



"A collaborative project to
develop a universal framework for
encoding and disseminating electronic clinical guidelines"

The SAGE Project

Standards-Based Sharable Active Guideline Environment



III. SAGE: Looking Forward



Nick Beard, MD

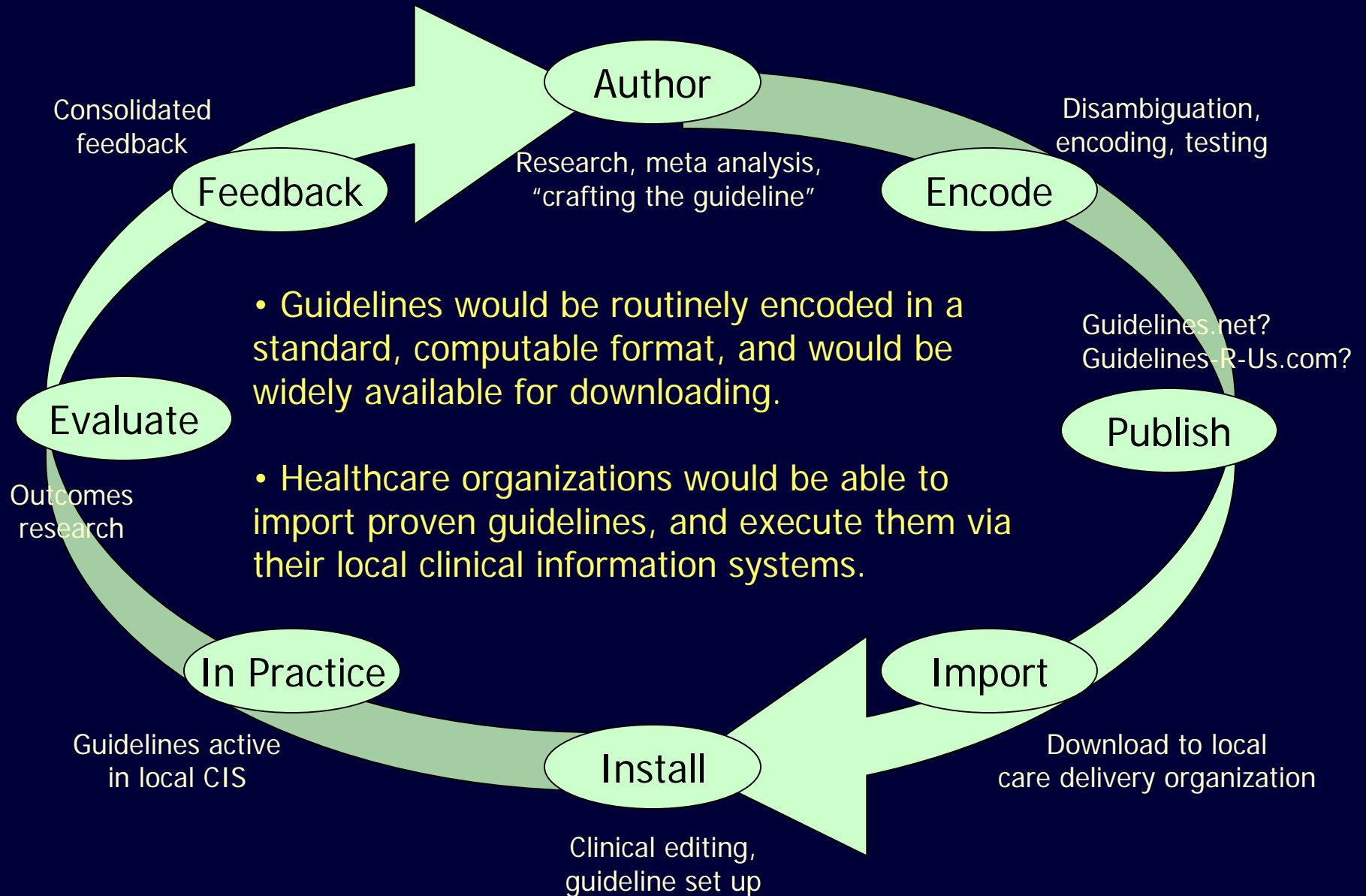
Vice President, Health Informatics

IDX Systems, Seattle

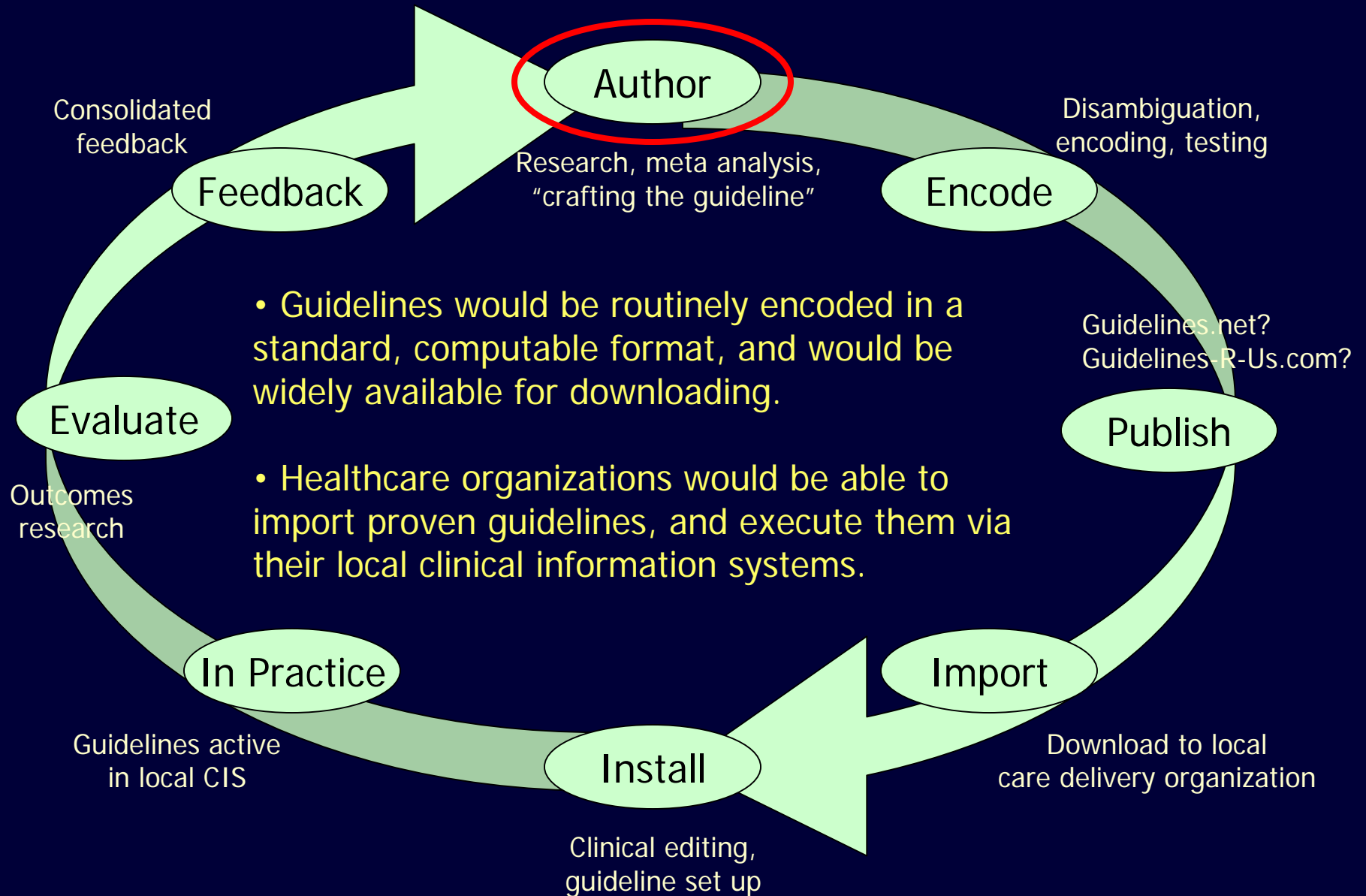
Nick_Beard@idx.com

- ⊕ The Lifecycle of a Guideline
- ⊕ Plans
- ⊕ Implications

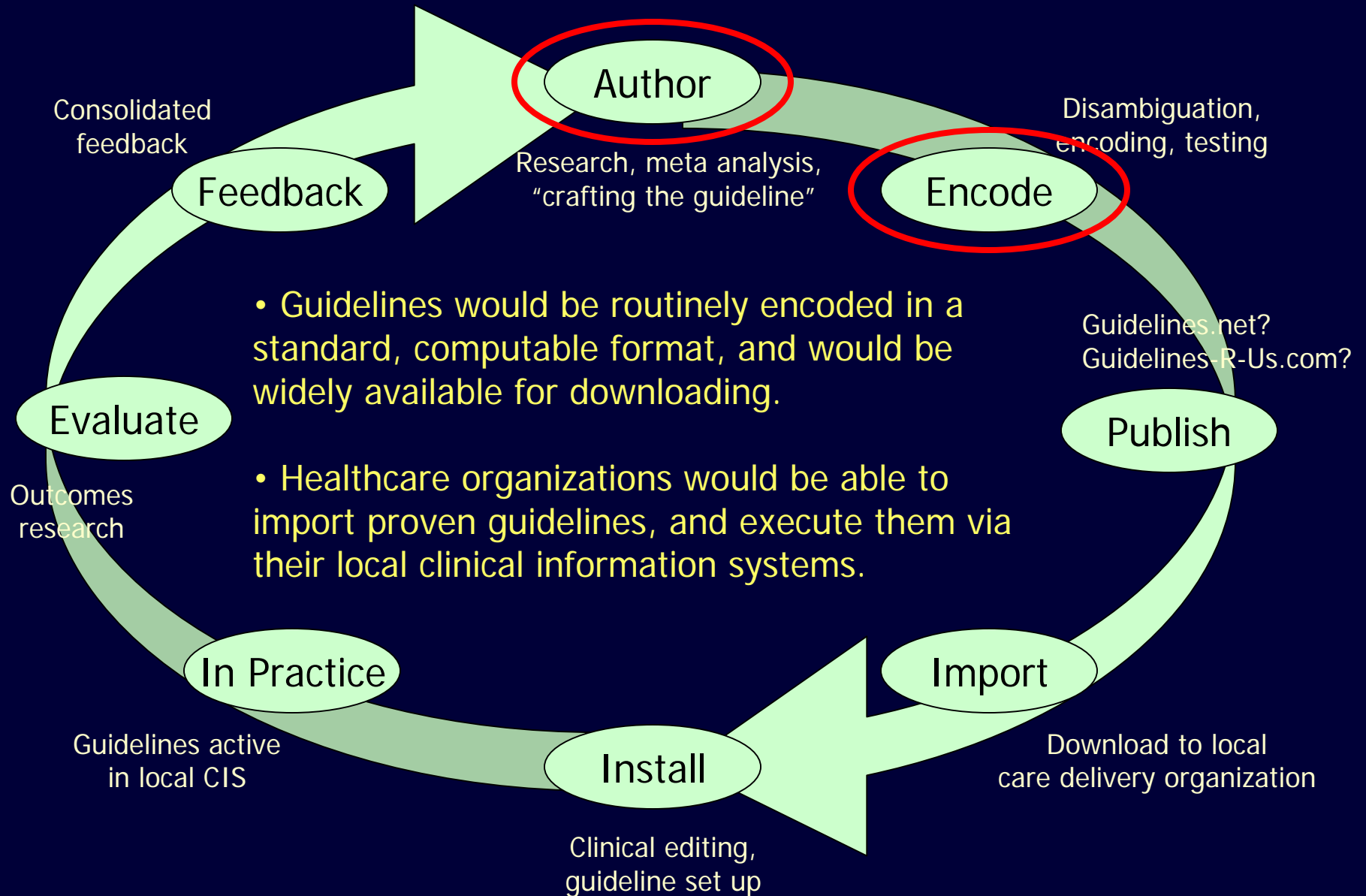
The SAGE Guideline Lifecycle



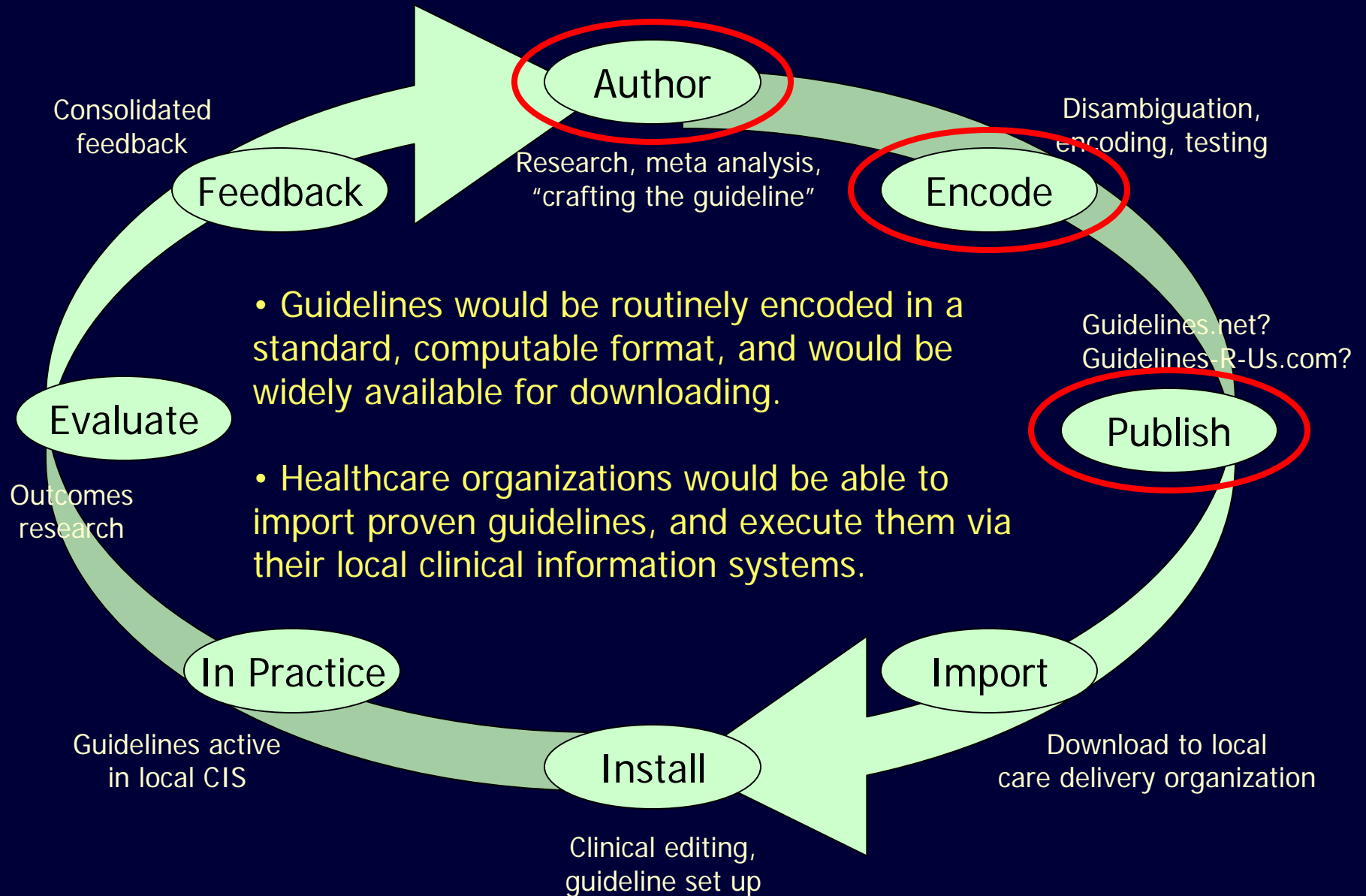
The SAGE Guideline Lifecycle



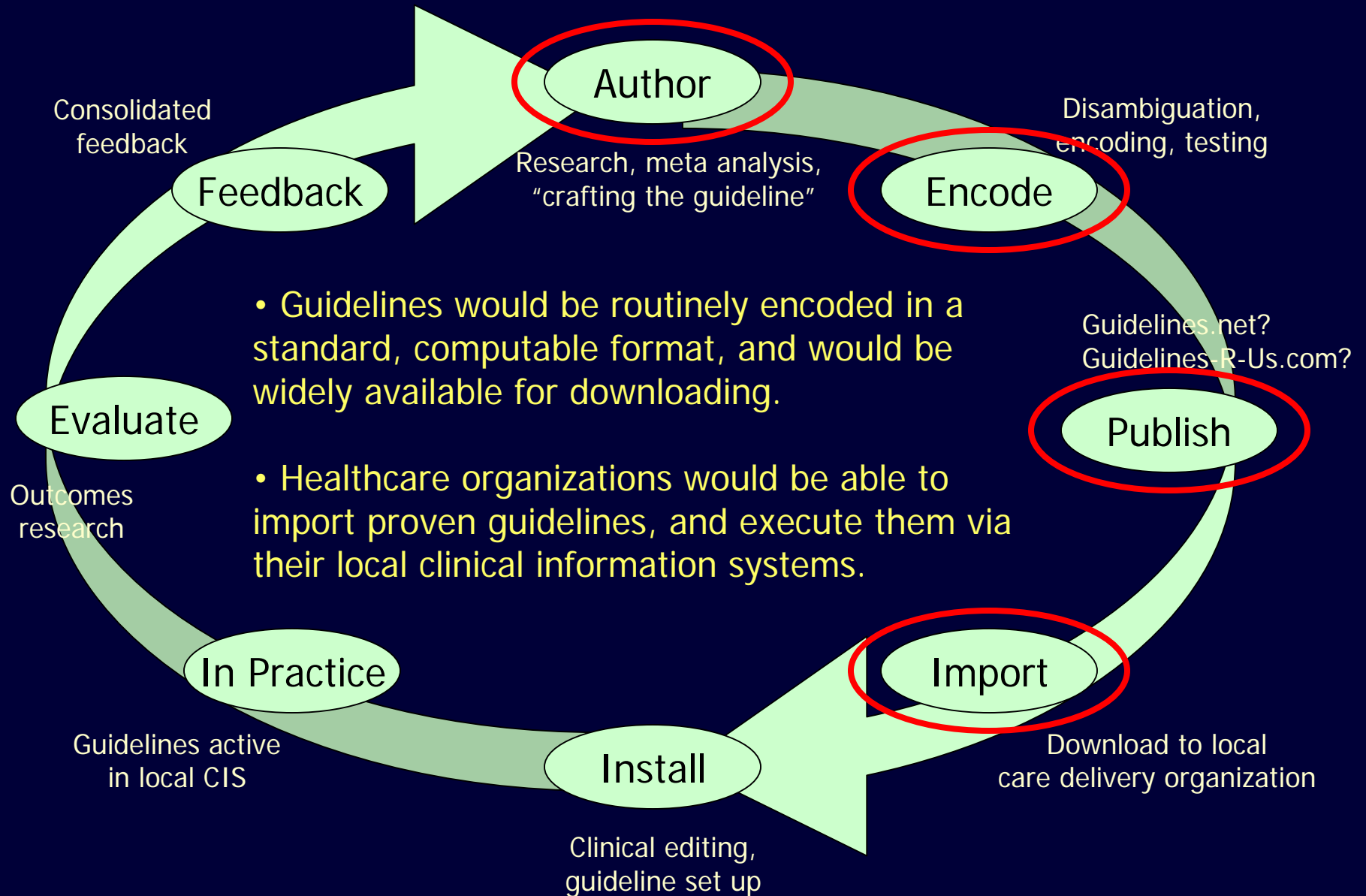
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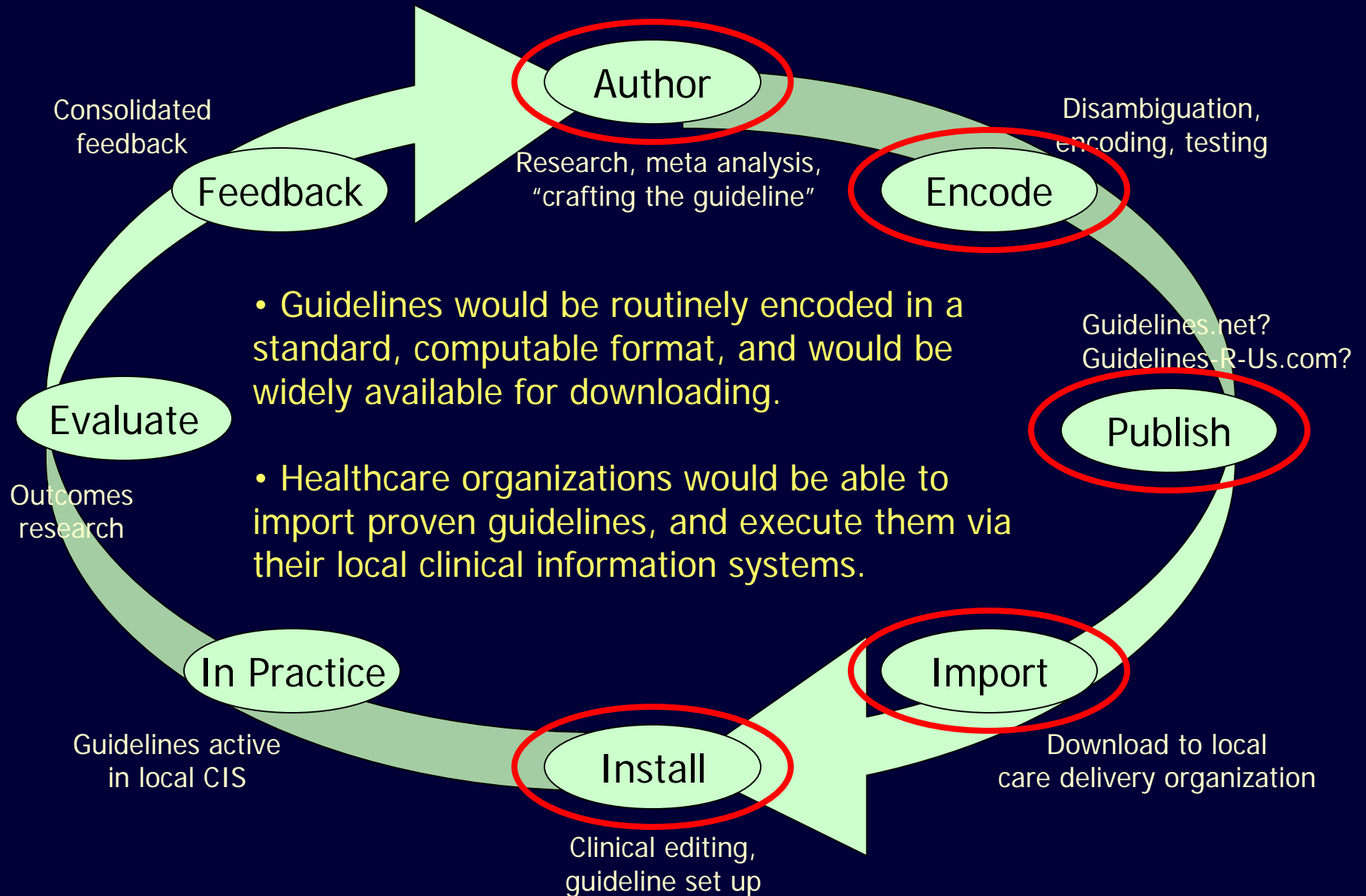
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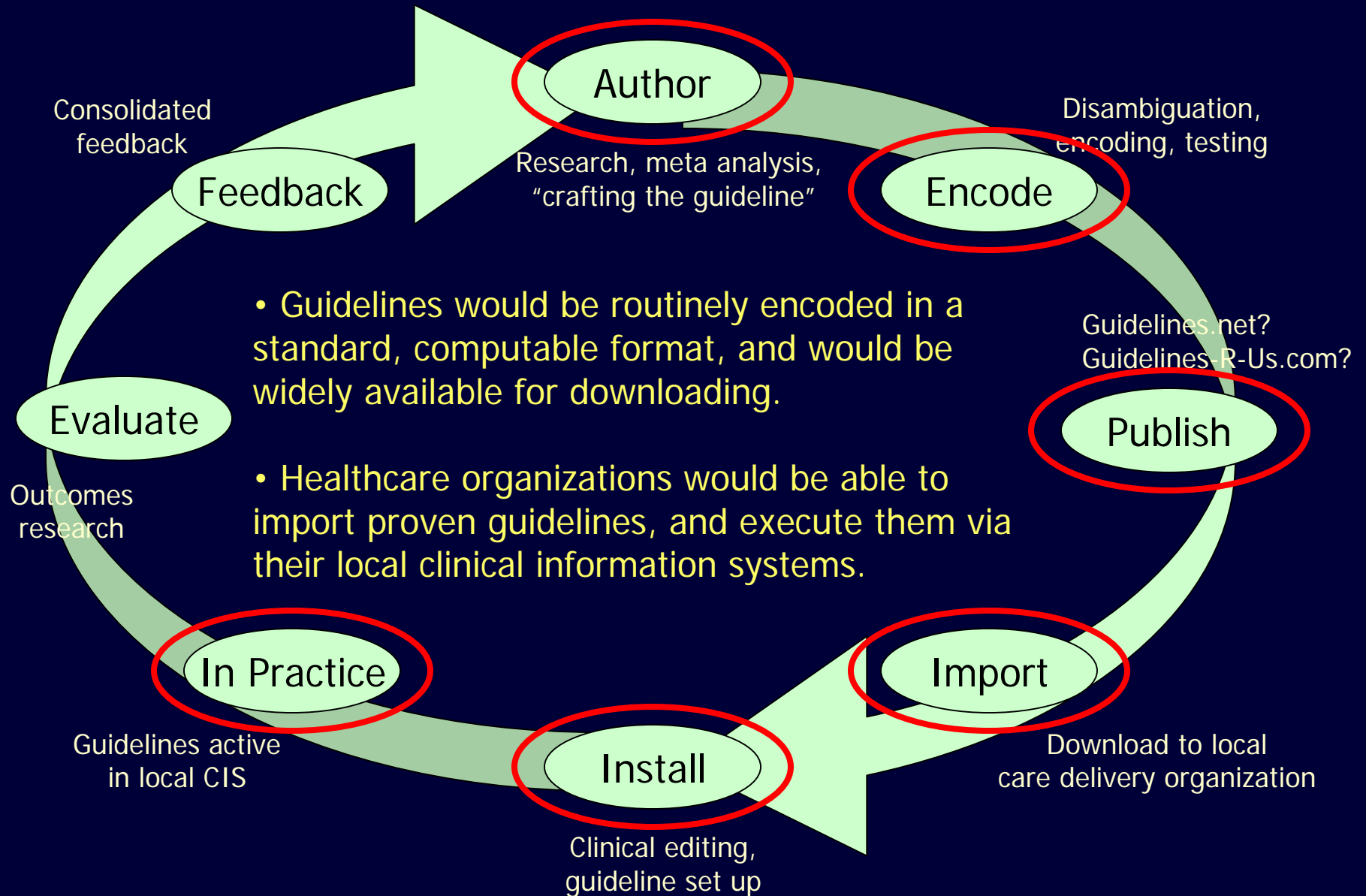
The SAGE Guideline Lifecycle



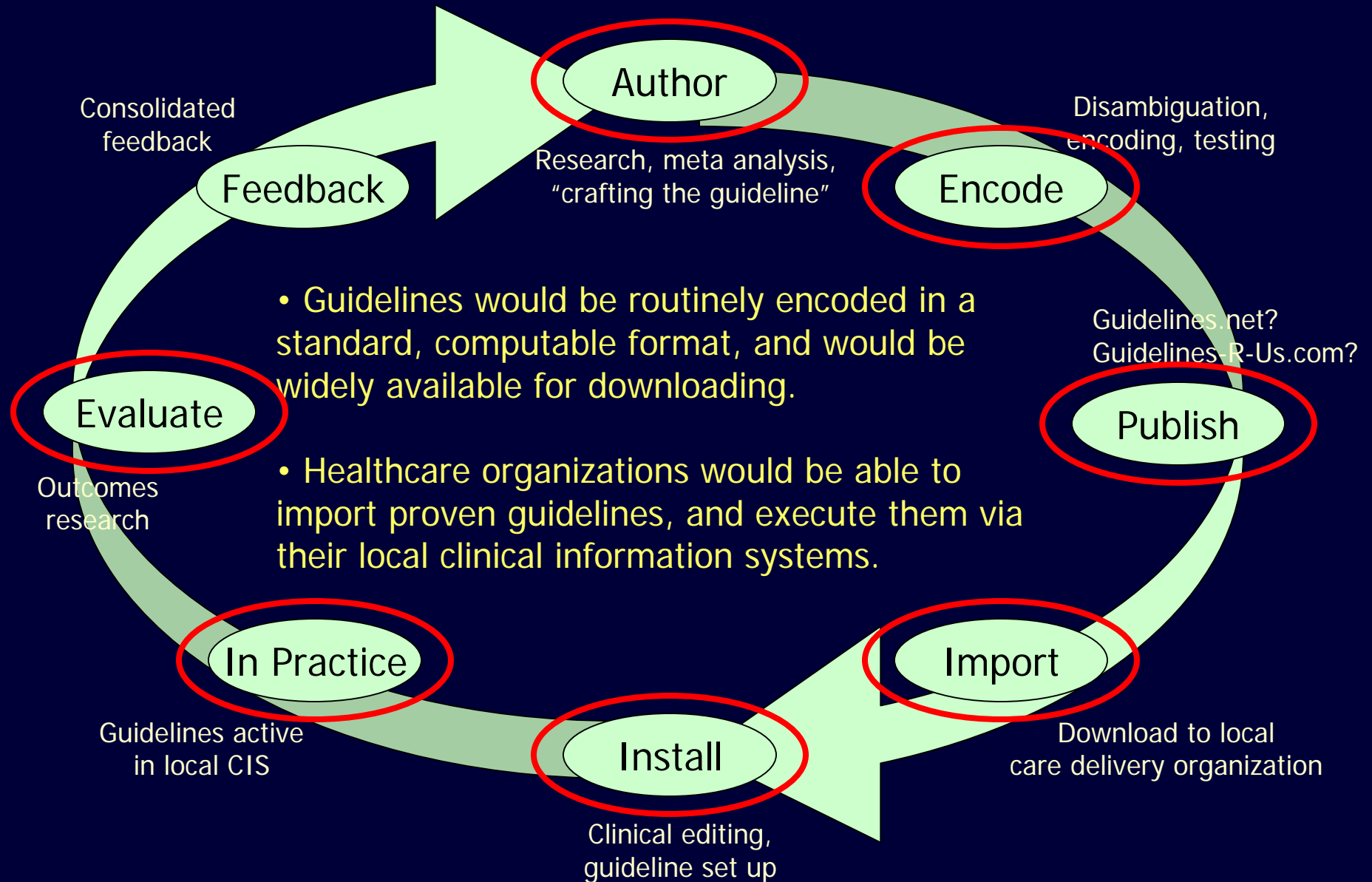
The SAGE Guideline Lifecycle



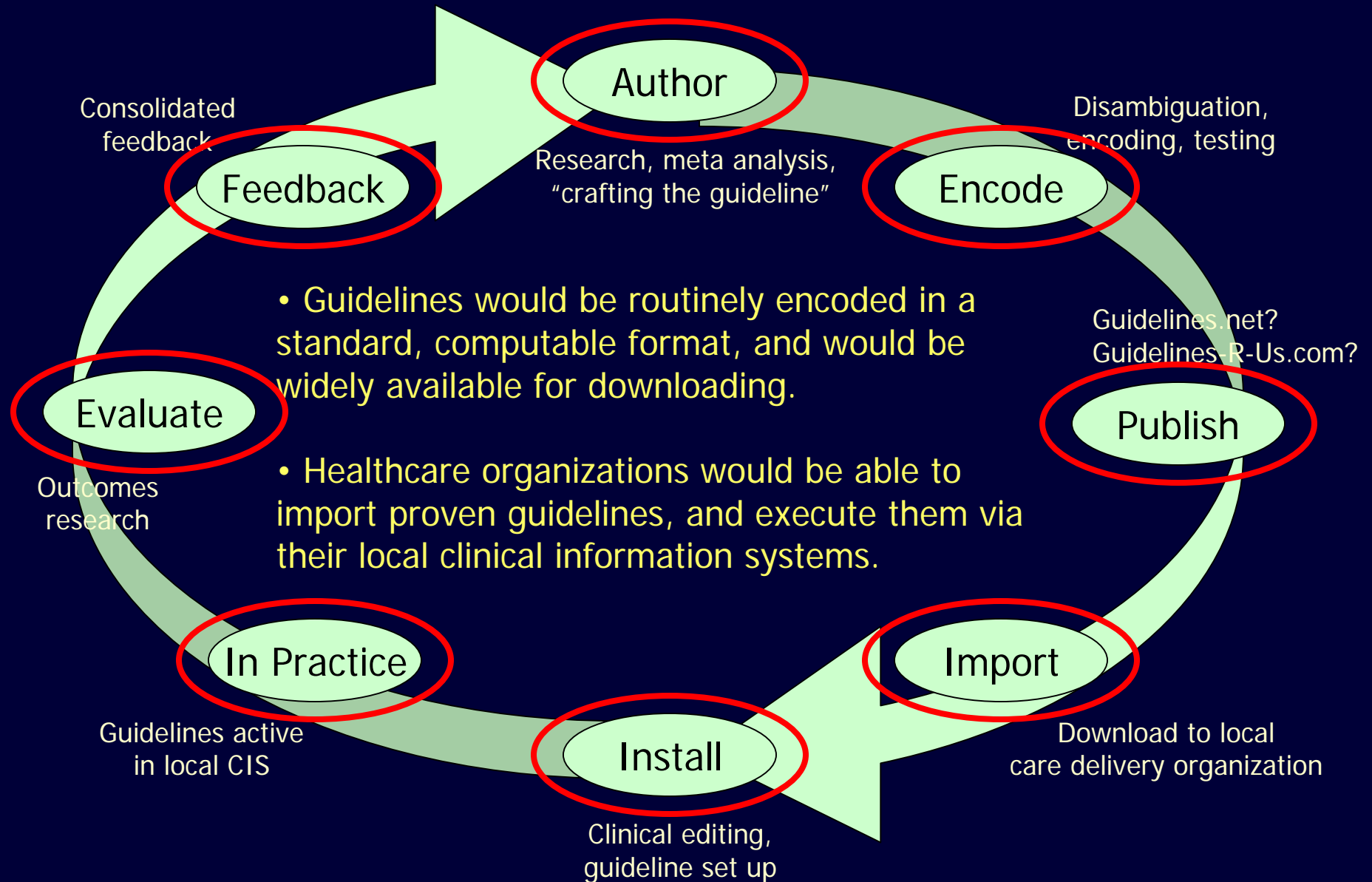
The SAGE Guideline Lifecycle



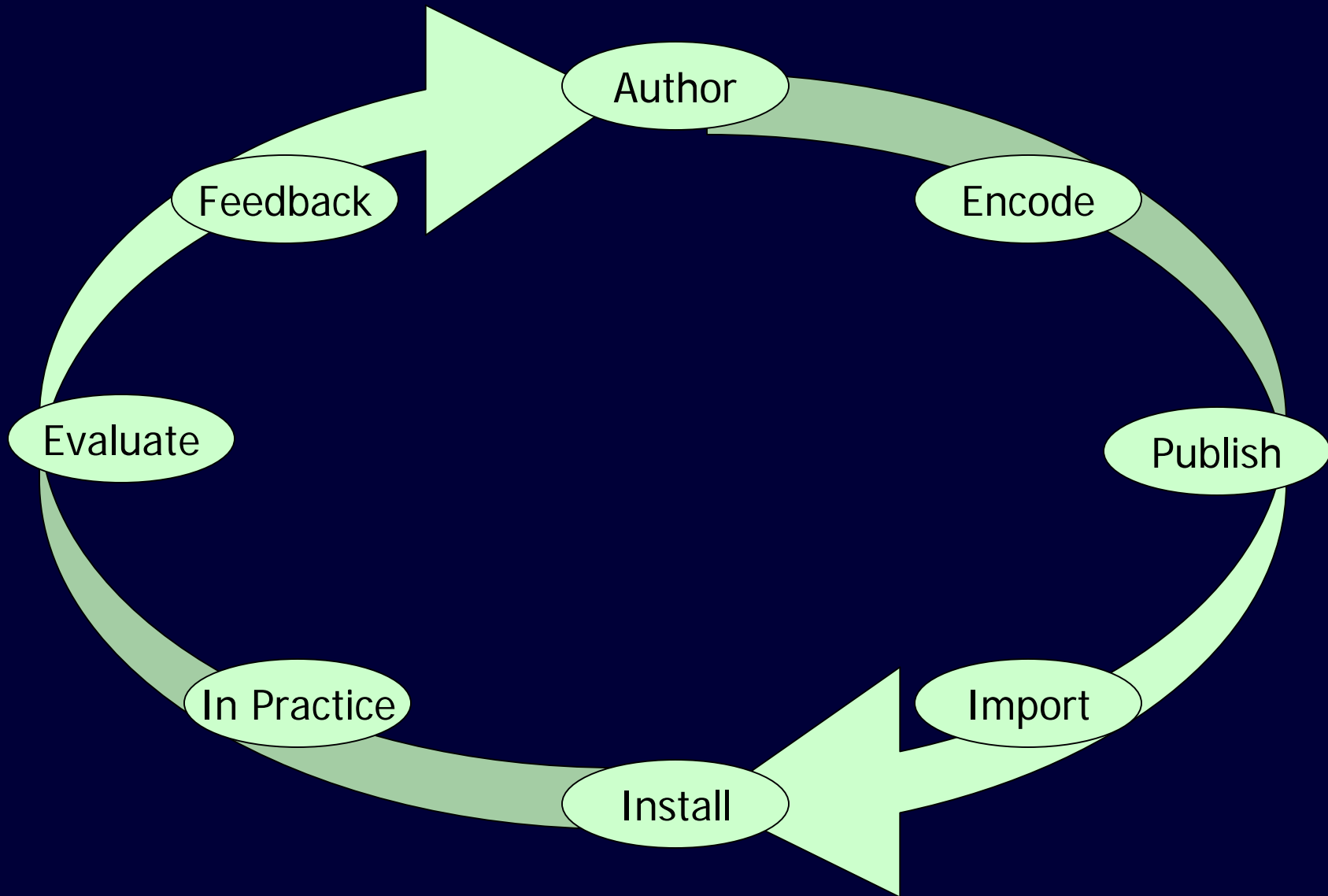
The SAGE Guideline Lifecycle



The SAGE Guideline Lifecycle



The SAGE Guideline Lifecycle



SAGE Exemplar Guidelines

Guideline	Clinical Domain
Immunizations	Routine health maintenance, in both outpatient and inpatient
Diabetes Mellitus	Chronic disease monitoring and treatment. Acute exacerbation of chronic disease. Chronic disease as a comorbidity.
Community Acquired Pneumonia	Emergency room evaluation and diagnosis. Outpatient treatment of acute disease. Inpatient and ICU treatment of acute disease. Follow-up of acute disease.
Total Joint Replacement	Surgical guideline. Comprehensive pre-op workup, inpatient plan of care, and post-op outpatient management

Imagining SAGE in Action (a look into the future)

- SAGE infrastructure is now in place ...
- Guideline has been downloaded and installed ...
- SAGE guideline has been activated ...
- What might care providers experience ?

Now entering the
“PowerPoint-ware zone” . . .

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WEASLEY, Ronald #1

Care Support Viewers/Labs Allergies

Patient Problem List Manager

Patient Problem List

Status	Problem and Modifier	ICD9
<input type="radio"/> A	Ganglion Cyst	727.43

Add Problem Update/Delete Problem

Legend: A = Active I = Inactive R = Resolved

Add Patient Problem

Abbreviated Standard List

Problem Description	ICD9
<input type="radio"/> Carbuncle NOS	680.9
<input checked="" type="radio"/> Diabetes Mellitus Type II	250.0
<input type="radio"/> Edema	782.3
<input type="radio"/> Ganglion Cyst	727.43
<input type="radio"/> Goiter NOS	240.9
<input type="radio"/> Gout Arthritis	274.0
<input type="radio"/> Hypertension	401.9
<input type="radio"/> Hypoglycemia	251.2
<input type="radio"/> Lipoma	214.9
<input type="radio"/> Nephropathy	583.0
<input type="radio"/> Presenile Dementia	290.10
<input type="radio"/> Pulmonary Hypertension Primary	416.0
<input type="radio"/> Rash Diaper	691.0
<input type="radio"/> Stone Kidney	592.0
<input type="radio"/> Wart	078.10

Add Problem Cancel

Vision: Guideline-augmented management of Diabetes Mellitus

A SAGE guideline has been installed and “activated”

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WEASLEY, Ronald

Care Support Viewers/Labs Allergies

Patient Problem List Manager

Patient Problem List

Status	Problem and Modifier	CD9
<input type="radio"/> A	Ganglion Cyst	727.43
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		
<input type="radio"/>		

Add Problem Update/Delete Problem

Legend: A = Active I = Inactive R = Resolved

Attention!

Care Support is available for Diabetes Mellitus.

American Diabetic Association Diabetes Mellitus Guideline:

- Hemoglobin A1C every 3-6 months, goal < 7%
- Blood pressure at every visit, goal < 130/80 mm Hg.
- Recommendations for anti-hypertension medications
- Lipids at least annually, goal < 100 mg/dl
- Nutrition consult for new diagnosis of DM.
- ASA therapy
- Pneumococcal and Influenza Vaccination.
- Smoking Cessation
- Microalbuminuria (annually) in type I who have had DM > 5 years and all type 2.
- Foot examination, annually
- Retinal examination, annually.

Do you wish to enable Care Support features for this patient?

Activate Cancel

Problem-specific guideline reminder will appear when problem is added

IDX Systems Corporation – Proprietary and Confidential



WEASLEY, Ronald #1

MRN: 03 987 222
DOB: 8-6-1962
SSN: 358-97-6587

Sex: M
Age: 41 Years
Phone: (789) 657-1587

Care Support Viewers/Labs Allergies/Immuniz Orders/Meds Problem List/Bill Flowsheets Mgmt Functions

Home
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Pause

Log Off

Care Support Maintenance

Care Support Library

Select Guideline

No guidelines available at this time.

Activate Reference

Enrolled Care Support

Select	Guideline	Date	Status
<input checked="" type="radio"/>	Diabetes Mellitus	9-7-2003	Active
<input type="radio"/>	Preventive Services	9-25-2003	Discontinued

Discontinue Temp Hold Modify Goals

Problem List

Problem Description	ICD9
Ganglion Cyst	727.43
Diabetes Mellitus Type II	250.0

Update Visits

InBox

☐ All Mine ☒ Patient

Notifications	Count	Info

Resolve Create Msg Refresh

For each patient, clinicians can view a list of appropriate guidelines, and choose to enroll a patient for a guideline.

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Care Support Viewers/Labs Allergies/Immuniz Orders/Meds Problem List/Bill Flowsheets Mgmt Functions

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Order Entry Main Screen

Problem List

Problem Description	ICD9
Ganglion Cyst	727.43

Unissued Order List

Unissued Orders	Assoc. Problems
Care Support Orders	Diabetes
<input checked="" type="checkbox"/> GlyHgb	
<input checked="" type="checkbox"/> Lipid Panel	
<input checked="" type="checkbox"/> Nutrition Consult	
<input checked="" type="checkbox"/> ASA 81mg	
<input checked="" type="checkbox"/> Microalbumin	
<input checked="" type="checkbox"/> Ophthalmology Consult	

Update Visits

Submit Edit Order Delete

MSR Medications Search Personal Department Institution Order Log

Radiology
Laboratory

Order Selections

Surgical Sp

Select Order Cancel

SAGE can automatically create pending orders, by executing guideline logic on current patient information

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Pause

Log Off

MRN: 01 657 157
DOB: 6-27-1908
SSN: 555-88-9874

Sex: M
Age: 95 Years
Phone: (555) 125-2608

Mgmt Functions

WEASLEY, Ronald #3

SAGE technology can also integrate guideline recommendations directly into the care workflow.

Care Support

Selected	Item	Info	Status	10-7-2003	9-10-2002	11-25-2001	09-25-2000	07-24-1999
Assessments								
<input checked="" type="checkbox"/>	Imm Screening		Due		Done	Done	Done	Done
<input checked="" type="checkbox"/>	Foot Exam	i	Due		Done	Done	Done	
<input checked="" type="checkbox"/>	Retinal Exam	i	Due		Done		Done	Done
<input type="checkbox"/>	Tobacco Use			No	No	No	No	No
<input type="checkbox"/>	Blood Pressure	i		105/80	130/82	115/70	120/60	140/90
Tests								
<input checked="" type="checkbox"/>	HbA1c	i	Due		7.0%	6.8%	7.2%	7.6%
<input checked="" type="checkbox"/>	Creatinine		Due		1.6	1.6	1.6	
<input checked="" type="checkbox"/>	Total Cholesterol		Due		200	180	160	
<input checked="" type="checkbox"/>	Triglycerides		Due		110	130	100	
<input checked="" type="checkbox"/>	HDL		Due		40	43	42	
<input checked="" type="checkbox"/>	LDL	i	Due		95	99	100	
<input type="checkbox"/>	Microalbumin	i						
Medications								
<input type="checkbox"/>	ASA				81 mg	81 mg	81 mg	81 mg
<input type="checkbox"/>	NPH Insulin				12 U	16 U	18 U	20 U
<input type="checkbox"/>	Lisinopril				10 mg	10 mg	10 mg	10 mg
Immunizations								
<input checked="" type="checkbox"/>	Influenzae	i	Due		Done	Done	Done	
<input type="checkbox"/>	Pneumococcal	i			Done			
Education								
<input type="checkbox"/>	Diabetes							
<input type="checkbox"/>	Nutrition							

Submit Order Document Audit Edit

And provide access to guideline reference information

Guideline appl

CIS Applicatio

dbtst

FLWSHEET

FLWSHEET DEMO

Marie STOCK

MRN: 01005875

Sex: F

DOB: 08/08/1936

Age: 67 Years

Select Patient

Care Support Flowsheet

View All

Immunization

Selected

Item

Ref Value

Info

Status

Chart Now

9-10-02

11-25-01

Nml

Goal

10-17-03

General Info

Height (cm)

Due

174

174

Weight (Kg)

Due

65

67

BP (mmHg)

120/80

Due

120/80

138/80

HR

Male: 50-90
Female: 55-95

Due

76

68

Resp

15-20

Due

14

16

Temp (F)

96.5-99.5

Due

97

99

Immunization

Information Required

Vaccinations

Influenzae

i

Due

Pneumococcal

i

Diabetes Mellitus

Information Required

Tobacco Use?

i

Due

No

No

Woman planning pregnancy?

Recent severe hypoglycemia?

Due

No

No

SAGE technology can also integrate guideline recommendations directly into the care workflow.

And provide access to guideline reference information

The **SAGE** Project: Implications for Dissemination of Medical Knowledge



Tomorrow:

- Centralized development and encoding of guidelines by health experts
- Standard best-practice guidelines distributed widely and rapidly into multiple delivery systems
- Clinician abilities will be augmented with medical knowledge at the point of care

Thank You!



www.sageproject.net