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Diabetes Management as an Example of the PDSA Cycle Process

What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

ACT PLAN

STUDY DO
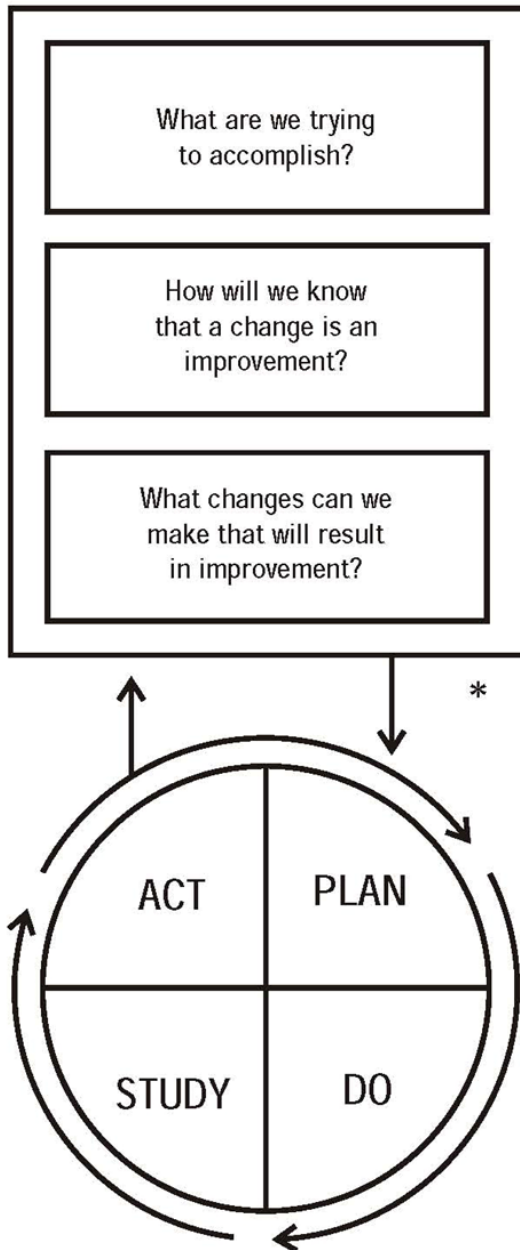
Physicians may find the language and concepts of quality improvement (illustrated to the left) to be new and strange. On closer inspection, however, physicians will find that the practice of clinical medicine is itself a series of quality improvement cycles.

The plan-do-study-act (PDSA) cycle describes, in essence, inductive learning – the growth of knowledge through making changes and then reflecting on the consequences of those changes. Such inductive learning is familiar to physicians, but such formal cycles of action and reflection are unusual in daily work.
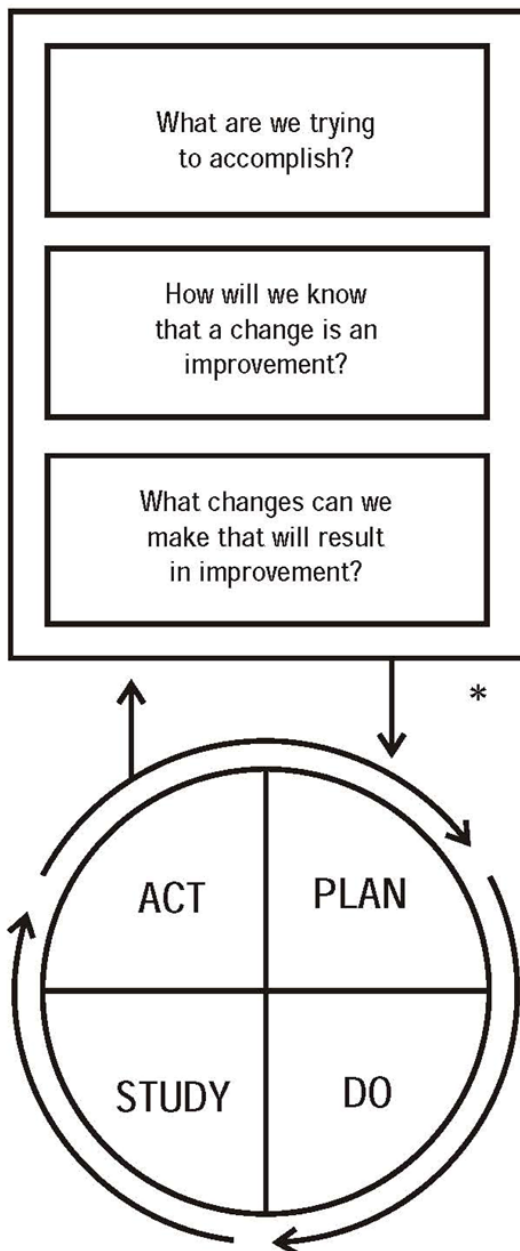
On the following pages, the treatment of diabetes is presented to illustrate how clinical decision-making parallels the process of quality improvement. Hopefully this illustration will make the concepts and practice of quality improvement less alien to physicians.

* Langley GJ, Nolan KM, Nolan TW. The foundation of improvement. Silver Spring, MD: API Publishing, 1992.

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Diabetes Management
(using PDSA Cycle Process)

What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

*

ACT   PLAN

STUDY   DO

Three Basic Questions of Quality Improvement

1. What are we trying to accomplish?
Near normalization of blood glucose to prevent:
1. Symptomatic hyperglycemia.
2. Hypoglycemic reactions.
3. Long-term complications.

2. How will we know that a change is an improvement?
1. A1C value will decrease (goal <7%).
2. SMBG values meeting pre-prandial and postprandial goals.
3. Elimination of hyperglycemic symptoms.
4. Elimination of hypoglycemic reactions.

3. What changes can we make that will result in improvement?
1. Change in meal plan.
2. Change in physical activity.
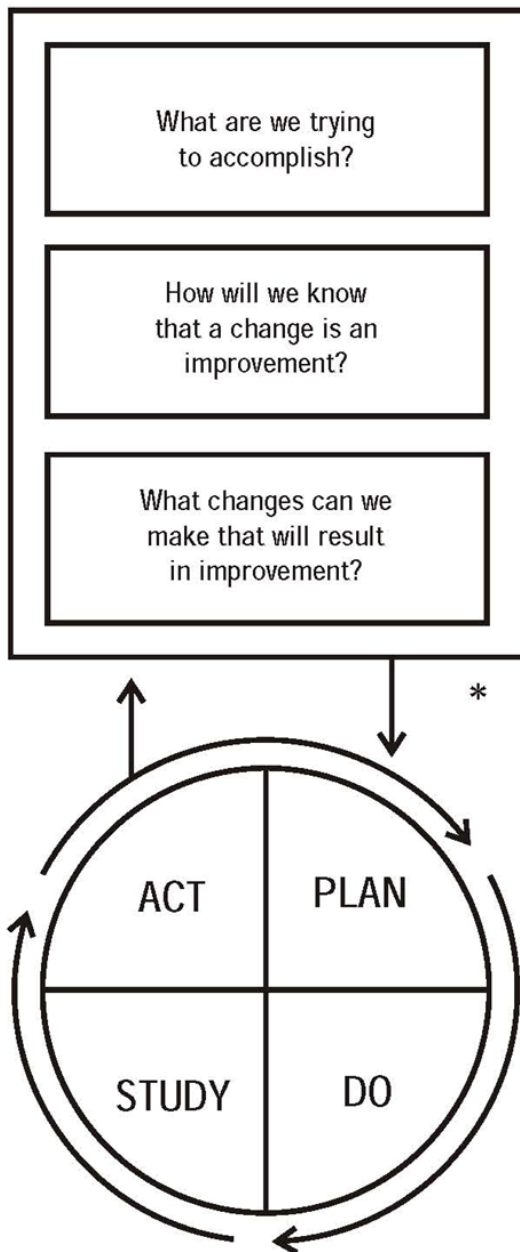3. Change in medication/insulin.

Select a single intervention and test it through a PDSA cycle.

* Langley GJ, Nolan KM, Nolan TW. The foundation of improvement. Silver Spring, MD: API Publishing, 1992.
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NATIONAL
DIABETES
EDUCATION
PROGRAM

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Diabetes Management Cycle #1

Plan
Select an initial diabetes treatment regimen

Do
Teach the patient to implement the regimen and to monitor their blood glucose values.

Study
Review the patient's SMBG values at follow up clinic visits.
1. Note where values have improved.
2. Note where values fall outside of the desired range.

Review the follow up A1C value.
Note change in the value compared to the baseline value.

Act
Based on results of the SMBG values, adjust the treatment regiment to:
1. Maintain the improvement over the baseline value.
2. Obtain further improvement in glycemic control.

Evaluate how to adjust the treatment regimen:
1. Change in meal plan.
2. Change in physical activity.
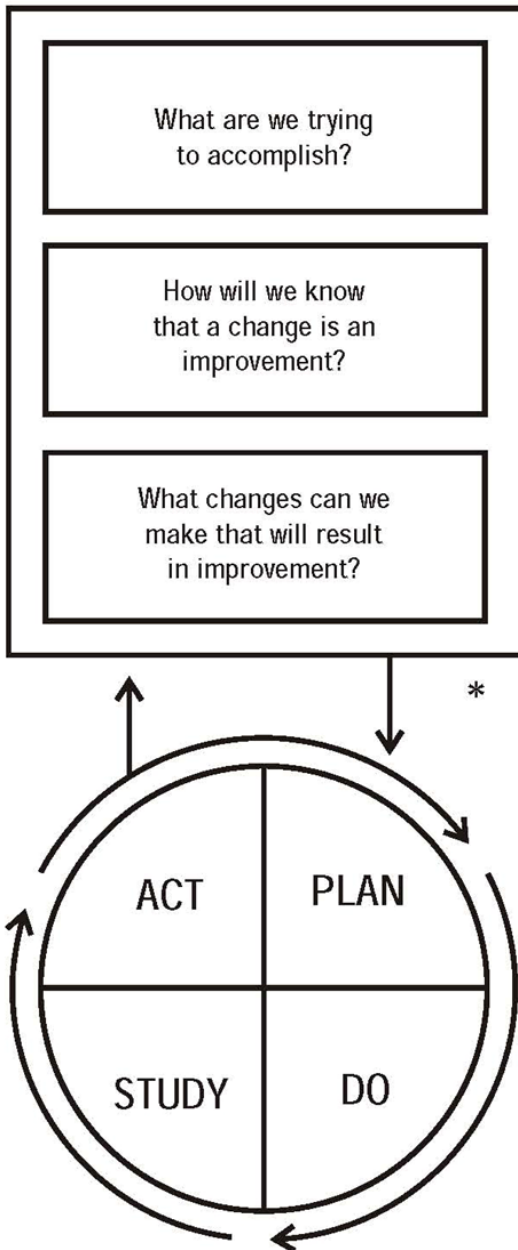3. Change in medication/insulin regimen.

Select a single intervention and test it through another PDSA cycle.

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Diabetes Management Cycle #2

Plan
Select an initial diabetes treatment regimen

Do
Teach the patient to implement the regimen and to monitor their blood glucose values.

Study
Review the patient's SMBG values at follow up clinic visits.
1. Note where values have improved.
2. Note where values fall outside of the desired range.
Review the follow up A1C value.
   Note change in the value compared to the baseline value.

Act
Based on results of the SMBG values, adjust the treatment regiment to:
1. Maintain the improvement over the baseline value.
2. Obtain further improvement in glycemic control.

Evaluate how to adjust the treatment regimen:
1. Change in meal plan.
2. Change in physical activity.
3. Change in medication/insulin regimen.

Select a single intervention and test it through another PDSA cycle.

Continue rapid cycle improvement until:
1. Management goals are reached.
2. Adverse response to intervention(s) precludes further improvement

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