 additional cases. The outbreak was fueled by clusters of intentionally unvaccinated children and perpetuated by delayed clinical diagnosis and inadequate infection-control measures. Because of community vaccination rates of >90%, the outbreak began to subside before containment started, but a vigorous public health response halted transmission beyond the third generation at a public-sector cost of more than $10 000 per case. Results of discussion groups and an online network survey suggested that parents of intentionally undervaccinated children tended to be white, college-educated, and of upper- and middle-income levels. The majority of them believed that a "natural lifestyle" protects children from vaccine-preventable diseases and that vaccines can cause multiple health conditions, especially autism.

The majority of parents in our network survey indicated that they took their health guidance from a mainstream health care provider and would accept vaccination under specific circumstances, yet many said their provider supported their decision not to vaccinate. It should be noted that 41% of the parents who had previously declined vaccination for their children accepted vaccination prophylaxis during the outbreak. Additional studies are needed to examine provider roles in intentional undervaccination.[9]

This investigation was limited in multiple aspects. The total extent of community exposure to measles was unknown, because contact tracing was impractical at certain public venues. The discussion groups and network respondents were convenience samples. Containment costs were retrospectively measured with potential recall bias. Provider surveys were not conducted.

Despite these limitations, we believe that the San Diego measles outbreak illustrates the challenges of intentional undervaccination. Measles infects 20 million persons globally each year[4] and the risk for importation continues. Only maintenance of high vaccination coverage can prevent the return of endemic measles transmission in the United States.

- What you should conclude from the results and conclusions of this study.
  - Recaps the methods used in data collection
  - Mentions (but does not thoroughly describe) the limitations of the study
    - Convenient sampling
    - Recall bias
  - Lacks generalizability
  - Provides brief application to practice
- **Quality of Evidence = B**



Measles Outbreak in a Highly Vaccinated Population, San Diego 2008: Role of the Intentionally Undervaccinated

abstract

Pediatrics 2010

OBJECTIVE: In January 2008, an intentionally unvaccinated 7-year-old boy who was unknowingly infected with measles returned from Switzerland, resulting in the largest outbreak in San Diego, California, since 1991. We investigated the outbreak with the objective of understanding the effect of intentional undervaccination on measles transmission and its potential threat to measles elimination.

METHODS: We mapped vaccination-refusal ratios according to school and school district, analyzed measles-transmission patterns, used discussion groups and network surveys to examine beliefs of parents who decline vaccination, and evaluated containment costs.

RESULTS: The importation resulted in 839 exposed persons, 11 additional cases (all in unvaccinated children), and the hospitalization of an infant too young to be vaccinated. Two-dose vaccination coverage of 95%, absence of vaccine failure, and a vigorous outbreak response halted spread beyond the third generation, at a net public-sector cost of $10 376 per case. Although 75% of the cases were of persons who were intentionally unvaccinated, 48 children too young to be vaccinated were quarantined, at an average family cost of $775 per child. Substantial ratios of intentional undervaccination occurred in public charter and private schools, as well as public schools in upper-socioeconomic areas. Vaccine refusal clustered geographically and the overall rate seemed to be rising. In discussion groups and survey responses, the majority of parents who declined vaccination for their children were concerned with vaccine adverse events.

CONCLUSIONS: Despite high community vaccination coverage, measles outbreaks can occur among clusters of intentionally undervaccinated children, at major cost to public health agencies, medical systems, and families. Rising rates of intentional undervaccination can undermine measles elimination. *Pediatrics* 2010;126:747–755

- What you should extract from this abstract
  - The methods section is not very descriptive
    - Used groups and surveys
      - possible cross-sectional design
      - need to check the detailed methods section
  - The results does not clearly state how many people were in the study
    - mentions the exposed and case numbers
- Overall, not very helpful.
- **Prediction: Level III**

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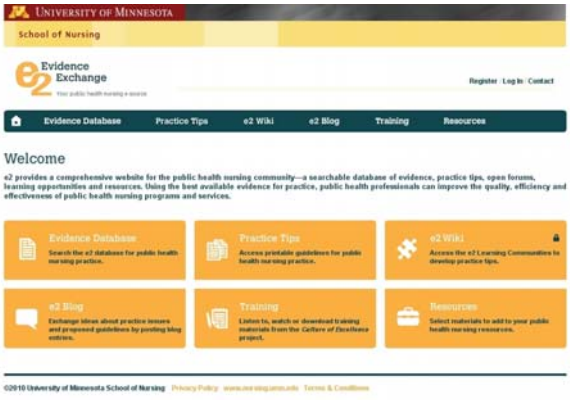

Champion Role Development

- Raising awareness
- Providing education
- Sharing information
- Acting as a resource to others
- Mentoring
- Role modeling

"You know your own agencies best; the role you develop will need to fit what will work best in your organization."

Ploeg, J. et al. (2010). The Role of Nursing Best Practice Champions in Diffusing Practice Guidelines: A Mixed Methods Study. Worldviews on Evidence-Based Nursing, 7(14): 238–251.

	Opinion Leader	Facilitator	Champion	Linking Agent	Change Agent
Theory of Action	Social Influence	Problem-solving	Social Influence	Networks	Change Theory
Purpose	Evaluation	Goal Achievement	Promotion	Gap Bridging	Change Behavior
Role	Informal	Formal	Informal	Formal	Formal
Who (individual or organizational)	Individual	Individual	Individual	Individual or Org'l	Individual or Org'l
Organizational Orientation	Internal	Internal or External	Internal	External	Internal or External
Trained or Chosen for Role?	No	Yes	No	Yes	Yes
Manner of Influence	Expertise	Interpersonal	Persuasion	Resource Access	Expertise
Domain of Influence	Work Unit	Spans Boundaries	Project Specific	Project Specific	Spans Boundaries
Innovativeness	Low	Low	High	Low	High
Nature of Relationships	On-going	Short-term	On-going	Short-term	Short-term

Thompson, G., Estabrooks, C., Degner, L.,(2006) Clarifying the concepts in knowledge transfer: a literature review. *Journal of Advanced Nursing*. 53(6):691-701

Champion Facilitation Continuum

Doing for Others
- Episodic, as needed contact
- Practical, technical help

Enabling Others
- Sustained partnership
- Developmental

Role Development

Champion Role Development

- No "right" or "wrong" Champion Role
- Successful Champions balance:
  - Organization's capacity for change
  - External challenges organization faces
  - Impact of adoption on "the way we do business"
  - Champion's own attributes to "drive though" innovation

"What distinguishes champions from other roles is their *overwhelming enthusiasm* and *visionary qualities*. They can be described as transformational leaders...

Thompson, G., Estabrooks, C., Degner, L., 2006, p. 695

"Persuasive and willing to take calculated risks, champions adopt programs, ideas or projects as their own and relentlessly promote them. Personal ownership of an idea or project is a central feature of the role."

Thompson, G., Estabrooks, C., Degner, L., 2006, p. 695

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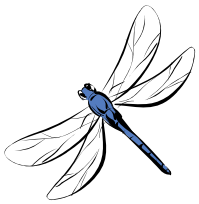

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